



The Increase of Burglary in the City of Santa Clarita 2011-2012

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PROBLEM DEFINITION:

Figure 1. City of Santa Clarita Crime Data			
CRIME	2011	2012	% Change
Homicide	5	1	-80.0%
Rape	18	30	66.7%
Assault	163	217	33.1%
Domestic	13	28	115.4%
Robbery	76	96	26.3%
Burglary	567	616	8.6%
Residential	320	277	-13.4%
Commercial	247	339	37.2%
Larceny	1766	1821	3.1%
Unlock Veh	256	264	3.1%
Veh Burglary	505	357	-29.3%
Shoplifting	441	496	12.5%
GTA	235	304	29.4%
Arson	19	18	-5.3%
TOTAL	2849	3103	8.9%
Source: LA County Sheriff's Dept.			

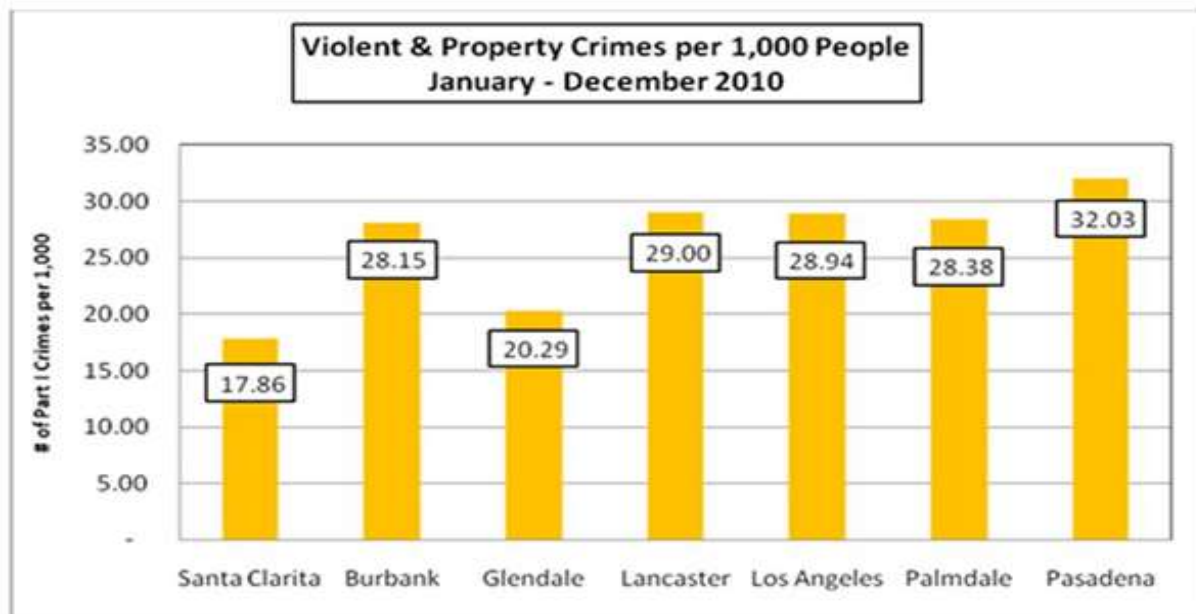
The City of Santa Clarita, located approximately thirty five miles northwest of downtown Los Angeles is currently experiencing an increase in certain types of crime (Figure 1). The city, which recently became the third largest in LA County with approximately 200,000 residents has historically seen less violent and property crime in comparison to neighboring cities in the region (Figure 2, below). However, this past year the city has seen an 8.6% *increase* in burglaries. Why have burglaries increased during this time period and can

we utilize Geographic Information Systems (GIS) to explain this increase? This project will attempt to determine if the increase in burglaries occurred as a result of five recent annexations that were completed in the second half of 2012. I will compare burglary data from June 2011 to Dec. 2011 with the same time period in 2012 in which annexations occurred. It should be noted that in 2011 no annexations took place, thus 2011 provides a reasonable baseline to measure any increase in burglaries. The five annexations completed by the City of Santa Clarita which added approximately 25,000 residents, are as follows:

ANNEXATION NAME	Completion Date	Acres	Est. Population
Copperstone	6/14/2012	68.696	1,284
Elsmere Canyon	6/14/2012	805.663	0
Soledad Commons	6/14/2012	8.357	0

Fair Oaks Ranch / West Sand Canyon	9/11/2012	2436.298	14,900
North Copperhill	11/29/2012	2473.693	9,500

Figure 2:



Source: FBI Uniform Crime Report, June 2011

DATA:

The City of Santa Clarita contracts with the LA County Sheriff's Department to provide public safety and law enforcement services. Since crime data is publicly available, I was able to secure Part I and Part II crime data for the entire County of Los Angeles from the LA County GIS portal. Examples of Part I offenses include serious crimes such as homicide, rape, robbery, burglary, and arson. Part II crimes are offenses for which only arrest data is provided such as fraud, vandalism and drug abuse. In order to find the crimes and time periods that I needed to complete this analysis I had to sort and filter through approximately 180,000 crimes for each year of interest. The crime data included all cities and unincorporated areas the Sheriff's

Department patrols. Once I located burglaries that were in the Saugus, Newhall, Canyon Country, Santa Clarita and Valencia area I was able to extract these records. These specific areas are individually classified by the Sheriff's Department but tend to fall within the city limits. The Sheriff's data did have X & Y coordinates which were helpful for mapping onto layers within GIS. When mapping X & Y coordinates I was able to select by location within GIS to remove any crimes that fell outside city limits. After sorting the data, I copied the 2011 and 2012 burglary crimes that were relevant to my selected time frame into an Excel Comma Separated Values or .csv file. I then converted these .csv tables into shapefiles utilizing the export data function in GIS.

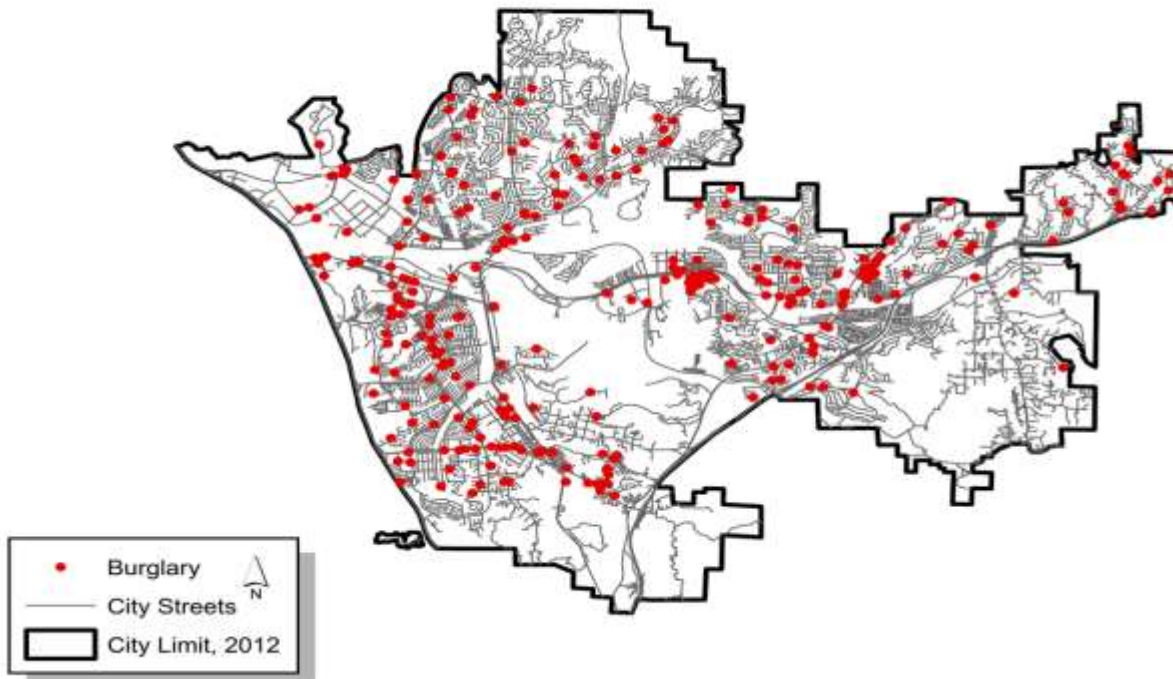
After meeting with representatives from the Sheriff's Department I discovered that the Sheriff Department's full time crime analyst does use GIS however, the Crime Prevention Unit manned by sworn personnel currently uses Google Earth to track beats, public safety zones and other data. Since Google Earth KMZ file formats are not readily compatible with ArcGis the Sheriff's Department put me in touch with a City of Santa Clarita GIS Specialist who was able to assist me. Through this highly helpful contact I was able to secure a 2012 city outline shapefile and an annexation shapefile. The attribute table of the annexation shapefile contained the specific dates, names and size of each annexation the city has completed dating back to the early 1990's. After editing the attribute table to delete all annexations that occurred outside the time horizon of this project, I was left with the five annexations in 2012. After closely examining the five annexations completed in 2012 only three annexations were in areas which included structures and population clusters. The two annexation areas that didn't include burglary data points were Elsmere Canyon and Soledad Commons, which were mainly land annexations with minimal structures. I edited the attribute table of this layer so GIS would only map the three areas of

annexation that included burglary data within their borders. These three annexations areas are Copperstone, Fair Oaks Ranch/ West Sand Canyon and North Copperhill. Additional data used to complete the analysis included the Countywide Address Management System (CAMS) shapefile from the LA County GIS Portal which contained street centerlines. I was able to clip this file with the city outline polygon in order to remove all streets falling outside the city limits.

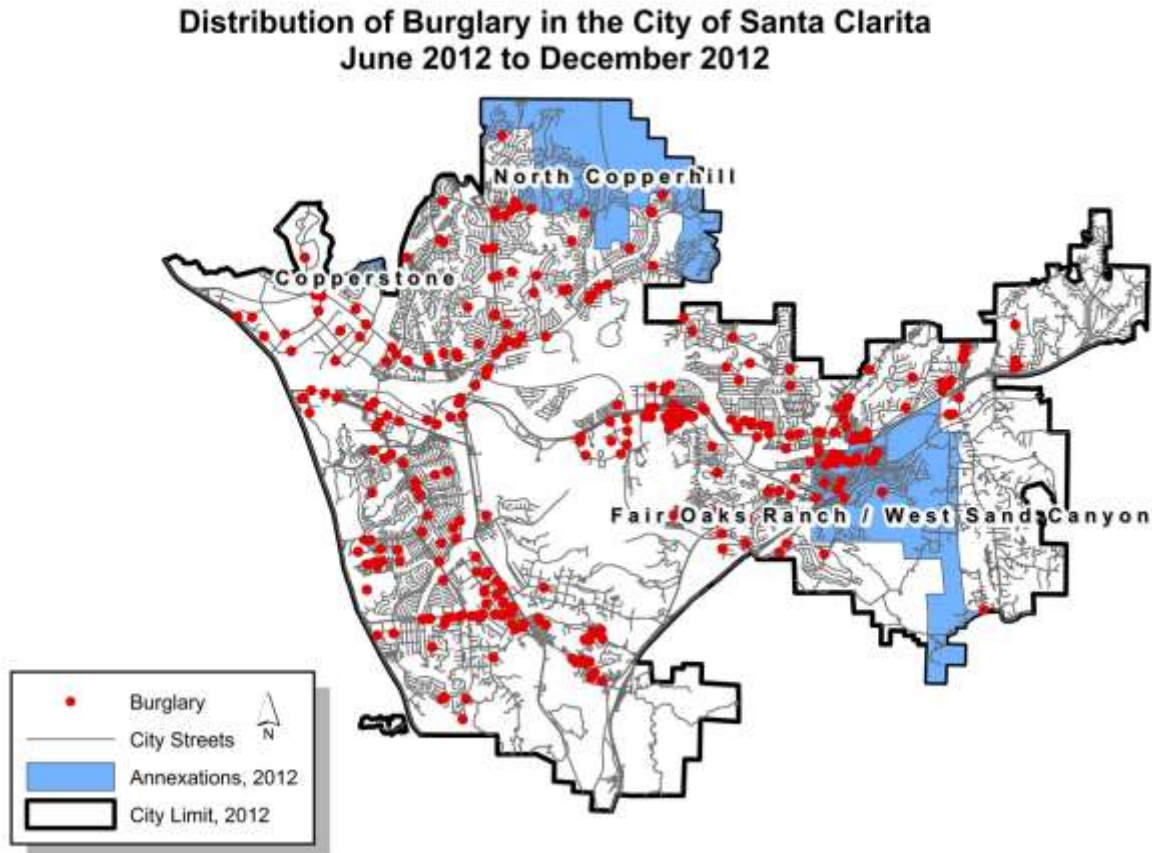
MAPS:

The first map below shows burglary data mapped for the period of June 2011-Dec. 2011 within the City of Santa Clarita, the number of burglaries mapped in this area during this time is 342. Please note the map below shows the 2012 or current city limits, a shapefile showing the 2011 city boundary was not available. To account for the 2012 boundary I edited the attribute table to remove all burglaries that occurred in areas outside of the 2011 city limits.

**Distribution of Burglary in the City of Santa Clarita
June 2011 to December 2011**



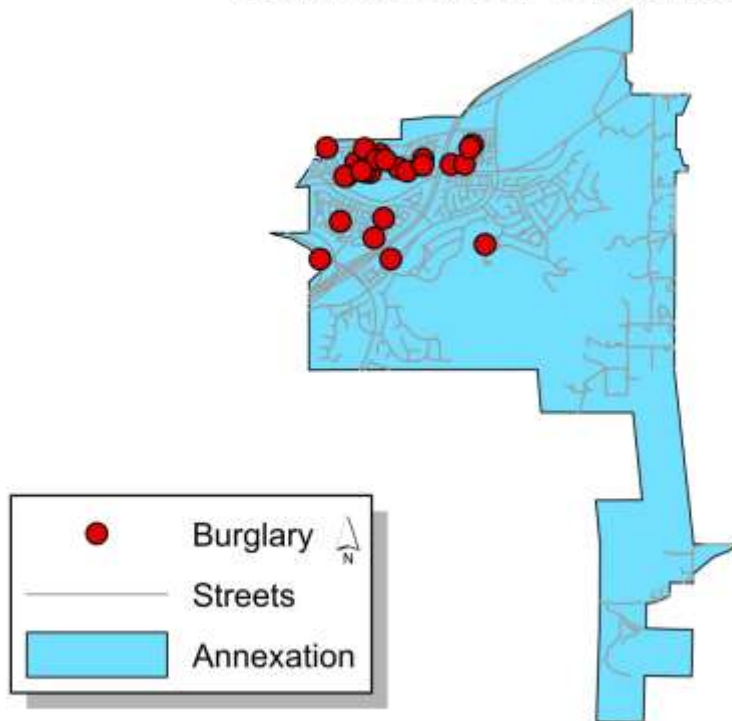
The map below shows burglaries for the same time period in 2012. During this period there were 411 burglaries an increase of 69 events or roughly 20% over 2011. In addition the three annexations that were completed in the latter half of the year are also highlighted in blue; they are Copperstone, North Copperhill and Fair Oaks Ranch/ West Sand Canyon.



To account for burglaries that occurred in the annexed areas prior to annexation I removed these from the attribute table so they would not skew the results. The burglaries that are mapped in 2012 all occurred after the respective annexation date and within the city limit. For example, any burglary that occurred in the North Copperhill area prior to 11/29/12 would have occurred outside city limits so I removed these data points. As a result there were no burglaries in the Copperstone during the time period of annexation and the end of the year, one in the North

Copperhill area and twenty seven in the Fair Oaks Ranch/ West Sand Canyon annexation area. The Fair Oaks Ranch/ West Sand Canyon annexation area highlighting the twenty seven burglaries from incorporation to the end of the year is below. This annexation accounted for the largest increase in burglaries.

Distribution of Burglary in the Fair Oaks/ West Sand Canyon Annexation September 11, 2012 to December 2012



Conclusion & Discussion:

As a result of annexations the city expanded its borders and thus the count of burglaries increased in this six month time frame. It is important to note that an increase in crime is to be expected as these three annexations increased the population of the city by roughly 25,000 residents. There are still 41 additional burglaries that occurred in the city during this time period that cannot be attributed to annexation. Using GIS I was able to conclude that within the latter

half of 2012 and due to recent annexations the burglary count rose by 28 events in the City of Santa Clarita. Naturally there were some limitations while completing this analysis. A few burglary events were missing X & Y coordinates so these data points may not have been mapped while using GIS. In addition the data I utilized only accounted for reported burglaries; if a burglary occurred and it was not reported to the authorities this data was omitted. Moreover during this time period there were dramatic changes in California public safety laws. The most notable legislation, Assembly Bill 109 or “The Public Safety Realignment Act” was passed by the California legislature in Oct. 2011 during the time horizon of this project. According to the California Department of Corrections and Rehabilitation (CDCR),

On May 23, 2011, the U.S. Supreme Court ruled 5-4 that the State must comply with an order handed down by a Three-Judge Court to reduce its prison population to 137.5 percent of design capacity within two years. In short, the U.S. Supreme Court held that prison medical and mental health care fall below the constitutional standard of care and the only way to meet constitutional requirements is for a massive reduction in the prison population (Three-judge panel and, 2011).

As a result of this U.S. Supreme Court ruling the California Legislature passed Assembly Bill 109 which began slowly shifting the supervision responsibility of nearly 30,000 inmates over a three year period to California’s 58 counties. Based on interviews with Sheriff’s Department personnel the City of Santa Clarita is currently dealing with a group of offenders who were transferred under this legislation. The cumulative recidivism rate for individuals released under AB 109 within the city is currently estimated to be in high 30% range. This high rate of recidivism can be partially attributed to a poorly written stipulation of the law that classifies criminals as non-violent, non-sexual and non-serious based on their most recent crime and not a through and complete review of the individuals criminal history. Initially the scope of this project was to utilize GIS to see if a spatial relationship existed between the location of probationers released under AB109 and burglaries. Unfortunately after interviews with law

enforcement and probation officers the reliability of addresses given by probationers is suspect. There are also ethical and legal ramifications of giving out the locations of individuals released under this new legislation to members of the public. Taking into account these factors I decided to examine recent annexations and burglaries instead. If I was able to complete the project with no resource or time limitations I would have attempted to locate a 2011 city limit outline, and improved upon the layout view of each map. Special recognition should be given to the City of Santa Clarita Sheriff's Department and the City of Santa Clarita GIS Department for their assistance as I completed this project.

Citations

1. Sgt. D. Harris, Personal Communication, 3-11-13, 3-21-13.
2. Probation Officer Joy, Personal Communication 3-21-13.
3. (Three-judge panel and, 2011). *Three-judge panel and california inmate population reduction*. California Department of Corrections and Rehabilitation. DOI:
www.cdcr.ca.gov