Visualizing A Web Of Data

Stamen Design

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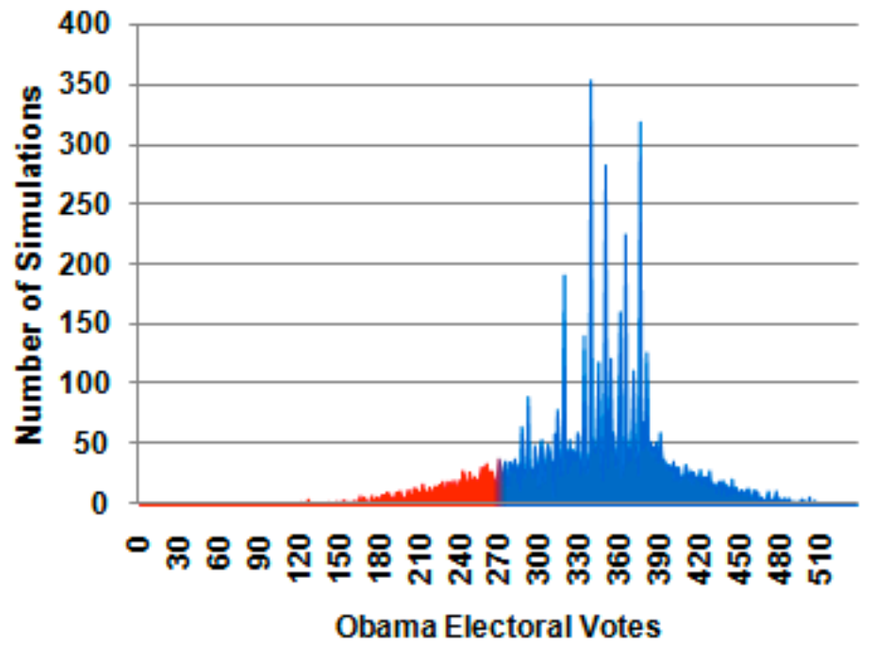
Data + Design

**Open data and visualization are colliding,
and feeding off one another to mutual benefit**

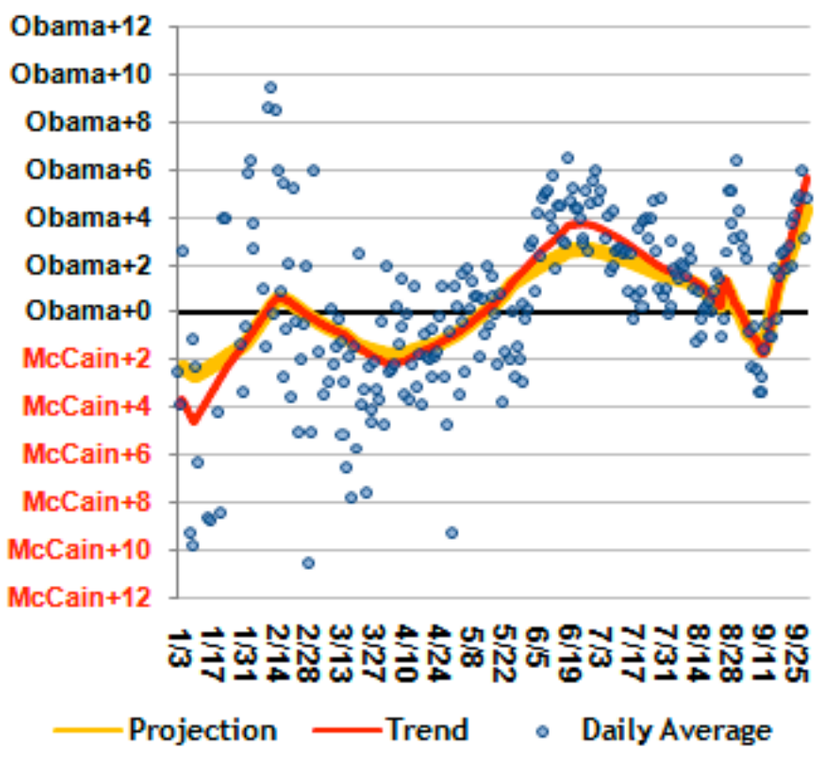
Agency	Weight	Date	Size	DEM	GOP	Margin
SurveyUSA	1.15	9/24	661	53	43	Obama +10
PPIC	0.93	9/13	1157	50	40	Obama +10
Field	0.91	9/10	830	52	36	Obama +16
Rasmussen	0.81	9/22	500	56	39	Obama +17
ARG	0.69	9/19	600	53	39	Obama +14
Rasmussen	0.30	8/20	500	54	41	Obama +13
PPIC	0.17	8/16	1047	48	39	Obama +9
Rasmussen	0.13	7/24	500	52	42	Obama +10
Field	0.12	7/11	672	54	30	Obama +24
SurveyUSA	0.08	6/18	503	53	41	Obama +12
PPIC	0.05	7/15	1401	50	35	Obama +15
Rasmussen	0.05	6/23	500	58	30	Obama +28
Polling Average				52.7	39.4	Obama +13.3
Trend-Adjusted				55.4	37.3	Obama +18.2
538 Regression	0.75			55.1	36.9	Obama +18.2
Snapshot				55.4	37.2	Obama +18.2
Projection		*MOE*	*±7.4*	**57.2**	**40.9**	**Obama +16.2**
Win %				**98%**	**2%**	**Safe DEM**

Agency	Weight	Date	Size	DEM	GOP	Margin
Quinnipiac	1.42	9/18	1418	49	45	Obama +4
PPP	1.23	9/21	1084	51	44	Obama +7
Rasmussen	0.93	9/28	500	49	48	Obama +1
CNN	0.91	9/22	794	49	45	Obama +4
Rasmussen	0.89	9/23	700	50	47	Obama +3
ARG	0.77	9/24	600	45	48	McCain +3
InsiderAdvantage	0.73	9/23	505	50	41	Obama +9
National Journal	0.46	9/13	402	45	44	Obama +1
PPP	0.42	9/8	1078	47	46	Obama +1
Rasmussen	0.40	9/14	500	46	48	McCain +2
InsiderAdvantage	0.40	9/17	508	51	41	Obama +10
Suffolk	0.31	8/23	450	44	39	Obama +5
ARG	0.29	9/12	600	44	46	McCain +2
Rasmussen	0.28	9/7	500	49	46	Obama +3
Rocky Mtn News	0.26	8/12	500	41	44	McCain +3
Mason-Dixon	0.25	8/14	400	46	43	Obama +3
Quinnipiac	0.24	8/18	1060	46	47	McCain +1
Zogby Interactive	0.23	9/11	825	45.5	47.5	McCain +2
InsiderAdvantage	0.23	9/10	501	49	46	Obama +3

Electoral Vote Distribution



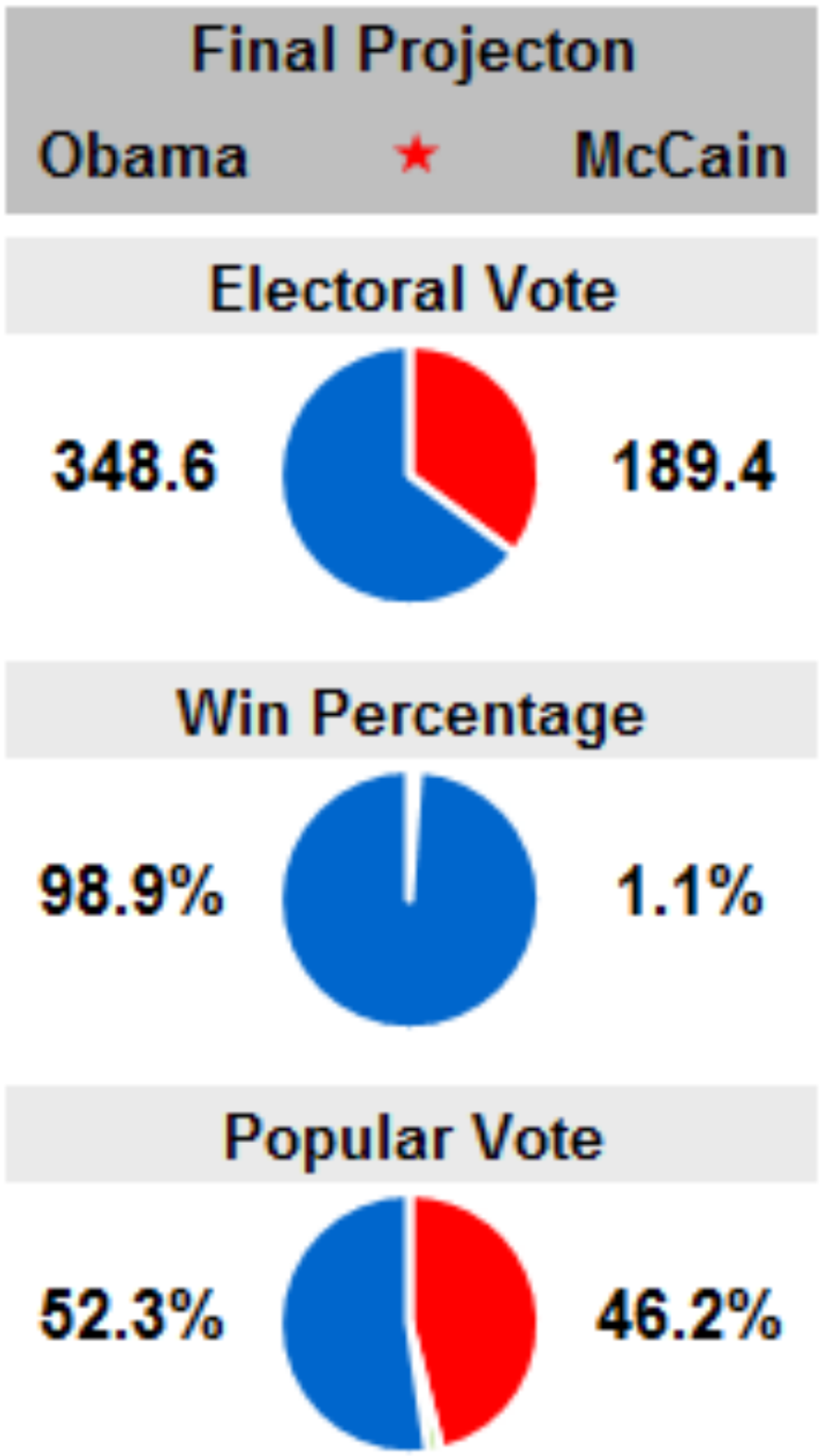
Super Tracker



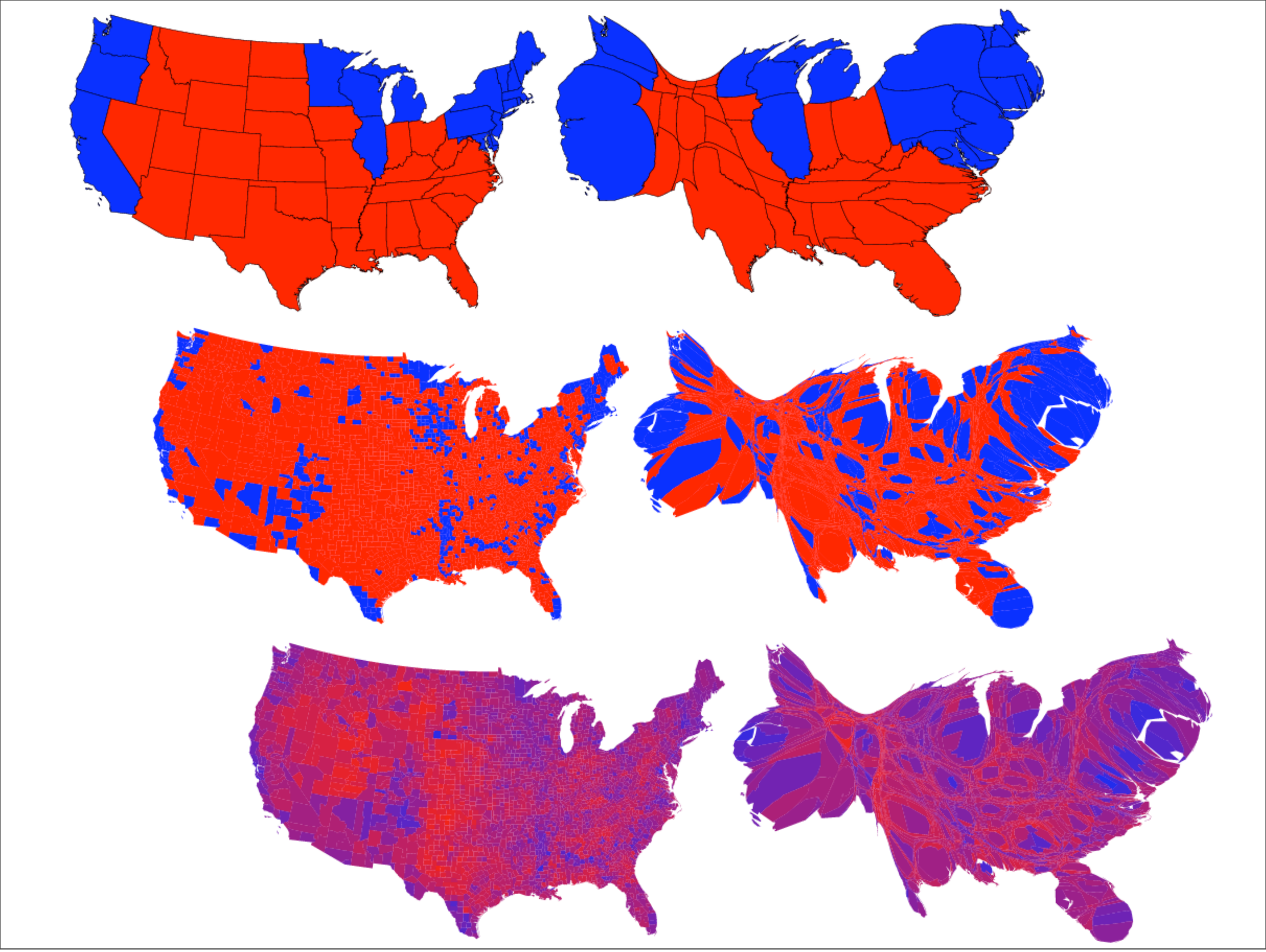
	Agency	Weight	Date	Size	DEM	GOP	Mar
ID	Research 2000	0.67	9/17	500	33	62	McCain
ID	Rasmussen	0.62	9/10	500	29	68	McCain
ID	ARG	0.54	9/9	600	26	68	McCain
ID	Greg Smith	0.36	8/20	600	29	52	McCain
ID	Research 2000	0.14	7/29	500	37	53	McCain
ID	Polling Average				29.9	62.9	McCain
ID	Trend-Adjusted				33.4	60.1	McCain +2
ID	538 Regression	0.75			36.0	56.5	McCain +2
ID	Snapshot				34.1	59.3	McCain +2
ID	**Projection**		*MOE*	*±10.6*	**35.7**	**62.7**	**McCain**
ID	**Win %**				**1%**	**99%**	**Safe G**

	Agency	Weight	Date	Size	DEM	GOP	Mar
IL	Research 2000	0.96	9/17	800	56	36	Obama
IL	Rasmussen	0.72	9/17	500	56	40	Obama
IL	Big Ten	0.68	9/16	628	52.9	37	Obama +1
IL	ARG	0.62	9/15	600	51	45	Obama
IL	Rasmussen	0.25	8/12	500	53	38	Obama
IL	Rasmussen	0.09	7/8	500	52	41	Obama
IL	Polling Average				54.1	39.1	Obama
IL	Trend-Adjusted				56.9	36.5	Obama +2
IL	538 Regression	0.75			56.5	36.3	Obama +2
IL	Snapshot				56.8	36.5	Obama +2
IL	**Projection**		*MOE*	*±7.6*	**58.7**	**39.7**	**Obama**
IL	**Win %**				**99%**	**1%**	**Safe D**

	Agency	Weight	Date	Size	DEM	GOP	Mar
IN	SurveyUSA	1.34	9/29	687	45	48	McCain
IN	Selzer	0.89	9/15	600	47	44	Obama
IN	CNN	0.83	9/15	890	43	48	McCain
IN	Rasmussen	0.74	9/18	500	47	49	McCain
IN	Big Ten	0.67	9/16	612	43.2	46.7	McCain +
IN	ARG	0.64	9/16	600	44	47	McCain
IN	Howey-Gauge	0.44	8/29	600	43	45	McCain
IN	SurveyUSA	0.38	8/17	645	44	50	McCain
IN	Rasmussen	0.30	8/20	500	43	49	McCain
IN	SurveyUSA	0.09	6/22	625	48	47	Obama
IN	IN Legis. Insight	0.05	5/30	601	38	47	McCain
IN	Polling Average				44.7	47.3	McCain +
IN	Trend-Adjusted				46.8	45.6	Obama +
IN	538 Regression	0.75			42.8	50.2	McCain +
IN	Snapshot				46.3	46.1	Obama +



Nate Silver maintained a set of simple information graphics. These were kept minimal: maps, pie charts, bar charts, spark lines. However, the constantly-shifting nature of the election made the site an addictive experience. Fans of the site visited it constantly, showing the emotional value of timely, important information presented simply.



Mark Newman
University of Michigan

These images, made after the election, show a hunger for a more nuanced way to present information.

Casualties of War

FACES | ANALYSIS | THEIR STORIES

E-MAIL | FEEDBACK

Use the slider below to investigate the demographics and military status of U.S. service members who died during the war in Iraq.

MARCH 16, 2003 — MARCH 13, 2004 (52 WEEKS)

Show all | Last two months | Initial invasion | First invasion of Falluja | Second invasion of Falluja

566 deaths

Age

18-24	46%
25-34	37%
35-44	14%
45+	3%

Branch of Military

Air Force	1%
Army	82%
Marine Corps	15%
Navy	2%

Race

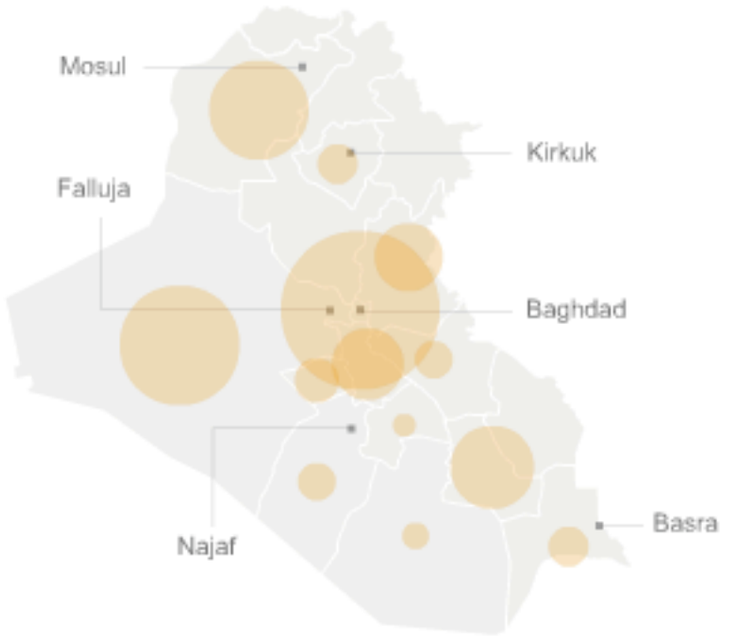
Black	15%
Hispanic	12%
White	69%
Other	5%

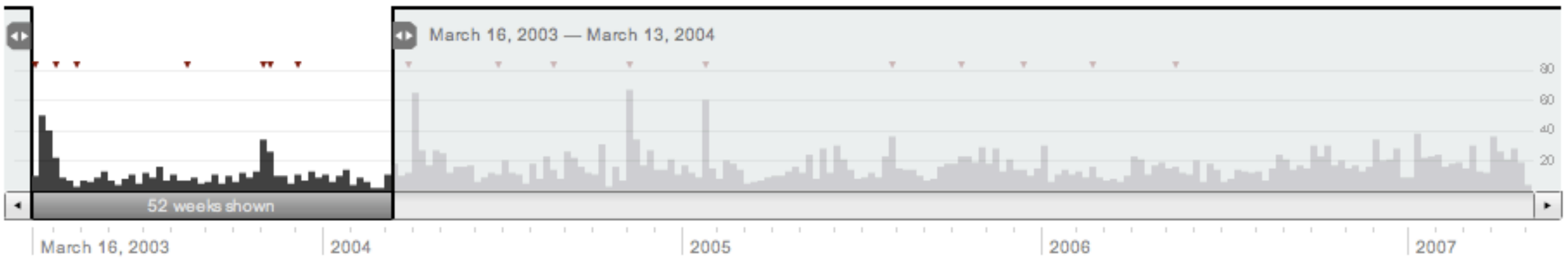
Type of Duty

National Guard	9%
Regular	83%
Reserve	8%

Location of death

Circles sized according to percentage of deaths in each Iraqi province.





This is the New York Times Casualties of War, again dealing with a constant flow of new incoming information. This piece debuted in 2005, and has been kept up to date through the present day.

Casualties of War

FACES | ANALYSIS | THEIR STORIES

E-MAIL | FEEDBACK

Use the slider below to investigate the demographics and military status of U.S. service members who died during the war in Iraq.

JAN. 1 — APRIL 1, 2006 (13 WEEKS)

Show all | Last two months | Initial invasion | First invasion of Falluja | Second invasion of Falluja

150 deaths

Age

18-24	55%
25-34	33%
35-44	11%
45+	1%

Branch of Military

Air Force	2%
Army	70%
Marine Corps	27%
Navy	1%

Race

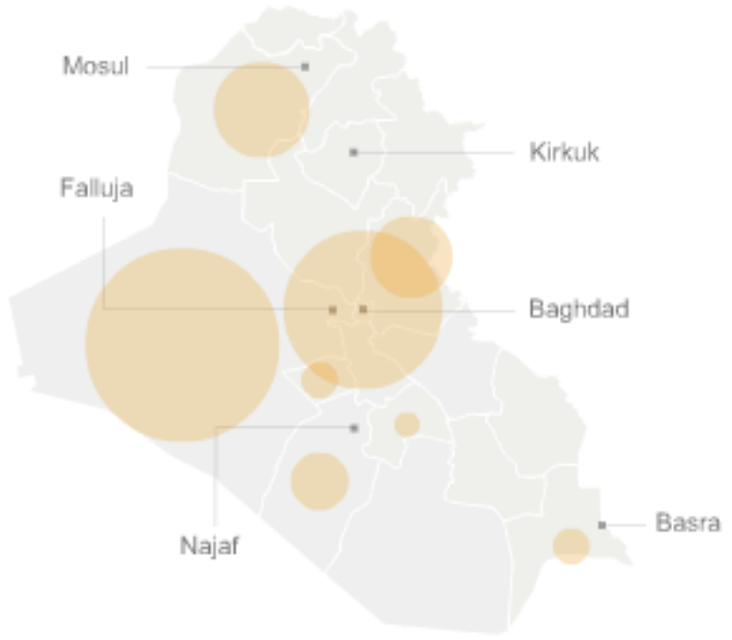
Black	8%
Hispanic	15%
White	70%
Other	7%

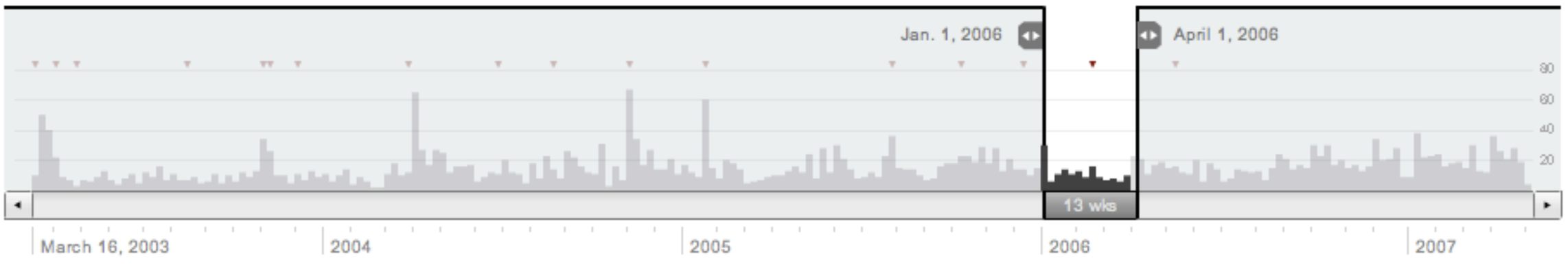
Type of Duty

National Guard	11%
Regular	87%
Reserve	3%

Location of death

Circles sized according to percentage of deaths in each Iraqi province.





The site links several variables about the Iraq war to a timeline and a map: date, location, age, race, military branch, and duty type of each American soldier killed in action.

News event connected to the war are also shown along the timeline, allowing for rich interactions with data.

Casualties of War

FACES | ANALYSIS | THEIR STORIES

E-MAIL | FEEDBACK

Use the slider below to investigate the demographics and military status of U.S. service members who died during the war in Iraq.

AUG. 13, 2006 — MAY 5, 2007 (38 WEEKS)

Show all | Last two months | Initial invasion | First invasion of Falluja | Second invasion of Falluja

775 deaths

Age

18-24	57%
25-34	32%
35-44	8%
45+	3%

Branch of Military

Air Force	1%
Army	73%
Marine Corps	23%
Navy	3%

Race

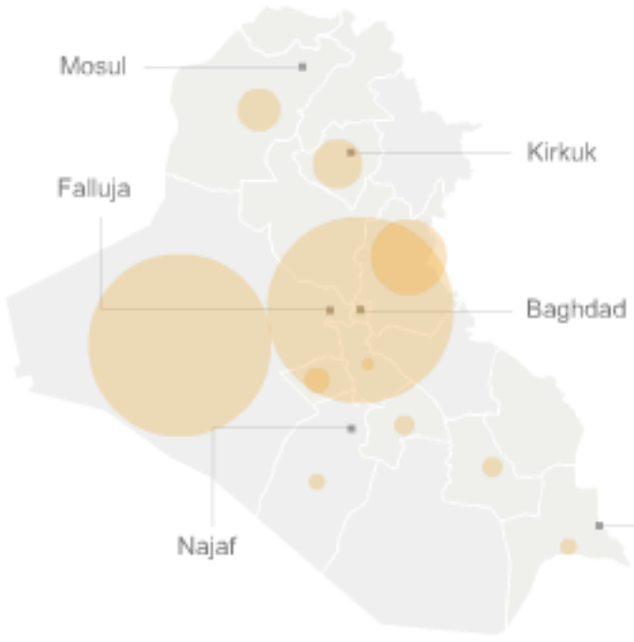
Black	9%
Hispanic	10%
White	76%
Other	5%

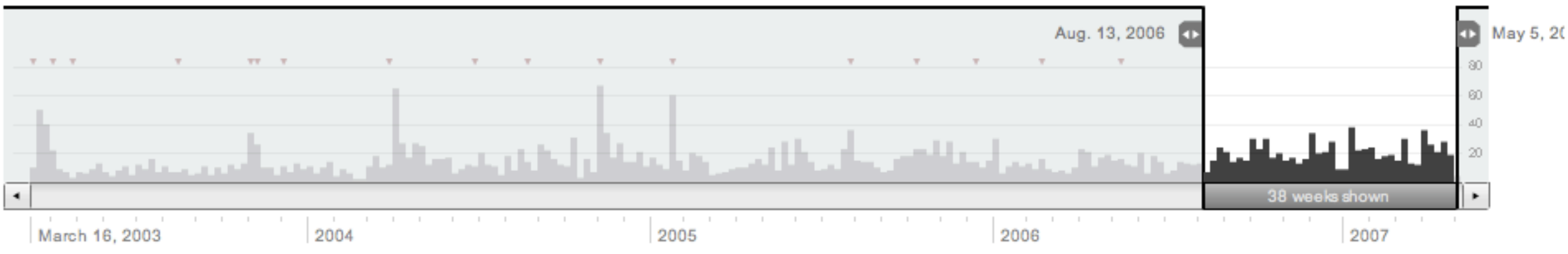
Type of Duty

National Guard	7%
Regular	85%
Reserve	8%

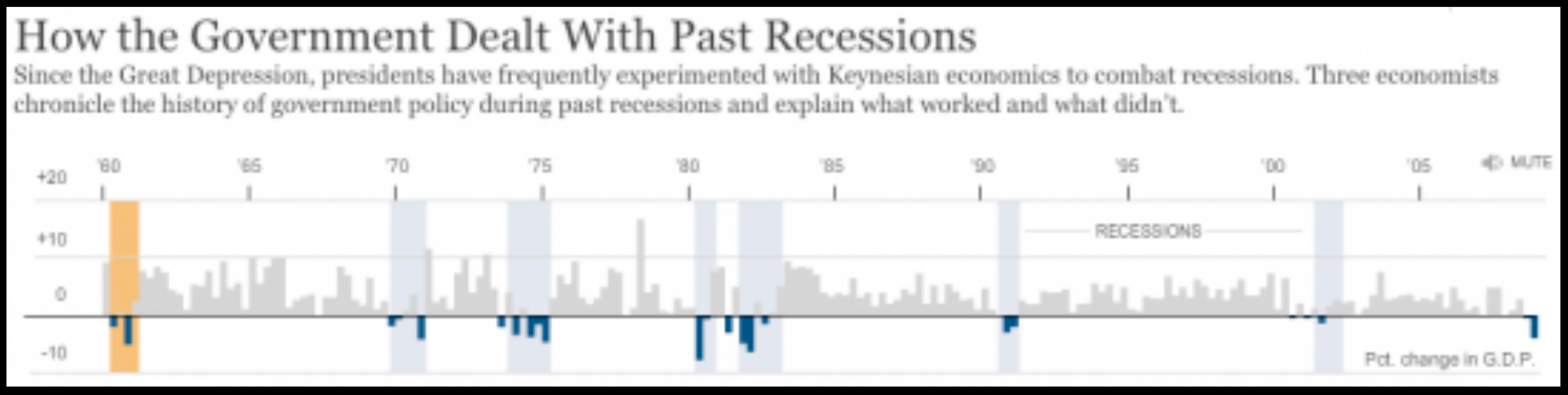
Location of death

Circles sized according to percentage of deaths in each Iraqi province.





The importance of this project is in its currency. As a news organization, the New York Times has committed to maintaining up to date information for several years.



New York Times, Recession data

Live, Vast, and Deep

The iron triangle of information visualization

The iron triangle of information visualization

“Live”: our favorite projects demonstrate data that is, ideally, being generated as you watch it.

“Vast”: data can cover an enormous surface area, think Google Maps

“Deep”: data is dense, interlinked

Live, Vast, and Deep

MoveOn.org Virtual Town Hall

Influencing the 2004 Presidential election

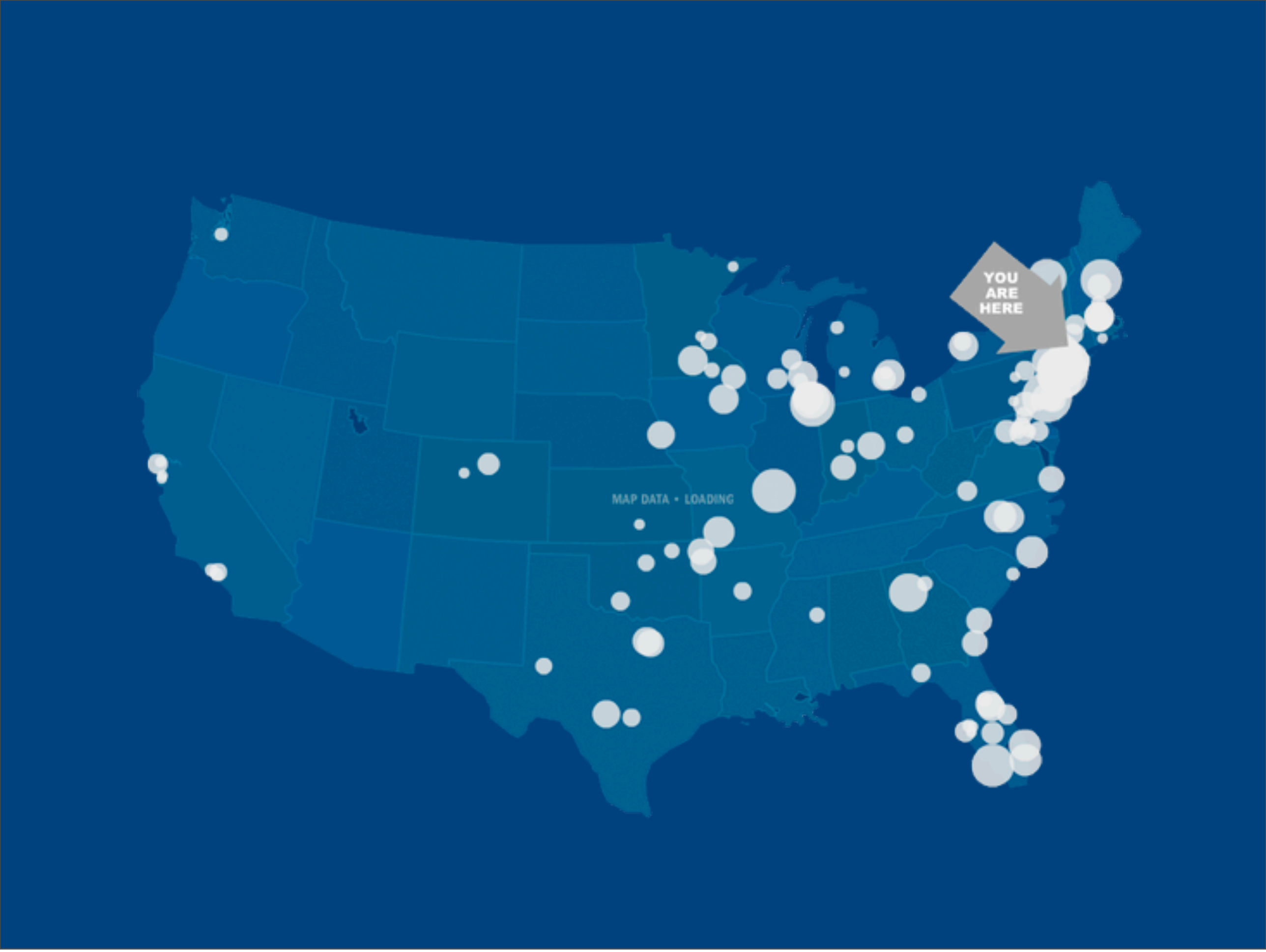
MoveOn's Virtual Town Hall was an early project we did with US-based liberal political group, MoveOn.org. In 2004, they were (unsuccessfully) trying to prevent a second term for President Bush.

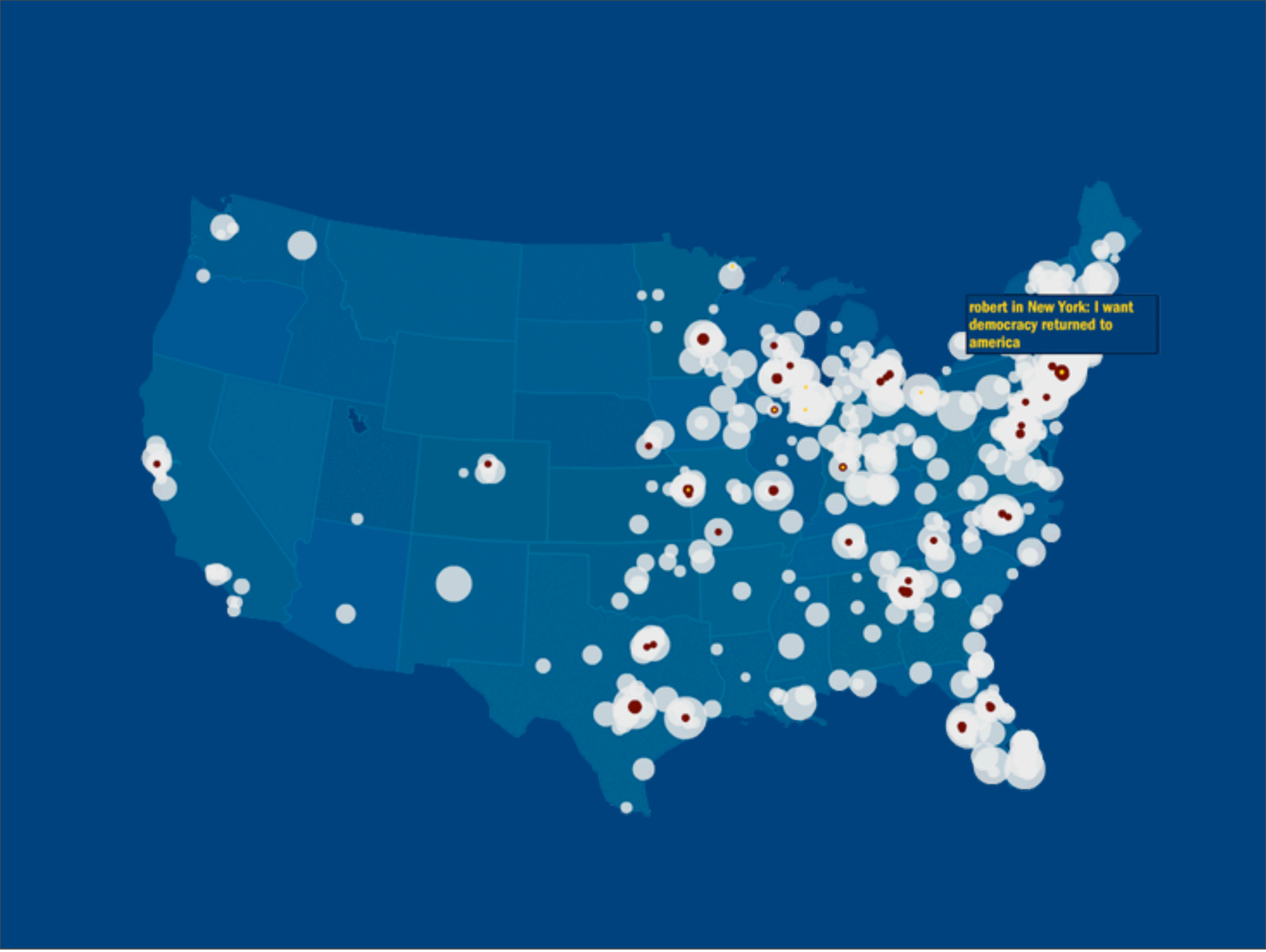
They wanted to improve on the conference calls they were doing via regular phone connections - these were both expensive and not-very-good.

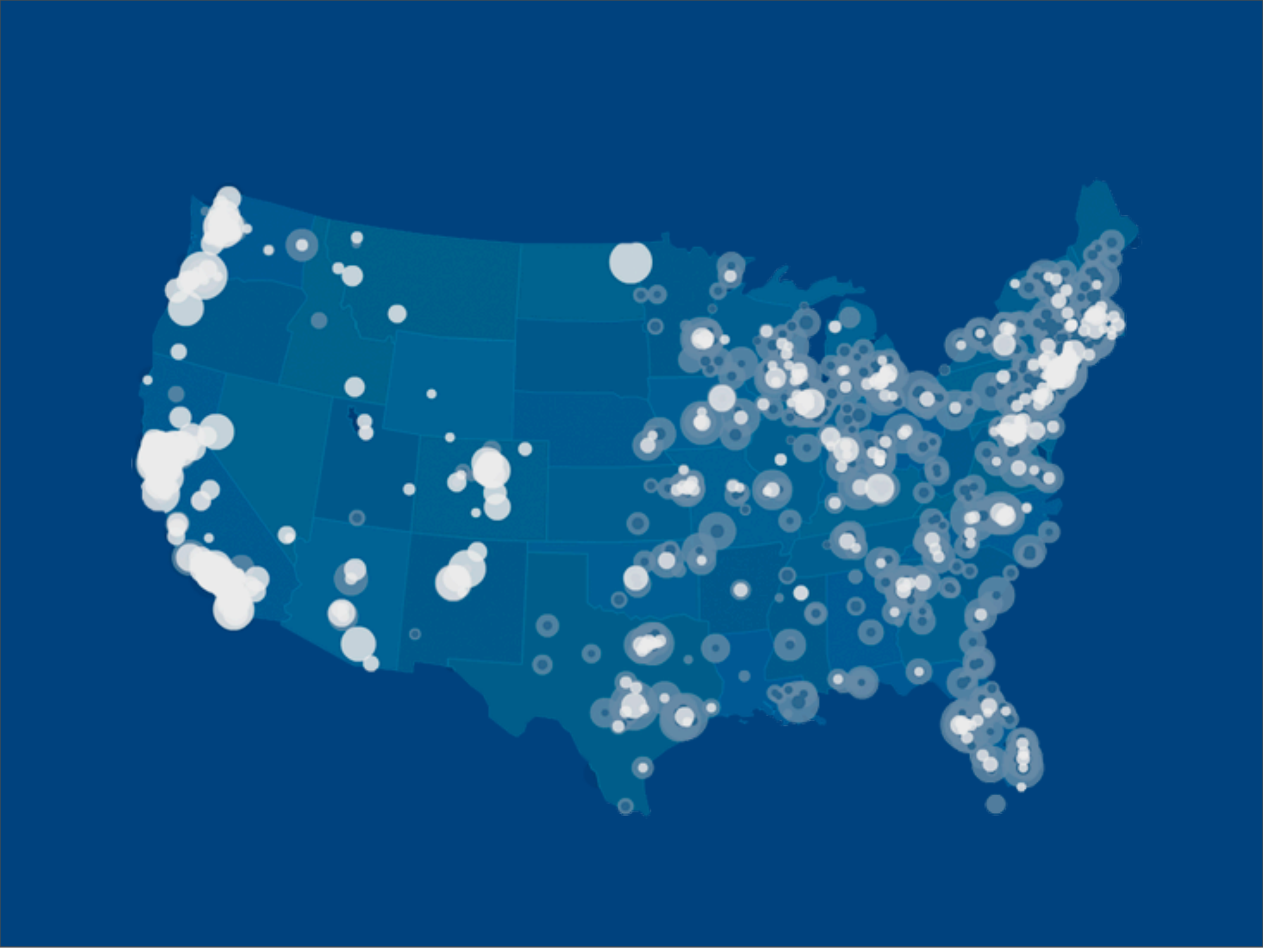
The first difference the project introduced was a move to the web. That's the Real Audio plugin up there on every page. The application was used as a radio call-in show, with music and conversation broadcast centrally.

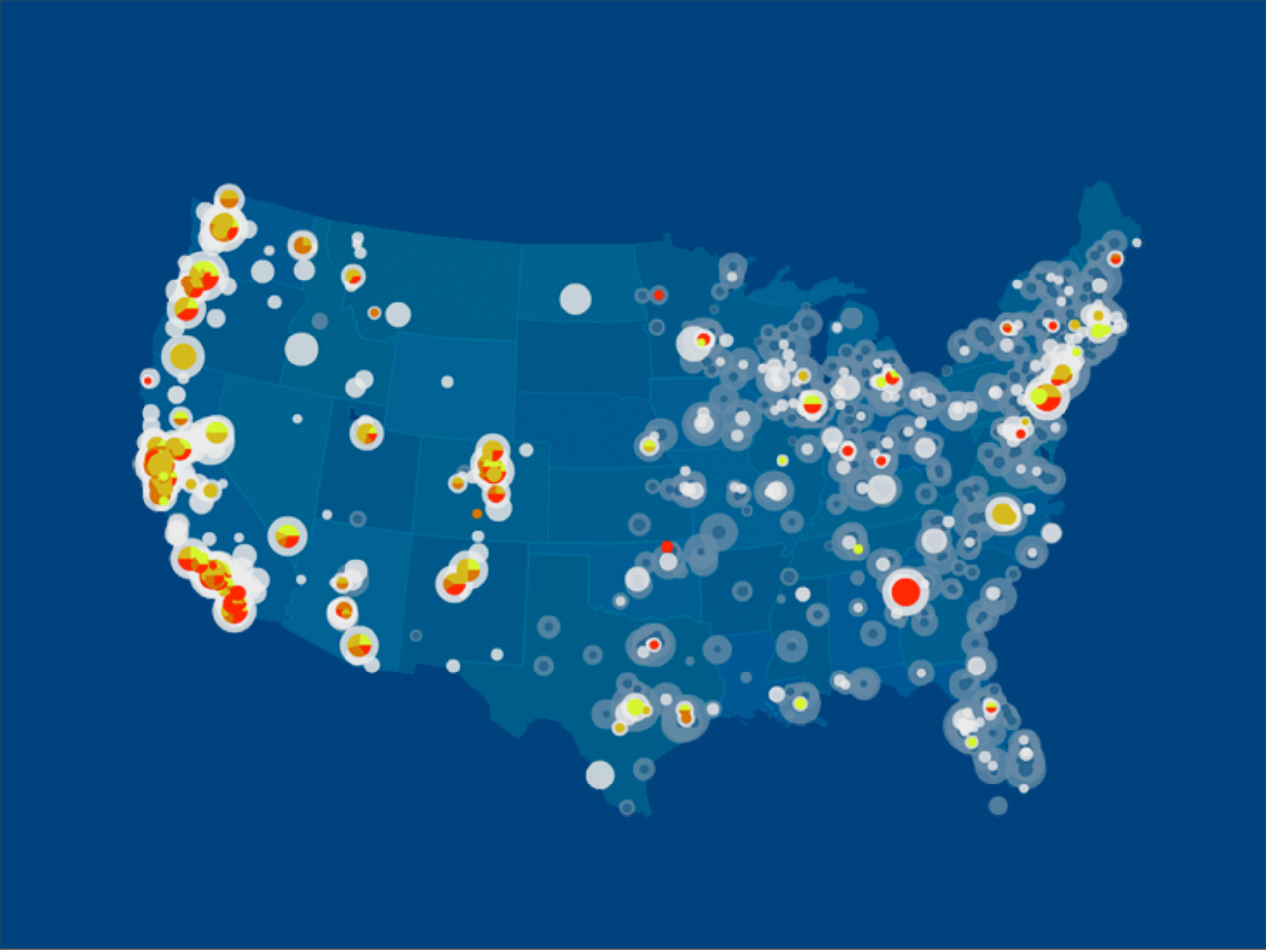
The second big difference the project introduced was that users identified themselves with a post code and a headcount of people with them

The result: Virtual Town Hall knows where you are, and where everyone else is.


YOU ARE HERE
MAP DATA • LOADING


robert in New York: I want democracy returned to america

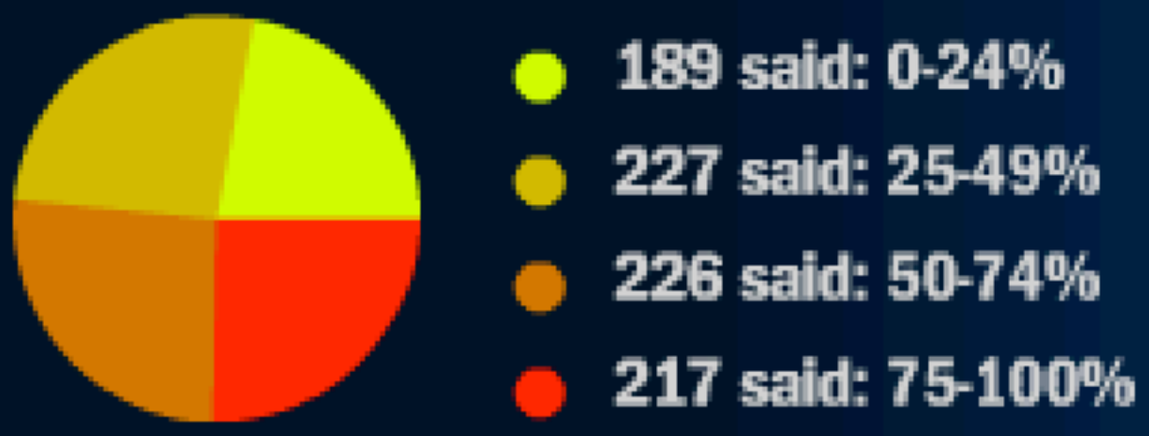




50K people joined us on for the first Town Hall!

859 parties have responded.

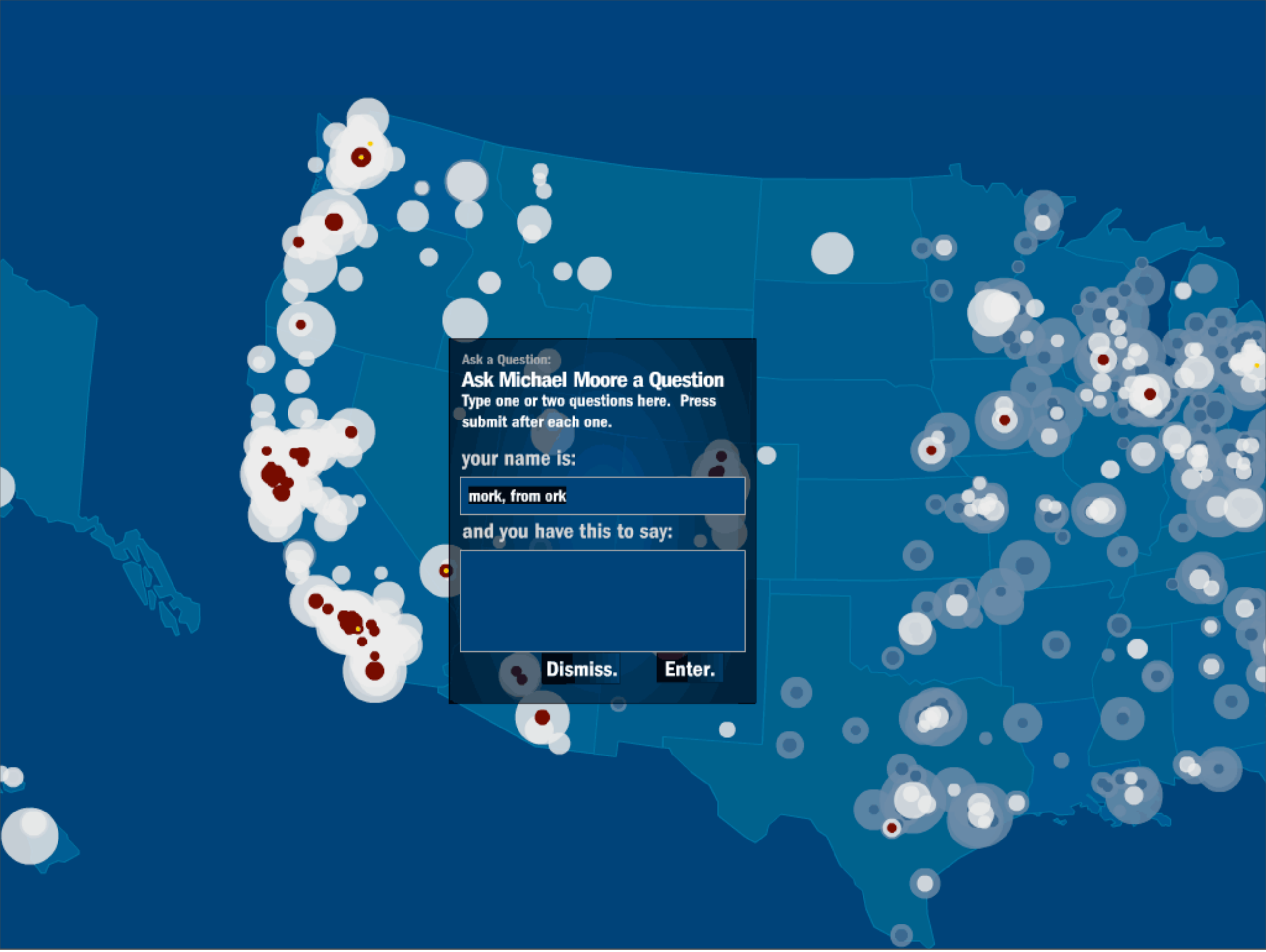
How many of you will attend a phone party July 11 and bring a friend?



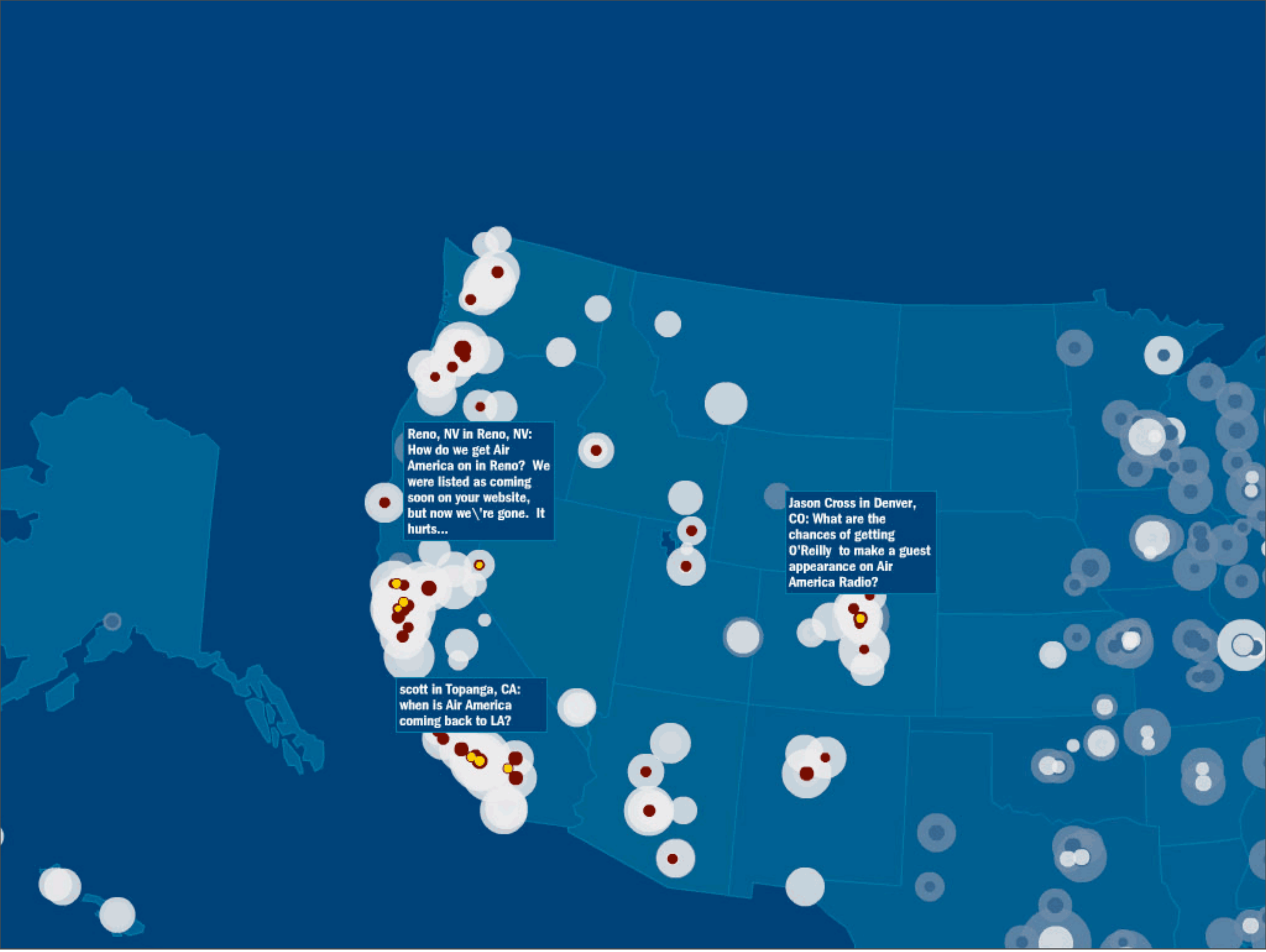
Currently active poll prompt: How many will make calls?

Hide Legend.

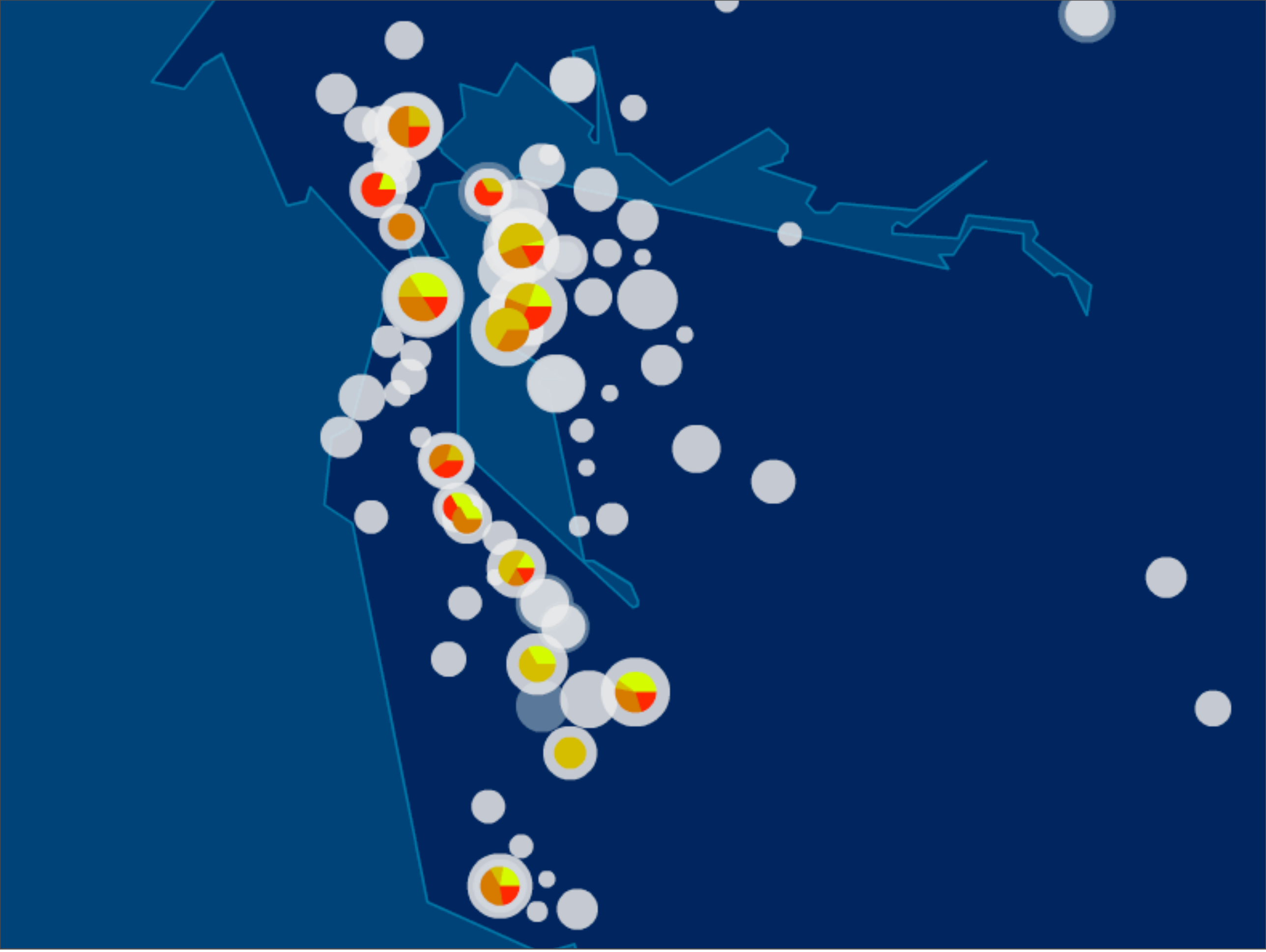
This ability to reach through the map, to see other people around you, imparted a feeling of presence and excitement to the application.



Special guest, Director Michael Moore, could accept questions from the audience



The map showed a constant stream of input from people around the country. We heard from people in remote parts of the United States that they were able to see, for the first time, how many like-minded individuals were near them.

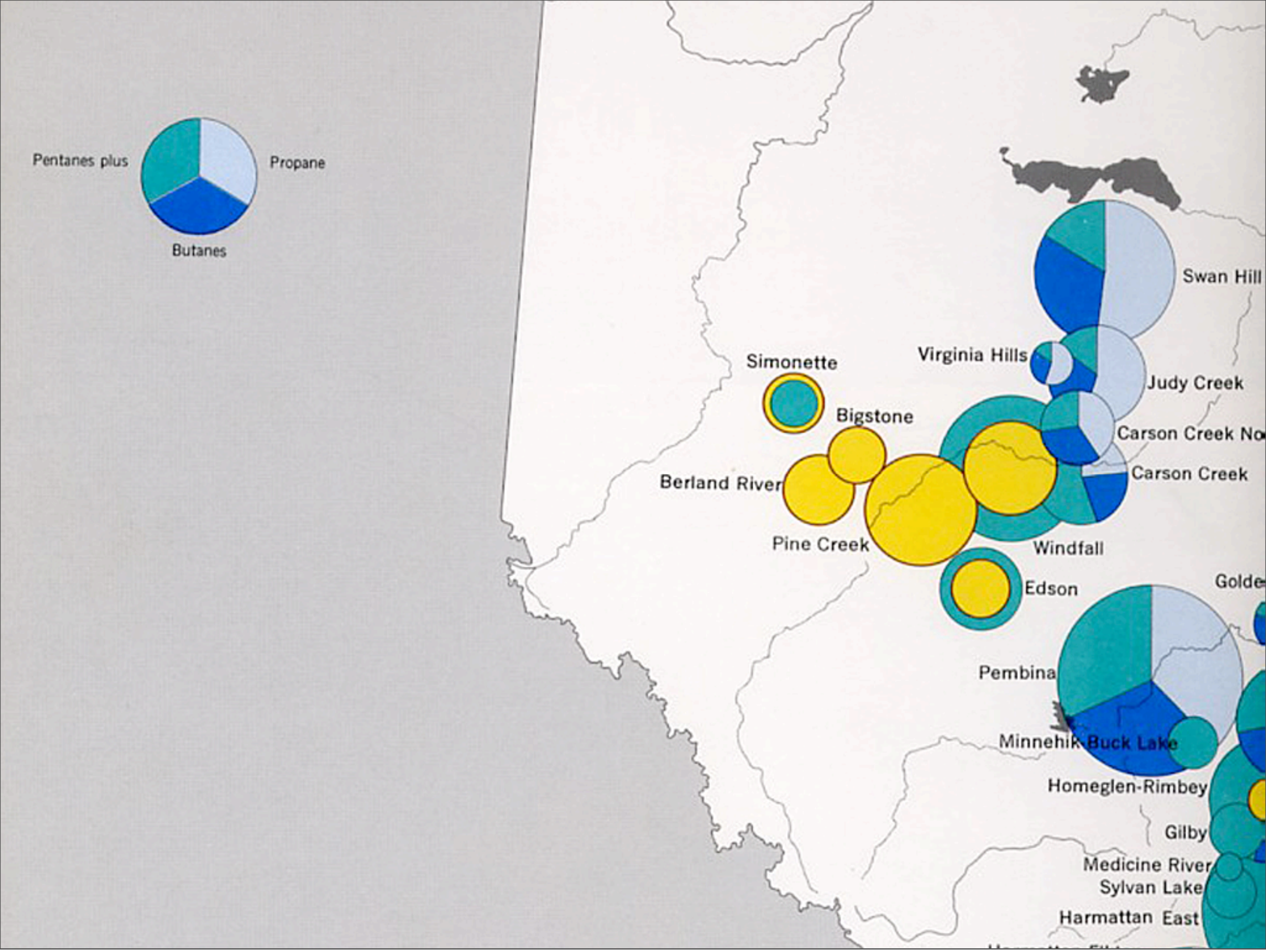


You could zoom in and see your local area – this is the San Francisco Bay Area, showing all the people attending nearby along with pie charts showing their answers to straw poll questions.

Steal From The Best

“A healthy musical continuum is one where everyone involved is listening to everyone else very, very closely, but they're not only listening to music from the people in their own scene, they're tuned in to other stuff, and then they use that stuff from outside as part of their arsenal in this sort of ongoing battle with the other producers or rivals.”

—Simon Reynolds, The Hardcore Continuum



This is not, strictly speaking, a new form of visual presentation.

PUBLIC SCHOOLS

HIGHER EDUCATION

SCHOOLS FOR INDIANS

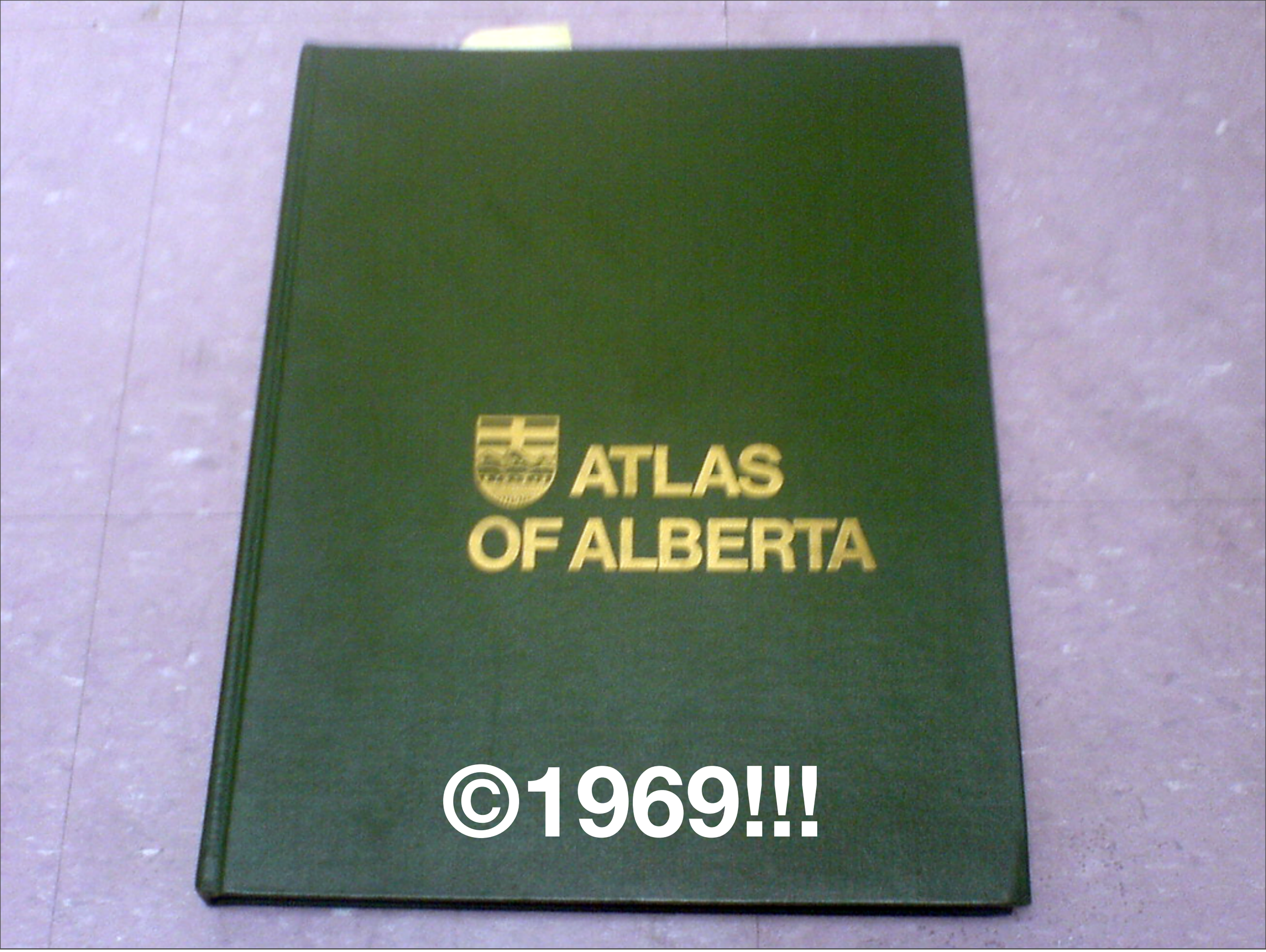
PRIVATE SCHOOLS

DENTISTS

PHYSICIANS AND SURGEONS

AUXILIARY HOSPITALS AND NURSING HOMES

ACTIVE TREATMENT HOSPITALS



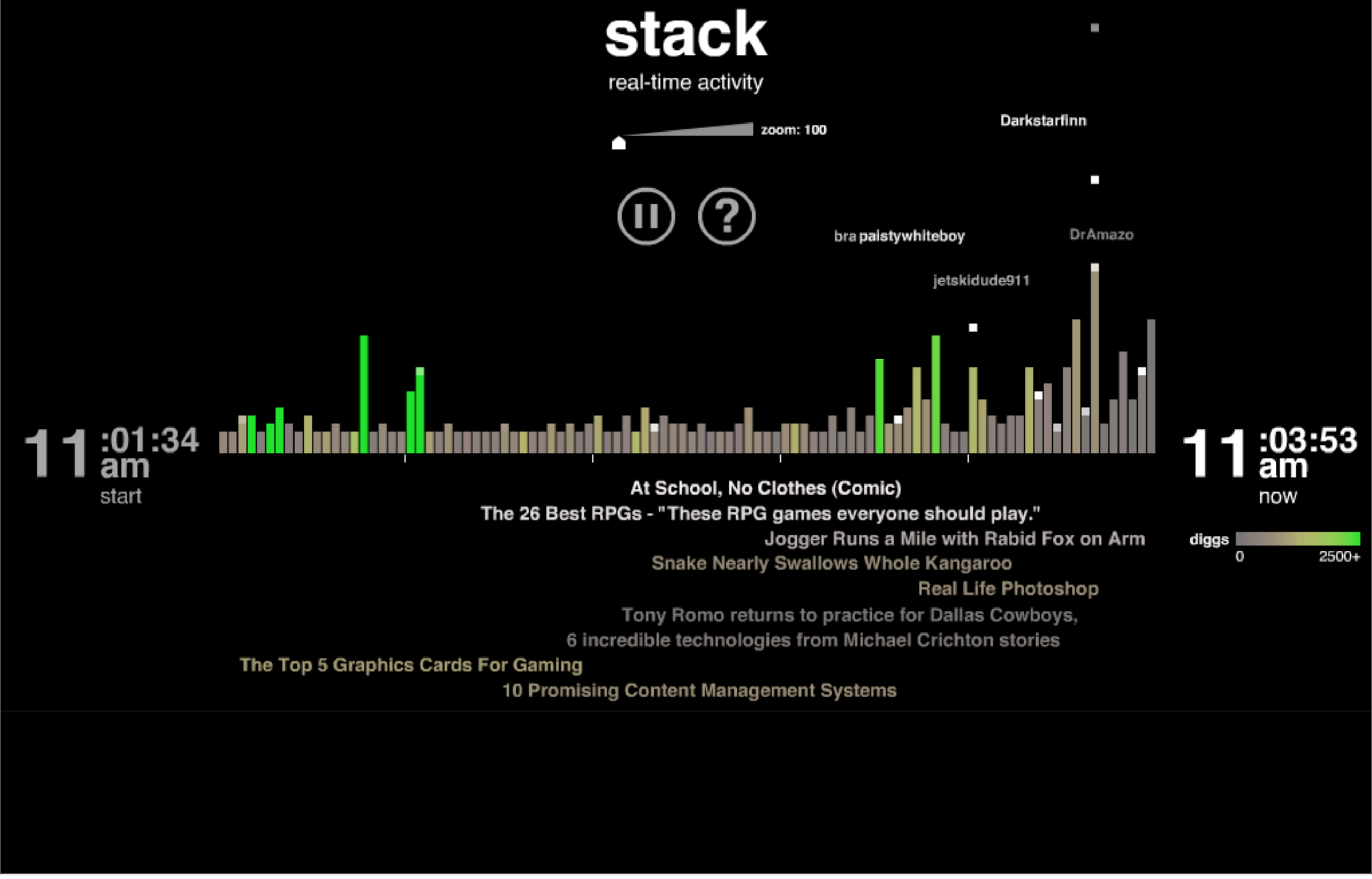
This is a major influence on our work, a Canadian atlas published almost 40 years ago. What's different now is the introduction of instant, live feedback via the internet.

Digg Labs

Illustrating dense social activity

http://labs.digg.com

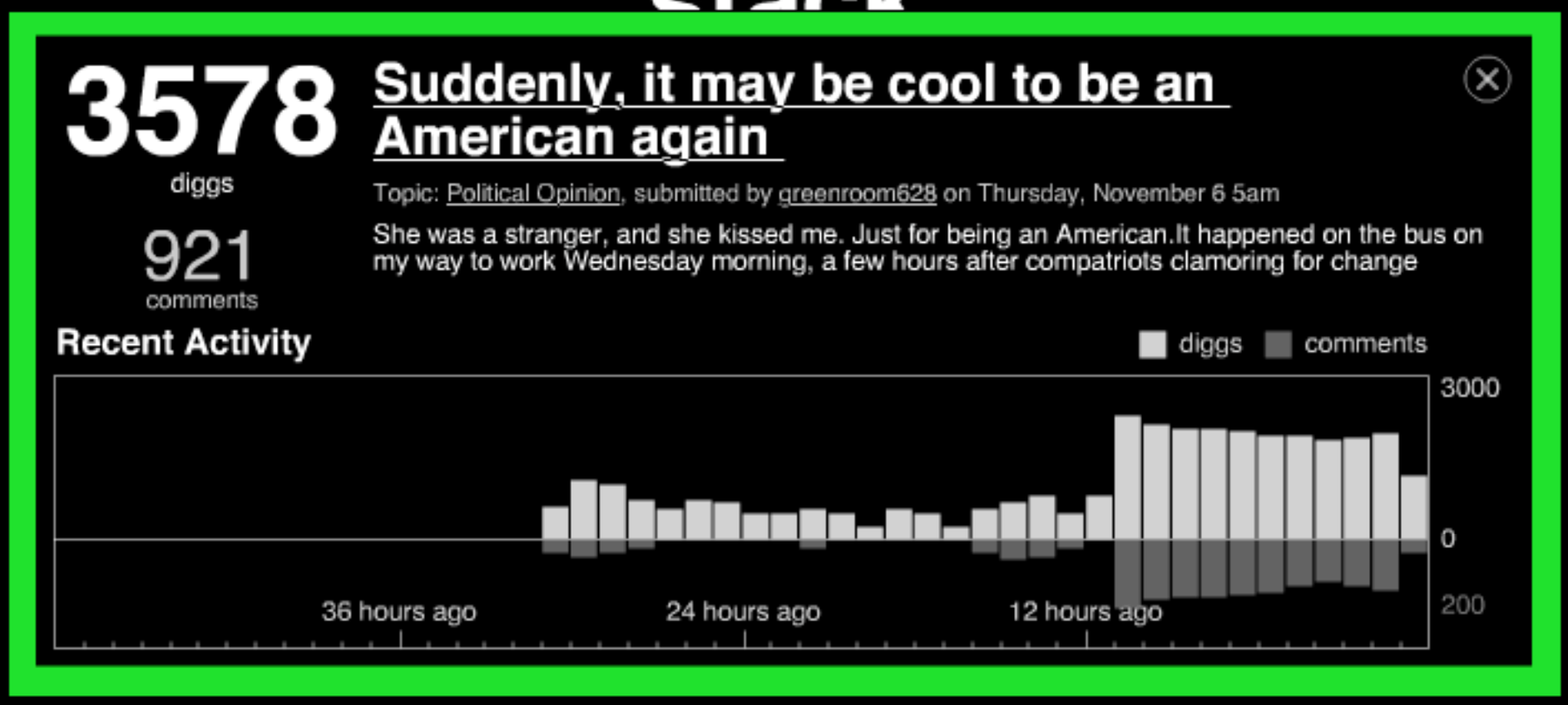
Our work with social news website Digg.com demonstrates a different sort of liveness.



30

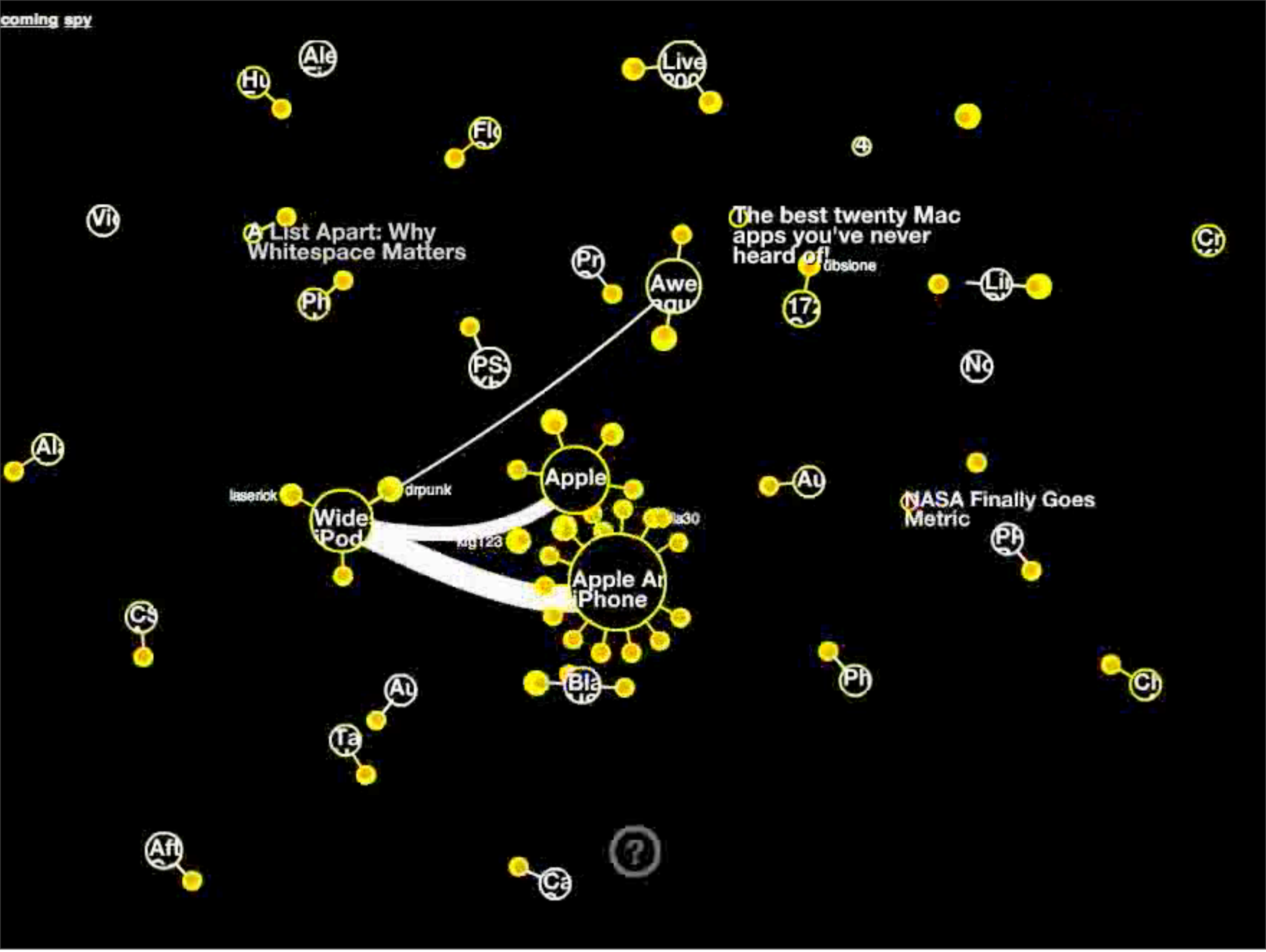
What's interesting here is that the Labs section visually demonstrates up-to-the-moment live activity on the website. This is Stack, which shows current popular stories on the site. User activity falls from the top of the screen and builds up columns of popularity.

It's an animated pie chart, and is designed to evoke Tetris.



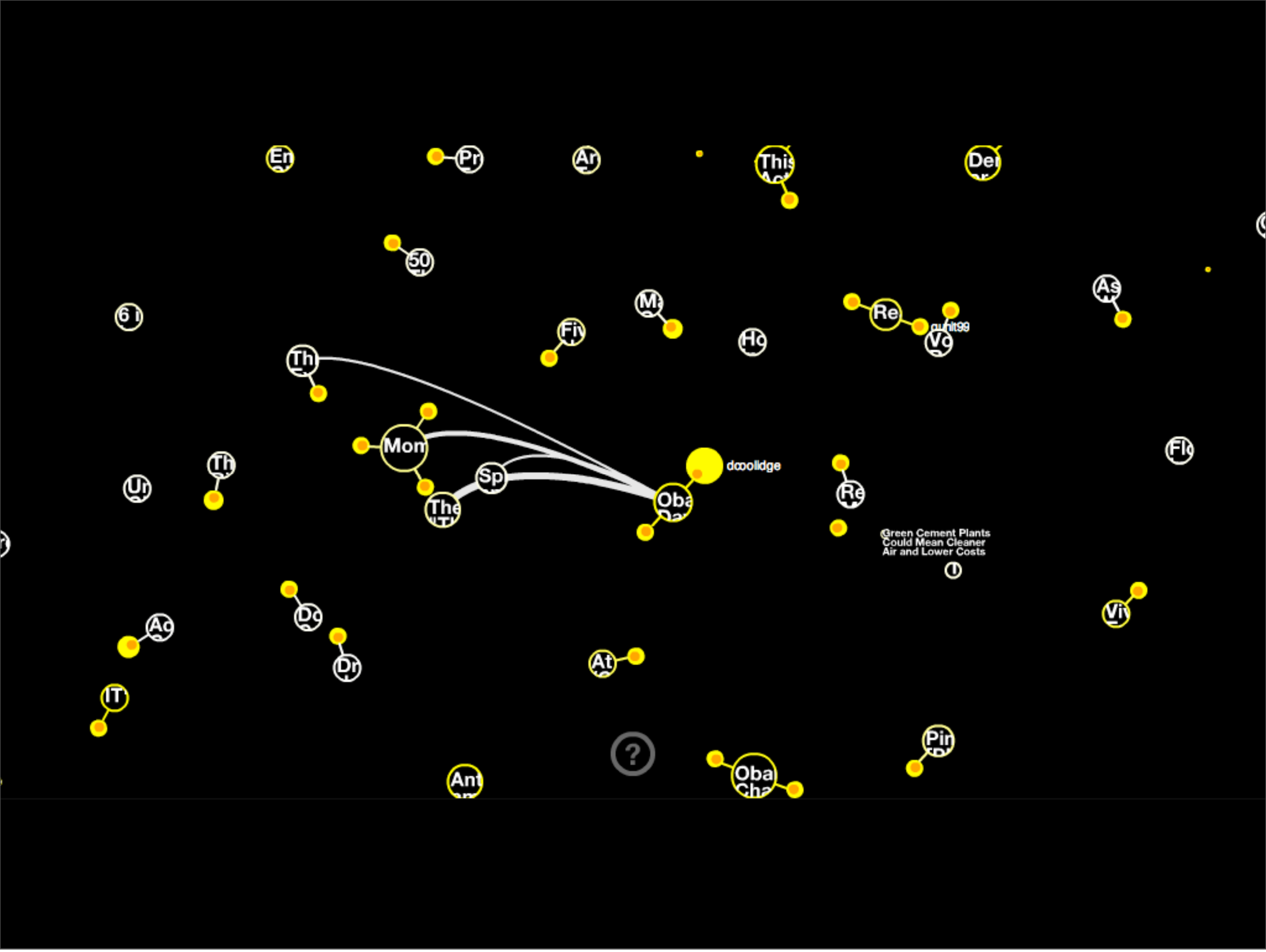
You can expand individual stories to see what historical activity looks like.

Here's one from earlier today - the chart across the bottom shows that this popular post-election story hit the front page about 9 hours previously, and you can see a burst of voting and comment activity.

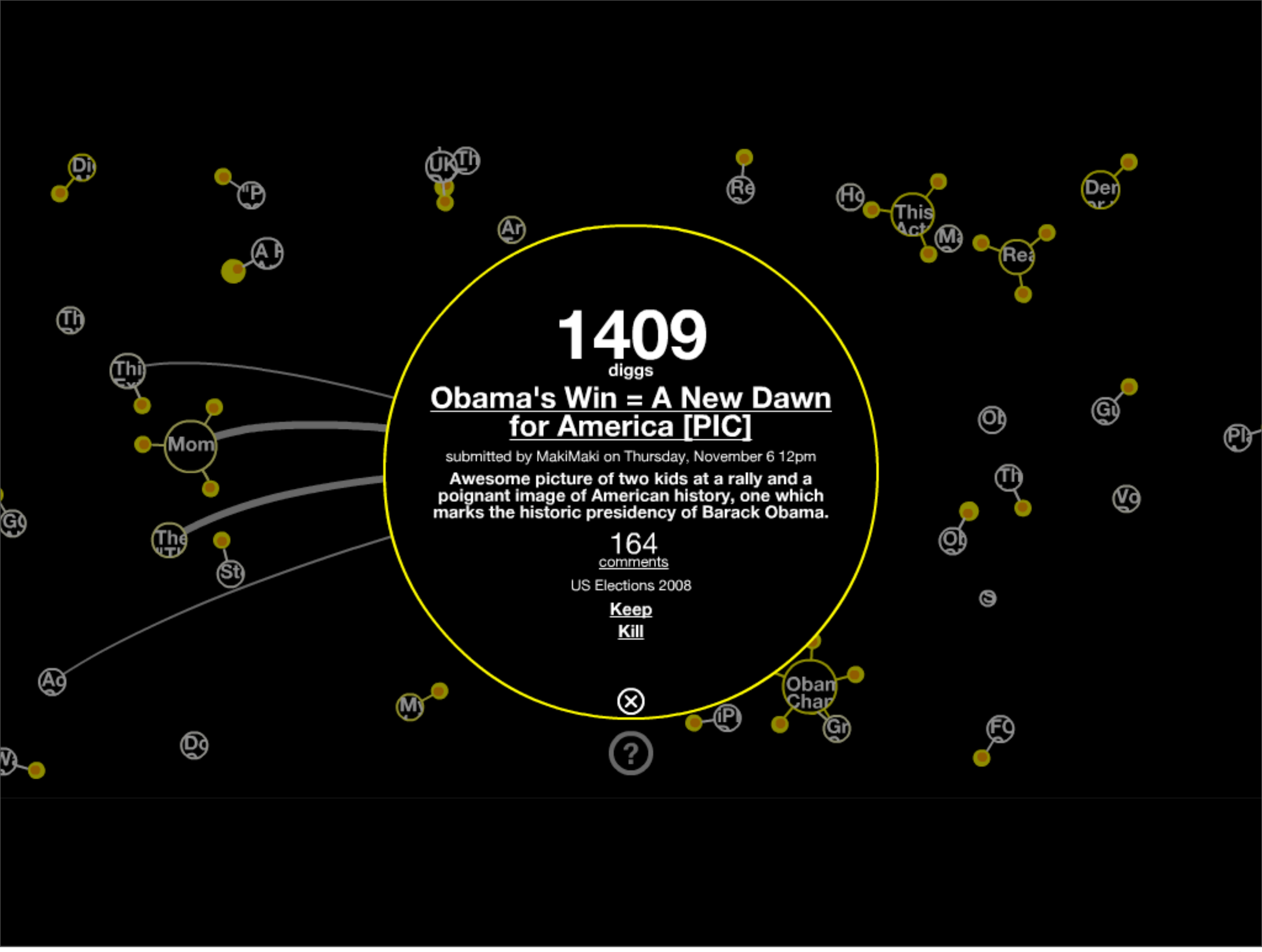


This is a video of Digg Swarm, which shows the same underlying data but in a different visual form.

Here user activity is shown using a biological clustering concept.



Users swarm around stories, and stories grow connections based on shared voting activity.



As before, you can investigate the visual interface - read more about something that looks interesting.

Live, Vast, and Deep

Trulia Hindsight

Historical views of home construction

http://hindsight.trulia.com

Our work with San Fracisco-based Real Estate information aggregator Trulia demonstrates the potential vastness of data online.

Trulia collects data about residential properties for the entire country, from government and private sources. They wanted to demonstrate the massive scale of this information collection by creating something that could be relevant and interesting to people who weren't necessarily in the market for a home.

trulia Hindsight

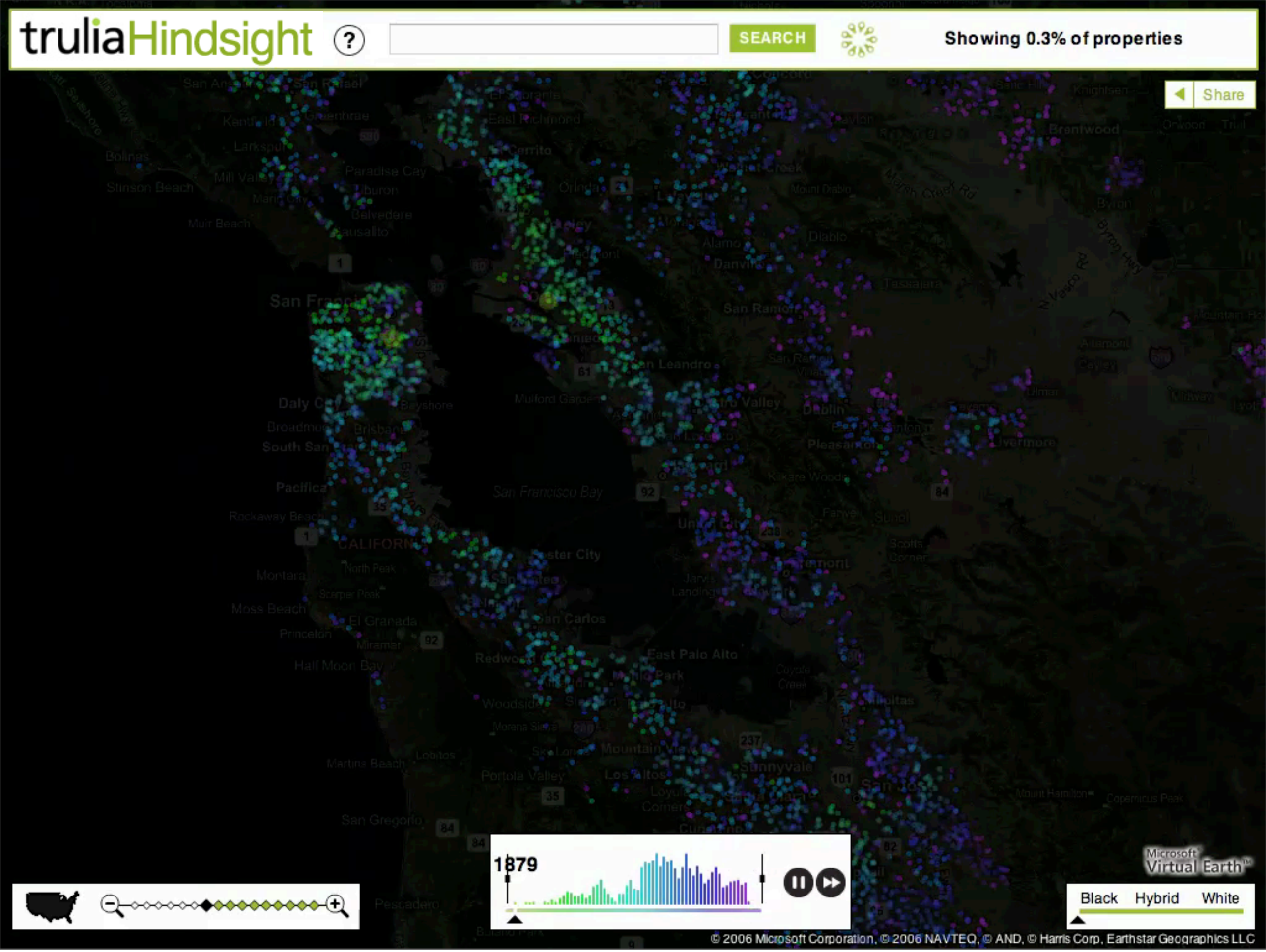
Blog: Maps of Properties Through Time

Trulia Hindsight maps properties by the year they were built in the entire United States. Search for specific properties or neighborhoods through the search box. Slider controls allow you to view specific time frames and scrub through the timeline. Or just play and watch. View the map.

Pages

- » About Trulia Hindsight
- » FAQ
- » Suggest a Link

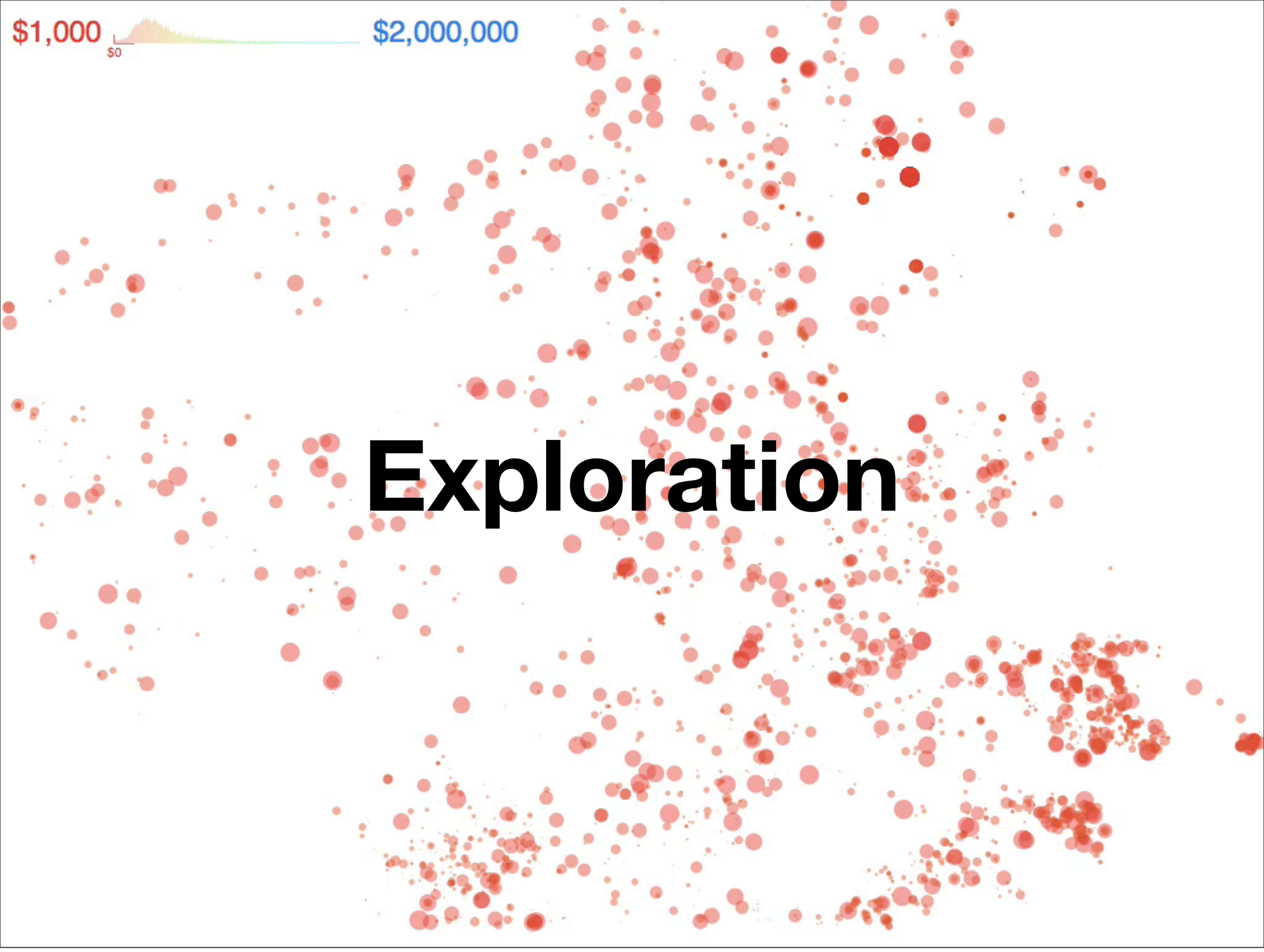
Hindsight is initially presented in the form of a blog, with posts about a variety of communities nationwide.



The interface shows colored dots for each home. You can immediately see construction patterns resulting from tract home development, where whole swaths of similar homes are laid down at once.

We used the standard slippy map interface, so it's possible to move around the country and see construction for different zoom levels. Even when you look up your childhood home in an out-of-the-way town, you can see historical information, link to it, and share it.

This is the SF Bay Area, you can see how people started off living in SF and Oakland in the North in the late 19th century, and then slowly moved down the Bay filling in former farmland with homes. There is a massive bump immediately after World War II.



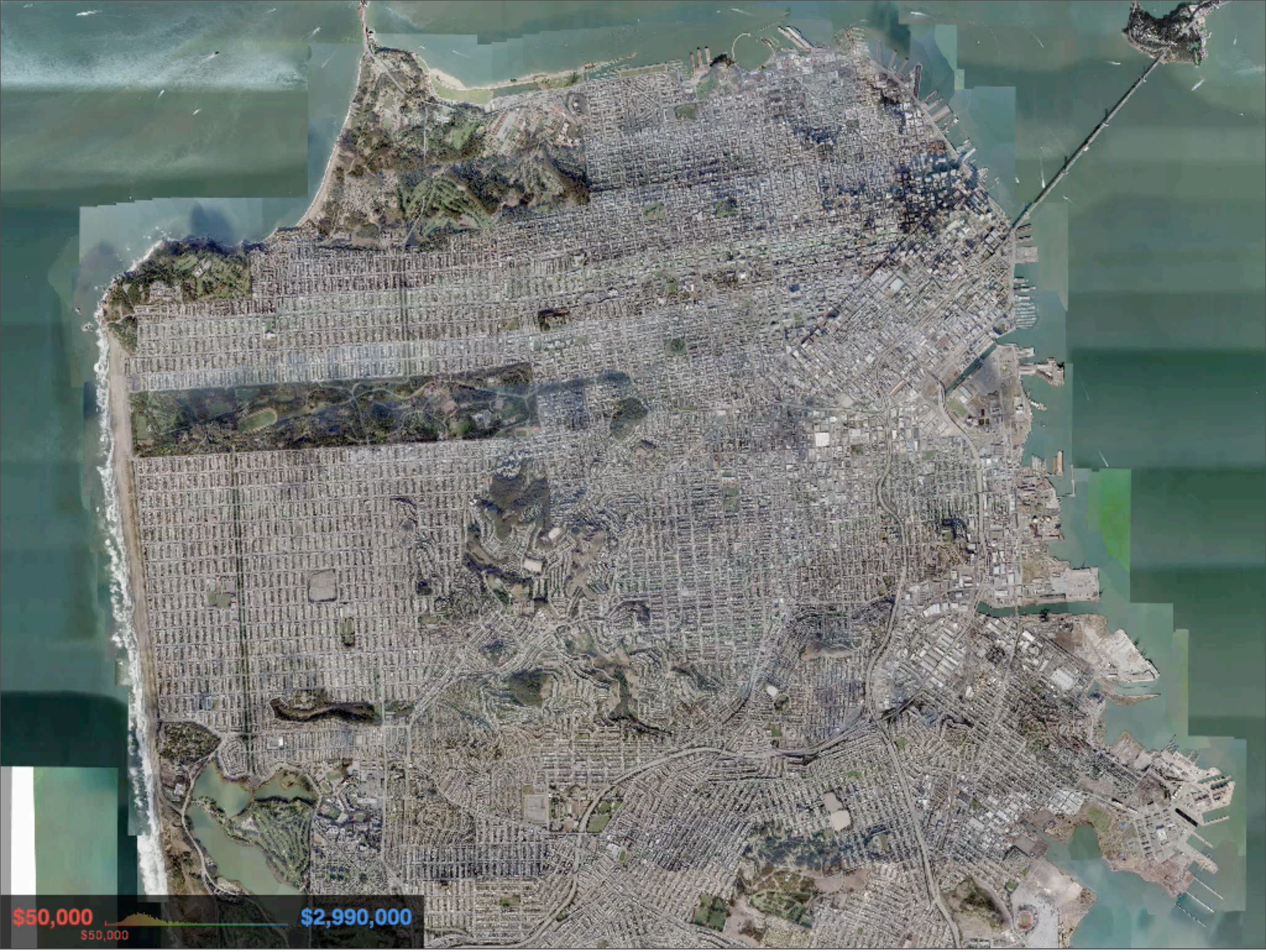
Exploration

I've shown three projects with a fairly high degree of polish.

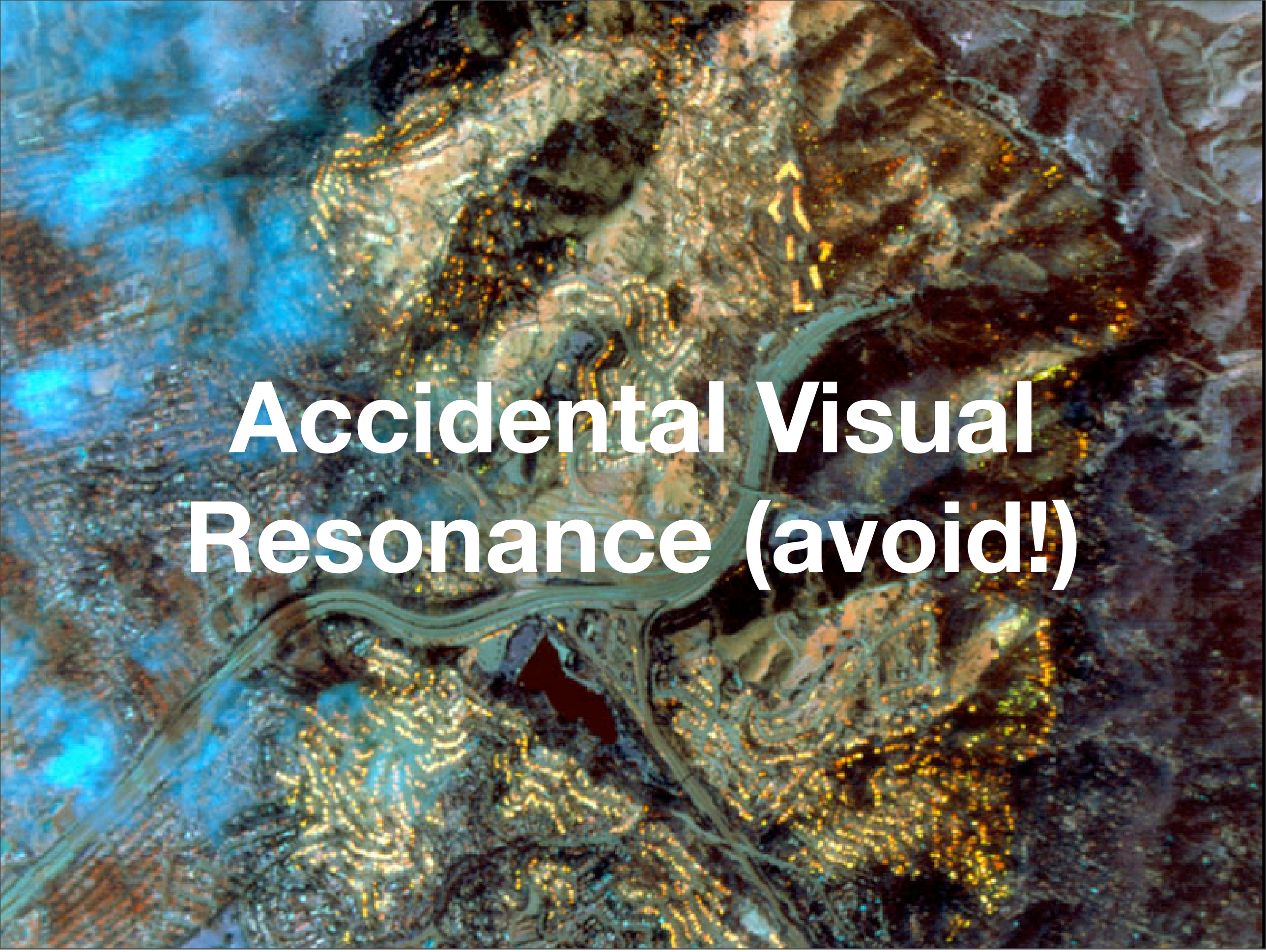
It's important to note that these don't spring from our heads fully-formed, there's a lot of exploratory work and dead-ends that contribute to the final piece.

This was an early sketch we did in Processing, showing data animated by house price, from cheapest to most expensive. It beautifully demonstrated animated sweeps, but home prices as a metric seemed insufficiently "real" for a final piece.

This is the same visualization style, also with just properties in San Francisco, now animated by construction date. This was a more satisfying visualization, the information presented is more directly relevant to people, because it’s possible to use it to tell a story about the city.



We added satellite imagery to the visualizations before, and quickly ran into a problem of accidental visual resonance. Prior to the last five or so years, the place most people encounter data visualization is through science, through the military, and through disaster response.



Hindsight looked too much like this NASA image of the fires in the Oakland Hills in 1991. You can pick out each home, and neighbourhood, clearly. “Accidental Visual Resonance.” In response, we removed red, orange, and yellow colors to keep it from looking like a fire.

This shows Plano, Texas - an example of suburban housing development.

At the bottom you can see a timeline of development - it's quite short, because these homes were all built around the same time, quite rapidly.

Cloudmade

New cartography for OpenStreetMap

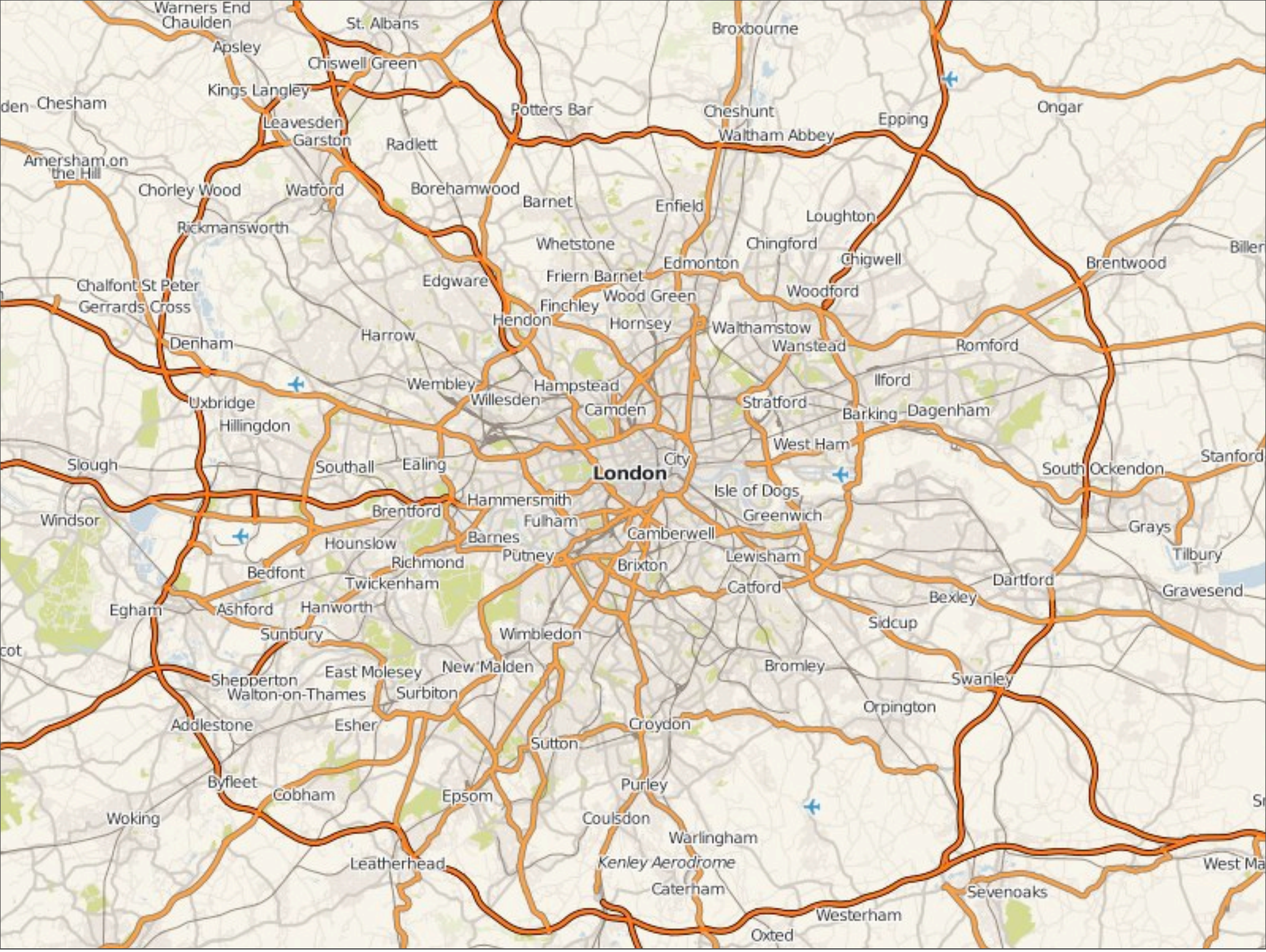
http://maps.cloudmade.com

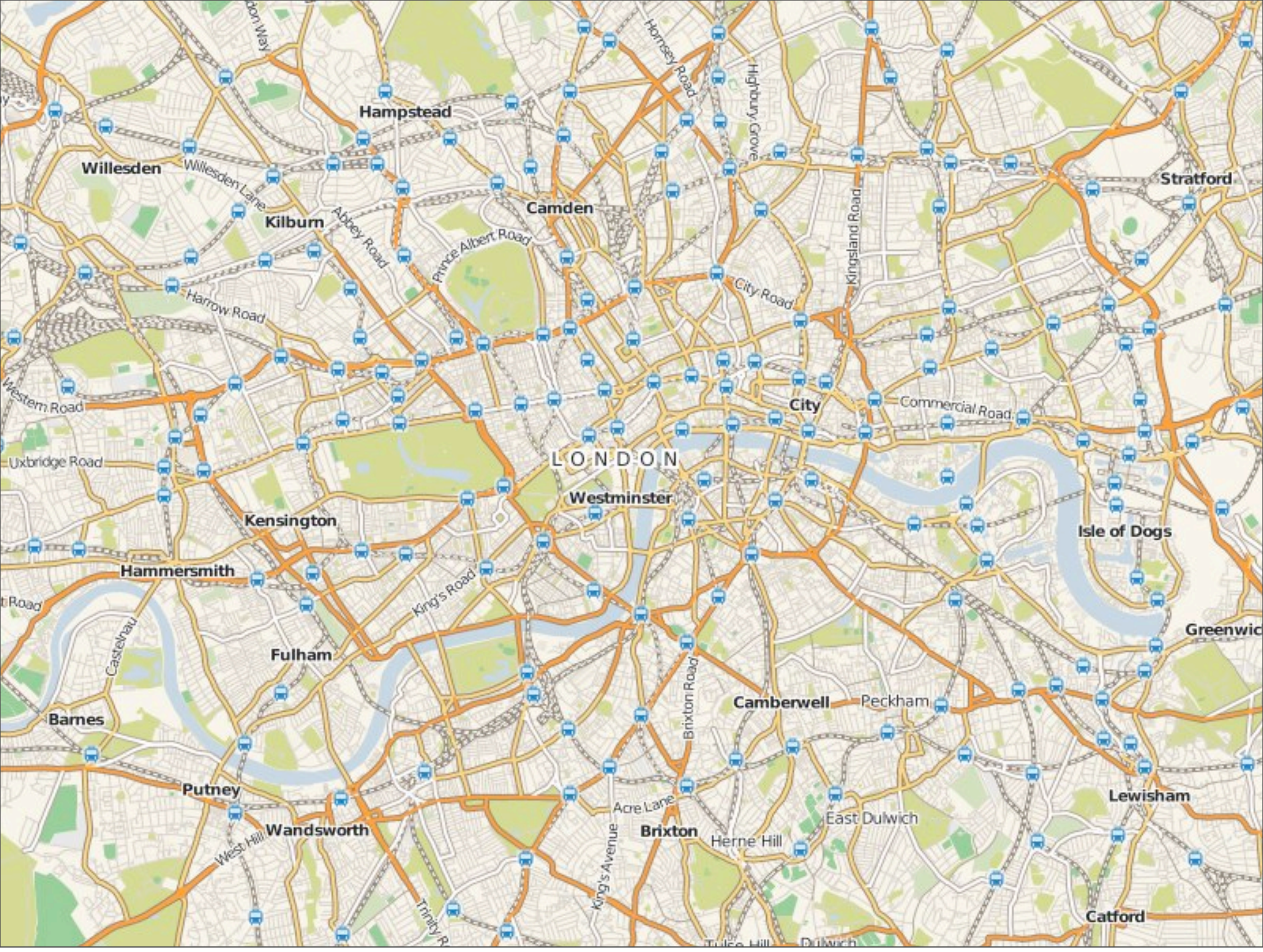
OpenStreetMap is the new story here

In four years of work, the volume of data in OpenStreetMap has progressed enormously.

Baghdad

London


Warners End
Chaulden
St. Albans
Broxbourne
Apsley
Chiswell Green
Kings Langley
Chesham
Potters Bar
Cheshunt
Epping
Ongar
Leavesden
Garston
Waltham Abbey
Radlett
Amersham on the Hill
Chorley Wood
Watford
Borehamwood
Barnet
Enfield
Loughton
Rickmansworth
Whetstone
Chingford
Chigwell
Brentwood
Edmonton
Friern Barnet
Edgware
Chalfont St Peter
Wood Green
Woodford
Gerrards Cross
Finchley
Hendon
Hornsey
Walthamstow
Harrow
Denham
Wanstead
Romford
Ilford
Wembley
Hampstead
Willesden
Uxbridge
Stratford
Camden
Barking
Dagenham
Hillingdon
West Ham
City
Slough
Southall
Ealing
London
South Ockendon
Stanford
Isle of Dogs
Hammersmith
Brentford
Greenwich
Windsor
Fulham
Grays
Barnes
Camberwell
Hounslow
Putney
Tilbury
Richmond
Lewisham
Bedfont
Brixton
Twickenham
Catford
Dartford
Gravesend
Egham
Ashford
Hanworth
Bexley
Sidcup
Sunbury
Wimbledon
New Malden
Bromley
East Molesey
Shepperton
Swanley
Walton-on-Thames
Surbiton
Orpington
Addlestone
Esher
Croydon
Sutton
Byfleet
Purley
Cobham
Epsom
Woking
Coulsdon
Warlingham
Kenley Aerodrome
Leatherhead
Caterham
Sevenoaks
Westerham
Oxted


Hampstead
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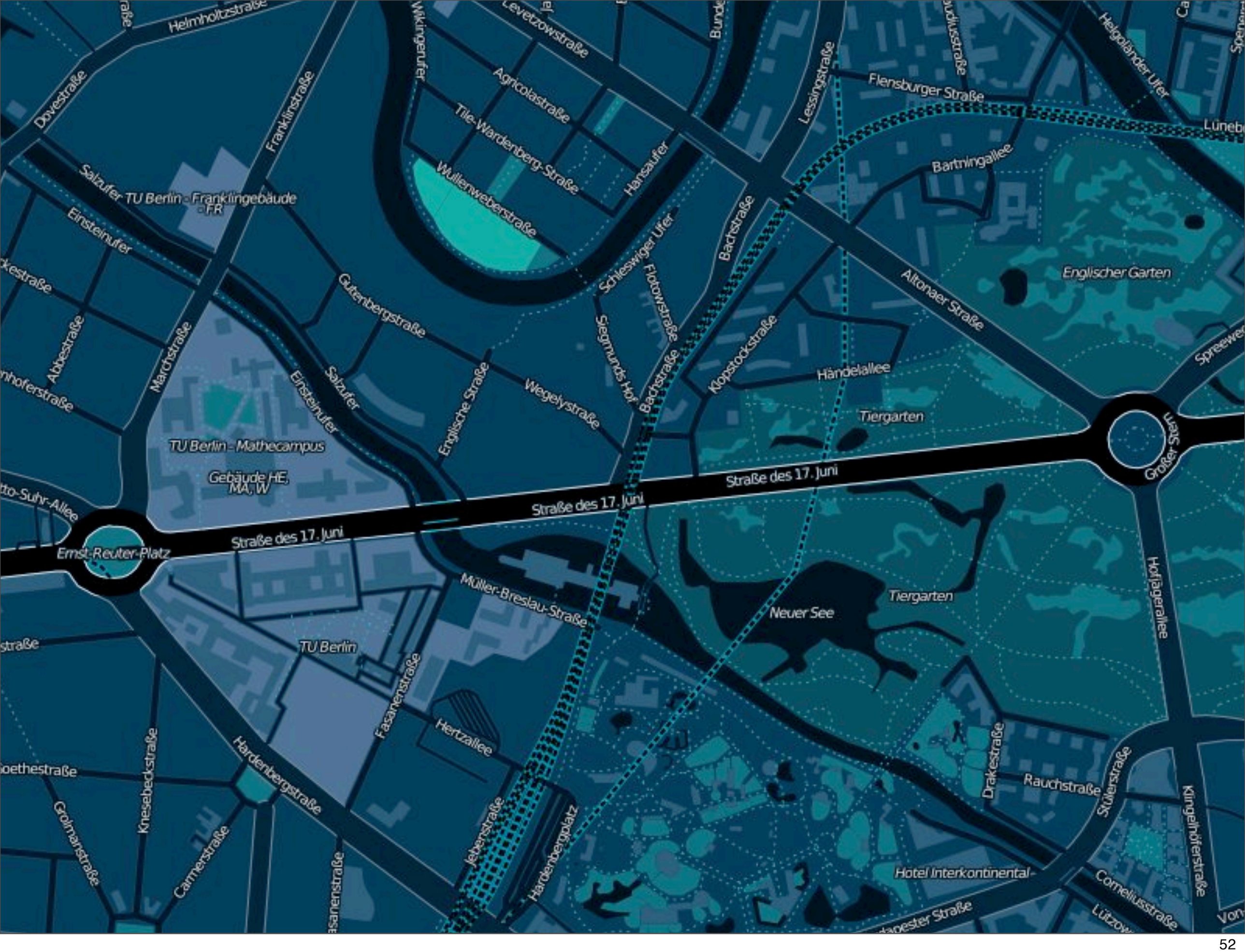
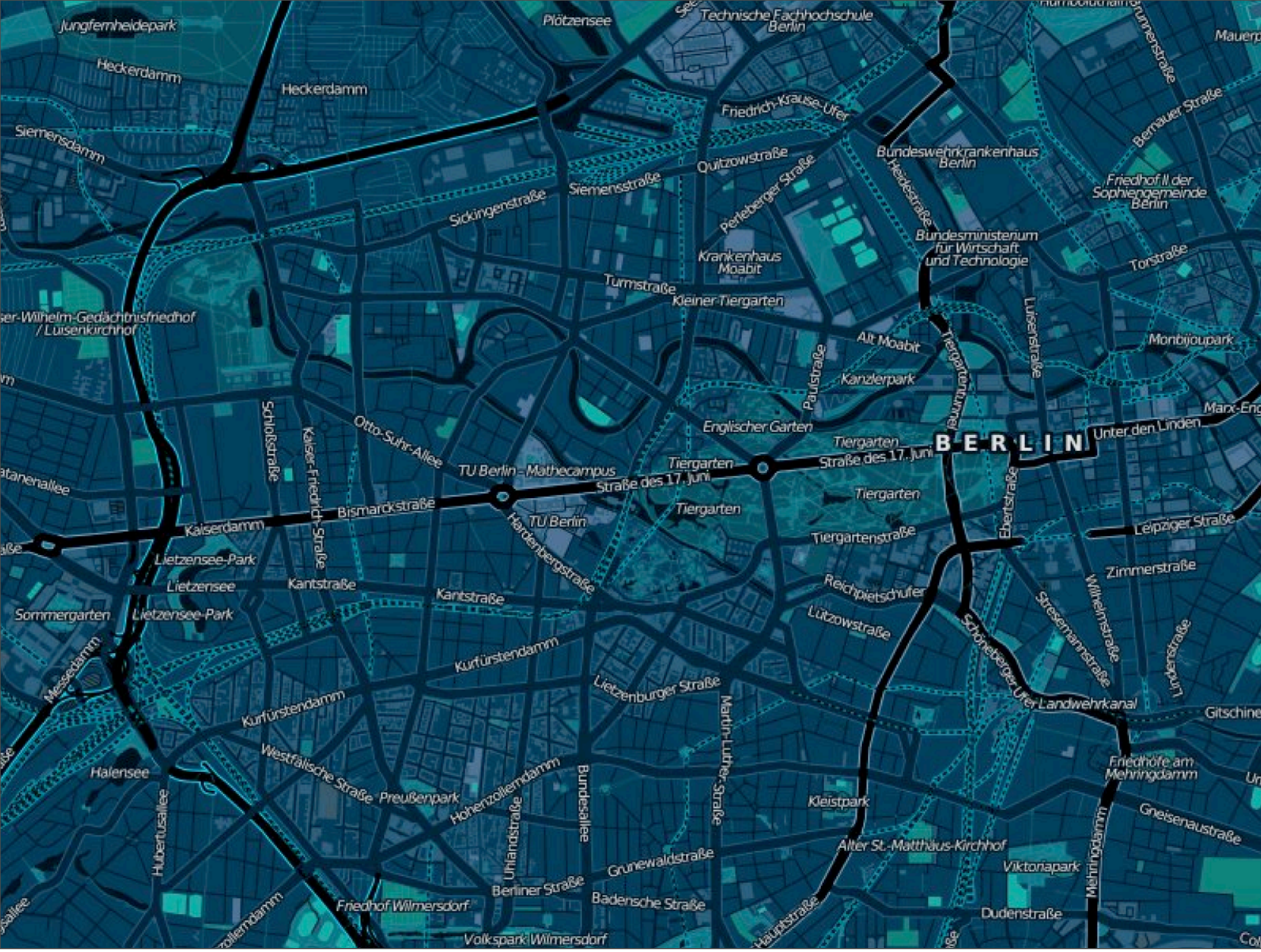
Willesden Lane
Kilburn
Abbey Road
Camden
Prince Albert Road
Harrow Road
Western Road
Uxbridge Road
Kensington
Hammersmith
King's Road
Fulham
Barnes
Putney
West Hill
Wandsworth
Trinity Road
Acre Lane
King's Avenue
Brixton
Herne Hill
Brixton Road
Camberwell
Peckham
East Dulwich
Lewisham
Catford
LONDON
Westminster
City
City Road
Kingsland Road
Commercial Road
Hornsey Road
Highbury Grove
Stratford
Isle of Dogs
Greenwich

Appearances Matter


Helmholtzstraße
Dovestraße
Franklinstraße
Wikingerufer
Levetzowstraße
Agricolastraße
Tile-Wardenberg-Straße
Hansaufer
Wullenweberstraße
Lessingstraße
Flensburger Straße
Bartningallee
Salzufer TU Berlin - Frankingebäude - FR
Einsteinufer
Schleswiger Ufer
Flotowstraße
Bachstraße
Altonaer Straße
Englischer Garten
Gutenbergstraße
Siegmunds Hof
Klopstockstraße
Händelallee
Abbestraße
Marchstraße
Salzufer
Einsteinufer
Englische Straße
Wegelystraße
Tiergarten
TU Berlin - Mathecampus
Gebäude HE, MA, W
Straße des 17. Juni
Großer Stern
Otto-Suhr-Allee
Ernst-Reuter-Platz
Müller-Breslau-Straße
Neuer See
Hofjägeralllee
TU Berlin
Fasanenstraße
Hertzallee
Goethestraße
Kneseebeckstraße
Hardenbergstraße
Carmerstraße
Jebenstraße
Hardenbergplatz
Drakestraße
Rauchstraße
Stülerstraße
Hotel Interkontinental
Corneliusstraße
Klingelhöferstraße


Gaußstraße
Goslarer Ufer
Neues Ufer
Huttenstraße
Schwarzer Weg
Keplerstraße
Turmstraße
Kaiserin-Augusta-Allee
Zwinglistraße
Alt Moabit
Essener Straße
Stromstraße
Kleiner Tiergarten
Krankenhaus Moabit
Fritz-Schloß-Park
Seydlitzstraße
Invalidenstraße
Nordhauser Straße
Sömmeringstraße
Quedlinburger Straße
Jagowstraße
Elberfelder Straße
Bundesratufer
Holsteiner Ufer
Kirchstraße
Calvinstraße
Spenerstraße
Paulstraße
Lüneburger Straße
Kanzlerpark
Am Spreebord
Iburger Ufer
Helmholtzstraße
Levetzowstraße
Agricolastraße
Lessingstraße
Bartningallee
Salzufer
Franklinstraße
Cauerstraße
Gueneckestraße
Gutenbergstraße
Einsteinufer
Otto-Suhr-Allee
Altonaer Straße
Englischer Garten
John-Foster-Dulles-Allee
Tiergarten
Spreeweg
Bachstraße
Klopstockstraße
Händelallee
Straße des 17. Juni
TU Berlin - Mathecampus
Wilmersdorfer Straße
Richard-Wagner-Straße
Gierkezeile
Zillestraße
Bismarckstraße
Schillerstraße
TU Berlin
Fasanenstraße
Hardenbergstraße
Hofjägerallee
Tiergartenstraße
Goethestraße
Pestalozzistraße
Leibnizstraße
Schlüterstraße
Kantstraße
Budapester Straße
Lützowufer
Reichpietschufer
Niebuhrstraße
Mommsenstraße
Wielandstraße
Bleibtreustraße
Kurfürstendamm
Tauentzienstraße
Augsburger Straße
Bayreuther Straße
Kurfürstenstraße
Keithstraße
Lützowstraße
Potsdamer Straße
Pohlstraße
Dahlmannstraße
Olivaer Platz
Lietzenburger Straße
Fuggerstraße
Kleiststraße
Pariser Straße


Jungfernheidepark
Heckerdamm
Heckerdamm
Siemensdamm
Plötzensee
Technische Fachhochschule
Berlin
Friedrich-Krause-Ufer
Quitzowstraße
Siemensstraße
Sickingenstraße
Perleberger Straße
Bundeswehrkrankenhaus
Berlin
Heidestraße
Bernauer Straße
Friedhof II der
Sophiengemeinde
Berlin
Mauerp
Bundesministerium
für Wirtschaft
und Technologie
Torstraße
Krankenhaus
Moabit
Turmstraße
Kleiner Tiergarten
Alt Moabit
Tiergartentunnel
Luisenstraße
Monbijoupark
Kanzlerpark
Paulstraße
ser-Wilhelm-Gedächtnisfriedhof
/ Luisenkirchhof
Schloßstraße
Kaiser-Friedrich-Straße
Otto-Suhr-Allee
Englischer Garten
Tiergarten
BERLIN
Unter den Linden
Marx-Eng
TU Berlin - Mathecampus
Tiergarten
Straße des 17. Juni
Straße des 17. Juni
Tiergarten
Tiergarten
Ebertstraße
atanenallee
Bismarckstraße
Kaiserdamm
TU Berlin
Hardenbergstraße
Tiergartenstraße
Leipziger Straße
Lietzensee-Park
Zimmerstraße
Lietzensee
Kantstraße
Kantstraße
Reichpietschufer
Sommergarten
Lietzensee-Park
Lützowstraße
Stresemannstraße
Wilhelmstraße
Messedamm
Kurfürstendamm
Schöneberger Ufer
Lindenstraße
Lietzenburger Straße
Landwehrkanal
Gitschiner
Kurfürstendamm
Martin-Luther-Straße
Westfälische Straße
Friedhöfe am
Mehringdamm
Halensee
Preußenpark
Hohenzollerndamm
Bundesallee
Kleistpark
Gneisenaustraße
Hubertusallee
Uhlandstraße
Alter St.-Matthäus-Kirchhof
Grunewaldstraße
Viktoriapark
Mehringdamm
Berliner Straße
Badensche Straße
Friedhof Wilmersdorf
Dudenstraße
Hauptstraße
Volkspark Wilmersdorf


Streitstraße
Berliner Straße
Olbenhau
Arosar Allee
Müllerstraße
Provinzstraße
Mühlenstraße
Saatwinkler Damm
Rohrdamm
Seestraße
Am Juliusturm
Nonnendammallee
Motardstraße
Freiheit
Spandauer Damm
Reichsstraße
BERLIN
Bismarckstraße
Heerstraße
Kantstraße
Torstraße
Köpenicker Straße
Hasenheide
Columbiadamm
Sonnenallee
Hermannstraße
Wexstraße
Hagenstraße
Königsallee
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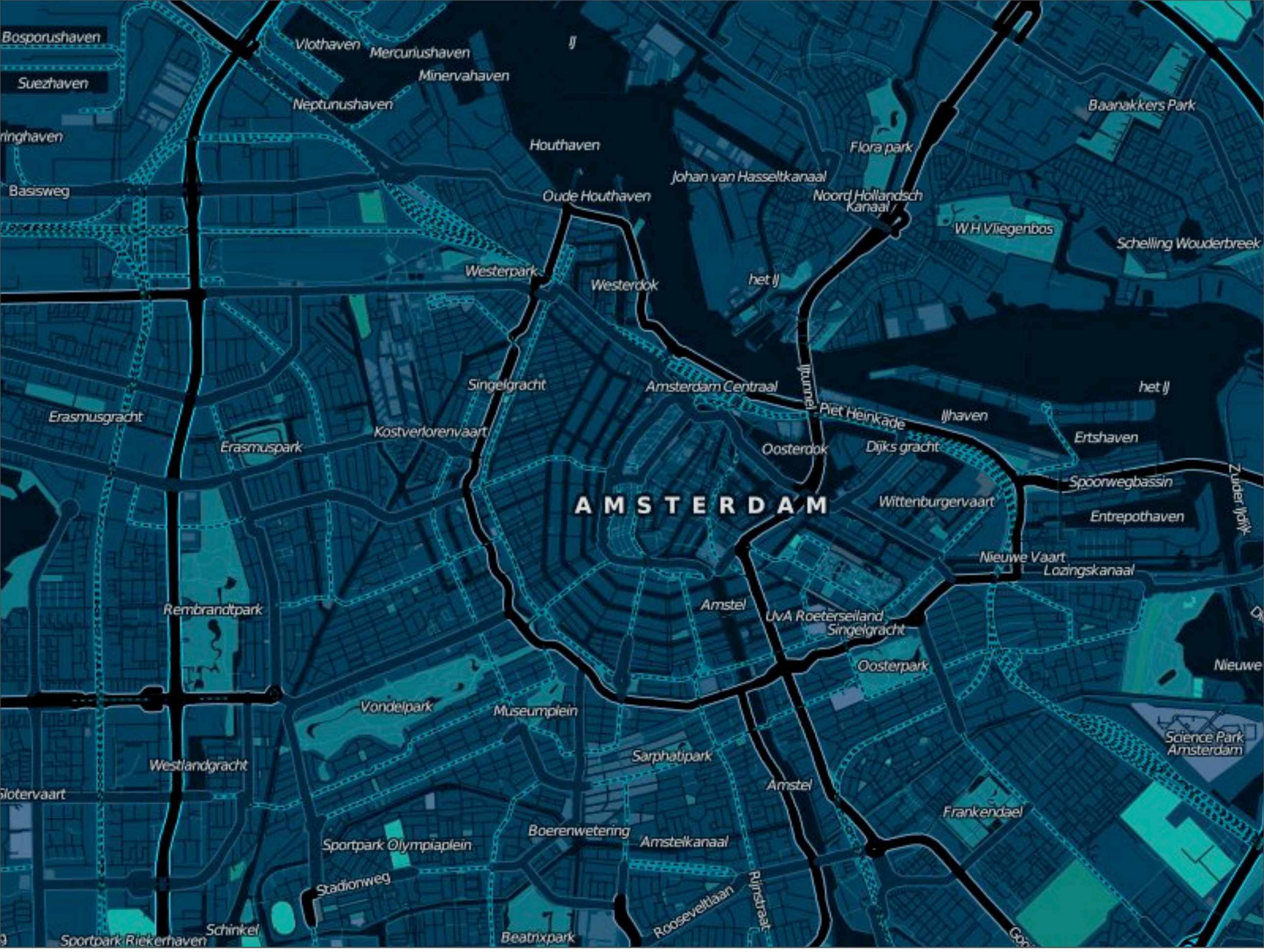
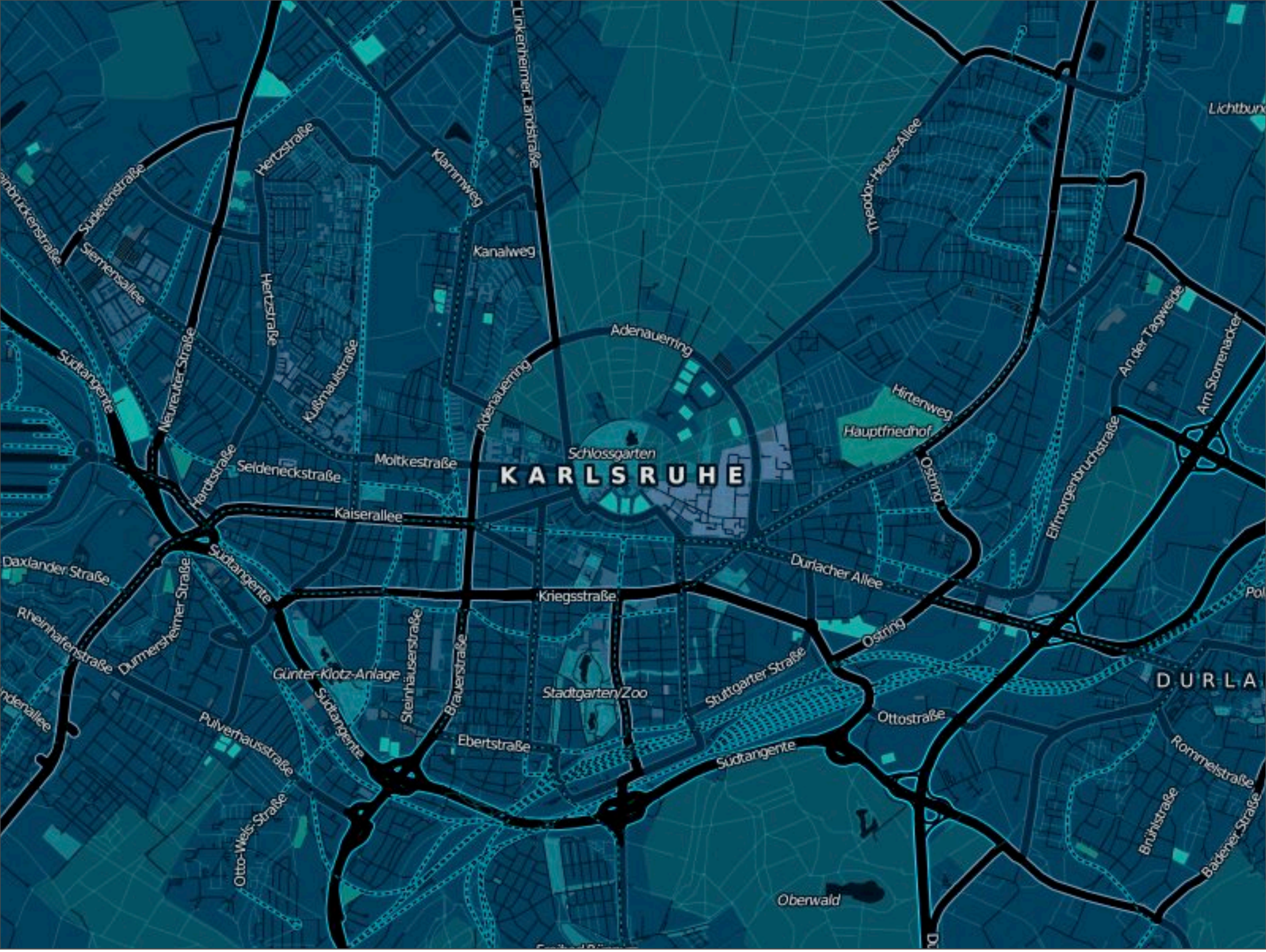
Clayallee
Paoellialiee
Schloßstraße
Grazer Damm
Gradestraße


Bosporushaven
Suezhaven
Vlothaven
Mercuriushaven
Minervahaven
Neptunushaven
IJ
Houthaven
Oude Houthaven
Johan van Hasseltkanaal
Noord Hollandsch Kanaal
Flora park
Baanakkers Park
W H Vliegenbos
Schelling Wouderbreek
Basisweg
Westerpark
Westerdok
het IJ
IJtunnel
Singelgracht
Amsterdam Centraal
Piet Heinkade
IJhaven
Ertshaven
Erasmusgracht
Kostverlorenvaart
Erasmuspark
Oosterdok
Dijks gracht
Spoorwegbassin
Zuider IJdijk
AMSTERDAM
Wittenburgervaart
Entrepothaven
Nieuwe Vaart
Lozingskanaal
Rembrandtpark
Amstel
UvA Roeterseiland
Singelgracht
Oosterpark
Vondelpark
Museumplein
Science Park Amsterdam
Westlandgracht
Sarphatipark
Amstel
Frankendael
Boerenwetering
Amstelkanaal
Sportpark Olympiaplein
Stadionweg
Roosseveltlaan
Rijnstraat
Schinkel
Sportpark Riekerhaven
Beatrixpark


Linkenheimer Landstraße
Hertzstraße
Klammweg
Kanalweg
Theodor-Heuss-Allee
Lichtburg
Sudetenstraße
Siemensallee
Hertzstraße
Neureuter Straße
Südtangente
Kußmaulstraße
Adenauerring
Adenauerring
Hirtenweg
Hauptfriedhof
An der Tagweide
Am Storrenacker
Schlossgarten
KARLSRUHE
Moltkestraße
Seldeneckstraße
Hardtstraße
Kaiserallee
Ostring
Ettlinger Bruchstraße
Daxlander Straße
Südtangente
Durlacher Allee
Kriegsstraße
Rheinhafenstraße
Durmersheimer Straße
Steinhäuserstraße
Brauerstraße
Günter-Klotz-Anlage
Südtangente
Stadtgarten/Zoo
Stuttgarter Straße
Ostring
DURLA
Pulverhausstraße
Ebertstraße
Südtangente
Ottostraße
Rommelstraße
Otto-Wels-Straße
Brühlstraße
Badener Straße
Oberwald


Intentional Visual
Resonance (pursue!)

Live, Vast, and Deep

SFMOMA ArtScope

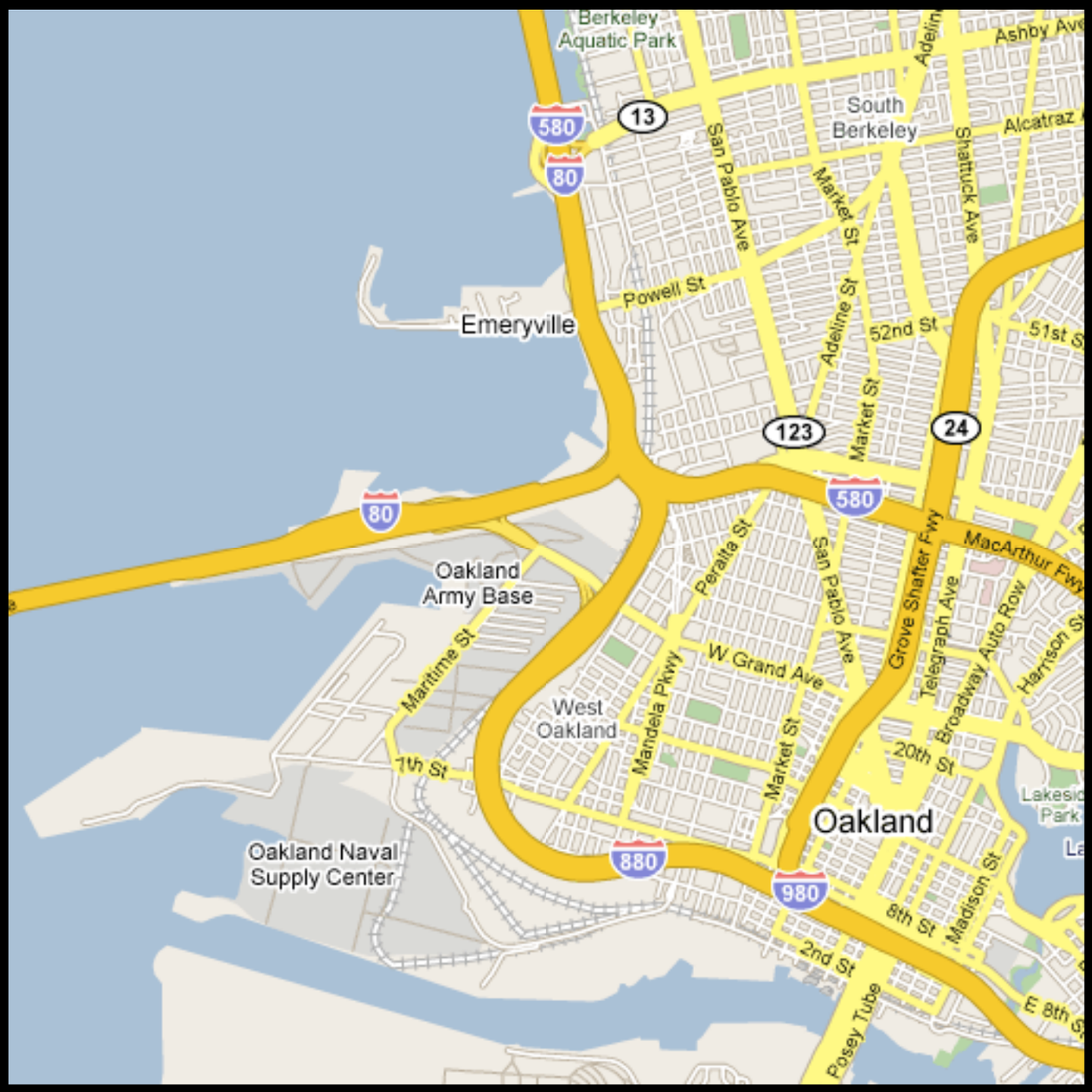
Immersive modern art browsing
http://sfmoma.org/pages/artscope

The SFMOMA ArtScope is our most recent project.

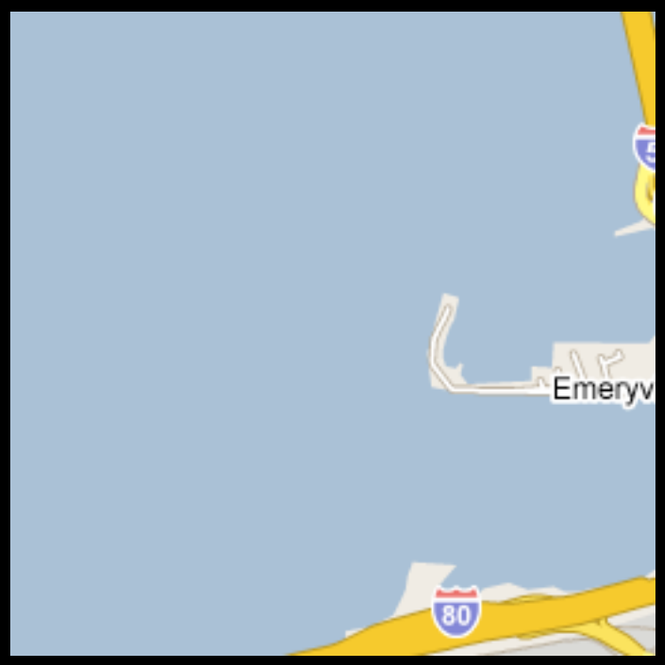
This is a deep dive into the Museum Of Modern Art's collection, most of which is not on display in the museum.

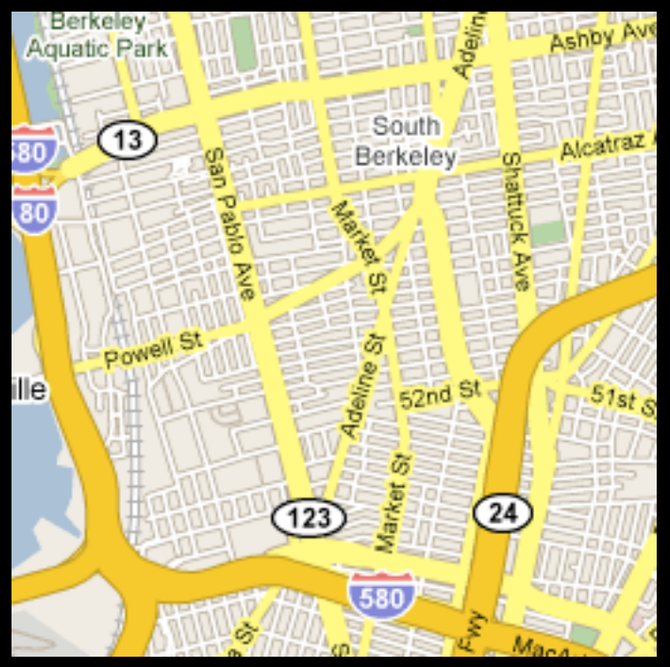
It doesn't look like a map, but we've been exploring the use of development and publishing ideas from online maps and satellite images for other purposes.

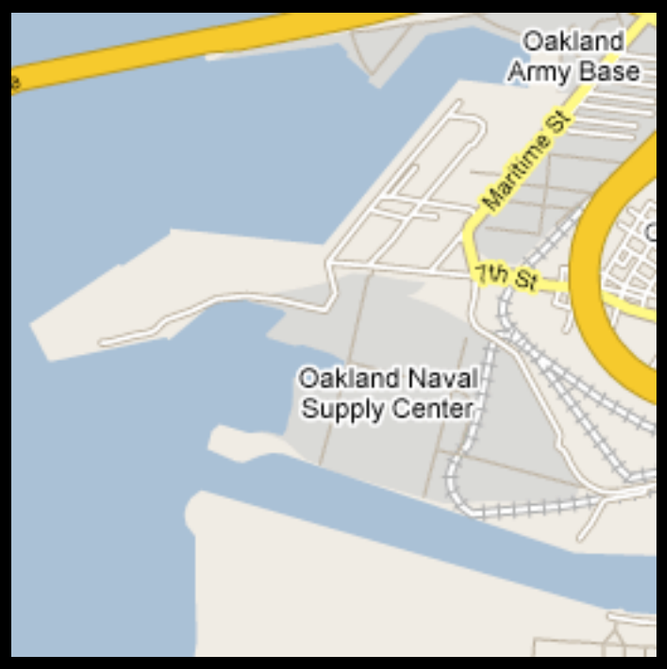
This is an image from Microsoft's Terraserver, from 2004. Prior to the release of Google Maps in 2005, this and MapQuest were the only good ways to get geographical information online. Interactions were slow, form-based, and limited. Imagery and map content was limited and poorly-designed.

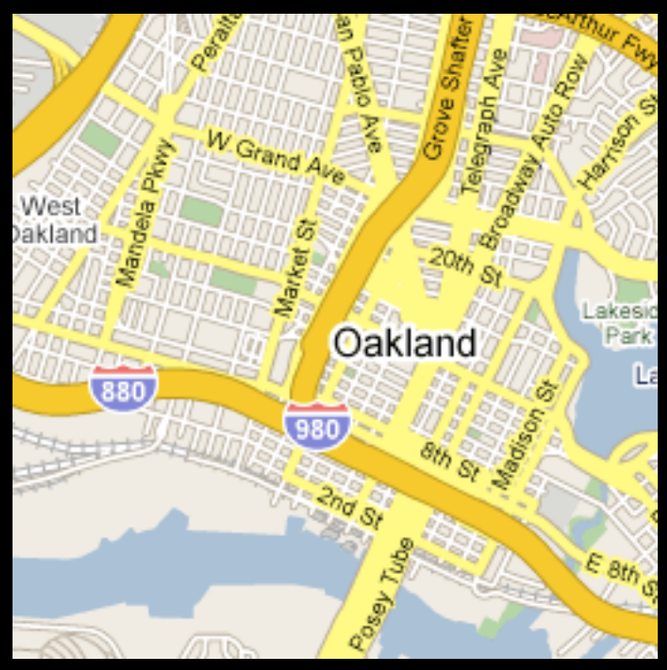


Google’s maps were a massive step forward, because they allowed you to move the map in the page, zooming freely from one place to another.

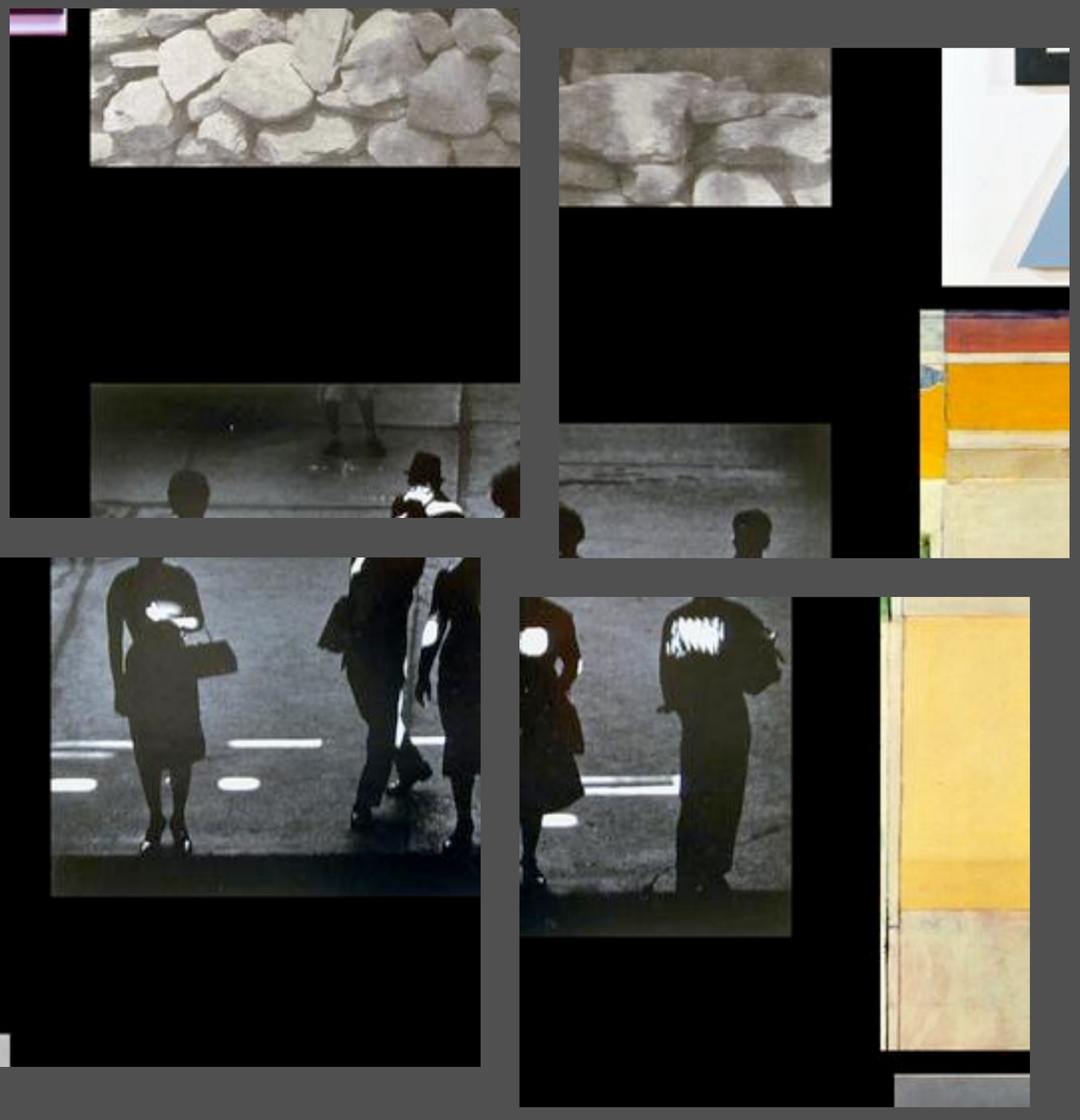




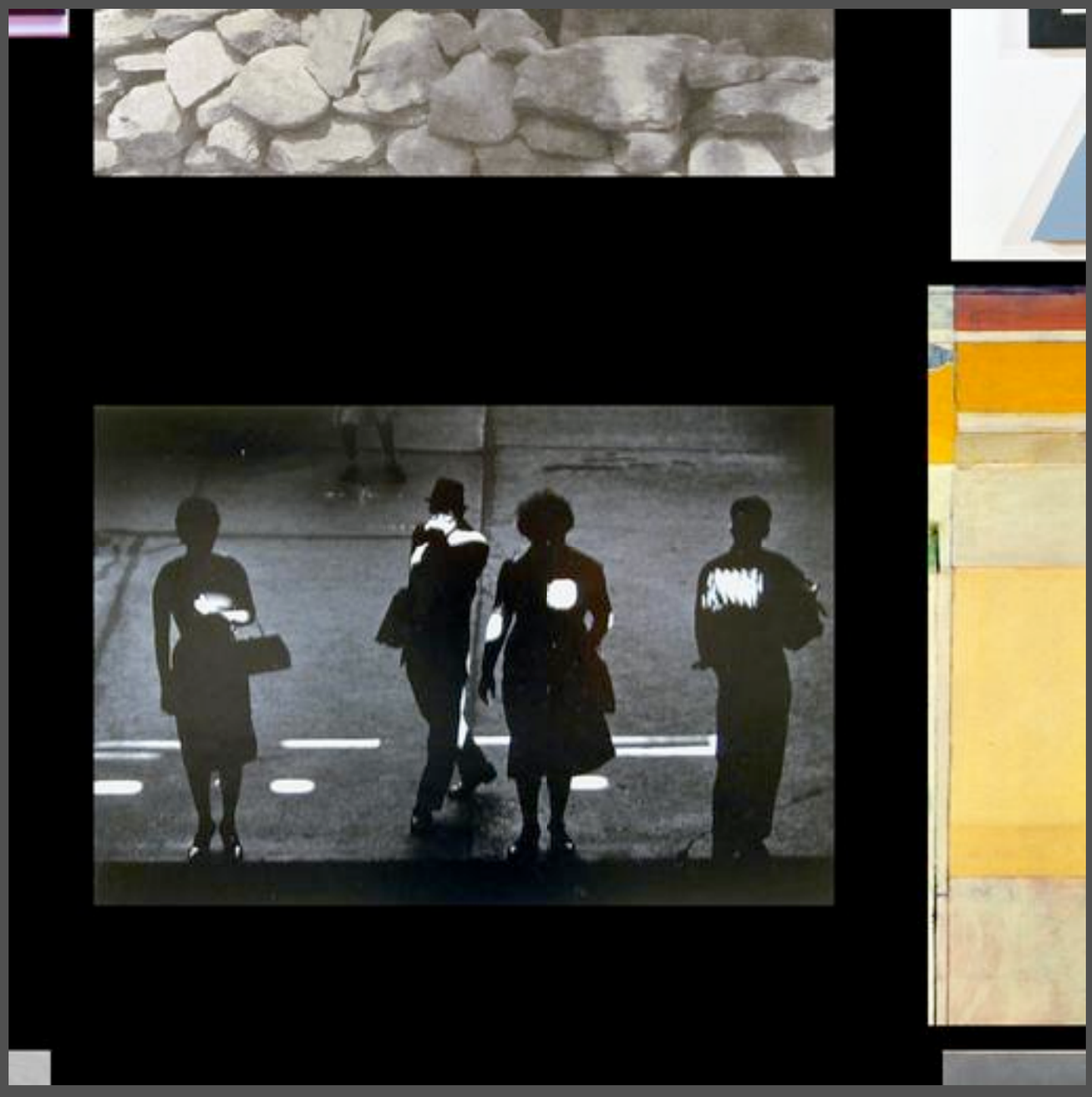


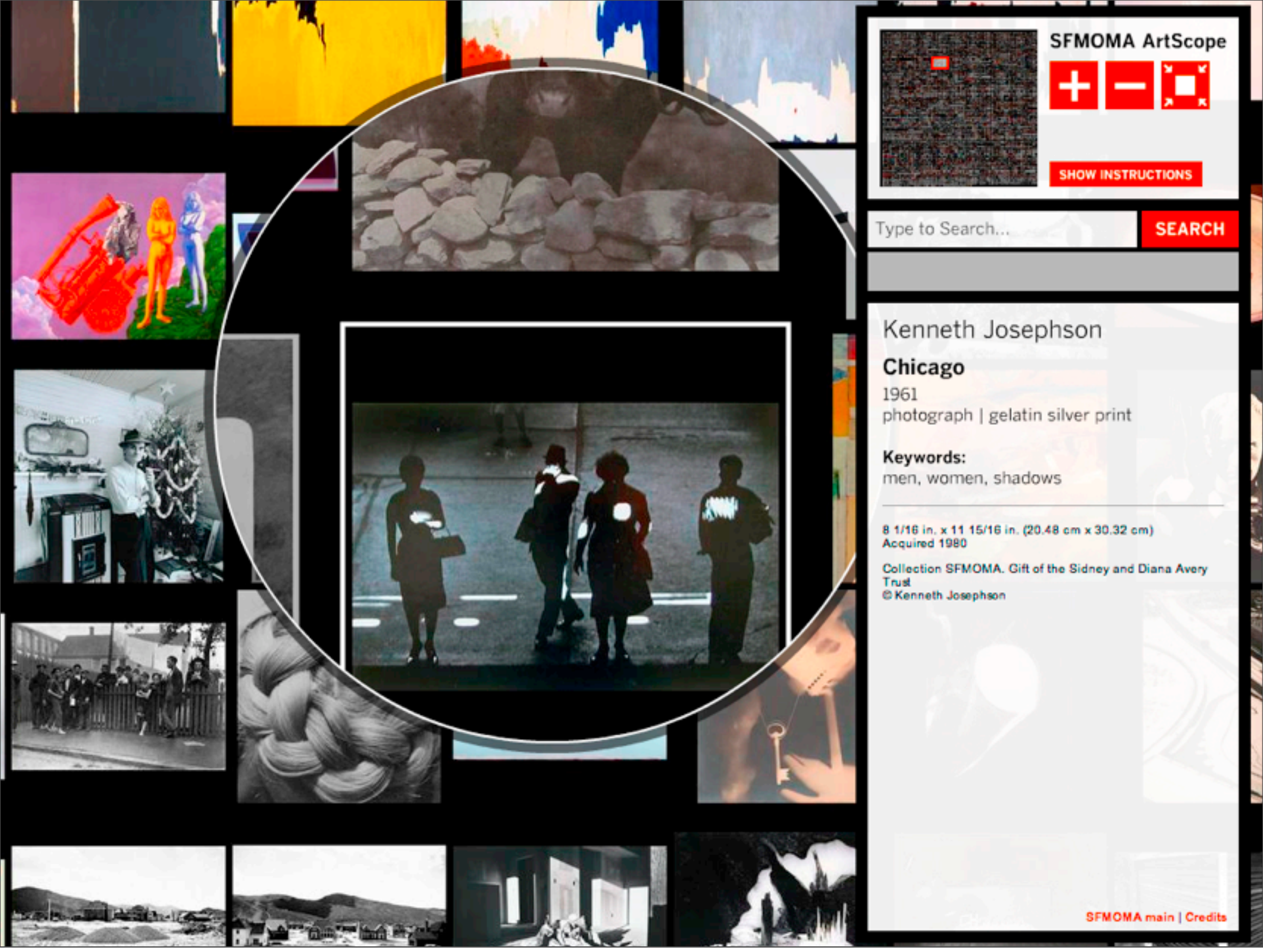


The infinite, continuous road maps and satellite imagery are available over a regular broadband connection because Google serves them to you as small square images

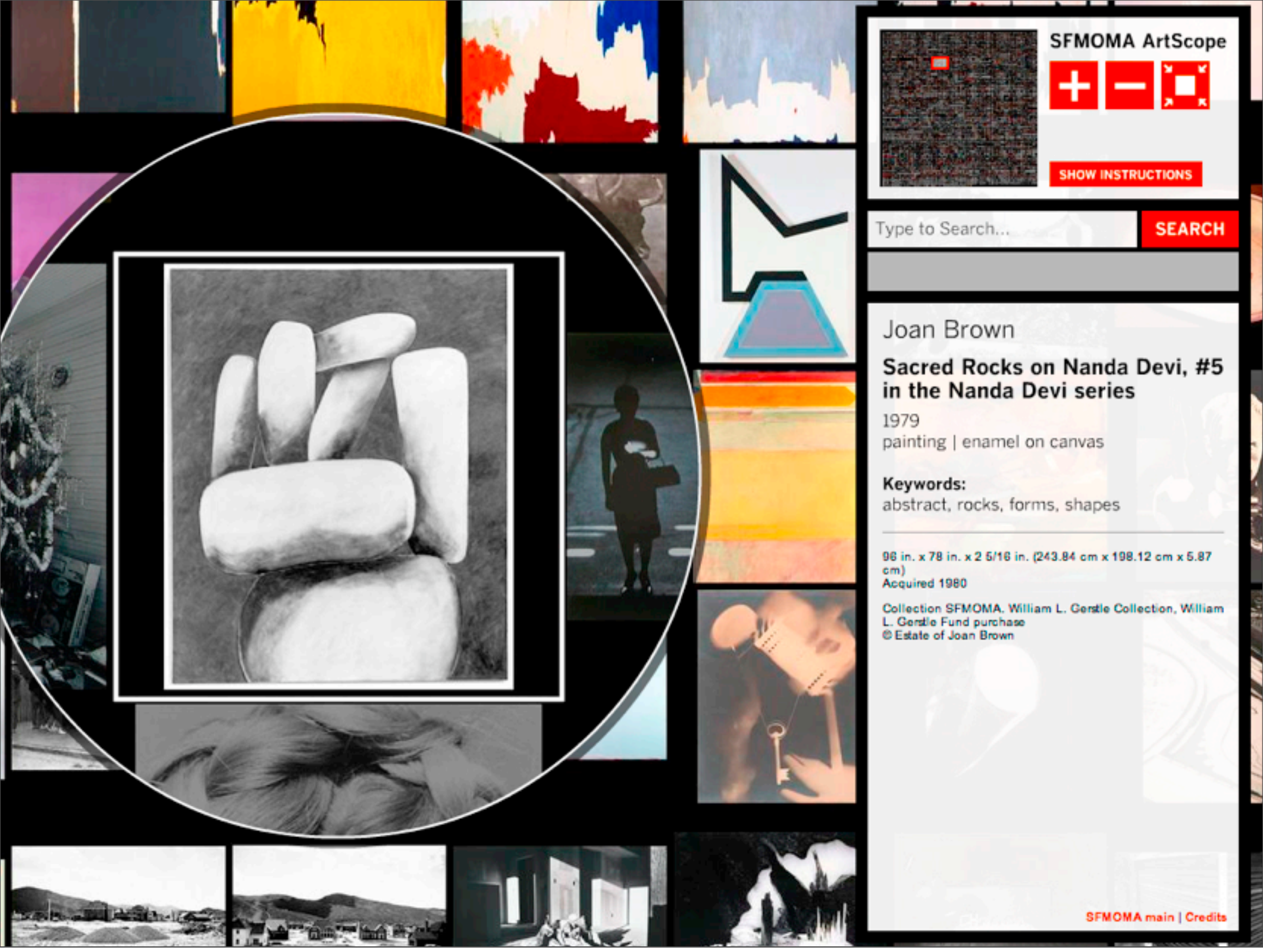


This idea can be applied to other kinds of deep navigation.

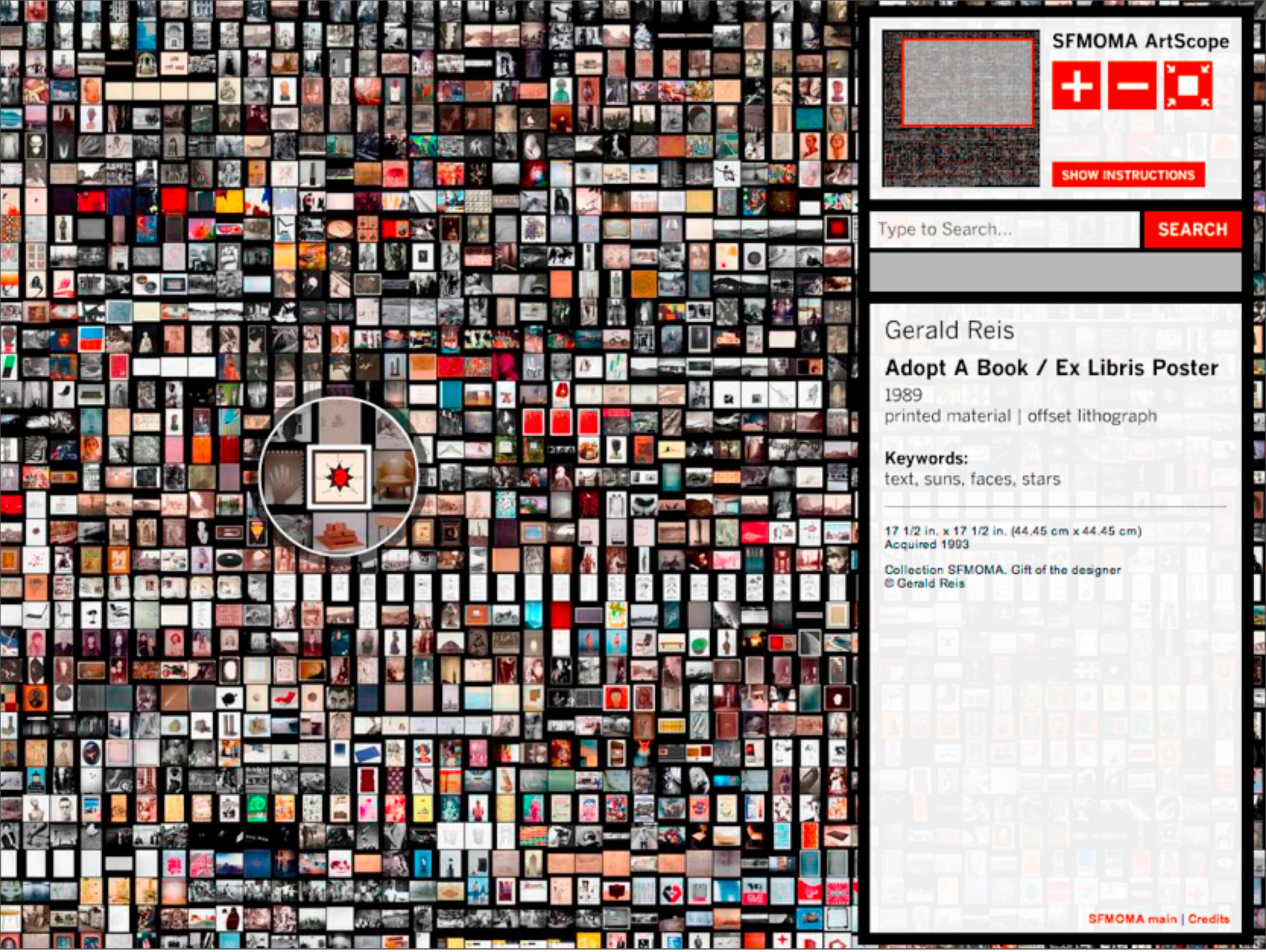




This is ArtScope



You can move the magnifying glass around to see what's in the Museum of Modern Art's extensive collection, or use tags and text searches to the right if you know what artist you're looking for, or are interested in browsing artwork by medium or subject.



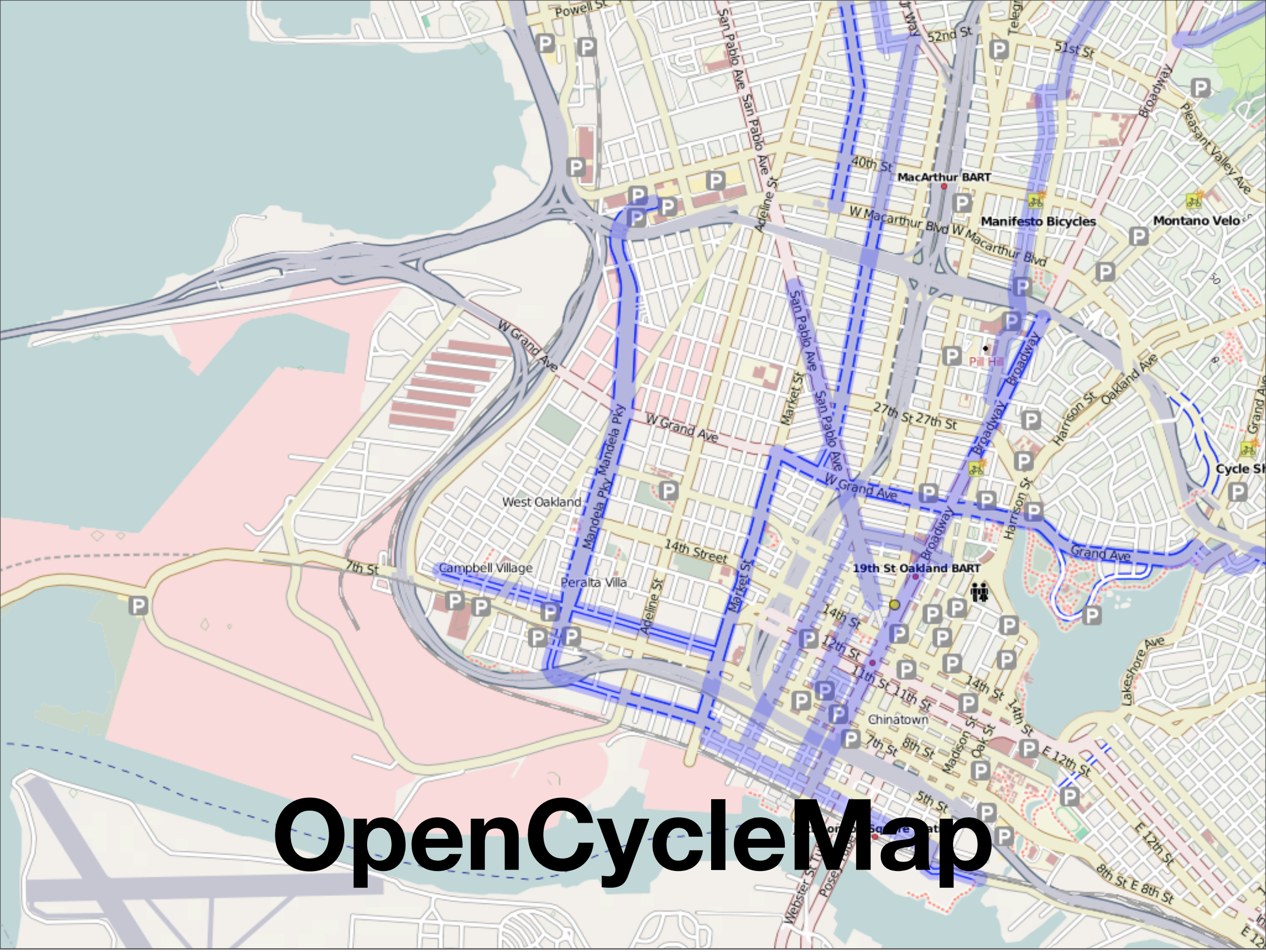
Really though, it's a kind of Google Maps for Modern Art.

All the familiar interaction metaphors – panning, zooming, small overview map – are there. There are certain interaction ideas popular on the web that are ripe for application to new contexts.

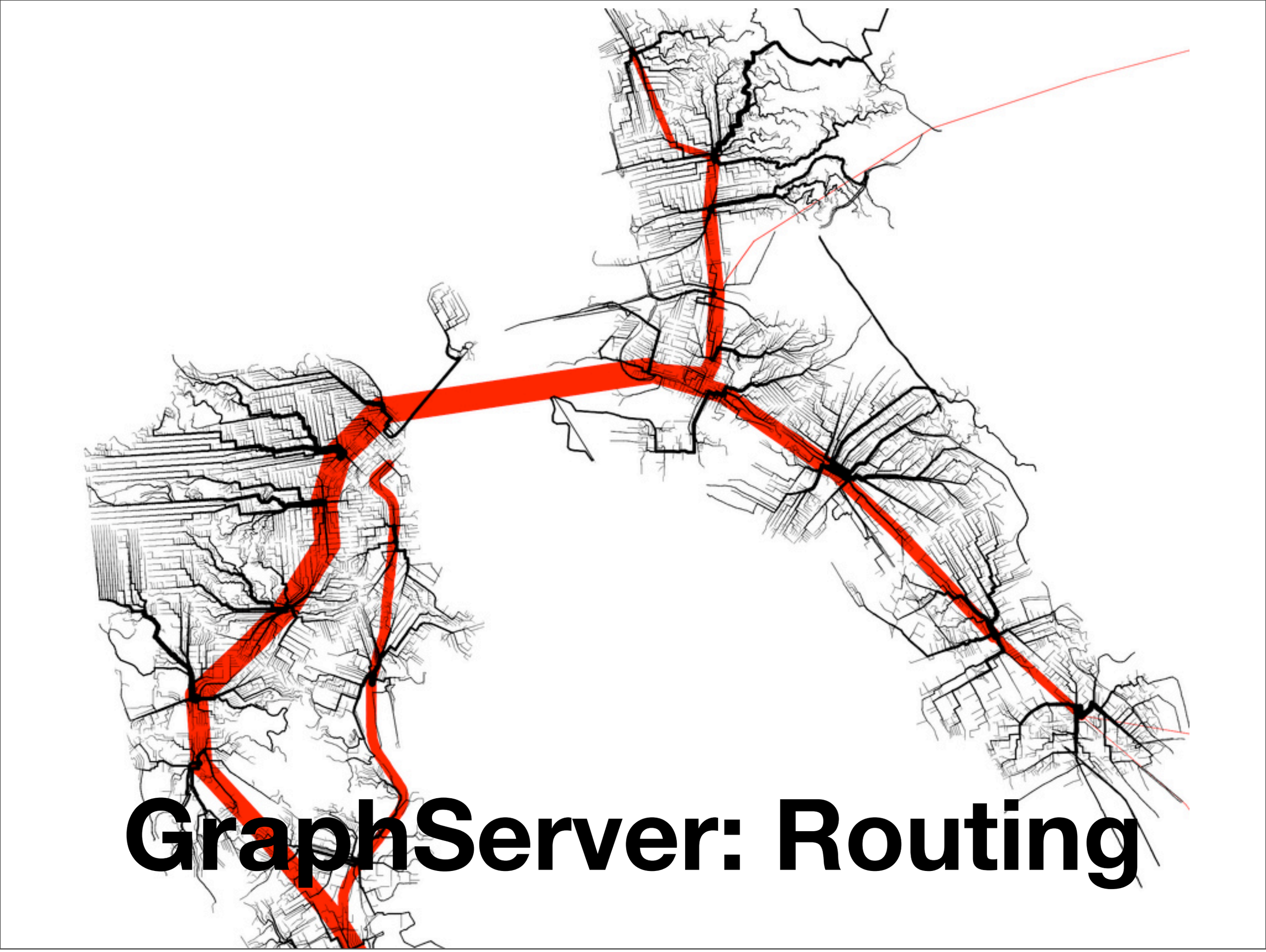
Maps, Generally

Maps online are switfly becoming the focal point for new thinking about data


OpenStreetMap
© 2005 OpenStreetMap.org



Andy Allan: Open Cycle Map
This is an award-winning custom render of OpenStreetMaps that illustrates why making your own maps from scratch is important: there are a lot of different kinds of geographic context out there, beyond just freeways and pizza places.



Brandon Martin-Anderson: shortest-path tree of San Francisco transit (red) and walking (black)
This is just transit, with an indication of walk + ride time.

Shawn Allen: San Francisco contours and bike routes
Shawn overlaid bike routes on contoured hill in SF, using data directly published by city government.

Heat Maps, Underneath

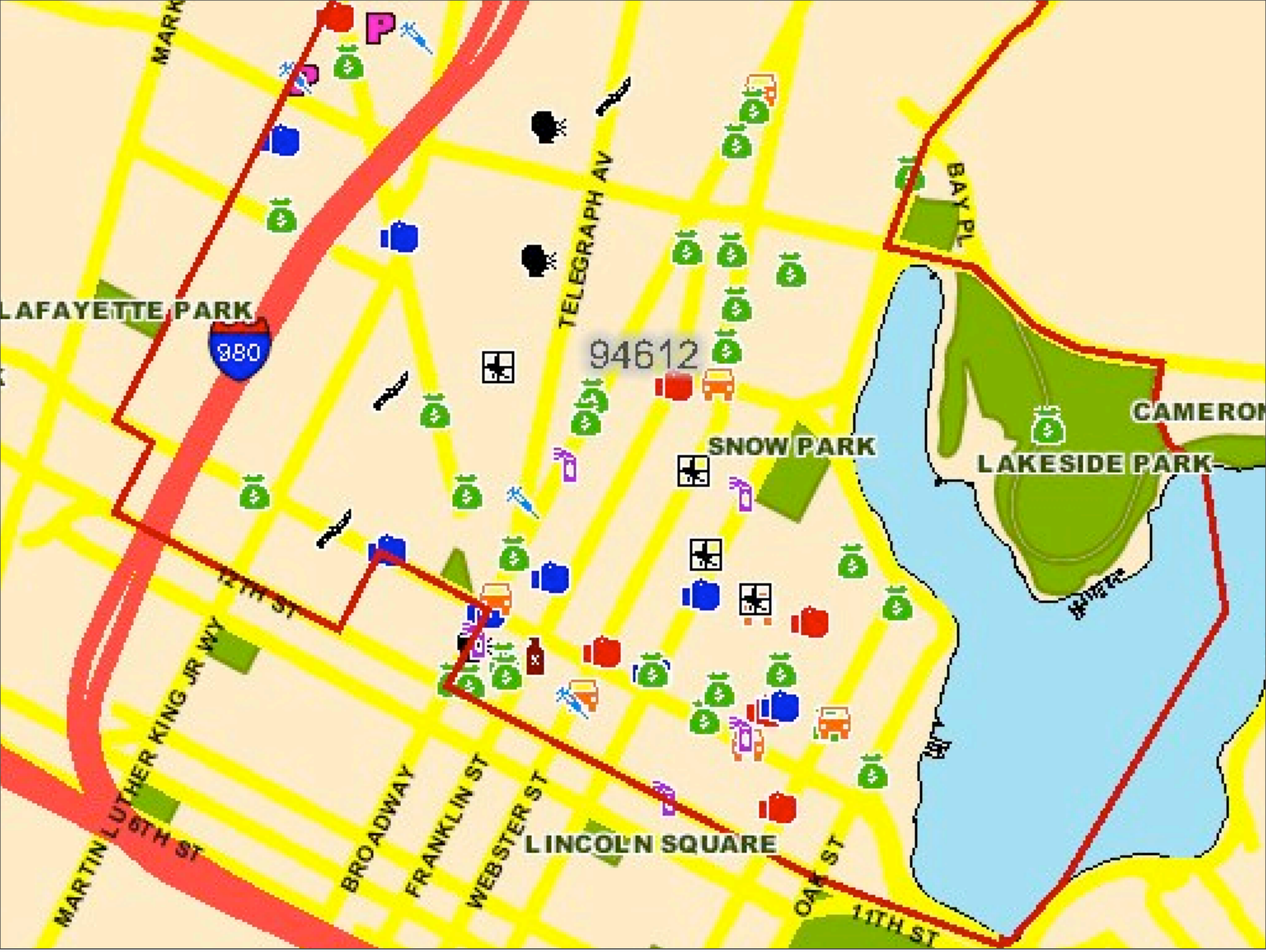
Oakland Crimespotting heat maps
Meanwhile, this is a heat map of crime in West Oakland with a thin layer of street context from OSM.

Black Box/Reach Through

“…scientific and technical work is made invisible by its own success. When a machine runs efficiently, when a matter of fact is settled, one need focus only on its inputs and outputs and not on its internal complexity. Thus, paradoxically, the more science and technology succeed, the more opaque and obscure they become.”

—Bruno Latour, Pandora’s Hope

Oakland Crimespotting is another recent project that demonstrates depth of interpretation through a variety of views on information.



This is the state of the art in mapping crime information for cities in the US. Maps are designed by programmers and not fully resident on the web.

Generally speaking, it’s hard to link to things and hard to explore information laterally.

“Native To A Web Of Data”

Tom Coates, 2006

http://www.plasticbag.org/files/native/

I’ve borrowed the title of this talk from Tom Coates’s Native to a Web of Data.

“A web of data sources, services for exploring and manipulating data, and ways users can connect them together”

“Designing Data For Reuse”

Matt Biddulph, 2005

http://www.hackdiary.com/slides/xtech2005/

Another influential piece of writing in this space is from Dopplr CTO Matt Biddulph.

Matt describes a series of best practices around open data formats and permanent, guessable URL’s.

Views

How many ways are there to look at data?

Oakland Crimespotting combines practices around usable data formats, web-friendly bookmarkable addresses, and visualization as a interpretation layer above data.

Murder

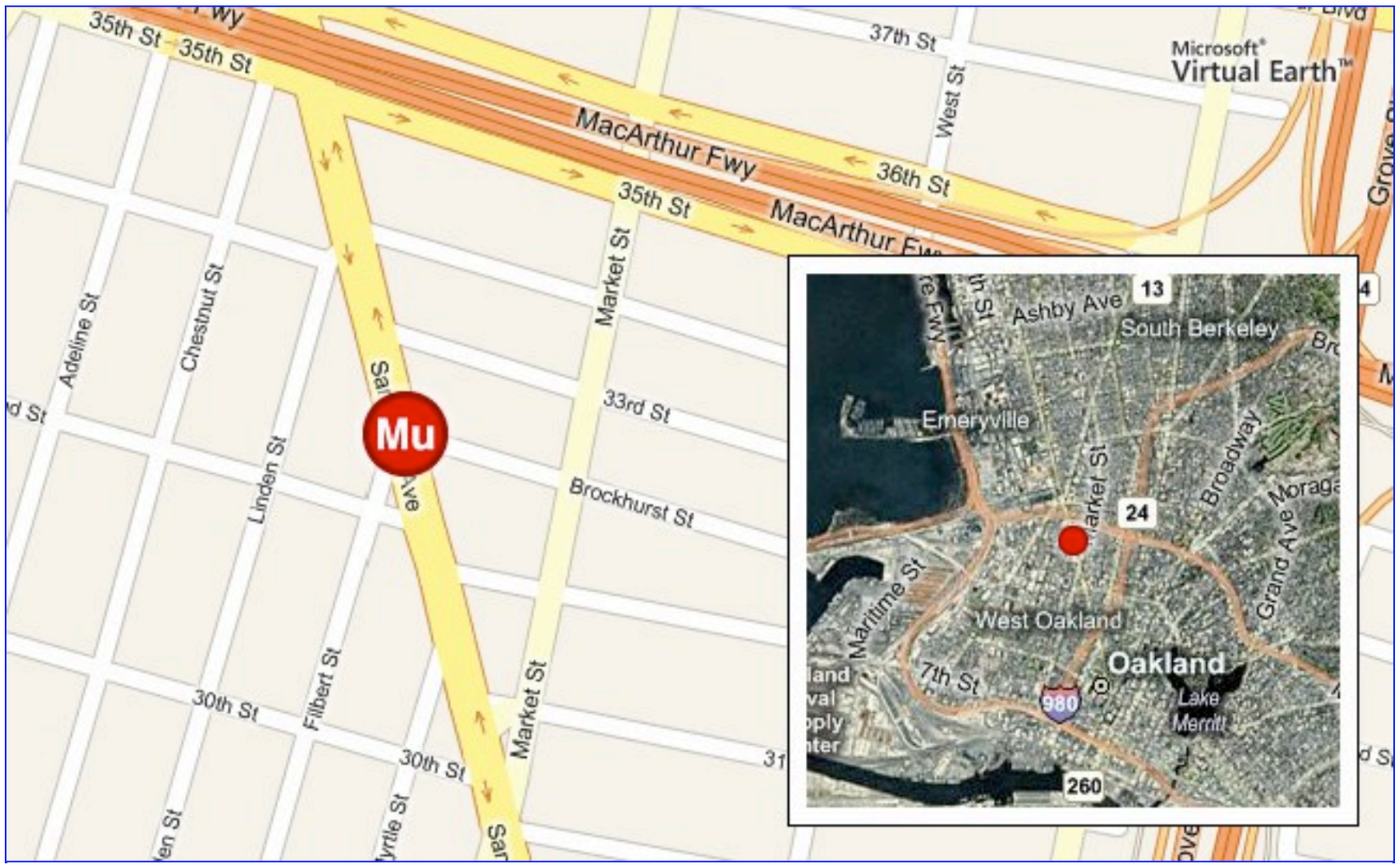
Wednesday, Mar 5, 2008 5:48am

MURDER

Case Number 08-016924-003, Police Beat 06X.

3200 block of San Pablo Ave, Emeryville, CA 94608, USA

Scroll down to see related and nearby reports, or to leave a comment.



View an interactive map of this report.

Related Reports

These reports are directly related to the one above, and may be part of the same incident

First, there is a page for every individual crime report in the system.

This is the most basic building block of the site. Each one has a sensible URL that includes a map, connected reports, and nearby neighborhood information.

Oakland crimespotting

Report data last published by Oakland Police: **2 days ago**

Home | Map | Crime Reports | Police Beats | Alerts | About | Feedback

205 Reports Of Robbery

Showing 20 reports, **Thursday, Mar 13, 2008** through **Monday, Mar 17, 2008**.

Earlier reports of robbery

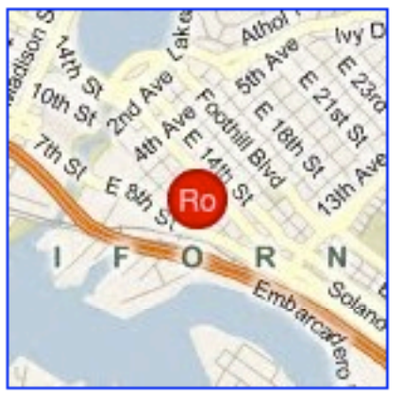
3:30am
Monday, Mar 17, 2008

CARJACKING WITH FIREARM (08-020179)

1:00am
Monday, Mar 17, 2008

ATTEMPTED ROBBERY-OTHER DANGEROUS WEAPON (08-020164)

10:30pm
Sunday, Mar 16, 2008



ROBBERY - STRONG ARM (HANDS, FISTS, FEET, ETC.) (08-020155)

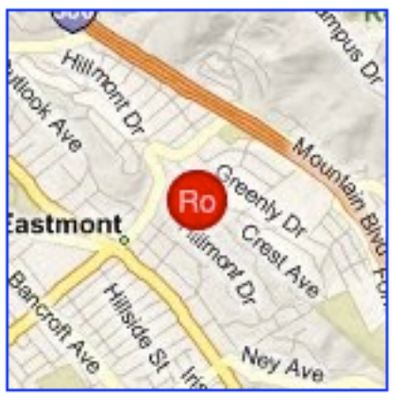
12:00am
Sunday, Mar 16, 2008

ROBBERY - STRONG ARM (HANDS, FISTS, FEET, ETC.) (08-020022)

10:00pm
Saturday, Mar 15, 2008

CARJACKING WITH FIREARM (08-019953-001)

10:00pm
Saturday, Mar 15, 2008

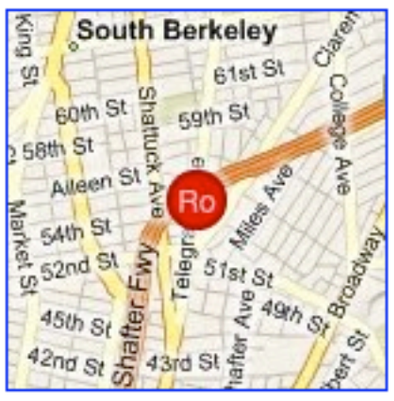


CARJACKING WITH FIREARM (08-019953)

9:20pm
Saturday, Mar 15, 2008

ROBBERY-FIREARM (08-019940)

8:15pm
Saturday, Mar 15, 2008



ROBBERY-FIREARM (08-019918)

Second, there are listing pages that show collections of reports: by day, by type of crime, by police beat.

crimespotting

Police Beat 4X

Contact your officer for beat 4X.

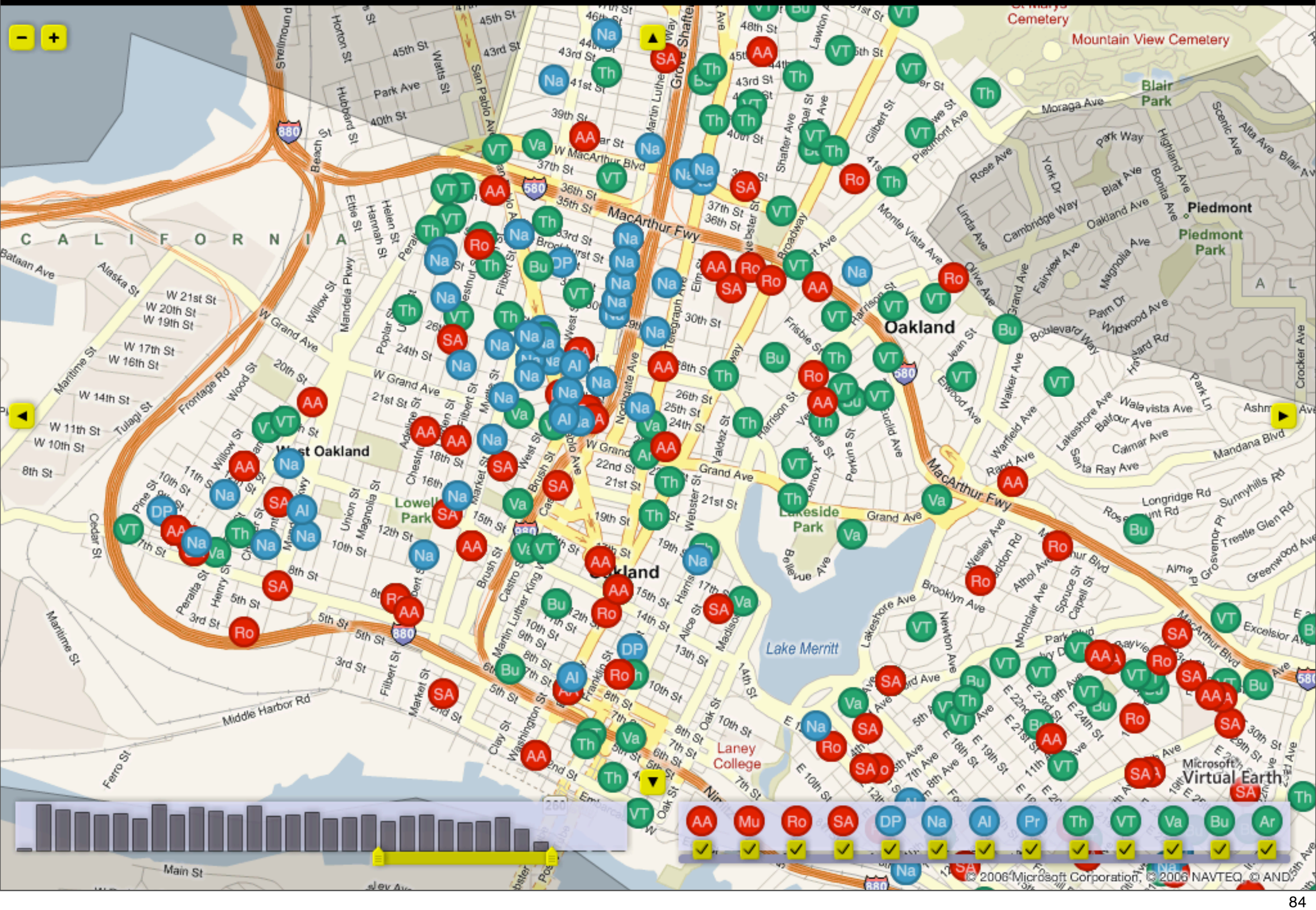
Downloadable spreadsheets and RSS feeds of reports from beat 4X are available below. Subscribe to feeds in your preferred feed reading software, or download spreadsheets for use in Microsoft Excel, OpenOffice Calc, Apple Numbers, and other spreadsheet programs.

News feed of reports in beat 4X

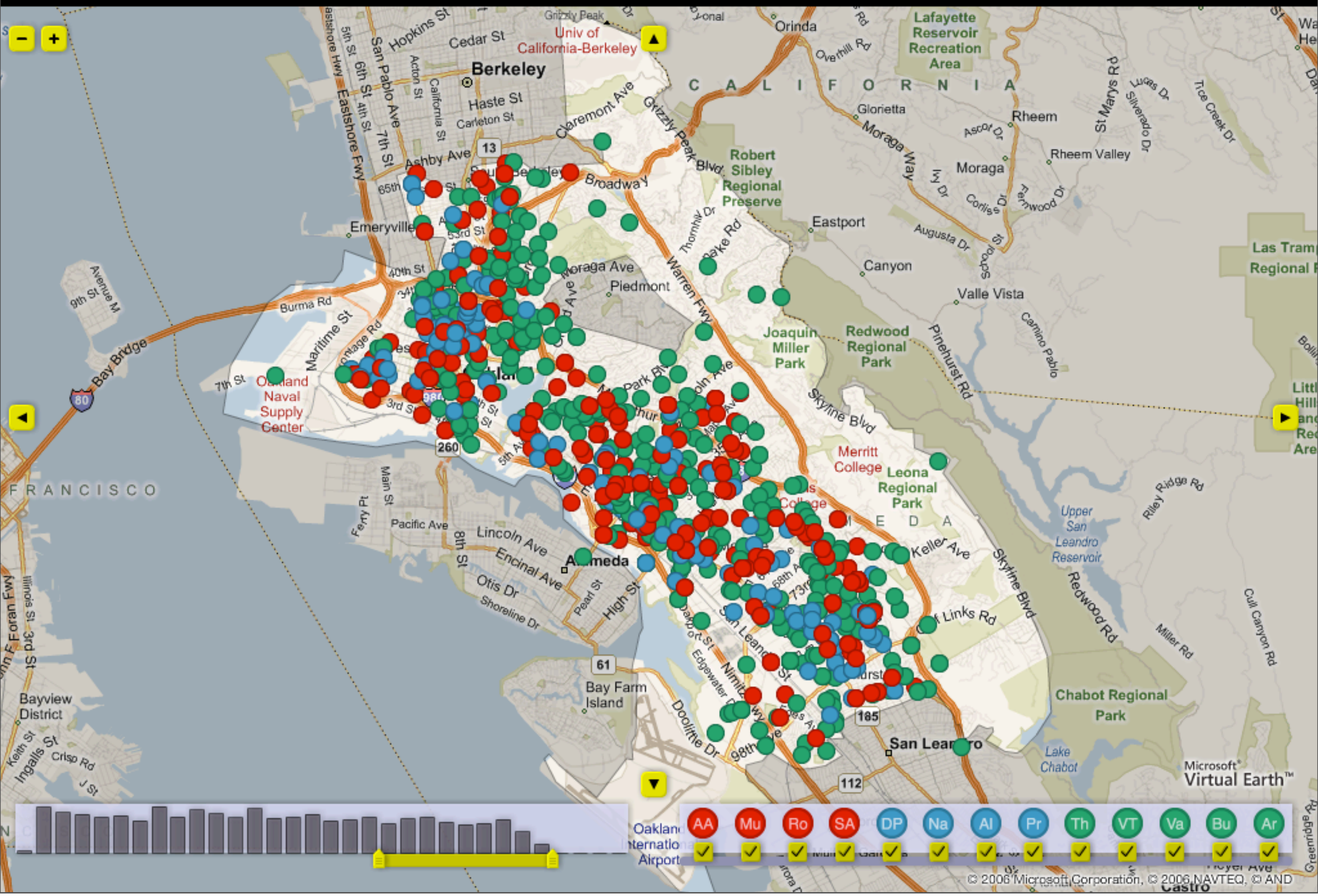
Spreadsheets of last week's reports / last month's reports in beat 4X.

Reports in the Past Week

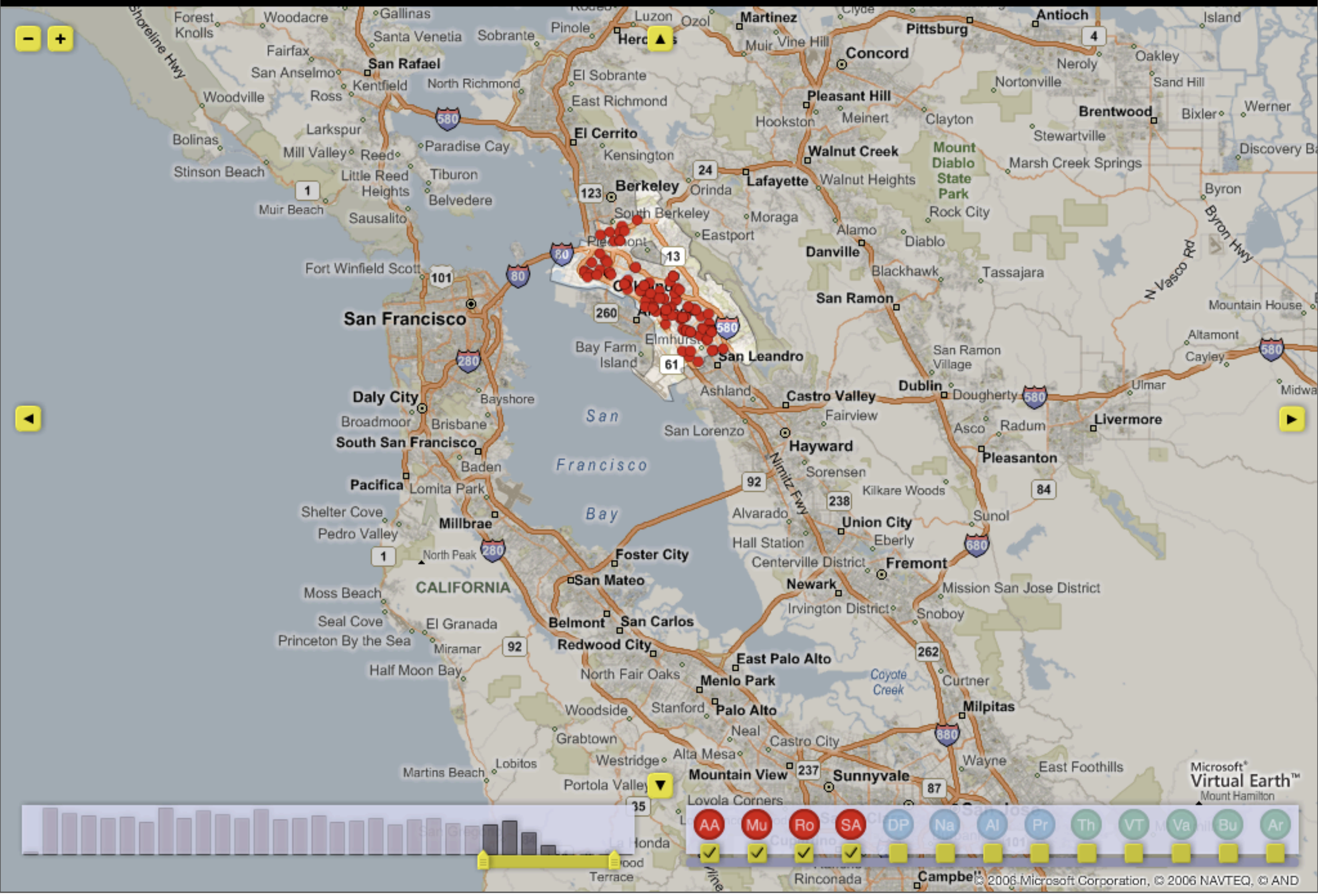
We're intentionally trying to stretch the definition of "API" here: the classic, Flickr-driven concept of an XML web service is definitely one Web 2.0 compliant way of looking at things, but Excel files and permanent URLs right there on the website is a broader concept that invites members of the non-geek public to join in. These have all been API-like "handles" that visitors can connect with.



Third, everything is presented on a map.



The map shows global context.



As well as the relative isolation of just one city of data.

Lessons

What can be learned from visual data?

The project also demonstrates additional layers of information that can be derived from raw data.

Oakland crimespotting

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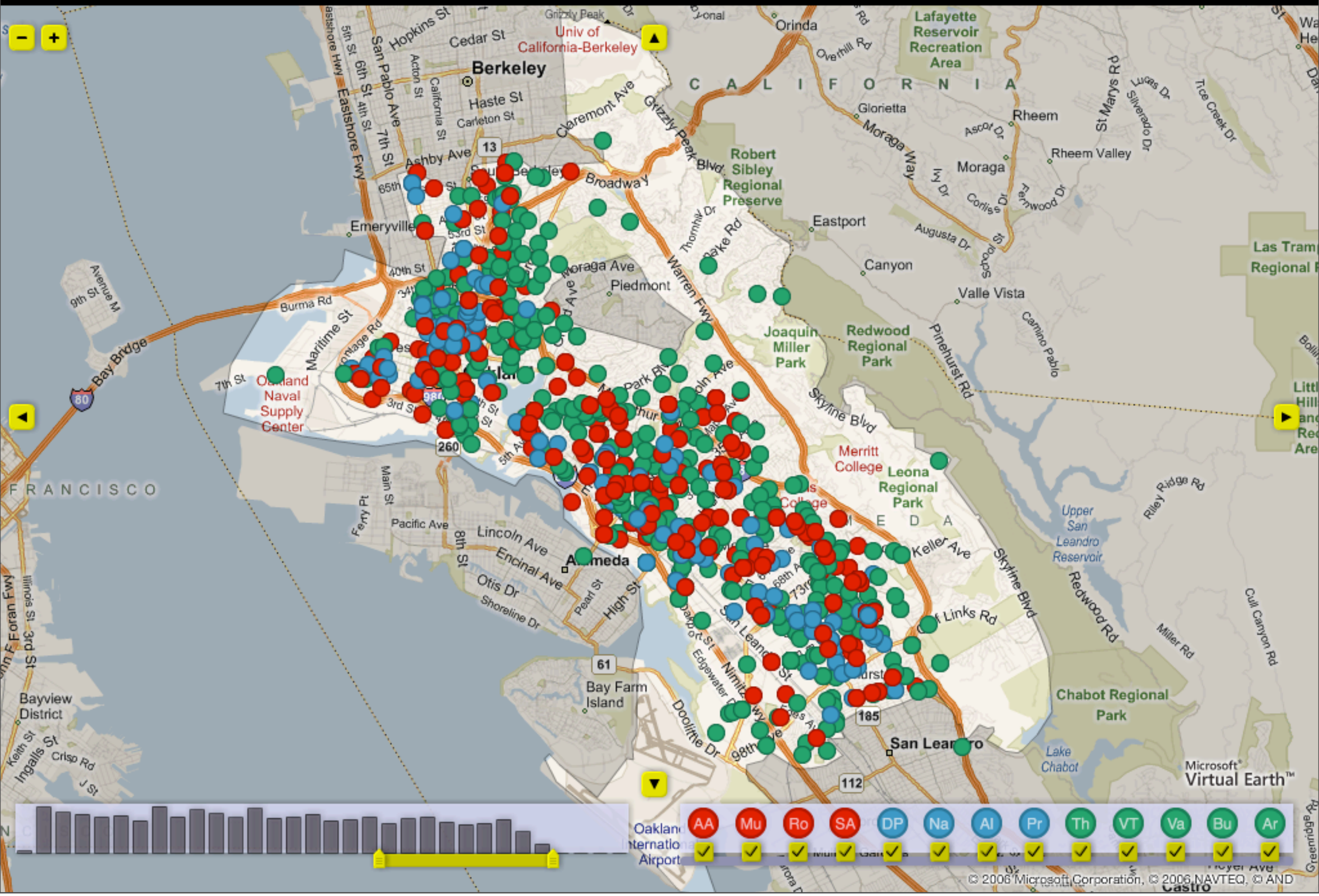

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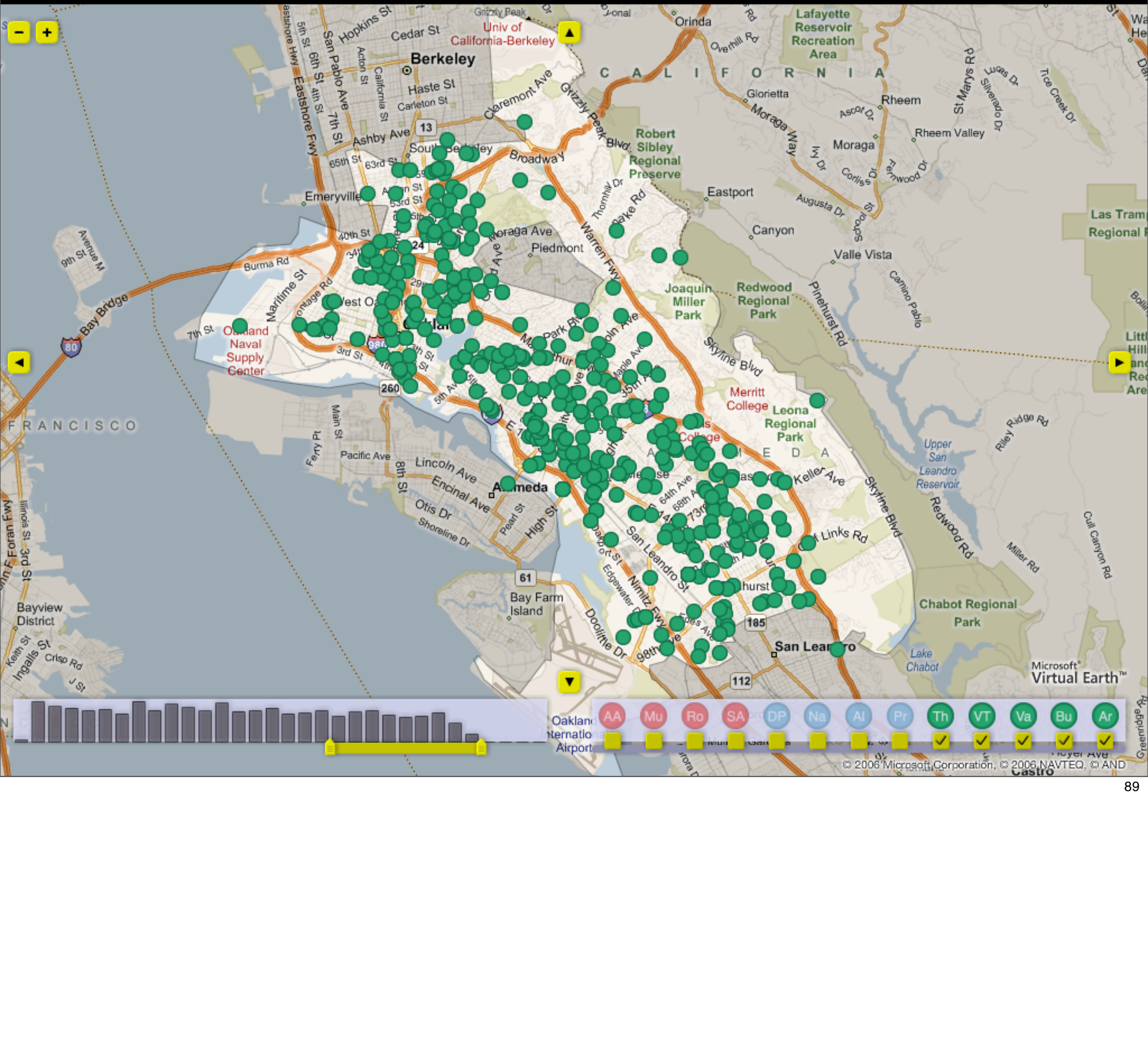

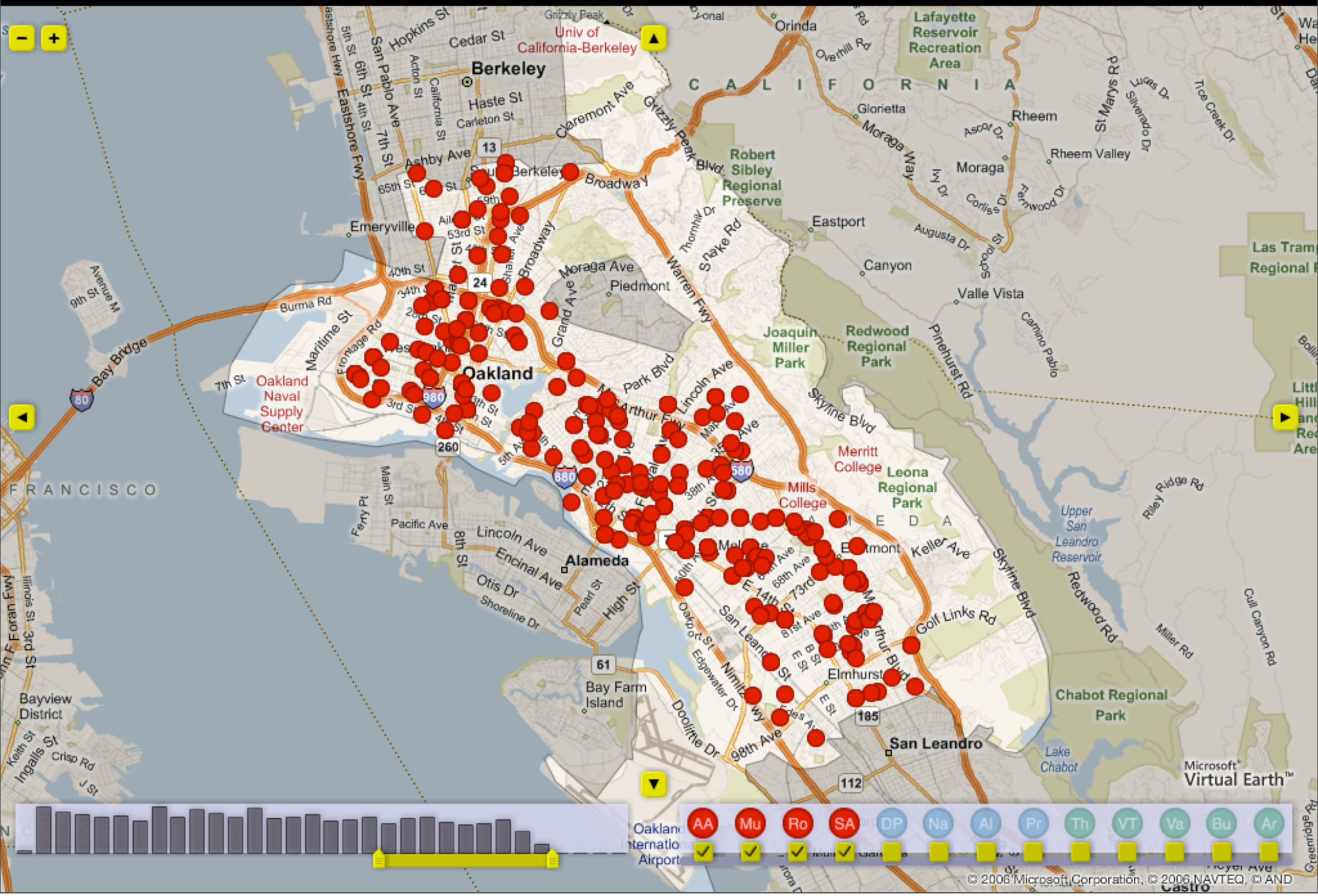

Here we see reports of just one particular type, isolated on the map.

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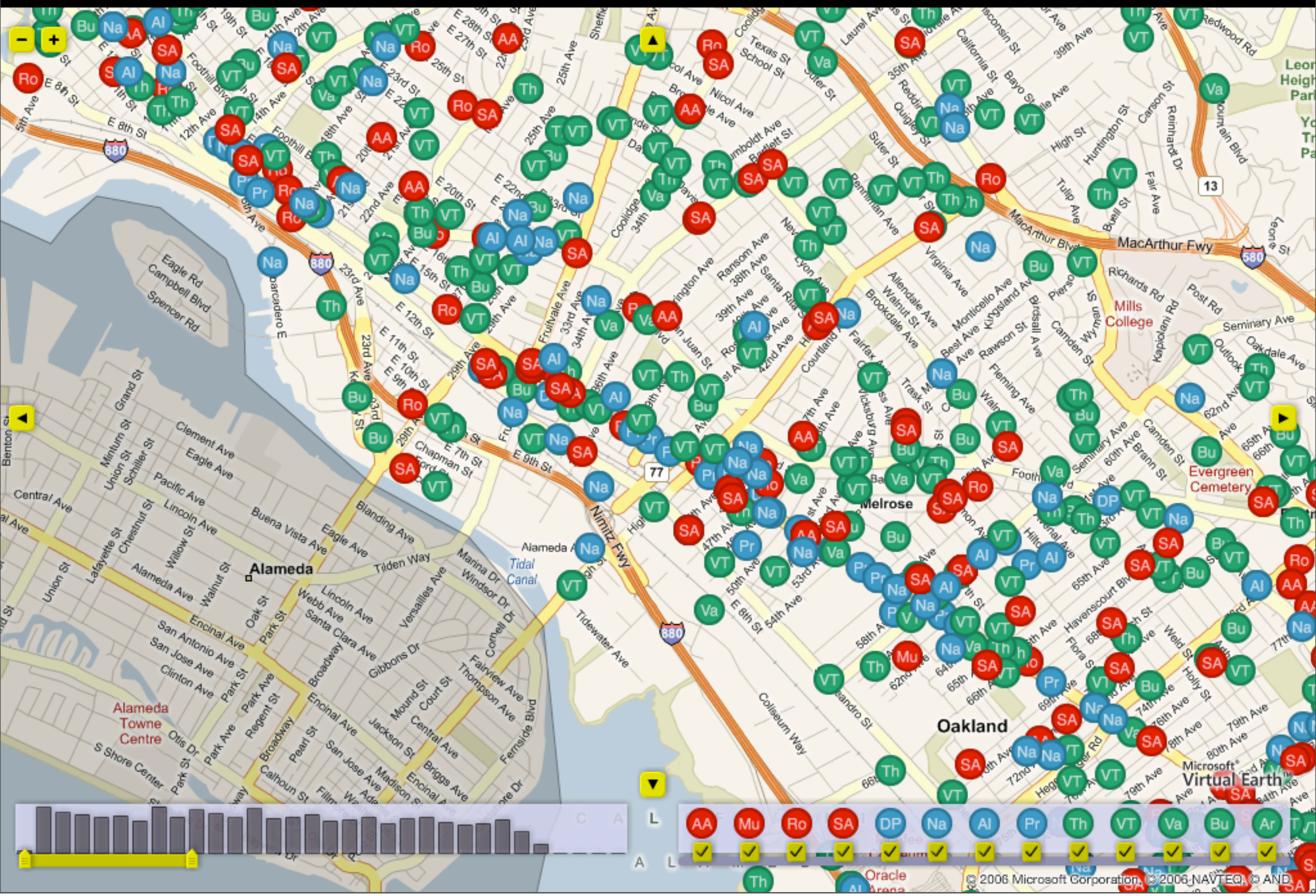

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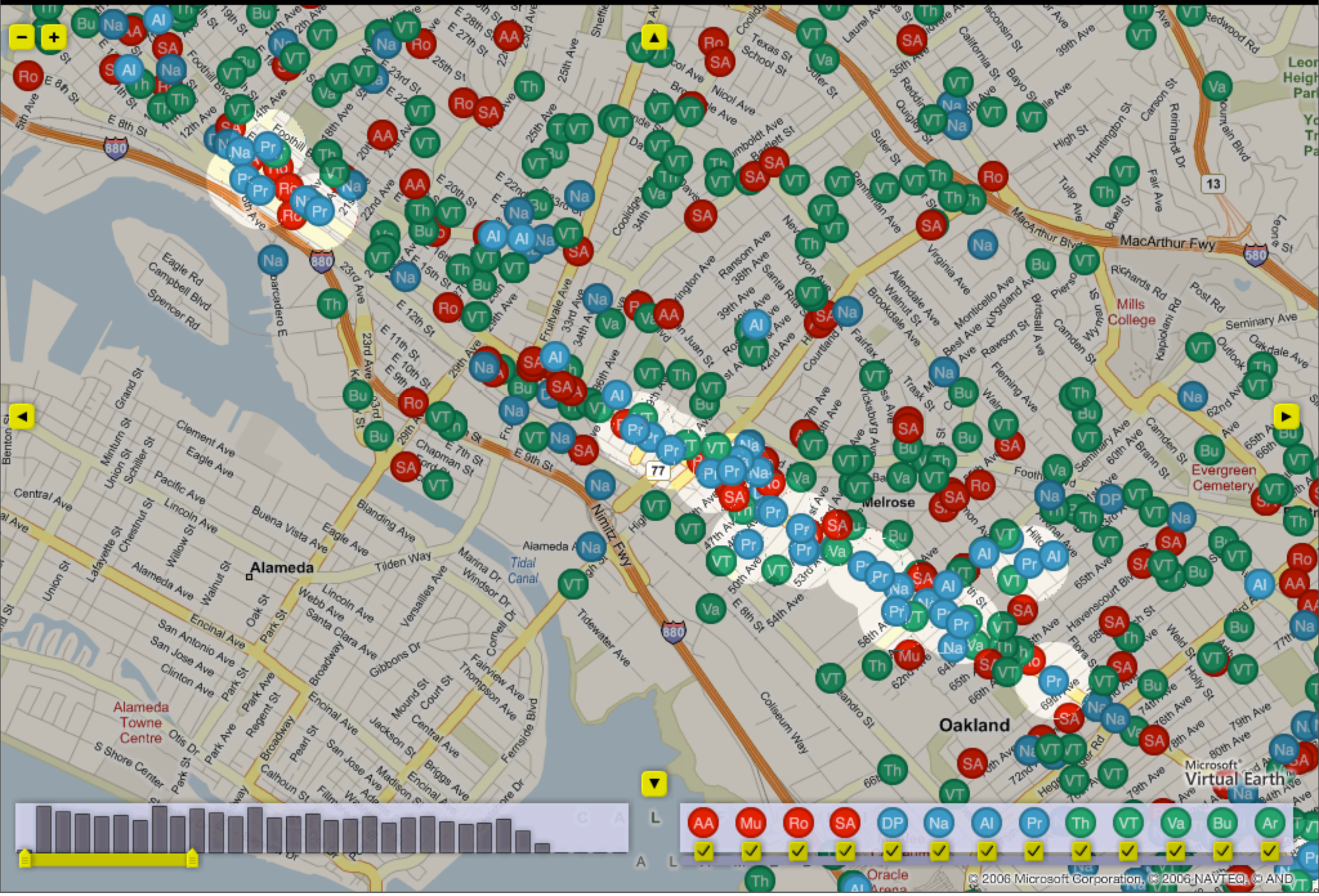

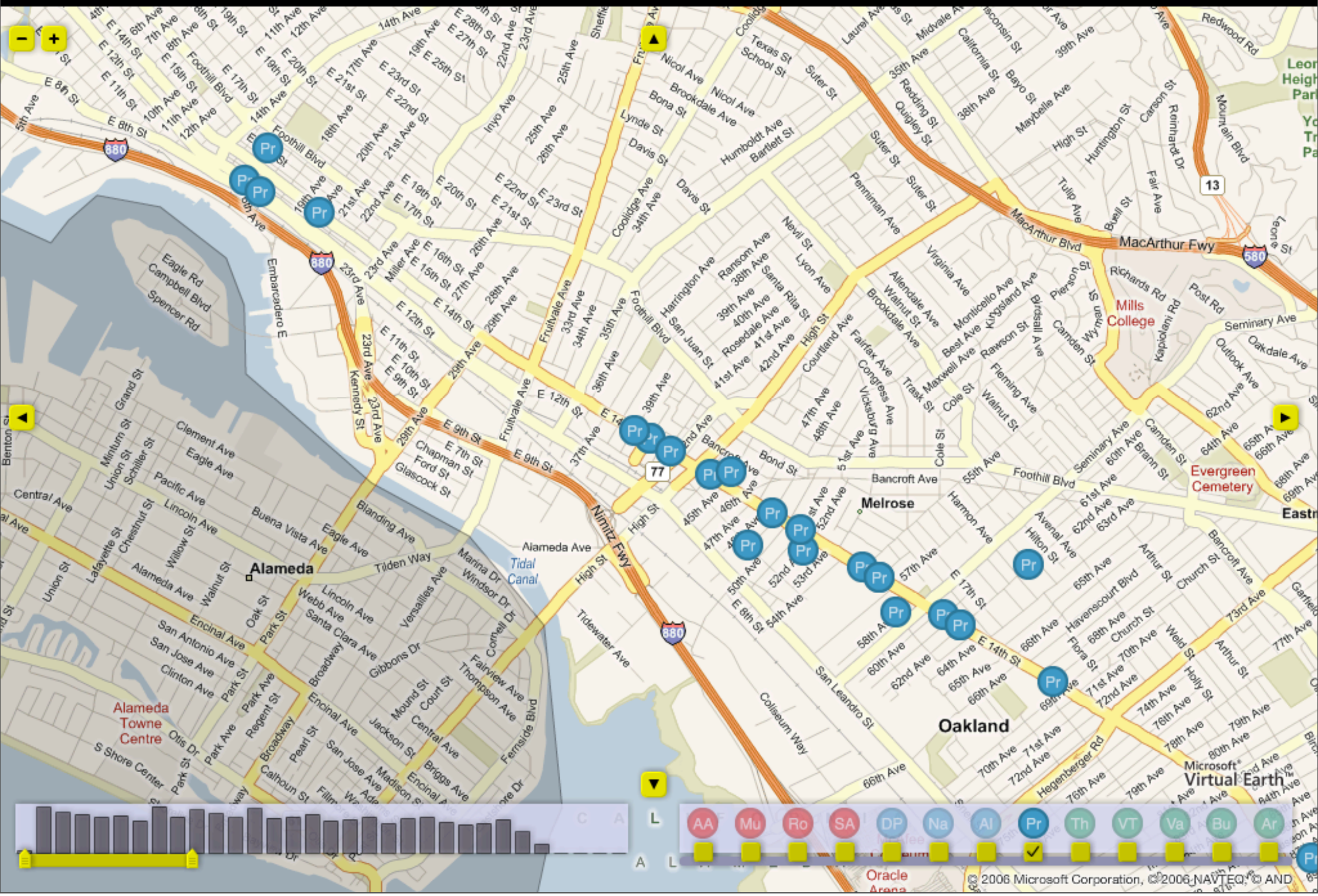

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These reports almost all happened on one day – prostitution in particular following this “sting” pattern.

Oakland crimespotting

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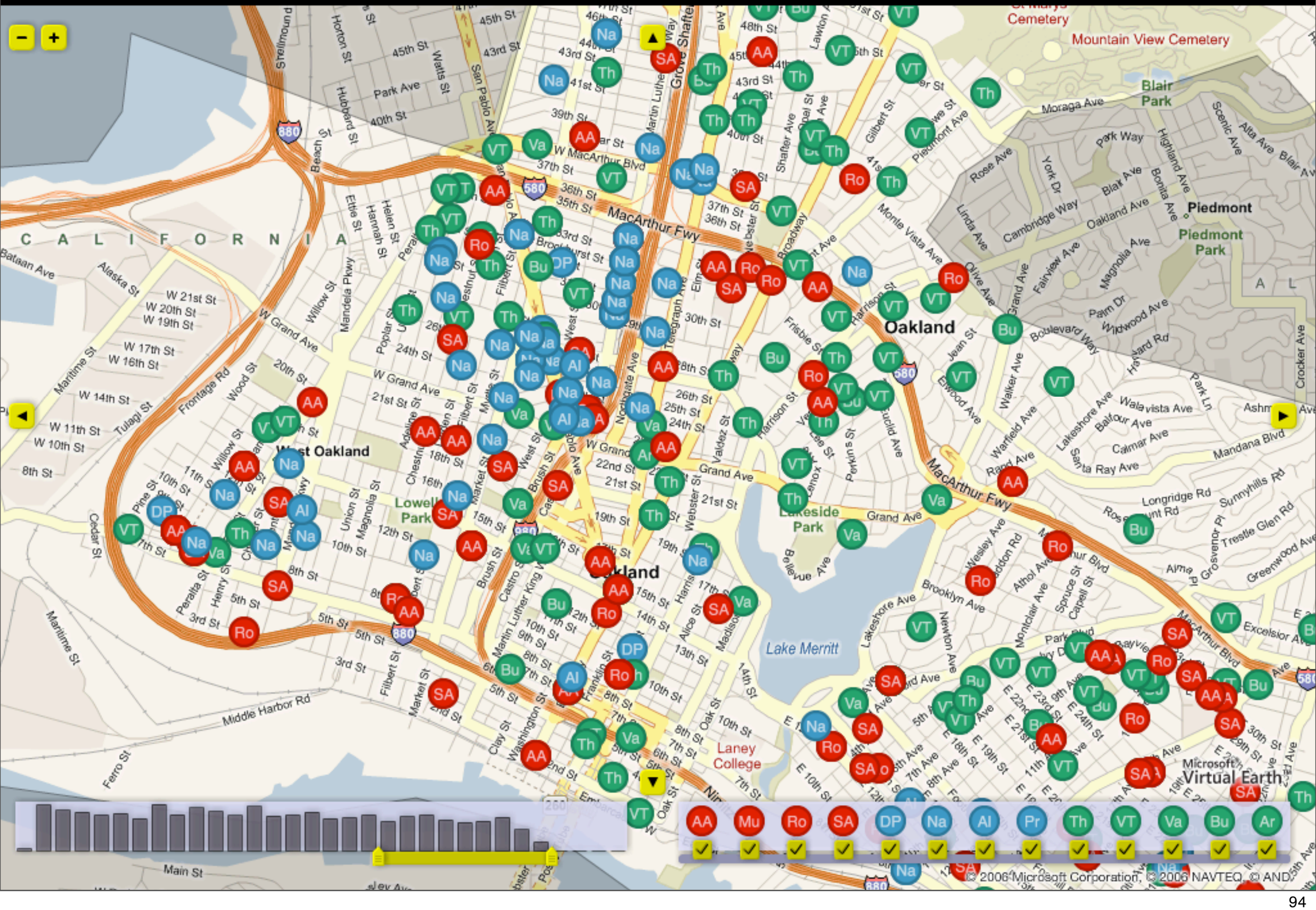
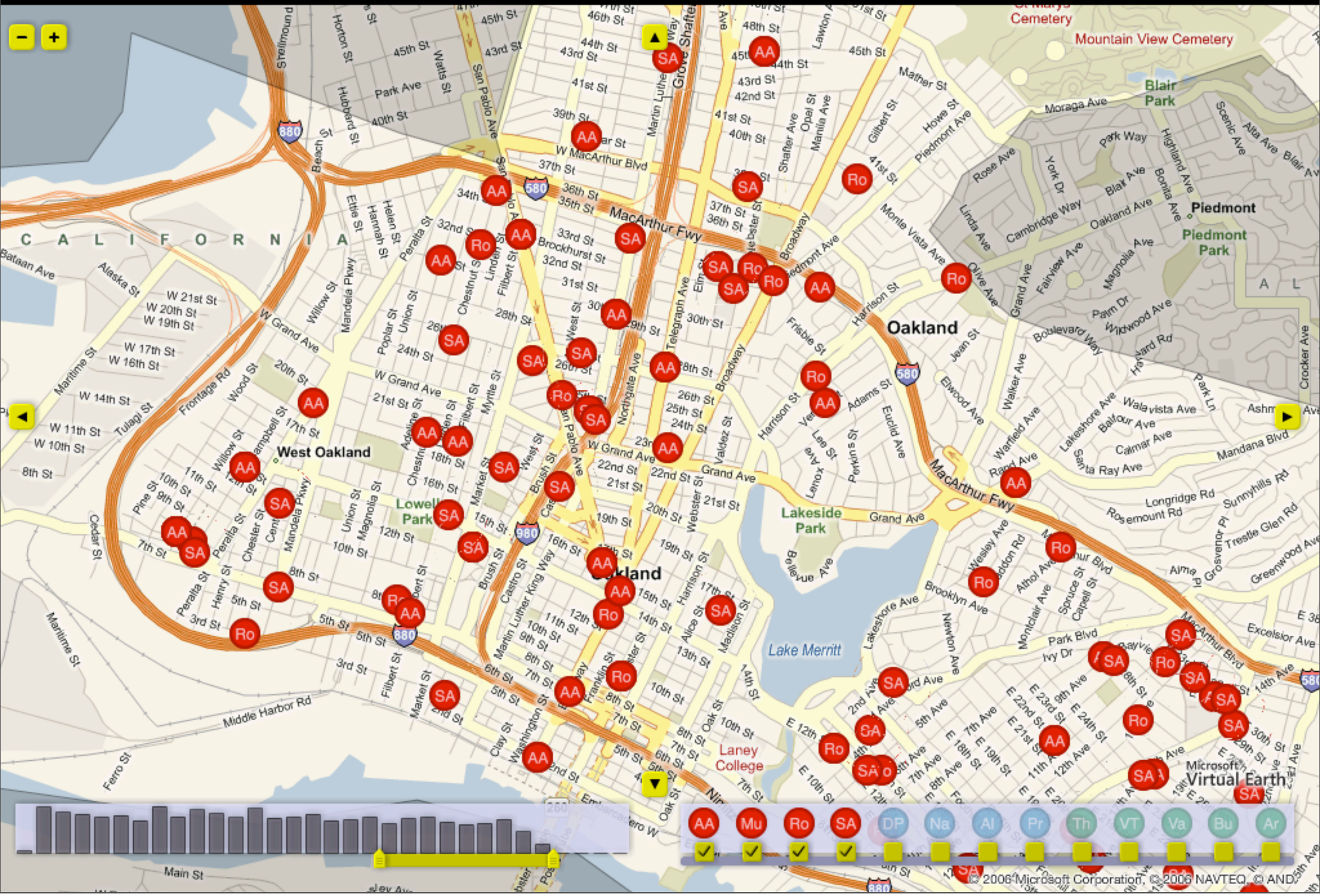
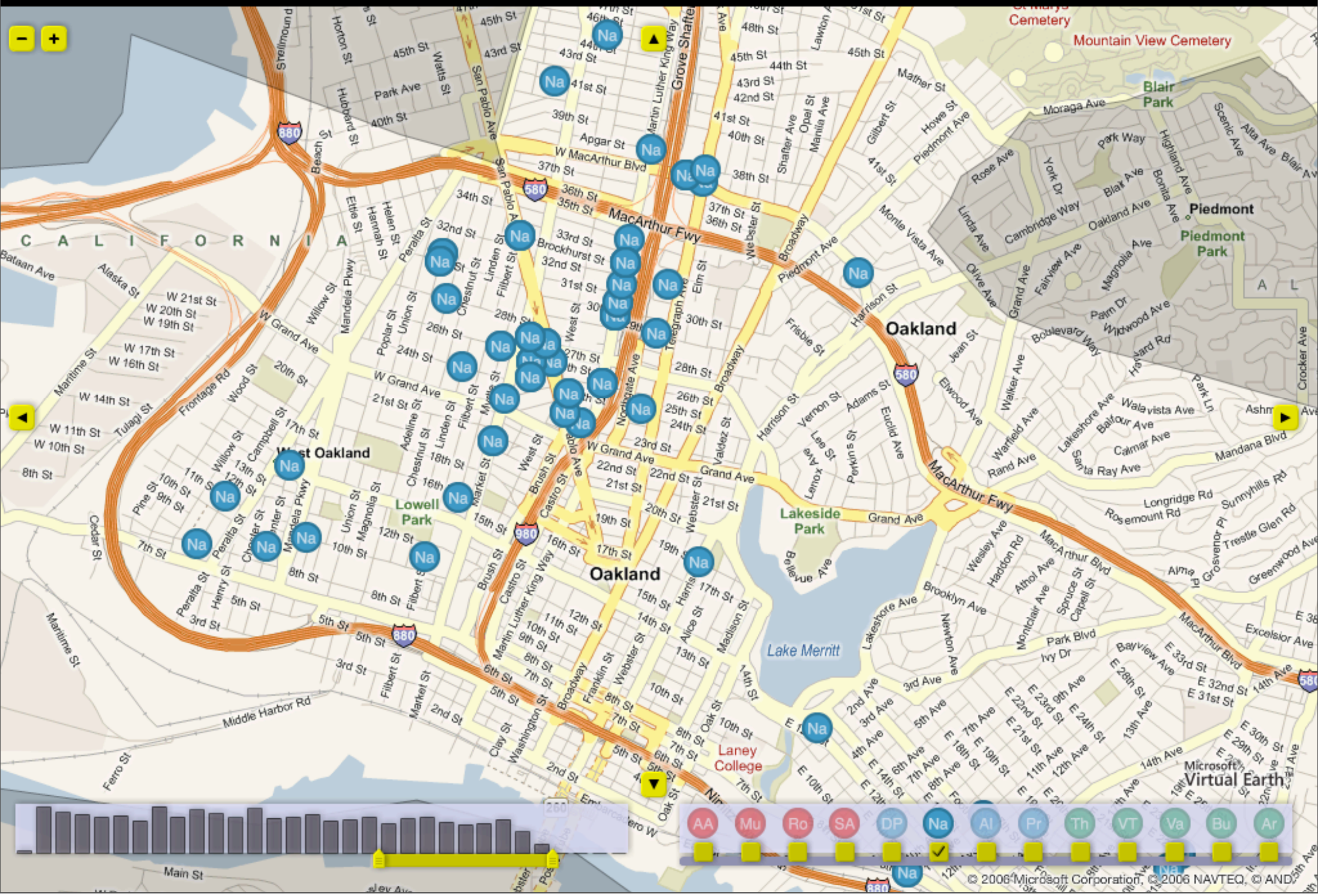




Violent crime is spread all over – there isn't as much of a focus in West Oakland as you'd expect



Most of these narcotics reports are in beats 06X and 07X

Design + Data

**Open data and visualization are colliding,
and feeding off one another to mutual benefit**

Thank You

mike@stamen.com