

## Project Scope

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The City of Mesa approached ASU's Urban Sustainability Best Practices/ Case Studies course led by Dr. Nalini Chhetri at Arizona State University's School of Sustainability to assist them in exploring the feasibility of a permanent Household Hazardous Waste (HHW) facility. The City believes there are economic and environmental opportunities.

## Research Questions and Results

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The research analyzes three permanent HHW facilities in Albuquerque, NM, Butte County, CA, and Gilbert, AZ. Similarities and differences between the Mesa HHW program and these programs are discussed. In addition, supplemental research was conducted in order to provide a comprehensive analysis. The following research questions are investigated.

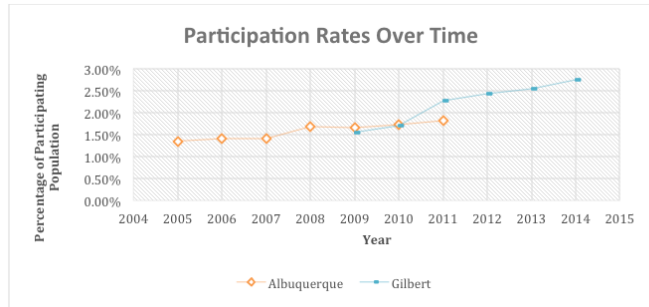
### Research Question 1: What process was used to create a permanent HHW facility?

- Albuquerque: In 1988, Albuquerque opened up a permanent HHW facility due to an inability to meet high demands and popularity of the events. They put out an RFP to build and operate the facility, and the contract was awarded to Advance Chemical Transport (ACT) for \$1,240,000, and they are still operating the facility today.
- Butte County, CA: The permanent HHW facility was built following a California Department of Resources Recycling and Recovery (CalRecycle) grant that was awarded for FY 1994-1995, and is currently run by NRC Environmental Services.
- Gilbert, AZ: Gilbert opened up a permanent HHW facility in 2008 for the cost of \$800,000. The facility is owned and operated by the City. The desire for increased diversion encouraged them to move to a permanent facility. Since opening they have seen an increase in participation (by parentage of population).

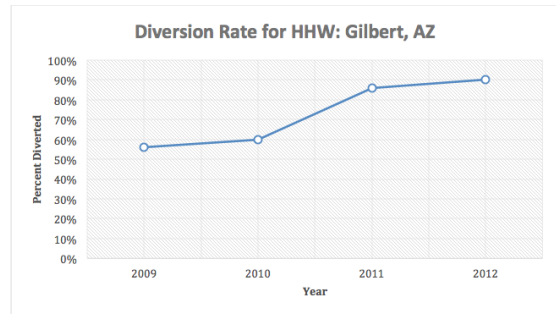
### Research Questions 2: What are the pros and cons of permanent HHW facilities?

Pros	Cons
Increased participation and greater populations reached	Location dependent and inflexibility
Encourages proper disposal and increased reuse opportunities	Liability of HHW processing and storage
Cleaner water supplies	Complex permitting process
Reduced planning, marketing, and education efforts	Well trained permanent staff required
Increased safety/decreased liability	Public/ political justification required

Quantitative data from the researched cities reflect benefits of permanent HHW facilities.



Graph 1: HHW collection participation for Albuquerque, NM and Gilbert, AZ. Data provided by the City of Mesa.



Graph 2: Diversion rate for Gilbert, AZ HHW facility. Data provided by the City of Mesa.

Research Questions 3: What are the associated costs (capital/fixed, operating, cost/car)?

Type of cost	City	Permanent HHW Facility Costs (Except Mesa)	Explanation and Timeframe of Costs
Capital/ Fixed Cost (for permanent facility)	Butte County	\$1,200,000	Estimate provided by County Employees
	Albuquerque	N/A	Not available
	Gilbert	\$800,000	\$800,000 upfront for new facility
Yearly/ Operational Costs	Butte County	\$410,287.66	Average yearly cost, 2009-2011
	Albuquerque	\$620,000	This is an estimate per year. The contract is up to \$1,240,000 for two years
	Gilbert	\$350,000	Annual budget
	*Mesa	\$480,000	Annual budget
Costs per car	Butte County	\$59.07	Averaged from 2009-2011
	Albuquerque	\$61.00	Fixed Cost
	Gilbert	\$79.68	Average between 2008-2014
	*Mesa	\$70.87	Current

Comparative costs of permanent HHW facilities for Butte County, CA, Albuquerque, NM, and Gilbert, AZ.

\*The information for Mesa is for comparison as they do not have a permanent HHW facility. Source: Mesa and each individual entity provided documentation that was used in compiling this chart.

## Recommendations and Conclusions

This report recommends that the City of Mesa build a permanent HHW facility. Additionally, it is suggested that Mesa consider collaboration with surrounding facilities in the region and consider continuing with one-day events, but less frequently than they are currently offered. A permanent facility will provide a valuable service for City of Mesa residents and will create a healthier and safer environment.