

OpenDSD Code Enforcement Data: College Area Study

Study Objective

The objective of this case is to demonstrate how [OpenDSD](#) data can be used to answer questions and monitor impacts of code enforcement actions on an issue that impacts a San Diego community.

Business Problem

A volunteer group subset of the College Area Community Planning Group was looking for a way to monitor the progress on open and recently closed code enforcement cases in the College Area Community Plan Area.

Data Available

A variety of data sources are available to help with this analysis. The City of San Diego has recently opened up availability to data used by the Development Services Department. This data includes not only permit data, but code enforcement data as well. The code enforcement case data is the dataset we will use to demonstrate this use.

Geographic Codes

Permits and Code Enforcement Cases are each tied to an address in the City.

Each address in the City is tied to a coordinate in a map projection called the [California State Map Plane 06](#). Municipalities and counties in California use this North American Datum map coordinate system for their jurisdictions per the State Map Act of 1983 (so these map coordinates are often called NAD83 coordinates). This map projection is a flat map projection in San Diego that projects as a number of feet from a point in the Pacific Ocean. So the NAD83_Northing coordinate is the number of feet north of that established point and NAD83_Easting is the number of feet east of that established (0,0) coordinate point in the ocean. The State Plane system is locally accurate, but it is difficult to share data across jurisdictions in different planes or with people who use spherical projections such as Latitude/Longitude systems. The OpenDSD team did the heavy lifting on this and also performed the spherical trigonometry work required to tie the data to latitude and longitude. We did this to enable presentation of our data in a Google Maps widget. For GIS folks who want to do this for other municipal government data, the formulary to do so is available from [NOAA](#) (factors used for California State Plane 06 are on page 81).

The datasets also provide a sortable address to help consumers sort data by address. The sortable address can also be used to search for data along streets. You can look for activity in the 5000-5999 range of El Cajon BL for example or just the 5200 block.

So while the DSD data is geocoded by NAD83 coordinate, latitude/longitude, address, Assessor Parcel Number (unless the violation or permit is in the public right-of-way), address, and address block range, people are interested in other geographies. Some are interested in zip codes, Council Districts,

Community Planning areas, nearness to their home, transit corridors, nearness to a school, nearness to a park, police beats, census tracts, etc. Using the data we do provide can get you close however. In this study we used a box bounding the College Area Community Plan area to geographically select code enforcement cases.

Don't forget you can use the first few digits of the [Assessor Parcel Number](#) for small irregular areas such as subdivisions. The first 3 digits are Assessor Map Book, the second three digits are Map page. Please be aware that selecting data on APN, will not capture right-of-way activity.

[OpenDSD](#)

The [OpenDSD](#) website makes real-time permit and code enforcement information available via the internet. On its front page, one can find ways to search through permit or code enforcement action history, or browse online maps of current activity. The Development Services Department also publishes PDFs of permit activity as well as electronic (XML) versions of code enforcement and permit data.

[Code Enforcement Activity XML Dataset](#)

This dataset is the list of all code enforcement cases in the City. It also includes cases closed within the last 6 months. It is the very same data shown on the real-time online code enforcement case maps. This data XML dataset is published weekly.

[Code Enforcement Complaint Types](#)

Complaint_Types_YYYYMMDD.csv is a CSV (comma separated values) dataset that can be opened up in a spreadsheet. This is a list of all "Complaint Type Codes" used by Development Services. These are classifications of complaints. This list is updated as codes are added or removed. Codes are updated no more than quarterly.

[Code Enforcement Remedies](#)

This is a sequenced list of code enforcement remedies. Not all remedies are applicable for all cases.

[Geographic Descriptors of Communities](#)

Community_Bounds.csv is a CSV (comma separated values) dataset that can be opened up in a spreadsheet. This is a list of bounding coordinates that puts a box around each of the Community Planning areas.

Meeting the Objective

The Volunteers were interested in any open or recently closed case that was not a “Noise” complaint.

Step By Step Answer

The lowest tech solution to meet this objective was to download the activity file, bring it up in a spreadsheet and eliminate rows of no interest. The process to do this is as follows:

1. Using an internet browser navigate to the following link:
<http://www.sandiego.gov/development-services/opensd/permitactivity.shtml>
2. Download the current activity file for code enforcement cases. This file contains open and recently (within 6 months) closed cases. Right-click on the link for “Mapped Code Enforcement Cases” and choose “Save link as...” in the popup menu. Save the downloaded file to the place on your computer where you will keep data files. This file is created every week
3. Copy the saved file as the name “CA_CASES_2015MMDD” for the date you are saving the file. In the reminder of this instruction, we will refer to this file name. If you lose or mess up the file, you can return to this step, delete the damaged file and re-copy it.
4. Open the “CA_CASES_2015MMDD” file with Microsoft Excel or some other XML capable spreadsheet.
 - a. Excel will prompt you on how to open the file. Choose to open “As An XML Table” and click OK.
 - b. Click OK at the next prompt.
 - c. Wait for the file to load. It is large, all cases in the City are in it.
 - d. The following steps are easier to do in the newest versions of Excel if the “Data | Sort & Filter | Filter” option is on.
5. (Optional) Add a link for up-to-date OpenDSD data:
 - a. Insert a new column between “Case ID” and “Case Source”.
 - b. In that new column in the first data row, add this formula that assumes you are in Row 2 and that “Case ID” is in column “J”
`=HYPERLINK("http://opensd.sandiego.gov/web/CECases/Details/" & TEXT($J2,"0"),"OpenDSD")`

6. Filter "Longitude" (click menu button next to the column heading) using the "Between..." option:

map_reference	longitude	latitude	nad83_northing	nad83_easting
0176			1836282	
0914			1839582	
1134			1832351	
1134			1832351	
1134			1832351	
7115			1838227	

Number Filters

Search

- ☒ (Select All)
- ☒ -117.281087
- ☒ -117.280506
- ☒ -117.280133
- ☒ -117.279773
- ☒ -117.279751
- ☒ -117.279546
- ☒ -117.279097
- ☒ -117.279009
- ☒ -117.278703

OK Cancel

Filter Options:

- Equals...
- Does Not Equal...
- Greater Than...
- Greater Than Or Equal To...
- Less Than...
- Less Than Or Equal To...
- Between...**
- Top 10...
- Above Average
- Below Average
- Custom Filter...

Use -117.100995 and -117.039156 as the longitude boundary for College Area:

Custom AutoFilter

Show rows where:

longitude

is greater than or equal to -117.100995

☒ And ☐ Or

is less than or equal to -117.039156

Use ? to represent any single character
Use * to represent any series of characters

OK Cancel

longitude
-117.140165
-117.128449
-117.114994
-117.114994
-117.114994
-117.138792
-117.272756
-117.272499
-117.094803
-117.102666

-
- latitude
- 32.9825
- 32.709992
- 32.710467
- 32.80855
- 32.982227
- 32.711989
- 32.710479
- 32.681654
- 32.692891
- 32.556497
- Custom AutoFilter
- Show rows where:
- latitude
- is greater than or equal to 32.757471
- ☒ And ☐ Or
- is less than or equal to 32.780853
- Use ? to represent any single character
Use * to represent any series of characters
- OK Cancel

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- The screenshot shows the 'complaint_type' dropdown menu in the 'AF' application. The menu is open, displaying various sorting and filtering options. The 'Noise-Barking Dogs' option is highlighted in the search results list. The 'OK' and 'Cancel' buttons are visible at the bottom of the dialog.
- complaint_type
- Sort A to Z
 - Sort Z to A
 - Sort by Color
 - Clear Filter From "complaint_type"
 - Filter by Color
 - Text Filters
- Search
- ☒ Housing-No Fence w/ Pool/Spa
 - ☒ Housing-Plumbing Deficiency
 - ☒ Housing-Structural Deficiency
 - ☒ Housing-Structure Not Intended f
 - ☐ Noise-Barking Dogs
 - ☒ Noise-Other Offensive Noise
 - ☒ Sign-Banner
 - ☒ Sign-Sign in Public Right Of Way
 - ☒ Sign-Unpermitted Sign
- OK Cancel

9. Copy and save the filtered rows in your spreadsheet as needed.

Technology Used

A variety of software was used to analyze the study data. While the City does not advocate the use of these products, we tried to use tools that were widely available, expected to be available for a long time, and were free or affordable. While the City of San Diego does not support maintenance, configuration, or programming on your personal computers, we do describe how we used tools for this study:

XML

Extensible Markup Language ([XML](#)) is the lingua franca of the [open data](#) world. It is a data publishing standard rather than software. XML is the best way to share complex data in a machine-readable form. People are far more familiar with spreadsheet data, but spreadsheet data is two dimensional. In the study data there are a few code enforcement cases that have multiple complaint codes. While the case appears one time in the XML, when the spreadsheet tool opens the XML it flattens it and shows multiple instances of the code enforcement case each with a different complaint type.

Zip Extraction Tool

The Development Services Department publishes machine-readable activity lists in a compressed form to enable quicker downloads. You will have to decompress the zipped file. Modern operating systems do this for you generally. [7-zip](#) is another popular free tool to unzip files if your operating system has trouble doing this.

Spreadsheet Application

In the study, we used spreadsheets to view and communicate the final result. Due to its ubiquity, we used Microsoft Excel. Google Sheets or Open Office have tools that can display XML files as well. But there are many [options](#).