

# SOLID WASTE BEST PRACTICES IN THE MAG REGION 2017 UPDATE



August 2017

**Title VI Notice to the Public  
Maricopa Association of Governments**

The Maricopa Association of Governments (MAG) hereby gives public notice that it is the policy of the agency to assure full compliance with Title VI of the Civil Rights Act of 1964, the Civil Rights Restoration Act of 1987, Executive Order 12898 on Environmental Justice, and related statutes and regulations in all programs and activities. Title VI requires that no person in the United States of America shall, on the basis of actual or perceived race, color, or national origin, be excluded from the participation in, be denied the benefits of, or be otherwise subjected to discrimination under any program or activity for which MAG receives federal financial assistance. Additional protections are provided in other federal and state statutes for discrimination based on religion, sex, disability, age, gender identity (as defined in paragraph 249(c)(4) of title 18, United States Code) or sexual orientation.

Any person who believes they have experienced discrimination under Title VI has a right to file a formal complaint with MAG. Any such complaint must be filed with MAG's Title VI Coordinator within 180 days following the date of the alleged discriminatory occurrence.

[Complaints should, at a minimum, include the following information:

- Your name and address, and a number at which you can be reached during business hours
- A general description of the person(s) injured by the alleged discriminatory acts
- A description of the alleged discriminatory act(s) in sufficient detail to enable the Title VI Coordinator to understand what occurred, when it occurred, and the basis of the alleged discrimination complaint (race, color, national origin, etc.)
- The letter must be signed and dated by the person filing the complaint or by someone authorized to do so on his or her behalf.]

For more information, or to file a complaint, please contact the Title VI Coordinator at (602) 254-6300.

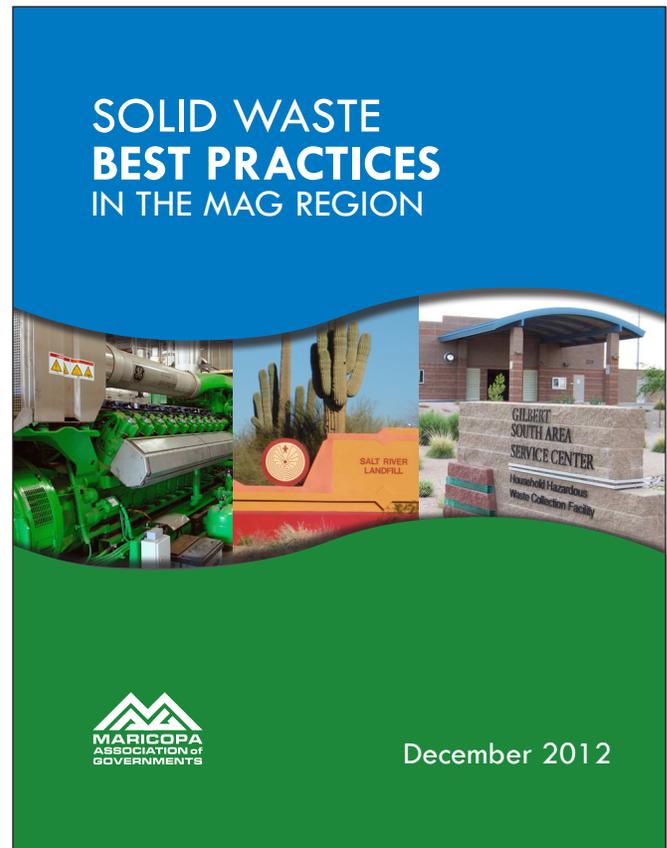
<b>Introduction.....</b>	<b>1</b>
<b>2012 Solid Waste Best Practices .....</b>	<b>3</b>
Same Day Trash and Recycling .....	3
Christmas Tree Drop Off Program .....	7
Commercial Recycling for City Commercial Accounts and Multi-Family Properties .....	13
Curbside Recycling Collection Program.....	17
Solid Waste/Recycling Education and Outreach Program.....	23
Trash to Treasure Reuse Program.....	31
Electronic Waste Recycling Program (Permanent Drop Off Location) .....	33
Green Waste Program .....	37
Household Hazardous Waste Facility .....	41
Household Hazardous Waste Collection Day.....	43
Household Hazardous Waste Home Collection Service .....	49
Hydraulic Leak Prevention Program.....	51
Automatic Vehicle Location Program.....	53
Bag Central Station Program (Plastic Bag Recycling).....	55
Safety, Emergency, and Special Waste Procedures .....	57
Residential Curbside Solid Waste and Recycling Inspection Program.....	59
Landfill Gas-to-Energy Facility.....	63
Metal Bin Refurbishment Partnership Project .....	65
<b>New Solid Waste Best Practices .....</b>	<b>67</b>
<b>Conclusion .....</b>	<b>71</b>
<b>Contact Information.....</b>	<b>72</b>
<b>List of Figures</b>	
Figure 1: Implementation of the Best Practices Identified in the 2012 Solid Waste Best Practices in the MAG Region Report .....	2



# INTRODUCTION

In 2012, the Maricopa Association of Governments prepared a report showcasing solid waste best practices being implemented in the MAG region. The MAG member agencies had submitted a number of innovative projects and programs designed to address solid waste and promote recycling. The best practices were presented to the MAG Solid Waste Advisory Committee on October 18, 2012, the MAG Management Committee on November 7, 2012, and the MAG Regional Council on December 5, 2012. At the December 5, 2012 Regional Council meeting, it was requested that a follow up report be prepared after a few years to determine if the best practices identified have been implemented in other communities across the region. On March 29, 2016, a survey was distributed to the MAG member agencies to collect information on the implementation of the best practices. In addition, the communities were requested to provide any new best practices.

Twenty-seven MAG member agencies responded to the survey and described the solid waste best practices being provided in their communities. *Figure 1* (see page 2) illustrates the implementation of the best practices identified in the 2012 report, noting which projects and programs have been initiated since the 2012 report was completed. While many of the programs included in this document have been in place since at least 2012, a number of them have also been launched more recently. For example, same day trash and recycling service was being provided in six communities in 2012; however, there are now 14 communities implementing same day trash and recycling. The best practices most implemented in the region include curbside recycling collection, solid waste/recycling education and outreach, and Christmas tree drop off programs. In addition to providing information on the best practices from the 2012 report, the MAG member agencies have also identified new best practices that are occurring in the region.



Solid waste and the challenges associated with it evolve over time. Therefore, the communities in the region continue to explore opportunities to modify existing or create new programs in order to adapt. This update highlights the numerous effective and efficient programs currently being implemented by the MAG member agencies to meet the solid waste and recycling needs of residents while protecting the environment. As reflected in this document, the region is making great strides to reduce the amount of material being sent to the landfill by encouraging participation in these solid waste and recycling programs.

**FIGURE 1: Implementation of the Best Practices Identified in the 2012 Solid Waste Best Practices in the MAG Region Report**

BEST PRACTICES	MAG MEMBER AGENCIES																											
	APACHE JUNCTION	AVONDALE	BUCKEYE	CHANDLER	EL MIRAGE	FLORENCE	FOUNTAIN HILLS	GILA BEND	GILBERT	GLENDALE	GOODYEAR	GUADALUPE	LITCHFIELD PARK	MARICOPA COUNTY	MARICOPA COUNTY	MESA	PARADISE VALLEY*	PEORIA	PHOENIX	PINAL COUNTY	QUEEN CREEK	SCOTTSDALE	SURPRISE	TEMPE	TOLLESON	WICKENBURG	YOUNGTOWN	
Same Day Trash and Recycling Program	◆				◆	●	●		◆	●	●		◆					◆	●		●		◆		◆		◆	
Christmas Tree Drop Off Program	●	●	●	●	●	●		●	●	●	●		●		●	●		●	●		●	●	●	●	●	●	●	
Commercial Recycling for City Commercial Accounts and Multi-Family Properties								●	●			◆			◆			●				●		●	●	●	●	
Curbside Recycling Collection Program	◆	●	●	●	●	●	●	●	●	●	●	◆	●	◆	●			●	●	●	●	●	●	●	●	●	●	●
Solid Waste/Recycling Education and Outreach Program		●	●	●		●	●	●	●	●	●	◆	●		●	●		●	●		●	●	●	●	●	●	●	
Trash to Treasure Reuse Program				●					●															◆				
Electronic Waste Recycling Program (Permanent Drop Off Location)			◆	●					●	●	●				●						●	●		●				
Green Waste Program		◆		◆			●						●		●	●			●			●		●				
Household Hazardous Waste Facility			◆	●				●													●			●			◆	
Household Hazardous Waste Collection Day	●	●				●	◆			●	●	●	●		●			●	●	◆		●	●	●	●	●		
Household Hazardous Waste Home Collection Service									●									◆	●			◆						
Hydraulic Leak Prevention Program																		●	●					◆				
Automatic Vehicle Location Program		●						●	●						●			◆	●	◆		●		●	◆			
Bag Central Station Program (Plastic Bag Recycling)						●												◆	●									
Safety, Emergency, and Special Waste Procedures								●	●		◆							●		◆	●				●		●	
Residential Curbside Solid Waste and Recycling Inspection Program		●	●	●		●		●	●	●	◆				●			●	●	◆	●	●	●	●	●	●		
Landfill Gas-To-Energy Facility									●																			
Metal Bin Refurbishment Partnership Project															●				●					●				

Note: This table reflects the implementation of the best practices identified in the 2012 Solid Waste Best Practices in the MAG Region Report, as indicated by the MAG member agencies in the 2016 survey.

\* In Paradise Valley, residents work directly with one of five private haulers to provide solid waste and recycling collection. As a result, the services provided to Town residents vary depending on the private hauler.

# SAME DAY TRASH AND RECYCLING

In the 2012 Solid Waste Best Practices in the MAG Region Report, three communities identified same day trash and recycling as a best practice: the City of Glendale, City of Phoenix, and the Town of Queen Creek. According to the 2016 survey, this best practice is currently being implemented in 14 communities across the region. Eight of these communities have implemented their same day trash and recycling programs since 2012.

## Apache Junction:

In 2014, same day trash and recycling service began in the City of Apache Junction. The City has a subscription based private service for its residents. Currently, 40 percent of the residents contract with one of the three private haulers in the City that implement a same day trash and recycling program (Right Away Disposal, Waste Management, and Republic Services). As a result of the program, the roadways are clear five days per week. There are no costs incurred or revenue generated by the City as a result of this program. Commercial properties contract with the hauler of their choice and typically operate five days a week.

## El Mirage:

In 2013, the private hauler contracted with the City of El Mirage, Parks and Sons of Sun City, began implementing same day trash and recycling in the City. El Mirage reported that there were very few challenges other than an increased number of containers on the roadway on pick up day. There was no change in cost or revenue for the project. The only cost identified was approximately \$1,500 for notifying residents of the same day trash and recycling program. Residents were notified through their utility bills.

## Florence:

In 2012, the Town of Florence transitioned from



*El Mirage Trash and Recycle Bins*

Town-provided solid waste service to contracted service. The private hauler, Right Away Disposal, introduced curbside recycling services for the first time to residents, which is picked up on the same day as trash. The Town reported that there were challenges in notifying every resident of the change in service. Multiple fliers, press releases, and emails were distributed; however, some residents were not aware of the change. The start-up costs were minimal and borne by the contractor. Since the same day trash and recycling program began at the same time as the transition to contracted service, the Town identified savings through the sale of equipment and transition of sanitation employees to other positions within Florence. Residents experienced a fee reduction from \$29 per month to \$17 per month.



*Florence Recycling Collection*

# SAME DAY TRASH AND RECYCLING (CONTINUED)



*Fountain Hills Trash and Recycle Bins*

## **Fountain Hills:**

The same day trash and recycling program in the Town of Fountain Hills was implemented in 2010. Trash and recycling services are conducted by Republic Services, which has the Town divided into four zones. Each zone reduced truck traffic from four to five trucks per week down to two trucks per week. The biggest challenge reported by the Town in implementing the program was concern expressed by residents regarding only having one pick up day.

## **Gilbert:**

The Town of Gilbert began implementing its same day trash and recycling program in 2016. The program provides increased efficiency by maximizing truck payloads through a routing scheme. It is also convenient for customers and results in only having the trucks in the neighborhood one day per week. Initially, the Town conducted pilot routes for two months. To implement the program, there were costs associated with administrative planning time; however, there was no start-up capital outlay. The residential annual operating budget is \$13 million and the source of funding for the program is the Town's enterprise fund/user fees. There was not an immediate cost reduction; however, the program enabled the Town to increase efficiencies. Benefits of the program also include additional accountability for trucks and drivers.

## **Glendale:**

The City of Glendale started providing same day trash and recycling to its residents in 2000. The program was implemented in conjunction with the introduction of its curbside recycling program. The City reported cost savings and route efficiencies due to increased shared resources and operational consistencies during collections. In addition, same day service reinforces recycling and reduces contamination. The program provides convenience for residents and improves neighborhood aesthetics by having the containers out only one day per week.

## **Goodyear:**

In 2006, the City of Goodyear implemented its same day trash and recycling program as part of the change from manual collections to automated curbside collections. Prior to 2006, residents were receiving twice per week manual trash collection and no curbside recycling. The changes to the program were a result of public surveys and recommendations made by the Goodyear Solid Waste Advisory Committee to City Council. Residents liked the addition of commingled recycling and that both containers would be out on the same day. Additional benefits mentioned by residents on the new program included: reduced time that trucks would be in the neighborhoods; containers would spend less time on the street; and the aesthetics of the community would be improved.

A challenge noted by the City of Goodyear was that some residents were accustomed to the previous service and felt they were receiving less trash service by adding recycling. Goodyear conducted a large amount of public education when the program was implemented and over time residents have recognized the benefit to adding recycling and once per week pick up. The same day trash and recycling service is provided by the City's contracted provider, Waste Management, and all operational costs were included in the contract. There were no additional costs since same day collection was part of the program change.

# SAME DAY TRASH AND RECYCLING (CONTINUED)

## Litchfield Park:

The City of Litchfield Park began implementing a same day trash and recycling program in 2016. Trash and recycling services in the City are provided through a contracted provider, Waste Management. Litchfield Park has indicated that there are currently no challenges being experienced and any start-up costs were incurred by the contracted provider.

## Peoria:

In 2015, the City of Peoria implemented a same day trash and recycling program along with container street placement. The changes in service help to eliminate the appearance of containers out all week, keeps the sidewalks open and clear for pedestrians, and adds convenience for residents to remember one day instead of two days for collection. The start-up costs for the program were \$111,156 for outreach, information, and marketing materials. The City does not anticipate a cost reduction due to the same number of trucks and personnel being required to collect and provide service.



Peoria Trash and Recycle Bins

## Phoenix:

The City of Phoenix, with more than 395,000 accounts in 10 service areas, began implementing its same day trash and recycling program in 2012. Previously, the City operated a four, 10 hour day collection schedule. The new program consists of a five day per week operation and has resulted in



efficiencies that enabled the City to eliminate 12 trucks and 12 positions, saving \$1.5 million annually. Additionally, program benefits include convenience for customers by only having to place bins out on one day and helping to keep costs as low as possible for customers. The greatest challenge the City experienced was effectively communicating the change to customers. Overall, the City reported the implementation a success; however, communication with customers needs to be well planned. A lesson learned from others was to recognize the diverse landscape of our communities to ensure safe collection of two to three commodities on the same day.

The start-up costs for the City of Phoenix same day trash and recycling program were \$382,538. The original annual savings projection, verified by the City Auditor's Department, estimated an overall program savings of approximately \$1.46 million. The City realized additional savings resulting in a total savings of \$1.5 million. Phoenix also had ancillary savings from a reduction of miles driven. From FY 2011-2012 to FY 2012-2013, miles driven decreased 258,721 miles saving \$377,000.

## Queen Creek:

The Town of Queen Creek implemented same day trash and recycling in 2010 when the Town began its solid waste program. The Town of Queen Creek contracts with Right Away Disposal to provide solid waste and recycling service to its residents. Benefits

## SAME DAY TRASH AND RECYCLING (CONTINUED)



Queen Creek Trash and Recycle Bins

realized by Queen Creek include: higher recycling participation by residents; convenience for customers; and coordination for street maintenance, street sweeping, and sidewalk repairs. In addition, there has been an increase in inspections since both trash and recycling bins can be inspected on the same day, helping to reduce recycling contamination, overfilled bins, and improper materials in the trash.

### **Surprise:**

In 2014, the City of Surprise implemented its same day trash and recycling program. The major benefit to the approximately 35,000 homes receiving service has been convenience. Cost savings and operational and/or routing efficiencies were also realized. In addition, neighborhood aesthetics were improved due to the containers being on the street only one day per week instead of two days. The annual budget supporting the same day collection operations is approximately \$2.5 million, which along with other solid waste programs, is funded through revenue generated by solid waste rates charged monthly to customers on their utility bill. There were cost savings associated with the same day trash and recycling program; however, the City also experienced an increase in operational costs (i.e., additional equipment and staffing) at the same time due to the need for additional routes to accommodate growth in residential housing.

### **Tolleson:**

The City of Tolleson same day trash and recycling program was implemented in 2016 when the City began contracting with Right Away Disposal for solid waste and recycling services. Previously, solid waste and recycling services were provided by the City, where due to its small size, same day collection was not feasible. The cost to transition to the new program was funded by residential and business rates. In general, contracting the service will save the City an estimated \$240,000 annually. In addition, the level of service is improved with same day collection and the frequency of bulk pick up has increased.

### **Youngtown:**

The same day trash and recycling program in the Town of Youngtown was implemented to communities beginning in 2014, and to all residents in early 2017. The Town reported that the program provides efficiencies for both the contractor and the residents. Since the Town of Youngtown contracts with Parks and Sons of Sun City for solid waste and recycling services, the Town experienced no start-up costs by switching to same day collection.

# CHRISTMAS TREE DROP OFF PROGRAM

The City of Goodyear Christmas tree drop off program was identified in the 2012 Solid Waste Best Practices in the MAG Region Report as a best practice. It offers residents an opportunity to properly dispose of their Christmas trees. In Goodyear, the trees collected are then chipped and used for mulch or ground cover. A Christmas tree drop off location is provided by many communities across the region. Currently, 21 communities are implementing this best practice, and all have initiated their Christmas tree drop off programs prior to 2012.

## **Apache Junction:**

Since 2002, the City of Apache Junction has had a Christmas tree drop off program. It is a free service provided to residents. The trees can be dropped off at two different locations. The City of Apache Junction then chips/cuts the material and uses it in the City parks for mulch.

## **Avondale:**

In 2005, the City of Avondale began a Christmas tree drop off program. In partnership with A-Z Rentals, Avondale residents are able to drop off trees at the local A-Z Rentals facility during a two week period over the holidays. A-Z Rentals provides the roll off bins and chipper to mulch the trees. The material is then donated for ground cover at a farm in the area. The benefit of this partnership is residents are able to drop off their trees as soon as possible following the holidays versus having to wait until bulk trash pick up. In addition, it reduces the risk of the trees being lit on fire when placed curbside. Trees that are collected through bulk trash are also provided to an area farm that mulches the trees and utilizes the material. The City reported that there were no initial start-up costs associated with the program.



*Avondale Christmas Tree Drop Off Location*

## **Buckeye:**

The Christmas tree drop off program in the City of Buckeye was first implemented in 2005. From 2005 through 2008, trees could be dropped off at an unmanned roll off container downtown. However, the site began to attract illegal dumping. From 2008 through 2011, curbside collection of trees was offered to residents. Many residents were not familiar with this program or indicated that they did not get the opportunity to dispose of their tree. As a result, the City implemented a new program in 2012 that consisted of the contracted provider manning a roll off container at five locations (fire stations) throughout the City. By dropping off the trees at a public site, the potential for illegal dumping was removed. In addition, the drop off sites are more convenient and provide better service to the residents. The greatest advantage to Buckeye is the minimization of illegal dumping and the associated clean up by City staff. There is no cost to the City for this program since it is part of the contracted residential service provided by Republic Services. It is included as part of the monthly rate residents pay for curbside trash and recycling.

# CHRISTMAS TREE DROP OFF PROGRAM (CONTINUED)

---

## **Chandler:**

Since at least 1995, the City of Chandler has offered its residents a Christmas tree drop off location. Currently, the City provides three options for disposing of Christmas trees. First, there are eleven neighborhood drop off sites located throughout the City from December 26th through the third week of January. Roll off containers are generally placed in the parking lot of City parks and are monitored approximately three times per week. The second option is curbside collection from December 26th through the third week of January. Residents can place their trees on the curb, separate from the recycling container, on their scheduled recycling collection day. The third option available to residents is bulk trash collection, which is scheduled at the resident's convenience. The City of Chandler contracts with Waste Management for trash and recycling services and it is the contracted provider that offers these options to residents. This seasonal program is funded in the Solid Waste Services annual budget. The program results in cost avoidance due to the chipped material being used in parks and for other utility purposes in the City.

## **El Mirage:**

In 2012, the City of El Mirage began providing a Christmas tree drop off program to its residents. The trees are collected by its contracted provider, Parks and Sons of Sun City, for chipping and use in other applications. The benefit of the program is that residents are provided a place to dispose of their Christmas trees free of charge. The start-up costs for the program included \$1,500 for resident notification. Annually, there is a \$600 operational cost for rental of the container to collect the trees. The program is funded through the City's sanitation services budget. The main source of cost reduction is the elimination of fees associated with disposal of the trees.

## **Florence:**

The Christmas tree drop off program in the Town of Florence began in 2012. The contracted provider, Right Away Disposal, offers two sites where residents are able to drop off trees. The trees may

also be disposed of through the once per month bulk trash pick up. The contracted provider is responsible for costs associated with the program and there are minimal cost reductions or revenue generated.

## **Gila Bend:**

In 2007, the Town of Gila Bend implemented its Christmas tree drop off program. Residents may drop off their trees at the Gila Bend Transfer Station. The Town chips the material, which is then disposed of by its contracted provider, Waste Management, or collected by the City of Phoenix.

## **Gilbert:**

Since 2006, the Town of Gilbert has had a Christmas tree drop off program. For two to three weeks per year, the trees are collected at a controlled location utilizing fencing to identify the proper drop off location. All trees are collected, chipped and used by Waste Management. The Christmas trees are collected daily to ensure the location does not attract illegal dumping. The Town experienced no start-up costs associated with the program and funding for the program is included in the bulk trash collection budget as part of the enterprise funded residential program.

## **Glendale:**

The City of Glendale has provided a Christmas tree drop off program to its residents since at least the year 2000. The City provides drop off locations at City parks and contracts with a vendor for collection of the trees.

## **Goodyear:**

The City of Goodyear began its Christmas tree drop off program in 2006 by placing roll off containers throughout the City for approximately two weeks following the holidays. The City staff then collects the trees dropped off by residents and chips them into mulch. For a few years, Goodyear used prison labor to chip the trees. More recently, the trees are taken unchipped to a local farm where they are utilized for mulch. There is no

# CHRISTMAS TREE DROP OFF PROGRAM (CONTINUED)

charge for the City to take the trees to the local farm as long as there is no contamination, which is the biggest challenge with the program. Since the containers are open to the public and typically unsupervised, items such as trash and other green waste are sometimes placed in the roll off containers. Goodyear has also experienced instances where a roll off has been set on fire by vandals. The City has since relocated the roll off containers to more secure areas. Goodyear reported no start-up costs for the program. There is also no revenue generated from the program; however, the benefit comes from having the trees recycled and not disposed of in the landfill.

## Litchfield Park:

In 2008, the City of Litchfield Park implemented a Christmas tree drop off program. Residents are able to drop off their trees at a designated area next to City Hall for a three week period around the holidays. Litchfield Park contracts with Total Tree Care Specialist to chip the trees on site and take the material. The City reported that start-up costs and the budget for the program are minimal.

## Maricopa County:

Maricopa County has offered a Christmas tree drop off program at all six of the Maricopa County Transfer Stations since 2012. The material is then ground into compost for application on closed landfills as erosion control.

## Mesa:

Since 1994, the City of Mesa has had a Christmas



Mesa Christmas Tree Drop Off Location

tree drop off program. When the program was first implemented, the City held special events for the collection of Christmas trees to be dropped off. Now, Mesa has several drop off sites located throughout the City. The trees are collected by the bulk collection crew and taken to the Salt River Landfill at no cost. The annual budget for the program is approximately \$2,500. The program does not provide a cost savings; however, it provides a convenient way for the residents to dispose of their Christmas trees.

## Peoria:

The City of Peoria implemented its Christmas tree drop off program in 2010. Roll off containers are provided at eight locations throughout the City. Peoria coordinates these locations with businesses where the trees are sold and flyers are provided to the businesses that indicate drop off information. A challenge to the Christmas tree drop off program is illegal dumping at specific locations. The benefit to the program is that the trees are provided to a farm for compost versus being disposed of in a landfill.

## Phoenix:

The City of Phoenix has had a Christmas tree drop off program since 1991. The program is a public-private partnership between the Public Works and Parks and Recreation Departments and A-Z Equipment Rentals. Drop off sites are available for a two week period at 14 park locations and two



Mesa Christmas Tree Drop Off Location

# CHRISTMAS TREE DROP OFF PROGRAM (CONTINUED)

A-Z Equipment Rental locations. Christmas trees and wreaths may also be dropped off at the City of Phoenix 27th Avenue or North Gateway Transfer Stations. The Public Works Special Operations staff use rear-load equipment to count, compact, and remove the trees from the park locations and transport the trees to the transfer stations. The trees and wreaths are then mulched and repurposed at City parks. By having several drop off locations throughout the City of Phoenix, it is more convenient for residents to dispose of their trees and wreaths. In addition, it deters illegal dumping. The program also assists the City in achieving its goal of 40 percent diversion by the year 2020. The funding for the program is included as part of the residential monthly solid waste rate.

## **Queen Creek:**

The Town of Queen Creek began offering special events with the implementation of its solid waste program in 2010. At these events residents may drop off items such as Christmas trees, electronics, tires, appliances, and documents for shredding. As of 2017, latex paint is also accepted. The Town contracts with Right Away Disposal to conduct these special events.

## **Scottsdale:**

In 1997, the City of Scottsdale began implementing its Christmas tree drop off program. Scottsdale provides residents the opportunity to drop off their trees at two City park locations on one Saturday. There is also a week long Christmas tree curbside service. The trees collected are taken to the compost site located at the Salt River Landfill.

## **Surprise:**

Since 2008, the City of Surprise has offered a Christmas tree drop off program to its residents. There are several drop off locations throughout the City for resident convenience. Trees may be dropped off for three weeks starting December 26th. The sites are monitored and cleaned by Surprise Solid Waste staff at least once per week depending on the volume of trees delivered by

residents to each location. On average, City staff collect approximately 2,000 trees from the drop off locations annually. The major benefits of the program are convenience and safety for residents and staff since the trees do not need to be cut into smaller pieces as required for bulk trash collection. Annual challenges include staffing and equipment shortages. During the holiday season, employees take time off and residents have the highest volume of trash and recycling. The Christmas tree drop off program is funded through revenue generated by the monthly solid waste rates charged to residents as part of the utility bill.

## **Tempe:**

The City of Tempe has a Christmas tree drop off program that began in 1996. Trees may be dropped off at Kiwanis Park and the Household Products Collection Center through the end of January each year. In the past, Tempe also had a drop off location that was scheduled with another event; however, the City determined it was not the best use of resources. Tempe is exploring the possibility of having trees dropped off directly at the Rio Salado and Hardy compost yard in the future. The trees are ground and the compost is then used by schools and residents as well as in City parks. Tempe currently pays \$24 per ton to grind the material; however, the City is researching alternative options such as purchasing grinding equipment that could be used among a group of municipalities. The City experiences a small savings since landfill costs are just over \$26 per ton while the cost to grind green organics, including Christmas trees, is \$24 per ton. There is also a small cost savings in mileage traveled; however, the major benefit of the program is diverting the trees from the landfill.

## **Tolleson:**

In 2010, the City of Tolleson implemented its Christmas tree drop off program. The City has partnered with its contracted hauler, Right Away Disposal, to provide the tree recycling service. There are many benefits to the program including the reduction of illegal dumping and collecting the trees at

# CHRISTMAS TREE DROP OFF PROGRAM (CONTINUED)

---



*Tolleson Christmas Tree Drop Off Location*

once versus individual home pick up or after illegal dumping. A major challenge for the program has been residents dropping off the trees late, after the designated timeframe has ended. The minimal start-up costs included signage and clearing a lot for the drop off location.

## **Wickenburg:**

The Town of Wickenburg Christmas tree drop off program has been in existence since 1970. This service is provided by the Town and the drop off location is adjacent to its maintenance shop. The biggest challenge has been informing residents to discontinue using a previous, long-time site located on private property that has changed ownership. The annual budget is a portion of the Town's tipping fee budget and is estimated at 2.5 tons of material with an associated cost of approximately \$150 for disposal.



# COMMERCIAL RECYCLING FOR CITY COMMERCIAL ACCOUNTS AND MULTI-FAMILY PROPERTIES

In the 2012 Solid Waste Best Practices in the MAG Region Report, the City of Scottsdale identified commercial recycling for city commercial accounts and multi-family properties as a best practice. The program provides commingled recycling service and cardboard box pick up for commercial accounts in the City. In addition, the commercial recycling routes service public drop off points that are used by residents and businesses that do not have City service. As reported on the 2016 survey, there are 10 communities in the region offering recycling for commercial accounts and/or multi-family properties. Two of these communities have implemented this best practice since 2012.

## Gila Bend:

The Town of Gila Bend has had a commercial recycling program since 2007. Businesses in Gila Bend contract with either Waste Management or Belmont Waste Disposal directly.

## Gilbert:

In 2006, the Town of Gilbert implemented a recycling program for commercial accounts and multi-family properties. Commercial account customers can also receive cardboard recycling service.

## Guadalupe:

Since 2017, a recycling program has been offered to Town of Guadalupe commercial accounts and all multi-family housing commercial accounts. The program has been very successful with no issues.

## Mesa:

The City of Mesa implemented a commercial commingled pilot program in 2015. In order to get the



Mesa Truck and Recycling Bin

program up and running, the City used existing surplus bins. The pilot program allowed the City to offer commingled recycling for both multi-family and commercial accounts. This program is in addition to the cardboard and newspaper recycling programs the City has offered for years. The benefits of the recycling programs include a City savings on tipping fees for solid waste, revenue from the recycling materials, and a savings to the customer on their solid waste bill. The program also assists the City in meeting its diversion goals. The City of Mesa charges \$20 per month for each commingled recycle bin. Existing surplus bins were used for the program.



Mesa Cardboard Recycling Bin

# COMMERCIAL RECYCLING FOR CITY COMMERCIAL ACCOUNTS AND MULTI-FAMILY PROPERTIES (CONTINUED)

## Peoria:

Multi-family accounts have been offered since Peoria implemented residential recycling in 2007. However, it was not until 2011 that modifications to regular commercial accounts were implemented to include recycling. Multi-family properties or businesses can call the City to set up a commercial account. Peoria staff also proactively contact new businesses and multi-family properties to set up accounts. One primary challenge is the lack of space for a container on some properties. Also, multi-family accounts have a high contamination rate due to the transient nature of the occupants. A flat rate of \$25 per container is charged for commercial accounts. Different sized containers are available.

## Scottsdale:

The City of Scottsdale has offered commercial recycling for City commercial accounts and multi-family properties since 2002. The program has since grown to include commercial front load service for recyclables. Businesses contact the City to set up a comingled recycling service account. The size of the container is dependent upon the location and space available. Container sizes could include 90 gallon, 300 gallon, and commercial containers. The City also offers cardboard box recycling. Multi-family or commercial accounts are able to call the City of Scottsdale for a cardboard box recycling appointment, which is made on Wednesdays. Benefits to

the commercial recycling program include increased diversion and greater access to the comingled recycling service.



Tempe Commercial Recycling Bins

## Tempe:

In 2006, the City of Tempe implemented a commercial recycling program. The City offers four, six, and eight yard recycling containers to its commercial customers and all comingled recyclable items are accepted. In 2016, Tempe also debuted a recycling program for multi-family units. An intern has been hired by the City to work with its recycling coordinator and commercial lead to conduct additional outreach to commercial customers. Costs for the commercial recycling program include signage and containers, which are covered by the enterprise fund.

## Tolleson:

The City of Tolleson has had a commercial recycling program since 2009. Commercial accounts for recycling services are mainly provided by private vendors. However, the City had provided recycling collection to a small number of restaurants. In 2016, solid waste and recycling services were transitioned from the City to a contracted provider, Right Away Disposal. Transition costs were funded by residential and business service rates. By contracting solid waste and recycling services, the City is estimating an annual savings of approximately \$240,000.



Scottsdale Recycling Material Collected

# COMMERCIAL RECYCLING FOR CITY COMMERCIAL ACCOUNTS AND MULTI-FAMILY PROPERTIES (CONTINUED)

---

## **Wickenburg:**

The Town of Wickenburg commercial recycling program was partially implemented with its curbside recycling program in 2011. Additional businesses were then added on a case-by-case basis. In 2013, the Town sold its larger commercial sites with metal dumpsters to a private company. However, the Town still provides commercial recycling service to sites with plastic containers where feasible. In addition, commercial businesses may create accounts with private vendors of their choice. The initial start-up costs for the Town's residential and commercial accounts combined were approximately \$153,700 with an annual budget of \$15,000. The tonnage of commercial and residential recyclable materials collected by the Town in 2015/2016 was 609.33 tons, which generated revenue of \$12,109 and a cost reduction of \$9,151.



## **Youngtown:**

In 2009, a commercial recycling program was made available to businesses in the Town of Youngtown. Businesses may contract with a private provider for the service, including Parks and Sons of Sun City and Waste Management. There is no cost to the Town.



# CURBSIDE RECYCLING COLLECTION PROGRAM

The Town of Wickenburg identified its curbside recycling program as a best practice in the 2012 Solid Waste Best Practices in the MAG Region Report. The program provides comingled curbside recycling services, making recycling convenient for residents. The Town also expanded the program to include businesses. Curbside recycling has been successfully implemented across much of the MAG region. According to the 2016 survey, 25 jurisdictions offer curbside recycling to their residents. Three communities have added curbside recycling since the 2012 Solid Waste Best Practices in the MAG Region Report was prepared.

## **Apache Junction:**

Beginning in 2014, residents in the City of Apache Junction have been able to receive curbside recycling collection. Residents work directly with one of three trash/recycling haulers to receive the service (Republic Services, Right Away Disposal, or Waste Management). There are no costs incurred or revenue generated by the City.

## **Avondale:**

In 2003, the City of Avondale began implementing a curbside recycling program. The City provides residents with a 90 gallon container for once per week curbside recycling collection. The benefits of the program include reducing the amount of material that is taken to the landfill, which in return brings revenue to the City. The initial start-up cost for the program was \$594,000; however, the City received a \$200,000 grant from the Arizona Department of Environmental Quality for the purchase of 13,000 containers and educational materials. As of the end of FY 2014/2015, Avondale had collected \$929,897 in revenue.



*Avondale Curbside Recycling Collection*

## **Buckeye:**

Residents in the City of Buckeye began receiving curbside recycling service in 2008. The City incorporated the program into its resolicitation for residential curbside collection. The biggest challenge faced when implementing the program was the in-ground trash containers in Sun City Festival. There was initial concern that not enough space was available in the current container for trash, then having to use a second container for recycling. In addition, more education was needed to address what items are recyclable and concerns that the recycling program would be too onerous. The biggest advantage of the program is extending the life of the Southwest Regional Landfill through waste diversion. This landfill is a wholly owned landfill of the City, operated under a public-private partnership. The City prepared a variance plan that was approved by the Maricopa County Environmental Services Department. Costs for the curbside recycling program, provided by Republic Services, are incorporated into the contracted rates.

## **Chandler:**

Since 1995, the City of Chandler has offered a curbside recycling collection program, which is conducted by a contracted provider, Waste Management. Costs for the program include: staff positions for recycling program operations (recycling coordinator, field

# CURBSIDE RECYCLING COLLECTION PROGRAM (CONTINUED)



Chandler Curbside Recycling Collection

staff); purchase of recycling containers; and promotion of implementation, awareness of recyclable materials accepted, and the benefits of the program. An operating budget for the recycling program was adopted and approved by the Chandler City Council. The program results in a cost avoidance due to the diversion of recyclable materials from the landfill. In addition, the contractual terms of the agreement with the Materials Recovery Facility are associated with revenue sharing, which set the funding source for recycling education and enforcement.

## **El Mirage:**

In 2012, the City of El Mirage began offering curbside recycling collection to its residents through its contracted provider, Parks and Sons of Sun City. The contracted weekly service benefits both the residents and the City by providing proper collection of recyclable materials. The only challenge reported was the space taken when the recycling container is placed alongside the trash container due to same day service. In addition, the space between the trash and recycling container for collection by the trucks can be an issue. The City pays \$7.38 per account for trash and recycling pick up for a total cost of approximately \$780,000 annually.

## **Florence:**

Residents in the Town of Florence began receiving curbside recycling collection when Town service was transitioned to contracted service with Right Away Disposal in 2012. Residents benefit from a convenient means of recycling items. The Town reported that there were some challenges with resident education of the new recycling program. The minimal cost associated with the program included fliers, magnets, and other educational information. The majority of the costs associated with the program are paid for by the contracted provider. A cost reduction was experienced as a result of the change to contracted service. Residential fees were reduced from \$29 per month to \$17 per month.

## **Fountain Hills:**

In 2010, Republic Services began providing curbside recycling service to the residents of the Town of Fountain Hills. Previously, the Town had a community drop off program that was difficult to manage. The curbside recycling program has made collection much easier for the Town and its residents. Any costs for the program are incurred by the contracted provider.

## **Gila Bend:**

The residents in the Town of Gila Bend have had curbside recycling since 2007. The Town contracts with a waste/recycling hauler, Waste Management, to collect recycling curbside.

## **Gilbert:**

Since the year 2000, the Town of Gilbert has implemented a curbside recycling collection program. The Town provides weekly collection of 96 gallon automated containers at all single family residential households. Gilbert reported no start-up costs since they were offset by the collection variance from two trash collections per week administered by Maricopa County. The funding for the program is incorporated through the residential enterprise fund. The recycling material generates approximately \$790,000 per year in revenue.

# CURBSIDE RECYCLING COLLECTION PROGRAM (CONTINUED)

## **Glendale:**

The City of Glendale has provided curbside recycling to its residents since 2000.

## **Goodyear:**

The City of Goodyear implemented its curbside recycling collection program when the sanitation collection program switched to automated service in 2006. The source of funding for the program is the monthly solid waste bill. Curbside recycling is a contracted service provided by Waste Management. The City does not receive any revenue from the program.

## **Guadalupe:**

In 2013, residents in the Town of Guadalupe began receiving curbside recycling service.

## **Litchfield Park:**

The City of Litchfield Park residents have had curbside recycling since 2006. The City contracts with Waste Management to collect the recycling containers. Any costs are incurred by the private provider.

## **Maricopa:**

The City of Maricopa implemented curbside recycling in 2016 through a contracted provider, Right Away Disposal. The City costs include \$100,000 annually to the waste/recycling hauler for the collection of recyclable material from the residents.

## **Mesa:**

Since 1994, the City of Mesa has provided curbside recycling to its residents. Benefits of the program include revenue for recyclable materials, reduced tipping fees, and the ability to meet diversion goals. Mesa reported that one challenge is the continuous education to ensure proper recycling and reduce contamination. Costs of the program included operator time and the purchase of the blue barrels. The annual avoided landfill costs for FY 2015-2016 were approximately \$835,000.



*Mesa Curbside Recycling Collection*

## **Peoria:**

A curbside recycling program has been provided by the City of Peoria since 2007. The City reported that landfill costs decreased \$315,155 within the first three years of implementing the program.

## **Phoenix:**

The City of Phoenix was a pioneer in single stream recycling, beginning its curbside program in 1989. Phoenix has realized many benefits as a result of curbside recycling, including: cost avoidance of long hauling material to the landfill; revenue generated by the sale of recyclables; and prolonged life of the landfill due to waste diversion. The recyclable materials generate revenue based on the market rates for the commodities. This past year, the City's

# CURBSIDE RECYCLING COLLECTION PROGRAM (CONTINUED)



Phoenix Materials Recovery Facility

revenue totaled more than \$4 million. A variance from Maricopa County was obtained to collect recyclables once per week and have it count toward the required twice per week collection. As a result, there are no additional costs for the program, which is funded by the residential solid waste fee.

## **Pinal County:**

Pinal County residents receive curbside recycling through Right Away Disposal.

## **Queen Creek:**

Since 2010, the Town of Queen Creek has provided curbside recycling to its residents through a contracted provider, Right Away Disposal.



Queen Creek Trash and Recycle Bins

## **Scottsdale:**

In 1996, the City of Scottsdale implemented its curbside recycling collection program and currently provides the service to over 80,000 single family homes. The benefits of the program include: diversion, revenue, and disposal fee savings.



Scottsdale Curbside Recycling Collection

## **Surprise:**

The City of Surprise began implementing a curbside recycling program in 2004. Residents are provided with a 95-gallon container and small recycling receptacle for inside the home. The major benefit of the weekly service includes diversion of recyclable material from the landfill and the stabilization of trash collection rates as the City is paid by the Materials Recovery Facility for the recycling tonnage brought to the facility. The major challenges are maintaining a robust and effective recycling outreach program and minimizing the amount of contamination from unacceptable items (i.e., trash, plastic wrap or bags, food, etc.). The curbside recycling program is part of the budget for same day collection operations, which is approximately \$2.5 million annually. It is funded through revenue generated by solid waste rates charged monthly to residential customers. In addition, the City also receives, by contract with a private Material Recovery Facility, \$20 per ton for recycling tonnage brought to the facility. However, if the contamination rate is 25 percent or higher, no revenue is received. The recycling revenue generates \$200,000 annually, assisting the City in

# CURBSIDE RECYCLING COLLECTION PROGRAM (CONTINUED)



*Surprise Curbside Recycling Collection*

keeping residential rates lower than if this revenue source was not available.

## **Tempe:**

Since 1993, the City of Tempe has implemented a curbside recycling program. Almost all residential communities, with the exception of a few mobile home parks and multi-family communities, have a 96-gallon recycling barrel with some 300-gallon recycling bins in alleyways. Tempe reported that contamination continues to be an issue in certain areas, particularly plastic film. There is confusion on what is and is not recyclable. The City is working to mitigate this issue through homeowners association (HOA) outreach, social media campaigns, using social norms to emphasize desired behavior, education from staff, and other methods. To begin the curbside recycling program, the City obtained a \$1 million loan, which was repaid over the course of several years. Start-up costs included side loaders, curbside barrels, personnel, etc. The program provides the City a savings through the avoidance of landfill tipping fees. The program also generates revenue from recycling, which may change in the future.

## **Tolleson:**

The City of Tolleson curbside recycling program was implemented in 2009. Curbside recycling services were provided by the City until 2016, when it was transitioned to Right Away Disposal. Tolleson reported that the biggest challenge is education on what items are accepted in the recycling program.

The initial start-up costs for the program were approximately \$60 per account for the new recycling barrels. Each year the City recycles approximately 340 tons of material, which has resulted in a major reduction in the waste stream as well as a cost savings. The City of Tolleson currently pays \$26.43 per ton for refuse and there is no cost for recycling. According to the City, approximately \$9,000 is saved annually due to the program.



*Wickenburg Curbside Recycling Program*

## **Wickenburg:**

The Town of Wickenburg implemented its curbside recycling program in 2011. Since that time, Wickenburg has expanded the program to include commercial sites. The initial start-up budget for both residential and commercial accounts was approximately \$153,700. The annual program budget is approximately \$15,000. In 2015/2016, the total tonnage of recyclables collected from commercial and residential sites was 609.33 tons. This generated \$12,109 in revenue and resulted in a cost reduction of \$9,151.

## **Youngtown:**

Curbside recycling has been offered to Town residents on a bi-weekly basis since 1991. In 2014, select communities in the Town of Youngtown began receiving weekly curbside recycling service through the contracted provider, Parks and Sons of Sun City. This was eventually rolled out to the remaining communities in the Town in early 2017. Today, all Town residents are offered the weekly curbside recycling collection. There is no cost to the Town.



# SOLID WASTE/RECYCLING EDUCATION AND OUTREACH PROGRAM

In the 2012 Solid Waste Best Practices in the MAG Region Report, several communities identified solid waste/recycling education and outreach as a best practice: the City of Avondale, City of Chandler, City of Mesa, Town of Queen Creek, and the City of Tempe. These programs encourage residents to reduce the amount of waste sent to the landfill through reusing and recycling. There are many innovative programs in the region designed to educate and inform residents on the importance of recycling and reducing waste. According to the 2016 survey, this best practice is currently being implemented in 22 communities across the region. One community has implemented its solid waste/recycling education and outreach program since 2012.

## Avondale:

When the City of Avondale began its recycling program in 2003, it introduced a character named Phil D. Blue to educate residents about recycling and encourage participation. Avondale went on to



Avondale Public Works Sanitation Mascots

expand the program to include a “Cast of Characters” including Will I. Close, Miss D. Curb, and Bulk E. Pile. In addition, the City incorporated “smiley face” and “thumbs up” stickers into the program. The start-up costs included \$250 for each character to be developed by an artist. The ongoing costs for the program are included in the existing operating budget for advertising.

## Buckeye:

In 2008, the City of Buckeye implemented a solid waste/recycling education and outreach program in conjunction with the new curbside recycling service. Initial outreach consisted of mailers, magnets, booths at events, and presentations at HOA and club meetings. Following the initial implementation of the recycling program, the City and the contracted provider for curbside recycling service, Republic Services, reached out to many school districts in Buckeye to encourage recycling as part of their daily waste management. As a result, recycling has been successfully included into many schools. This activity continues as the contract with Republic Services includes education and outreach collaboration



Avondale Solid Waste/Recycling Education and Outreach

# SOLID WASTE/RECYCLING EDUCATION AND OUTREACH PROGRAM (CONTINUED)



*Buckeye “do more blue” Education and Outreach Material*

as part of the service. The City of Buckeye currently uses multiple venues for public outreach including the local newspaper, flyers, phone blasts, Community Services Department publications, public speaking engagements, and Constant Contact. Buckeye began using Constant Contact in 2016 to provide monthly solid waste and recycling “trash talk” and other Public Works related information directly to customers. The City currently utilizes the slogan “do more blue” to encourage residents to think about recycling. The current diversion rate for Buckeye is 19 percent, and contamination rates have gone from 30 percent to five percent over the past three years. Buckeye cites diversion from the Southwest Regional Landfill as a major benefit of the program.

In 2017, the City of Buckeye also initiated cooperative agreements with local charitable organizations, Buckeye Goodwill and All Faith Community Services, to publicize their ability to receive reusable or recyclable white goods, mattresses, and other items. The organizations will pick up these items directly from residences, which assists the City in reducing the amount of illegal dumping that occurs on open lands.

## **Chandler:**

In 2011, the City of Chandler developed recycling education kits that can be checked out by teachers of Chandler schools for educational purposes.

While these kits were created in 2011, the City has had an overall solid waste/recycling education and outreach program since 1994. Initially, community focus groups guided the City’s planning for incorporating recycling programs and programs necessary for public awareness and outreach. Chandler held neighborhood meetings; distributed printed materials and magnets; published newsletters; attended special events; offered presentations to civic groups, churches, and schools; posted billboards and other signage throughout the City; created adhesive labels for recycling containers; scheduled public service announcements; and other outreach.



*Chandler Solid Waste/Recycling Education and Outreach*

Chandler reported that the community has been very responsive to the recycling program and the greatest benefits include extending the life of the landfill by five years and generating revenue as a result of citizen participation in the recycling program. According to the City, there are also some challenges. One of the challenges with recycling is that programs differ. New Chandler residents may come from other cities and towns around the country where recycling programs are limited or require source separation. In addition, it can be difficult to find the right balance of outreach to serve a diverse community that had experienced significant growth. The City’s programs are funded by an annual budget and contractual terms of an agreement established with the Materials Recovery

# SOLID WASTE/RECYCLING EDUCATION AND OUTREACH PROGRAM (CONTINUED)

Facility for funding to support the City's programs for education/enforcement.

## **Florence:**

In 2012, the Town of Florence implemented a solid waste/recycling education and outreach program. Educational materials include fliers and magnets. In addition, the Town utilizes electronic resources. The annual budget for this program is \$500 per year.



*Florence Recycling Education and Outreach Material*

## **Fountain Hills:**

A solid waste/recycling education and outreach program began in the Town of Fountain Hills in 2010. The Town contracts with Republic Services for solid waste and recycling services, which includes education and outreach to residents. In addition, Fountain Hills is part of a pilot program with the contracted provider where organizations such as the Town can apply for a recycling project grant. Residents receive reward points for recycling that can in turn be used to vote on community projects. Residents also receive points for watching recycling videos. Fountain Hills has been part of the

pilot program for three years. The Town noted that other national programs have been modeled after this pilot program. Any costs associated with the outreach program are incurred by the contracted provider.

## **Gila Bend:**

Since 2007, the Town of Gila Bend has had a solid waste/recycling education and outreach program. The contracted provider, Waste Management, provides educational information in billing inserts to residential, commercial, and industrial customers.

## **Gilbert:**

The Town of Gilbert implemented its solid waste/recycling education and outreach program in 2000. The Town provides mailers, walk and talks, presentations, HOA and school communication, events, and other outreach. The budget for the program varies from year to year depending on programmatic changes that occur. On average, the budget is \$1.00 to \$3.00 per residential household per year.

## **Glendale:**

In 2000, the City of Glendale implemented its solid waste/recycling education and outreach program in conjunction with the curbside recycling program. The City's outreach efforts include: flyers, events, presentations, education at schools, and engagement with groups such as Boy Scout and Girl Scout Troops. In 2015, the solid waste/recycling education and outreach program reached 19,000 residents through direct contact. The annual budget is approximately \$650,000.

## **Goodyear:**

The Goodyear solid waste/recycling education and outreach program began in 2006 with the launch of the automated curbside collection program. The City conducted a large public outreach campaign that was implemented over several months. Grant assistance was provided through the Arizona Department of Environmental Quality for public education during the initial implementation of the

# SOLID WASTE/RECYCLING EDUCATION AND OUTREACH PROGRAM (CONTINUED)

automated curbside program. The outreach efforts included: block parties in several neighborhoods, HOA and school presentations, truck billboards, mail outs, information in City newsletters, Good-year website, creation of a sanitation hotline, and social media. The City staff provides outreach and education at community events and at schools when available. Reduction in staff has made it more difficult to continue to provide high levels of public outreach on a regular basis. The contracted provider, Waste Management, has become more involved in education and outreach within the community.

## **Guadalupe:**

In 2013, a solid waste/recycling education and outreach program was implemented in the Town of Guadalupe. The Town reported that contamination in the recycling container is an issue; therefore, there is continued education to residents.

## **Litchfield Park:**

The City of Litchfield Park has had a solid waste/recycling education and outreach program since 2006. The program consists of monthly billing statement inserts, which are provided by the contracted hauler, Waste Management.

## **Maricopa County:**

Maricopa County implemented a solid waste/recycling education and outreach program in 2012. As part of the program, flyers and brochures are distributed to residents. In addition, presentations are provided at Chamber of Commerce meetings and in classrooms.

## **Mesa:**

The City of Mesa created a working partnership with Mesa Public Schools in 2008 to implement a successful recycling program. Recycling containers are available at all school campuses and administrative locations. In addition to this partnership, Mesa has had a recycling education and outreach program for all residents since 1994. The City uses various materials and presentations to educate its residents on the benefits of recycling and proper recycling methods.

## **Peoria:**

In 2008, the City of Peoria implemented its solid waste/recycling education and outreach program. Information is provided to residents and schools on recycling, reuse, and reduction of general household waste. The outreach methods include: the City's website, social media, inserts, tours of the Materials Recovery Facility, and handouts and presentations at schools. Peoria received a grant to assist with the development of outreach materials for the implementation of same day trash and recycling. The City has committed funds for ongoing education.

## **Phoenix:**

The City of Phoenix has had a solid waste/recycling education and outreach program since 1990, which dates back to the implementation of its recycling services. Since then, the education and community outreach has expanded to include the following: presentations to the community and schools; free tours of the Materials Recovery Facility at the North Gateway Transfer Station; community events including national and local sports, Earth Day, and other sustainability-themed events; social media; traditional media such as television and radio; and videos on waste diversion and creative ways to reuse products. In addition, the City's community engagement services team deploys specialists to educate neighborhoods or households on a door-to-door basis where contamination in recyclables has been found.



*Phoenix Public Education and Outreach*

# SOLID WASTE/RECYCLING EDUCATION AND OUTREACH PROGRAM (CONTINUED)



Phoenix Trash and Recycling Stands

The City also reported some lessons learned through the process. Differences in recycling rules from neighboring cities can cause confusion to residents, which poses a challenge for staff that is working to educate residents on recycling. In addition, staff continue to explore opportunities for engaging and educating residents given that technology has become a large part of how people gather information. The annual budget for the program is approximately \$2.1 million and is provided by the City's Solid Waste Division, which is responsible for the collection and disposal of trash and diversion of recyclables and green organics for 395,000 households.

## Queen Creek:

Since the Town of Queen Creek began providing recycling in 2010, it has had a robust outreach program. The program consists of banners; e-newsletters; water bill inserts; website updates; social media; community events and guides; citizen leadership academy training; and school recycling education. Following the completion of the 2012 Solid Waste Best Practices in the MAG Region Report, the school recycling education program was expanded to include fifth through eighth grade education along with more interactive features. The curriculum is called Preserve the QC and contains higher level concepts as well as air quality and

water conservation information. The first through fourth grade curriculum is called Too Good to Throw Away and features information on basic recycling, landfilling, and natural resources.

In 2016, the Town of Queen Creek launched the Shut Your Lid outreach program. It is an extensive education program designed to decrease litter and contamination and increase diversion. The program includes enhanced inspections and outreach on residential containers, banners and outreach materials at Town events, social media campaigns, and website videos. The Town's education and outreach program is funded with the monthly residential rate charged to customers.



Queen Creek Special Event Display

## Scottsdale:

The City of Scottsdale implemented a solid waste/recycling education and outreach program in 1996. In field program representatives inspect, educate, and promote recycling to increase participation and diversion from the landfill. The program

# SOLID WASTE/RECYCLING EDUCATION AND OUTREACH PROGRAM (CONTINUED)



Scottsdale Solid Waste/Recycling Education and Outreach

includes outreach through the following: utility inserts; materials distributed by the inspector; the City website; Nextdoor.com; and events.

## Surprise:

In 2004, the City of Surprise began a solid waste/recycling education and outreach program in conjunction with its new recycling collection program. The education and outreach program generally includes the use of advertising and promotional materials to deliver the message to residents on trash/recycling collection services and proper recycling. The City also places advertising signs on its solid waste trucks to promote recycling. In addition, City staff attend school and community events and/or meetings to promote recycling. In addition, the solid waste inspection staff assists in delivering the outreach message to residents along with inspecting trash and recycling containers at the curbside.

The annual budget for the Surprise recycling outreach program is approximately \$160,000 annually. The program is funded from revenue generated by the solid waste rates charged monthly to residents. The City also receives a revenue payment from the Materials Recovery Facility of \$20.00 per ton for the sale of its recyclables on the commodity market. The annual revenue is approximately \$200,000 and is used to assist with the costs of



Surprise Solid Waste/Recycling Education and Outreach

the solid waste/recycling education and outreach program.

## Tempe:

Since 2009, the City of Tempe has had the Education Recycling Information Center (ERIC) as a key part of the City's outreach program. The ERIC offers residents hands-on education opportunities by providing interactive displays on conserving natural resources through solid waste best practices. Tempe is currently undergoing a revamping of the ERIC to include other aspects such as energy and water conservation; stormwater; and the Fats, Oils, and Grease Program. The initial cost of the ERIC truck and trailer was approximately



Tempe Education Recycling Information Center (ERIC)

# SOLID WASTE/RECYCLING EDUCATION AND OUTREACH PROGRAM (CONTINUED)



Tempe Solid Waste/Recycling Education and Outreach

\$155,000. Additional costs have been incurred to include updates. Once the ERIC is revamped to be more effective for education, the City would like to determine if there are measurable changes in recycling rates following a school visit. This will require measuring the school's waste and recycling for a couple months prior to the visit and a couple months after the visit. The City noted that a sizable portion of the school children and teachers would need to visit ERIC in order to receive an accurate result.

In addition to ERIC, the City of Tempe has redesigned its website and is developing a social media site called Sustainable Tempe. The site has an electronic mailing list serve for residents interested in sustainability events. Tempe noted that it also has utilized targeted mailings and hopes to participate in more HOA education and outreach efforts in the future.



Tolleson Solid Waste/Recycling Education at Local School

## **Tolleson:**

The City of Tolleson implemented its solid waste/recycling education and outreach program in 2010. The program primarily consists of materials on the City's website. However, Tolleson also sets up booths at local schools and at City Hall on occasion to promote recycling. The City noted that costs for the program are minimal and include website updates and utility bill inserts. Since implementation of the program, the City reported that recycling contamination rates have dropped.

## **Wickenburg:**

Since the Town of Wickenburg began offering curbside recycling in 2011, the Town has had a solid waste/recycling education and outreach program. A large community outreach was implemented at the beginning of the program to educate residents and commercial customers about the type of materials that can be recycled. Since the launch, the Town has held an annual campaign of educational materials that are included in the utility bills. In addition, stickers are placed on containers and letters are sent to customers where contamination is discovered following an audit of their recycling container. The Town also conducts an annual event at the elementary school during Public Works Week. Wickenburg budgets approximately \$200 annually for education and outreach.

## **Youngtown:**

Since 1991, the Town of Youngtown has had a solid waste/recycling education and outreach program. This program was reformed in 2014 at the same time the Town began its curbside recycling collection program. The contracted hauler, Parks and Sons of Sun City, provides educational materials that are placed at Town Hall, the Town Library, and in the customer's monthly bill. There is no cost to Youngtown.



# TRASH TO TREASURE REUSE PROGRAM

**In the 2012 Solid Waste Best Practices in the MAG Region Report, the City of Chandler identified its trash to treasure reuse program as a best practice. The program diverts gently used household items that are brought in by residents to the Recycling-Solid Waste Collection Center in Chandler. The donated items assist charities in helping others in need while diverting the useable items from the landfill. According to the 2016 survey, there are three communities in the region that have a trash to treasure program. One of the three jurisdictions has implemented this best practice since 2012.**

## **Chandler:**

The City of Chandler has offered its trash to treasure reuse program at the City's Recycling-Solid Waste Collection Center since 2011. Residents and businesses in any community are able to drop off gently used or easily repairable items. Chandler continues to work with four nonprofit organizations that collect these items to assist people in need. These organizations include: Big Brothers/Big Sisters of Central Arizona, Catholic Charities Community Services, Stardust Building Supplies, and Swift



*Chandler Trash to Treasure Reuse Program*

Charities for Children. The initial startup-cost of \$200 was for the construction of covers for the roll off containers used to store the reusable items. The program results in a cost avoidance due to reusable items being diverted from the landfill.

## **Gilbert:**

In 2012, the Town of Gilbert implemented a stop and shop program at its Household Hazardous Waste (HHW) Facility. Residents are able to take and use any unopened items that have been dropped off at the facility. The Town reported that there were no start-up costs and the program is funded by the Residential Enterprise Fund. The cost reduction from implementing the program is minimal.



*Gilbert Stop and Shop Program*

## **Tempe:**

The City of Tempe provides multiple opportunities for diverting reusable items from the landfill. The first reuse program involves the collection of used clothing during the Tempe Zero Waste Day events, which are now held bi-annually. At the Zero Waste Days in November 2015 and April 2016, the clothing and other textiles dropped off by residents were collected by either Goodwill of Central Arizona or Threadz. The material was then kept for their mission-oriented programs or sold to raise funds for their organizations. In addition to textiles, Stardust Building Supplies collected usable building

# TRASH TO TREASURE REUSE PROGRAM (CONTINUED)

---

supplies and Goodwill of Central Arizona collected items such as clothing, household goods, furniture, working and non-working appliances, as well as other items.

In October 2015, the City of Tempe launched a community yard sale program that encourages yard sales. Tempe actively promotes the yard sales if they are under an HOA or neighborhood association and agree to host a post-yard sale pick up by one of the community partners (Arizona Humane Society, Big Brothers/Big Sisters, The Arc of Tempe, Goodwill of Arizona, and Salvation Army).

The City of Tempe has also recently started a program with Stardust Building Supplies, through a Request for Proposal (RFP) they were awarded, that allows them to be the official nonprofit that collects usable building materials from spring cleaning and remodeling projects. The program also allows Stardust Building Supplies to collect any usable building materials from alleyways ahead of bulk trash pick ups.

In addition, the City of Tempe is launching a move-out program for off-campus locations that involves the following community partners: Big Brothers/Big Sisters, Salvation Army, Goodwill of Central Arizona,

and The Arc of Tempe. Tempe reported no costs associated with these programs since the nonprofit organizations accept the items at no charge. The cost reduction due to the implementation of these programs would be the avoidance of landfill tipping fees. Since the programs are recent, the savings are minimal. The City is anticipating impressive cost savings in FY 2016-2017.



# ELECTRONIC WASTE RECYCLING PROGRAM (PERMANENT DROP OFF LOCATION)

**The electronic waste recycling program in the City of Goodyear was identified as a best practice in the 2012 Solid Waste Best Practices in the MAG Region Report. The City worked with a private hauler to stage a permanent drop off bin for e-waste at the White Tank Transfer Station. Nine communities in the region have indicated that an electronic waste recycling program with a permanent drop off location is offered to residents. According to the 2016 survey, one new electronic waste recycling program with a permanent drop off location was implemented since 2012.**

## **Buckeye:**

Since 2016, the City of Buckeye has offered its residents a permanent drop off location for electronic waste. With the purchase of a more spacious property for Public Works, Buckeye created a permanent storage facility and began offering scheduled residential drop off of electronic waste. The program does not have full-time dedicated staff; instead, existing compliance and management staff collect the electronic waste, maintain the storage area, and manage the recycling of the electronic waste.

## **Chandler:**

In 2006, the City of Chandler began its electronic waste recycling program, which includes the collection of items such as computers, printers, and household electronics. Residents are able to dispose of their electronic waste through the City's curbside recycling bulk collection or at the Recycling-Solid Waste Collection Center. By providing these options, Chandler makes it convenient for residents to properly dispose of their electronic waste. When feasible, it offers safe handling and recycling versus landfill disposal. In addition, revenue is

generated when the market bears a fair value for the material. There are also challenges associated with electronic waste recycling, including: limited competitive resources for recycling electronics locally, and a declining market for commodities pricing that impacts the City's ability to generate revenue for the material. The costs associated with hauling the electronics to a recycler are funded in the City of Chandler's annual budget. The program results in a cost avoidance due to the recyclable materials being diverted from the landfill.

## **Gilbert:**

Since 2010, the Town of Gilbert has provided residents a permanent drop off location for electronic waste. Residents are able to drop off their electronic waste at the Town's Household Hazardous Waste Facility. The Town reported that there were no start-up costs associated with providing the drop off location and it is funded through the residential enterprise fund.



*Gilbert Household Hazardous Waste Collection Facility*

## **Glendale:**

The City of Glendale has had its permanent drop off location for electronic waste since 2012. Electronic waste is accepted at the Glendale Municipal Landfill, which is then collected by a contracted vendor for reuse and recycling.

# ELECTRONIC WASTE RECYCLING PROGRAM (PERMANENT DROP OFF LOCATION) (CONTINUED)



*Goodyear Permanent Electronic Waste Drop Off Location*

## **Goodyear:**

Since 2008, the City of Goodyear has offered residents a permanent drop off location for electronic waste. The City established the permanent site to address the anticipated increase in electronic waste generated from the changes to the television market. The site is located at the Waste Management White Tank Transfer Station in a secured location where residents can access it Monday through Saturday. The container is serviced by Westech Recyclers, which is the same company that provides the City's electronics recycling at the Household Hazardous Waste Day events. The electronics that can be reused are refurbished. Those that cannot be reused are shipped to processors for metal extraction. Challenges with the program include the disposal of cathode ray tube (CRT) televisions. The City of Goodyear and Westech Recyclers no longer accept CRT televisions. The City is seeing fewer CRT televisions; however, some still are dropped off. Waste Management is monitoring the drop off location to discourage improper CRT television disposal. Another challenge of the program is the decline in the commodity market.

There was no cost to the City of Goodyear or residents for the electronic waste permanent drop off location. The revenue generated from the metal

recycling offset the cost of the service. However, the recycling market has continued to weaken. The City has indicated that it may need to stop the program due to the declining recycling market. The cost reduction was from the diversion of the material from the landfill and, while the recycling markets were good, recycling the items with circuit boards. Since then, the markets have declined and costs have risen. Therefore, there is no revenue being generated by the program at this time.

## **Maricopa County:**

Maricopa County began providing permanent electronic waste drop off locations at each of its six transfer stations in 2012. All forms of electronic waste are accepted; however, a \$5.00 fee is charged for CRT units. Maricopa County reported no start-up costs associated with the permanent electronic waste drop off locations. A third party vendor, eGreen-IT Solutions, is utilized for the program.



*Maricopa County Permanent Electronic Waste Drop Off Location*

## **Queen Creek:**

In 2012, the Town of Queen Creek entered into an Intergovernmental Agreement with the Town of Gilbert for Queen Creek residents to utilize the Gilbert Household Hazardous Waste Facility. As part of the Intergovernmental Agreement, Queen Creek residents are able to drop off electronic waste at the facility year round. In addition, Queen Creek provides residents three other opportunities to drop off electronic waste at special events. The

# ELECTRONIC WASTE RECYCLING PROGRAM (PERMANENT DROP OFF LOCATION) (CONTINUED)

program has a budget of \$25,000, which is funded through the residential rate. However, the fees for use of the Gilbert facility are based on residential use per drop off. In the first year, the Town spent less than half of the budget. Participation has since increased to nearly \$25,000. The Town attributes the increase in participation to providing the required voucher online, making it more convenient for residents. The Town has also increased outreach for the program.

## Scottsdale:

Since 2002, the City of Scottsdale residents have been able to drop off electronic waste at the Scottsdale Solid Waste Yard. The program includes four electronics recycling events per year. The program provides minimal revenue and diverts the electronics from the landfill.

## Tempe:

The City of Tempe began collecting electronic waste at its Household Products Collection Center when it opened in 1999. Residents are able to drop off electronic waste on Fridays and Saturdays. In addition, residents are able to drop off electronic waste at two Zero Waste Days (April and November). The main challenge with the program is that there is now a cost to process some

electronics, such as CRT computer screens and televisions. The City has been working on an RFP for an electronic waste recycling vendor, which may be expanded to include household hazardous waste. Overall, the Household Products Collection Center has a budget of \$500,000 per year. The source of funding is two enterprise funds (Solid Waste and Recycling Services and Water). The costs associated with electronics are approximately \$10,000 per year.

CITY OF TEMPE'S 27TH  
**ZERO WASTE DAY**

Saturday, April 15 | 7 a.m. – 1 p.m.

Tempe Fire Training Facility, 1340 E. University Dr.  
(Directly north of Household Products Collection Center)

Slash the **TRASH**  
Reduce | Reuse | Recycle



# GREEN WASTE PROGRAM

**Three communities in the region identified their green waste program as a best practice in the 2012 Solid Waste Best Practices in the MAG Region Report. The City of Litchfield Park has a clean up day, which provides residents with a curbside pick up of green waste and debris once per year. Maricopa County identified its waste diversion and reuse pilot project as a best practice. This project involves chipping and/or grinding green waste for use as erosion control and soil amendments for existing cap material. Also, in the City of Tempe, the green waste to compost program has been identified as a best practice. Collectively, nine communities in the region have indicated that they have implemented a green waste program. Two of these programs began following the completion of the 2012 Solid Waste Best Practices in the MAG Region Report.**

## **Avondale:**

In 2013, the City of Avondale implemented its green waste program. Residents place their green waste at the curb during their designated bulk trash service week. One crew services the bulk trash and another crew services the green waste. The green waste is then utilized by Duncan Farms. The benefits of the program include: reducing the amount of waste taken to the landfill, increasing the



*Avondale Green Waste Program*

City's diversion rates, and saving the City money on tipping fees. A challenge Avondale has faced is that occasionally a resident not familiar with the program has combined their green waste and bulk trash piles. The initial start-up cost for the program was \$199,000.

## **Chandler:**

In FY 2013-2014, the City of Chandler implemented a green waste diversion program at the City's Recycling-Solid Waste Collection Center, a residential self-haul transfer facility. To date, the City has diverted approximately 4,700 tons of selected green waste originally destined for landfill disposal. Through an intensive waste screening process, the program achieves less than one percent contamination. City staff screens the loads when residents arrive to drop-off their green waste. The green waste loads are checked again when entering the drop-off zone, and one final check is completed prior to loading and transporting the material to a local green waste processing company for mulching and/or composting. Though cost savings is nominal, the program does offset the overall cost associated with disposing of waste that cannot be diverted through reuse and/or recycling.

## **Gila Bend:**

Since 2007, the Town of Gila Bend has provided a green waste program for its residents. The green waste may be dropped off at the Gila Bend Transfer Station. The material is then collected by the Town's contracted provider, Waste Management.



*Gila Bend Transfer Station*

# GREEN WASTE PROGRAM (CONTINUED)

A portion of the material is also periodically collected by the City of Phoenix.

## Litchfield Park:

The City of Litchfield Park implemented the Litchfield Park Clean Up Day in 2000. Residents are able to receive curbside pick up of their green waste and debris once per year. Benefits of the program include assisting residents in the disposal of green waste and the use of the material as mulch for projects in the City. The program began as a community involvement event on a Saturday with resident volunteers. Due to the cost of liability insurance and the purchase of personal protective equipment, the event is now conducted by City employees during business hours.



Litchfield Park Clean Up Day

## Maricopa County:

In 2012, Maricopa County implemented its waste diversion and reuse pilot project. The Maricopa County transfer stations collect and segregate green waste for future grinding into compost. The material is then spread onto closed landfill surfaces to serve as organic erosion/dust control. Costs for the project included the purchase of a grinder that is used at all six transfer stations. In 2014 through 2016, the project resulted in a landfill disposal savings of \$460,200. The County experienced a reduction of 547 round trips to the landfill, 32,872 miles driven, and 320 driver hours. In addition, there was a fuel savings of 4,669 gallons.



Maricopa County Compost Application on a Closed Landfill

## Mesa:

The City of Mesa began its green barrel curbside program in 1998. The green barrel is available to residents for collection of yard waste, which is then reused as compost and mulch. The benefits of the program include providing a lower cost option for residents to dispose of their yard waste and assist the City in meeting its diversion goals. Challenges of the program are contamination and the rising



Mesa Green Waste Bin

# GREEN WASTE PROGRAM (CONTINUED)

cost of tipping fees associated with the program. The initial start-up costs included outreach and education and the purchase of barrels. Residents are currently charged \$6.56 per month to participate in the green barrel curbside program. The material is then taken to the Salt River Landfill, Right Away Disposal, and Waste Management. The FY 2016-2017 budget for tipping fees is \$550,000.

## Phoenix:

Since 1996, the City of Phoenix has practiced green waste diversion at the landfill and transfer stations. In 2017, the City is scheduled to open its first compost facility that will be able to process up to 110,000 tons of green materials annually. The state-of-the-art facility is being constructed on 28 acres at the 27th Avenue transfer station. The facility is designed for positive and negative aeration processes using frequent pile turning, watering and temperature control to produce a stable cured compost in 45 to 60 days. While the facility is designed to process 110,000 tons of green waste annually, there will be the option for future expansion of up to 220,000 tons of materials. The high quality compost will be used internally on City parks and athletic fields as well as marketed to the general public. The compost facility is also designed to handle food scraps and is a key component in moving the City toward its diversion goal of 40 percent by year 2020.

The construction costs for the new compost facility are \$20 million. The annual budget is \$1 million-



Phoenix Compost

\$3 million, depending on the tonnage of material diverted. The facility is expected to generate minimal revenue during start-up; however, the processing contract is set up to have a revenue share component that may generate revenue in the future as production increases. The facility will divert materials from the landfill and save long haul and disposal operating costs of \$17 per ton.

## Scottsdale:

The City of Scottsdale began its green waste program in 2004. Green waste is collected monthly through the City's brush and bulk collection service. A major benefit of the program is that the collected green waste is diverted to the compost site located at the Salt River Landfill. Due to the diversion of the material, the life of the landfill is then extended.



Tempe Green Waste Processing Location

## Tempe:

The City of Tempe has a number of programs in place to divert green waste from the landfill. In 2010, the City launched its green waste to compost program. Green organics are collected from alleyways and curbside during three of the City's six bulk trash collections per year. This program initially began as a pilot project for 500 households and is now a permanent program implemented city-wide. Tempe is also exploring the possibility of expanding the tonnage and the type of material collected. Grass clippings are not accepted in bulk trash; however, grass clippings are accepted from commercial accounts. The City is investigating options for oleanders and palm fronds. Creative uses for tree stumps in parks or other projects are also being evaluated.

# GREEN WASTE PROGRAM (CONTINUED)



*Tempe Green Waste Collection and Processing*

In 2016, the City of Tempe implemented a pilot curbside compost program. The City identified larger properties in South Tempe within three neighborhoods that have additional trash containers. In addition, the City conducted door-to-door outreach to identify potential participants. Some residents with commercial front-load containers have also switched to the 96-gallon compost containers. Tempe is encouraging residents to participate in the curbside green organics pilot program. The cost associated with the compost container is less than the cost of an additional trash container. The City noted that grass clippings are accepted in this program. As a convenience for its residents, Tempe has also added a green organics drop off location.

In 2016, the City of Tempe began picking up a roll-off container from the Desert Botanical Gardens. In addition, an agreement was reached with Arizona State University (ASU) Athletics to accept their

green waste for a fee and to sell them compost for a fee. Other ASU material includes downed trees and shrubs generated by storms. The City is also collecting green organics from the Tempe Elementary School District.

Another program in the City designed to address green waste involves Tempe Solid Waste and Recycling Services opening its compost yard to provide compost to residents. The City has an industrial scale and scale house and is now able to accept green organics from residents and provide compost to them for free, as it is available. There is a compost pile that residents are able to access 24 hours per day, seven days per week. If additional compost is needed, residents are able to make an appointment with the City. In addition, the City of Tempe conducts compost giveaways approximately three to four times per year. The City plans to allow commercial customers from Tempe and beyond to drop off green organics for a fee and to buy compost for a fee.



*Tempe Compost Applied to a Field*

# HOUSEHOLD HAZARDOUS WASTE FACILITY

In the 2012 Solid Waste Best Practices in the MAG Region Report, three communities identified their permanent household hazardous waste (HHW) facility as a best practice: the City of Chandler, Town of Gilbert, and the City of Tempe. These facilities encourage the proper disposal of household hazardous waste by providing a permanent location for residents to drop off the materials. According to the 2016 survey, there are currently six communities in the region with a permanent HHW facility available to its residents. Two communities first began implementing this best practice following the completion of the 2012 Solid Waste Best Practices in the MAG Region Report.

## **Buckeye:**

In 2006, the City of Buckeye obtained a grant from the Arizona Department of Environmental Quality to host a household hazardous waste event. The event was not well attended; however, customer requests and individual drop offs after the event showed the ongoing need, and resulted in collaboration with the City of Phoenix to facilitate this service. As population increased and need for proper waste flow was observed, Buckeye developed a drop off process, a designated storage area, and a disposal contract. In 2016, with the purchase of a more spacious property for Public Works, Buckeye was able to create a permanent storage facility, provide scheduled residential drop off at the facility, and manage disposal in a cost-effective manner. The HHW program does not have full-time dedicated staff; instead, existing compliance and management staff manage collection and disposal activities, maintain the storage area, and manage proper disposal. Buckeye continues to look for cost effective methods to provide this service to its customers.



*Chandler Recycling-Solid Waste Collection Center—  
Household Hazardous Waste Drop Off*

## **Chandler:**

Since 2006, the City of Chandler household hazardous waste program has included a permanent HHW facility located at the Chandler Recycling-Solid Waste Collection Center (residential transfer facility). The HHW facility does not have full-time dedicated staff. Instead, to minimize costs associated with household hazardous waste operations, staff scheduled to fulfill transfer facility duties are scheduled to work HHW, based on the number of residents scheduled and the quantities of household hazardous waste anticipated for drop off. The staff assists residents and ensures safe and efficient operations. Approximately 80 percent of the HHW collected is recycled and/or reused.

The initial costs for the Chandler Recycling-Solid Waste Collection Center included \$350,000 for constructing the facility and \$225,000 for equipment and resources to set up the operation. The City maintains an annual budget of \$100,000 for the facility.

## **Gilbert:**

In 2008, the Town of Gilbert Household Hazardous Waste Facility was opened to provide residents a place to safely dispose of many HHW materials. The Town is able to recycle the majority of the materials brought to the facility. The current diversion rate is 89 percent. The facility is funded using the residential enterprise fund and has an annual budget of \$445,000 per year.

# HOUSEHOLD HAZARDOUS WASTE FACILITY (CONTINUED)



*Gilbert Household Hazardous Waste Facility*

## **Queen Creek:**

The Town of Queen Creek entered into an Intergovernmental Agreement with the Town of Gilbert in 2012 for Queen Creek residents to utilize the Gilbert Household Hazardous Waste Facility. The Town of Gilbert bills Queen Creek monthly based on the number of Queen Creek residents that drop off materials. A voucher system is used to track participation in the program. The Intergovernmental Agreement between Gilbert and Queen Creek specifies the amount of material that can be accepted.

## **Tempe:**

The City of Tempe was the first in the Valley to build a permanent HHW facility. The Household Products Collection Center was built in 1999 and accepts residential items such as HHW, electronic waste,

textiles, paper shredding, scrap metal, and commingled recycling. The City achieves a 90 percent recycling rate with the items that are dropped off by residents. The initial start-up costs for the facility were a match from an Arizona Department of Environmental Quality grant. The start-up costs included \$600,000 with an additional \$300,000 from the City to complete the project. The annual budget for operating, disposal, and personnel is \$500,000. All funds to operate the facility are through user fees from both the water and solid waste enterprise funds. The City reported no revenue generated from the collection of HHW. The only cost reduction methods are to lower the operating and disposal options for waste being brought into the facility.

## **Youngtown:**

Since 2013, the Town of Youngtown residents have had various methods to dispose of HHW at a permanent facility. Through the Town's private hauler, Parks and Sons of Sun City, residents can receive guidance and education on proper disposal methods and options available to them. There is no cost to the Town.



*Tempe Household Products Collection Center*

# HOUSEHOLD HAZARDOUS WASTE COLLECTION DAY

**In the 2012 Solid Waste Best Practices in the MAG Region Report, two communities identified their household hazardous waste collection day as a best practice: the City of Goodyear and the City of Litchfield Park. Many communities across the region have indicated that HHW collection events are part of the solid waste services provided to residents. According to the 2016 survey, there are 16 jurisdictions that conduct HHW events to ensure safe and proper disposal of the materials. Two of these communities have implemented their programs since 2012.**

## **Apache Junction:**

In 2008, the City of Apache Junction began hosting an annual HHW event at its public works yard. The City staffs the event and works with multiple vendors for HHW material pick up and disposal. The event is advertised on the City website, social media, and in local newspapers. It is typically held in the spring and is very popular with residents. Apache Junction also has an Intergovernmental Agreement with Pinal County for its residents to drop off HHW materials at the event. Pinal County then reimburses Apache Junction for the participation of its residents. As a result of the program,



*Apache Junction Household Hazardous Waste Collection Event*

there is a reduction in the clean-up of household hazardous waste being dumped in the desert. The collection event allows for proper disposal. The annual budget for the HHW collection event is \$23,000.

## **Avondale:**

The City of Avondale has provided its residents a HHW collection event since 2004. The City collaborates with the neighboring communities of Goodyear, Litchfield Park, and Tolleson on two household hazardous waste events per year. An Intergovernmental Agreement is in place for the events that allows residents from these communities to come through the designated location. Each year one event is held in Avondale and the other event is held in Goodyear. The HHW events are set up in a “drive thru” format and staff removes the items that are being dropped off. Due to this program, the amount of hazardous material being placed in the trash container is reduced. The City of Avondale budgets \$15,000 per year for the HHW events.

## **Florence:**

In 2007, the Town of Florence began offering residents a safe and proper disposal option for household hazardous waste. Once per year, the Town works with Right Away Disposal to conduct an HHW collection day event where residents can drop off HHW, electronics, and other similar items at no cost. All costs for the event are paid by the contractor and there is minimal cost reduction or revenue generated as a result of the program.

## **Fountain Hills:**

In 2017, the Town of Fountain Hills is planning to host an HHW event with Stericycle. The Town anticipates a cost of approximately \$50,000. The funds will come from a newly implemented environmental fee.

## **Glendale:**

The City of Glendale has had a household hazardous waste collection program for many years; however in 2000, the City implemented its home

# HOUSEHOLD HAZARDOUS WASTE COLLECTION DAY (CONTINUED)

collection service. From 2000 and 2004, the home collection service was performed by City staff. The program then evolved to having a contractor collect the waste directly from residents. The City coordinates two events per year, one in the spring and one in the fall. Each event includes a three week time frame where residents can call Glendale to schedule an appointment for pick up. The City contracts with Kary Environmental Services to conduct the residential home pick up of the HHW material. The annual budget for the HHW collection program is \$60,000, which is funded by the monthly residential solid waste rate.



*Goodyear Household Hazardous Waste Collection*

## **Goodyear:**

Since 2002, the City of Goodyear has provided household hazardous waste collection events for its residents. The program has evolved over time. In 2012, the City began collaborating with other West Valley cities to hold two regional HHW events per year. The cities of Avondale, Goodyear, Litchfield Park, and Tolleson entered into an Intergovernmental Agreement to conduct the joint events, which are held in Goodyear in the fall and Avondale in the spring. By holding joint events, the cities are able to share the costs, including labor costs. The events also provide an easy venue for residents to dispose of their HHW in a safe and environmentally sound way. In addition, the events help to prevent illegal dumping, which is more costly in the long run. Initially, a Solid Waste Reduction Grant from the Arizona Department

of Environmental Quality was available for the first event in 2002. However, the program is now funded by a portion of the residential monthly sanitation charge.

## **Guadalupe:**

Since 1999, the Town of Guadalupe, through the City of Tempe, has provided household hazardous waste collection day events for its residents. Currently, Zero Waste Day events are conducted for plastic bags and wrap, electronics, appliances, clothing, furniture, HHW, and automotive products (e.g., tires, oil, fluids). This program is being offered to Guadalupe since the City of Tempe bills Guadalupe water, sewer, and refuse. Residents must have their ID and a current water bill to participate in the events. The outreach/notification procedures are through a water bill insert, Town marquee, and brochures posted at Town Hall and special events.

## **Litchfield Park:**

The City of Litchfield Park has conducted household hazardous waste collection for its residents since 2004. The City currently partners with the cities of Avondale and Goodyear to conduct joint HHW events. The cities entered into an Intergovernmental Agreement and once per year, the City of Litchfield Park participates in a drop off HHW event at Goodyear City Hall. The cost of the program is based on the number of vehicles that participate in the event.

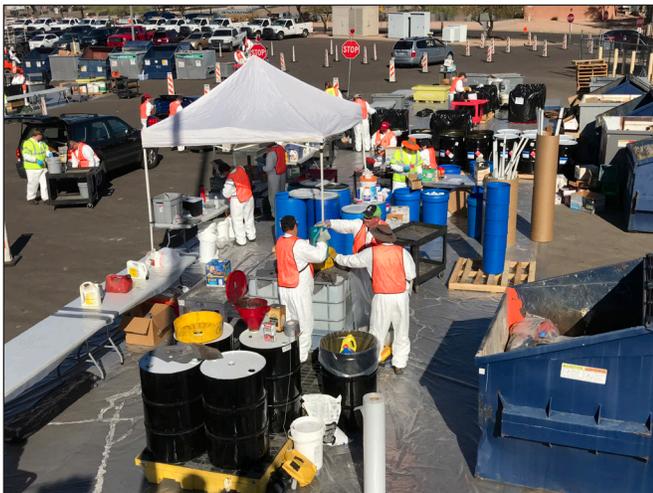


*Litchfield Park Household Hazardous Waste Collection*

# HOUSEHOLD HAZARDOUS WASTE COLLECTION DAY (CONTINUED)

## Mesa:

Since 2000, the City of Mesa has provided household hazardous waste collection events for its residents and currently hosts four drop off events per year. The household hazardous waste events in Mesa generate a substantial amount of material due to the high number of residents that participate. The City is currently evaluating the feasibility of building a permanent HHW facility. For FY 2015-2016, the annual budget for the four events is \$538,400. The program is funded by a monthly charge on every residential bill for an annual revenue of approximately \$615,000.



Mesa Household Hazardous Waste Collection Event

## Peoria:

In 1993, the City of Peoria conducted its first household hazardous waste event. The City now holds three HHW events per year. Two of the events are appointment based and one is a drop off event. Peoria organizes the events and contracts with various vendors. Current funding for the three events is \$100,000 per year.

## Phoenix:

Since its inception in 1985, the City of Phoenix household hazardous waste collection program has gone through a number of changes. However, the goal of the program remains the same, to ensure that hazardous materials purchased by individual



Paint Cans at the Phoenix Household Hazardous Waste Collection Event

residents do not pose a harm to the general public or the environment when thrown away. The proper disposal and recycling of HHW and electronic waste also diverts these materials from the landfill and supports the City in reaching its diversion goal of 40 percent by the year 2020.

The City of Phoenix currently hosts nine mobile HHW and electronic events per year (one event per month except for June, July, and August). The events are set up as a “drive thru” service where Phoenix residents can drop off household hazardous materials such as paint, automotive oils, automotive tires, household appliances, electronics, and pool chemicals. The nine events are held at various locations across the City in an effort to serve as many residents as possible. The events are



Phoenix Household Hazardous Waste Collection Event

# HOUSEHOLD HAZARDOUS WASTE COLLECTION DAY (CONTINUED)

typically held at a large City park or City facility. The City contracts with Environmental Response Inc. for HHW.

The estimated annual budget for the HHW and electronics collection events is \$546,000. The project is funded by the Solid Waste Fund and is part of the Diversion and Disposal Division's annual budget.

## **Pinal County:**

In 2016, Pinal County provided a site for Heritage Environmental Services to conduct an HHW collection day. Residents were encouraged to sign up to participate in the household hazardous waste drop off event, which also included the collection of electronics. Pinal County anticipates that future annual events will be conducted.

## **Scottsdale:**

The City of Scottsdale has provided residents with household hazardous waste collection since 2000. The HHW program currently includes one event per year as well as a home collection service. In the past, Scottsdale has conducted three events per year. However, the City is encouraging residents to participate in the home collection service and therefore reduced the number of events to one per year.

## **Surprise:**

In 2007, the City of Surprise began its household hazardous waste collection program. The City offers events at different times throughout the year to help protect the environment by properly disposing of items that may contain harmful chemicals. Currently, the City holds two collection events per year (October and April) and contracts with Advanced Chemical Transport for HHW disposal and recycling.

A major challenge the City faced in 2016 was the rising costs of conducting the HHW events. The 2017 budget will have a 25 percent cost increase



*Surprise Household Hazardous Waste Collection Event*

for the same level of service. Another challenge is that the program is offered to all City of Surprise residents; however, 56 percent of the participants are non-service (solid waste) paying customers. These residents receive trash and recycling service from a private waste hauler instead of the City of Surprise; therefore, no revenue is received from them to cover the entire costs of the two HHW events held for all City residents. The anticipated annual budget for 2017 is \$80,000. The events are subsidized through the revenue generated by the solid waste rates charge monthly to residential customers on their utility bills.

## **Tempe:**

Since 1999, the City of Tempe has provided HHW collection events for Tempe and Guadalupe residents. The City currently conducts Zero Waste Day events in the spring and fall next to the Tempe Household Products Collection Center. Items accepted at the Zero Waste Day events include household hazardous waste, plastic bags and wrap, electronics, appliances, building materials, automobile tires, scrap metal, textiles, furniture, books, and automotive products. The materials collected at the events are reused or recycled locally, regionally, and nationally. The costs for the Zero Waste Day events are included into the \$500,000 annual budget for the Household Products Collection Center. The City reported no revenue generated from the collection of HHW.

# HOUSEHOLD HAZARDOUS WASTE COLLECTION DAY (CONTINUED)

## **Tolleson:**

The City of Tolleson has provided its residents HHW collection events since 2012. Tolleson collaborates with the cities of Avondale and Goodyear on two household hazardous waste events per year. The cities entered into an Intergovernmental Agreement to allow the residents from these communities to participate in the regional events. The program results in a reduction of illegal dumping and hazardous waste cleanup. The City of Tolleson's portion of the shared cost is typically no greater than \$1,500 and requires minimal staffing on a Saturday.



*Avondale, Goodyear, Litchfield Park, and Tolleson  
Joint Household Hazardous Waste Event*



# HOUSEHOLD HAZARDOUS WASTE HOME COLLECTION SERVICE

The household hazardous waste home collection service in the City of Glendale was identified as a best practice in the 2012 Solid Waste Best Practices in the MAG Region Report. The City offers residents the opportunity to safely dispose of HHW through a home collection service provided by the City. A total of four communities in the region have indicated that they offer an HHW home collection service to their residents. Two of these programs have been implemented since the 2012 Solid Waste Best Practices in the MAG Region Report was prepared.

## Glendale:

Since 2000, the City of Glendale has conducted a household hazardous waste collection service. From 2000 to 2004, this service was provided by City staff. However, starting in 2004, a contractor began collecting the material directly from the residents at their homes. The program is offered twice per year where a resident can make an appointment with Glendale to have their HHW material picked up. Glendale then provides the appointment information to the vendor. A total of 1,500 appointments

are available each year, 750 appointments per event. One of the benefits of the program is saving the residents from potential HHW exposure during transportation to an event. The City's annual budget for the HHW collection program is \$60,000.

Announcing a new pilot program!



Starting January 2017, we'll come to your home to pick up your Household Hazardous Waste items!

### ACCEPTABLE ITEMS

- Oil based paint, used motor oil, anti-freeze or gasoline. (limit 5 gallons each, maximum of 20 gallons liquids per appointment.)
- Rechargeable and automotive batteries, paint thinners, fluorescent and CFL light bulbs, household and garden chemicals marked dangerous.

Items we can't accept: Appliances, Latex Paint, Tires, Electronics, Ammunition, Medical Waste, Explosive or Radioactive material



**Appointments are limited!**

Call 623.773.7836 between December 5-23, 2016 to schedule your pick-up in January



PeoriaRecycles

Peoria's Household Hazardous Waste Home Collection Program



Household Hazardous Waste from the Glendale Home Collection Service

## Peoria:

In 1993, the City of Peoria conducted its first household hazardous waste event. The City now holds three HHW events per year. Two of these events are appointment based. Peoria has contracted a vendor to collect hazardous items from residents at their doorsteps. Collection appointments coincide with days of collection in order to eliminate confusion. Peoria was recognized by the American Public Works Association (APWA) for its HHW by Appointment Program. The APWA is also suggesting that all cities consider this program as a model. The third HHW event in Peoria is a drop off

# HOUSEHOLD HAZARDOUS WASTE HOME COLLECTION SERVICE (CONTINUED)

event. Peoria organizes the events and contracts with various vendors. Current funding for the three events is \$100,000 per year.

## **Phoenix:**

The City of Phoenix currently provides HHW and electronics home collection service for elderly and/or disabled City of Phoenix solid waste customers who are unable to drive and have no other means to drop off materials at one of the nine collection events. This program began in 2005 and is coordinated to coincide with the nine scheduled mobile HHW collection events. Residents who qualify for the service can schedule a pick up by contacting the City's household hazardous waste specialist. The City is considering the possibility of partnering with a private waste/hazardous materials management company to provide home collection services. The cost of the program is included in the annual HHW budget of \$546,000.

## **Scottsdale:**

In 2015, the City of Scottsdale implemented its household hazardous waste home collection service. Scottsdale residents call the City to schedule an appointment during the nine months that the service is available. While the City also offers an annual HHW collection event, it is encouraging residents to participate in the home collection service. The program is funded by the solid waste fee charged to residents.



*Household Hazardous Waste*

# HYDRAULIC LEAK PREVENTION PROGRAM

**The City of Peoria hydraulic leak prevention program was identified in the 2012 Solid Waste Best Practices in the MAG Region Report as a best practice. Frequent hydraulic leaks from the City's fleet can cause serious issues and impact City resources. Peoria developed a plan to minimize and eliminate the hydraulic leaks. According to the 2016 survey, three communities currently have a hydraulic leak prevention program. One of these communities initiated its program since 2012.**

## **Peoria:**

The City of Peoria hydraulic leak prevention program was implemented in 2011. The City's Solid Waste Division had identified a serious issue with frequent hydraulic leaks from the fleet and the resources that were impacted when it occurred. A decision to create a plan to minimize or eliminate leaks was put into action. The Solid Waste and Fleet Divisions created a plan that involved field staff to accomplish this goal. After several months of discussion and planning, the plan was rolled out, milestones were evaluated, and adjustments were made along the way.

In addition to reducing hydraulic leaks/roadway spills, the program has reduced the impact on resources cleaning up the spills. There is also an



*Peoria Solid Waste Truck*

enhanced partnership with the Peoria Fleet Division as a result of this program. The City of Peoria continues to keep leaks at a minimum due to the dedication and commitment of the partnership between the Solid Waste and Fleet Divisions. Equipment operators are vigilant about leaks, implement additional inspections throughout the day, and maintain higher preventative maintenance procedures with assistance from the Fleet Division. The City reported that there were no start-up costs and additional supplies and training were absorbed in the current budget.



*Phoenix Solid Waste Truck*

## **Phoenix:**

In 2008, the City of Phoenix began its hydraulic leak prevention program. The program is designed to replace hoses on side loading refuse trucks that collect residential refuse and recycling containers. Replacing the hydraulic hoses benefits the City by reducing the number of spills occurring on City streets and in neighborhoods, along with reducing costs associated with spill remediation and street repair. Staff had initial concerns with the quality and workmanship of replacement hoses installed by vendors. However, this was resolved by implementing a quality control inspection of refuse trucks that receive hose replacement. The annual cost of the program varies, depending on the number of trucks that receive replacement hoses. The average cost to

## HYDRAULIC LEAK PREVENTION PROGRAM (CONTINUED)

---

replace hoses is approximately \$1,700 to \$1,800 per truck.

### **Tempe:**

The City of Tempe hydraulic leak prevention program was implemented in 2015. The program requires an annual replacement of all high-use hoses, which are the hoses that constantly bend or flex during daily operations. At the beginning of the program, all trucks over three years of age had all hoses replaced. The high-use hoses are date tagged for follow-up replacements on an annual basis. Any trucks where metal hydraulic lines had previously been replaced with hoses were brought back to Original Equipment Manufacturer (OEM) specifications and replaced with metal lines again. Once the units were returned to OEM status, the average cost for the annual replacement of high-use hoses is approximately \$1,800 to \$2,200 per truck. Prior to the program, the City averaged six failures per year for side loaders and three failures per year for front loaders. Since the program has been implemented, Tempe has seen minimal hose failures which result in fewer road calls, decreased down time, fewer environmental spills, reduced overtime, and a total annual saving of approximately \$2,000 to \$2,500 per truck.

# AUTOMATIC VEHICLE LOCATION PROGRAM

---

**The 2012 Solid Waste Best Practices in the MAG Region Report included the automatic vehicle location program as a best practice in the City of Phoenix. With automatic vehicle location equipment in the solid waste collection trucks, Phoenix staff is able to track and monitor operational activities. Ten communities in the region have indicated that an automatic vehicle location program is implemented in their jurisdiction. Three of these communities have implemented their automatic vehicle location programs since 2012.**

---

## **Avondale:**

The City of Avondale has had global positioning system (GPS) and inspection equipment by Zonar Systems installed on its fleet since 2009. This allows the City to monitor the vehicles and equipment to its actual live location. The City equipment with the inspection portion installed allows the operators to do their pre/post trips electronically therefore eliminating the paper inspection reports. The benefit to the program is that an operators sanitation route can be reviewed for completeness and accuracy. Staff is able to review time, location, direction, and speed of vehicles at all times. Costs for the program include \$800 per unit for the initial equipment and set up as well as \$31 per month per system installed.

## **Gilbert:**

The Town of Gilbert implemented an automatic vehicle location program in 2006, which includes GPS units on all of its solid waste light and heavy duty vehicles. The Town is able to track stopping, idling time, armature, can counts, mileage, etc. In addition, the automatic vehicle location system fulfills the requirements for the electronic vehicle inspection reports. The start-up cost for the program was

approximately \$300 per unit (basic GPS system), which was funded through the appropriate user fund/budget.

## **Glendale:**

In 2007, the City of Glendale implemented its automatic vehicle location program by installing Zonar Systems on its solid waste vehicles. The City is currently evaluating an upgrade to the system. The annual budget for the program is \$120,000.

## **Mesa:**

The City of Mesa began its automatic vehicle location program in 2012 with the use of Zonar Systems. The City fleet is now equipped with FleetMind systems.



*Mesa Truck Equipped with an Automatic Vehicle Location System*

## **Peoria:**

Beginning in 2013, the City of Peoria added automatic vehicle location equipment, Zonar Systems, to all of its vehicles in the solid waste inventory. The benefits to the program include: assisting with route optimization; locating vehicles when necessary; and identifying vehicle efficiencies such as speed, idle time, etc. A supplement was approved through the Peoria City Council to implement both automatic vehicle location and a route optimization program with ongoing maintenance funds. The original budget was \$120,000, which included the purchase of units and cost of implementation. The annual budget is approximately \$10,000 to \$12,000 for the program.

# AUTOMATIC VEHICLE LOCATION PROGRAM (CONTINUED)



Phoenix Truck Equipped with an Automatic Vehicle Location System

## Phoenix:

The City of Phoenix has had an automatic vehicle location program since 2006. However, in 2015, the City installed LoJack hardware and software applications which have increased the City's ability to more accurately track vehicle, driver, and route information. This tool provides the ability to compare different routes, trucks, and driver performance. The alerts from the software increase driver safety and reduce costs associated with driving routes. The start-up costs for installation of the hardware was \$29,292. Since the hardware is rented, there are ongoing costs of \$24,589 per month for 421 vehicles (approximately \$296,000 per year).

## Pinal County:

In 2014, Pinal County began using Zonar Systems to provide tracking on its public works vehicles. Right Away Disposal provides solid waste and recycling services to Pinal County residents and also has automatic vehicle location on its fleet.

## Scottsdale:

The City of Scottsdale implemented an automatic vehicle location program in 2002. The City had been using GPS to track its fleet; however, it has since changed to a new system. Scottsdale is now using FleetMind, which provides a high level of detail and data for managing service verification, routing, etc.

## Tempe:

Since 2008, the City of Tempe has utilized an automatic vehicle location system. The City is able

to make its operations more efficient by collecting route reports on the following: time leaving the yard, compliance with conducting pre/post trip inspection, mileage, time standards, break times, collection validations, route completions, speed, and accidents. There are a number of benefits to installing the automatic vehicle location system including: rightsizing routes and staff, reducing mileage, route efficiencies, and operator accountability. Some of the challenges include: the need for a position to run reports and analyze data, development of fair and accurate reports, management use of data to manage, and staff buy-in.

The costs for the program consist of the hardware, installation, and monthly service fee. The hardware costs per vehicle ranged from \$400 to \$1,500 and the installation costs were \$300 to \$1,000 per vehicle. There is also a monthly service charge of \$37 to \$90 per vehicle. If the equipment is used properly and to its fullest potential, the City has indicated that the savings are substantial. The City has reduced residential routes from 19 to 14 per day. Commercial routes have been reduced from 14 down to eight per day. The City of Tempe estimates a savings of \$700,000 per year.

## Tolleson:

The City of Tolleson implemented an automatic vehicle location program in 2013 by installing Zonar Systems on a large portion of the City's fleet. The City now contracts with Right Away Disposal for solid waste and recycling services, which also has automatic vehicle location systems on its vehicles. The entire implementation of the program had cost the City slightly over \$21,000 for a large portion of the fleet. The cost to add the equipment to just the sanitation vehicles was approximately \$5,000. Due to the implementation of the program, Tolleson was able to improve routes and identify missed pick ups.

# BAG CENTRAL STATION PROGRAM (PLASTIC BAG RECYCLING)

**Bag Central Station was identified in the 2012 Solid Waste Best Practices in the MAG Region Report as a best practice for the City of Phoenix. The City works in partnership with the Arizona Food Marketers Association (AFMA) and grocers in Phoenix to accept used bags from their customers for recycling. Three communities currently have a plastic bag recycling program, according to the 2016 survey. Since the 2012 Solid Waste Best Practices in the MAG Region Report was prepared, one of these communities had implemented its program.**



*Plastic Bag Recycling Bin*

## **Fountain Hills:**

In 2009, the Town of Fountain Hills implemented a plastic bag recycling program. Fountain Hills coordinated with local grocery stores to install sheet plastic recycling locations at four stores in the Town. In addition, there are stores that have their own plastic bag recycling program. Implementing the program did not result in any cost to the Town.

## **Peoria:**

The City of Peoria has had a plastic bag recycling program since 2014. Initially, City staff coordinated with the Bag Central Station Program for the plastic bag bins. Peoria encourages residents to drop off their plastic bags at the store from which they received them. The City has also added library locations and public access facilities for drop off convenience. The bags are then picked up by City staff and shipped to Trex for recycling.



## **Phoenix:**

In 2007, the City of Phoenix implemented Bag Central Station, which is a voluntary recycling program with the Arizona Food Marketers Association and their members to recycle plastic bags provided to customers during retail sales. The City works in partnership with the AFMA and grocers within Phoenix to accept used bags from their customers for recycling by the grocery store chain. Costs associated with the Bag Central Station Program included the purchase of reusable bags for distribution to the general public. These were purchased by the City of Phoenix for \$250,000 for the first two years. The City also funded \$25,000 for marketing of the program in the start-up year. Industry funding for marketing of the program is unknown. However, the AFMA did fund the installation of plastic bag collection bins at the grocery stores. They also contributed \$1,000 for design of the program logo.



# SAFETY, EMERGENCY, AND SPECIAL WASTE PROCEDURES

**The 2012 Solid Waste Best Practices in the MAG Region Report included the safety, emergency, and special waste procedures in the Salt River Pima-Maricopa Indian Community. These procedures result in improved employee and general public safety. According to the 2016 survey, eight communities currently have these procedures in place. One community has implemented the procedures since 2012.**

## **Gilbert:**

In 2000, the Town of Gilbert implemented town-wide risk administration. However, the Public Works Department also has in-house standard operating procedures such as lockout/tagout procedures for vehicles with stored energy. Risk administration costs are funded through each individual division.

## **Glendale:**

The City of Glendale implemented emergency procedures and policies for landfill, collection, and other operations in 2006. Safety, emergency, and special waste procedures are provided in a variety of formats and programs, including online. Glendale also conducts Safety Stand-Downs and every employee receives safety training.

## **Guadalupe:**

In accordance with the Town of Guadalupe's Stormwater Management Plan, safety, emergency, and special waste procedures were implemented in 2016.

## **Peoria:**

In 2009, the City of Peoria created procedures with key players in Solid Waste, Streets, Fire, and Emergency Management to identify which division is responsible for processing hazards in the City. The procedures include: key players, processes, vendors, and how to handle different situations. Peoria identified two example scenarios: spilled

bleach on the roadway and mercury dropped off at a fire station. The emergency procedures assist in identifying how to handle those situations and the contracted vendors to contact. Primarily the Solid Waste Division is responsible for working with contracted vendors. The enterprise fund includes \$6,000 for small incidents as part of the HHW program.

## **Pinal County:**

Pinal County has an Office of Emergency Management, Environmental Health Services, and a Safety Officer to address any potential issues that may arise in the County. The Public Works Department follows established protocols depending on the emergency or safety matter.

## **SRPMIC:**

Since 2007, the Salt River Pima-Maricopa Indian Community has had safety, emergency, and special waste procedures in place. The procedures assist the Community in identifying hazardous or unacceptable waste entering the landfill and handling emergencies that may be encountered. There are also safety steps identified to protect the employees and general public.



*Entrance to the Salt River Landfill*

## **Tolleson:**

The City of Tolleson has had safety, emergency, and special waste procedures since 1980; however, they have progressed over time. The cost of developing and updating the procedures is built into the

## SAFETY, EMERGENCY, AND SPECIAL WASTE PROCEDURES (CONTINUED)

---

City's day-to-day operating costs. By implementing these procedures, Tolleson saves the costs associated with incidences, injury, and clean-up.

### **Youngtown:**

Since 1990, the contracted providers for the Town of Youngtown have had safety, emergency, and special waste procedures in place. The Sun City Fire and Medical Department would be dispatched to clean up an incident. In the event of special waste needs, the contracted private hauler, Parks and Sons of Sun City, may be consulted and contracted for hauling or proper disposal methods. There is no cost to the Town.

# RESIDENTIAL CURBSIDE SOLID WASTE AND RECYCLING INSPECTION PROGRAM

The residential curbside solid waste and recycling inspection program was identified in the 2012 Solid Waste Best Practices in the MAG Region Report as a best practice for the Town of Queen Creek. Trash bins are inspected for bag and tie violations and recycling bins are inspected for violations related to acceptable recycling material to reduce contamination. According to the 2016 survey, 17 communities have a residential curbside solid waste and recycling inspection program. Two of these communities have implemented this best practice since 2012.

## Avondale:

In 2003, the City of Avondale implemented its residential curbside solid waste and recycling inspection program. The City has two dedicated sanitation inspectors that conduct random inspections daily of residential recycling and trash containers. After receiving three warnings/citations, a resident can be fined. By conducting the inspections, the City remains in compliance with its variance.



Avondale Residential Curbside Inspection Program



Avondale Residential Curbside Inspection Program Stickers

The inspections also assist Avondale in educating residents of any issues the inspector may find and replace or repair any containers that are not in compliance.

## Buckeye:

The City of Buckeye has had a residential curbside solid waste and recycling inspection program since 2008. As part of the City's variance plan, and upon the implementation of curbside recycling, Buckeye is required to conduct inspections. They are conducted randomly by both City staff and the contracted provider. Most residents who are tagged call the City to inquire about the issue. There is no cost for the program; it is part of the residential contract with Republic Services. City resources are funded through the Solid Waste Enterprise, which is funded by the monthly residential trash and recycling service fee.

## Chandler:

Since 1995, the City of Chandler has had a residential curbside solid waste and recycling inspection program. The City has been divided into four sections and by a rotating schedule, field staff are assigned a section to perform recycling and/or solid waste inspections. Recycling inspections are performed daily to ensure compliance with the

# RESIDENTIAL CURBSIDE SOLID WASTE AND RECYCLING INSPECTION PROGRAM (CONTINUED)

---

recycling program (acceptable recyclables are placed in the blue container, contamination is addressed, etc.). When unacceptable items are found, printed materials subject to the items or issues are left for the resident's information. Solid waste inspections are also performed daily to ensure regulatory compliance subject to vector control (bag and tie) and that incompatible waste (HHW) is addressed to reduce concerns for hot loads. Items may be removed by staff, if staff determines there is concern for public safety.

Solid waste inspections also assist the City in addressing the option of recycling when recycling material is placed in the trash container. Costs associated with staffing, vehicles, and printed materials are funded by the operating budget. The City experiences a cost avoidance by diverting waste from landfill disposal, and potential revenue from waste with market value.

## **Fountain Hills:**

The Town of Fountain Hills implemented a residential curbside solid waste and recycling inspection program in 2010. The contracted solid waste provider, Republic Services, is required to inspect a percentage of containers annually. The containers are inspected for appearance and functionality. This program is part of the contracted services.

## **Gilbert:**

The Town of Gilbert residential curbside solid waste inspection program has been in place since 2000. The Town inspects at least 20 percent of all trash containers per year. Gilbert checks refuse containers; the recycling containers are not included. The inspectors are mainly looking for vector control issues; however, other items such as container condition are also examined. The inspections fulfill the Town's variance requirement. Costs for the program consist of two inspector positions, which are funded through the residential enterprise fund.

## **Glendale:**

In 2000, the City of Glendale began its residential curbside solid waste and recycling inspection program to inspect the containers for contamination as well as damage. The contamination check is an inspection of the materials to identify if any items are not recyclable. A resident who has unacceptable material in their recycling container is informed of the issue and the information is documented in the database. The benefit to the program is a higher rate of diversion from the landfill. The challenge is providing sufficient education and outreach in highly contaminated areas. The cost of the program is included as part of the City's monthly residential solid waste rate.

## **Goodyear:**

In 2006, the City of Goodyear implemented its residential curbside solid waste and recycling inspection program. Annually, 25 percent of all sanitation containers are inspected per the City's variance with Maricopa County. Inspections assist Goodyear in identifying areas where recycling contamination is an issue and provide an opportunity for public education. Containers are checked for damage and repaired as necessary during the inspection process. An inspector position was created for this program and is funded by the monthly sanitation fees paid by the residents. Cost reduction comes from maintaining the variance to provide once per week trash and recycling with Maricopa County. There is no revenue generated by the program.

## **Guadalupe:**

The Town of Guadalupe implemented a residential curbside solid waste and recycling inspection program in 2013. The program is currently a pilot project where random audits of residential receptacles are conducted.

# RESIDENTIAL CURBSIDE SOLID WASTE AND RECYCLING INSPECTION PROGRAM (CONTINUED)



Mesa Recycling Bin

## Mesa:

In 1994, the City of Mesa implemented its residential curbside solid waste and recycling inspection program. The inspections are conducted by a dedicated staff person to comply with the Maricopa County variance program.

## Peoria:

The City of Peoria has had a residential curbside solid waste and recycling inspection program since 2007. One inspector is dedicated to daily inspections. The inspector focuses on inspecting containers throughout the City for approximately 53,000 accounts. Another position was approved as part of the FY 2017 budget. The responsibilities for the new position will include outreach and education. The residential curbside solid waste and recycling inspection program is paid for using enterprise funds and has a budget of approximately \$200,000.

## Phoenix:

In 1992, the City of Phoenix began its residential curbside solid waste and recycling inspection program to inspect the condition of containers for

damage and also to check for contamination. A container found damaged is then placed on a list for repair or replacement. The contamination check is an inspection of the materials to identify if any items are not recyclable. A resident who has unacceptable material in their recycling container is informed of the issue and the information is documented in the database. The benefit to the program is a higher rate of diversion from the landfill. The challenge in the City of Phoenix is providing sufficient education and outreach in highly contaminated areas. The cost of the program is included as part of the City's monthly residential solid waste rate.



Phoenix Trash and Recycling Bins

## Pinal County:

In 2017, a residential curbside solid waste and recycling inspection pilot program was implemented in Pinal County by Right Away Disposal.

## Queen Creek:

The Town of Queen Creek implemented its residential curbside solid waste and recycling inspection program in 2010. This program is designed to decrease contamination and provide

# RESIDENTIAL CURBSIDE SOLID WASTE AND RECYCLING INSPECTION PROGRAM (CONTINUED)

---

additional outreach and education directly to the residents. The Town has one dedicated inspector that utilizes GIS and the billing software to track and maintain inspections. Both the trash and recycling containers are able to be inspected at the same time due to the same day trash and recycling service, which increases efficiency. By implementing the program, the Town also fulfills its variance requirement.

## **Scottsdale:**

Since 1996, the City of Scottsdale has had a residential curbside solid waste and recycling inspection program. Field representatives and drivers inspect the curbside containers for compliance using the Maricopa County guidelines as well as the City's recycling guidelines.

## **Surprise:**

In 2004, the City of Surprise residential curbside solid waste and recycling inspection program was implemented. It is included as part of the City's recycling outreach and education program. Trash and recycling containers are inspected by staff at the curbside. The inspectors are also responsible for delivering the City's outreach message on trash and recycling to residents. The annual budget for the Surprise outreach and recycling program is approximately \$160,000 annually, and the source of funding is from revenue generated by solid waste rates charge monthly to residents on their utility bills.

## **Tempe:**

The City of Tempe began its residential curbside inspection program in 1978. The City has five dedicated inspectors that periodically conduct vector checks. Drivers, inspectors, and customers inform the City of any issues such as vector or damaged containers and the delivery crew replaces them with new or refurbished containers. The budget for the program is approximately \$115,000 annually.

## **Tolleson:**

Since 2009, there has been a residential curbside solid waste and recycling inspection program in the City of Tolleson. The inspection program consists of inspecting containers for contamination and approved materials as well as the overall condition of the container. Currently, the inspections are a shared responsibility between the City and the contracted solid waste and recycling provider, Right Away Disposal. Maricopa County has requirements that containers appropriately contain the solid waste, so the inspections help to ensure that a container is not cracked or damaged. Due to the inspections, the streets and community overall stay cleaner and there is better control on ensuring only approved material is collected. The City reported minimal costs associated with the program.

# LANDFILL GAS-TO-ENERGY FACILITY

The 2012 Solid Waste Best Practices in the MAG Region Report included the Glendale landfill gas-to-energy project, which is a renewable energy project at the City's landfill. The facility uses methane gas from the decomposing trash to power two 20-cylinder engines, which are connected to turbines that generate electricity. Glendale is currently the only community identifying a landfill gas-to-energy facility best practice, according to the 2016 survey.



*Glendale Landfill Gas-to-Energy Facility*

## **Glendale:**

The Glendale landfill gas-to-energy facility began operating in 2010 and is a 2.8 megawatt biogas facility that uses methane gas generated from decomposing trash. The plant is owned and operated by Glendale Energy LLC and generates enough electricity for approximately 750 homes. Total project construction cost was \$6 million. Glendale Energy LLC maintains the annual budget for plant operation and maintenance.



*Inside the Glendale Landfill Gas-to-Energy Facility*



# METAL BIN REFURBISHMENT PARTNERSHIP PROJECT

**The City of Mesa metal bin refurbishment project was identified in the 2012 Solid Waste Best Practices in the MAG Region Report as a best practice. The project consists of a partnership with the East Valley Institute of Technology to refurbish trash bins. According to the 2016 survey, a metal bin refurbishment project has been implemented in three communities in the region, and all were established prior to the completion of the 2012 Solid Waste Best Practices in the MAG Region Report.**

## **Mesa:**

The City of Mesa first implemented its metal bin refurbishment partnership project during the 2011-2012 academic school year. Students enrolled in the welding program at the East Valley Institute of Technology have the opportunity to refurbish City of Mesa front load trash bins that need to be repaired. As part of the program, the City also provides a \$1,000 scholarship to the school to help students needing financial assistance with program fees and safety equipment purchases. This pilot project results in a cost savings of \$100 per container. Costs for the program include \$300 in materials per container.

## **Phoenix:**

Since 2006, the City of Phoenix has implemented a metal bin refurbishment program by contracting with Hambicki Truck and Container Sales to refurbish damaged front load and roll-off bins as a cost savings measure. A benefit to the program is the associated time and cost savings for new containers. The City can refurbish metal bins at half the cost of new containers. Refurbishing metal bins takes two weeks compared to six weeks to receive new bins. The lifespan of the bins is also extended due to this program. Once containers are repaired, they are available to be placed back into circulation. The annual budget for this program is \$190,000 with an average cost savings of approximately \$40,000 per year.

## **Tempe:**

The City of Tempe has had a metal bin refurbishment program since 1978. The City currently has three welders, a fully equipped three-bay weld shop, and two wash and paint bays. Tempe conducts all of its own repairs, painting, pick ups, and deliveries. The annual budget for the program is approximately \$300,000.



*Mesa Metal Bin Refurbishment Partnership Project*



**In addition to determining the implementation of the best practices included in the 2012 Solid Waste Best Practices in the MAG Region Report across the region, jurisdictions were asked to provide any new best practices not previously identified. According to the 2016 survey, the communities in the region are continuing to evaluate innovative options for addressing the challenges of solid waste and encouraging reuse and recycling. Below are additional projects and programs beyond the previously identified best practices.**

**Buckeye:**

The City of Buckeye contracts with Republic Services for residential curbside collection, while all commercial collection is individual subscription with the commercial user's desired source. In an effort to reduce the municipal trash and recycling costs for the City, Buckeye included in the residential contract that the contracted provider would collect the municipal trash and recycling from all present and future municipal buildings, including fire stations, at no additional costs. Therefore, all municipal trash and recycling collection costs are removed from the City budget, resulting in cost avoidance. This contract was awarded in 2013.

**El Mirage:**

In 2012, the City of El Mirage implemented a curbside bulk trash collection program. The City offers curbside bulk trash pick up for residents twice per year and works with its residential trash and recycling provider, Parks and Sons of Sun City, to coordinate the pick up. El Mirage is divided into two sections and collection dates are set. The City communicates the collection to residents through all available outreach opportunities (utility bill mailers, City website, Facebook, and Channel 11). Addition-



*El Mirage Curbside Bulk Trash Collection Program*

ally, City staff scout the neighborhoods prior to the collection to answer questions about the program and resolve any compliance issues. The program has had great success with an average of 375 tons of trash picked up at each event. As the program continues to grow and experience greater success, El Mirage staff and Parks and Sons of Sun City continue to reshape the program to increase efficiency and lower program costs. This service is provided at no cost to residents and the City of El Mirage pays between \$60,000 and \$70,000 annually to support the program. Funding is provided by the City's sanitation budget.

**Fountain Hills:**

The Town of Fountain Hills has been discussing a mail-in electronics recycling program with Republic Services. The program would consist of Republic Services mailing a box with pre-paid postage to the resident and they would then ship their electronics directly to a recycling center. Fountain Hills has been evaluating options to enhance its curbside service and was approached by Republic Services about the mail-in electronics recycling program.

**Phoenix:**

***Mattress Diversion Program***

In 2015, the City of Phoenix implemented a mattress diversion program. Phoenix established a partnership with Goodwill of Central Arizona to divert mattresses from the City's 27th Avenue and North Gateway Transfer Stations. With this partnership, Phoenix diverts the mattresses at designated areas of the transfer stations and requests pick



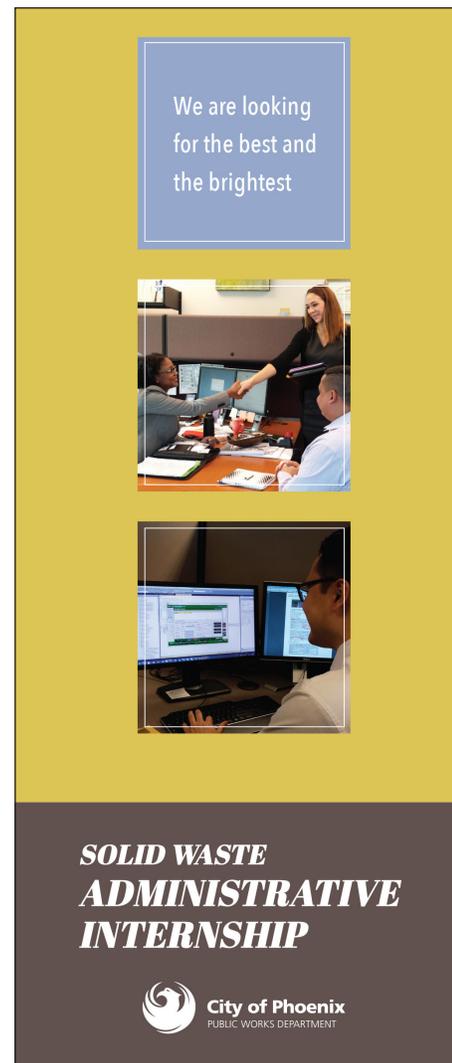
ups from Goodwill as needed each week. Goodwill transports the mattresses to its Retail Operations Center (ROC) and deconstructs them into the base components of steel, wood, foam, and fabric, which in turn are sold to recyclers to remanufacture into new products.

The mattress diversion program partnership with Goodwill is helping the City reach its goal of diverting 40 percent of its trash by the year 2020 and realizing operational cost savings by reducing the number of mattresses landfilled. After the first three months of implementation, the City diverted 1,394 mattresses. The City of Phoenix and Goodwill are jointly learning about the quality of the mattresses coming into the transfer stations and have developed quality standards to determine which mattresses are collected for recycling and which are unsuitable for recycling and must be landfilled. Goodwill marks the rejected mattresses with recycled red spray paint for easy identification at the transfer station and landfill. Goodwill of Central Arizona absorbed the start-up costs for the program and equipment costs estimated at \$152,000. Goodwill charges the City \$7.00 per mattress collected from the transfer stations. The City is realizing an operational cost savings from the mattress handling and disposal costs estimated at \$11.00 per mattress. Therefore, there is a net savings of \$4.00 per mattress.

### **Solid Waste Administrative Internship Program**

In 2011, the City of Phoenix implemented its solid waste administrative internship program. The program attracts graduate level students interested in solid waste, sustainability, and environmentally-focused careers within the public sector. Interns assist management staff in researching and implementing innovative solid waste practices meant to increase operational efficiency within the program

and enhance solid waste services for customers. Interns provide critical research, analysis, and administrative support for City Council approved solid waste program implementation and solid waste innovations and efficiency strategies. Intern responsibilities also consist of the following: conducting surveys, collecting information, analyzing findings, making interpretations and recommendations to staff; compiling data and preparing reports as requested by the solid waste management team; and completing other duties as assigned by the solid waste management team. Each intern is a part-time employee and is compensated \$18,250 per year. The City typically has two solid waste interns at any given time.



We are looking for the best and the brightest

**SOLID WASTE  
ADMINISTRATIVE  
INTERNSHIP**

 City of Phoenix  
PUBLIC WORKS DEPARTMENT

Phoenix Internship Brochure

### **Barrel Delivery Process**

The City of Phoenix identified a need to provide better customer service related to the delivery, repair, replacement, or removal of containers. Therefore, Phoenix implemented a new barrel delivery process. The process previously entailed a customer service representative entering the service request in the City's Customer Care and Billing (CC&B) System. The 400 to 800 service requests were printed individually and divided among 12 drivers. Each driver routed their own work day, managed up to 50 pieces of paper, documented their actions taken on the work order, and returned it to the office for administrative follow-up in the CC&B System. Manual routing took each driver approximately one hour. It also did not adequately account for multiple deliveries to the same address, provide grouping of nearby addresses, or realize any efficiencies in the route driven. Residents waited at least seven business days for delivery. At times, lost work orders resulted in repeated customer calls for service and increased wait times.

Staff developed an automated process to extract all open tasks related to barrel delivery, repair, replacement, or removal. These extracted tasks were processed by the Phoenix software application for routing (Route Smart) to provide the most efficient route based on certain parameters (i.e. maximum number of barrels a single truck could hold, grouping same addresses together, reducing risk factors of left hand turns). Staff developed a second tool to import the optimized routes into a Microsoft Excel template. With laptops or tablets, drivers used drop-down menus in the program to record their actions. This information was also used to update the CC&B System. The new process has reduced the amount of time drivers spend routing their deliveries, reduced customer wait times to an average of three business days, and reduced miles driven. The City reported no start-up costs associated with the new barrel delivery process.



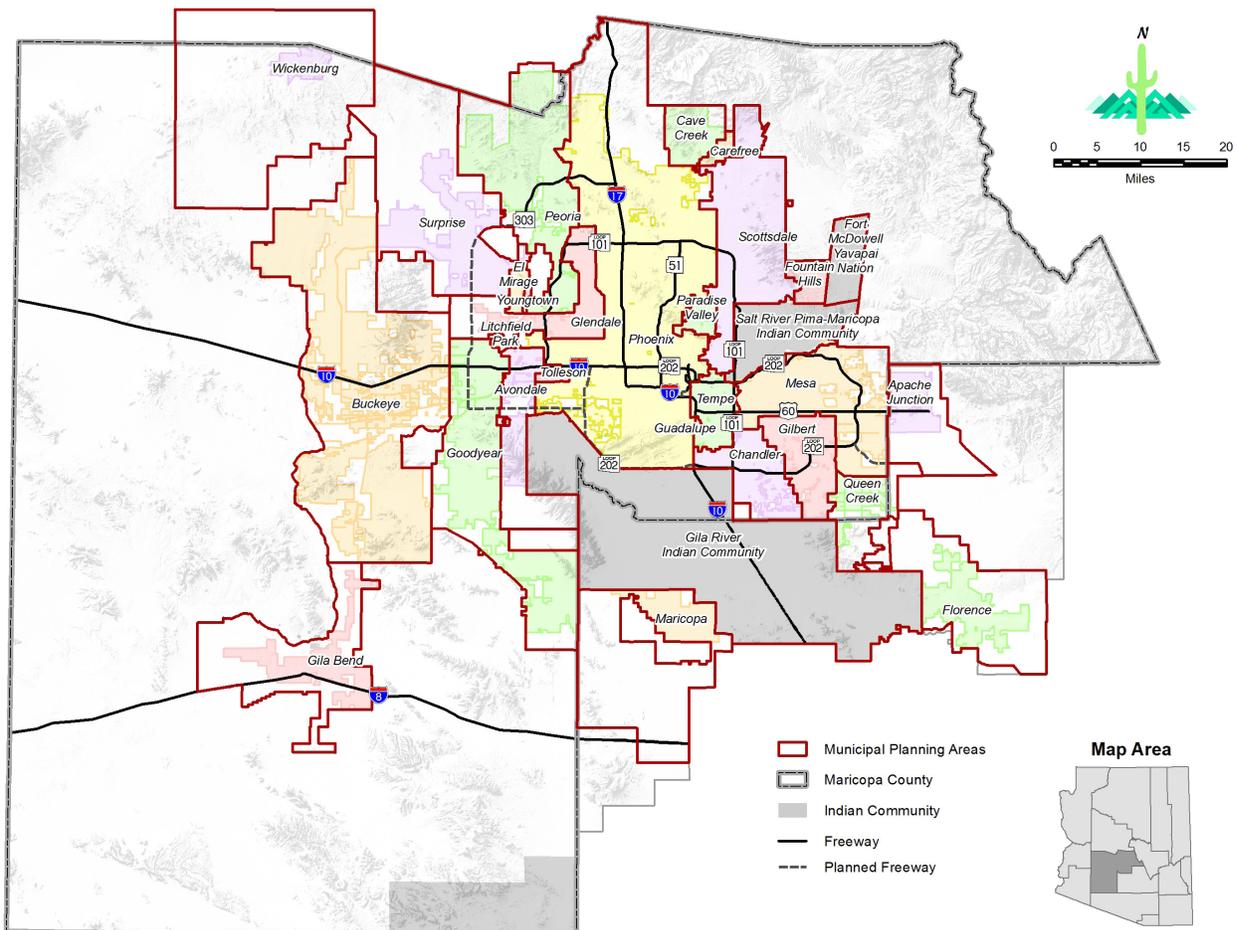
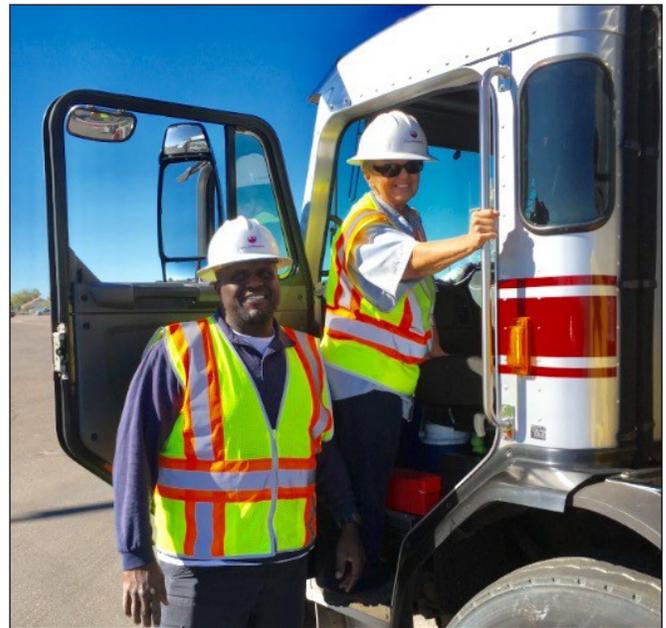
Phoenix Trash and Recycle Barrels



# CONCLUSION

As shown in this update, many of the projects and programs identified in the 2012 Solid Waste Best Practices in the MAG Region Report are being offered in communities across the region.

The MAG member agencies are providing a wide array of programs to address solid waste challenges and promote recycling. In addition, innovative partnerships have been developed to increase efficiencies and offer additional opportunities. The programs identified in this document demonstrate the commitment of the MAG member agencies to providing services that meet the solid waste and recycling needs of residents and protect the environment.



# CONTACT INFORMATION

---

**For additional details on the solid waste best practices identified in this document, contact information is provided below.**

---

- City of Apache Junction: (480) 474-5066
- City of Avondale: (623) 333-4473
- City of Buckeye: (623) 349-6805
- City of Chandler: (480) 782-3510
- City of El Mirage: (623) 935-6405
- Town of Florence: (520) 868-7541
- Town of Fountain Hills: (480) 816-5180
- Town of Gila Bend: (602) 679-0355
- Town of Gilbert: (602) 503-6426
- City of Glendale: (623) 930-2619
- City of Goodyear: (623) 932-3010
- Town of Guadalupe: (480) 505-5363
- City of Litchfield Park: (623) 935-1066
- City of Maricopa: (520) 568-9098
- Maricopa County: (602) 506-8997
- City of Mesa: (480) 644-2423
- Town of Paradise Valley: (480) 348-3610
- City of Peoria: (623) 773-7895
- City of Phoenix: (602) 534-2539
- Pinal County: (520) 866-6419
- Town of Queen Creek: (480) 358-3831
- City of Scottsdale: (480) 312-5600
- City of Surprise: (623) 222-6220
- City of Tempe: (480) 350-8036
- City of Tolleson: (623) 936-7141
- Town of Wickenburg: (928) 684-5451 ext. 1556
- Town of Youngtown: (623) 933-8286



**NOTES:**

---



302 N. 1st Ave. Suite 300  
Phoenix, Arizona 85003  
602-254-6300  
[www.azmag.gov](http://www.azmag.gov)