

Data Science for Smart Cities CE88

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CE88 in title

Today



Urban data collection, handling and processing.

Lecture 5. Data acquisition: measurement and crowd-sensing.

Lecture 6. Community surveys, population census, open government data, APIs.

Agenda:

9:10 Lecture 5. Data acquisition: measurement and crowd-sensing.

Lecture 6. Community surveys, population census

10:00 Break

10:10 Mini-lab

10:40 Lecture 6. Open government data, APIs.

Open Data



 Open data is data that can be freely used, reused and redistributed by anyone - subject only, at most, to the requirement to attribute and sharealike.

opendatahandbook.org/en/what-is-open-data/

 Open data is the idea that certain data should be freely available to everyone to use and republish as they wish, without restrictions from copyright, patents or other mechanisms of control.

en.wikipedia.org/wiki/Open_data

- Who provides open data:
 - Government: federal, state, regional and local municipal governments, including cities
 - Institutions: universities
 - Organizations: international and national standards bodies and NGOs.
 - Private: corporations, individuals

Oakland

https://data.oaklandnet.com/



















Proposed Budget for Fiscal Years 2015-2017

On May first the Mayor

Financial Forecast 2016-2020

Every two years the city

CrimeWatch Maps Past 90-Days

We are committed to making

Public Works Service Requests

You can view public works

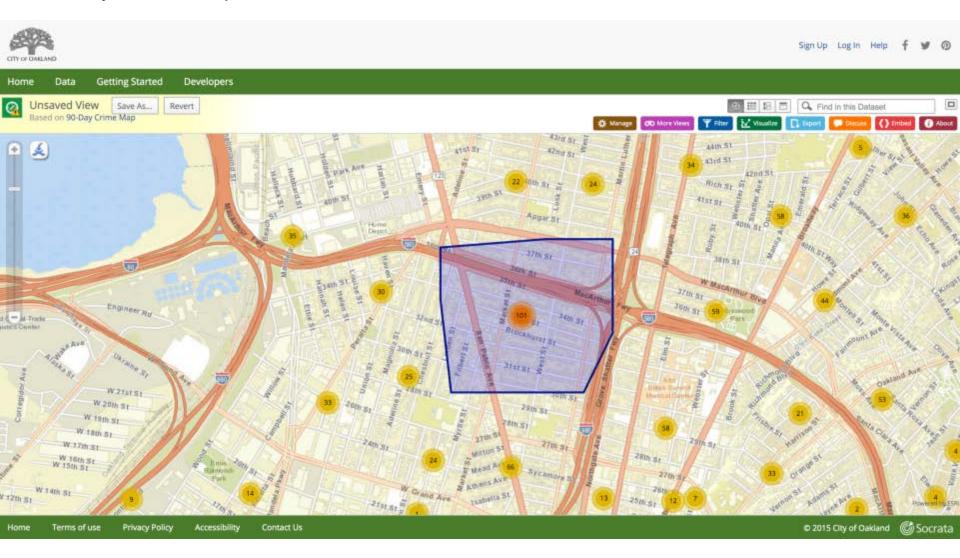
Resilience

Resilience is the capacity of individuals, communities and

Oakland



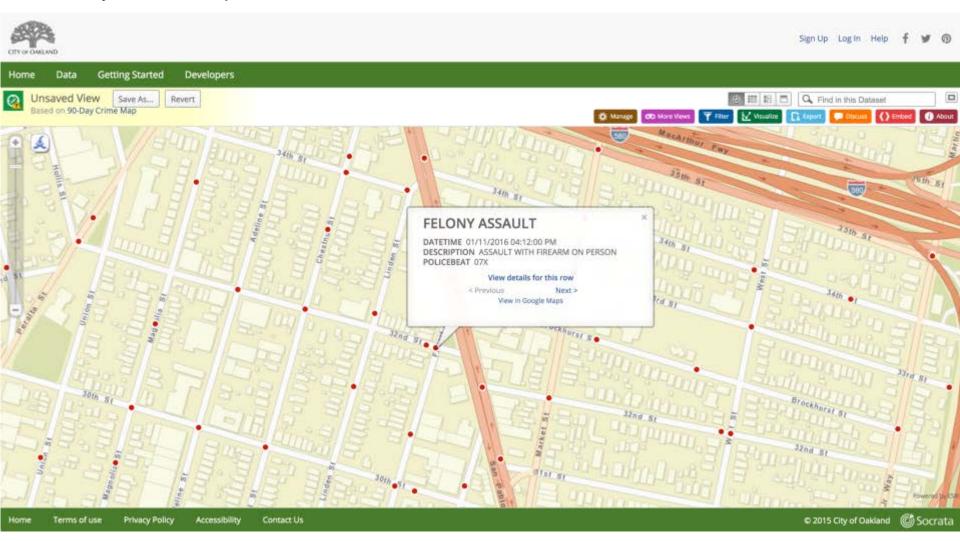
90-Day Crime Map



Oakland



90-Day Crime Map







City of Berkeley Open Data

Catalog Developers Sign In

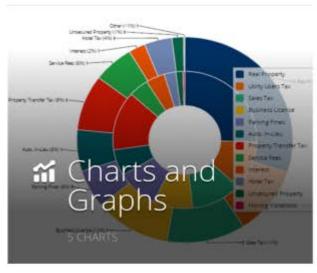


Search Data

Welcome to the City of Berkeley Open Data portal. Please use the brief (1 to 5 minute) tutorial videos below to help understand how to use the Open Data portal features. Please use the City's Online Service Request form to offer feedback or ideas regarding this site.









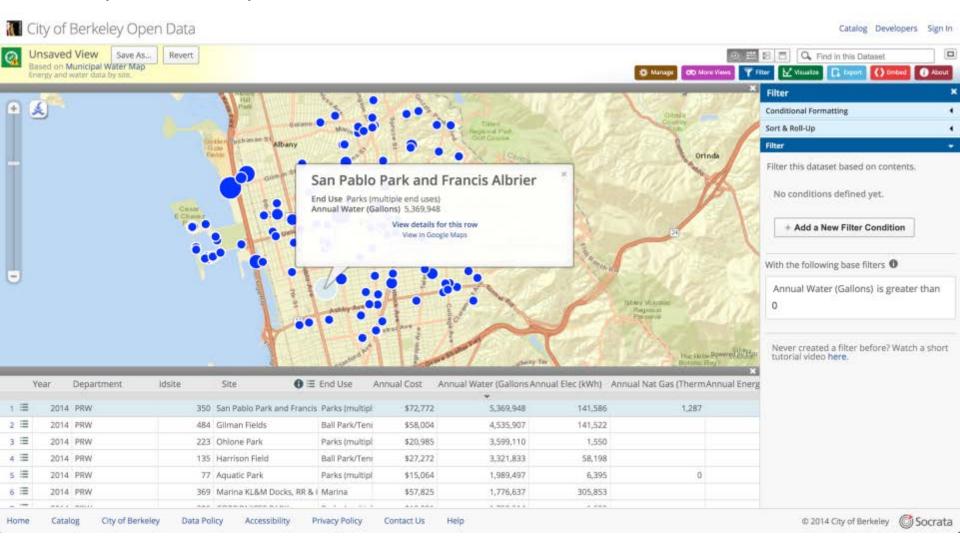




Berkeley



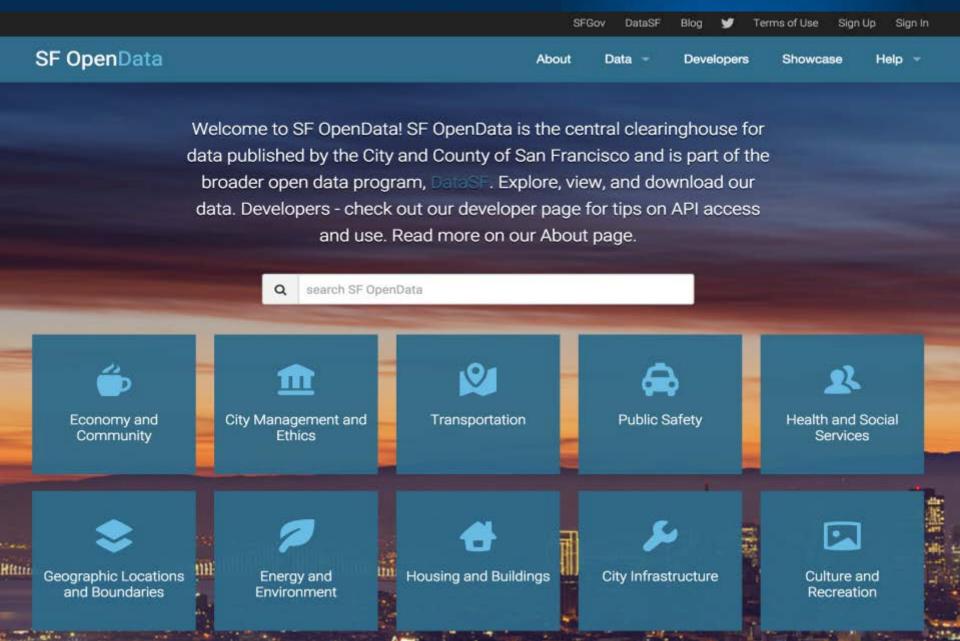
Municipal Water Map



San Francisco



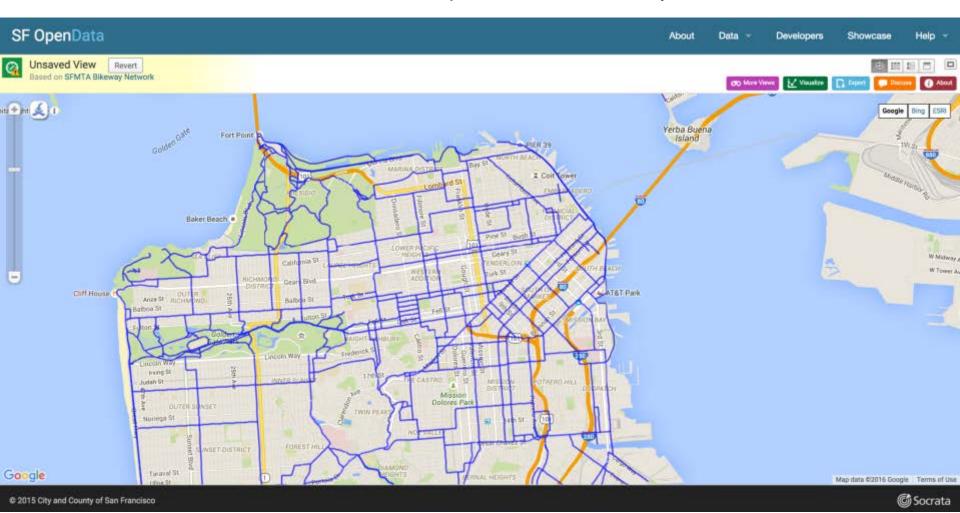




San Francisco



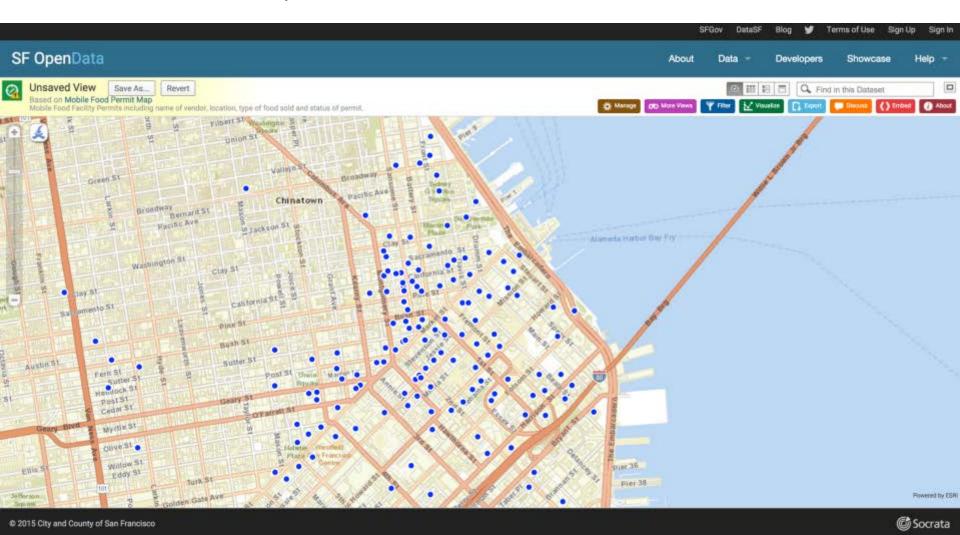
The network of bike routes, lanes, and paths around the city of San Francisco.



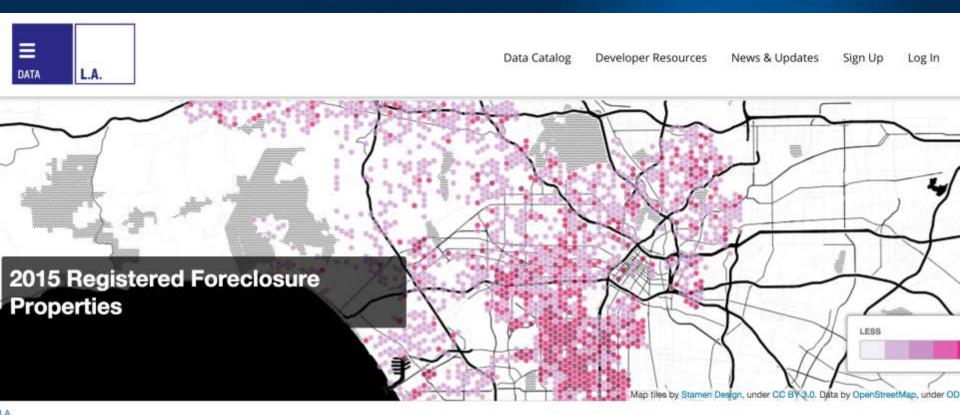
San Francisco



Mobile Food Permit Map



Los Angeles



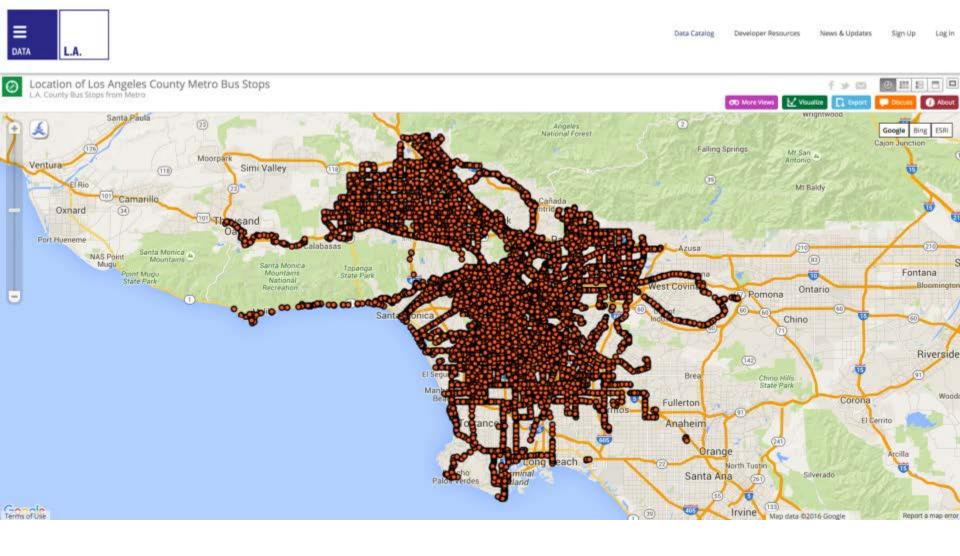
LOS ANGELES OPEN DATA

Information, Insights, and Analysis from the City of Los Angeles

Los Angeles



Location of Los Angeles County Metro Bus Stops



APIs



Application programming interface (API) is a set of routines, protocols, and tools for building software and applications.

Sample APIs for web services:

Twitter https://dev.twitter.com/overview/api

Google Maps Directions

https://developers.google.com/maps/documentation/directions/

Uber https://developer.uber.com/docs

APIs for accessing open data over the internet, for example:

https://dev.socrata.com/consumers/getting-started.html

Open Urban Data APIs



No standards in APIS or established sources yet, but there's some that are useful

https://dev.socrata.com/consumers/getting-started.html

</> SODA Developers

App Developers ▼

■ API Docs ▼

BLibraries & SDKs

Search

Getting started with the SODA Consumer API

App Developers

Getting Started Finding Open Data

Examples

Analyzing Open Data with SAS

Animated Heatmap with Heatmap.js Create a column chart with Highcharts

Creating an Application with ASP.NET

Making a heatmap with R Data Analysis with Python, Pandas, and So you want to win that hackathon or build the next hot open data app? Follow this guide to get yourself started. Make sure you check out the more detailed resources under the "API Docs" section when it's time to get in deep.

Locating Open Data and APIs

Socrata hosts over one hundred different data catalogs for governments, non-profits, and NGOs around the world, so finding an open data catalog to work with is easy:

- Check to see if your local government or state already has an open data site. Check your city or state website or even just Google "open data" and your government's name. You'll probably find something pretty quickly.
- Peruse the Open Data Network, our global catalog of open datasets. The same catalog listing is
 also available programmatically via the Global Catalog API.
- Check to see if there's a community group in your area with their own catalog hosted on communities.socrata.com. Got a community group or event of your own and want free hosting for your data and APIs? Sign up!

Open Urban Data APIs



A set of routines to access data programmatically over the internet, from within code/application. For example:

https://data.cityofchicago.org/resource/alternative-fuel-locations.json?\$where=within_box(location, 41.885001, -87.645939, 41.867011, -87.618516)

```
[ {
    "location" : {
        "needs_recoding" : false,
        "longitude" : "-87.6341564",
        "latitude" : "41.8774754"
    },
    "access_days_time" : "24 hours daily",
    "state" : "IL",
    "ev_network_web" : {
        "url" : "http://www.mychargepoint.net/"
    },
```

```
"geocode_status": "200-9",
 "city": "Chicago",
 "fuel_type_code": "ELEC",
 "ev network": "ChargePoint Network",
 "id": "36612",
 "intersection_directions": "326 S WELLS 2; Traders Self-Park
Garage www.InterParkGreen.com\n326 S WELLS 1; Traders
Self-Park Garage www.InterParkGreen.com",
 "longitude": "-87.6341564",
 "status_code": "E",
 "zip": "60607",
 "station_name": "INTERPARK",
 "groups_with_access_code": "Public",
 "station phone": "888-758-4389",
 "date_last_confirmed": "2016-02-02T00:00:00",
 "updated_at": 1454410732,
 "ev_level2_evse_num": "2",
 "ev level1 evse num": "2",
 "latitude": "41.8774754",
 "street address": "326 S Wells St"
}]
```

Socrata





Products

Solutions

Resources

Community

About

SCHEDULE A MEETING

Socrata's mission is to unleash the power of government data to improve society. To that end we offer several products that help make data more accessible, more understandable, and more actionable by everyone who wants to know more about their government and communities.







Open Data

Socrata Open Data supports the entire lifecycle of data, from publishing your data to the cloud, all the way to empowering developers to utilize that data to build apps that impact the community directly.

Open Performance

Socrata Open Performance is the premier performance management solution for governments of all sizes to establish and communicate their goals and tangible achievements.

Perspectives

Socrata Perspectives enables governments and data experts to connect the dots between policy and outcomes to better engage their constituents, using the data and expert insight only they can provide.





