AUG 20, 2012 9:39 AM (217 views)

**Fighting crime using geospatial analysis in JMP**

I’ve been looking into crime − 9,134 rows of crime to be exact. After reading about [geospatial analysis of crime in *The Police Chief* magazine](http://www.policechiefmagazine.org/magazine/index.cfm?fuseaction=display&article_id=2695&issue_id=62012), I decided to do this in [JMP](http://www.jmp.com/software).

So, I downloaded all of the [individual crime incidents from April 2012](https://data.sfgov.org/Public-Safety/Map-Crime-Incidents-Previous-Month/gxxq-x39z) from the San Francisco government data website. Then, I began my geospatial analysis in JMP.

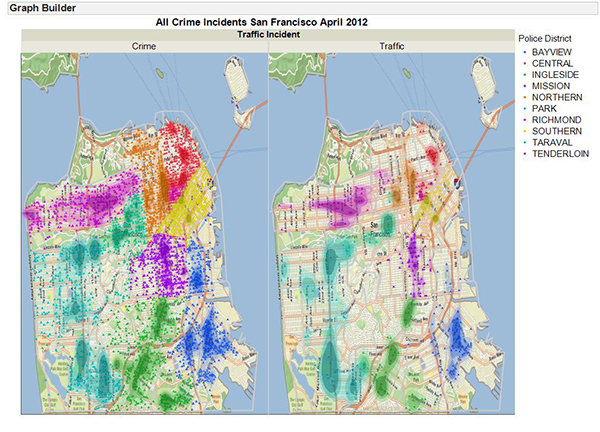
The first thing I did is to use the Bubble Plot to plot all the crimes. I saved this as an interactive Flash file. This lets you toggle the different categories of incidents on and off. I have a background map of San Francisco and ZIP codes outlined in white.

[iframe src ="https://community.jmp.com/legacyfs/online/wp\_images/2012/07/SF\_Crime\_1204\_2.html" width="620" height="410" border="0"]

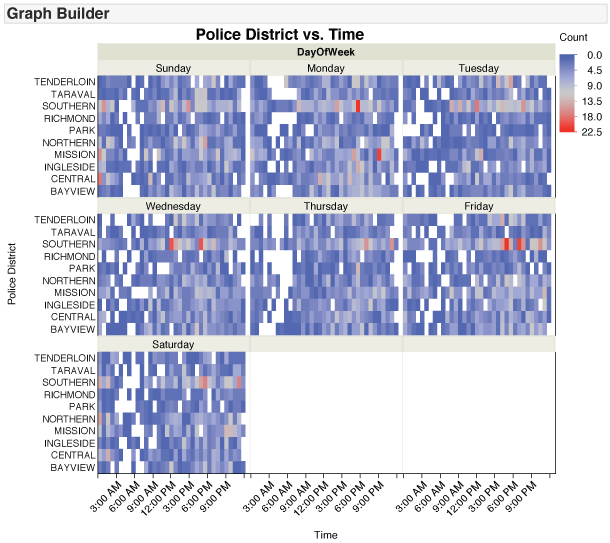
You can open the [Bubble Plot in a new window](https://community.jmp.com/legacyfs/online/wp_images/2012/07/SF_Crime_1204_2_full.html) to see it larger.

One challenge for police and other public safety officials is deciding where to put patrols to effectively reduce crime incidents. One idea is that traffic incidents co-occur with more serious crime, commonly called the [Data-Driven Approaches to Crime and Traffic Safety](http://www.calea.org/calea-update-magazine/issue-103/data-driven-approaches-crime-and-traffic-safety-its-application-publ) (DDACTS) model.

To explore this idea in JMP, I recoded the data into traffic and non-traffic incidents, and used Graph Builder in JMP to overlay density maps of each precinct. You can see that traffic and overall crime did have a similar pattern in April in San Francisco.

[](https://community.jmp.com/legacyfs/online/wp_images/2012/08/crime_traffic_San_Francisco_JMP_600.png)

Finally, I wanted to know more about when incidents occur. Again, I used Graph Builder, this time to make heat maps based on time, date and precinct. The heat maps provide a great overview, and they would be a helpful tool for staffing and force planning. At first, I was a little surprised that 6 pm is a high crime time in downtown San Francisco, but then I realized that is when everyone is out and about − including me!

[](https://community.jmp.com/legacyfs/online/wp_images/2012/06/sanfran-crime-incidents-heat-map1.png)

You can download my[JMP data table](https://login.sas.com/opensso/UI/Login?realm=/extweb&goto=http://support.sas.com/demosdownloads/license.jsp?productID=111419&jmpflag=Y) from the JMP File Exchange and explore the data and my visualizations yourself. I've saved my analyses to the data table. (Download of file requires a free SAS profile.)

*Note: Scott Wise of JMP contributed to this post.*