



## **Benchmark Study of Local and Regional Waste Collection Programs**

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January 2017  
File No. 27216225.00

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# 1 INTRODUCTION

SCS conducted a benchmark survey of local and regional cities concerning their residential curbside waste collection services of household trash, recyclables, bulky waste, and yard waste. While similarities exist in collection programs among local and regional cities, no two programs are alike. Each city has a unique waste collection program that suits their constituency and functions within the constraints of their respective funding.

SCS used a mix of internet research, written surveys, and phone calls to gather information about waste collection programs. As expected, some cities were able to provide extensive information on their waste collection program whereas other cities could not due to time constraints or lack of available data. Table 1 indicates the information sources for each city.

**Table 1: Information Sources for Benchmark Study**

|          | City                     | Internet | Phone Calls | Written Survey |
|----------|--------------------------|----------|-------------|----------------|
| Local    | 1. Council Bluffs        | X        |             | X              |
|          | 2. Bellevue              | X        |             | X              |
|          | 3. Papillion             | X        | X           | X              |
|          | 4. La Vista              | X        | X           | X              |
|          | 5. Gretna                | X        | X           | X              |
|          | 6. Plattsmouth           | X        | X           | X              |
|          | 7. Blair                 | X        | X           | X              |
|          | 8. Fremont               | X        | X           | X              |
| Regional | 1. Fort Wayne, IN        | X        |             | X              |
|          | 2. St. Louis, MO         | X        |             | X              |
|          | 3. Minneapolis, MN       | X        |             | X              |
|          | 4. Arlington, TX         | X        |             | X              |
|          | 5. Denver, CO            | X        |             | X              |
|          | 6. Wichita, KS           | X        |             | X              |
|          | 7. Kansas City, MO       | X        |             | X              |
|          | 8. Albuquerque, NM       | X        |             | X              |
|          | 9. Tulsa, OK             | X        |             | X              |
|          | 10. Fort Worth, TX       | X        |             | X              |
|          | 11. Virginia Beach, VA   | X        |             | X              |
|          | 12. Oklahoma City, OK    | X        |             | X              |
|          | 13. Colorado Springs, CO | X        | X           |                |

The regional cities of Wichita and Colorado Springs do not provide curbside collection of waste using municipal crews nor does it contract for curbside collection services on behalf of its residents. Residents in Wichita and Colorado Springs are responsible for contracting with a private waste hauler for curbside waste collection services. Data from these communities were not used for comparison with the other regional cities as it would not result in an appropriate comparison. Where appropriate, data from these communities were included in tables for information purposes only. The local cities of Papillion, La Vista, Gretna, Plattsmouth, Blair and Fremont also operate under a private, homeowner paid market. However, data from these communities was collected to offer a better understanding of local market conditions.

Following is a discussion of the data collected on a topographic basis. The data are presented separately for local and regional cities and comparisons drawn where appropriate. To assist the reader, SCS has also included data for Omaha in Tables 3, 5, 6, 7, and 8.

## 2 FEES AND COSTS

A summary of fees assessed to households for curbside waste collection services are presented in Table 5.

### 2.1 MONTHLY FEE - LOCAL

#### 2.1.1 Trash

Bellevue provides waste collection services for \$13.42 a month of up to 175 gallons of waste a week with the homeowner providing the trash containers. Council Bluffs collects trash in approved containers of 32 or 95 gallon size for \$18.00 a month. Both Bellevue and Council Bluffs include recycling and yard waste collection in the monthly fee for trash. Private haulers operating in surrounding cities use 95 or 96 gallon carts and charge between \$16.95 and \$24.95 a month. Some haulers include yard waste collection in the monthly trash fee while others assess an additional fee. Details for private haulers are included in Table 4 and are listed as Hauler A – D for purposes of anonymity.

#### 2.1.2 Bulky Waste

Both Bellevue and Council Bluffs collect bulky waste by appointment. Residents in Bellevue can have bulky waste collected weekly throughout the year with a per item fee charged for collection. Council Bluffs holds two bulky collection events each year and includes the cost of pickup in the trash collection fee. Private haulers in other local cities collect bulky waste weekly throughout the year by appointment and charge an additional per item fee for pickup.

#### 2.1.3 Yard Waste

Bellevue and Council Bluffs both provide separate weekly curbside collection of yard waste which is included in the monthly fee assessed for trash collection. Private haulers also collect yard waste separately in all cities identified except Plattsmouth where it is comingled with trash. Depending on the private hauler, yard waste is collected for a separate fee ranging from \$5.00 to \$13.00 a month. One hauler does not charge an additional fee for yard waste.

#### 2.1.4 Recyclables

Council Bluffs includes recycling collection using 18 gallon bins with the monthly trash fee. Recycling in Bellevue is collected in 18 gallon bins or 95 gallon carts during a pilot program being conducted. Private haulers in other local cities collect recycling for \$3.00 to \$12.95 a month. All private haulers use 95 or 96 gallon carts for recycling except Hauler B in Gretna and Blair which also uses 18 gallon bins. Hauler A operates an incentive program to promote recycling where a slightly higher per monthly fee is assessed and recycling is weighed during

collection. Homeowners are then given points based on pounds recycled which can be redeemed at local establishments for items such as free coffee or pizza.

## 2.2 MONTHLY FEE - REGIONAL

### 2.2.1 Trash

Most regional cities surveyed provide for the weekly curbside collection of trash. Wichita does not provide nor contract for residential curbside waste collection services; however, they do require that private waste haulers offer two price options based on trash quantity. Monthly fees for curbside waste collection are not assessed to households in Denver and Kansas City; collection costs are funded through the city's general fund. In Virginia Beach, costs for curbside trash collection are paid from the general fund and partially funded through a solid waste assessment fee of \$21.36 per household per month and households are required to pay \$75 for the cart.

Most of the regional cities surveyed provide weekly curbside collection service of trash in 95 or 96 gallon carts although several also provide collection services from smaller carts at a reduced price. The monthly fee for trash collection using 95 gallon carts ranges from \$9.95 in Fort Wayne to \$27.89 in Minneapolis. Both of these fees include the collection of recycling and the trash collection fee in Minneapolis also includes yard waste. Households in Arlington pay a monthly fee of \$13.72 for twice weekly collection of an unlimited number of trash bags. This fee also includes the cost for weekly collection of recycling in 65 gallon carts. The average monthly cost for waste collection in all cities surveyed is between \$15.00 and \$20.00.

### 2.2.2 Bulky Waste

With the exception of Fort Wayne, all regional cities provide curbside collection of bulky waste. Tulsa is the only city to charge an additional fee for collection. A fee of \$10.00 is assessed for up to 8 cubic yards of material.

### 2.2.3 Yard Waste

All regional cities surveyed provide separate curbside yard waste collection except Arlington and Oklahoma City which do not accept yard waste and Fort Wayne and Tulsa which combine yard waste with trash. The only city that charges an additional fee for yard waste collection is Denver which charges \$9.75 for a 95 gallon cart that can be used to collect all organic material.

### 2.2.4 Recyclables

All regional cities surveyed include the cost of curbside collection of recyclable materials in the monthly trash collection fee.

## 2.3 TOTAL WASTE COLLECTION BUDGET

Waste collection budgets vary significantly by city. Some of that variation is due to their accounting practices and may or may not include amortization of capital expenses, insurance,

maintenance, or other operations. Waste collection budgets are presented below but may not be directly comparable depending on each city's accounting practices.

### **2.3.1 Local Cities**

Council Bluffs was the only local city to provide their annual collection budget of \$3.34 M for servicing 19,000 households. This value is comprised of \$1.8 M for collection of trash, \$0.51 M for recycling, \$0.089 M for bulky waste collection, and \$0.94 M for collection of yard waste. Bellevue reported 80% of their collection budget is associated with trash collection, 15% for recycling, less than 1% for bulky item collection and 5% for yard waste collection at 17,000 households.

### **2.3.2 Regional Cities**

Eight regional cities were able to provide their annual waste collection budgets:

Fort Wayne, IN – \$8.5 M for 82,000 households  
St. Louis, MO - \$13 M for 109,977 households  
Denver, CO - \$26 M for 174,000 households  
Kansas City, MO - \$16.9 M for 149,000 households  
Albuquerque, NM - \$48.5 M for 176,000 households  
Tulsa, OK - \$13.6 M for 117,800 households  
Fort Worth, TX - \$52 M for 209,657 households  
Oklahoma City, OK - \$47.1 M for 192,832 households

Albuquerque provided more extensive information regarding their collection budgets. The value provided above consists of \$31.073 M for garbage collection, \$17.427 M for recyclables collection and does not include capital costs. \$15.709 M is budgeted for capital costs including bins and carts.

## **2.4 FEE COLLECTION METHOD**

All local and regional cities that charge residents for waste collection services do so through a utility or water bill.

## **2.5 VARIABLE CART SIZES AND PRICING**

### **2.5.1 Local Cities**

Bellevue requires homeowners to provide the containers for waste collection; therefore, container sizes vary. Any combination of carts, cans, and bags may be used so long as the total volume to be collected does not exceed 175 gallons. Council Bluffs allows additional bags to be used so long as they display a sticker which can be purchased for \$2.50. Private haulers in local cities allow additional 96 gallon carts to be purchased for an additional \$3.00 - \$5.00 a month.



### 2.5.2 Regional Cities

The cities of Minneapolis, Albuquerque, Fort Worth, and Tulsa charge different fees depending on the size of the cart and collection frequency. Minneapolis charges a base rate of \$22.89 and an additional cart fee of \$2.00 for a 32 gallon cart or \$5.00 for a 95 gallon cart. Albuquerque allows the purchase of additional 96 gallon carts for \$7.69 a month. Fort Worth charges \$12.50 a month for 32 gallon carts, \$17.50 for 64 gallon carts, and \$22.75 for 96 gallon carts. Tulsa offers its residents three cart sizes, two collection frequencies (once or twice weekly), and three types of collection services. Monthly fees for the variety of service options in Tulsa are presented in Table 2. Fort Wayne also uses variable size carts; however, a variable fee is not assessed.

**Table 2: Summary of Monthly Fees in Tulsa, OK**

| Service Type and Frequency |        | Number of Carts and Size |         |         |         |
|----------------------------|--------|--------------------------|---------|---------|---------|
|                            |        | 1 Cart                   |         |         | 2 Carts |
|                            |        | 32-gal                   | 64-gal  | 96-gal  | 96-gal  |
| Curbside                   | 1/week | \$12.52                  | \$14.02 | \$15.52 | \$17.00 |
|                            | 2/week | \$17.74                  | \$19.24 | \$20.74 | \$23.10 |
| Backyard                   | 1/week | \$16.47                  | \$17.97 | \$19.47 | NA      |
|                            | 2/week | \$25.64                  | \$27.14 | \$28.64 | \$31.00 |
| Extended Backyard*         | 1/week | \$19.47                  | \$20.97 | \$22.47 | \$23.95 |
|                            | 2/week | \$31.64                  | \$33.14 | \$34.64 | \$37.00 |

\*Extended Backyard service is when there are more than 100 but less than 200 feet from the curb to the backyard

## 2.6 COLLECTION CREWS

Both Bellevue and Council Bluffs use contracted crews to collect waste. The regional cities of Fort Wayne, St. Louis, Arlington, Tulsa, and Fort Worth also use contracted haulers for waste collection. Denver, Albuquerque, and Virginia Beach use municipal crews while Minneapolis, Kansas City and Oklahoma City use a combination of contracted and municipal crews.

## 3 CONTAINERS

A summary of container characteristics for curbside waste collection services are presented in Table 6.

### 3.1 LOCAL CITIES

#### 3.1.1 Trash

Both Bellevue and Council Bluffs require residents to provide the containers for trash collection. Bellevue allows any combination of 35, 60, or 90 gallon and plastic bags so long as no container weighs more than 60 pounds and the total collection volume does not exceed 175 gallons. A pilot program is being conducted in Bellevue where residents within the program area are given 95 gallon carts. Council Bluffs requires residents to use either one city approved 90-95 gallon cart, which can be purchased from the city, or up to three, 32 gallon containers. Extra bags are allowed but a sticker costing \$2.50 must be affixed to the bag. An additional 90-95 gallon cart

can also be used for trash; however, three stickers are required (an additional \$7.50) for it to be collected. All private haulers in local cities use 95 or 96 gallon carts for trash collection.

### **3.1.2 Yard Waste**

Yard waste is manually collected from containers supplied by residents in Bellevue and Council Bluffs as long as they are clearly marked as yard waste using a Y or a sticker which can be obtained from city offices. Residents in Council Bluffs can purchase an additional 90-95 gallon cart to be used for yard waste. There is no limit to the amount of yard waste able to be collected in either city and both allow biodegradable paper bags. Branches and brush not able to be fit in a container can be set out provided they are shorter than 4 feet and are bundled. All private haulers use 95-96 gallon carts for yard waste except Hauler B in Gretna and Blair which allows residents to use smaller 32 gallon cans or yard waste bags.

### **3.1.3 Recyclables**

Bellevue provides unlimited recycling collection from resident supplied containers or 18 gallon bins can be picked up from city offices at no charge. Residents also have the option of participating in a recycling incentive program called RecycleBank which provides residents with 96 gallon carts that are weighed during collection. Points are awarded for recycled materials which can then be used as coupons for free items in area businesses. Council Bluffs collects recyclables from 18 gallon bins provided by the city. Each residence receives two bins as Council Bluffs operates a dual stream recycling program. All private haulers use 96 gallon carts for recycling and Hauler B in Gretna and Blair will also collect recycling from 18 gallon bins.

## **3.2 REGIONAL CITIES**

### **3.2.1 Trash**

Many regional cities have implemented a cart based system for the collection of trash. However, the cities of Kansas City and Arlington use a bag system for the collection of solid waste although, Kansas City is evaluating the implementation of a cart based system. For Kansas City's bag system, the city collects two bags of trash for each household. Additional bags of trash may be set out for collection, but they must be tagged in order for them to be collected. Tags may be purchased for \$2.50 at designated retailers in the Kansas City area. Arlington allows an unlimited number of bags and trash and is collected twice per week.

Denver and St. Louis use a dumpster system in some residential areas whereby dumpsters of various sizes are placed in alleys to serve the disposal needs of a small grouping of houses (typically four to six). In St. Louis, approximately 85% of households' use 1.5, 2.0, 2.5, or 3.0 cubic yard alley dumpsters depending on how many households are in the vicinity while the other 15% of households use 96 gallon carts. Waste is collected from dumpsters on a twice weekly basis while carts are collected on a weekly basis.

Most cities with carts have a "pay as you throw" based system where residents select a cart size and their monthly fee for service is based on the size of the cart. Residents are issued one cart per household. The sizes of carts available to residents vary from city to city; however, many

offer cart sizes of 32, 64, and 96 gallons. The cities of Albuquerque, Virginia Beach and Oklahoma City are unique in that they only offer one size of cart for residents (95 or 96-gallon).

Cities that use cart based systems vary in the acceptance of bags of trash outside of the cart. The cities of Denver, St. Louis, Albuquerque, and Virginia Beach do not allow bags to be set outside of the cart. Cities such as Tulsa and Fort Worth do allow bags, but they must be tagged with a pre-paid sticker in order for them to be collected. Fort Wayne allows an unlimited number of bags to be set outside of the carts and Minneapolis allows up to two additional bags to be set out. Denver provides for one special collection every three weeks where residents can set out up to 10 bags of waste for an “overflow” pick-up.

The cities of Albuquerque and Tulsa have outfitted their solid waste carts with Radio-Frequency Identification (RFID) technology while Virginia Beach is in the process of implementing a program. No other regional cities report using RFID technology at this time.

### **3.2.2 Yard Waste**

Similar to local cities, the collection of yard waste in the regional cities is mainly manual collection of materials in bags and bundles. St. Louis collects yard waste in dumpsters and carts depending on service collection. Denver recently implemented a cart-based collection program for organic waste. Residents may subscribe to this program and pay a \$9.75/month fee for the curbside collection of yard waste in a 95-gallon cart.

### **3.2.3 Recyclables**

Most curbside recycling programs use a cart for the collection of materials from residents. The cities of Albuquerque, Tulsa, Arlington, and Virginia Beach provide one size cart for the collection of recyclables. The cities of Denver and Minneapolis provide varied sized carts for recycling. Kansas City and Oklahoma City use bins sized 22 and 18 gallons, respectively.

## **4 COLLECTION SERVICES**

A summary of operations for curbside waste collection services are presented in Table 7.

### **4.1 COLLECTION FREQUENCY - LOCAL**

#### **4.1.1 Trash**

Both Bellevue and Council Bluffs collect trash on a weekly basis. All private haulers in the local area collect trash on a weekly basis as well.

#### **4.1.2 Bulky Waste**

Bellevue collects bulky waste each Friday by appointment. Council Bluffs holds two bulky waste collection events each year but an appointment must be made. Private haulers also collect bulky waste on weekly basis by appointment with the exception of Hauler D in Fremont which does not collect bulky waste.

### **4.1.3 Yard Waste**

Yard waste is collected separately by both Bellevue and Council Bluffs from April 1<sup>st</sup> through November 30<sup>th</sup>. Collection occurs weekly on regularly scheduled trash collection days. Private haulers collect yard waste separately according to the same schedule except Hauler A which does not collect yard waste separately at any time in Plattsmouth, NE.

### **4.1.4 Recyclables**

All local cities have curbside collection of recyclables. Bellevue and Council Bluffs have weekly collection of recyclable. Haulers A, B, and D collect recyclables on a biweekly basis in all cities in which they operate while other haulers operate weekly collections.

## **4.2 COLLECTION FREQUENCY - REGIONAL**

### **4.2.1 Trash**

Ten of the regional cities surveyed offer weekly curbside trash collection (Fort Wayne, Minneapolis, Denver, Kansas City, Albuquerque, Tulsa, Fort Worth, Virginia Beach, and Oklahoma). Three regional cities provide twice a week collection of solid waste (St. Louis, Tulsa, and Arlington). St. Louis and Arlington by default collect solid waste from residents twice per week, whereas one of Tulsa's subscription services allows residents to select twice per week collection.

### **4.2.2 Bulky Waste**

Collection frequency of bulky waste varies considerably between different cities. Fort Wayne, Minneapolis, and Arlington collect bulky waste during regular trash collection routes which occur weekly in Fort Wayne and Minneapolis and twice weekly in Arlington. St. Louis, Denver, Fort Worth, and Oklahoma City collect bulky waste monthly while Kansas City, Albuquerque, Tulsa, and Virginia Beach offer collections by appointment.

### **4.2.3 Yard Waste**

Four regional cities surveyed do not provide separate curbside collection of yard waste (Fort Wayne, Arlington, Tulsa, and Oklahoma City). Of the cities that do provide the service, the majority provide it on a weekly basis (St. Louis, Minneapolis, Denver, Fort Worth, and Virginia Beach). Yard waste is collected quarterly in Kansas City and twice a year in Albuquerque.

### **4.2.4 Recyclables**

All cities surveyed except for Fort Wayne, Minneapolis, Denver, and Virginia Beach collect recyclables on a weekly basis. Those cities listed collect recyclables on a biweekly basis.

## 4.3 COLLECTION ROUTES

### 4.3.1 Trash

The number of daily trash collection routes varies depending on the number of households serviced. Bellevue and Council Bluffs operate 4 and 5 trash collection routes on a daily basis, respectively. St. Louis and Denver each operate 55 routes a day and Oklahoma City operates 60 to 62 routes per day. Most other regional cities operate between 24 and 38 routes a day.

### 4.3.2 Bulky Waste

Bellevue operates 1 bulky collection route each week on Friday and Council Bluffs operates 1 to 2 collection routes during the biannual collection events. The regional cities that reported information on bulky waste collection routes show a low of 2-5 routes in Minneapolis to a high of 25 routes in Tulsa.

### 4.3.3 Yard Waste

Bellevue operates 1.5 yard waste routes per day while Council Bluffs operates 6 routes per day. Regional cities operate between 4 and 25 yard waste routes per day.

### 4.3.4 Recyclables

Both Bellevue and Council Bluffs operate approximately half as many recycling collection routes as trash collection routes. Four regional cities, St. Louis, Minneapolis, Kansas City, and Fort Worth, operate the same or slightly fewer recycling collection routes as compared to trash routes. Arlington, Denver, Albuquerque, and Oklahoma City operate significantly fewer recycling routes compared to trash routes. The significant outlier is Tulsa which operates more recycling routes (33) than trash routes (25).

## 4.4 DAY OF THE WEEK COLLECTION - LOCAL

### 4.4.1 Trash

Trash collection in both Bellevue and Council Bluffs occurs Monday through Friday.

### 4.4.2 Bulky Waste

Bulky waste is collected by appointment on Fridays in Bellevue. Council Bluffs hold two collection events each year on Saturday but residents must schedule a pick up.

### 4.4.3 Yard Waste

Yard waste collection in both Bellevue and Council Bluffs occurs Monday through Friday.

### 4.4.4 Recyclables

Recyclables are collected in both Bellevue and Council Bluffs occurs Monday through Friday.

## 4.5 DAY OF THE WEEK COLLECTION - REGIONAL

### 4.5.1 Trash

Collection of trash in all regional cities occurs Monday through Friday except in Arlington and Wichita where trash is collected Monday through Saturday and Oklahoma City where trash collection occurs four days a week with no collection on Wednesday. In Tulsa, households that receive twice weekly trash collection are serviced using separate smaller collection vehicles on Wednesdays.

### 4.5.2 Bulky Waste

The collection of bulky waste typically occurs Monday through Friday with three notable exceptions. St. Louis only collects bulky waste on Mondays. Residents in Denver that are issued dumpsters (typically a group of four houses) are asked to place their bulky items next to the dumpster at the beginning of the week for which the city commits to collecting by the end of the week. Kansas City collects bulky waste on the 1<sup>st</sup> and 4<sup>th</sup> disposal day of the month when appointments are made by residents.

### 4.5.3 Yard Waste

Yard waste in the regional cities that collect yard waste separately occurs Monday through Friday except in St. Louis where collection occurs Wednesday through Friday and Virginia Beach where collection occurs Tuesday through Friday.

### 4.5.4 Recyclables

The collection of recyclables occurs in most cities Monday through Friday. However, Denver does not collect recyclables on Wednesdays and varies collection routes so that the collection routes on Tuesday and Thursday are longer than the collection routes on Monday and Friday. Oklahoma City also does not collect recycling on Wednesday.

## 4.6 ANNUAL TONNAGE

Tonnage information for all categories of waste for all cities surveyed is shown in Table 3 on the following page. Also included is a normalization of the number of tons of waste collected per household serviced.

**Table 3: Waste Tonnage Collected by City**

| City               | # of Households Served | Annual Collection (tons) |             |         |                    | Annual Collection (ton/HH) |             |       |                   |
|--------------------|------------------------|--------------------------|-------------|---------|--------------------|----------------------------|-------------|-------|-------------------|
|                    |                        | Trash                    | Recyclables | Bulky   | Yard Waste         | Trash                      | Recyclables | Bulky | Yard Waste        |
| Omaha, NE          | 139,889                | 134,899                  | 17,104      | a       | 5,662 <sup>b</sup> | 0.96                       | 0.12        |       | 0.04 <sup>b</sup> |
| Bellevue, NE       | 17,000                 | 16,300                   | 1,600       | 500     | 2,900              | 0.96                       | 0.09        | 0.03  | 0.17              |
| Council Bluffs, IA | 19,000                 | 15,800                   | 1,517       | 180     | 3,500              | 0.83                       | 0.08        | 0.01  | 0.18              |
| Fort Wayne, IN     | 82,000                 | 88,100                   | 13,155      | *       | *                  | 1.07                       | 0.16        |       |                   |
| St. Louis, MO      | 109,977                | 140,000                  | 16,000      | 5,500   | 20,000             | 1.27                       | 0.15        | 0.05  | 0.18              |
| Minneapolis, MN    | 106,500                | 85,600                   | 27,500      | *       | 19,300             | 0.80                       | 0.26        |       | 0.18              |
| Arlington, TX      | 96,000                 | 118,000                  | 23,000      | *       | *                  | 1.23                       | 0.24        |       |                   |
| Denver, CO         | 174,000                | 208,000                  | 34,000      | 3,500   | 4,000              | 1.20                       | 0.20        | 0.02  | 0.02              |
| Wichita, KS        | *                      | 228,710                  | 20,798      | *       | *                  |                            |             |       |                   |
| Kansas City, MO    | 149,000                | 78,000                   | 20,000      | 6,500   | 3,500              | 0.52                       | 0.13        | 0.04  | 0.02              |
| Albuquerque, NM    | 176,000                | 504,590                  | 27,660      | 2,847   | 1,278              | 2.87                       | 0.16        | 0.02  | 0.01              |
| Tulsa, OK          | 117,800                | 90,700                   | 22,000      | 2,000   | 7,000              | 0.77                       | 0.19        | 0.02  | 0.06              |
| Fort Worth, TX     | 209,657                | 162,800                  | 45,600      | 33,200  | 27,900             | 0.78                       | 0.22        | 0.16  | 0.13              |
| Virginia Beach, VA | 124,000                | 135,000                  | 30,000      | 131,000 | 40,000             | 1.09                       | 0.24        | 1.06  | 0.32              |
| Oklahoma City, OK  | 192,832                | 244,325                  | 9,181       | 44,886  | *                  | 1.27                       | 0.05        | 0.23  |                   |

\* Indicates information could not be gathered

<sup>a</sup> Omaha tracks on a per vehicle served basis with 3,308 served in 2015

<sup>b</sup> Yard waste was co-collected and co-mingled starting in July 2015

#### 4.6.1 Local Cities

Bellevue and Council Bluffs collect similar volumes of waste as would be expected by their close proximity and similar population size. Each collect approximately 16,000 tons of trash, 1,600 tons of recyclables, and 3,000 tons of yard waste on a yearly basis. Bellevue collected significantly more bulky waste than Council Bluffs although both collect little bulky waste in comparison to total waste collected.

#### 4.6.2 Regional Cities

Annual tonnage of solid waste collected varies by city and is strongly dependent on population size. Noticeable deviations from average conditions can be found in Albuquerque where more than two times as much trash is discarded per household as compared to other regional cities. Also noticeable is the very low recycling rate present in Oklahoma City and the very high tonnage of bulky waste collected in Virginia Beach.

### 4.7 WASTE DIVERSION

#### 4.7.1 Recyclables

Bellevue collects recycling using a single stream process while Council Bluffs uses a dual stream process. Residents of Council Bluffs are required to separate paper, cardboard, and glass from

cartons, plastics, and metal. Each category is collected on a biweekly basis (i.e. paper, cardboard, and glass are collected one week and cartons, plastics, and metal are collected the next).

All regional cities collect recyclable in a single stream with the exception of Oklahoma City where bottles and cans are kept separate from paper. The other notable exception is Kansas City does not accept glass as part of their single stream program but does operate two collection centers where it can be dropped off.

#### **4.7.2 Household Hazardous Waste (HHW)**

Residents of Bellevue can take HHW to Under the Sink, a drop off facility owned and operated by the City of Omaha free of charge. Council Bluffs operates a Regional Collection Center where HHW can be dropped off free of charge.

All regional cities except Fort Wayne operate a collection facility where HHW can be dropped off free of charge to residents. The exception to this is St. Louis where the first 50 pounds of HHW are accepted at no charge but any amounts over 50 pounds are charged at \$1.00 a pound and an appointment is required. Fort Wayne only collects HHW during a collection event held once a year. Denver has drop off facilities that can be used free of charge or a mobile collection service that residents can use for \$15 per collection. Fort Worth also operates both a drop off facility and a mobile collection unit that holds events in neighborhoods throughout the year.

## **5 COLLECTION VEHICLES**

A summary of vehicle characteristics for curbside waste collection services are presented in Table 8.

### **5.1 VEHICLE SIZE AND TYPE**

#### **5.1.1 Local Cities**

Bellevue uses rear load 25 cubic yard trucks for all types of waste collection and trucks are loaded manually. Council Bluffs operates 25 cubic yard rear loading trucks for all waste types except recycling which is collected from 20 cubic yard side loading trucks. Collection of trash uses a semi-automated system while collection of recyclables, bulky, and yard waste is done manually. This information was not collected from private haulers in surrounding cities.

#### **5.1.2 Regional Cities**

Regional cities use a combination of rear and side loaded vehicles for the collection of trash ranging from 8 to 33 cubic yards in size. In one of Kansas City's collection areas, a contractor uses split body trucks for the co-collection of trash and recyclables. These vehicles are 27 cubic yards in size and the box is split 70 percent for trash and 30 percent for recycling.

Tulsa uses four, small eight-cubic yard trucks for the collection of trash in gated communities where operating larger trucks is difficult or undesirable. Tulsa also uses these smaller trucks to



accompany their larger side-loaders in neighborhoods to provide trash collection through their backyard service program.

With the exception of Arlington, all regional cities operate semi (assisted rear-loading) or fully automated trucks for trash collection in at least a portion of the city. Kansas City is undergoing a pilot study with automated collection of 96 gallon carts but residents outside of the study area use manual collection of trash bags. Denver operates both automated and manual collection depending on neighborhood.

Recyclables from all regional cities except Kansas City and Oklahoma City are fully or semi-automated. Kansas City is undergoing a pilot study with automated collection of 96 gallon carts but residents outside of the study area use manual collection of recycling. Oklahoma City uses manual collection of recycling.

Bulky wastes are collected using boom trucks or in rear-loading trucks similar to those used for trash.

Truck sizes for yard waste in those cities that offer separate collection range in size from 20 to 30 cubic yards. St. Louis, Denver, and Tulsa use automated collection while Minneapolis, Kansas City, Albuquerque, Fort Worth, and Virginia Beach use manual collection.

## 5.2 TECHNOLOGY

### 5.2.1 Local Cities

Neither Bellevue nor Council Bluffs currently has onboard computers in any of their collection vehicles; however, Bellevue indicated computers would soon be installed in trash collection trucks. Bellevue uses E Route Logistics for route planning while Council Bluffs does not use any routing software. This information was not collected from private haulers in local cities.

### 5.2.2 Regional Cities

Three cities, Fort Wayne, Kansas City, and Tulsa use onboard computers in their trash, recycling, and yard waste (except Fort Wayne which does not collect yard waste separately) collection vehicles. In Tulsa, onboard computers provide a rolling screen that outlines the level of service required by households which is particularly important given the wide variety of collection services offered.

Fort Wayne, Kansas City, Tulsa, and Virginia Beach all use routing software. Denver and Albuquerque use GPS tracking systems on collection vehicles for truck tracking.

## 5.3 FUEL

### 5.3.1 Local Cities

All collection vehicles in Council Bluffs use CNG as the vehicle fuel while Bellevue uses CNG in trash and recycling vehicles but not for bulky and yard waste collection vehicles. Neither city owns its fueling station.

### 5.3.2 Regional Cities

All waste collection vehicles in Arlington and Denver are powered by CNG. Tulsa operates CNG powered vehicles for all collections except bulky waste and Kansas City operates CNG powered recycling trucks. Portions of Oklahoma City's trash and bulky waste collection fleets are also powered by CNG. St. Louis, Minneapolis, Arlington, Denver, Tulsa, and Oklahoma City all own the fueling station used for collection vehicles. Kansas City owns the CNG fueling station used for the recycling collection vehicles.

## 5.4 FLEET AGE AND REPLACEMENT

### 5.4.1 Local Cities

Council Bluffs operates a new fleet of vehicles approximately one year old. Recyclable collection vehicles in Bellevue are two years old with other collection vehicles being seven years old. Replacement of vehicles in Bellevue occurs after 10 to 12 years while replacement of vehicles in Council Bluffs occurs as needed. This information was not collected from private haulers in local cities.

### 5.4.2 Regional Cities

Regional cities tend to maintain slightly older vehicle fleets for waste collection when compared to local cities. The average solid waste vehicle fleet age is approximately eight years, with the average age ranging from two years old in Tulsa to 15 years old in Virginia Beach, VA. Denver indicated that due to budget constraints they are behind schedule in replacing their solid waste vehicle fleet (60 percent of their fleet is overdue for replacement). Other cities are also behind schedule with vehicle replacement. For example, Albuquerque indicated the average age of their solid waste and recycling vehicle fleet is 12 years. Their target replacement schedule for the vehicle fleets is seven years and they have been working hard to close the gap between the actual age of their fleet and their target replacement schedule.

In Oklahoma City, city-owned vehicles are five years old or less whereas the contractor's trash collection vehicles are mostly six years old or greater. Oklahoma City tries to replace trash collection vehicles every five to seven years and bulky waste collection vehicles every seven to 10 years.

The cities surveyed indicated their target vehicle replacement schedule is typically five to 10 years. Most cities target their fleets for replacement when they are seven years old. However, Tulsa, whose contractor uses new CNG fueled vehicles, indicated they have a longer life and their target replacement schedule is about 10 years.

## 6 CUSTOMER SERVICE

### 6.1 LOCAL CITIES

#### 6.1.1 Missed Pick-Ups

Bellevue and Council Bluffs both operate a missed pick up policy where residents contact the hauler to have missed waste collected. Bellevue will have waste collected in 24 hours.

#### 6.1.2 Complaint Management

Residents of Bellevue can contact the city with complaints regarding waste collection. The city will then contact the waste hauler directly to resolve the issue. In Council Bluffs, residents can file requests or complaints directly with the hauler.

#### 6.1.3 Breakage

In Bellevue, waste containers are the property of the homeowners so broken or damaged containers are replaced at homeowner's expense. Council Bluffs offers a 10-year, prorated warranty on the 96 gallon carts, if used. If homeowner elects to use personal containers these are replaced at owner's expense if damaged or broken.

#### 6.1.4 Special Services

Both Bellevue and Council Bluffs operate a backdoor collection program for the disabled or elderly. Residents wishing to utilize this service must contact the city and provide a disability form signed by a doctor. Council Bluffs also offers a differential rate for those with limited income. Qualifying households can receive waste collection services at \$9.00 a month instead of the regular rate of \$18.00 a month.

### 6.2 REGIONAL CITIES

#### 6.2.1 Missed Pick-Ups

Similar to local cities, most regional cities have implemented a policy to handle missed pick-up requests. These requests are typically submitted by phone or online through the city's website. While many cities attempt to collect missed pick-ups as quickly as possible (usually within 24 hours), some cities have staff that investigate the claim further. For example, Denver has instituted a policy whereby drivers call in addresses of residents that do not have their cart set-out. If a resident on this list calls about a missed pickup, a city representative explains that they will have to wait until their next regularly scheduled collection day. St. Louis also has a similar protocol where supervisors investigate claims of missed pick-ups and if it is determined the resident did not have their cart set out on time, they will have to wait until their next scheduled pick-up. Minneapolis and Tulsa also operate similar policies.

### **6.2.2 Complaint Management**

Complaints about waste collection services are handled on a case-by-case basis. In some cities, residents contact the city who then forwards the complaint on to the hauler while in other cities, residents contact the hauler directly to resolve complaints.

### **6.2.3 Breakage**

Regional cities strive to repair and replace carts at no cost. Some cities, including Tulsa and Virginia Beach, repair and replace for free only if the homeowner is not responsible for the damage. If the resident is responsible for the damage due to neglect, fire, or theft, the resident must pay for the cost to repair the cart. Tulsa charges residents \$65 to repair/replace a cart if they are responsible for the damage. Tulsa bought all the carts initially but the contracted hauler is responsible for paying for the repairs and replacement of the carts and maintaining proper inventory. On a regular basis, city staff checks the hauler's inventory to ensure it is being properly maintained. Even though the initial waste collection carts for Virginia Beach were distributed "free" to residents, their current program requires residents to buy the carts for \$75. These carts come with a 10-year warranty and the city will repair and replace them for free during that time as long as the homeowner isn't responsible for damage due to neglect. St. Louis, Minneapolis, Denver, and Kansas City will repair or replace carts free of charge.

### **6.2.4 Special Services**

Many regional cities offer special services to residents in their community, including special backyard/side-door service to residents. These cities typically require documentation from a doctor in order to qualify for this type of service. In arranging for backyard/side-door service, Denver strives to avoid having their collection staff go on private property for waste collection. Operations supervisors in Denver and Minneapolis will meet with residents requesting such service to develop a compromise for their special collection service. Residents approved for backyard/side-door service in Albuquerque are issued a red triangle that is placed on their cart to alert collection crews of the special service.

## **7 CONCLUSION**

The data presented shows that waste collections services vary widely amongst regional cities of similar population to Omaha making it difficult to draw definitive comparisons. However, several generalities can be made. First, the average waste collection fee across all cities which have municipal contracts is \$16.50 per household and all include recyclable collection in that fee. Second, nearly all regional cities use carts for the collection of both trash and recyclables. Of the 8 regional cities that use carts, 5 allow residents to pick from at least 2 sizes while the other 3 use only 96 gallon carts. It should also be noted that all private haulers operating in local cities use 96 gallon carts for collection of both trash and recyclables with only one hauler also using 18 gallon bins. Several interesting policies for dealing with "overflow" trash were found including allowing residents to place extra trash out for free, operating a sticker program for extra bags, and allowing an overflow day once a month where additional bags can be set out free of charge.

Third, all cities collect trash and most collect recyclables on at least a weekly basis. Collection frequency of yard waste varies considerably and four cities do not provide separate collection of yard waste (two do not accept yard waste and two comingle yard waste with trash). All cities operate a recyclable collection with the majority being single stream and all cities also operate a drop off facility for household hazardous waste. Finally, bulky waste collection programs were the most varied between all cities making comparison difficult. All cities operate a bulky waste program and the majority includes the cost of pickup in the trash collection fee. Collection frequencies vary from once a week along regular waste routes to requiring residents to schedule an appointment for collection.

## 8 DISCLAIMER

All reasonable care was taken to ensure the consistency and accuracy of the presented data; however, independent verification of the data provided by the surveyed individuals was not performed. SCS Engineers assumes no responsibility for the accuracy of the information obtained from, or provided by, third-party sources.

**Table 4: Waste Collection Services Provided by Private Haulers in Local Cities**

| City                          |            | Papillion             |             | La Vista              |             | Gretna                |                |             | Plattsmouth           | Blair                 |                | Fremont  |
|-------------------------------|------------|-----------------------|-------------|-----------------------|-------------|-----------------------|----------------|-------------|-----------------------|-----------------------|----------------|----------|
| Hauler                        |            | A                     | C           | A                     | C           | A                     | B              | C           | A                     | A                     | B              | D        |
| Monthly Fee (\$/HH)           | Trash      | \$16.95               | \$16.95     | \$16.95               | \$16.95     | \$16.95               | \$18.25        | \$16.95     | \$21.95               | \$24.95               | \$18.25        | \$21.00  |
|                               | Recycling  | <sup>a</sup>          | \$3.00      | <sup>a</sup>          | \$3.00      | <sup>a</sup>          | \$10.00        | \$3.00      | <sup>b</sup>          | <sup>b</sup>          | \$10.00        | \$12.00  |
|                               | Bulky      | <sup>c</sup>          | Per item    | <sup>c</sup>          | Per item    | <sup>c</sup>          | Per Item       | Per item    | <sup>c</sup>          | <sup>c</sup>          | Per Item       | N/A      |
|                               | Yard waste | \$5.00                | *           | \$5.00                | *           | \$5.00                | \$5.00         | *           | No YW service         | \$5.00                | \$5.00         | \$13.00  |
| Collection Frequency          | Trash      | Weekly                | Weekly      | Weekly                | Weekly      | Weekly                | Weekly         | Weekly      | Weekly                | Weekly                | Weekly         | Weekly   |
|                               | Recycling  | Biweekly              | Weekly      | Biweekly              | Weekly      | Biweekly              | Biweekly       | Weekly      | Biweekly              | Biweekly              | Biweekly       | Biweekly |
|                               | Bulky      | Weekly                | Weekly      | Weekly                | Weekly      | Weekly                | Weekly         | Weekly      | Weekly                | Weekly                | Weekly         | N/A      |
|                               | Yard waste | Weekly <sup>d</sup>   | Weekly      | Weekly <sup>d</sup>   | Weekly      | Weekly <sup>d</sup>   | Weekly         | Weekly      | N/A                   | Weekly <sup>d</sup>   | Weekly         | Biweekly |
| Collection Days               | Trash      | M-F                   | M-F         | M-F                   | M-F         | M-F                   | M-F            | M-F         | M, Tu, F              | Tu, W, F              | M-F            | M-F      |
|                               | Recycling  | M-F                   | M-F         | M-F                   | M-F         | M-F                   | W/F            | M-F         | W                     | Tu, W, F              | W/F            | M/T      |
|                               | Bulky      | F                     | Appointment | F                     | Appointment | F                     | Appointment    | Appointment | Day of trash service  | F                     | Appointment    | N/A      |
|                               | Yard waste | M-F                   | M-F         | M-F                   | M-F         | M-F                   | Weekly         | M-F         | N/A                   | Tu, W, F              | Weekly         | M/T      |
| Type of containers used       | Trash      | Carts                 | Cart        | Carts                 | Cart        | Carts                 | Cart           | Cart        | Carts/Can use Own     | Carts                 | Cart           | Cart     |
|                               | Recycling  | Carts                 | Cart        | Carts                 | Cart        | Carts                 | Cart, bin      | Cart        | Carts/Can use Own     | Carts                 | Cart, bin      | Cart     |
|                               | Yard waste | Carts                 | Cart, Bag   | Carts                 | Cart, Bag   | Carts                 | Cart, Can, Bag | Cart, Bag   | N/A                   | Carts                 | Cart, Can, Bag | Cart     |
| Size of containers used (gal) | Trash      | 96                    | 95          | 96                    | 95          | 96                    | 95             | 95          | 96                    | 96                    | 95             | 96       |
|                               | Recycling  | 96                    | 95          | 96                    | 95          | 96                    | 18, 95         | 95          | 96                    | 96                    | 18, 95         | 96       |
|                               | Yard waste | 96                    | 95          | 96                    | 95          | 96                    | 32, 90         | 95          | N/A                   | 96                    | 32, 90         | 96       |
| Number of containers allowed  | Trash      | No limit <sup>e</sup> | No Limit    | No limit <sup>e</sup> | No Limit    | No limit <sup>e</sup> | No Limit       | No Limit    | No limit <sup>e</sup> | No limit <sup>e</sup> | No Limit       | No Limit |
|                               | Recycling  | No limit <sup>f</sup> | No Limit    | No limit <sup>f</sup> | No Limit    | No limit <sup>f</sup> | No Limit       | No Limit    | No limit <sup>g</sup> | No limit <sup>g</sup> | No Limit       | No Limit |
|                               | Yard waste | No limit <sup>e</sup> | No Limit    | No limit <sup>e</sup> | No Limit    | No limit <sup>e</sup> | No Limit       | No Limit    | N/A                   | No limit <sup>e</sup> | No Limit       | No Limit |
| <b>Extra bags allowed?</b>    |            | No                    | Yes         | No                    | Yes         | No                    | Yes            | Yes         | No                    | No                    | Yes            | Yes      |
| <b>Is there a bag limit?</b>  |            | N/A                   | Yes         | N/A                   | Yes         | N/A                   | No             | Yes         | N/A                   | N/A                   | No             | No       |

Footnotes:

\* Cost is included in the trash collection fee

<sup>a</sup> Operates an incentive program where recycling containers are weighed and points, which can be redeemed as coupons at area business, are accumulated based on weight recycled. Customers can participate for \$9.95 a month or have normal recycling collection for \$6.95 a month.

<sup>b</sup> Customers wanting recycling collection must participate in the incentive program for \$12.95 a month

<sup>c</sup> Collection of bulky waste is charged using a \$25.00 truck fee, \$15.00 for the first item, and \$7.50 for the second item

<sup>d</sup> Yard waste is collected April 1 to November 30

<sup>e</sup> Additional carts can be purchased for \$5.00

<sup>f</sup> Additional carts can be purchased by those participating in the recycling incentive program for \$9.95

<sup>g</sup> Additional carts can be purchased by those participating in the recycling incentive program for \$12.95

**Table 5: Waste Collection Program Fees and Costs**

| Curbside Collection                    |                | Omaha               | Bellevue     | Council Bluffs  | Fort Wayne, IN | St. Louis, MO | Minneapolis, MN      | Arlington, TX | Denver, CO   | Wichita, KS      | Kansas City, MO | Albuquerque, NM      | Tulsa, OK                    | Fort Worth, TX               | Virginia Beach, VA   | Oklahoma City, OK |
|--|----------------|---------------------|--------------|-----------------|----------------|---------------|----------------------|---------------|--------------|------------------|-----------------|----------------------|------------------------------|------------------------------|----------------------|-------------------|
| Monthly Fee (\$/HH)                    | Trash          | \$5.91 <sup>a</sup> | \$13.42      | \$18.00         | \$9.95         | \$11.00       | \$22.89 <sup>b</sup> | \$13.72       | <sup>c</sup> | N/A <sup>d</sup> | <sup>c</sup>    | \$15.00 <sup>e</sup> | \$12.52-\$20.74 <sup>f</sup> | \$12.50-\$22.75 <sup>g</sup> | \$21.36 <sup>h</sup> | \$19.73           |
|  | Recycling      | *                   | *            | *               | *              | *             | *                    | *             | <sup>c</sup> | N/A              | <sup>c</sup>    | \$2.33 <sup>i</sup>  | *                            | *                            | *                    | *                 |
|  | Bulky          | N/A                 | Per item     | *               |                | *             | *                    | *             | *            | N/A              | *               | *                    | \$10.00 <sup>i</sup>         | *                            | *                    | *                 |
|  | Yard Waste     | \$3.28 <sup>k</sup> | *            | *               | N/A            | *             | *                    | N/A           | \$9.75       | N/A              | *               | *                    | N/A                          | *                            | *                    | N/A               |
| <b>Variable Cart Sizes and Pricing</b> |                | N/A                 | N/A          | Yes             | Yes            | No            | Yes                  | No            | Yes          | Yes              | No              | No                   | Yes                          | Yes                          | No                   | No                |
| <b>Total Collection Budget</b>         |                | \$20 M              | ~80%         | \$3.34 M        | \$8.54 M       | \$13 M        |                      |               | \$26 M       | N/A              | \$16.8 M        | \$48.5 M             | \$13.6 M                     | \$52 M                       | \$2.64 M             | \$47.1 M          |
| <b>Fee Collection Method</b>           |                | N/A                 | Utility Bill | Sanitation Bill | Utility Bill   | Water Bill    | Utility Bill         | Utility Bill  | N/A          | Direct Bill      | N/A             | Water Bill           | Utility Bill                 | Water Bill                   | Utility Bill         | Utility Bill      |
| # HH                                   | Municipal Crew | N/A                 | N/A          | N/A             | N/A            | N/A           | ~53,250              | N/A           | 174,000      | N/A              | 50,000          | 176,000              | N/A                          | N/A                          | 124,000              | 75,378            |
|  | Contractor     | 139,889             | 17,000       | 19,000          | 82,000         | 109,977       | ~53,250              | 96,000        | N/A          | N/A              | 99,000          | N/A                  | 117,800                      | 209,657                      | N/A                  | 117,454           |

Footnotes:

Shaded cells indicate information could not be gathered

\* Indicates the fee is included with the trash collection fee

<sup>a</sup> Contract rate paid to collections vendor; disposal fee for landfill paid direct by City

<sup>b</sup> Base fee is \$22.89 with an additional charge of \$2 for 32 gallon cart and \$5 for 95 gallon cart

<sup>c</sup> Collection costs are paid via tax funds so price for collection is not visible to the consumer

<sup>d</sup> Wichita, KS operates as a 100% homeowner paid open market for waste collection services

<sup>e</sup> Base fee is \$15 and additional carts can be purchased for \$7.69

<sup>f</sup> Rate is variable based on collection frequency and cart size. Low end is \$12.52 for weekly collection of 32 gallon cart; high end is \$20.74 for biweekly collection of 96 gallon cart

<sup>g</sup> Rate is variable based on cart size. \$12.50 for 32 gallon cart, \$17.50 for 64 gallon cart, \$22.75 for 96 gallon cart

<sup>h</sup> In addition to collection fee, cart must be purchased for \$75

<sup>i</sup> Recycling fee is included in the trash collection fee

<sup>j</sup> Fee covers collection of 8 cubic yards of material

<sup>k</sup> Contract rate paid to collections vendor April thru November

Table 6: Waste Collection Containers

| Curbside Collection        |                               | Omaha            | Bellevue           | Council Bluffs      | Fort Wayne, IN | St. Louis, MO    | Minneapolis, MN  | Arlington, TX | Denver, CO          | Wichita, KS       | Kansas City, MO  | Albuquerque, NM  | Tulsa, OK    | Fort Worth, TX   | Virginia Beach, VA       | Oklahoma City, OK |
|----------------------------|-------------------------------|------------------|--------------------|---------------------|----------------|------------------|------------------|---------------|---------------------|-------------------|------------------|------------------|--------------|------------------|--------------------------|-------------------|
| Container Type             | Trash                         | Can or Bag       | <sup>a</sup>       | Cart, Can           | Cart           | <sup>b</sup>     | Cart             | Bag           | Cart, Can, Dumpster | Cart              | Bag              | Cart             | Cart         | Cart             | Cart                     | Cart              |
|                            | Recycling                     | Bins             | <sup>c</sup>       | Bins                | Cart           | <sup>b</sup>     | Cart             | Cart          | Carts               |                   | Bin              | Cart             | Cart         | Cart             | Cart                     | Bin               |
|                            | Yard Waste                    | Can, Bag, Bundle | <sup>a</sup>       | Cart, Can, Bag      | N/A            | <sup>b</sup>     | Can, Bag, Bundle | N/A           | Carts               | N/A               | Bag, Bundle      | Bag, Bundle      | N/A          | Bag, Bundle      | Bag, Bundle <sup>d</sup> | N/A               |
| Container Size (gallons)   | Trash                         | 32               | 35, 65, 95 (pilot) | 32, 95              | 48, 96         | <sup>e</sup>     | 32, 95           | N/A           | 35, 65, 95          | 65, 95            | N/A              | 96               | 32, 64, 96   | 32, 64, 96       | 95                       | 95                |
|                            | Recycling                     | 18               | 18, 95 (pilot)     | 18                  | 48, 96         | <sup>e</sup>     | 64, 96           | 65            | 65, 95              |                   | 22               | 96               | 96           | 96               | 95                       | 18                |
|                            | Yard Waste                    | 32               | 95 (pilot)         | Varies              | N/A            | <sup>e</sup>     | Varies           | N/A           | 95                  | N/A               | N/A              | Varies           | N/A          | Varies           | Varies                   | N/A               |
| # Containers per Household | Trash                         | 5                | 3                  | 1 or 3 <sup>f</sup> | 1              | 1                | 1                | N/A           | 1                   | 1                 | 2                | 1                | 1            | 1                | 1                        | 1                 |
|                            | Recycling                     | No Limit         | 1                  | 2                   | 1              | 1                | 1                | 1             | 1                   |                   | No Limit         | 1                | 1            | 1                | 1                        | 3                 |
|                            | Yard Waste                    | No Limit         | 1                  | No Limit            | N/A            | 1                | No Limit         | N/A           | 1                   |                   | 20               | No Limit         | N/A          | No Limit         | No Limit                 | N/A               |
| Containers w/ RFID         | Trash                         | No               | No                 | No                  | No             | No               | No               | N/A           | No                  |                   | N/A              | Yes              | Yes          |                  | Yes                      | No                |
|                            | Recycling                     | No               | No                 | No                  | Yes            | No               | No               | No            | No                  |                   | No               |                  | Yes          |                  | No                       | No                |
|                            | Yard Waste                    | No               | No                 | No                  | N/A            | No               | No               | N/A           | No                  |                   | N/A              | N/A              | N/A          | N/A              | N/A                      | N/A               |
| Additional Information     | Required Yard Waste Container | Yes <sup>g</sup> | Yes <sup>g</sup>   | Yes <sup>g</sup>    | N/A            | Yes <sup>g</sup> | Yes <sup>g</sup> | N/A           | Yes <sup>g</sup>    | N/A               | Yes <sup>g</sup> | Yes <sup>g</sup> | N/A          | Yes <sup>g</sup> | Yes <sup>g</sup>         | N/A               |
|                            | Allow bags for Trash?         | Yes              | Yes                | Yes                 | Yes            | No               | Yes              | Yes           | No <sup>h</sup>     | Varies per hauler | Yes              | No               | Yes          | Yes              | No                       | Yes               |
|                            | Bag Limit?                    | No               | 5                  | <sup>i</sup>        | No             | N/A              | 2                | No            | N/A                 | Varies per hauler | 2 <sup>i</sup>   | N/A              | <sup>i</sup> | <sup>i</sup>     | N/A                      | No                |

Footnotes:

Shaded cells indicate information could not be gathered

<sup>a</sup> Residents provide containers

<sup>b</sup> 15% of residents have carts, 85% use alley dumpsters

<sup>c</sup> Residents can use own containers provided they are clearly marked for recycling. 18 gallon bins are also available free of charge or they can participate in recycling incentive program and receive a 96 gallon cart

<sup>d</sup> Can request special container for large amounts at \$40/weekday and \$75/weekend

<sup>e</sup> Carts are 96 gallons and alley dumpsters are 1.5, 2.0, 2.5, or 3.0 cubic yards

<sup>f</sup> Only one container is allowed if using 95 gallon cart. 3 containers are allowed if 32 gallon cans are used

<sup>g</sup> Containers are required for yard waste except for large brush which can be bundled

<sup>h</sup> Every 3 weeks an overflow service is provided with an extra pick up of up to 10 bags

<sup>i</sup> A sticker program is used for additional bags



**Table 7: Waste Collection Operations**

| Curbside Collection         |            | Omaha               | Bellevue     | Council Bluffs          | Fort Wayne, IN        | St. Louis, MO       | Minneapolis, MN     | Arlington, TX | Denver, CO                 | Wichita, KS | Kansas City, MO     | Albuquerque, NM | Tulsa, OK   | Fort Worth, TX | Virginia Beach, VA | Oklahoma City, OK |
|-----------------------------|------------|---------------------|--------------|-------------------------|-----------------------|---------------------|---------------------|---------------|----------------------------|-------------|---------------------|-----------------|-------------|----------------|--------------------|-------------------|
| Collection Frequency        | Trash      | Weekly              | Weekly       | Weekly                  | Weekly                | <sup>a</sup>        | Weekly              | Twice/week    | Weekly                     | Weekly      | Weekly              | Weekly          | Weekly      | Weekly         | Weekly             | Weekly            |
|                             | Recycling  | Weekly              | Weekly       | Weekly                  | Biweekly              | Weekly              | Biweekly            | Weekly        | Biweekly                   |             | Weekly              | Weekly          | Weekly      | Weekly         | Biweekly           | Weekly            |
|                             | Bulky      | N/A                 | <sup>b</sup> | Twice/year <sup>b</sup> | Weekly                | Monthly             | Weekly              | Twice/week    | Once/4 weeks               |             | Appointment         | Appointment     | Appointment | Monthly        | Appointment        | Monthly           |
|                             | Yard Waste | Weekly <sup>c</sup> | Weekly       | Weekly                  | N/A                   | Weekly <sup>c</sup> | Weekly <sup>c</sup> | N/A           | Weekly                     |             | Four/year           | Twice/year      | N/A         | Weekly         | Weekly             | N/A               |
| Routes/Day                  | Trash      | 56                  | 4            | 5                       |                       | 55                  | 14                  | 24            | 55                         | N/A         | 6-16                | 32              | 25          | 38             | 28                 | 60 - 62           |
|                             | Recycling  | 18                  | 1.5          | 3                       |                       | <sup>d</sup>        | 14                  | 13            | 17                         | N/A         | 6-16                | 4               | 33          | 30             |                    | 16 - 21           |
|                             | Bulky      | N/A                 | 1            | 1-2                     |                       | 12                  | 2-5                 |               | 8                          | N/A         |                     |                 | 25          | 14             |                    | 4                 |
|                             | Yard Waste | N/A                 | 1.5          | 6                       |                       | <sup>e</sup>        |                     | N/A           | 4                          | N/A         | 6-16                | <sup>f</sup>    | 25          | 17             | 18                 | N/A               |
| Collection Days             | Trash      | M-F                 | M-F          | M-F                     | M-F                   | M-F                 | M-F                 | M-Sat         | M-F                        | M-Sat       | M-F                 | M-F             | M-F         | M-F            | M-F                | M,T,Th,F          |
|                             | Recycling  | M-F                 | M-F          | M-F                     | M-F                   | M,T,Th,F            | M-F                 | M-F           | M,T,Th,F                   |             |                     | M-F             | M-F         | M-F            |                    | M,T,Th,F          |
|                             | Bulky      | N/A                 | F            | Sat                     | M-F                   | M                   | M-F                 | M-Sat         | M-F                        |             | <sup>g</sup>        | M-F             | M-F         | M-F            |                    | M-F               |
|                             | Yard Waste | M-F                 | M-F          | M-F                     | N/A                   | W-F                 | M-F                 | N/A           | M-F                        |             |                     | M-F             | M-F         | M-F            | T-F                | N/A               |
| Annual Tons                 | Trash      | 134,889             | 16,300       | 15,800                  | 88,100                | 140,000             | 85,600              | 118,000       | 208,000                    | 228,710     | 78,000              | 504,590         | 90,700      | 162,800        | 135,000            | 244,325           |
|                             | Recycling  | 17,104              | 1,600        | 1,517                   | 13,155                | 16,000              | 27,500              | 23,000        | 34,000                     | 20,798      | 20,000              | 27,660          | 22,000      | 45,600         | 30,000             | 9,181             |
|                             | Bulky      |                     | 500          | 180                     |                       | 5,500               |                     |               | 3,500                      |             | 6,500               | 2,847           | 2,000       | 33,200         | 131,000            | 44,886            |
|                             | Yard Waste | 5,662               | 2,900        | 3,500                   | N/A                   | 20,000              | 19,300              | N/A           | 4,000                      |             | 3,500               | 1,278           | 7,000       | 27,900         | 40,000             | N/A               |
| <b>Recycling Collection</b> | Single     | Single              | Dual         | Single                  | Single                | Single              | Single              | Single        | Single                     | Single      | Single <sup>h</sup> | Single          | Single      | Single         | Single             | Dual              |
| <b>HHW Collection</b>       | Drop off   | Drop off            | Drop off     | Drop off <sup>i</sup>   | Drop off <sup>k</sup> | Drop off            | Drop off            | Drop off      | Drop off/Curb <sup>m</sup> | Drop off    | Drop off            | Drop off        | Drop off    | <sup>n</sup>   | Drop off           | Drop off          |

Footnotes:

Shaded cells indicate information could not be gathered

<sup>a</sup> Alley dumpsters for solid waste are collected twice a week. Dumpsters for recycling and yard waste and all carts are collected weekly

<sup>b</sup> By appointment

<sup>c</sup> Collection of yard waste does not occur during the winter months

<sup>d</sup> Monday - 44 (dumpsters); Tuesday - 41 (dumpsters); Wednesday - 12 (carts)

<sup>e</sup> Wednesday - 12 (carts); Thursday - 44 (dumpsters); Friday - 41 (dumpsters)

<sup>f</sup> Four crews go through neighborhoods two weeks in the spring and two weeks in the fall

<sup>g</sup> Collection occurs on the 1st and 4th disposal day of the month by appointment

<sup>h</sup> No glass is permitted

<sup>i</sup> One collection event each year is run through the County Solid Waste District

<sup>k</sup> Appointment is required for disposal. First 50 pounds of HHW are accepted at no charge. Amounts over 50 pounds are charged at \$1.00 per pound

<sup>m</sup> Door to door collection is done on an appointment basis at a charge of \$15.00 per occurrence

<sup>n</sup> Have drop off facility and have a mobile collection unit

Table 8: Waste Collection Vehicles

| Curbside Collection    |                            | Omaha             | Bellevue          | Council Bluffs | Fort Wayne, IN | St. Louis, MO | Minneapolis, MN | Arlington, TX | Denver, CO   | Wichita, KS | Kansas City, MO     | Albuquerque, NM | Tulsa, OK    | Fort Worth, TX | Virginia Beach, VA | Oklahoma City, OK  |
|------------------------|----------------------------|-------------------|-------------------|----------------|----------------|---------------|-----------------|---------------|--------------|-------------|---------------------|-----------------|--------------|----------------|--------------------|--------------------|
| Vehicle Size (CY)      | Trash                      | 25                | 25                | 25             |                | 20            | 20              | 25            | <sup>a</sup> |             | <sup>b</sup>        |                 | <sup>c</sup> |                |                    | 12, 31-33          |
|                        | Recycling                  | 25                | 25                | 20             |                | 20            | 20              | 28            | 28           |             | 27                  |                 | 25 or 30     |                |                    | 12 -15             |
|                        | Bulky                      | N/A               | 25                | 25             |                | 20            | N/A             | N/A           | 25           |             | <sup>d</sup>        |                 | 20           |                |                    | 25, 30-39          |
|                        | Yard Waste                 | 25                | 25                | 25             | N/A            | 20            | 20              | N/A           | 28           |             | 25 or 27            |                 | 25 or 30     |                |                    | N/A                |
| Vehicle Type           | Trash                      | Rear              | Rear              | Rear           | Side/Rear      | Side/Rear     | Rear            | Rear          | Side/Rear    |             | <sup>b</sup>        | Side            | Side/Rear    |                | Side               | Side/Rear          |
|                        | Recycling                  | Rear              | Rear              | Side           | Side/Rear      | Side          | Rear            | Side          | Side         |             | Split belly         | Side            | Side/Rear    |                | Side               | Split Side         |
|                        | Bulky                      | N/A               | Rear              | Rear           |                | Rear          | Flatbed         | Rear          | Rear         |             | Custom <sup>d</sup> | Flatbed         | Boom         |                | Boom               | Rear/Boom          |
|                        | Yard Waste                 | Rear              | Rear              | Rear           | N/A            | Side          | Rear            | N/A           | Side         |             | Rear                | Flatbed         | Side/Rear    |                | Rear               | N/A                |
| Vehicle use CNG?       | Trash                      | No                | Yes               | Yes            | No             | No            | No              | Yes           | Yes          |             | No                  | No              | Yes          |                | No                 | Partial            |
|                        | Recycling                  | No                | Yes               | Yes            | No             | No            | No              | Yes           | Yes          |             | Yes                 |                 | Yes          |                |                    | No                 |
|                        | Bulky                      | N/A               | No                | Yes            |                | No            | No              | Yes           | Yes          |             | No                  | No              | No           |                |                    | Partial            |
|                        | Yard Waste                 | No                | No                | Yes            | N/A            | No            | No              | N/A           | Yes          |             | No                  | No              | Yes          |                | No                 | N/A                |
| On-Board Computers     | Trash                      | Yes               | Soon              | No             | Yes            | No            | No              | No            | No           |             | Yes                 |                 | Yes          |                | No                 | No                 |
|                        | Recycling                  | Yes               | No                | No             | Yes            | No            | No              | No            | No           |             | Yes                 |                 | Yes          |                |                    | No                 |
|                        | Bulky                      | N/A               | No                | No             |                | No            | No              | No            | No           |             |                     | Yes             | No           |                | No                 | No                 |
|                        | Yard Waste                 | Yes               | No                | No             | N/A            | No            | No              | N/A           | No           |             | Yes                 |                 | Yes          |                |                    | N/A                |
| Vehicle Age (YRS)      | Trash                      | 10 to 12          | 7                 | 1              | > 2011         | 9             |                 | 4.5           |              |             | 9.5                 | 12              | 2            |                | 15                 | 4 - 7 <sup>e</sup> |
|                        | Recycling                  | 10 to 12          | 2                 | 1              | > 2011         | 9             |                 | 4.5           | 3 to 5       |             | 4                   |                 | 2            |                |                    | 4 - 7 <sup>e</sup> |
|                        | Bulky                      | N/A               | 7                 | 1              |                | 6+            |                 | 4.5           |              |             | 6                   |                 | 10           |                |                    | 6 - 7              |
|                        | Yard Waste                 | 10 to 12          | 7                 | 1              | N/A            | 9+            |                 | N/A           | 3 to 5       |             |                     |                 | 2            |                |                    | N/A                |
| Replace Age (YRS)      | Trash                      | 10 to 12          | 10 to 12          | f              | g              | h             |                 | 9             | 5 to 7       |             | 7                   | 7               | 10           |                | 10                 | 5 - 7              |
|                        | Recycling                  | 10 to 12          | 10 to 12          | f              | g              | h             |                 | 8             | 7            |             | 10                  |                 | 10           |                |                    | 5 - 7              |
|                        | Bulky                      | N/A               | 10 to 12          | f              |                | h             |                 | 9             | 5 to 7       |             | 10                  |                 | 7            |                |                    | 7 - 10             |
|                        | Yard Waste                 | 10 to 12          | 10 to 12          | f              | N/A            | h             |                 | N/A           | 5 to 7       |             |                     |                 | 10           |                |                    | N/A                |
| Automated              | Trash                      | No                | Pilot only        | Semi           | Semi           | Fully         | Semi            | No            | Partial      |             | Partial             | Fully           | Fully        | Fully          | Fully              | Semi               |
|                        | Recycling                  | No                | Pilot only        | No             | Semi           | Fully         | Semi            | Fully         | Fully        |             | Partial             |                 | Semi         | Fully          | Fully              | No                 |
|                        | Yard Waste                 | No                | Pilot only        | No             | N/A            | Yes           | No              | N/A           | Yes          |             | No                  | No              | Semi         | No             | No                 | N/A                |
| Additional Information | Own Fueling Station?       | Yes               | No                | No             | No             | Yes           | Yes             | Yes           | Yes          | No          | Yes <sup>i</sup>    |                 | Yes          |                | No                 | Yes                |
|                        | Routing Software and Type? | E Route Logistics | E Route Logistics | No             | Fleetmind      | No            | No              | No            | No           |             | Yes                 | No              | Yes          |                | Yes                | No                 |

Footnotes:  
 Shaded cells indicate information could not be gathered  
<sup>a</sup> 28 to 30 CY side loaders with smaller 25 CY rear loaders for manual collection  
<sup>b</sup> 25 to 32 CY trucks depending on contractor  
<sup>c</sup> 25, 26, and 30 CY trucks are used with 8 CY trucks being used in gated communities  
<sup>d</sup> International 7600 cab chassis with boom arm, stabilizers, and 47 CY containers  
<sup>e</sup> City vehicles are less than 5 years old on average but contractor vehicles are mostly greater than 6 years old  
<sup>f</sup> Replaced as needed  
<sup>g</sup> Replaced occurs at the start of new contracts  
<sup>h</sup> Replacement occurs as funds become available  
<sup>i</sup> Own CNG fueling station for recycling trucks