

Fall 2017 Partnership with Apache Junction

# ASU Project Cities Solid Waste Management

Sustainability and Solid Waste– ERM 432/532: Sustainable Solid Waste  
Management

Students of AI Brown



Project Cities



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Management Report

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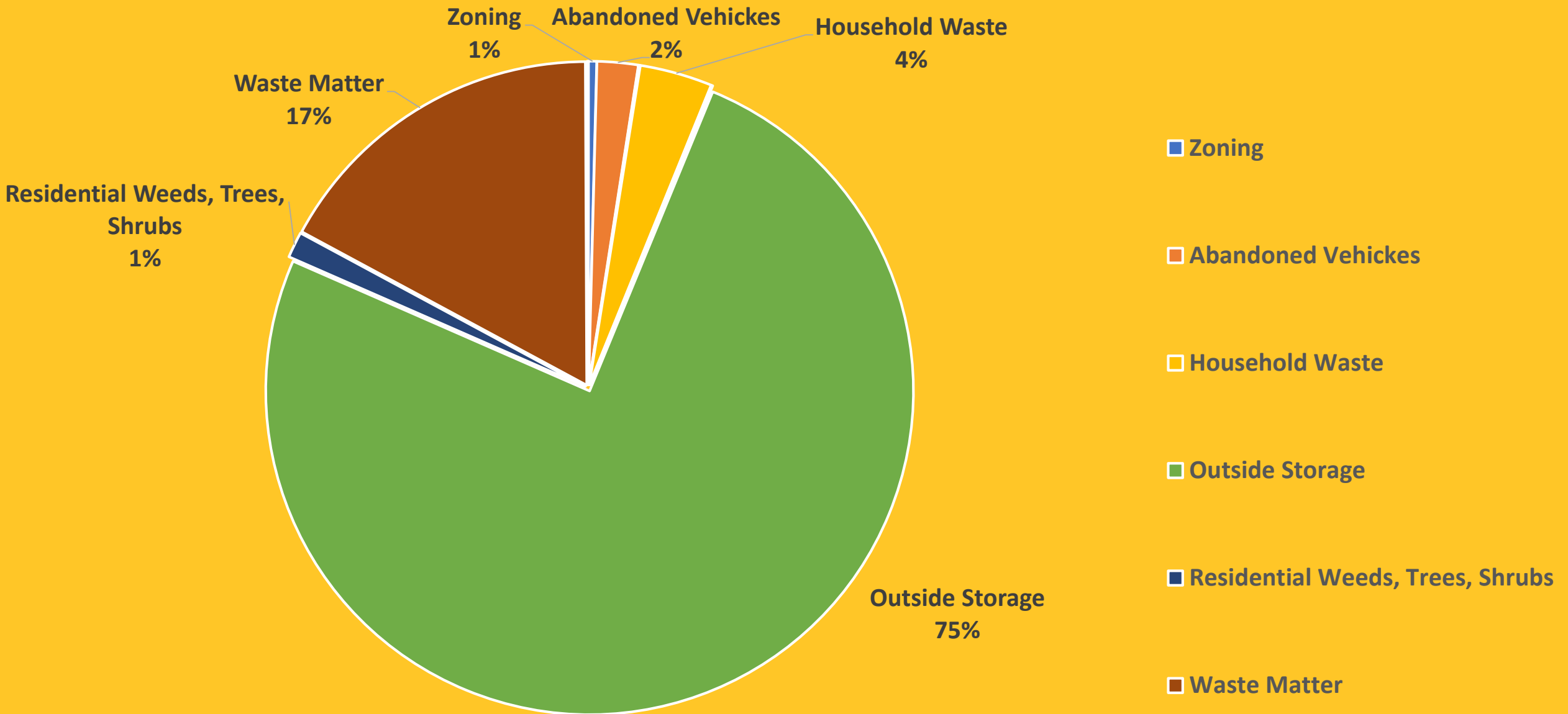
# Presentation Outline

- **Project Goals & Objectives**
- **Complaints Analysis**
- **Environmental Health Aspects**
- **Conclusions & Recommendations**

# Project Goals & Objectives

- **Goals:** suggest improvements in waste pick-up related policies and mitigate solid waste associated environmental health problems
- **Objectives:**
  - ❖ Analyze filed complaints regarding solid waste
  - ❖ Compare complaint systems
  - ❖ Describe environmental health aspects
  - ❖ Propose recommendations

# AJ Sources for SW Complaints from 2015 to 2017

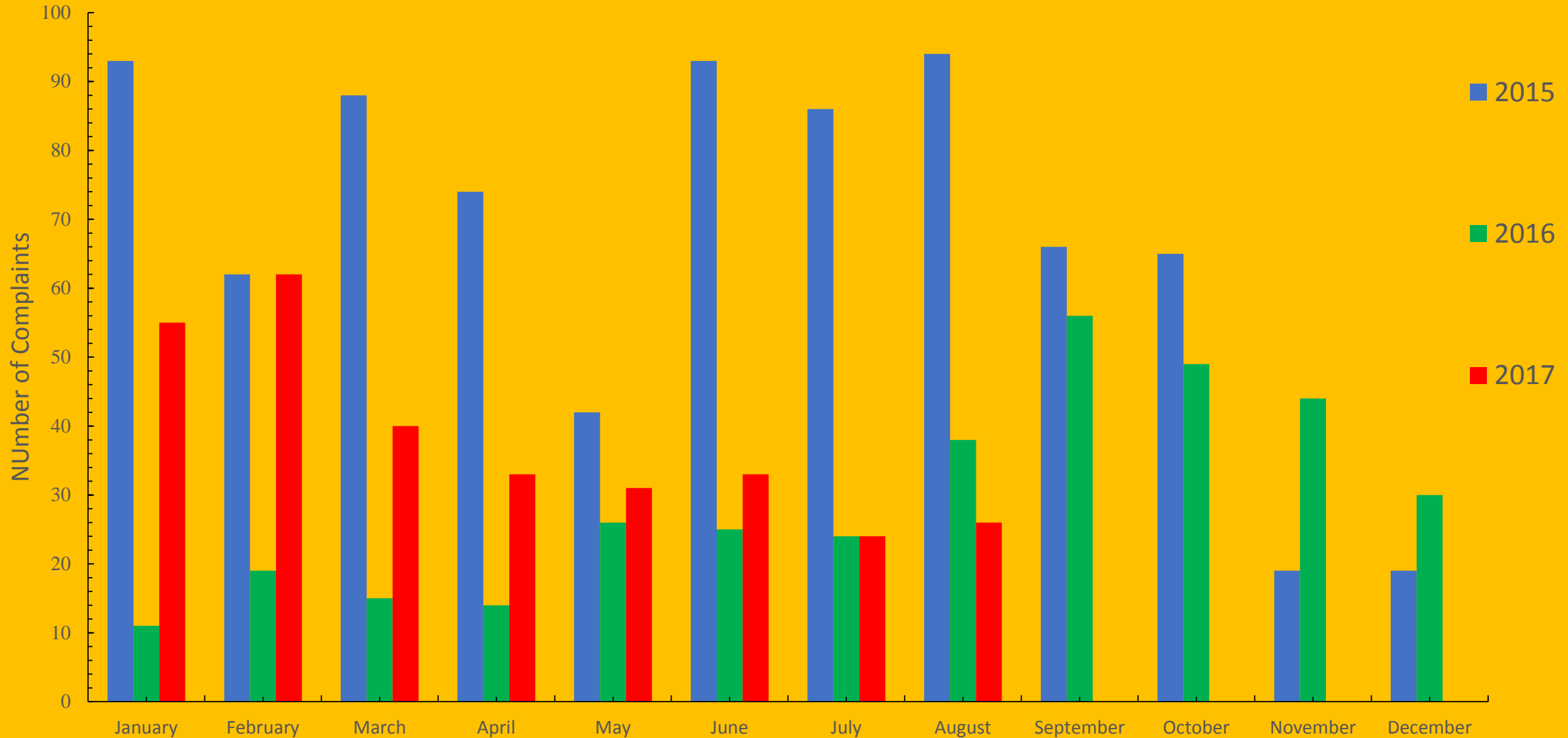


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S Goldfield Rd

# AJ Sourced Monthly Complaints in Apache Junction





Comparison of Complaints Systems in 4 Phoenix Area Cities				
	Avondale	Buckeye	Mesa	Apache Junction
Ease-of-use	Easy	Easy	Medium	Medium
Category	6 categories 0 subcategory	0 categories	56 categories 25 subcategories	4 categories 28 subcategories
Features	Can upload photos	Can be anonymous	Can pin the violation location on the map	Can submit suggestions online about the system

# Types of Environmental Health Aspects

- Odors
- Vectors of disease
- Air Pollution
- Soil Contamination
- Water Pollution
- Injuries
- Aesthetics

# Odors

Decomposing household  
solid waste emits  
objectionable odors.



Photo taken by Al Brown



# Vectors

The most common types of vectors in the USA are rodents, cockroaches, fleas, flies and mosquitoes (CDC, 2006).



Photo taken by Al Brown



# Air Pollution

Decomposing trash emits  
volatile organic compounds  
into the atmosphere.

Uncontained trash contributes  
to particulate pollution.



Photo taken by Al Brown



# Soil Contamination

Illegal dumping is especially dangerous to the soil because the waste piles may contain hazardous wastes and they are totally open to access by the general public including children.



Photo taken by Al Brown



# Water Pollution

Trash accumulation causes leachate, a liquid that has percolated through solid waste and has become contaminated.



Photo taken by Larry Kirch



# Injuries

Rubbish fires present a risk of injuries and property damage in Apache Junction.



Photo taken by Gandhar Pandit



# Aesthetics

CDC Healthy Community  
Design recommendations  
include maintaining a clean  
and safe community for all  
to enjoy.



Photo taken by Al Brown

# Recommendations

## For Complaints Management

- **Ease-of-use:** make it simple and quick to file complaints
- **Description of the process:** explain the subsequent steps to complaints
- **Ease of access:** provide user-friendly navigation of the website
- **Category:** give detailed descriptions of each category

# Recommendations (cont'd)

- For Accumulated Solid Waste
  - Remove current accumulated solid waste
  - Require a weekly solid waste pickup
  - Augment solid waste management public education
  - Provide easy and affordable solid waste recycling services

# Thank you!

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## References

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Disease Vectors and Pests (2006). *Centers for Disease Control and Prevention, Centers for Disease Control and Prevention, orig. 1976, revised 2006,* [www.cdc.gov/nceh/publications/books/housing/cha04.htm](http://www.cdc.gov/nceh/publications/books/housing/cha04.htm)