

# UA Bike Theft Mapping

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Submitted To: UA Planning, PTS,  
UAPD, PAG

# Outline

- Objective
- Procedure
- Findings
- Understanding
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  - Solutions
- Conclusion

# Objective

The ultimate goal of this project is to curb bike thefts throughout the U of A campus, through the means of locating the sites with the most thefts.

It is the Author's belief that curbing theft would be far more efficient once the sites with the most thefts are located.

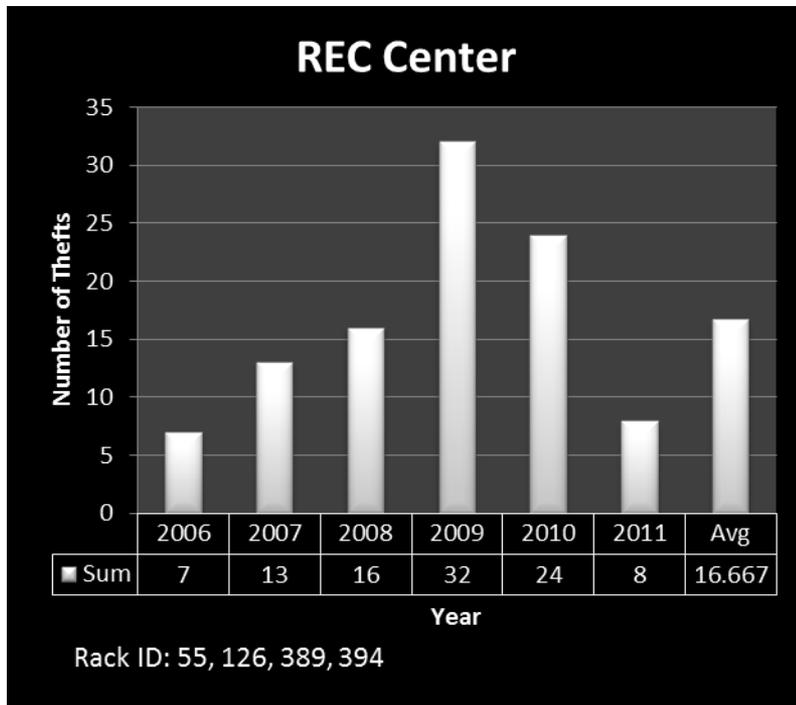
# Procedure

1. Collected bike theft records from 2006-2011 from UAPD
2. Identified each UA building from the records
3. Recorded every incident from each building as a **single theft**
4. Summed all the recorded incidents for each individual building, categorizing them from highest to lowest
5. Performed a probabilistic analysis for each building
6. Graphed and mapped findings

# Procedure Continued

- Each building was identified using the address given the UAPD records and confirmed using the UA online building map
- Every incident regardless of classification was recorded as a **single theft**

# Findings Sample



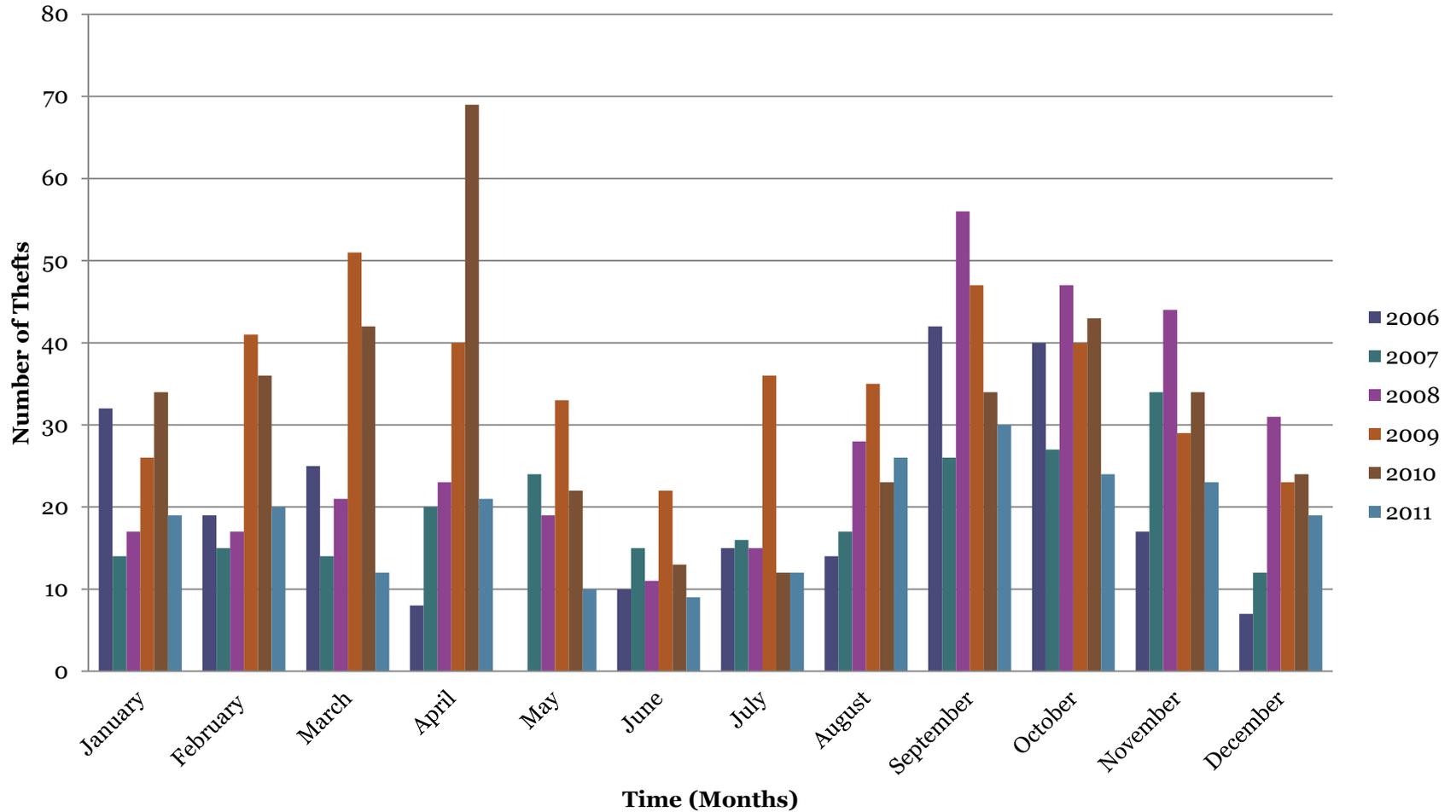
Site: Rec Center				
Address: 1400 E 6th Street				
Rack ID: 55, 126, 389, 394				
Date	Count		Year	Sum
03.20.06	1		2006	7
03.28.06	1		2007	13
04.20.06	1		2008	16
06.09.06	1		2009	32
07.28.06	1		2010	24
09.09.06	1		2011	8
09.28.06	1		Avg 16.66667	
01.20.07	1			
01.30.07	1			

# Analysis

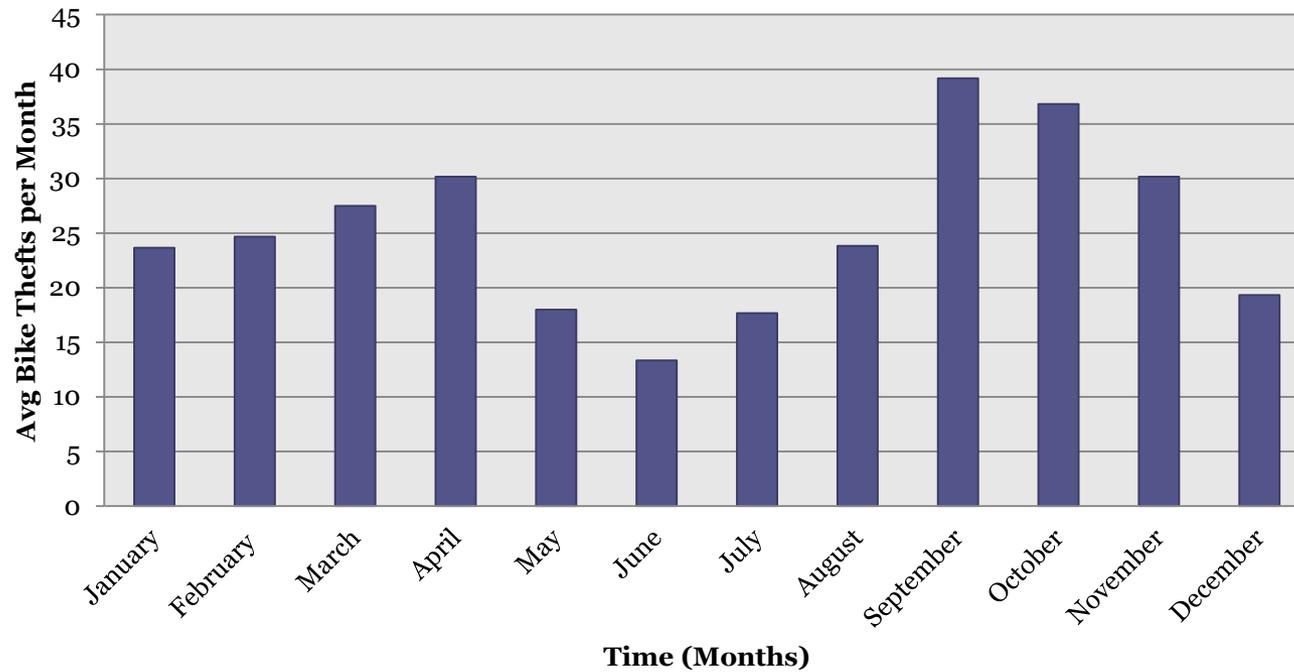
Building	Building ID	Avg Theft	Probability of Theft	%
Rec Center	117	16.6667	0.064850948	6.485095
Main Library	55	14.5	0.056420212	5.642021
Sky View Apartments	423	9.5	0.036964966	3.696497
Manzanita-Mohave Hall	7	8.8333	0.034370804	3.43708
Modern Languages	67	8.5	0.033073917	3.307392
Coronado Hall	85	8.3333	0.032425279	3.242528
Richard Harvill Building	76	8.1667	0.03177703	3.177703
AME	119	6.8333	0.026588706	2.658871
Student Union (SUMC)	17	6.8333	0.026588706	2.658871
McClelland Hall	108	6.6667	0.025940457	2.594046
Colonia de La Paz Hall	118	6.1667	0.023994932	2.399493
Music Building	4	5.6667	0.022049408	2.204941

Sum	257.0001
Mean	3.426668
Median	2.5
Mode	1.5
STDEV	2.967825
Variance	8.807983

# Thefts per Year



## Averaged Thefts per Month



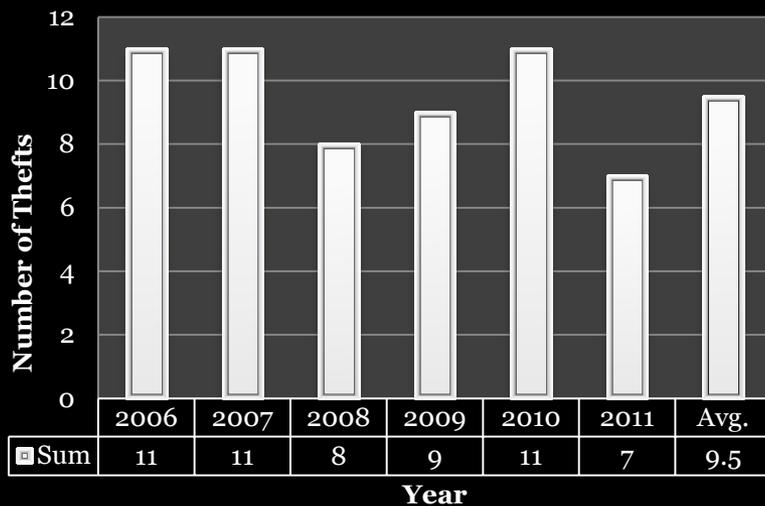
# Findings

- Some sites were consistent each year
- Some sites experienced a bell shape distribution
- Some sites experienced a decrease in theft
- Some experienced an increase in theft
- Some sites experienced random theft
- Some sites experienced a spike in theft

# Findings Continued (Examples)

## Consistent theft

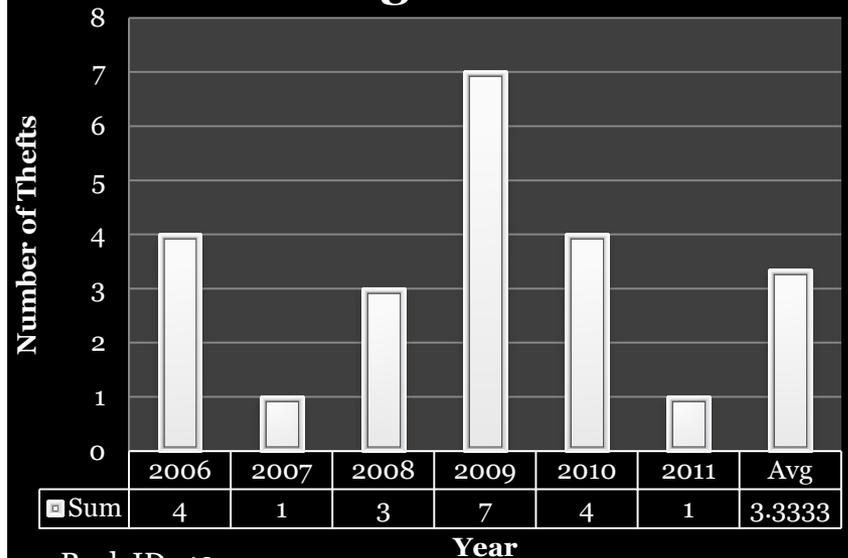
### Sky View Apts



Rack ID: 395, 396

## Bell shaped theft

### College of Law

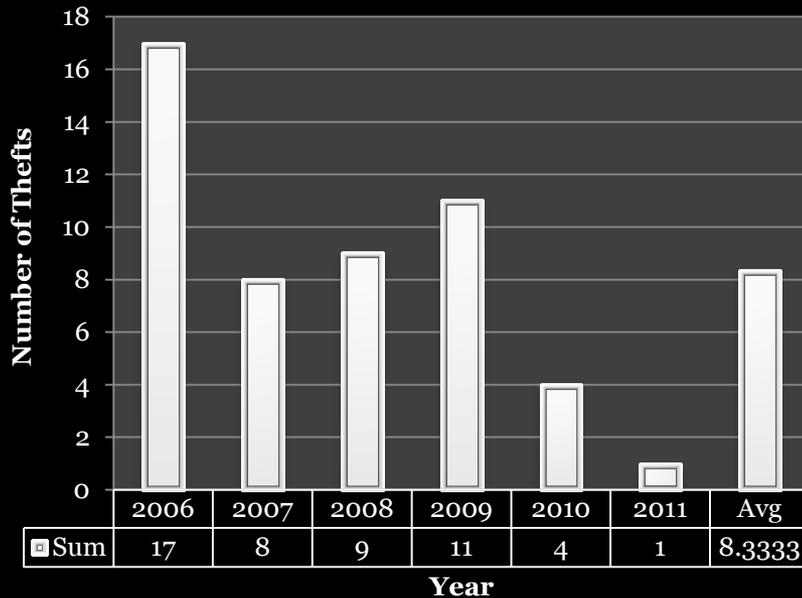


Rack ID: 42

# Examples Continued

## Decrease in theft

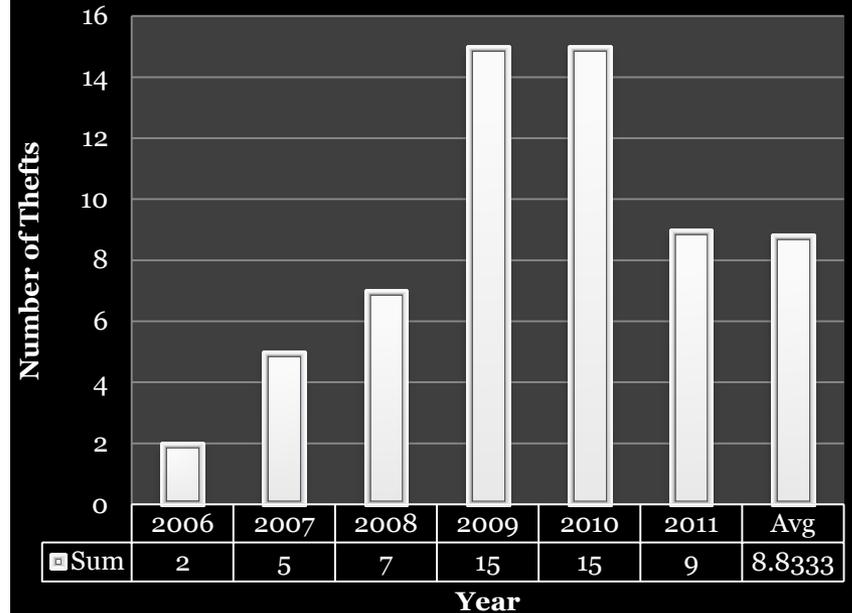
### Coronado Hall



Rack ID: 12, 107, 108

## Increase in theft

### Manzanita-Mohave Hall

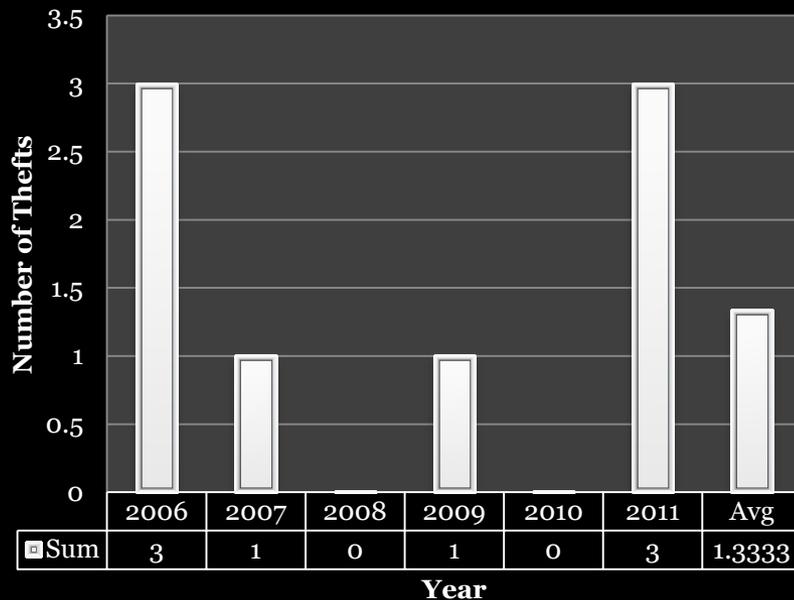


Rack ID: 21, 162, 163, 164, 165

# Examples Continued

## Random theft

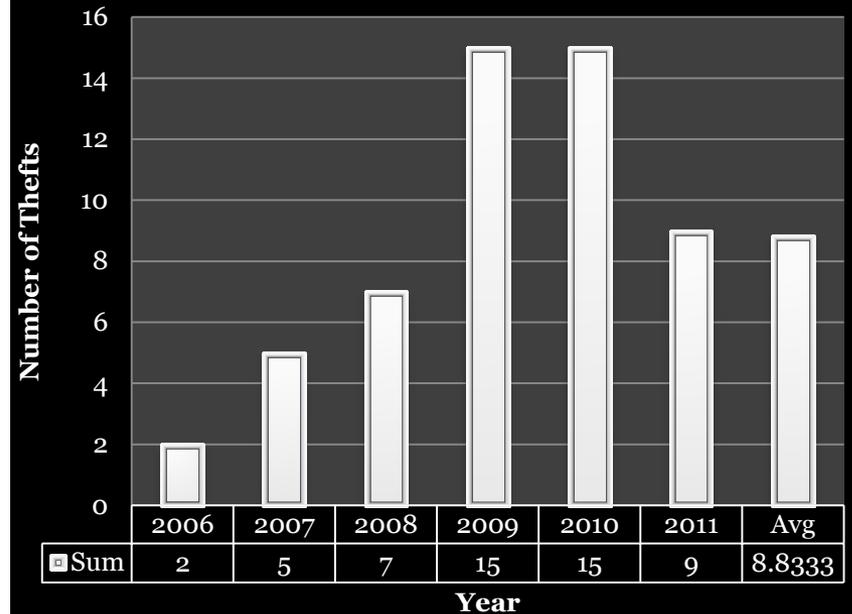
### Drama Building



Rack ID: 168

## Spike in theft

### Manzanita-Mohave Hall



Rack ID: 21, 162, 163, 164, 165

# Discussion

- Spike and bell shapes in thefts can be associated with the economic crash of 2008-2009
- Decrease in thefts can be attributed to construction at a particular site
- Increase in theft can be attributed to a decrease in theft from another site
- Random thefts are RANDOM

# Discussion Continued

- No data on favorite parking spaces is available
- No data exists on how individual bike locking and thefts
- Best assessment of theft is per building and not per rack

# Solutions

- ID all bike racks by their associated ID number
- UAPD can record the bike rack ID number for each theft
- UA Planning can record thefts regularly
- This provides a true census of theft
- Develop surveys of how students lock their bikes

# Solutions continued

- Place warning signs at sites with the most theft, warning all students about the potential dangers
- Signs can also illustrate proper way to secure bikes

# Conclusion

- Bike thefts are on the decline campus wide
- The sites that experience the most theft, have consistently experienced the most theft

# Questions