ITEM # __32__

Staff Report

ORGANIZED SOLID WASTE COLLECTION

September 27, 2022

BACKGROUND:

On September 14, 2021, the City Council referred to staff an email from Susie Petra requesting a study of the City's current waste collection services with respect to efficiency, economic considerations, fuel consumption, and emissions. The email identified interest in the "Organized Collection" solid waste model.

There are a variety of models used among local governments to provide for solid waste collection. "Open Collection" refers to market-driven garbage collection: customers are free to select a solid waste collection service that best meets their needs (e.g., pricing, service frequency, options for recycling/yard waste/bulky collection, etc.). Although Ames requires solid waste haulers to obtain a City license to operate, there are few local regulations regarding garbage collection. **Therefore, Ames' current system would be best described as open collection.**

According to license records from 2021, there are seven garbage hauling companies licensed to operate routes in Ames. These seven haulers operate 71 licensed trucks. However, it is not clear how many of those trucks operate on a routine basis in Ames as opposed to other portions of Story County (or perhaps even outside the county). Of these 71 total trucks, 21 are roll-off trucks, leaving 50 front-load, side-load, and rear packer trucks capable of serving routine residential and commercial garbage needs in Ames.

The majority of these firms provide residential collection carts sized for 95/96 gallons. One company offers 65- or 95-gallon carts and another offers 35-, 65-, or 95-gallon options. A handful allow for collection with customer-provided cans or bags. At least three of the firms operating in Ames offer options for twice per week garbage collection from the same residence.

Approximately two-thirds of the Ames providers offer a form of yard waste collection (either through a fee-per-scheduled-pickup, a seasonal subscription, or both). Two of the providers offer curbside recycling services.

ORGANIZED COLLECTION OVERVIEW:

"Organized Collection" is a model of solid waste collection in which local government relies on private haulers to provide a uniform set of collection services and the community is divided into one or more concentrated service areas to maximize

efficiency. **This Organized Collection model is pursued in an effort to ensure a baseline level of service offerings, reduce overlapping truck traffic, and optimize pricing.**

THE MINNESOTA EXPERIENCE:

The State of Minnesota has adopted a voluntary organized collection statute. This law allows cities that are interested in pursuing organized collection to follow a set of procedures to implement it. In this model, each of the existing haulers in a city is assigned a dedicated collection zone, where they would be the exclusive collection provider. The number of customers in each assigned zone corresponds to the market share each hauler currently has. **Therefore, haulers each maintain the number of customers they previously had.** In adjusting their service area, the haulers gain the advantages of having dense zones of customers, reducing the fuel consumption and driving time that comes with the overlapping routes in an open collection system.

Through negotiations, the municipality and the haulers agree to a uniform set of collection services and fees. **Therefore, regardless of which area of the community a resident lives or which hauler provides the service, the cost is the same for the customer. In the agreement, haulers may be required to also provide optional services such as yard waste collection or recycling.** If haulers do not all provide such services (as is the case in Ames), haulers can sub-contract those secondary services to another hauler that does provide those services.

The City of Richfield, Minnesota (population 36,000) implemented organized collection in 2021. In this community, three existing haulers worked with the City to divide it into three zones based on their pre-organization market share (Figure 1).

Figure 1. Richfield, Minnesota Organized Collection Zones and Haulers

These zones were then divided again into schedule zones to manage the days during which pickup would occur (Figure 2).

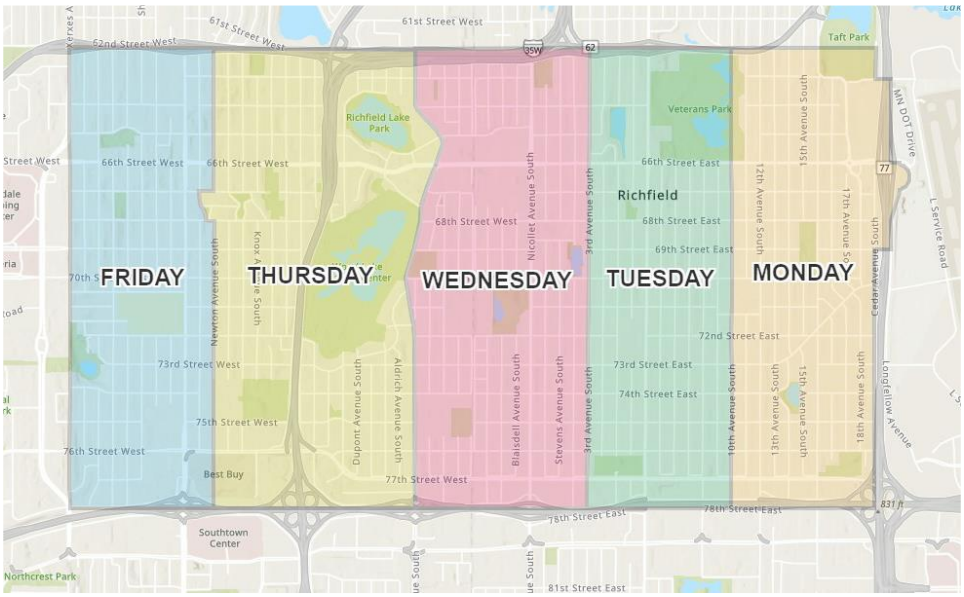

Figure 2. Richfield, Minnesota Organized Collection Schedule

The haulers in this example agreed to the negotiated collection prices outlined in the agreement with the City and each other. These prices included small/medium/large cart pickup, on-call or overflow fees, recycling collection, organics collection, yard waste and holiday tree collection, bulky waste collection, electronic waste collection, and other fees. The negotiated price per household for weekly 95-gallon cart garbage collection in Richfield is $14.50 for the first contract year. The fees escalate annually according to a schedule established in the contract.

This contract effectively provides these three haulers with exclusive rights to serve the community for the seven-year term of the agreement. At that time, the contract can be renegotiated for another term, if desired.

The Minnesota organized collection statute explicitly authorizes cities and waste haulers to engage in anti-competitive conduct to plan and implement the organized collection system:

> "(a) A political subdivision that organizes collection under this section is authorized to engage in anticompetitive conduct to the extent necessary to plan and implement its chosen organized collection system and is immune from liability under state laws relating to antitrust, restraint of trade, unfair trade practices, and other regulation of trade or commerce.
>
> (b) An organization of solid waste collectors, an individual collector, and their officers, members, employees, and agents who cooperate with a political subdivision that organizes collection under this section are authorized to engage

in anticompetitive conduct to the extent necessary to plan and implement the organized collection system, provided that the political subdivision actively supervises the participation of each entity. An organization, entity, or person covered by this paragraph is immune from liability under state law relating to antitrust, restraint of trade, unfair trade practices, and other regulation of trade or commerce."

THE IOWA EXPERIENCE:

Iowa law does not contain a comparable, explicit exemption from anti-competitive conduct for cities or haulers who wish to participate in an organized collection system. Iowa Code Section 553.6(5) does exempt the activities of a city acting within its statutory or constitutional home rule powers from the Iowa Competition Law, which otherwise would prohibit restraint of trade or monopolies. Iowa law also provides cities general powers to perform any function deemed appropriate to preserve and improve safety, health, and welfare of residents. There are numerous examples of cities in Iowa that rely on these powers to provide city-operated or city-contracted garbage collection.

However, the exemptions to the Iowa Competition Law do not extend to private enterprises that may be acting in concert with a city. Given this and considering that no examples exist in Iowa of an organized collection scheme similar to the model offered in Minnesota, it is City staff's opinion that negotiating with providers as a group to develop uniform services and prices is not authorized by Iowa law.

ALTERNATIVES TO OPEN AND ORGANIZED COLLECTION:

Some municipalities provide solid waste collection services as an exclusive local government service rather than through private providers (municipal collection). This achieves many of the advantages present in organized collection regarding efficiency, traffic reduction, uniform pricing and services. However, municipal collection displaces the private sector from providing the services and adds a significant administrative and labor burden to the local government.

As an alternative to a comprehensive City-operated solid waste collection service, there are other models cities might use to control some aspects of the waste collection process while retaining some degree of private sector competition. These approaches contain features that could address some of the negative impacts that exist in an open collection model as indicated in the referral letter. These alternative models are:

CONTRACT MUNICIPAL COLLECTION:

The most common collection model for cities in Iowa is contract municipal collection, where the city declares by ordinance that no one except the city is authorized to collect garbage, and then the city grants a contract to a single private hauler to be the exclusive collection provider for all properties. **This arrangement has many of the**

characteristics of organized collection as described above (e.g., provider choice, traffic, noise, greenhouse gas emissions reductions, etc.), but avoids the issues related to the Iowa Competition Law by encouraging various providers to bid against one another for a contract, rather than to work cooperatively to divide the community into sections receiving uniform services and pricing.

A challenge in shifting from an open collection system to a single contractor serving most of the community is that the providers who are not selected to provide the service may leave the market altogether. If this occurs, there is risk that the selected contractor could raise prices in future years because few viable alternative providers exist.

SEGMENTED COLLECTION:

Depending on the types of collection services desired, a city could contract with separate providers to each handle one aspect of waste collection on a city-wide basis (a single refuse provider, a single yard waste provider, and a single recycling provider).

This system ensures uniform pricing and services across the city. Although it is possible that one provider could win contracts for all three services, this model creates the opportunity to have up to three providers with a presence in the community. This is an advantage in future years if one of them exits the market; others have a presence that could allow them to step in and provide the service that has been lost. However, the disadvantage to this system is that customers must work with separate providers for each service needed.

ZONAL COLLECTION:

In this model, a city is divided into zones, then competitive proposals are solicited from private sector haulers to serve each zone. City staff is not aware of any example of this type of service in the state of Iowa, although the model is common in California and has been considered in a variety of other states. This alternative results in many of the same advantages and disadvantages of organized collection. Uniform pricing may be achieved with this zoned approach, because the City could negotiate with each zone's top proposal to determine if the offeror would match the lowest price received for other zones in the City. However, there is no guarantee that uniform pricing would be agreed to.

However, this approach does not guarantee to preserve the market share for the existing providers in the manner that the Minnesota organized collection model does. If a single provider wins the selection process in every zone across the City, the result would be no market share for other providers, and the City would effectively be operating in a Contract Municipal Collection model. An additional challenge with this approach could occur in the event a particular zone does not receive any acceptable proposals.

REGULATION BASED ON PROPERTY TYPE:

A variant that could be used alongside any of the described models is to regulate only the collection of solid waste at certain types of properties. For example, many of the cities in Iowa with municipal collection or contract municipal collection only serve single-family households, or only residential properties. Other types of customers (multi-family and/or commercial properties) must rely on private sector providers for service.

BENEFITS AND COSTS OF EACH COLLECTION MODEL:

The collection models discussed in this report (open collection, organized collection, municipal collection, contract municipal collection, segmented collection, and zonal collection) contain a variety of benefits and costs across a number of different metrics. Several key metrics to consider are discussed below:

CHOICE OF PROVIDER:

The choice of provider is only an option to customers in an open collection model. Ames currently has seven providers operating in the community. Customers may have strong loyalty to their selected provider. Each of the other models for collection involve a given property being served by only one provider for each service (trash, recycling, yard waste, etc.).

SERVICE OPTIONS:

Among the seven service providers, some offer twice weekly pickup, most offer yard waste collection, and some offer recycling. Most of the providers also offer collection for large or bulky items by appointment, in addition to options for roll-off boxes for projects or commercial needs. It is possible in most of the models to bundle garbage, recycling, and yard waste collection into a single cost, whether the customer intends to use all three services or not; doing so helps encourage use of the diversionary services (recycling and yard waste collection).

PRICING UNIFORMITY:

Garbage collection pricing is impacted by the costs to collect (labor, fuel, trucks, containers, etc.), and the cost of disposal (Resource Recovery System tipping fees or landfill tipping fees). Prices in Ames for residential garbage collection vary between $16.50 and $31.17 per month (as of December 2021) and can fluctuate further depending on the service options requested**. Studies relating to organized collection have indicated that there is a cost savings to consumers in communities where organized collection has been implemented.** The rationale for this savings is that the collection routes under an organized collection model are substantially more efficient than routes in an open collection system. These efficiencies would also exist in a variety of the other models that consolidate customers under a single collection provider (e.g., municipal collection).

However, pricing can also influence the volume of waste generated, or affect other factors. “Pay-as-you-throw,” or “Unit Pricing,” is a tool to assign increasing costs to each additional unit of garbage disposed of. A 1996 study prepared for the U.S. EPA

indicated that cities implementing unit pricing tend to see greater waste diversion to more appropriate solutions (i.e., recycling, composting), but not necessarily a reduction in the overall waste disposed of.[1] However, smaller communities (particularly suburban and rural households) engage more in waste reduction when subjected to unit pricing.

Aggressive unit pricing may have impacts to consider such as the potential to encourage illegal dumping, along with disproportionate impacts to low-income households. Some high waste-generating customers (e.g., certain commercial and industrial users), may not reduce or divert their waste streams in response to unit pricing, due to operational constraints.

These pricing factors suggest that in a system where pricing can be controlled, it is most effective to: 1) offer low-cost alternatives to garbage disposal, and 2) ensure that the garbage disposal prices are less costly on a per-unit basis at low volumes and cost more on a per-unit basis when more is thrown away.

TRAFFIC ISSUES:

With seven licensed refuse haulers and the variety of service options provided in Ames, the maximum number of truck trips that could occur on a residential street due to solid waste collection, excluding special pickups, is 18 trips per week (Table 1). This assumes each hauler only drives down each street once when collecting from both sides (two trips are actually needed in some instances such as where there are wider arterial streets or if automated side-loading trucks are used).

It is noteworthy that Ames Municipal Code Section 10.18(1) **requires licensed haulers to collect garbage from residential properties not less than twice per week, unless a customer at a one- or two-family dwelling requests collection to be reduced to once per week.** However, it is not clear that all Ames solid waste providers offer twice weekly collection.

Table 1. Maximum Potential Weekly Solid Waste Trips on an Ames Street

Trip Source	Trips
1x Weekly Only Garbage Collection Trips (5 firms)	5
2x Weekly Garbage Collection Trips (2 firms)	4
Curbside Yard Waste Trips	7
Curbside Recycling Trips	2
MAXIMUM POTENTIAL WEEKLY TRIPS	**18**

In theory, a single provider serving a zone or the entire community would reduce the number of regular trips per week on a typical residential street to a maximum of four (twice weekly garbage collection, once per week yard waste collection, and once per week recycling collection). This figure could be reduced even further to as low as 2-3 most weeks (once per week garbage, once per week yard waste, and every other week recycling); in many communities, collection of garbage more than once per week for

[1] https://archive.epa.gov/wastes/conserve/tools/payt/web/pdf/upaperf1.pdf

residential areas is the exception. Additionally, many comparable communities collect recycling only once every other week, further reducing weekly truck traffic.

City staff conducted a visual survey of the collection companies and days of collection in one Ames neighborhood in November 2021. This visual survey took place over two weeks and encompassed 89 single-family households. The survey identified only the garbage collection companies and frequencies and did not count recycling or yard waste collection, although separate containers for both were observed.

This visual survey indicated that garbage trucks operated four days per week, with three of the 89 households receiving collection twice per week. Some households had service on different days than their neighbors who utilized the same provider. **In total, City staff estimates the streets adjacent to these 89 homes are subject to nine truck trips per week for garbage collection alone.**

Image: Nov. 2021 Visual Survey – Residential Garbage Collection by Firm

Image: Nov. 2021 Visual Survey – Residential Garbage Collection by Day of Week

In addition to traffic on low volume residential streets, solid waste collection presents unique traffic issues in residential areas where collection takes place in alleys, because the narrow width of alleys restricts vehicle traffic. Ames has approximately 75 blocks of alleys (~600 households) where residential garbage service is provided; the existence of multiple providers making collections within the same alleys intensifies these issues.

Additionally, portions of several major arterial roadways (South and North Dakota Avenue, Lincoln Way, Grand Avenue, 13th Street, and S Duff Avenue) do not contain rear alleys to accommodate refuse collection. Therefore, solid waste trucks serving these properties must slow and stop in the driving lanes of these high-volume roadways. This issue is again multiplied by the numerous garbage providers servicing these properties, resulting in repeated days and times during which trucks are stopped.

Image: Containers from multiple providers out for collection on Grand Avenue

NOISE ISSUES:

Because garbage collection tends to begin in the early morning hours, noise (from truck engines, brakes, hydraulics, and contact with the collection containers) can be a challenge.

Ames does not currently have an ordinance regulating the times during which solid waste collection may occur. Noise from garbage collection has been a subject of at least one previous complaint to the City Council (the last record of a Council referral regarding this issue was in August 2007). A greater number of collection providers can intensify the frequency of noise issues.

GREENHOUSE GAS EMISSIONS:

Garbage truck fuel consumption is substantial due to the frequent starts and stops, idling, energy consumed by hydraulics, and the heavy loads. Garbage collection vehicles have typical fuel efficiencies of approximately 3 miles per gallon (diesel).[2] Diesel fuel generates 22.4 pounds of CO2 for every gallon combusted.

Ames has approximately 12,000 single family homes. Assuming an average density of 130 houses per mile (81-foot frontages and split onto either side of the street), a garbage truck collecting once per week from at least one customer per block must travel approximately 185 road miles of collection route. This figure excludes distance traveled to the start of each collection route and trips to the Resource Recovery Facility and/or the Boone County Landfill. It also excludes commercial and multi-family residential collections.

[2] https://www.governing.com/archive/gov-to-save-on-trash-trucks-cities-take-a-look-at-the-gas-tank.html#:~:text=Garbage%20trucks%20have%20abysmal%20fuel,around%203%20miles%20per%20gallon.

Based on these figures, a single hauler collecting from each residential block in the City would generate 1,381 pounds of CO2 each week (roughly the amount generated by taking a passenger car from Ames to Fort Lauderdale, Florida)[3]. These emissions are higher when accounting for the multiple providers and the multiple trips each makes to provide their different services.

ROADWAY WEAR AND TEAR:

Roadway design guides use a factor called the Equivalent Single-Axle Load (ESAL) to compare the effect of different sized loads on pavement. The effect of increased weight is not linear; heavier loads have a significantly greater impact than repeated lighter loads.

The City's Public Works Engineering staff has identified varying estimates of the ESAL values for garbage trucks, with **one garbage truck trip (2.7 ESALs) being equivalent to between 1,000 and 1,400 passenger car trips (~0.002 ESALs).** Local roads have an average of 500-750 vehicle trips per day; therefore, a single garbage truck trip is equivalent to 1.3-2 days' worth of passenger vehicle traffic.

The effect of these additional equivalent trips on the roadway depends to a large degree on the construction type and condition of the roadway (Table 2). An 8" unreinforced concrete local street is designed to accommodate 2,000,000 ESALs in its lifetime. Weekly trips from one garbage truck over a 40-year period generates 5,616 ESALs, or 0.28% of the wear and tear the street is designed to absorb in that period of time. To evaluate the ESAL impact of the most efficient possible scenario, where three total trucks operate each week on a given street to provide garbage, yard waste, and recycling collection, this figure should be multiplied by 3 (16,848 ESALs over 40 years, or 0.84% of the road's ESAL design capacity).

An 8" asphalt street with no sub-base has a substantially lower ESAL design number of approximately 250,000. A street of this construction type is substantially more impacted by heavy loads. A single garbage truck trip each week for 40 years (5,616 ESALs) makes up 2.25% of all the traffic wear that roadway is designed for.

[3] https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator *1,381 pounds of CO2 is equivalent to 1,555 average passenger car miles. The distance from Ames, Iowa to Fort Lauderdale, Florida is 1,572 miles.*

Table 2. Roadway Life Reduction from Heavy Trucks on Concrete and Asphalt Streets

		Roadway Life Reduction			
		8" Concrete (on grade) (2,000,000 ESALs)		8" Asphalt (no sub-base) (250,000 ESALs)	
	Total ESALs (40 Years)	% of Design Life	Time	% of Design Life	Time
1 Truck Per Week	5,616	0.28%	0.12 Years	2.25%	0.90 Years
3 Trucks Per Week (Most Efficient Scenario: Garbage, Recycling Yard Waste)	16,848	0.84%	0.34 Years	6.74%	2.70 Years
18 Trucks Per Week (Least Efficient Scenario: 7 Providers with Current Services)[4]	101,088	5.05%	2.02 Years	40.44%	16.18 Years

WASTE VOLUME REDUCTION:

The volume of garbage disposed of is affected by several factors, including the cost of disposal (See the "Unit Pricing" discussion in the section of this report regarding Pricing Uniformity), the availability and/or convenience of alternative disposal methods (food waste disposal, glass and other recycling alternatives), and public education regarding the impacts of disposal choices.

NUISANCE ABATEMENT:

The City experiences a substantial number of instances each year where high volumes of garbage have been placed on curbs. This is most evident during the July-August lease turnover time for rental properties, although the City's Inspection Division receives approximately 30-50 other complaints for garbage throughout the year. These complaints (and the move-in/move-out garbage) can be challenging to address in the current system, since it is unclear when the property in question will next receive scheduled garbage pickup.

A single provider being responsible for the collection of solid waste at a given property could allow for garbage-related nuisance abatement to be conducted more efficiently; if no other provider is allowed to serve that property, then the property owner, tenant moving out, tenant moving in, and the City have only one firm with which to work to address the collection issue.

ADMINISTRATIVE/OPERATING COSTS AND IMPACTS TO CURRENT PROVIDERS:

The final factors to consider when evaluating different models of waste collection include the administrative efforts required on the City's part to 1) transition from the existing system, and 2) maintain the newly implemented system on an ongoing basis. Additionally, the costs to initiate and provide service (e.g., purchase trucks, provide labor, establish billing systems, etc.) varies among the models. These costs would be taken on in the form of initial debts to establish service, and customer charges would higher to pay these costs off. Established providers are likely to be less impacted by

[4] *See Table 1.*

these costs since they already have much of the infrastructure in place to provide service.

Staff has not identified any recent examples of communities in Iowa that have undertaken the transition from open collection to municipal collection or contract municipal collection. Converting to any new system is likely a multi-year undertaking. The ability to obtain and distribute collection containers, particularly with supply chain bottlenecks, can make the transition process for a city the size of Ames difficult. If a municipally operated garbage collection service was pursued, a substantial investment would be required in labor, vehicles, equipment, and software.

In addition to the transition process, the different models of collection systems have different impacts to the current private sector collection companies, with some of the providers potentially losing substantial market share.

COMPARISON TABLE:

These metrics discussed above can be applied to the various collection models as outlined in Table 3, below:

Table 3. Benefits and Costs of Different Collection Models

		MODEL					
		Open Collection (Status Quo)	**Organized Collection (Minn. Model)**	**Municipal Collection**	**Contract Municipal Collection**	**Segmented Collection**	**Zonal Collection**
		Users Contract with Provider of their Choice	Current Haulers' Market Shares Consolidated into Zones; Consistent Rates Negotiated	Comprehensive City-Provided Garbage, Recycling, Yard Waste Services	Single Contract for Comprehensive Garbage, Recycling, Yard Waste Services	3 City-wide Contracts: 1 Garbage, 1 Recycling, 1 Yard Waste	City Divided into Zones; a Single Contract is Awarded in Each Zone
Benefits to Community: *(high is more desirable)*	Choice of Provider	High	Low	Low	Low	Low	Low
	Service Offerings	Medium	High	High	High	Medium	High
	Pricing Uniformity	Low	High	High	High	High	High/Medium
	Traffic Reduction	Low	High	High	High	High	High
	Noise Reduction	Low	High	High	High	High	High
	GHG Emissions Reduction	Low	High	High	High	High	High
	Road Wear and Tear Reduction	Low	High	High	High	High	High
	Waste Volume Reduction	Low	Medium	Medium	Medium	Medium	Medium
	Nuisance Abatement Tools	Low	Medium	High	High	High	Medium
Costs: *(high is less desirable)*	Administrative Effort: Transitional Period	Low	High	High	Medium	Medium	High
	Administrative Effort: Ongoing	Low	Low/Medium	High	Low/Medium	Low/Medium	Low/Medium
	Operating Costs (Passed on to Customers)	Low	Low	High	Low	Low	Low
	Impact to Current Providers	Low	Medium	High	High	Medium	Medium

COMPARISON OF COLLECTION MODELS IN IOWA COMMUNITIES:

City staff contacted the Iowa Department of Natural Resources (DNR) to gather information regarding garbage collection models in use throughout Iowa. DNR no longer regularly collects this information; however, DNR was able to provide data from the most recent years in which the 947 communities in Iowa submitted information.

The DNR data indicates that less than one-quarter of cities in Iowa use open collection for garbage collection at residential properties (Table 4). Most communities (two-thirds) instead use a contract municipal collection system, while 100 (mostly larger) cities provide municipal collection. Conversely, most of the other communities in Iowa (two-thirds) allow commercial properties the freedom to select their own provider, in an open collection system.

Table 4. Garbage Collection Models of Communities in Iowa, by Property Type.

Collection Model	Residential	Commercial
Municipal Collection	100	78
Contract Municipal Collection	634	219
Mixed: Combination of Municipal Collection and Contract Municipal Collection	6	1
Open Collection	201	610
No Data	6	39
TOTAL	**947**	**947**

Staff gathered detailed information regarding the waste collection models in a sampling of the largest cities in Iowa (Cedar Falls, Cedar Rapids, Council Bluffs, Davenport, Des Moines, Dubuque, Iowa City, Marion, Marshalltown, Sioux City, and Waterloo). Most of the Des Moines metro area (the City of Des Moines excluded) is served by contract providers operating through the Metro Waste Authority (MWA). Because of the unique contractual relationships between those cities, MWA, and the contract providers, those communities were not included in this analysis.

Among these 11 cities studied in detail, eight provide for municipal collection using city crews (Table 5). Two cities (Council Bluffs and Sioux City) utilize contract municipal collection. One city (Marshalltown) has an open collection system for garbage, but contracts with a single private sector provider for recycling collection.

Table 5. Comparison of Iowa Solid Waste Collection Models

City	Municipal Collection	Contract Municipal Collection	Open Collection
Ames			**X**
Cedar Falls	X		
Cedar Rapids	X		
Council Bluffs		X	
Davenport	X		
Des Moines	X		
Dubuque	X		
Iowa City	X		
Marion	X		
Marshalltown			X
Sioux City		X	
Waterloo	X		

PROPERTIES SERVED:

Among the studied communities, all the cities that have municipal collection or contract municipal collection require the use of the city services for single-family households (Table 6). In these cities, private haulers are typically prohibited by ordinance from contracting with single-family households, and instead focus on servicing large multi-family and commercial properties. Most of these cities require the use of city services or offer city services as an option for multi-family residential properties up to 3-4 units in size. These cities are therefore focused on providing service using smaller household-sized collection containers and frequencies, although a handful of the cities allow commercial customers to request service through the city, depending on their service needs.

Table 6. Provider Options by City and Property Type

City	Single-Family Residential	Multi-Family ≤3-4 Units	Multi-Family >3-4 Units	Commercial
Cedar Falls	City	City	City or Private	City or Private
Cedar Rapids	City	City	City or Private	City or Private
Council Bluffs	City	Private	Private	Private
Davenport	City	City	Private	Private
Des Moines	City	City	City or Private	Private
Dubuque	City	City (≤6 units)	City or Private	City or Private
Iowa City	City	City	City	Private
Marion	City	City	City	City
Sioux City	City	City	City	Private
Waterloo	City	City or Private	City or Private	City or Private

COLLECTION CONTAINERS AND PRICING *(AS OF DECEMBER 2021)*:

The communities that provide municipal garbage collection generally provide options for various sized collection containers. The options for smaller containers (35-, 48- and 65-

gallon containers) appear to be more frequently available in other communities compared to the options that are available through private haulers in Ames.

The pricing options for cities that provide municipal collection are outlined in Table 7. Some communities, such as Cedar Falls, use container pricing to incentivize generating less waste, with a monthly fee for a 95-gallon cart ($27.84) costing roughly three times more than the monthly fee for a 35-gallon cart ($9.46). Cedar Rapids incentivizes smaller waste generation by offering a 35-gallon cart as the only size option. Residents who must dispose of more waste in Cedar Rapids may obtain a second 35-gallon container for an additional $9.45 per month.

This approach is contrasted with the pricing in Waterloo, where a 35-gallon cart costs $10/month and can be nearly doubled in size to a 68-gallon cart for only $1.75 more, or Des Moines, where a 68-gallon cart costs $14.56 per month and a 96-gallon cart is available for $15.66 per month.

Table 7. Monthly Charge for Garbage Collection by Container Size

City	32-35 Gallon	48 Gallons	64-68 Gallons	90-96 Gallons	Extra Cont.	1 Can/ Bag	2 Cans/ Bags	3 Cans/ Bags	Extra Bag
Cedar Falls	$9.46		$17.86	$27.84			$13.00		$1.25
Cedar Rapids[Y]	$17.51				$9.45				$1.50
Council Bluffs[R Y]				$20.00				$20.00	$2.50
Davenport[R]	$13.81		$17.60	$21.42					
Des Moines[R]			$14.56	$15.66					$1.00
Dubuque[R]	$15.38	$17.22	$20.65	$29.00		$15.38			$1.50
Iowa City			$12.00				$12.00		$1.50
Marion[R Y]						$18.75			$2.50
Sioux City[R Y]			$15.55	$18.21	$4.16			$18.21	$1.15
Waterloo	$10.00		$11.75	$17.75					$1.00

[R] - denotes the cost of curbside recycling collection is included with garbage fees
[Y] - denotes the cost of curbside yard waste collection is included with garbage fees

Options exist in nearly all the communities to purchase a sticker for an extra garbage bag to be disposed of in addition to the regular collection container. These fees range from $1.00-$2.50 per sticker, with the average price of $1.66.

The standardization of containers provides for the option of automated collection (using hoisting devices to dump the containers) rather than manually lifting and dumping garbage into the collection truck. Of the studied cities, three used automated collection exclusively; four cities used a combination of automated and manual collection. Four used manual collection only.

Automated collection containers also present the opportunity to use RFID chips; these devices allow the collection trucks to be fitted with data collection equipment, which can then log information such as the date and time a particular household was serviced or

the weight of garbage collected. This data can be used to implement weight-based collection rates or to bill for extra bags without relying on a sticker system.

COLLECTION TRUCKS:

The communities in which municipal collection occurs operate with more economical collection routes compared to open collection providers. Therefore, the number of trucks necessary to provide service is greatly reduced. Table 8 indicates the number of trucks and the number of accounts in the cities evaluated. The route efficiencies in these communities allow for each collection truck to collect from between 400 and 800 homes on an average day.

Table 8. Number of Trucks and Accounts per City

City	Total Accounts	# Refuse Trucks	# Yard Waste Trucks	# Recycling Trucks
Cedar Falls	12,214	3	5	
Cedar Rapids	42,700	16		10
Des Moines	68,000	35 total		
Dubuque	19,900	7	1	5
Iowa City	16,500	4	3	5
Marion	12,000	6 total		
Waterloo	23,000	9 total		

For comparison purposes, Ames has approximately 12,000 single family homes.

COLLECTION FREQUENCY:

According to the Iowa DNR, Ames is one of only 25 cities out of 947 in Iowa that allows or provides twice weekly collection. Of the 10 comparable cities studied that utilized city crews or citywide collection contracts, all provided for regular garbage collection **no more than once per week**, thus ensuring that residential neighborhood traffic, vehicle emissions, and road wear-and-tear are kept to a minimum. Only the City of Davenport provided an option for an extra unscheduled collection of a garbage container, for a $25 fee per instance.

CURBSIDE YARD WASTE:

Most of the cities studied in depth provide some form of curbside yard waste collection. In Sioux City, where the garbage is hauled to a landfill in Nebraska, yard waste is permitted to be mixed with household trash (this is prohibited in Iowa landfills that do not have landfill gas collection). In Council Bluffs, Cedar Rapids, and Marion, the cost of yard waste collection is included with the cost of garbage service; The service in Cedar Rapids is considered “mandatory” and customers cannot opt out of sorting yard waste into a separate container. In six other cities, yard waste service is optional and can be obtained through either a monthly fee or a per-collection charge (Table 9).

Table 9. Yard Waste Collection Charge by Container Size (Per pickup, unless noted)

City	13 Gal. Food Scrap Cart	25 Gal.	48 Gal.	65 Gal.	95-96 Gal.	Extra Bag
Cedar Falls					$5-$10	
Davenport					$4.80	$1.60
Des Moines				$8.34/mo	$10.42/mo	$1.37
Dubuque	$1.00/mo		$8.00/mo	$11.00/mo		$1.30
Iowa City		$2.00/mo			$2.00/mo	
Waterloo					$4.00/mo	

CURBSIDE RECYCLING:

All but one of the eleven compared cities provide some form of curbside recycling services (Table 10).

Table 10. Recycling Models in Iowa Communities

City	Optional Curbside Recycling	Mandatory Curbside Recycling	Mandatory Multi-Family Recycling	Recycling Drop-off Centers
Cedar Falls				X
Cedar Rapids		X		
Council Bluffs	X			X
Davenport	X			X
Des Moines	X		X	X
Dubuque	X			X
Iowa City	X		Over 4 Units	X
Marion	X			X
Marshalltown		X		
Sioux City	X			X
Waterloo	X			X

Six of the ten cities providing recycling services allow customers to opt in, but do not charge any monthly charge for collection (one city charges for the cost to purchase the recycling bin but does not charge for regular collections). In Iowa City and Waterloo, recycling is an optional program at an additional fee for the resident. Cedar Rapids charges a separate fee for recycling ($5.02/month), but participation in the recycling program is mandatory. Marshalltown has a city-wide private sector contract for recycling collection, and participation is mandatory.

RECYCLING DROP-OFF CENTER:

Nine of the eleven studied cities provide for the drop off of recyclable materials at one or more designated sites. In several of the communities, the recycling drop off site serves as a location for other waste-related customer service needs, such as yard waste, household hazardous waste, organics drop off, etc. In Waterloo, all households pay $5 per month to maintain the recycling and yard waste drop off site, regardless of whether those households also sign up for curbside collection of those materials.

MULTI-FAMILY PROPERTY RECYCLING MANDATES:

Two of the cities studied have requirements for multi-family residential properties to obtain recycling services from a private hauler. In Iowa City, a pilot project was implemented in 2012 to require multi-family properties to host a recycling collection point. This program became mandatory for all multi-family properties in 2016.

The City of Des Moines is the other community that requires multi-family properties to provide recycling services to tenants. This requirement is included as a condition to obtain a rental housing permit.

STAFF COMMENTS:

The City has several pending and upcoming initiatives related to solid waste that may have substantial impacts on one another. These include:

1. This report related to Organized Waste Collection
2. The Waste-to-Energy Options Study
3. The Climate Action Plan
4. The expiration of the current Central Iowa Solid Waste Management Association (CISWMA) solid waste Comprehensive Plan, which determines the final disposition of waste in Story County, Boone County, portions of Greene County, portions of Calhoun County, and portions of Dallas County (through 2025).

The Waste-to-Energy Options Study is now complete. This study explores several alternatives for new and/or modified Resource Recovery processing and waste combustion to generate energy. The study consultants have produced a model that generates different financial conclusions depending on the inputs provided. This model can be substantially impacted by changes to the assumptions regarding solid waste volume, BTU value, and the presence or absence of organics, glass, and plastics. Staff's initial analysis is that changes to the waste stream that reduce the overall volume of garbage and reduce the presence of organics and glass in the solid waste are beneficial to the overall system. However, further analysis is needed to understand these impacts completely.

The Climate Action Plan process would suggest that greater involvement by the City in the waste collection process is called for. City involvement could greatly affect the efficiency of waste collection and signal to consumers what actions are needed to have the least impact on the climate (through adjustments such as pricing signals and service offerings).

The current Comprehensive Plan for Solid Waste Management expires in May 2025. Prior to that date, Ames and the partners in the Resource Recovery System will need to determine whether the Boone County Landfill will continue to serve as the final disposition site for Story County's solid waste, if additional steps need to take place to manage the volume of waste generated, or if partnership with other communities may be needed.

NEXT STEPS:

The most important step following the receipt of this report is for the Council to consider what its desired policy goals are. What outcomes does the Council wish to achieve related to: 1) the cost to customers? 2) sustainability (truck emissions and waste reduction/diversion)? 3) availability of services? 4) traffic/noise/nuisance abatement?

Once these policy goals have been identified by the City Council, it becomes possible to identify the potential paths to achieve them. The City Council has a broad array of choices if it is not satisfied with the current system of open solid waste collection. Pursuing a different model of collection (i.e., municipal collection, contract municipal collection, segmented collection, or zonal collection) would likely require substantial further study as a next step.

If the City Council wishes to explore one of these alternative models further, it would be appropriate to direct staff to develop a plan including gathering resident feedback, consulting with providers, researching specific examples in other cities, and perhaps retaining a consultant to assist with the planning process (and ultimately, implementation).

As an alternative to a new collection model, or potentially as a supplement to a new model, the City Council could explore implementing specific policies that address issues such as waste volumes, efficiency, noise, and other issues. These policies could include:

1. **Requiring adoption of Pay-as-You-Throw rates for service.**

2. **Prohibiting twice per week scheduled collection and requiring haulers to provide container size/number options as an alternative.**

3. **Requiring haulers to develop, submit, and abide by a route efficiency plan to obtain a license.**

4. **Requiring haulers to provide a uniform set of services (garbage, recycling, yard waste/organics) in order to serve Ames customers.** The City Council should note that staff would need to further study the costs and benefits if materials such as metals and paper were separated at the curb and recycled rather than being processed for Ames' Waste to Energy System. However, separation and curbside recycling of glass and organics in particular could have significant advantages due to the challenges associated with both of these materials in Ames' Waste to Energy System.

5. **Requiring multi-family properties to provide recycling or organics collection for tenants.**

It should be emphasized that the City of Ames has never engaged in solid waste collection; rather, this service has been left to the private sector to accomplish. Staff continues to believe that the private sector can provide waste collection services at less cost to residents mostly due to the access these private sector providers have to lower-cost labor and the necessary resources and infrastructure to provide collection service. Therefore, staff would recommend not considering moving to a Municipal Collection system at this time. In addition, staff believes if the Council wishes to pursue changes in solid waste collection, it should focus—at least initially—on residential rather than commercial collection services.