

## *Community Solid Waste and Recycling Strategic Plan*

*“Formulate what a solid waste vision could be for Scottsdale that embodies Scottsdale’s community values, and develop a strategic plan to achieve that vision.” Excerpted from motion made by Virginia Korte 5-17-2016, adopted by Council 5-2*

### Scottsdale’s Community Solid Waste and Recycling Strategic Plan

#### Introduction

The City of Scottsdale’s Solid Waste Department delivers solid waste and recycling services to many members of the community, including all of Scottsdale’s single-family residential home residents. The direction the City Council provided in May, 2016 was in the context of the review of a set of proposed rate increases put forward by the Solid Waste Department. The Department, however, is only one of many entities in Scottsdale with an interest in the business of solid waste collection and disposal, and the related business of collecting, processing and re-purposing of recyclable and reusable materials. The intent of this plan is to go beyond directing the activities of the Scottsdale Solid Waste Department, but instead provide a community-wide vision and plan for addressing all solid waste and recycling needs.

Historically, members of the Scottsdale community have expressed broad support for, and embraced efforts to, increase diversion of material from landfill disposal through the concepts of Reduce, Reuse, and Recycle. Scottsdale’s citizens have experience in this process through the weekly pick up of the single stream recycling collection provided by the City’s Solid Waste Department. This popular program was established in 1996 and is embraced by the majority of Scottsdale Citizens today. The Community Solid Waste and Recycling Strategic Plan should build on this history, and should contemplate the community health and image as well as the financial impacts of continuing to increase Scottsdale’s community-wide diversion rates, thus reducing the disposal of waste in our limited landfill space.

#### Background

There are currently multiple providers of solid waste and recycling services in Scottsdale.

**Single-family Homes:** Arizona Revised Statutes Title 49 governs solid waste collection and disposal in Arizona (ARS 49-741 establishes local government authority for implementing the State’s solid waste management program). Under this regulatory authority, the City’s Solid Waste Department provides collection service to each of over 80,000 single-family homes in Scottsdale. This service includes weekly curbside refuse collection service using 20-gallon or 90-gallon containers, or weekly alley pickup in shared 300-gallon carts. The City also provides once per week curbside, single-stream recycling collection as part of its standard service package, using 20-gallon or 90-gallon containers. Each residential customer is also provided monthly pickup of bulk items and uncontained brush and yard waste. Finally, as part of the base residential service fee, residents can also receive on-call move-in box collection, on-call appliance collection, and on-call household hazardous waste collection. For an additional fee, residents may request an additional refuse container.

**Multi-family Complexes:** ARS 49-746 states that “a municipality of this state shall not prohibit or unreasonably restrain a private enterprise from delivering recycling or solid waste management services to commercial, industrial or multifamily residential properties within or to the municipality.” While Scottsdale requires all single-family residential homes to be serviced by the City’s Solid Waste Department, because of this legislative requirement, this is not the case for residents living in apartment and condominium complexes. Scottsdale’s Solid Waste Department treats these complexes as

commercial customer accounts. The Scottsdale Solid Waste Department does have a collection program to service commercial accounts; this program is available to provide refuse and recycling collection service to multi-family complexes, but there are several other private sector alternatives for landlords and property managers to choose from as well. The Scottsdale Solid Waste Department provides service to multi-family complexes using two, three, four, five, six and eight cubic yard containers, and can arrange for pickup between one and six times per week. Private sector service providers operate with limited regulatory oversight from the City, and provide a similar range of services.

**Other Commercial Customers:** As with multi-family complexes, ARS 49-746 prohibits the municipality from restraining a private enterprise from delivering recycling or solid waste management services to all other commercial activities as well. As a result, options for all other commercial customers are similar to those described above for multi-family residential complexes. The Scottsdale Solid Waste Department provides a service option for businesses, but any business may also purchase service from one of several private sector waste collection and disposal companies licensed by the City to operate in Scottsdale. For customers served by the Solid Waste Department the range of services is similar to that described above, with the addition of service using large roll-off containers of various sizes also available.

While the subject of collection of waste and recyclable materials generally prompts images of large trucks driving down the streets picking up containers along the way, there are also many other collection options available within the community, usually for various specialty options. These include, but are certainly not limited to, textile collection drop-off points; retail outlets accepting used light bulbs, batteries, motor oil, or plastic grocery bags for proper disposal; and thrift stores and other marketing of used items.

**Processing and disposal:** The Scottsdale Solid Waste Department has a contract with the Salt River Community Landfill Corporation (SRCLC) for disposal of refuse at the Salt River Landfill, located on the Beeline Highway and Gilbert Road. The current expected life of the Salt River Landfill is through the year 2035, and the SRCLC is seeking ways to extend the life of the facility beyond that time frame. The Solid Waste Department's trucks haul refuse directly to the Salt River Landfill, or they haul it to the Scottsdale Transfer Station, located near Pima Road and the 101 freeway in northern Scottsdale, to consolidate it into larger trucks for transfer to the landfill. The SRCLC also operates a Materials Recycling Facility adjacent to the landfill, which the Scottsdale Solid Waste Department uses for processing of all recyclable materials collected. The SRCLC facilities are also available to private-sector waste haulers operating in Scottsdale. Some private sector haulers, particularly the larger entities like Republic Services and Waste Management Inc., also own and operate their own landfill or material recycling capabilities, all of which are located further from Scottsdale.



*Processing line at the Salt River Pima-Maricopa Indian Community's Material Recycling Center*

## Vision

The most widely recognized statement of the collective vision of the residents of the City of Scottsdale is the City's General Plan. The community vision is built on a foundation of citizen involvement. Building on the Scottsdale Town Enrichment Program (S.T.E.P.) forums in the 1960's, 1970's, and early 1980's, two community visioning processes, Scottsdale Visioning (1991-1992) and City Shape 2020 (1994-1996) identified Dominant Themes and created Guiding Principles for the community. These ideas were carried forward into the 2001 General Plan and validated through voter ratification.

Of the Dominate Themes created in the Scottsdale Visioning the following two best relate to the mission of the Community Solid Waste and Recycling Strategic Plan:

- 1) **Sonoran Desert:** Our growth and development should proceed with clear awareness of the impact on our rare and beautiful environment.
- 2) **Resort Community:** Tourism and the constant influx of people from all over the world strongly affect our way of life as well as our economy.

These Scottsdale Visioning Dominant Themes are reflected in the following quote:

*"Building on its southwestern heritage, stylish reputation, and innovative methods of delivering municipal services, Scottsdale has evolved into an internationally recognized resort center, art community, and health care provider. The desert community of Scottsdale has always been its own special place. It has never tried to be all things to all people."*

-Scottsdale Shared Vision 1992

Similarly, the following two Guiding Principles created during the City Shape 2020 also speak to visions that should be embodied in the Community Solid Waste and Recycling Strategic Plan:

- 1) **Seek Sustainability:** Scottsdale is committed to the effective management of its finite and renewable environmental, economic, social, and technological resources to ensure that they serve future needs.
- 2) **Value Scottsdale's Unique Lifestyle and Character:** Scottsdale offers a superior and desirable Sonoran Desert lifestyle for its citizens and visitors. The preservation of the unique lifestyle and character will be achieved through a respect for our natural and man-made environment, while providing for the needs of our citizens.

During the draft General Plan 2035 process, the community has retained these themes and principles by summing them up into primary Community Aspirations for Scottsdale's future- **Exceptional Experience, Outstanding Livability, and Community of Prosperity.**

Draft General Plan 2035 begins with a Vision and Values chapter which identifies the overarching community values used in "implementing Scottsdale's vision, community aspirations, and goals found in the General Plan." Among these values, one in particular directly addresses the goals in General Plan 2035 that concern the subjects of the Community Solid Waste and Recycling Strategic Plan:

Conserve and Preserve the Environment:

Lead the region in the stewardship and effective management of the Sonoran Desert environment and conservation of natural resources and open spaces for the visual, physical, and personal enrichment of everyone.

This is a clear statement of Scottsdale’s environmental and sustainability ethic, and serves as an organizing principle for the supporting policies, objectives and strategies included in the Community Solid Waste and Recycling Strategic Plan.

### Process

The proposed General Plan provides an organized set of goals within the broader, community-wide vision for the future of Scottsdale. Using this as a starting point, we can identify and prioritize the policy goals the Community Solid Waste and Recycling Strategic Plan will adopt, identify appropriate objectives to meet the goals, and develop a list of strategies to attain the objectives. The result is a process driven by the community’s stated vision, which then focuses through successively more detailed levels to arrive at a set of objectives and strategies to achieve them.



### Policies and Objectives

General Plan 2035 is organized into eight chapters. Seven of these chapters correspond directly to seven overarching vision statements, including the statement of the community’s environmental and sustainability vision quoted above. The eighth chapter addresses implementation of the general plan, and applies to all the other chapter subjects.

Two of the eight chapters contain policy statements that pertain directly to the subject of solid waste management and recycling.

	<a href="#">Chapter 1</a> - Character & Culture- Community character and how land uses differ throughout the city. Emphasizes the importance of the city's diverse character and unique design quality.
	<a href="#">Chapter 2</a> - Environment - Focuses on Scottsdale's environmental resources and open spaces, from protecting natural systems and the water supply to creating a green built environment.
	<a href="#">Chapter 3</a> - Collaboration & Engagement- Underscores the importance of community involvement in decision-making.
	<a href="#">Chapter 4</a> - Community Well-Being - Emphasizes the importance of health, housing, safety, and recreation opportunities on the overall well-being of the community.
	<a href="#">Chapter 5</a> - Connectivity - Promote a variety of choices for the movement of people and goods throughout Scottsdale.
	<a href="#">Chapter 6</a> - Revitalization - Focuses on preserving neighborhood character, addressing the fiscal impacts of development, guiding reinvestment, providing public services, and allocating public facilities.
	<a href="#">Chapter 7</a> - Innovation & Prosperity- Fosters economic sustainability. Focuses on tourism, business retention and attraction, and high-quality jobs.
	<a href="#">Chapter 8</a> - Implementation - How do we get there? The Implementation Chapter describes steps to put the vision, values and goals into action.

Chapter 2, “Environment,” is composed of five major elements, one of which is “Environmental Planning.” This element contains seven goals, one of which is to “Maximize resource recovery, reuse, and recycling, and promote use of recycled, recyclable, and renewable materials.” The discussion of this goal includes eight specific policy statements that support the goal. Each of these policy statements then becomes a logical candidate for consideration as a policy goal of the Community Solid Waste and Recycling Strategic Plan.



General Plan 2035

### Environment Chapter- Environmental Planning Element

Goal EP-4: Maximize resource **recovery, reuse, and recycling**, and promote use of recycled, recyclable, and renewable materials.

#### Supporting Policies:

EP 4.1 Maintain and expand **citywide recycling** programs, particularly for tourist areas, businesses, multi-family housing, institutional facilities, special events, and public spaces.

EP 4.2 Encourage public and private establishments to **minimize waste** generation, and establish effective programs for waste reduction, reuse, and recycling of resources.

EP 4.3 Whenever possible and appropriate, use **paperless media** and limit the use of hard copy materials for City programs and projects.

EP 4.4 Encourage the recycling and/or reuse of **building materials** to reduce construction waste.

EP 4.5 Support **regional waste reduction efforts**, policies, and regulations.

EP 4.6 Identify opportunities to use solid waste and recycled materials as **marketable commodities**.

EP 4.7 Strive to **reduce single-use**, non-recyclable, and non-compostable packaging and bags.

EP 4.8 Promote **composting** programs that reduce the amount of biodegradable waste going to the landfill.

Similarly, Chapter 6, “Revitalization,” is composed of six major elements, one of which is “Public Services and Facilities.” This element contains five goals, one of which is to “Maintain an innovative, sustainable solid waste collection, recycling, and disposal delivery system.” The discussion of this goal includes three specific policy statements that support the goal. Each of these policy statements then becomes a logical candidate for consideration as a policy goal of the Community Solid Waste and Recycling Strategic Plan.



General Plan 2035

### Revitalization Chapter- Public Services and Facilities Element

Goal PSF-1: Maintain an innovative, sustainable solid waste collection, recycling, and disposal delivery system.

#### Supporting Policies:

PSF 1.1 Seek new, cost effective, and environmentally-friendly methods of solid waste collection, recycling, and disposal.

PSF 1.2 Provide a diverse selection of services that meet solid waste disposal needs.

PSF 1.3 Use Scottsdale’s Transfer Station to reduce miles driven by solid waste collection vehicles, improve operational efficiency, and expand the options for future disposal sites.

Finally, just as Chapter 8 of General Plan 2035 describes steps to work toward achievement of the vision, values and goals of that plan, the Community Solid Waste and Recycling Strategic Plan must include specific strategies the community will use to achieve the objectives laid out in the plan.

The policies and objectives of the Community Solid Waste and Recycling Strategic Plan are based largely on the goals and policies listed above taken from General Plan 2035, although there are some differences. Some general plan policies are narrowly focused on internal city staff operations, for example policy EP 4.3: “Whenever possible and appropriate, use paperless media and limit the use of hard copy materials for City programs and projects.” As the Community Solid Waste and Recycling Strategic Plan is intended to be a broad, community plan, these policies, while still valuable and still clearly issues the city’s staff will pursue, do not rise to the same level of priority as other, broader policy goals.

Additionally, other general plan policies are modified in recognition of practical realities in determining objectives and implementing strategies. For example, policy EP 4.1: “EP 4.1 Maintain and expand citywide recycling programs, particularly for tourist areas, businesses, multi-family housing, institutional facilities, special events, and public spaces.” The breaks this general plan policy statement into three separate policies, one for single-family residential homes, another for multi-family residential buildings, and a third for all other commercial waste generators. This approach allows greater flexibility to tailor objectives and corresponding strategies to the unique set of circumstances associated with each of three separate parts of the community.

The end result of this process is the identification of ten separate policy statements for the Community Solid Waste and Recycling Strategic Plan:

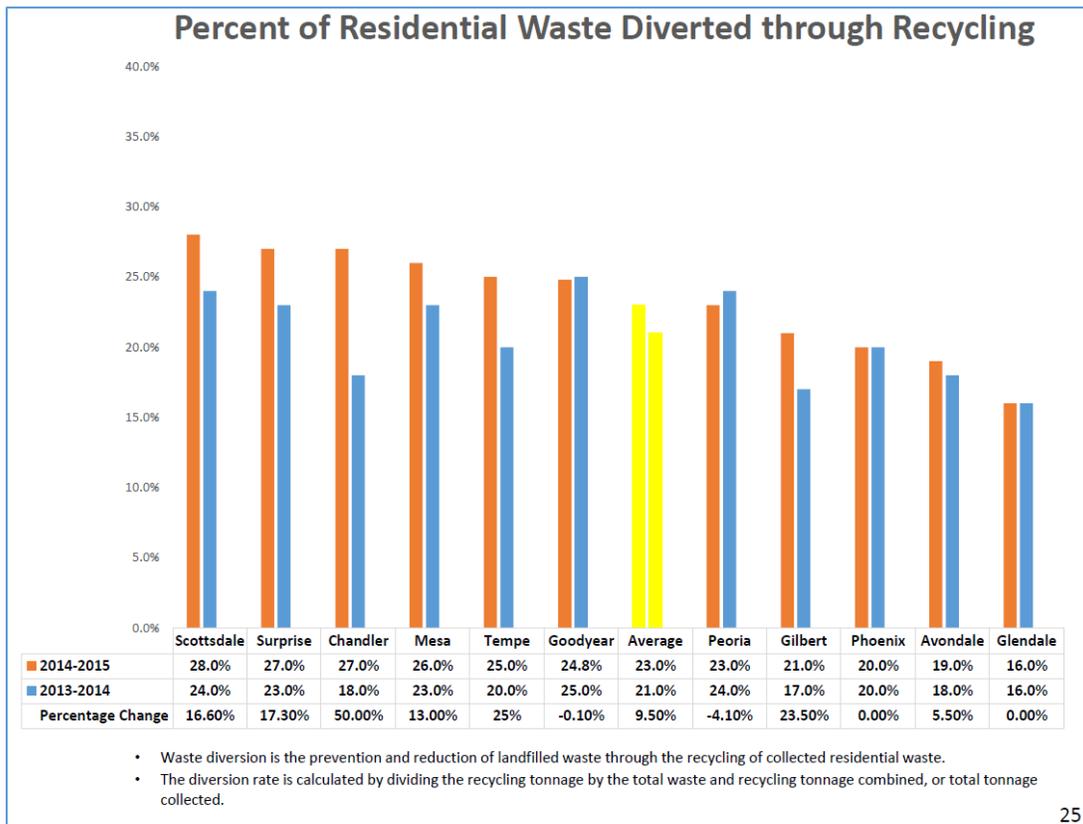
1. Maintain and expand citywide recycling programs- single family residential.
2. Maintain and expand citywide recycling programs- multi-family residential.
3. Maintain and expand citywide recycling programs- commercial, particularly for tourist areas, businesses, institutional facilities, special events, and public spaces.
4. Encourage public and private establishments to minimize waste generation, and establish effective programs for waste reduction, reuse, and recycling of resources.
5. Encourage the recycling and/or reuse of building materials to reduce construction waste.
6. Support regional waste reduction efforts, policies, and regulations.
7. Identify opportunities to use solid waste and recycled materials as marketable commodities.
8. Promote composting programs that reduce the amount of biodegradable waste going to the landfill.
9. Seek new, cost effective, and environmentally-friendly methods of solid waste collection, recycling, and disposal.
10. Provide a diverse selection of services that meet solid waste disposal needs

These policies are driven by the community’s values and vision as represented in General Plan 2035. Together, they provide a comprehensive approach to meeting the community’s expectations for how Scottsdale will approach the collection, disposal, and recycling or reuse of solid waste materials generated within the city, while adhering to the environmental and sustainability ethic that is so important to the community’s members. The next ten sections of the Community Solid Waste and Recycling Strategic Plan will address each of these policies in turn.

Policy 1: Maintain and expand citywide recycling programs- single family residential.

*Background:*

The City’s Solid Waste Department currently provides weekly recycling pickup for each of approximately 80,000 single-family homes in Scottsdale. In fiscal year 2015/16 Scottsdale diverted 24% of the material by weight it collected in the single-family residential program from disposal in the landfill. The chart below shows that Scottsdale is already a leader in the region in diversion, although there is room for significant improvement. The 28% figure shown in the chart below is consistent with the 24% figure shown above, as the chart includes only the weekly refuse and recycling pickups, and not the monthly brush and bulk item pickups, in order to be consistent with the other reporting communities for valid comparison purposes.



*Data from final draft, Valley Benchmark Report FY 2014/15, June 2016*

*Objective:*

The City’s residential diversion rate goal is to increase diversion to 50% by weight of all materials collected from single-family homes by 2030. This includes material collected in monthly brush and bulk item collections as well as the weekly refuse and recycling collections.

*Strategies:*

Customer education will be an important component of any effort to increase diversion. For single-family residential homes, the customer sorts waste into either their refuse bin or their single-stream recycling bin. This places a significant responsibility on the customer to identify recyclable materials

properly. Educating this customer on recycling in general and on the specific items that can or cannot be recycled becomes critical.

Customer education can take several forms:

- Providing materials direct to the customer to aid in the identification of recyclable materials.
- Advertising through various media to highlight the benefits of recycling, as well as to help identify recyclable materials. Readily available media includes the City’s website, social media, utility bill inserts, signs on the side of refuse collection vehicles, and various paid media options.
- Education of school-age children through school programs and curriculum is a potentially powerful tool. In addition to helping students make the right choice when discarding materials themselves, a well-informed child can help spread information about recycling to other members of the household. City staff should work with public school districts (Scottsdale Unified, Paradise Valley Unified, or Cave Creek Unified) as well as private and charter schools within the City to promote recycling education efforts.

Incentives to encourage greater levels of recycling can also be an important part of a strategy to increase diversion rates for residential customers. Incentives can include use of the rate structure used to pay for the service, as well as other external incentives.

One method involving use of the rate structure is the concept of “pay as you throw.” This involves a rate structure that rewards customers with an advantageous rate if they reduce the volume of waste they discard as refuse, based on the assumption that if the customer is generating less refuse they are



*Sorted materials at the Material Recycling Facility prepared for shipping to commodity resellers*

recycling or diverting a greater amount. The City’s residential program already uses a rudimentary “pay as you throw” structure, as any customer who generates more refuse than can be handled weekly in a single container can obtain a second container for an increased monthly fee. More elaborate programs can potentially use on-vehicle sensors on collection vehicles to weigh refuse, or use multiple sizes of containers with lower rates for smaller containers. These programs have initial costs associated with acquisition of new technology or new containers. “Pay as you throw” programs can also lead to greater levels of contamination in the recycling stream as customers put non-recyclable material into recycling to avoid increased costs.

Scottsdale’s single-family residential customers currently receive monthly pickup of bulk items and uncontained brush and yard waste as part of the basic service. A “pay as you throw” option could assess fees for the use of this service, or for use that exceeds a minimum threshold.

While education coupled with incentives can increase voluntary participation in residential recycling, mandated participation can also be implemented. In some communities (Cambridge, MA; Vail, CO;

Washington DC) ordinances require mandatory recycling of specified materials. Any mandated program will require an enforcement mechanism, with compliance inspections and consequences for violations.

As the single-family residential program is entirely under the purview of the Scottsdale Solid Waste Department, internal department initiatives can also play a role in increasing diversion from single-family homes. As an example, loading yard waste and other organic material into the same truck with furniture and other bulky items makes it difficult or impossible to divert a load of otherwise green waste from the landfill. A process that allows collection employees to separate brush from non-recyclable refuse at the point of collection, possibly by having two trucks cover the same areas, could enhance diversion without any changes to customer behavior. A similar observation could be made regarding cardboard disposed of with the brush and bulk service. The approach of using multiple vehicles would increase diversion, but there would be a cost associated with running multiple trucks in the same area.

#### Policy 2: Maintain and expand citywide recycling programs- multi-family residential.

##### *Background:*

Owners and property managers of multi-family apartment or condominium complexes currently procure waste disposal services from either the Scottsdale Solid Waste Department's commercial services program, or from one of several private-sector waste collection and disposal operators. As of October 2016, the Solid Waste Department provided service to over 250 separate multi-family accounts, which included over 8,000 individual apartment or condo units. Data was not available for the number of units served by private sector services providers.

Unlike the single-family program, where every customer receives once per week recycling pick-up as part of the basic service package, there is no requirement for multi-family complexes to have recycling available for their residents, and there is no requirement for waste collection operators to provide recycling services.

It is also currently difficult to measure diversion rates for multi-family complexes, as the City's Solid Waste Department is not the sole service provider, and the City does not require private waste haulers to report information that would allow calculation of diversion rates for those complexes they serve.

##### *Objective:*

The City's multi-family diversion rate goal is to increase diversion to 30% by weight of all materials collected from multi-family buildings by 2030. The City has the ability to monitor progress toward this goal for accounts that the Solid Waste Department services, ideally the goal should include accounts that private waste haulers operating in Scottsdale service as well.

##### *Strategies:*

Education is an important part of the effort to increase recycling in multi-family complexes for many of the same reasons it is important for single-family homes, and many of the same observations made for single-family homes apply here. Additional challenges arise from the fact that multi-family tenants tend to move more frequently than single-family home owners, introducing the need for more frequent education to keep up with new residents.

Not all apartments or condominiums have recycling services readily available, increasing availability of service should lead to increased recycling levels. In some cases, there are physical limitations that need to be overcome in order to provide recycling services. The smaller living and kitchen spaces in many apartments limits the ability of residents to have multiple containers needed to sort recycling from refuse. Similarly, complexes with dumpsters in parking lot or alley enclosures to handle refuse

requirements have limited space to place additional collection containers. Addressing these physical needs during the planning stages of new projects can be helpful going forward.

In addition to having the physical space to accommodate recycling services in multi-family buildings, if a resident is going to have readily available recycling service the landlord or property manager must make the service available. There are different possible approaches to increasing recycling service availability for multi-family homes. Both public sector and private sector waste haulers can implement incentives through their rate structure, making it cost-advantageous for the customer to have recycling replace a portion of their existing refuse service. Of course, both public and private sector haulers are subject to the economic realities of the business, and when revenues for recycled commodities are low it may be difficult to offer price incentives for customers to convert from refuse to recycling.

Many communities in the country have enacted ordinances to require waste haulers providing refuse service to multi-family complexes to also provide recycling service. Portland, OR; Cambridge, MA and the state of Vermont are examples of entities using this strategy. Alternatively, some communities have mandated property owners, rather than service providers, to make recycling available to multi-family residents. Montgomery County, MD; Austin and San Antonio, TX; and Seattle use this strategy. Either approach requires a higher degree of government intervention than a pure market incentive approach. Neither strategy changes the economics of recycling services when commodity prices are low; waste haulers will charge the cost of the recycling service, which may be substantially higher than refuse service alone; or they will increase costs in other service areas to cover the cost of mandated recycling.

Short of mandating private waste haulers to provide service, the City could potentially establish reporting requirements that would allow calculation of city-wide multifamily diversion rates. This would allow market-based incentives and voluntary compliance to be the main tools for increasing diversion in multi-family complexes, but would allow the City to be able to monitor effectiveness and report progress to the community. Reporting requirements would entail some cost on the part of the private waste haulers for data collection and compilation, but would be less onerous and have less financial impact than mandating service.

The previous paragraphs all address ways to provide and promote recycling services within the physical layout of multifamily complexes. The other possibility is to provide an alternative for residents of multi-



*Public recycling drop-off center at City offices on Indian School Road & Drinkwater Boulevard*

family housing to use outside of their complexes. While using a collection center at some distance from the actual residence creates a disincentive and will likely have less of a positive impact on diversion, it can still provide a benefit. The Solid Waste Department currently provides nine recycling collection points available to the public at large.

The City may elect to maintain this public drop-off service, or potentially even expand the program to make it readily available to more people. There is, however, a cost to provide this service. The Solid Waste Department spends roughly \$35,000 per year to provide public drop-off service at these locations. Currently, the Department absorbs the cost, but since the entire Department operates as an enterprise and recovers all their costs through the rates they

charge, the cost for these “free” drop-off points is actually being paid by rate-paying customers. Since they are rate-paying customers, they presumably do not use the “free” drop-off points.

This raises two significant issues: First, the availability of a nearby “free” recycling service can actually be a disincentive for property managers or landlords to pay to provide recycling services at their complexes. Second, the broader community is paying, through commercial and residential refuse rates, to provide a service that other non-paying entities use. If the community values public drop-off service for recycling as a broad community benefit, then there may be a willingness to continue to pay for the service through the existing rate structure. If this is not the case, the service should be curtailed and the community should place greater emphasis on the options described earlier to enhance availability of recycling services within the actual multi-family housing complexes.

Locations of Solid Waste Department public drop-off collection points:

Eldorado Park/Boys and Girls Club	2311 N. Miller
Paiute Neighborhood Center	6535 E. Osborn
City Office Building	7447 E. Indian School
Church	4425 N Granite Reef
City Corporation Yard	9191 E San Salvador
Scottsdale Ranch Park	10400 E. Via Linda
Scottsdale Fire Station #609	14970 N 78th Way
Scottsdale Fire Station #611	20775 N Pima Rd
Scottsdale Fire Station #610	16701 N 100th St

Policy 3: Maintain and expand citywide recycling programs- commercial, particularly for tourist areas, businesses, institutional facilities, special events, and public spaces.

*Background:*

Similar to the current situation described under policy 2 related to multi-family housing, owners, operators and managers of other commercial entities procure waste disposal services from either the Scottsdale Solid Waste Department’s commercial services program, or from one of several private-sector waste haulers. The Scottsdale Solid Waste Department currently services over 1300 individual business accounts, while an unknown number obtain service from a range of private-sector haulers. Similar to the situation with multi-family residential complexes, there is currently no requirement for commercial entities to have recycling service available, and there is no requirement for waste collection operators to provide recycling services to these customers. Also similar to the situation with multi-family complexes, the City does not require private waste haulers to report information that would allow calculation of diversion rates for those commercial entities they serve, so it is not currently possible to calculate city-wide commercial diversion rates. The diversion rate for accounts handled by the Scottsdale Solid Waste Department is currently about 4%.

*Objective:*

The City’s multi-family diversion rate goal is to increase diversion to 20% by weight of all materials collected from multi-family buildings by 2030. The City has the ability to monitor progress toward this

goal for accounts that the Solid Waste Department services, ideally the goal should include accounts that private waste haulers operating in Scottsdale service as well.

This target applies to all commercial activities, but can also be subdivided into a series of goals for specific economic activity sectors or commodities. The objective can emphasize individual commodities commonly generated in large quantities by commercial activities, for example cardboard or construction and Demolition waste. The objective can emphasize economic sectors that generate large volumes of material, such as retail; or sectors that have broad community visibility, such as tourism or city government.

*Strategies:*

As with multi-family housing, increasing availability of service should lead to increased recycling levels. There are often physical limitations that need to be overcome for commercial entities in order to



*One of the Solid Waste Department's commercial program vehicles- The Department's commitment to use of compressed natural gas fuel is one of the ways it promotes sustainability*

provide recycling services. Many businesses have space in dumpster enclosures for their refuse containers, but have limited space to place additional collection containers to handle recycling collection. Resolving these space constraints may require flexibility from the collection service provider, either the City's Solid Waste Department or private haulers, to implement solutions.

There are also different possible approaches to increasing recycling service availability for businesses.

As with multi-family housing, both public sector and private sector waste haulers can implement incentives through their rate structure, making it cost-advantageous for the customer to have recycling replace a portion of their existing refuse service. Of course, both public and private sector haulers are subject to the economic realities of the business, and when revenues for recycled commodities are low it may be difficult to offer price incentives for customers to convert from refuse to recycling.

Government mandates are also a tool that can potentially be used to increase diversion at commercial entities. Government could potentially enact ordinances requiring commercial waste haulers to provide recycling service to all accounts within a specified category or above a specified weight or volume threshold. This requires a higher degree of government intervention than a pure market incentive approach. It also does not change the economics of recycling services when commodity prices are low; if waste providers are mandated to provide a service that doesn't pay for itself, costs will potentially go up on other services.

Short of mandating private waste haulers to provide service, the City could potentially establish reporting requirements that would allow calculation of diversion rates. Reporting requirements could be limited to specific sectors or economies, and in this way tailored to achieve targeted improvements. In this case market-based incentives and voluntary compliance would continue to be the main tools for increasing diversion, but the City would gain the ability to monitor effectiveness and report progress.

Reporting requirements would entail some cost on the part of the private waste haulers for data collection and compilation.

While market-based incentives and mandates potentially apply to increasing diversion for most commercial activities, city government can have a greater, more direct role in enhancing diversion efforts at public, government facilities. The City chooses the level of service it provides for recycling disposal options at government offices; public facilities such as parks, libraries, senior centers and community centers; and at city events, including spring training games at Scottsdale Stadium, public events at the Civic Center Mall, and events at WestWorld. Increasing the availability of recycling receptacles at City events and facilities carries the additional costs associated with providing, maintaining, collecting and emptying the additional receptacles, as well as additional costs to pay the City's Solid Waste Department for disposal. These additional costs will potentially either be paid through increased general fund support of the facility, or through increased user fees for the activity using the facility.

Policy 4: Encourage public and private establishments to minimize waste generation, and establish effective programs for waste reduction, reuse, and recycling of resources.

*Background:*

While the previous policies focus on diverting material that goes into the waste stream from disposal in a landfill, this policy focuses on minimizing amounts or types of materials that enter into the waste stream in the first place. In particular, many communities have engaged in efforts to minimize generation of material that has little value as a recycled commodity, especially those that have large volumes like Styrofoam and other packaging material; or to minimize generation of material that causes problems in the material recycling process, such as plastic grocery bags.

*Objective:*

General success in reducing waste generated should show up as a reduction in the per capita weight of material collected and disposed of by the City's Solid Waste Department and private waste haulers operating in the city, in both the residential and commercial waste categories. Unfortunately, there are other variables that make it very difficult to do this calculation or to draw solid conclusions from it. Similarly, success in minimizing generation of particular categories of waste can be difficult to measure. Some communities have observed noticeable reduction in litter in public spaces associated with reduction of the use of various commodities.

*Strategies:*

As with many policies, there is a role for public education in reducing waste generation. Promoting reuse of bags, bottles, and other items prevents these items from entering the waste stream. The City and several local commercial entities provide reusable shopping bags and water bottles, often as promotional material to support other activities.

There may be other programs to promote reuse of specific items that contribute significant volumes to waste streams. In particular, the concept of grasscycling is promising. Grasscycling is simply the practice of leaving lawn clippings on the lawn instead of bagging them and disposing of them as waste. This practice helps retain moisture in soil and recycles the nutrients in the grass, reducing the need for chemical fertilizers, which are environmental benefits in addition to the waste reduction aspect of the practice. A recent study of the contents of the waste stream generated by residential customers in Phoenix found that 22% of the city's residential waste stream was grass & leaves (Cascadia Consulting for the City of Phoenix Public Works Department, Residential Characterization Preliminary Findings;

September, 2014). If proportions are similar in Scottsdale, even a modest reduction in the amount of grass entering the waste stream could represent several thousand tons.

One technique some municipalities have used to promote keeping materials out of the municipal waste stream is the publication of a reuse and repair community resource directory. Local businesses and organizations serve as collection points for a variety of items, including light bulbs, electronic items, batteries, and plastic bags. Collecting information about these various efforts, keeping it updated, and making it easily and widely available can enhance efforts already underway to collect these materials and keep them out of the waste stream.

In addition to voluntary measures, municipal governments in other locations have implemented mandates to ban the use of specific items, including plastic grocery bags, and Styrofoam. As of 2016, Arizona Revised Statutes 9-500.38 prohibits cities from regulating the sale, use or disposition of plastic grocery bags, or from imposing a tax, fee, assessment, charge or return deposit on a plastic grocery bags. This prohibition of local government action applies not only to grocery bags, but more broadly to “reusable bags, disposable bags, boxes, beverage cans, bottles, cups and containers that are made out of cloth, plastic, extruded polystyrene, glass, aluminum, cardboard or other similar materials and that are used for transporting merchandise or food to or from a business or multifamily housing property.” Use of mandates to eliminate or regulate use of these particular elements of the waste stream is not feasible without a state legislative change.

Policy 5: Encourage the recycling and/or reuse of building materials to reduce construction waste.

*Background:*

Construction and demolition waste represents a significant proportion of the waste generated in Scottsdale and the surrounding region. The 2005 Maricopa Association of Governments (MAG) Regional Solid Waste Management Plan determined that within the Phoenix region, construction and demolition waste reached almost 1 million tons over a one-year period.

The Scottsdale Solid Waste Department can provide roll-off containers to construction contractors to meet their construction and demolition waste needs. Private waste haulers are also very active in this sector, although the City does not have any data available to indicate the relative proportions collected by private haulers.

*Objective:*

The City has the ability to closely monitor and track construction demolition and waste generated by the City’s construction of public facilities. Reductions in the amount of waste landfilled on capital projects would be an appropriate and measurable objective for public construction.

The City does not currently have the means to monitor and track waste generated or materials diverted from landfills on private construction projects.

*Strategies:*

The City has a greater ability to control the recycling of construction and demolition waste or to promote the use of recycled building materials on City-funded public construction projects than it does in other construction. For city capital projects, the City has already adopted a policy of using the U.S. Green Building Council’s LEED (Leadership in Energy and Environmental Design) program. This is a points-based certification program designed to promote a wide range of sustainable building practices, including reduction of construction and demolition waste and use of recycled construction materials.

The City has been very successful at having new buildings achieve LEED certification since Council adopted the policy in 2005. Since that time, the City has built ten buildings that achieved LEED New Construction certification. Every one of these completed since 2009 has earned the LEED credits for both use of recycled materials and the management of construction waste. The LEED policy is already in place, its positive impact on reuse and recycling could potentially be enhanced by requiring contractors on LEED building projects to achieve the specific credits related to reduction of construction and demolition waste and use of recycled construction materials.



*Recycled barn wood in Scottsdale’s Museum of the West is an example of imaginative and effective use of recycled building materials*

Scottsdale LEED Certified City Buildings

<i>Building</i>	<i>LEED certification level</i>	<i>Year completed</i>
Granite Reef Senior Center	Gold	2006
Arabian Library	Certified	2007
Fire Station 602	Platinum	2008
Gateway to the Preserve Trailhead	Platinum	2009
Appaloosa Library	Gold	2009
McKellips Service Center	Silver	2009
McCormick Model Railroad Building	Gold	2010
Fire Station 601	Platinum	2011
Fire Station 608	Platinum	2011
Scottsdale Museum of the West	Gold	2015

The City's Street Operations Department also promotes the use of recycled construction materials through the reuse of old asphalt. To maintain the quality of the street network, the Department applies a range of maintenance treatments to selected streets each year. A percentage of these treatments each year involve removing the top one to one-and-a-half inches of asphalt and replacing it with new asphalt. The removal process mills and grinds the old asphalt, generating a large volume of asphalt "millings." The Department stockpiles the millings and uses them in the City's dust abatement program, placing them in alleys and on unpaved parking areas to provide a usable, clean and relatively dust free surface. Over the most recent year, the Department placed an estimated 8,000 tons of recycled asphalt in this way, avoiding disposal in a landfill.



*Recycled asphalt used to minimize dust on the road to Tom's Thumb Trailhead in the Preserve*

For all other construction, the City has less ability to control the recycling of construction and demolition waste or to promote the use of recycled building materials. Adoption of voluntary goals for construction waste diversion could potentially increase diversion rates. One voluntary program that is already in place is the City's Green Building program. Adoption of any voluntary reduction measures would require the creation of a reporting and monitoring system to track results.

Mandates to require certain levels of construction and demolition waste diversion or use of recycled building materials are also possible. These would likely be viewed as government interference with private activity, and would require development of a tracking and enforcement capability.

Policy 6: Support regional waste reduction efforts, policies, and regulations.

*Background:*

The City of Scottsdale is currently engaged in regional collaboration efforts. As a member agency of the Maricopa Association of Governments (MAG), the city participates in MAG planning efforts related to solid waste and recycling. MAG established a standing Solid Waste Advisory Committee, consisting primarily of representatives from MAG member municipalities. The committee serves in an advisory capacity to the MAG Management Committee and Regional Council on solid waste management matters affecting the region. MAG produced a Regional Solid Waste Management Plan in 2005.

The Resource Innovation and Solutions Network (RISN), a public-private collaboration led by the Global Sustainability Solutions Services program at Arizona State University, is another important regional effort. RISN "brings together university, government, business and non-governmental partners to transform the relationship between resources, the environment, the economy and society in order to create a resource-focused Ethical Circular Economy platform that replaces the linear model of produce-

use-discard with a circular model in which discarded materials are transformed into usable products, essentially eliminating waste.” (RISN Regional Circular Organic Resource System report, August 2016).

*Objective:*

The success of this policy will be driven by the successful implementation of programs driven by regional partnerships, and the degree to which these programs achieve their goals, both regionally and specifically for the City of Scottsdale.

*Strategies:*

The City will continue the regional partnership through RISN. While current efforts focus on developing regional markets and supporting infrastructure for organics, there are other potential future focus areas. The incorporation of public sector, private sector and academia from across the region into an action-oriented partnership is a powerful model with great potential.



*Scottsdale is working through a regional partnership to explore ways to market organic material*

The City will also continue to work within MAG as an active member of the Solid Waste Advisory Committee. At the same time, opportunities exist to develop new regional partnerships that go beyond municipal government. These opportunities may include partnering with local school districts, primarily as part of the effort to promote recycling and waste reduction; partnering with non-profit environmental advocacy organizations; and partnering with private sector entities within the solid waste industry.

Policy 7: Identify opportunities to use solid waste and recycled materials as marketable commodities.

*Background:*

Scottsdale already markets commodities it collects through its single stream recycling program, and from some of its commercial customers. This marketing occurs through the City’s contracted recycling services provider, the Salt River Community Landfill Corporation (SRCLC). SRCLC’s contracted recycling facility operator sorts recyclable materials by commodity and then sells them through various commodity markets, with a portion of the revenues coming back to the City of Scottsdale.

In recent years, several entities have approached the City seeking to acquire a portion of the City’s waste stream in order to produce a marketable commodity. These proposals have most often taken the form of building a plant to convert portions of the organic material in the waste stream into energy using pyrolysis, gasification or other technologies. The City until recently has operated under a contract with the SRCLC that guaranteed it would deliver at least 90% of the refuse collected by the Solid Waste Department to the SRCLC landfill. This contractual requirement effectively kept the City from pursuing alternative options.

*Objective:*

Success in implementing this policy could potentially be measured either in terms of volumes of material diverted from the waste stream to alternative uses, or in terms of revenue generated by marketing materials.

*Strategies:*

While there may be opportunities to market a wide range of commodities that are currently included in the waste stream, the biggest potential in terms of value and volume of waste diverted lies in the area of organics. The City is already working through the RISN regional network led by ASU and the City of Phoenix to explore markets for composted organic material. Various waste-to-energy options may also become viable as technology progresses and large enough volumes of organic material become available.

While selling materials from the waste stream potentially generates revenue that could help offset disposal costs for either the City's Solid Waste Department or commercial haulers, there are also additional costs associated with segregating materials from the waste stream, collecting the materials, and processing them for sale or marketable use.

Policy 8: Promote composting programs that reduce the amount of biodegradable waste going to the landfill.

*Background:*

The Scottsdale Solid Waste Department does not require its residential customers to source-separate organic waste from other waste. Residents dispose of organic food waste in their refuse containers. Residents may dispose of yard waste, including grass clippings, tree trimmings and other organic material, in their monthly brush and bulk pickup, where it is generally mixed with other materials either at the source or in the City's collection vehicles.

Commercial entities may arrange for collection and disposal of organic materials with their waste hauler. The City currently does not track the degree to which private waste haulers servicing commercial accounts separate organics from the rest of the waste stream for composting or other use.



*Green waste collection at the Salt River Landfill, on the Salt River Pima-Maricopa Indian Reservation*

The Salt River Landfill maintains a separate green waste disposal area. The City's Solid waste

Department, as well as other waste haulers, can leave loads at the green waste disposal area and avoid landfilling them if the loads have minimal non-organic contamination. The Salt River Landfill operator currently contracts with a firm that grinds organic material on site, and ships the material to other facilities in Arizona for either composting or use as a feedstock for renewable energy.

*Objective:*

The City's Solid Waste Department can measure how much waste their collection vehicles deliver to the SRCLC green waste collection area, which is diverted from the landfill, and establish an objective for this diversion. It is more difficult to set an objective and measure success for the levels of diversion achieved by other haulers.

Another objective could be the increase of private composting efforts, although this would be very difficult to measure directly.

*Strategies:*

Education strategies to promote composting by residents or businesses could include efforts to promote the benefits of composting, as well as providing instruction on how to properly and effectively establish and maintain composting procedures.

The City is engaged in a regional effort led by ASU's Resource Innovation and Solutions Network (RISN) to explore potential solutions for collecting, processing and marketing organic material on a regional scale. In 2016 RISN is completing a study that provides a region-wide assessment of available organic material volumes and potential regional markets, and generates a possible future scenario for a regional organic material collection and processing network (Regional Circular Organic Resource System final draft report, RISN; August, 2016). The scenario includes a suggested 20,000 ton per year composting facility at Scottsdale's transfer station.

Some communities, including Mesa, have implemented "third bin" programs, providing all their residential customers a third container for organic material in addition to a refuse container and a recycling container. Such a program can encourage segregation of organic materials at the source, and allow the hauler to divert a greater volume of organic material from the landfill and provide it to a centralized composting facility. These programs involve additional costs for the containers, and for additional collection routes. As an example, within the Valley the City of Mesa has a third bin program available to its residential customers. About 32% of Mesa's single-family residential homes participate in this optional program, each paying \$6.56 per month for the extra service. These extra bins are set out, on a citywide average, about 34% of the time.

In some cases the City's Solid Waste Department can also modify collection processes to increase diversion of organic material from the landfill and to make it available for a centralized composting program. Currently, the Department's brush and bulk program collects yard waste and tree trimmings in the same trucks that it uses to collect furniture, appliances and other waste. The mixed nature of the loads often prevents the Department from delivering what may be substantial amounts of organic material to SRCLC's green waste collection site and diverting it from the landfill. Process changes to avoid this would involve running routes a second time with a second collection vehicle, and would entail additional associated costs.

Policy 9: Seek new, cost effective, and environmentally-friendly methods of solid waste collection, recycling, and disposal.

*Background:*

The City's Solid Waste Department operates as a business enterprise. All of the costs of providing the service, including collection, processing, disposal and specialty services, are paid for by the revenues the program generates. The primary source of revenues is the fee for service the Department collects from its customers. The City's rate of \$16.00 per month for basic single-family home residential service is

among the lowest of any municipality in the Valley, and is arguably the lowest for the suite of services the Department provides. A cost study conducted by an outside consultant in 2016 validated that the residential portion of the Solid Waste Department's program is generating revenue sufficient to cover its costs (Solid Waste Cost of Service and Rate Design Study, NewGen Strategies and Solutions; March 2016). The Department seeks to continue to provide services with a high degree of efficiency, as any increase in the cost of service will ultimately be borne by the customer through rate increases.

The same cost study found that the Department's commercial programs were not fully recovering the cost of their services through the revenue collected from customers (NewGen, March 2016). As a whole, the Solid Waste Department is covering their costs with existing revenues, but in effect the single-family residential customers have been making up for the deficit in the commercial program. To begin to rectify this situation, Council approved substantial increases in commercial solid waste rates to take effect in July, 2016.

*Objective:*

The Solid Waste Department's operational efficiency is reflected in the rates they charge to customers. The Department's objective is to continue to provide the best value to single-family residential customers, in terms of monthly rate for the services provided, of any municipality in the Valley. The goal for the Department's commercial program is to provide services at a cost that minimizes the need for rate increases and holds rates at a level competitive with the commercial market.

*Strategies:*

The City's Solid Waste Department is pursuing several strategies to enhance efficiency, especially in the commercial programs. As expected, the commercial rate increases in July, 2016 resulted in some account cancellations. The Department is in the process of adjusting routes and downsizing the workforce to adapt to the decreased workload

Additional cost saving strategies for the Solid Waste Department to consider and possibly pursue include leveraging the Department's transfer station, and increasing the use of automation in managing the collection program. Options for the transfer station include possibly making it available for a fee to other haulers, or using it to transfer loads to other landfills. These options are possible with the flexibility built into the City's new landfill contract. The Department is already implementing a vehicle tracking and route planning software solution which should allow better optimization of routes and tracking of service delivery.



*The Solid Waste Department's transfer station helps reduce cost and improve sustainability by reducing the amount of miles driven by the Department's fleet*

Policy 10: Provide a diverse selection of services that meet solid waste disposal needs

*Background:*

The City currently provides a range of specialty collection and disposal services, including the household hazardous waste program, electronics recycling, move-in box collection. The private sector also provides a range of services, some oriented to specific commodities.

*Objective:*

Determine if there are services not currently available or with limited availability which the community desires to see established or expanded. Determine for each potential service whether it can best be provided through public- or private-sector service providers, and determine the cost to provide the desired level of service.

*Strategies:*

The Solid Waste Department is continuously open to input regarding potential service enhancements. A targeted public outreach effort can help determine if there is a broad base of support for any new or enhanced services.

1. Stakeholder/public input?
  - 1.1. EQAB letter?
  - 1.2. Waste Management, Republic, others?
  - 1.3. Thrift stores, reuse retailers
  - 1.4. Specific commodity recyclers: textiles, electronics, hazardous waste
  - 1.5. Residents
  - 1.6. HOA's
  - 1.7. Businesses
2. Staffing, organization
  - 2.1. City SW staff, other city staff, boards and commissions, public (residents, businesses, waste management providers)

Questions:

- Are you willing to pay an additional \$1 or \$2 on your monthly residential bill to support programs like free community recycling drop offs?
- Would you be in favor of City government enacting ordinances to require residents and businesses to recycle, to include establishing a means of enforcement and fines for noncompliance?
- Would you be in favor of a third collection bin for organic waste, such as grass clippings and food waste?
- Would you be in favor of establishing a large-scale composting facility within Scottsdale, possibly near your neighborhood?

Observation: It might be difficult to avoid sounding like we're advocating against some of these policy choices by the way we word the questions