

Building maps from scratch

Nathaniel Vaughn KELSO

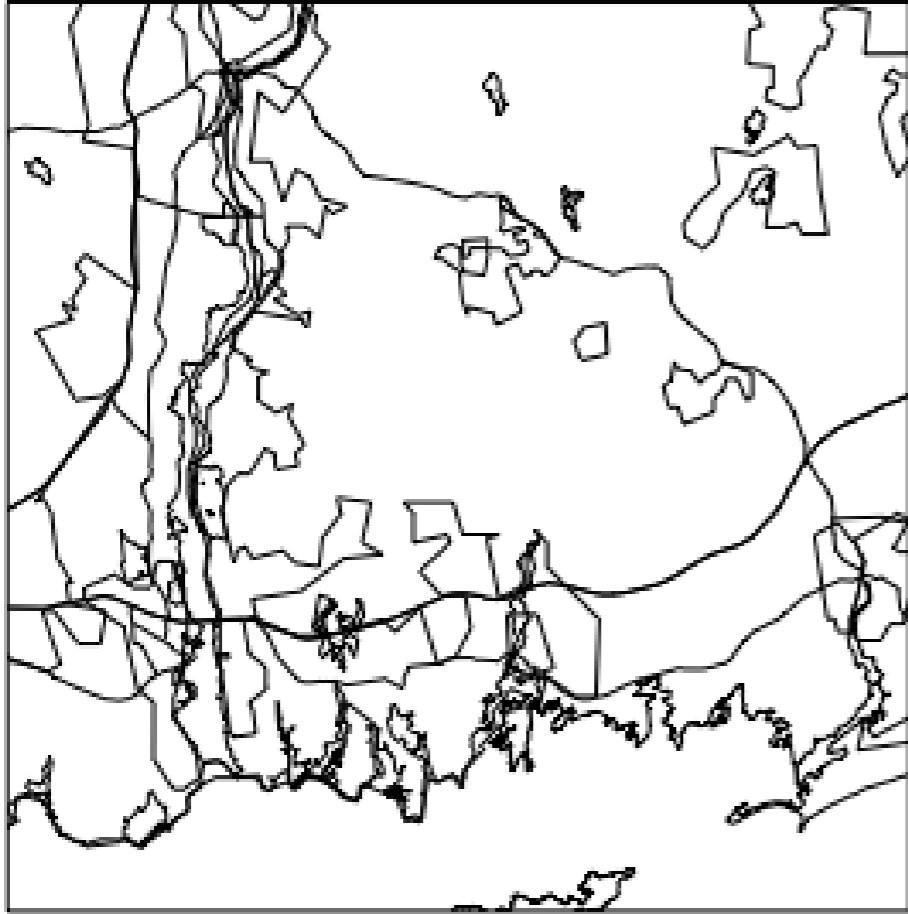
Stamen Design

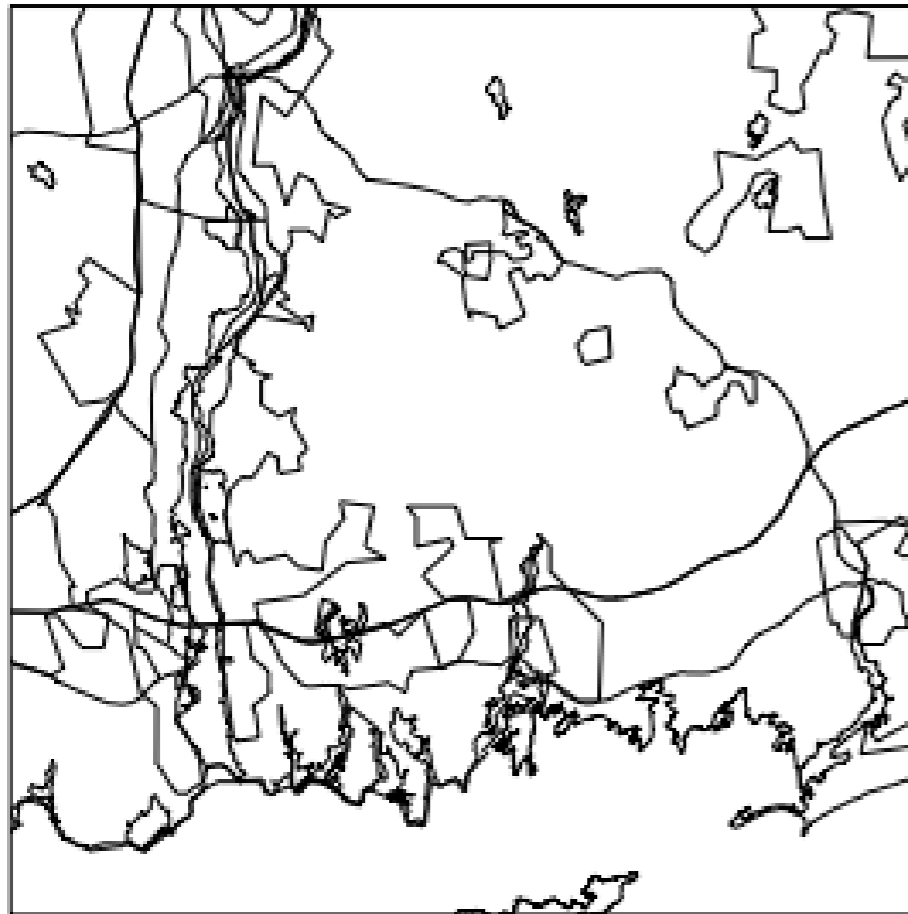
[@kelsosCorner](#)

**“Maps aren’t made,
they’re built”**

But why do we keep mapping?

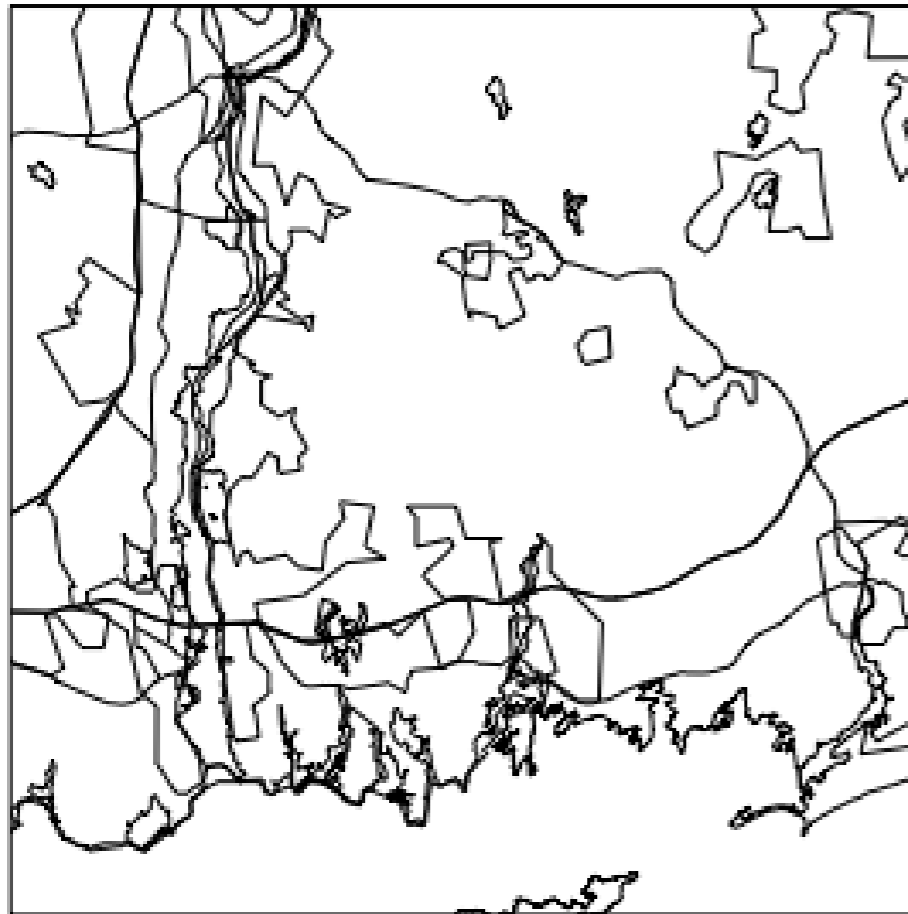
“Maps aren’t made,
they’re built”





Layers

- ✓ Type Graphic
- ✓ Notes
- ✓ Guides
- ✓ -----
- Type Map
- Drop Type
- Symbols
- patches
- ✓ Locator/bndrys
- ✓ Locator/land
- ✓ Locator/grid
- ✓ Locator/water
- ✓ neat line
- ✓ road/white fill
- ✓ roads
- ✓ Provinces
- roads minor
- ✓ roads tert
- ✓ islands
- ✓ lakes
- ✓ rivers
- ✓ Gov't
- ✓ Parks
- ✓ Main Map upper
- ✓ Main Map lower
- ✓ Water
- ✓ Urban
- ✓ relief
- ✓ Map dropShadow
- ✓ GRID
- ✓ TIFF
- ✓ Chart/data
- Foreground
- Foreground loc
- Background



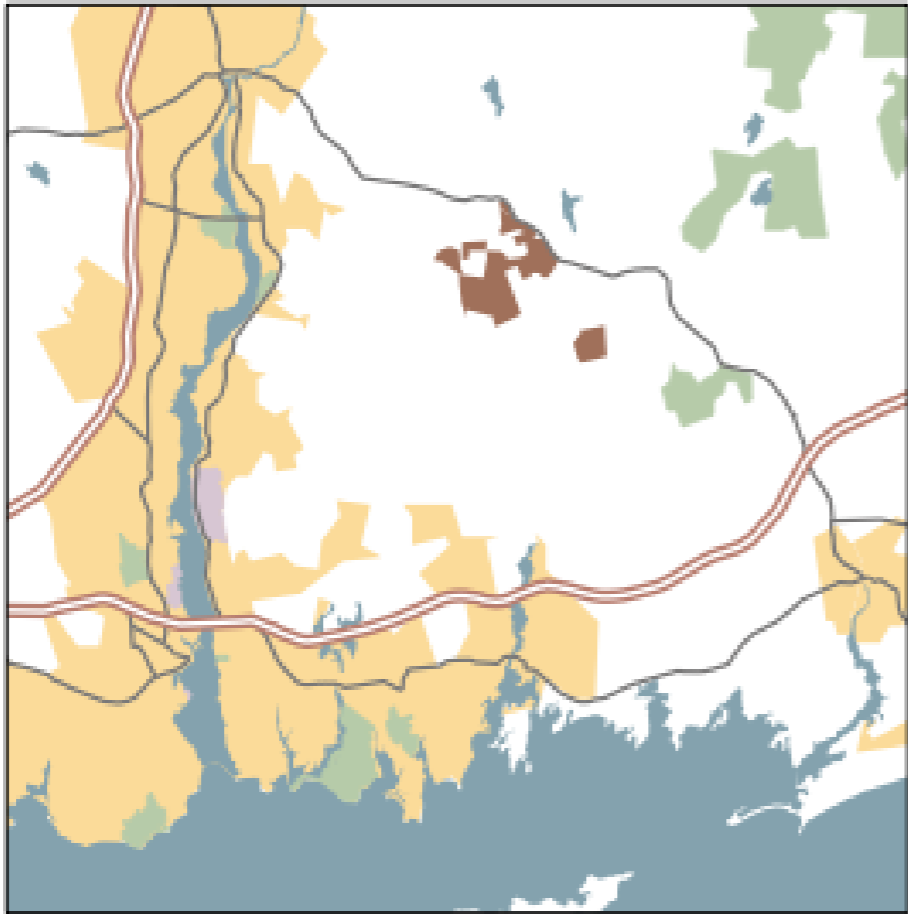
Layers

- ✓ [Symbol] [Color] Type Graphic
- ✓ [Symbol] [Color] Notes
- ✓ [Symbol] [Color] Guides
- ✓ [Symbol] [Color] -----
- [Symbol] [Color] Type Map
- [Symbol] [Color] Drop Type
- [Symbol] [Color] Symbols
- [Symbol] [Color] patches
- ✓ [Symbol] [Color] Locator/bndrys
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- [Symbol] [Color] Background

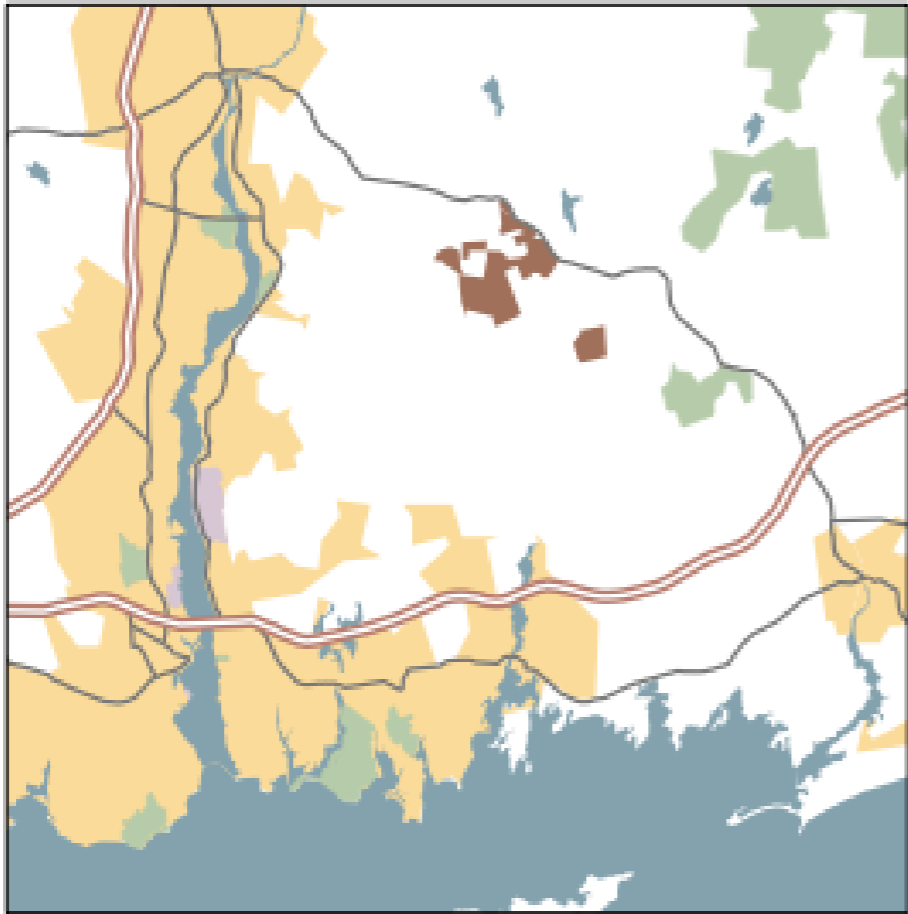
Assets

Swatches Styles Library

- [Symbol] *Political Roman Poynter*
- [Symbol] *Political RomBold Poynter*
- [Symbol] *Phys Pol Italic Poynter*
- [Symbol] *Phys Pol ItaiBold Poynter*
- [Symbol] *Water Weideman Book*
- [Symbol] *Streets Roman Poynter*
- [Symbol] *Shield Numbers*
- [Symbol] *Normal Text*
- [Symbol] *Hed 1-col*
- [Symbol] *Hed 3/4-col*
- [Symbol] *Intro*
- [Symbol] *Credit/Agate*
- [Symbol] *Source line*
- [Symbol] *Type body*
- [Symbol] -----LOCATORS
- [Symbol] Globe/Loc land feature
- [Symbol] Boundaries globe
- [Symbol] Land globe (Joined)
- [Symbol] Land flat
- [Symbol] Land shadow
- [Symbol] Grid lite/Locator
- [Symbol] Grid dark/Locator
- [Symbol] Water globe
- [Symbol] Water flat
- [Symbol] Normal
- [Symbol] -----POLYGONS
- [Symbol] Polys (hilit)
- [Symbol] Polys (Highlight bckgrnd)
- [Symbol] Polys (bckgrnd)
- [Symbol] Polys (bckgrnd) noLine
- [Symbol] Polys (redefine)
- [Symbol] Map Drop Shadow
- [Symbol] Polys buildup
- [Symbol] City street background
- [Symbol] Water
- [Symbol] Water/grad
- [Symbol] Lakes
- [Symbol] Parks
- [Symbol] Govt
- [Symbol] -----LINES
- [Symbol] road casing fill
- [Symbol] roads casing
- [Symbol] road casing nofill

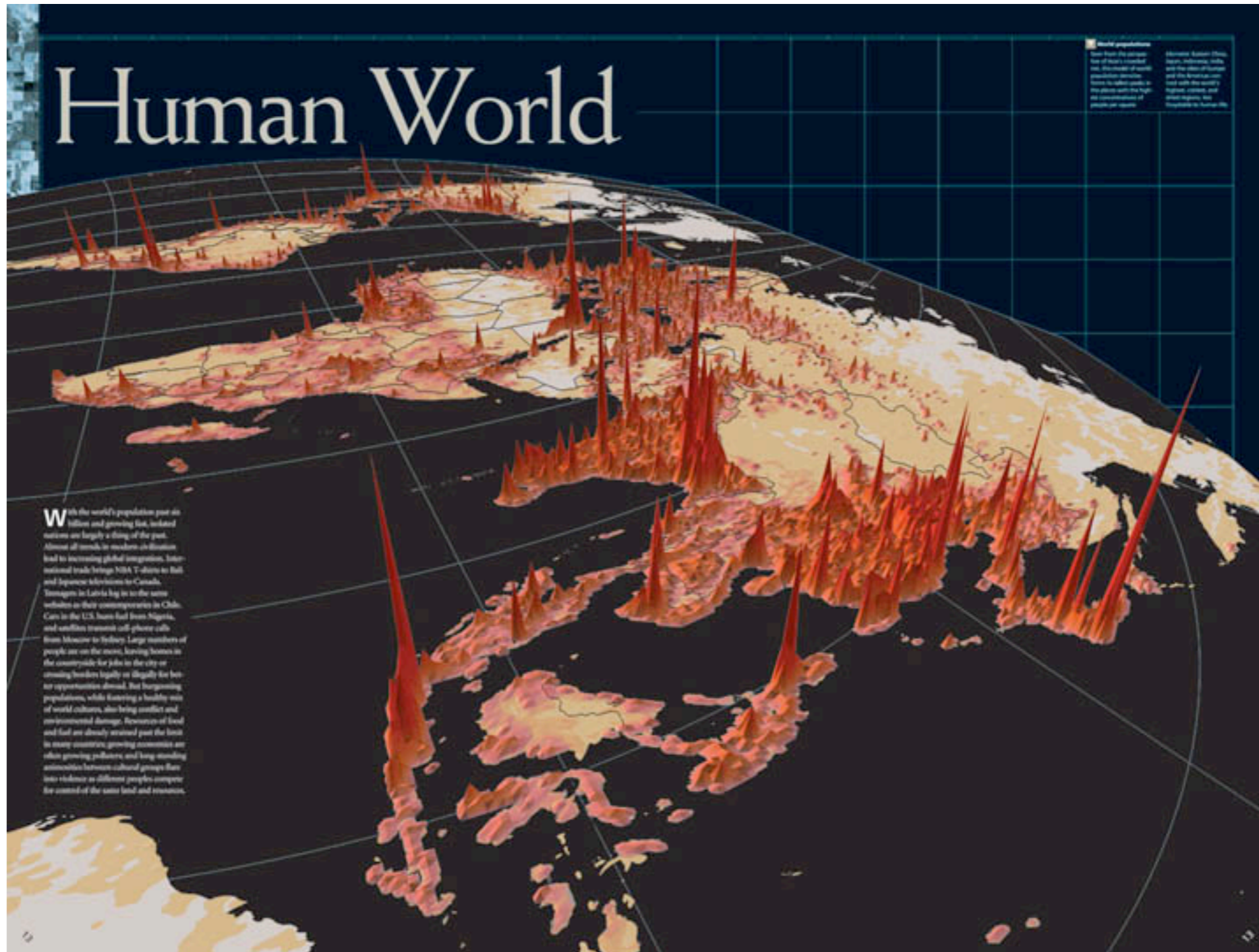


Done, right?



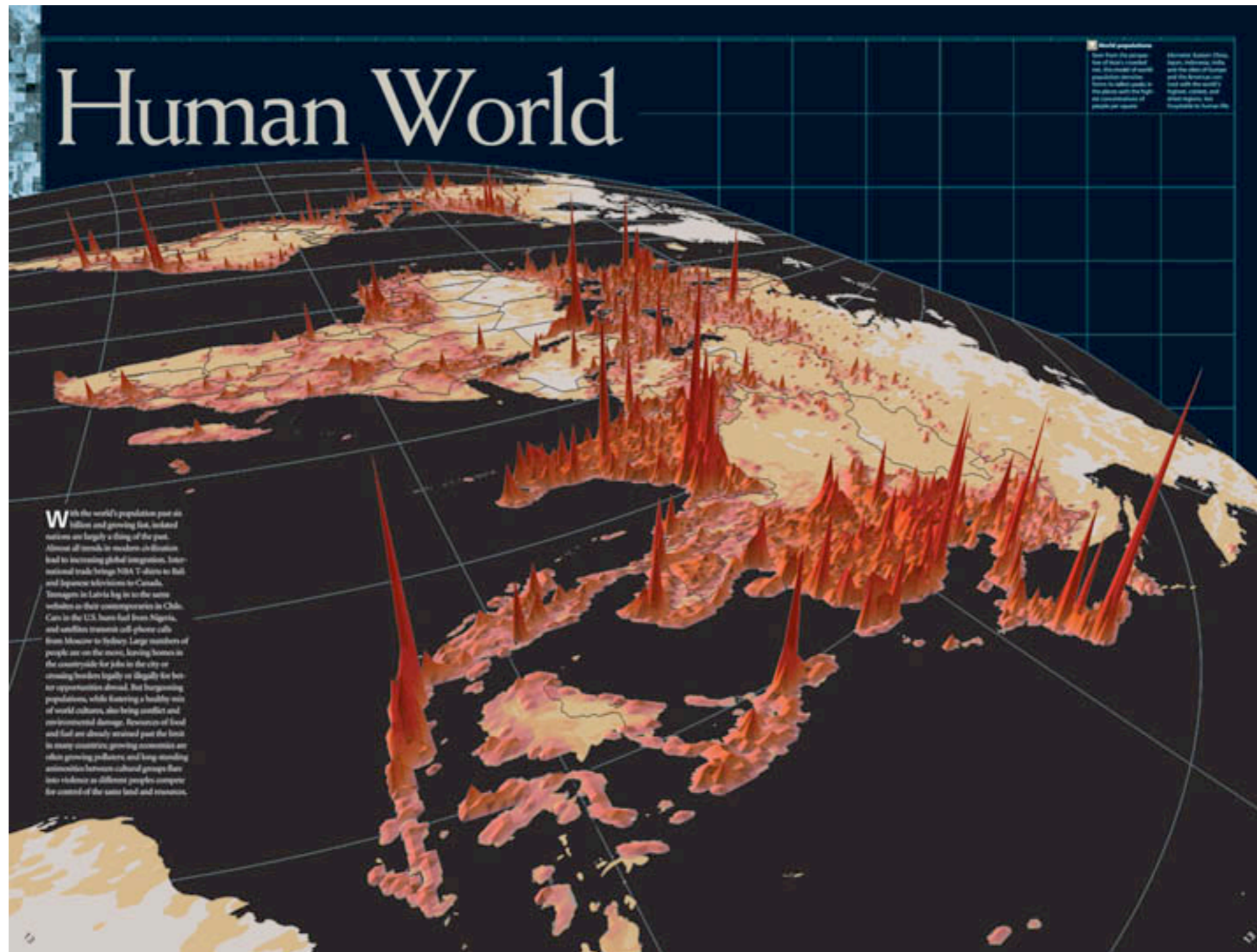
BY NATHANIEL VAUGHN KELSO — THE WASHINGTON POST

Data visualization



Nathaniel V. KELSO for National Geographic

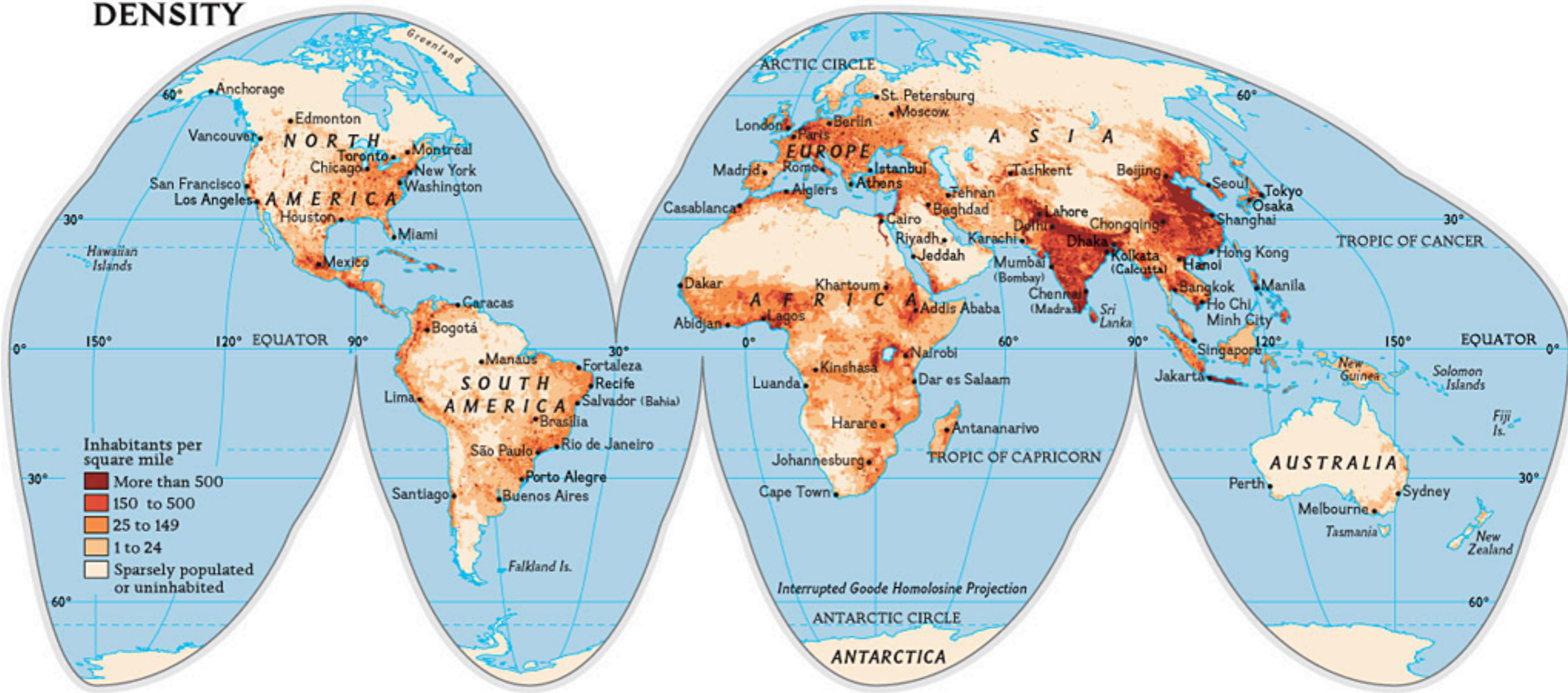
Data **exploration** visualization



Nathaniel V. KELSO for National Geographic

Data explanation?

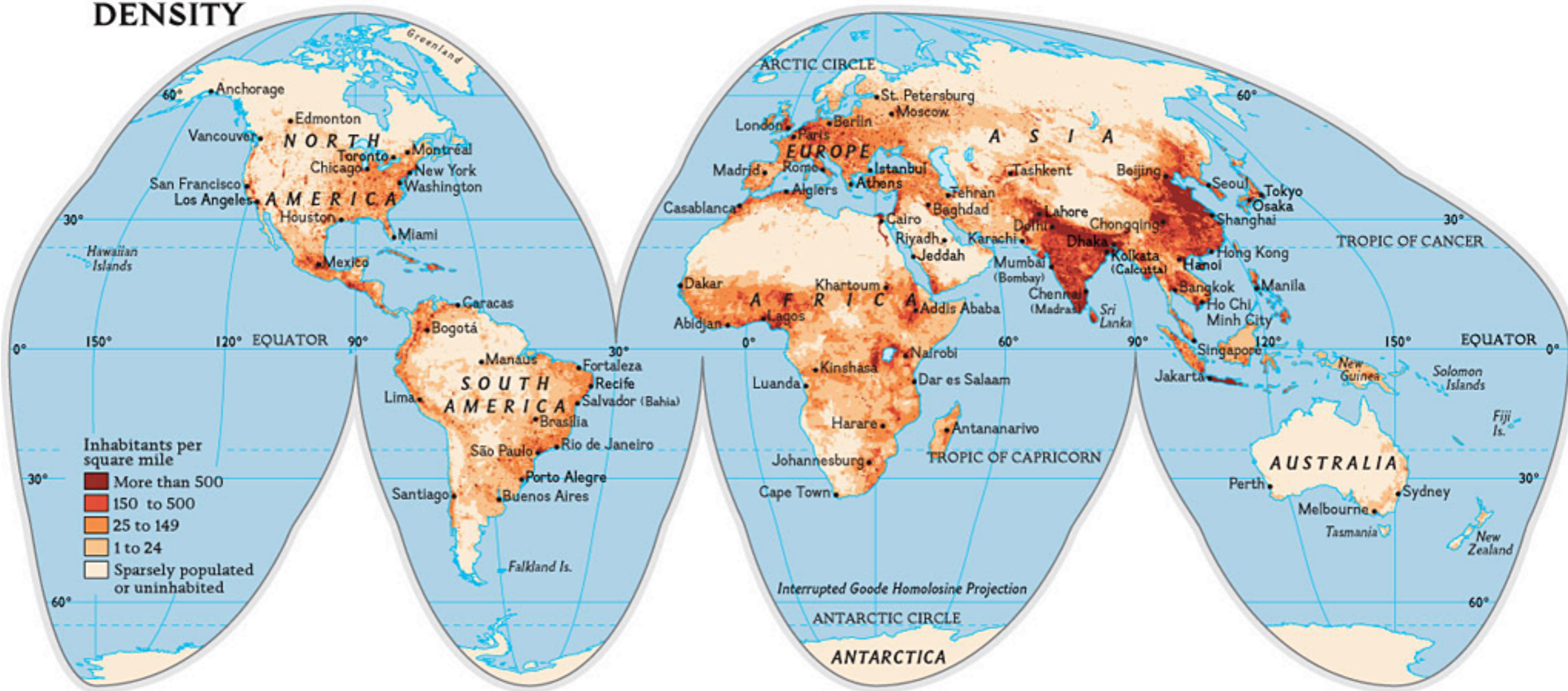
POPULATION DENSITY

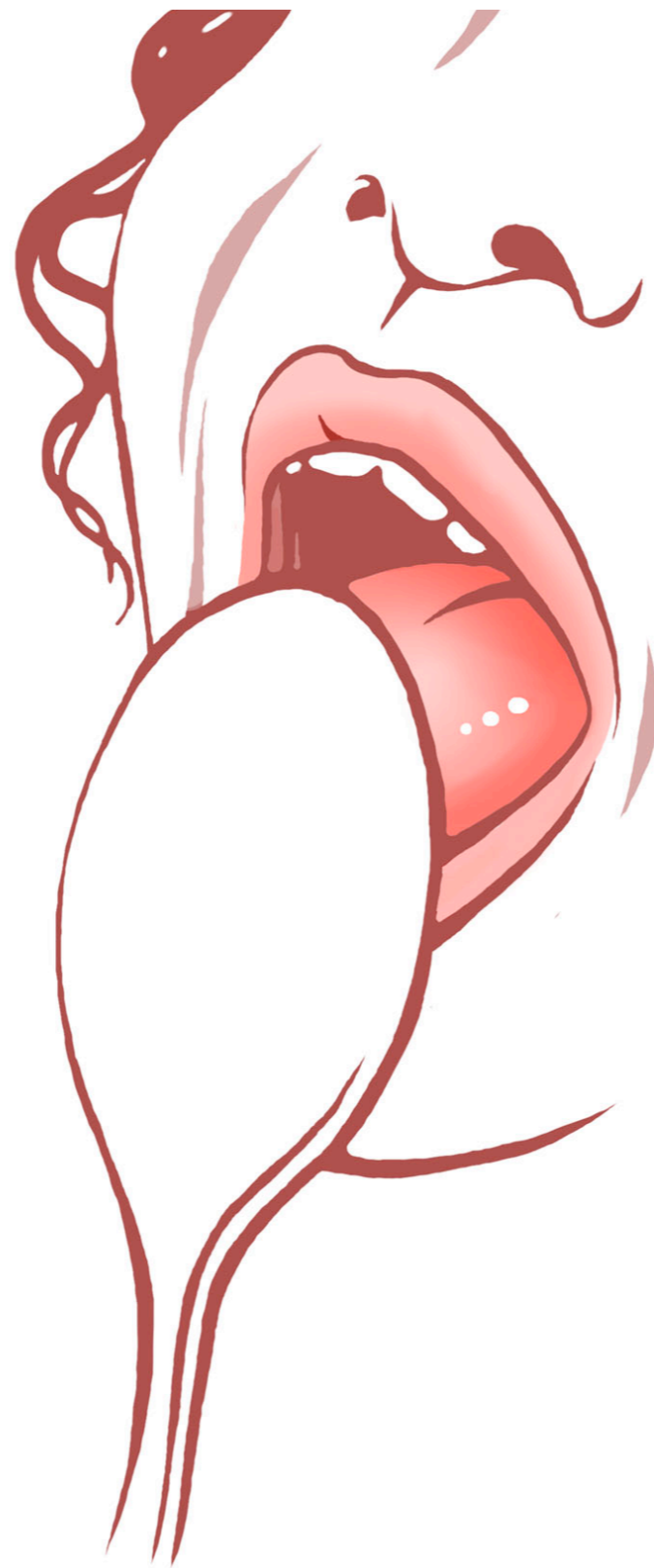


Nathaniel V. KELSO for National Geographic

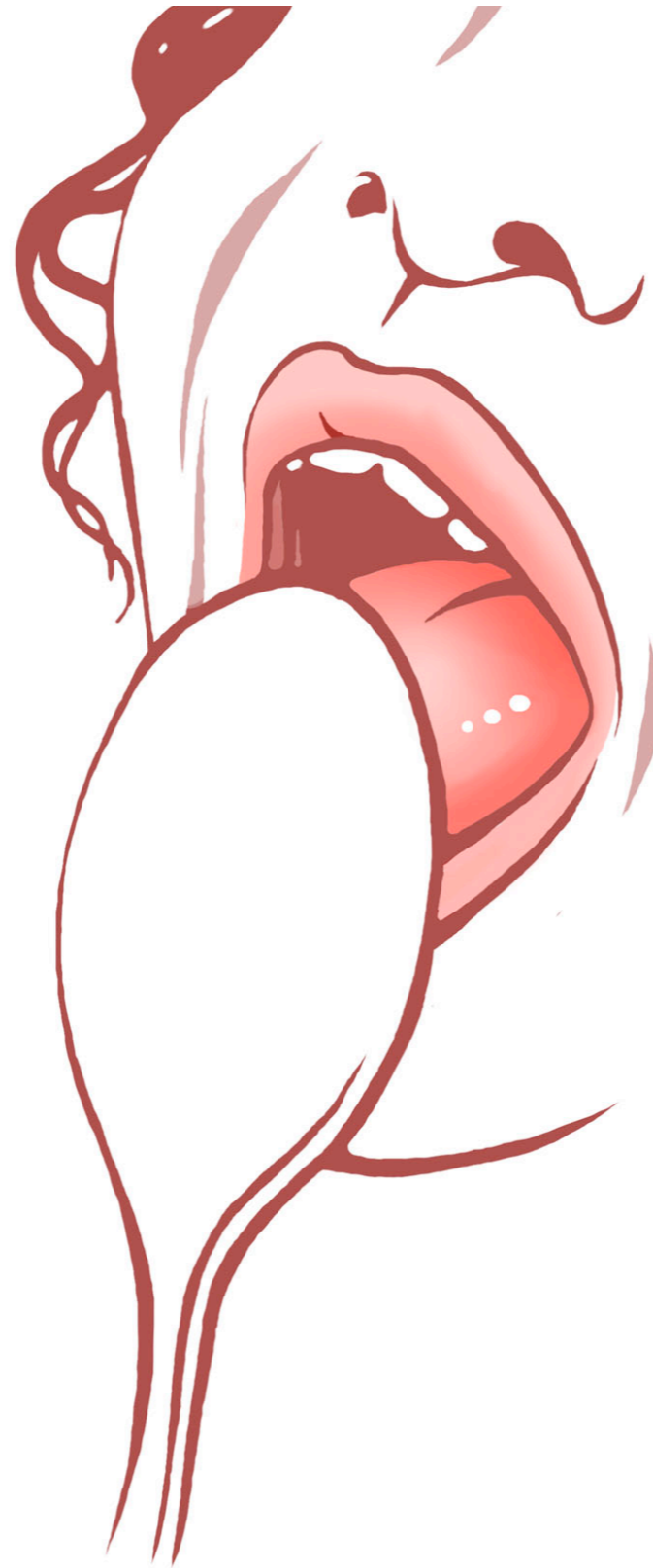
Information graphic

POPULATION DENSITY



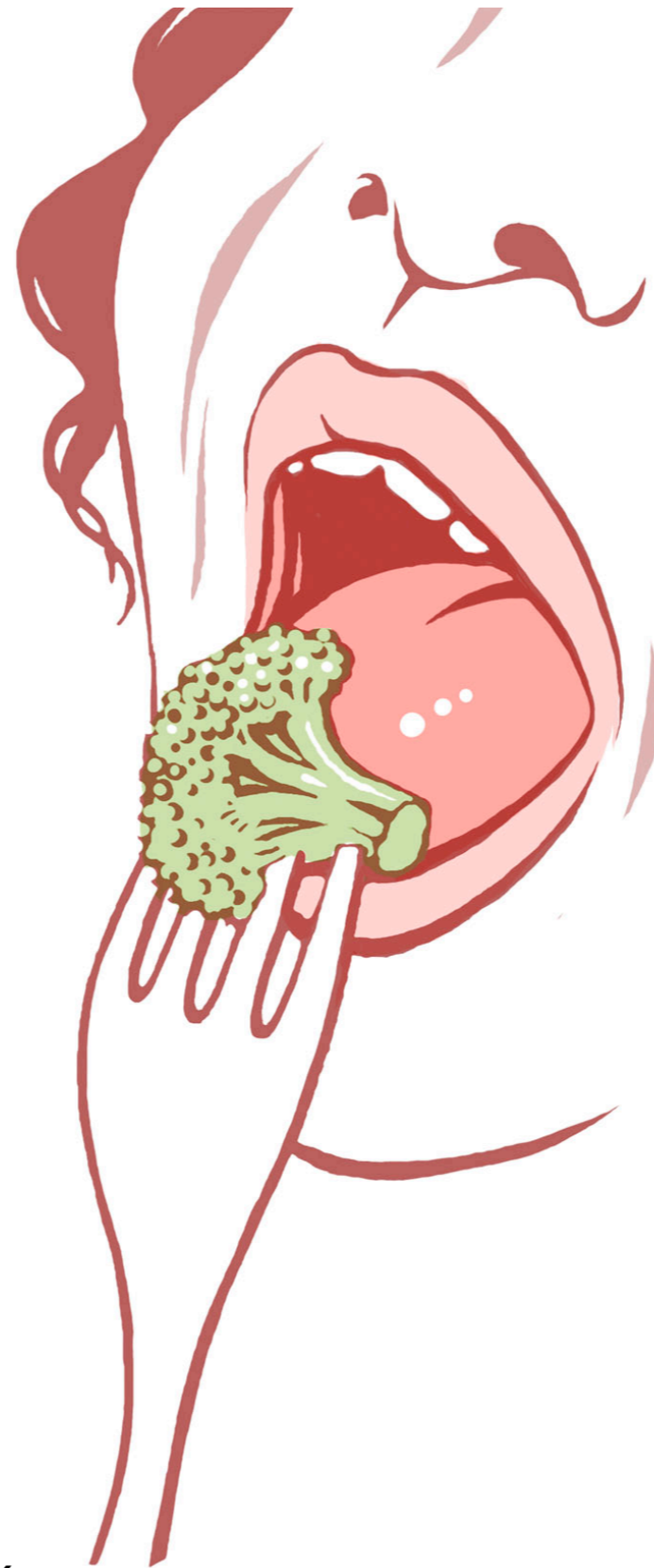


Data visualization (aka data porn)



P. Clark

Visual explanations



P. Clark

Steven Few
Martin Wattenberg
Fernanda Viegas

Maps as visualizations?

or

Spectacle?

or

Visual confections?

or

Operational intelligence?

Range: self discovery/choose-your-own-adventure to telling a story crafted to convey a specific message.

Let's move towards visual explanations and stories.

Visual executive summaries

If you are very careful you can dip a cup into the Ocean and & fill it with water from a single, pure Stream of Story -Rushdie

[@kristianiac Clark](http://kelso.it/x/15y)



Graphic from Lienhard, Myers, & Wilson - Reference below

Why do we build our own maps?

THE WORLD
ACCORDING TO A GROUP OF
AMERICANS
WHO TURNED OUT TO BE UNEXPECTEDLY GOOD
AT GEOGRAPHY, DERAILING OUR ATTEMPT
TO ILLUSTRATE THEIR COUNTRY'S ATTITUDE
TOWARD THE REST OF THE WORLD.



missteaks!

Calls came to the Foreign Desk
complaining about



- Misspellings
- Placements
- Boundaries

**What we
needed was**

- Accuracy
- Symbology
- Type styles
- Consistency

**IN THEIR STORIES,
REPORTERS SAY**

“ISRAEL”

BUT WE CAN'T JUST SAY “ISRAEL”. WE SAY



We get challenged by all sides. Our rendition has to be defensible against challenges from both (or more) sides. We have to find the right source. We can have no stake in the rendition. We must look at it from Mars.

ACCOMPLISHMENTS WE STICK TO

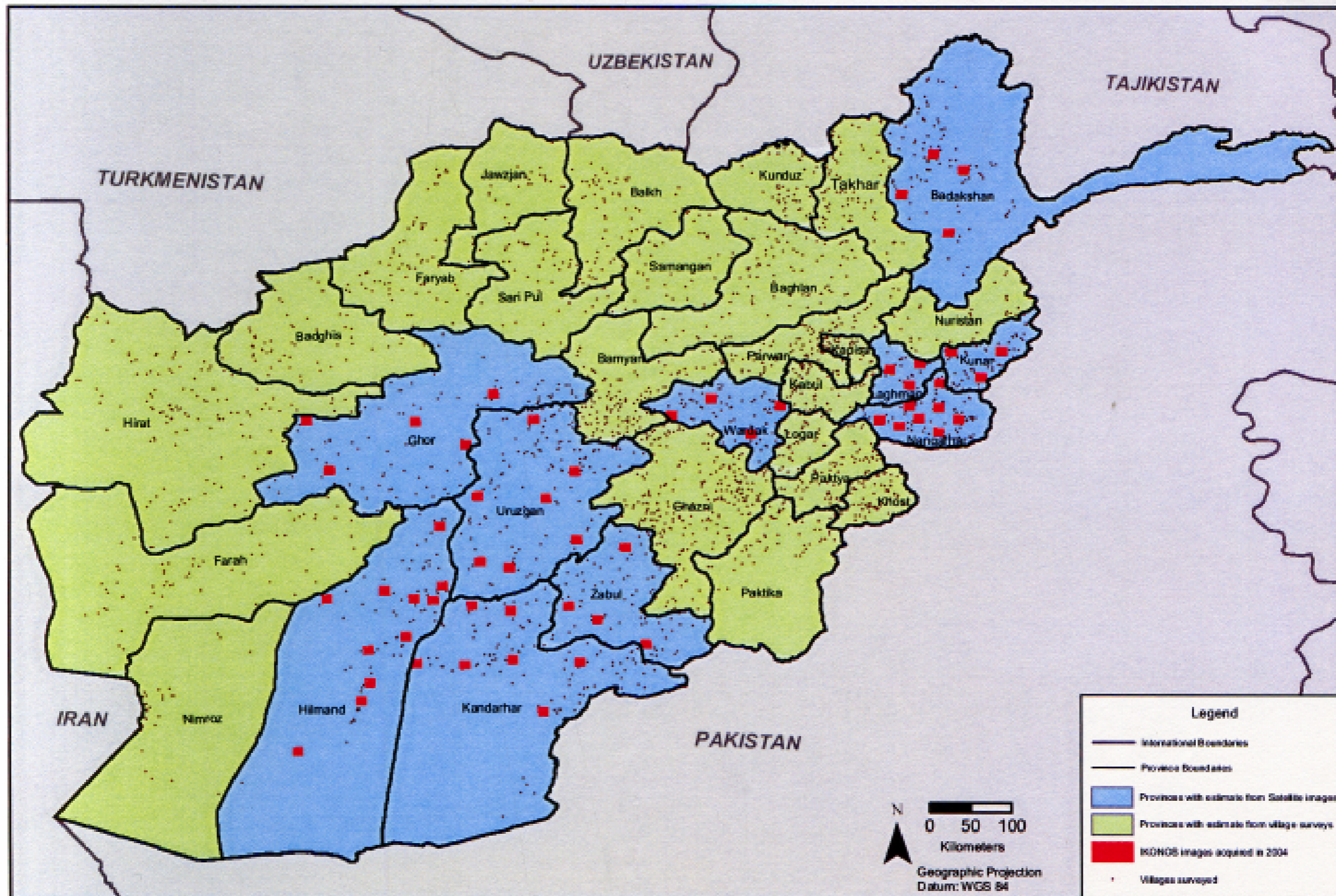
- We look for the best solution, not the easiest.
- Our standards are objective
- They are applied on a consistent basis
- As a result, our maps are authoritative
(your's can be, too)
- And the maps look good!

“Location is a state of mind”

Jason Wilson (@feKaylius)



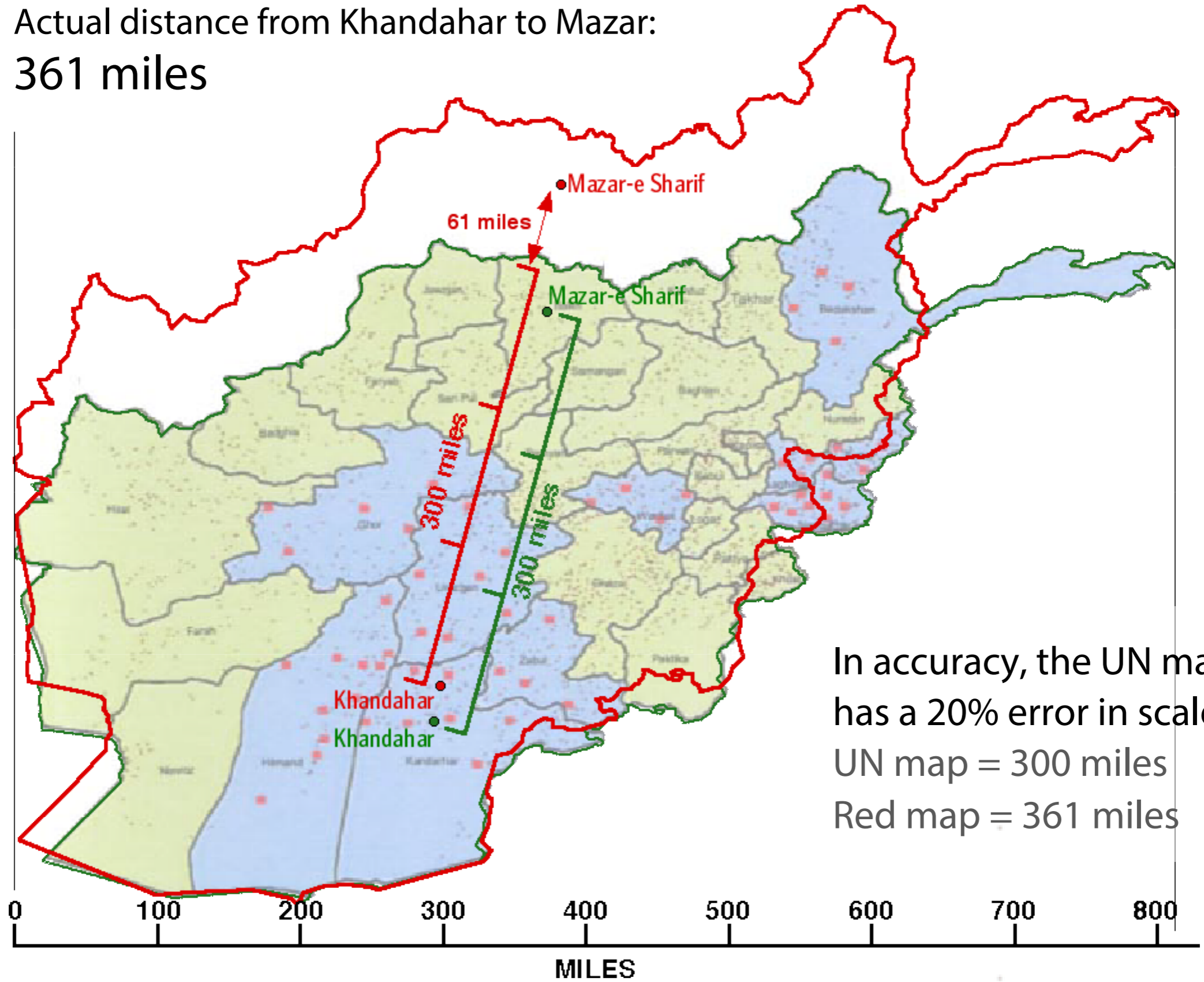
Afghanistan: Villages surveyed and satellite images acquired in 2004



Source: CHD - UNODC Afghanistan Opium Survey 2004 (http://www.unodc.org/unodc/en/crop_monitoring.html)
Note: The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by the United Nations.

UN map about opium production

Actual distance from Khandahar to Mazar:
361 miles



In accuracy, the UN map
has a 20% error in scale:
UN map = 300 miles
Red map = 361 miles

Afghanistan's actual east-west distance (both scales show): 810 miles

Is web Mercator the be-all-end-all?

THE MAGIC WORD IS

“PROJECTION”

If a map isn't projected
correctly it is inaccurate!

(but not necessarily “wrong”)

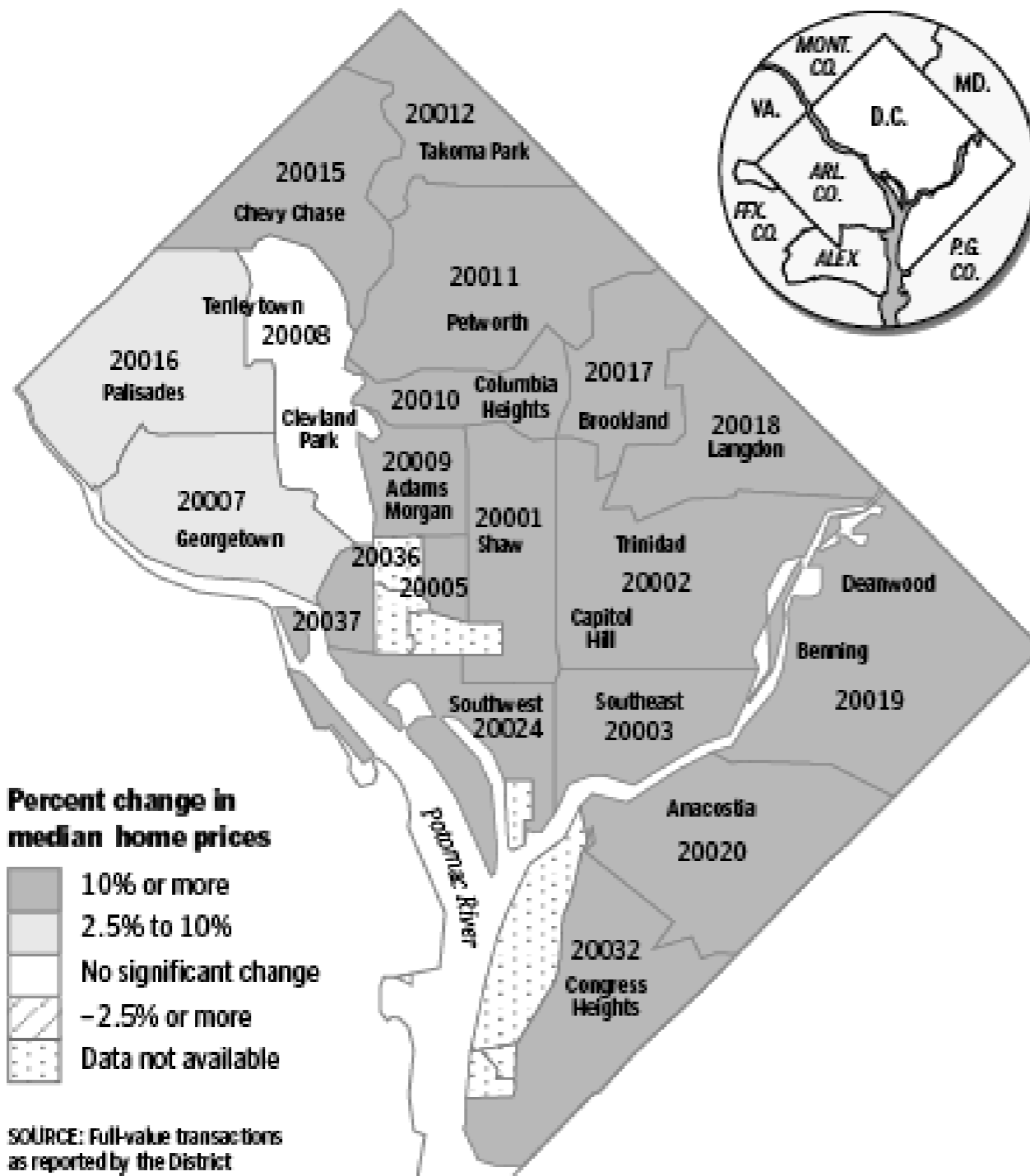
WHEN SCALE IS DISTORTED

- the map itself is inaccurate
- the information is distorted with it
- can result in false perceptions
- and incorrect comparisons

District of Columbia

January through March

Zip code	2004		2005		Change in median price
	Total homes sold	Median purchase price	Total homes sold	Median purchase price	
20001	80	\$287,500	72	\$376,000	\$88,500
20002	153	205,000	187	337,000	132,000
20003	53	337,500	49	468,000	130,500
20005	2	746,600	1	850,000	103,400
20007	53	755,000	74	825,500	70,500
20008	28	990,000	30	1,012,450	22,450
20009	32	480,000	33	686,100	206,100
20010	51	273,500	53	471,800	198,300
20011	158	255,000	172	346,750	91,750
20012	29	325,000	30	467,500	142,500
20015	28	630,000	32	780,000	150,000
20016	47	757,550	62	825,000	67,450
20017	35	230,000	41	295,000	65,000
20018	37	205,000	46	340,750	135,750
20019	72	110,400	107	169,000	58,600
20020	65	129,000	56	185,000	56,000
20024	2	200,950	7	613,759	412,809
20032	24	134,249	34	182,500	48,250
20036	—	—	1	1,500,000	—
20037	5	410,500	2	725,000	314,500
20059	—	—	1	518,000	—
TOTAL	954	\$265,000	1,090	\$375,000	\$110,000



BY NATHANIEL VAUGHNKELSO — THE WASHINGTON POST

Here's a map showing a San Francisco to Beijing flight that crashed. The scale isn't too far off.
But the route isn't right.



and, someone doesn't like that we use 'Taiwan' as a country name.

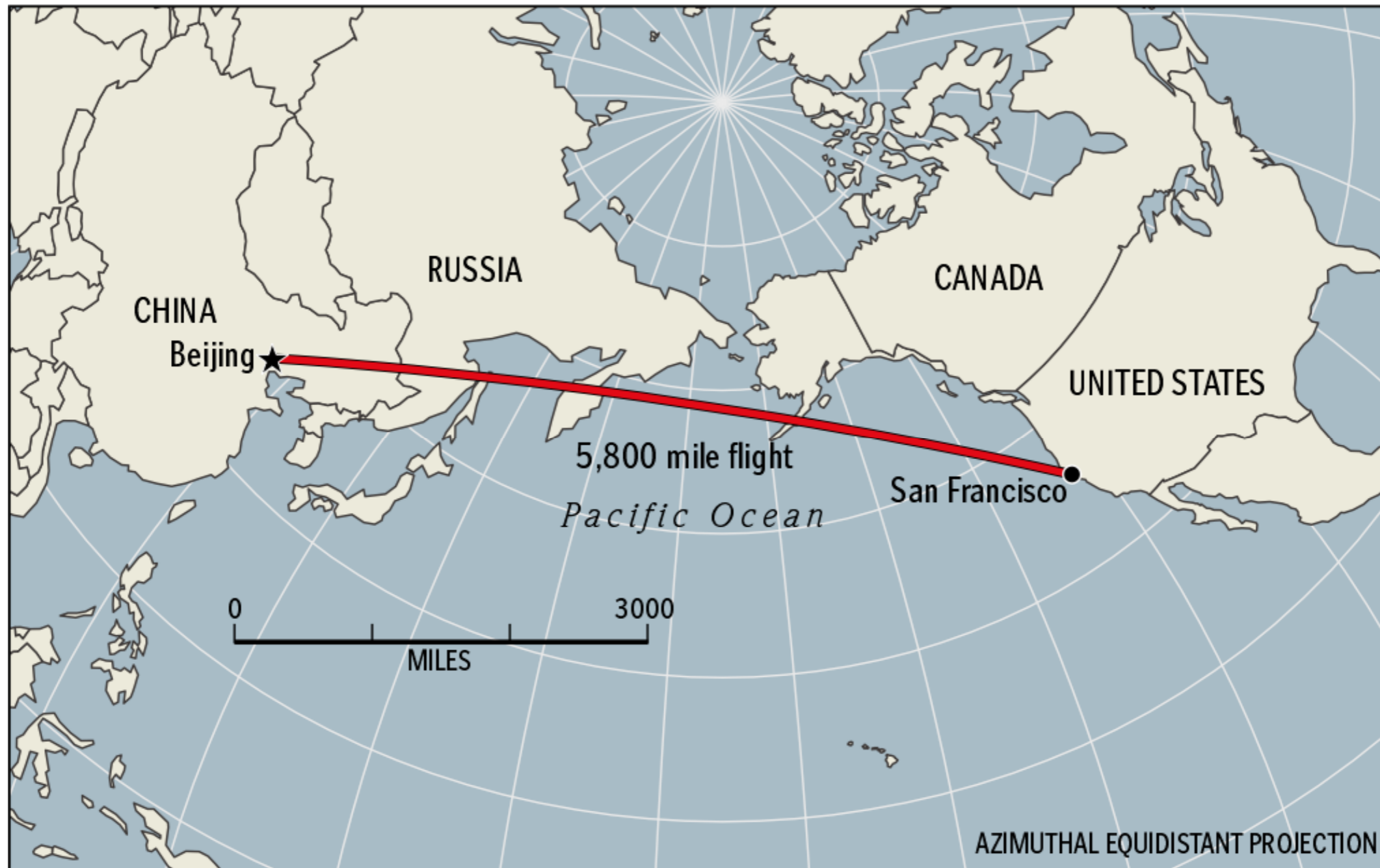
Here's a typical approach to the story. The route is correct now. But how well is the scale doing?



and, someone still doesn't like that we use 'Taiwan' as a country name.

Challenge: Implement this projection in your favorite web map API.

This map shows the right route along with the correct scale on the entire route as well.



We took Taiwan off, just to be safe.

How is cartography related to the general field of information design?

Both add structure and meaning to raw data.

(Cartography is focused on #geo, but not exclusively 'maps'.)

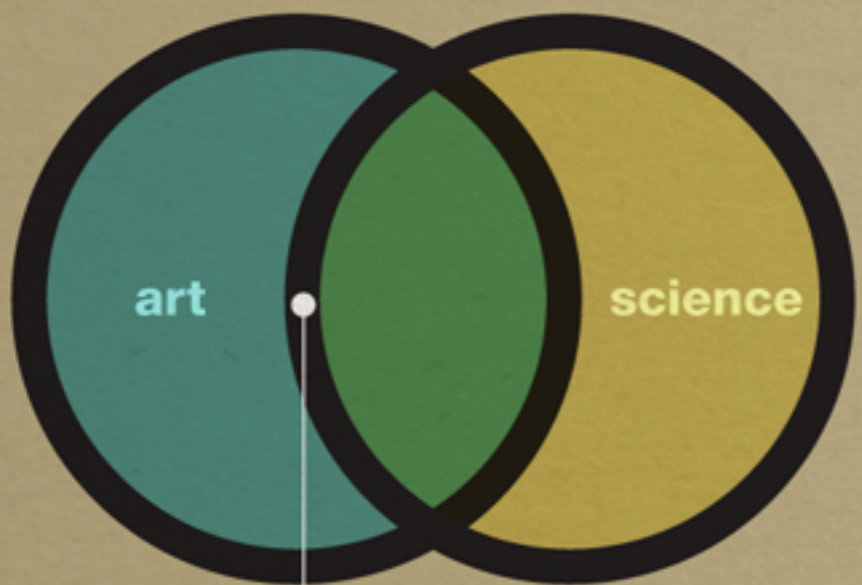
What distinguishes maps from art?

- Maps should be informative
- Both can be fun to look at

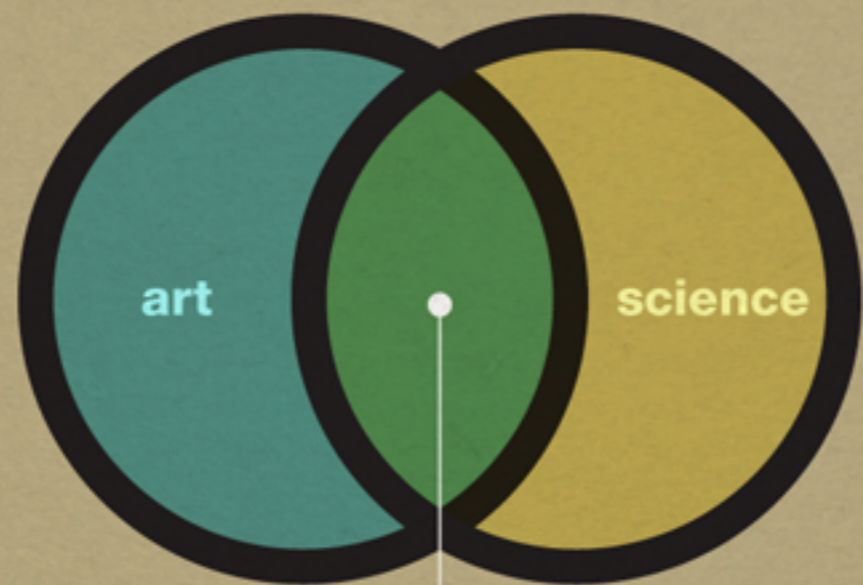
Tufte talks about 'data ink' or the ratio of information to white space.

If you dig Tufte, check out Jacques Bertin's Semiology of Graphics (Esri, 2011) kelso.it/x/15q

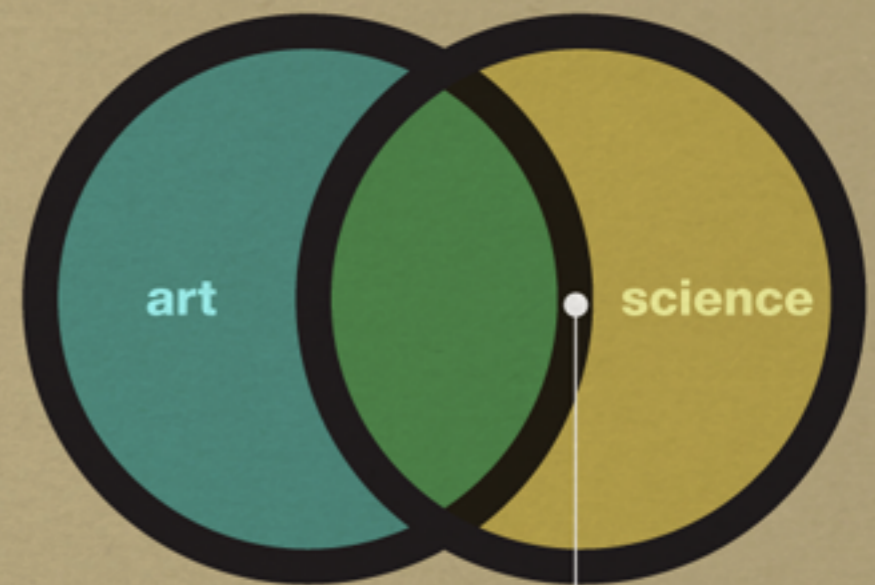
How can we make better^{web} maps?



manuscript cartography

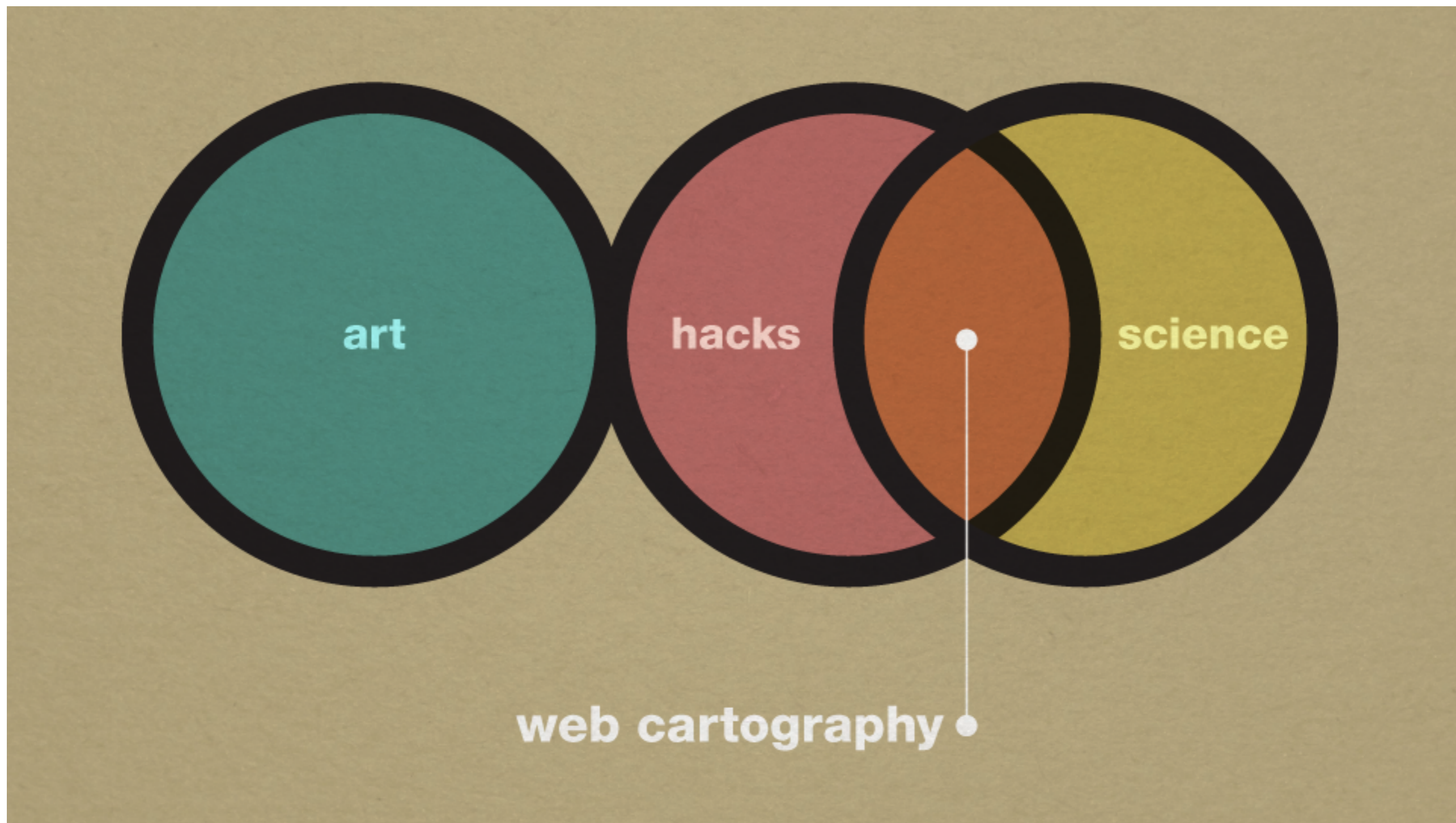


print cartography



web cartography

Tim Wallace



“Step away from a paper map, and you see the big picture, bring your face close, and you see the fine details.” via @spara

Reveal more on zoom in or mouse-over:

kelso.it/x/9c

Use direct annotation (at max zoom):

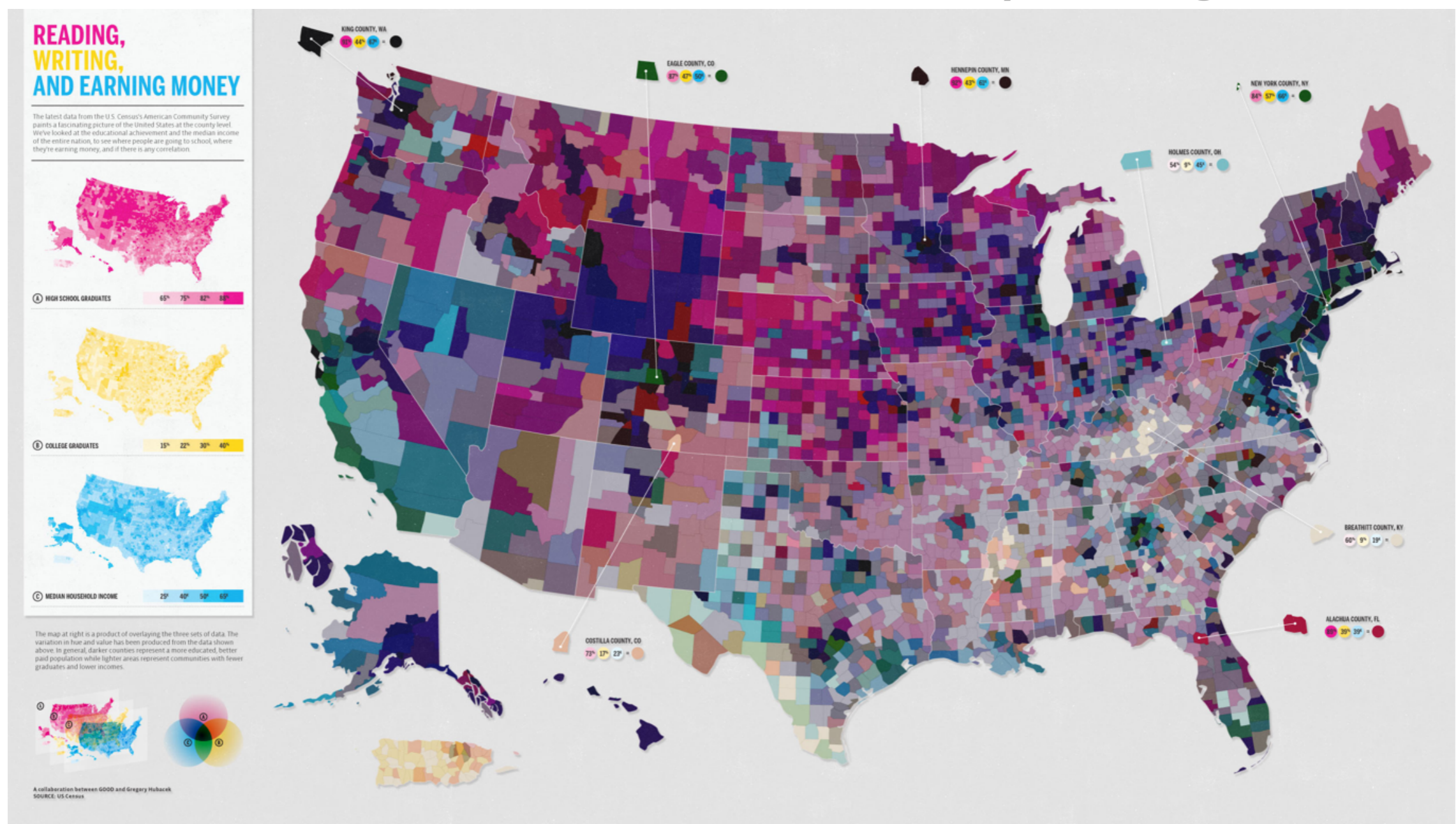
kelso.it/x/15r

“The mouse is my generation's rotary dial.” @jenniferbrook

Don't be wed to one technology.
Stay focused on the story telling.
The rest will flow.

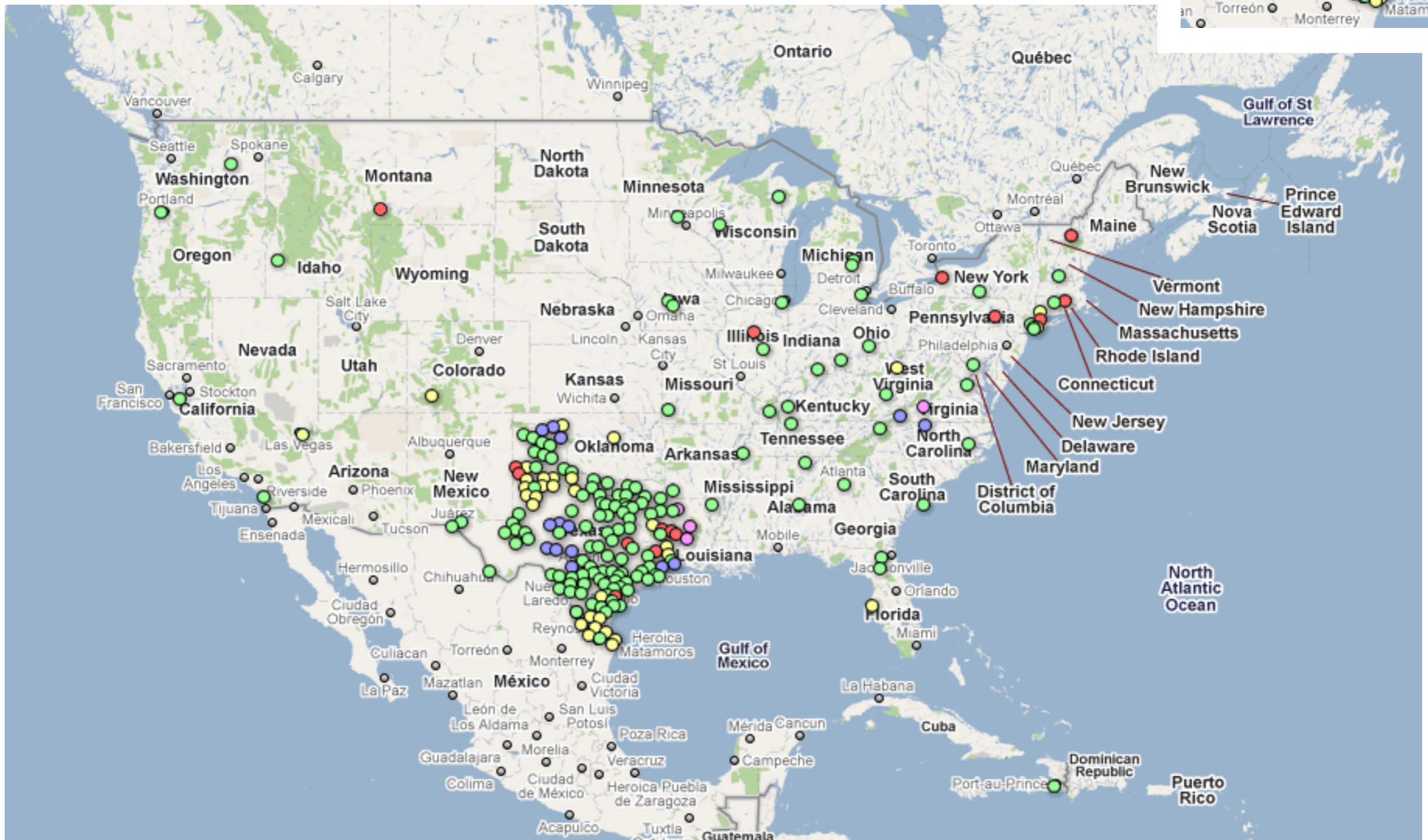
Demystifying Cargo Cult Visualization

You Should Not Visualize 3 Variables by Mixing 3 Colors



Check your locations!

Wayward locations end up at Null Island ;)



What is where?

"Location is the most important signal on the Internet since search" @johnbattelle at Signal:Austin Conference via Matt Galligan (@mg)

Millions of places, but only ~250,000 useful places around the world.

7 billion people

How many cities is that?

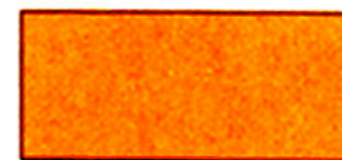
How about 10,000 people per city?

700,000 cities should do, except ...

- We like living next to other people in some really big cities
- 1/2 the world still lives in tiny rural settlements
- Humans are zany!



Städte, Siedlungen



Siedlungsgebiet
grosser Agglomerationen

■ Rom	mehr als 1 000 000 Einwohner
■ Dublin	500 000 – 1 000 000
▣ Zürich	200 000 – 500 000
■ Bern	100 000 – 200 000 (<u>Hauptstadt</u>)
● Biel	50 000 – 100 000
⊙ Freiburg	20 000 – 50 000 (<u>Hauptort</u>)
⊙ Locarno	10 000 – 20 000
○ Brugg	5 000 – 10 000
○ Sempach	2 000 – 5 000
○ Zernez	weniger als 2 000
⋯ DELPHI	Antike Stätte
∪ Djanet	Oase



Natural Earth

Free vector and raster map data at 1:10m, 1:50m, and 1:110m scales

Home

Features

Downloads

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Forums

Corrections

About



Cross Blended Hypso with Shaded Relief and Water

Natural Earth is a public domain map dataset available at 1:10m, 1:50m, and 1:110m scales. Featuring tightly integrated vector and raster data, with Natural Earth you can make a variety of visually pleasing, well-crafted maps with cartography or GIS software.

Natural Earth was built through a collaboration of many **volunteers** and is supported by **NACIS** (North American Cartographic Information Society), and is free for use in any type of project (see our **Terms of Use** page for more information).

[Get the Data](#)



Convenience

Natural Earth solves a problem:



Neatness Counts

The carefully generalized linework

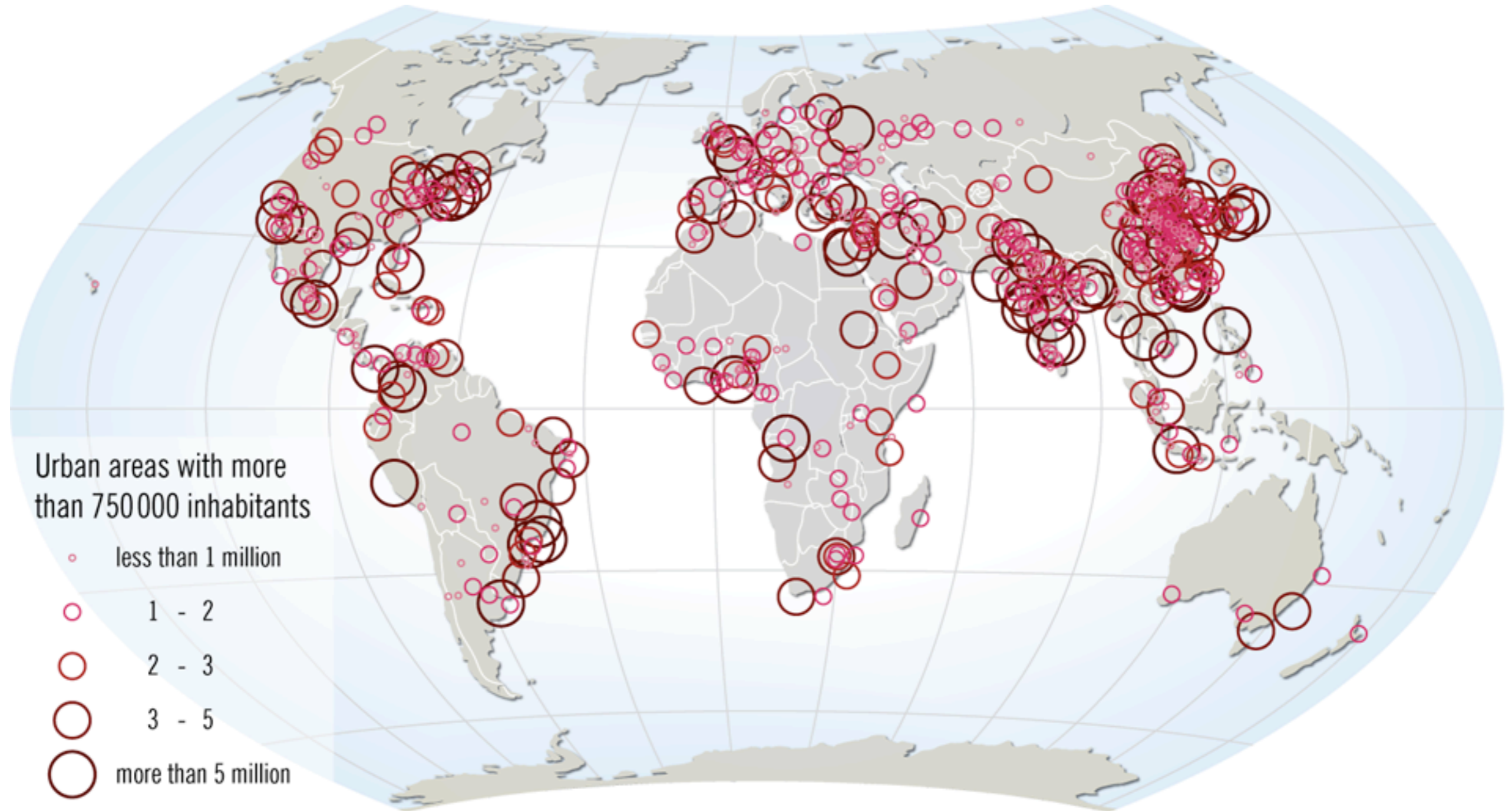
50m-admin-0-countries_area (242 areas selected)			
COUNTRYNAM	SCALERANKV	FEATURECLA	SOVEREIGNTY
Afghanistan	1.000000000000	Countries	Afghanistan
Åland	3.000000000000	Countries	Finland
Albania	1.000000000000	Countries	Albania
Algeria	1.000000000000	Countries	Algeria

GIS Attributes

Natural Earth, however, is more

World map of large urban areas in 2005 // Nordpil // Natural Earth

1.4 billion in just 590 mega-cities = 20%



1:10 Million scale // California // Natural Earth

3.5 billion in just 7,500 cities = 50%



1:10 Million scale // California // Natural Earth

3.5 billion in just 7,500 cities = 50%



¿ 6.5 billion in 700,000 cities = 92% ?

7.0 billion in 2,300,000 cities = 99%

200 mega regions

100,000 neighborhoods?

12,000 metro-micros?

375,000 suburbs, edge cities?

35,000 rural centers?

178,000 rural outposts?

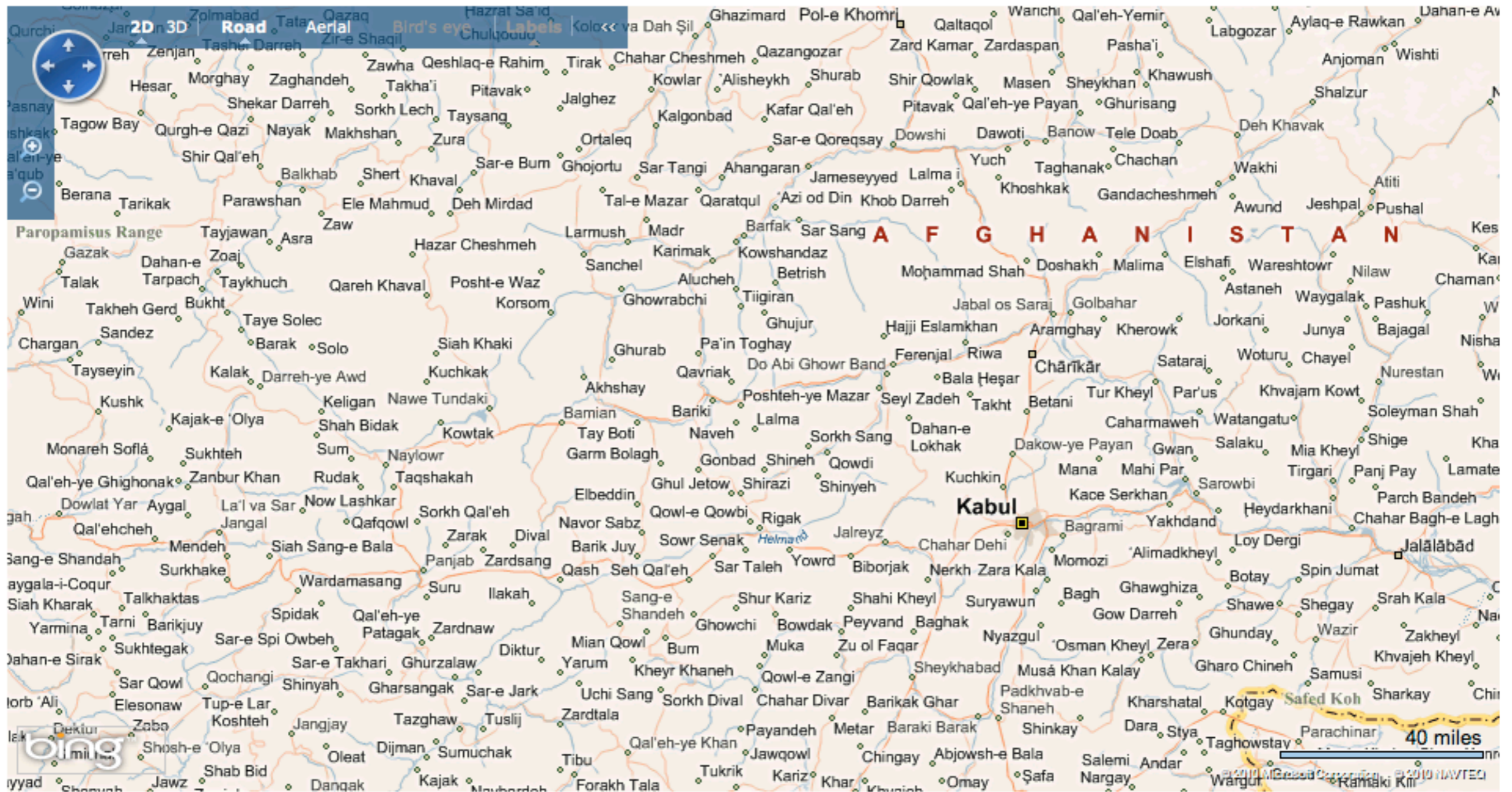
US has 300 million people with ~50,000 places = 6,000 people on average

World has 7 billion with ~2.3 million places = 3,000 people on average

148.94 million sq km land area but we only use 15% of that = 1 name per 10 sq km

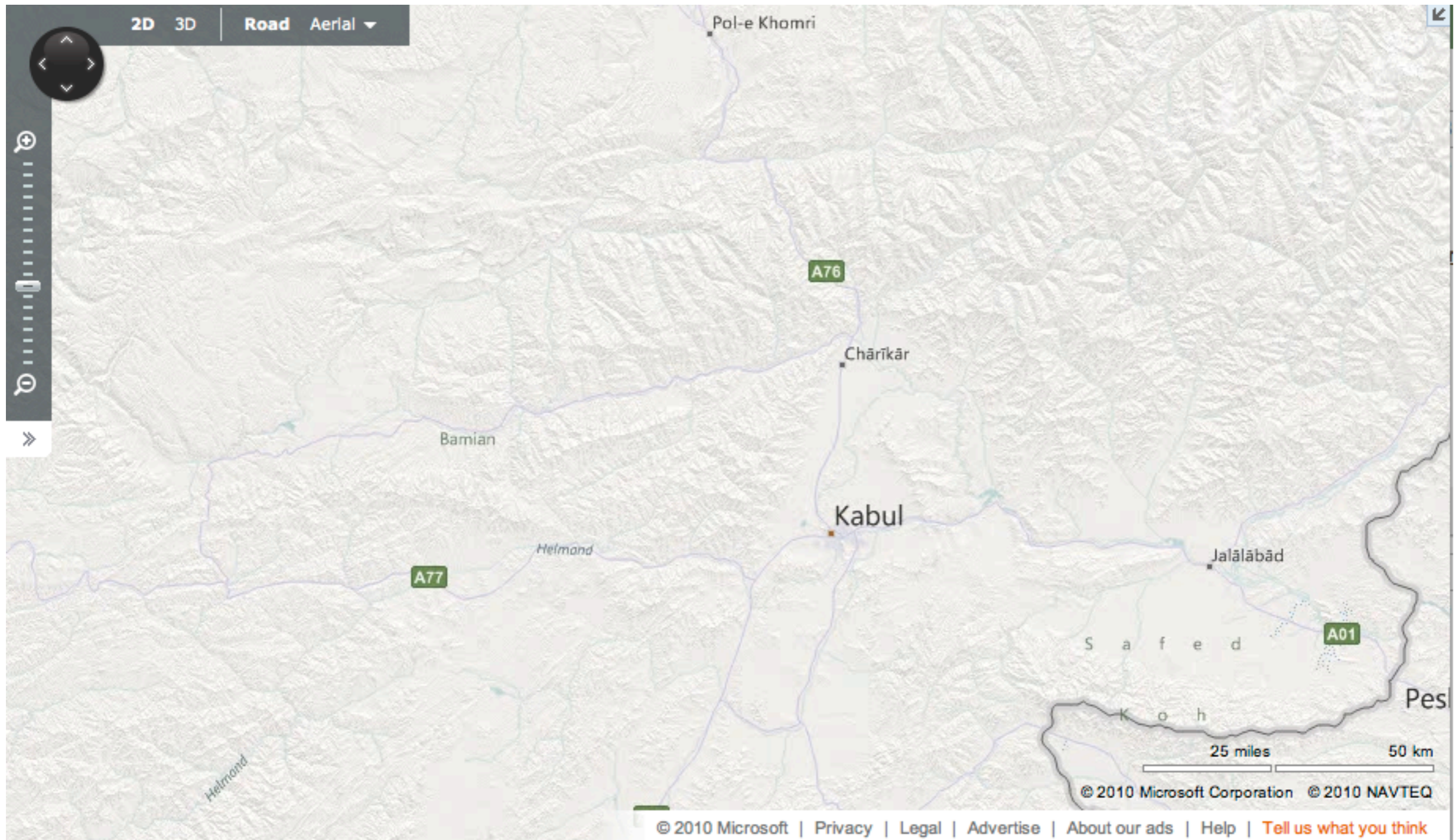
148.94 million sq km land area but we only use 1% for cities = 1 name per 1 sq km

Data Overload: Reference // Bing (old)



Better for adding your own locations: Story // Bing (new)

41 Latitude // Jason O'Beirne



Aggregation

TOP SECRET AMERICA

A Washington Post Investigation

WATCH THE INTRO



READ THE STORIES



SEE THE MAP



EXPLORE CONNECTIONS



FIND COMPANIES



SEARCH THE DATA



Where is Top Secret America?

Explore the map to find locations of government organizations and companies within Top Secret America.

Currently on the map:

GOVERNMENT WORK LOCATIONS

2,162

Show all government

COMPANY WORK LOCATIONS

6,941

Show all companies

Enter city or address...

Zoom

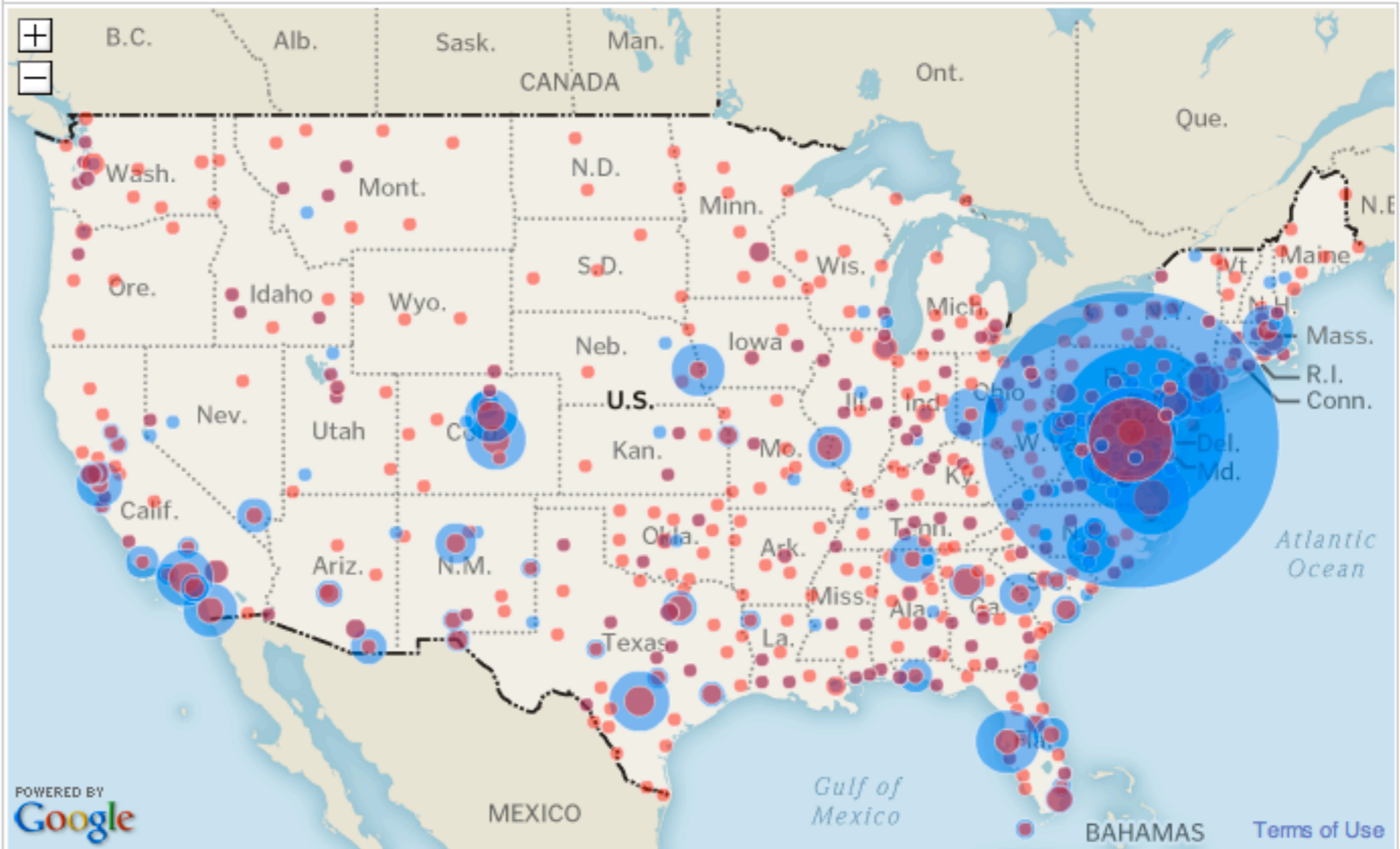
View Options:

ZOOM TO DC

ZOOM TO US

ZOOM TO ALL

RESET MAP

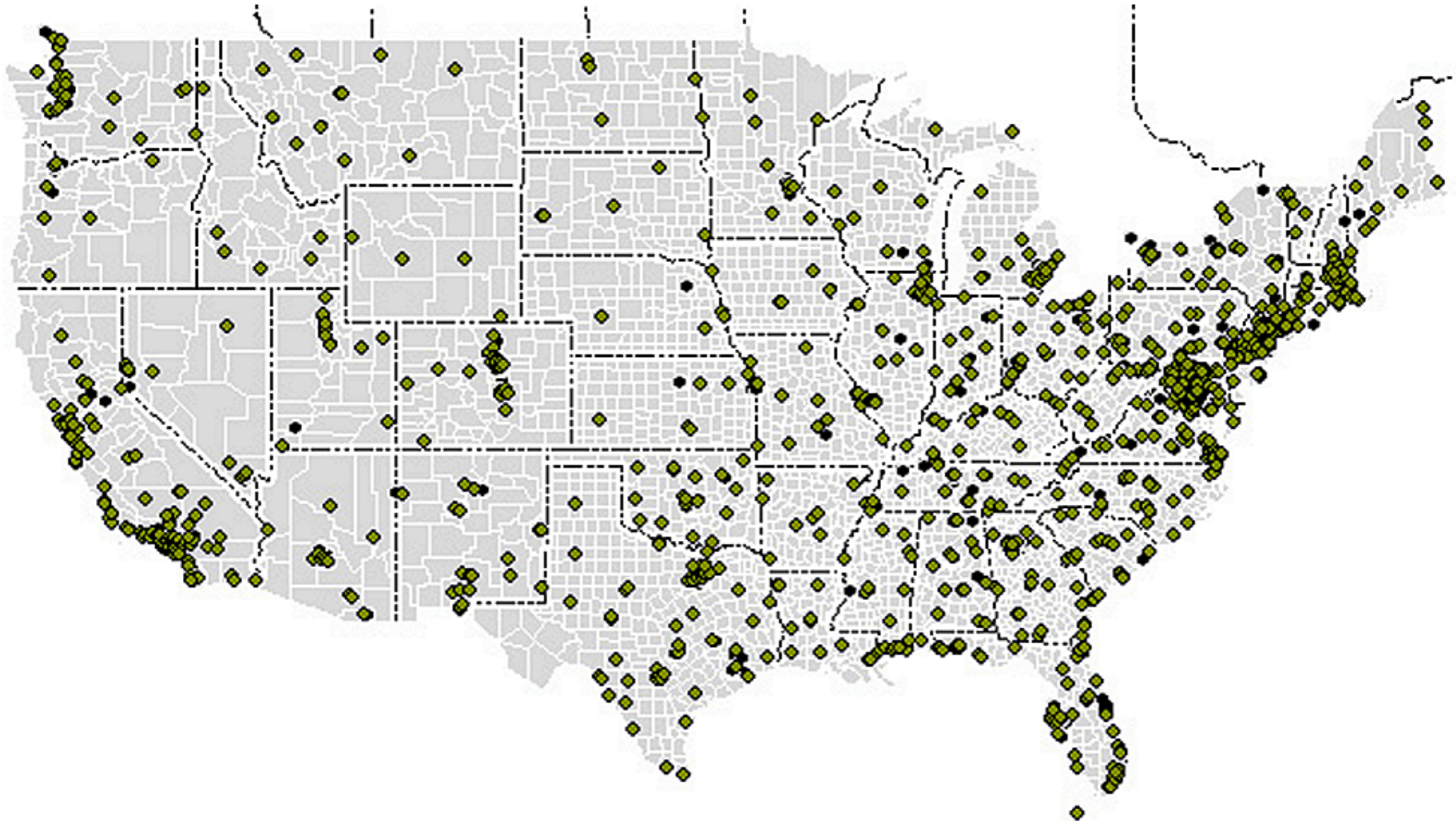


Top-secret government organizations by location

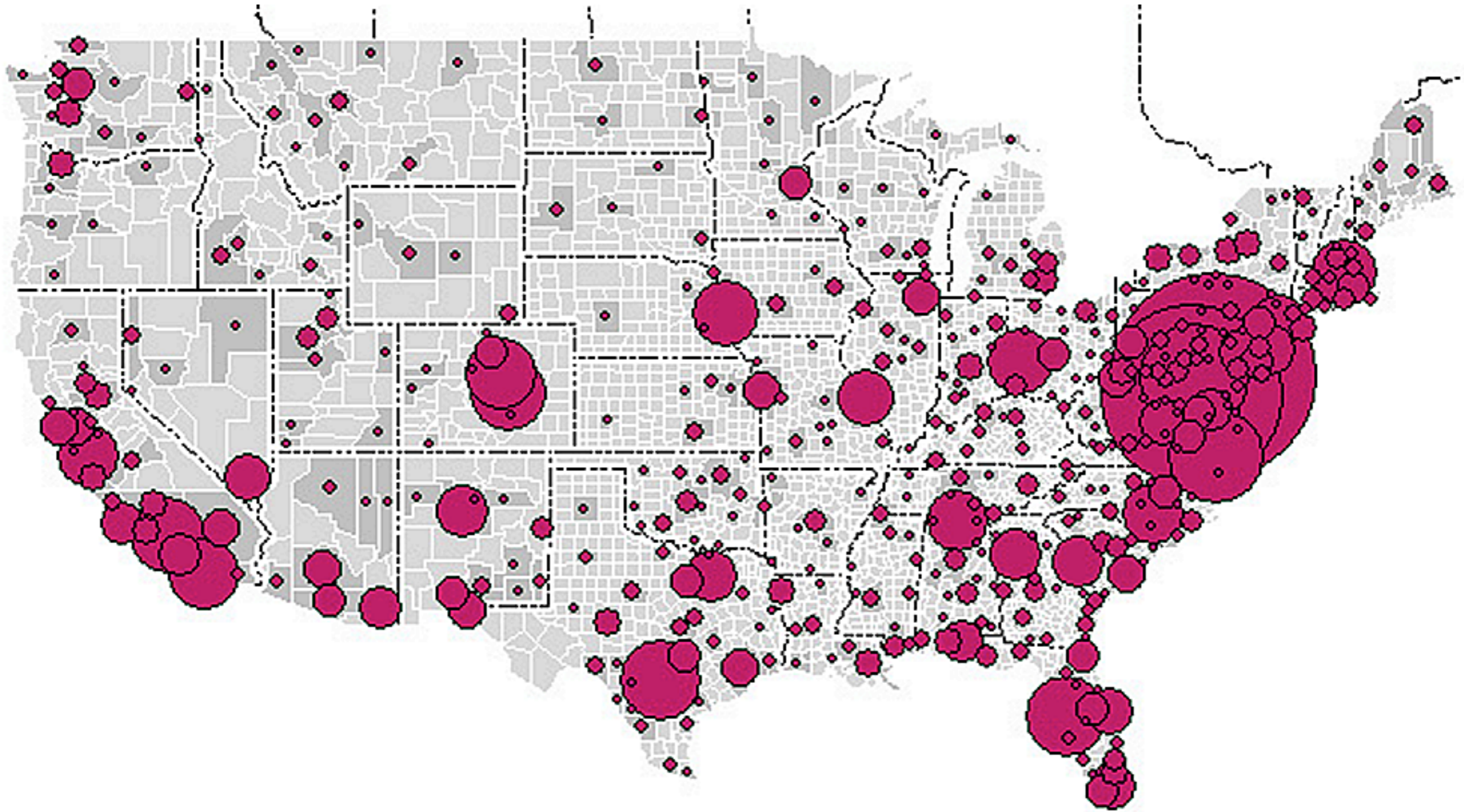
Number of total work locations by government organization.



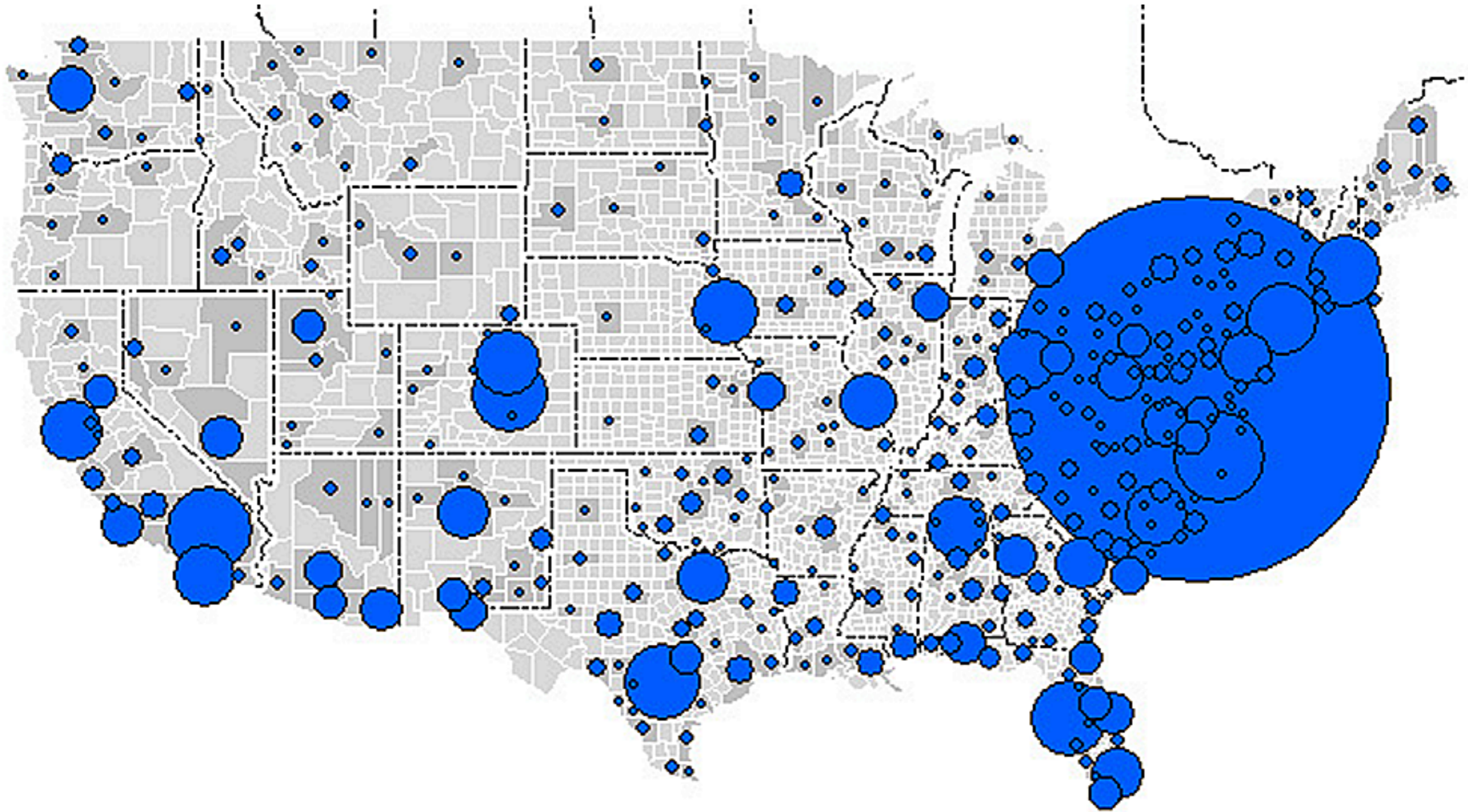
TSA locations by **address** or **city,state** point locations



TSA locations **GROUPED** by metros, micros, and rural counties

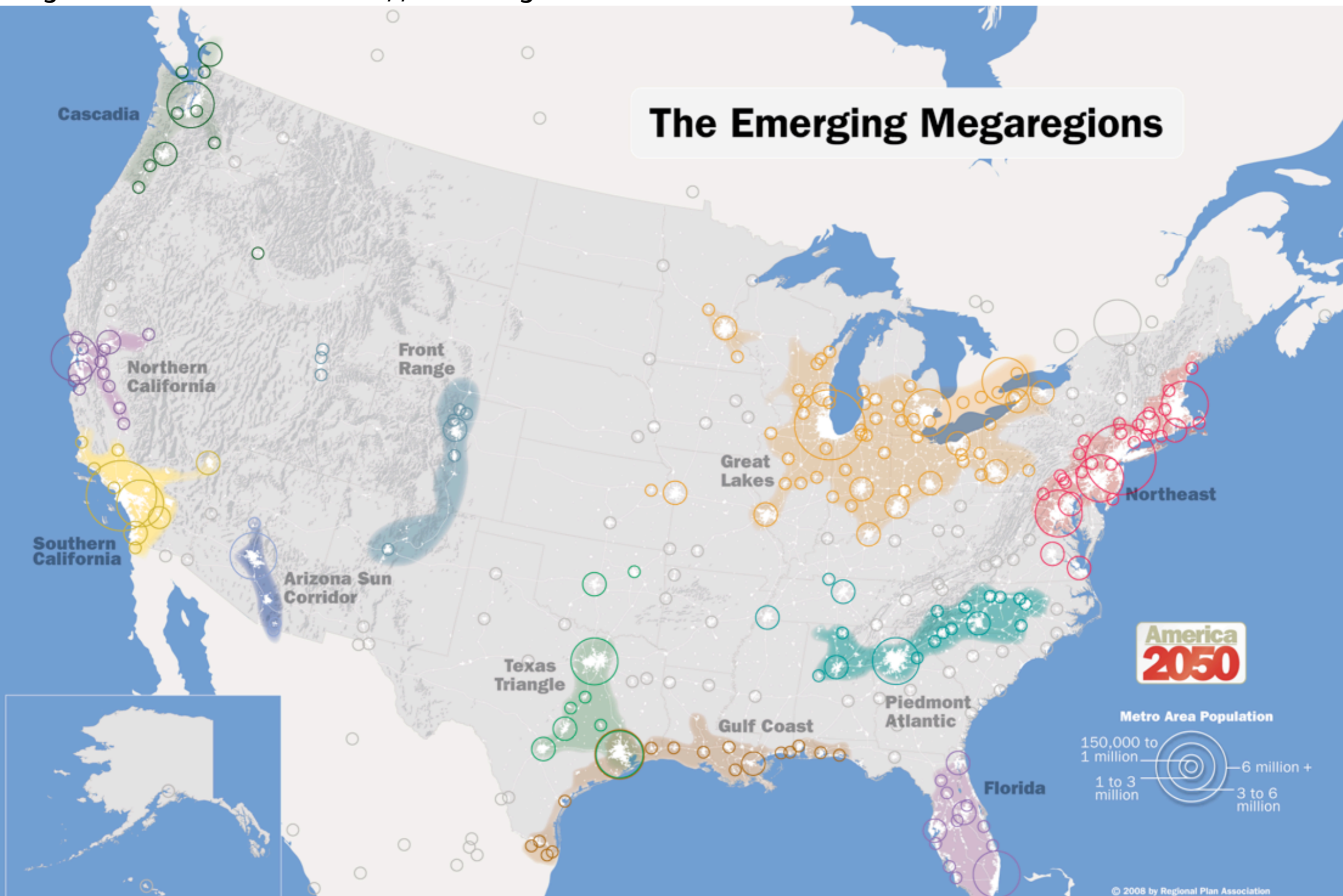


TSA locations grouped by **MEGA-CITIES**, metros, micros, and rural counties



Metropolitans >> Mega-Regions // Richard Florida
Regional Innovation Clusters // Brookings

The Emerging Megaregions



Avoid Ice Berg Databases

Build what you need, not what you want

TOP SECRET AMERICA

A Washington Post Investigation

SHARE TSA



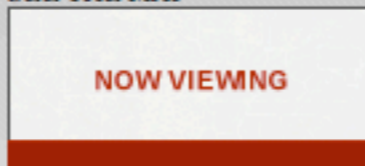
WATCH THE INTRO



READ THE STORIES



SEE THE MAP



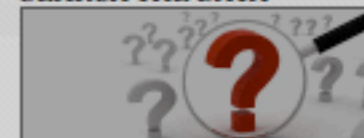
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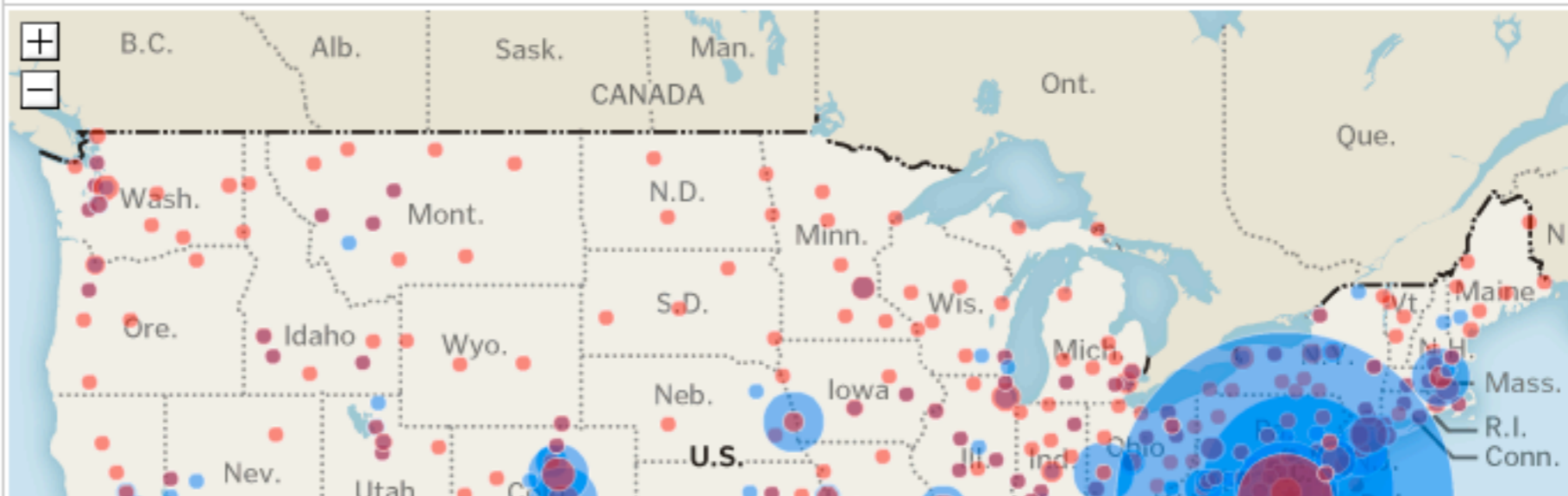
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ZOOM TO DC

ZOOM TO US

ZOOM TO ALL

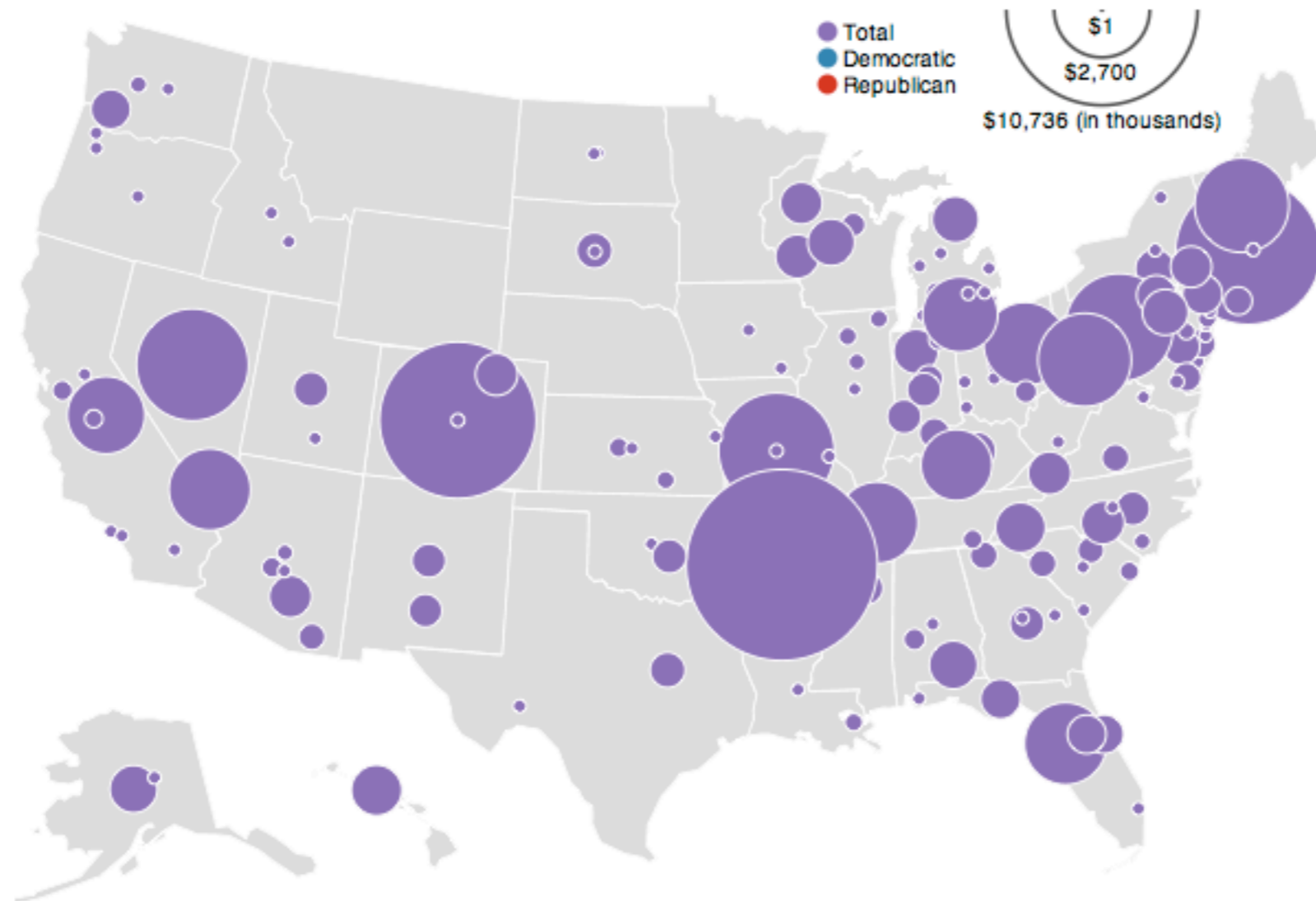
RESET MAP



Campaign cash: Who's spending where in 2010

Mouse over the map bubbles to learn more.

Spending by party: Total • [Democrats](#) • [Republicans](#)



Races with spending reported by interest groups:

Race, incumbent	Last week	Two weeks ago	Three weeks ago	Total	Partisanship
Ark. Sen. Blanche Lincoln, D	\$0	\$171,385	\$173	\$10,736,674	97% Democratic
Colo. Sen. Michael F Bennet, D	\$1,609,066	\$527,527	\$1,042,664	\$7,207,366	72% Republican
Mass. Sen. Scott P. Brown, R	\$0	\$0	\$0	\$6,221,849	52% Republican
Mo. Sen. OPEN, Christopher Kit Bond, R	\$919,687	\$92,648	\$1,423,209	\$3,947,296	70% Democratic
Nev. Sen. Harry Reid, D	\$648,207	\$226,119	\$389,194	\$3,694,882	63% Republican

Election maps

Campaign finance

Tea party movement

Democrat losses

Exit polls

Live results

Senate analysis

House analysis

Governor analysis

Beyond the Results: House

Recommend 927

Tweet 0



Election history



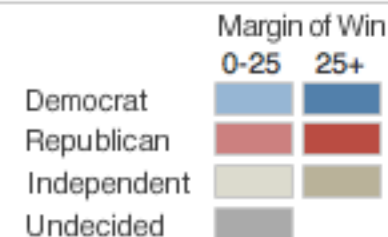
2010 Congressional election results

193 DEMOCRAT

242 REPUBLICAN



BALANCE OF POWER



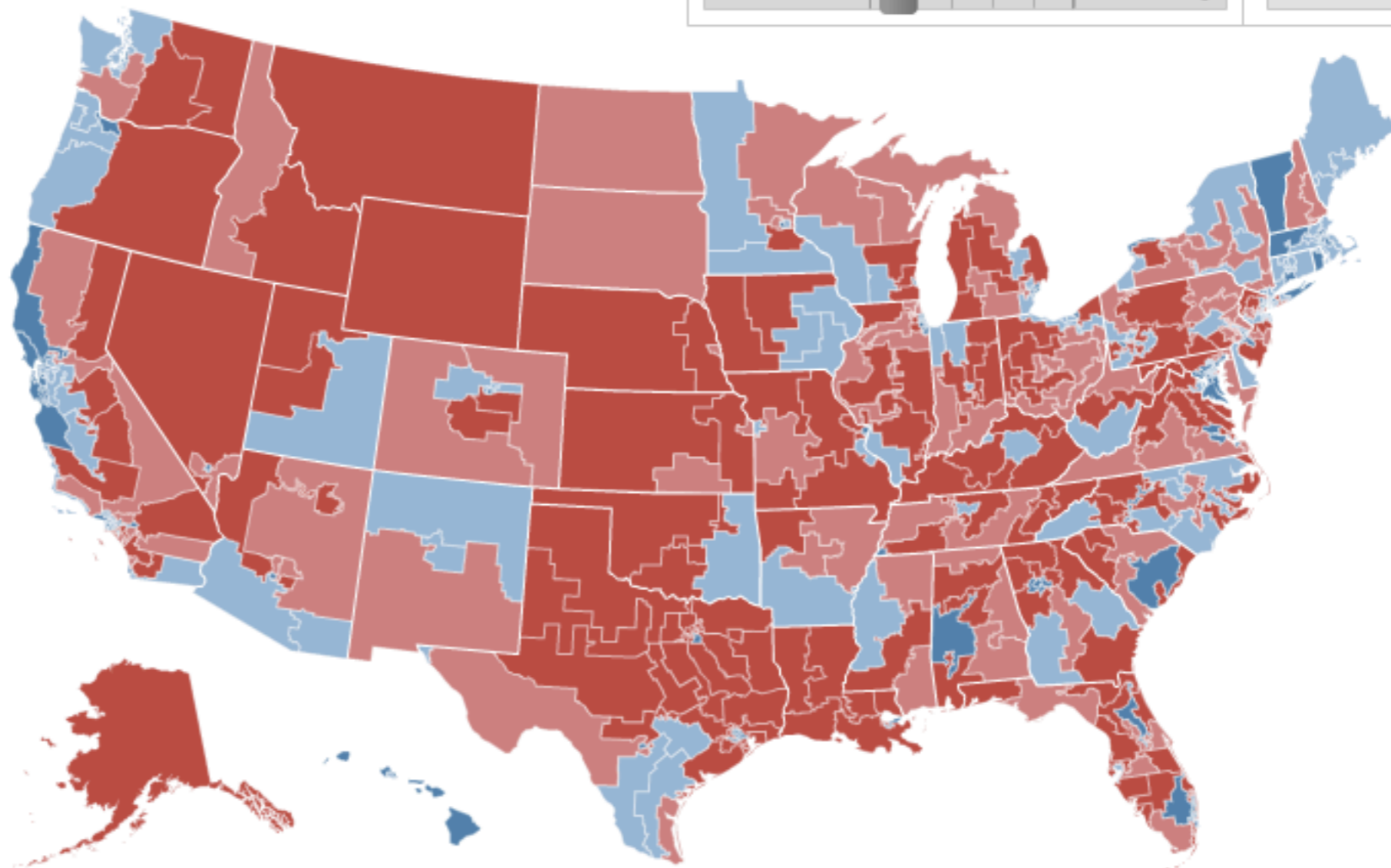
Choose a district

State

Customize Map

- ALL DISTRICTS
- REPUBLICAN GAINS (2010)
- TEA PARTY WINS (2010)
- OVERALL POVERTY RATE
- PERCENT 65 AND OVER
- NON-HISPANIC BLACK
- HISPANIC
- UNINSURED

Zoom out Zoom in +



Explore the 2010 census

View how demographics in your neighborhood have changed over time:

Enter city or zip code



INCREASE



DECREASE



Select a year:

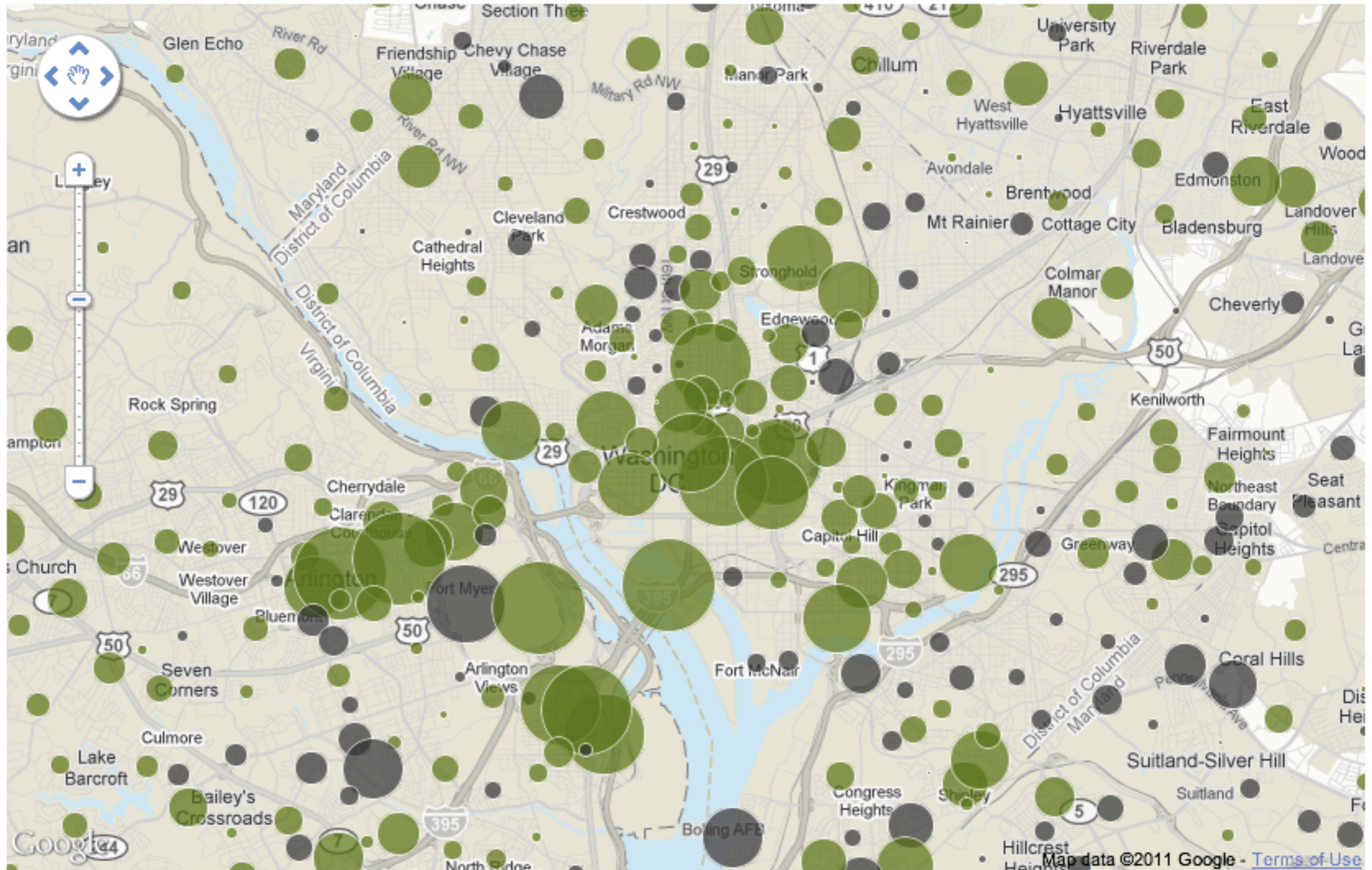
- 2010
- 2000
- 1990

Select a view type:

- PERCENT CHANGE
- POPULATION


Refine your view:

- TOTAL
- WHITE
- BLACK
- HISPANIC
- ASIAN



NOTE: White, Black and Asian are non-Hispanic. Figures may not add up to 100% because of rounding. SOURCE: U.S. Census.
 GRAPHIC: Kat Downs, Dan Keating and Nathaniel Vaughn Kelso / The Washington Post - Updated March 25, 2011.

Explore the 2010 census

View how demographics in your neighborhood have changed over time: 

Select a year:

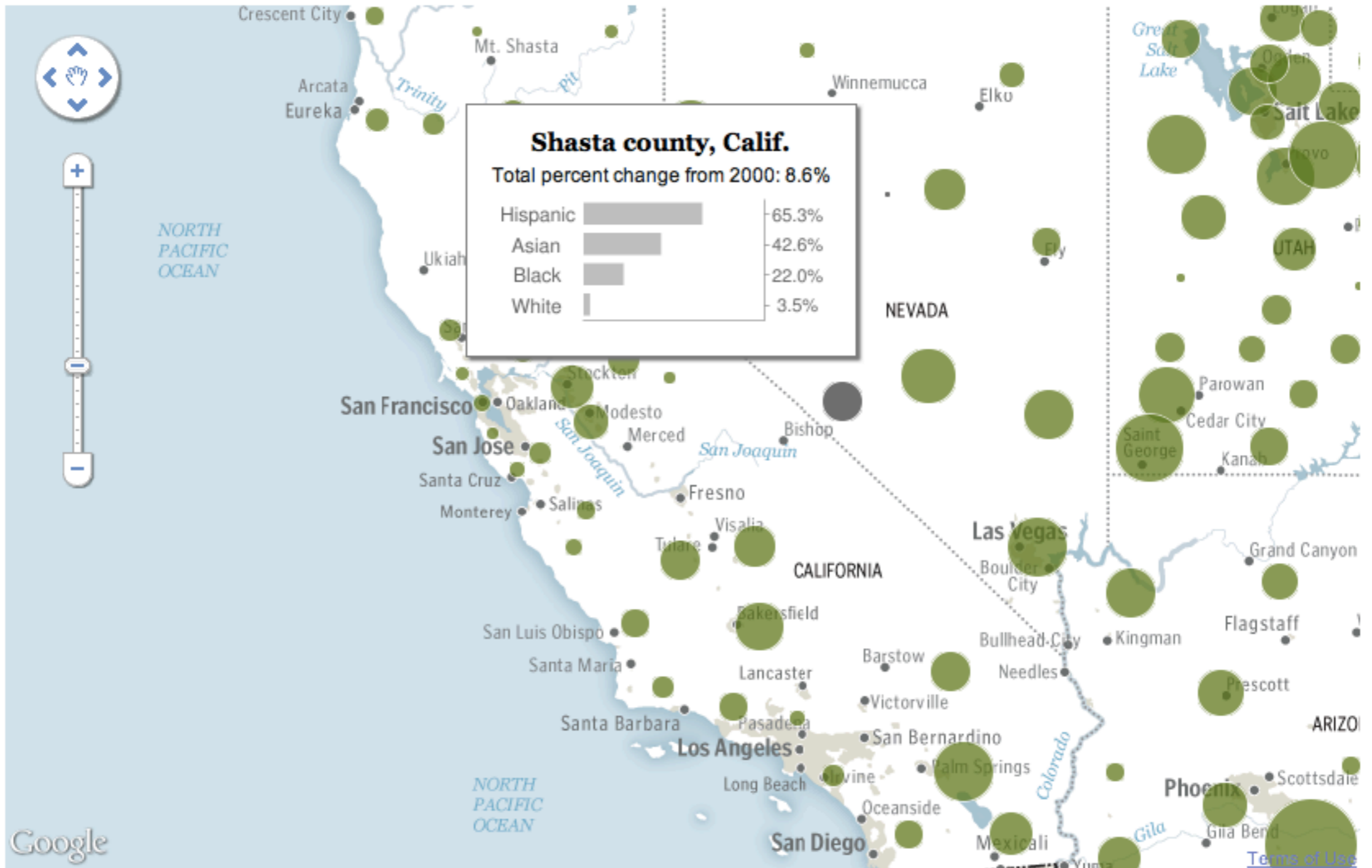
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Select a view type:

-
-

Refine your view:

-
-
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NOTE: White, Black and Asian are non-Hispanic. Figures may not add up to 100% because of rounding. SOURCE: U.S. Census. GRAPHIC: Kat Downs, Dan Keating and Nathaniel Vaughn Kelso / The Washington Post - Updated March 25, 2011.

Places have always been palimpsests

The contemporary is constantly being constructed upon the foundations of the old. Yet only recently has place begun to take on an entirely new dimension. Millions of places are being represented in cyberspace by a labour force of hundreds of thousands of writers, cartographers and artists.

– *MARK GRAHAM*

Precision \neq Accuracy \pm POI

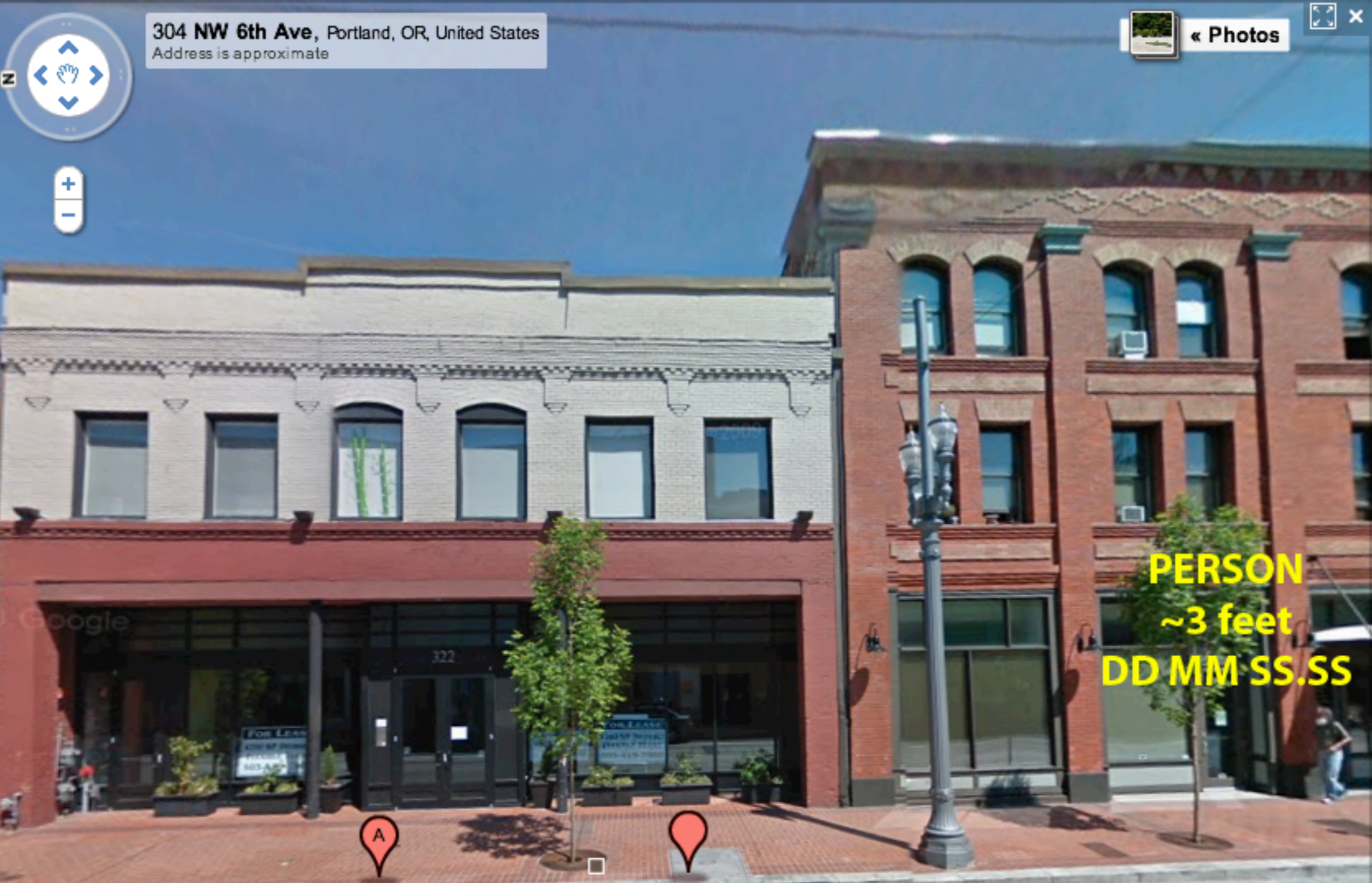
<http://kelso.it/x/6e>
<http://kelso.it/x/yq>

Scott Ableman



304 NW 6th Ave, Portland, OR, United States
Address is approximate

Photos

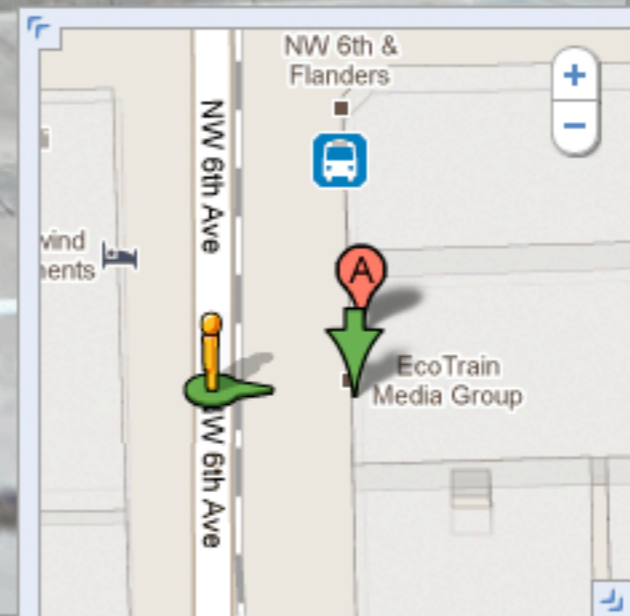


PERSON
~3 feet
DD MM SS.SS



GOOGLE ADDRESS POI LONG-LAT

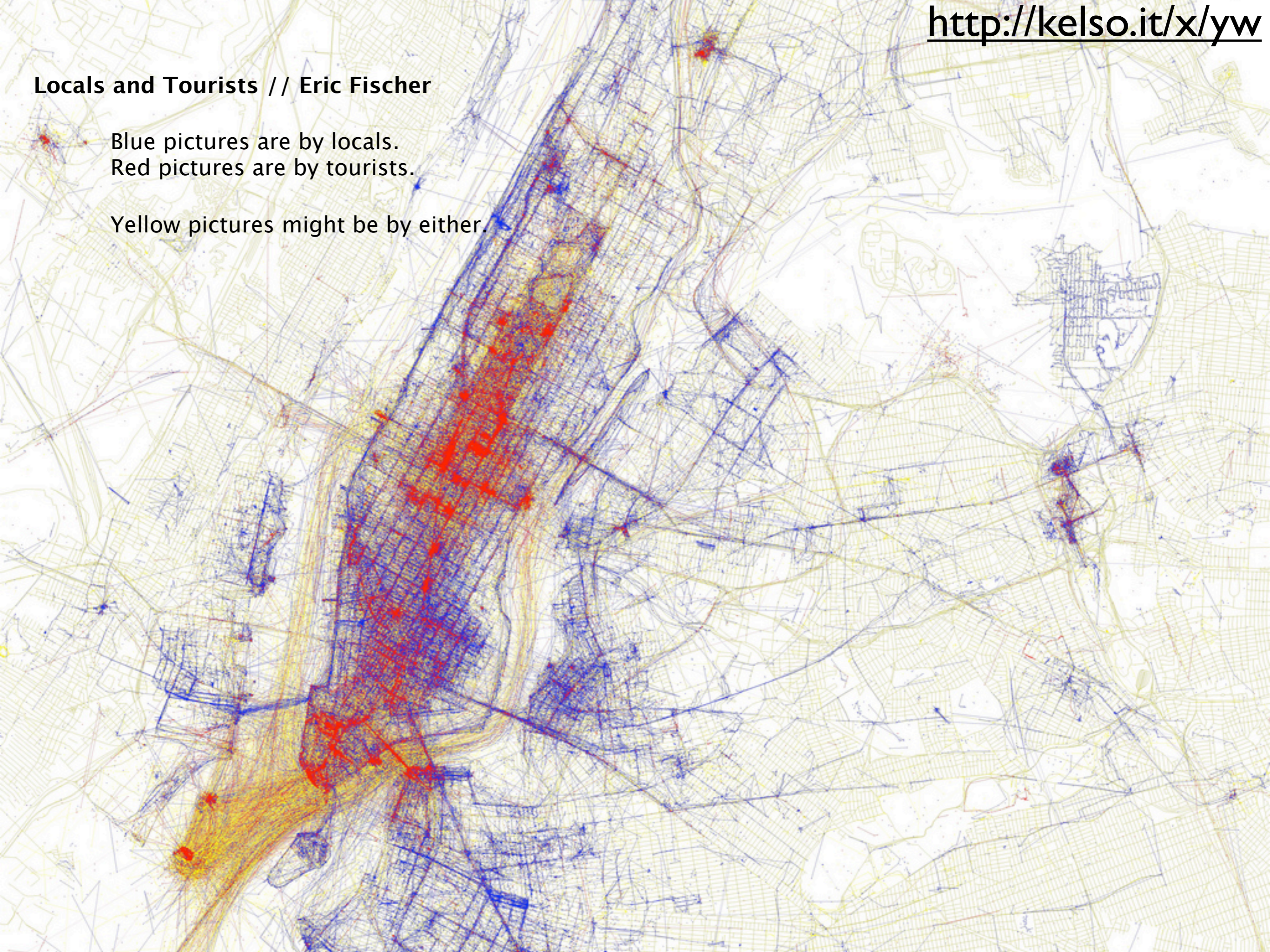
NIGHTMARE
~20 feet
DD MM SS.S



Locals and Tourists // Eric Fischer

Blue pictures are by locals.
Red pictures are by tourists.

Yellow pictures might be by either.



Marshall McLuhan

<http://kelso.it/x/yu>
<http://kelso.it/x/yt>
<http://kelso.it/x/yv>

“the city no
longer exists
except as a
cultural ghost
for tourists”

McLuhan is also known for the expressions "[the medium is the message](#)" and "[global village](#)"

Social archipelago // The social life of New York City // urbagram

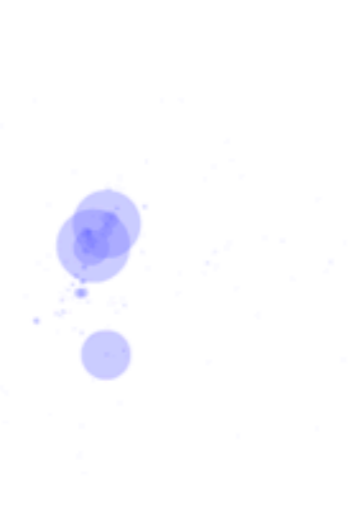
NIGHTLIFE

ARTS

SHOPS

PARKS

FOOD



Most Popular

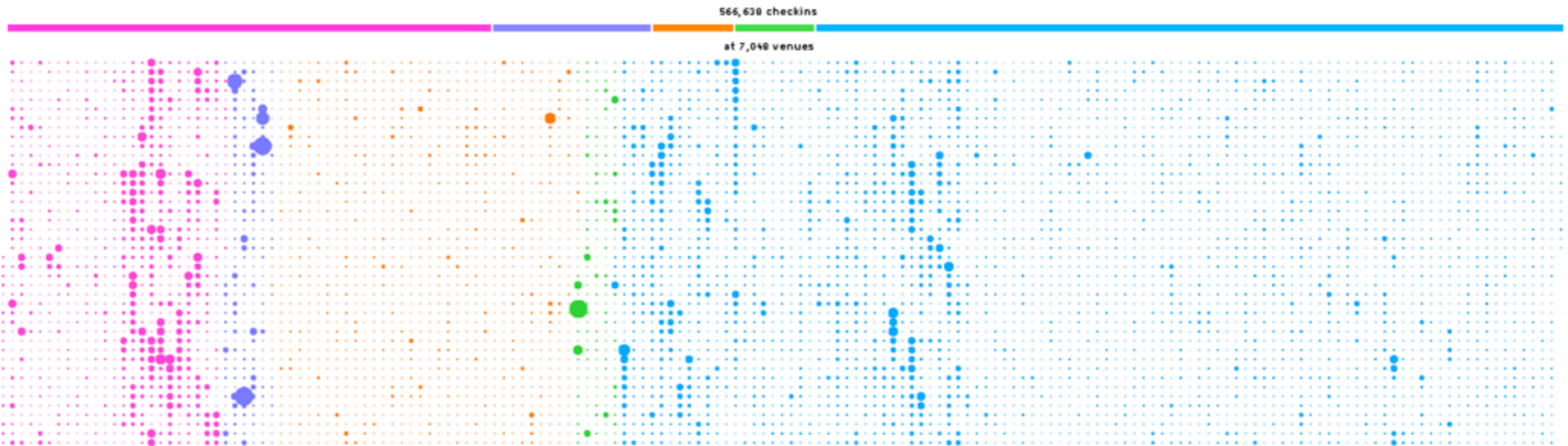
- Brass Monkey
- Bar Matchless
- The Woods

- MoMA
- Met Museum
- Brooklyn Museum

- IKEA
- Target
- Apple Store

- Central Park
- Governor's Island
- Brighton Beach

- Balthazar Restaurant
- Cafe Grumpy
- Five Leaves



on the Foursquare network.

Transport // Walk Score



America's Most Walkable Neighborhoods

Find the most walkable neighborhoods in the top 40 U.S. cities.

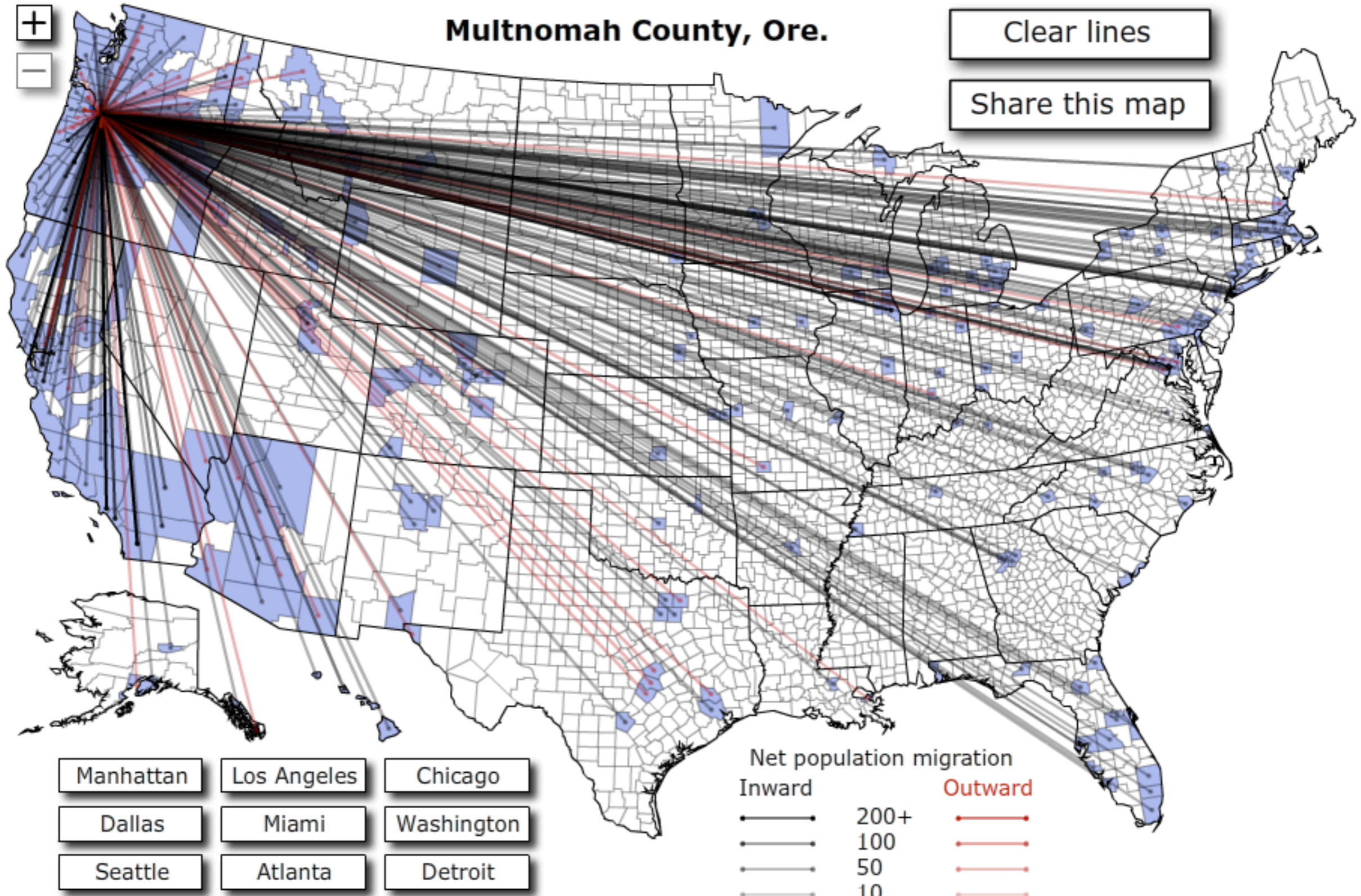
City	Score	Most Walkable Neighborhoods
1 San Francisco	86	Chinatown, Financial District, Downtown
2 New York	83	Tribeca, Little Italy, Soho
3 Boston	79	Back Bay-Beacon Hill, South End, Fenway-Ken
4 Chicago	76	Loop, Near North Side, Lincoln Park
5 Philadelphia	74	City Center East, City Center West, Riverfront
6 Seattle	72	Pioneer Square, Downtown, First Hill
7 Washington D.C.	70	Dupont Circle, Logan Circle, Downtown
8 Long Beach	69	Downtown, Belmont Shore, Belmont Heights
9 Los Angeles	67	Mid City West, Downtown, Hollywood
10 Portland	66	Pearl District, Old Town-Chinatown, Downtown
11 Denver	66	Lodo, Golden Triangle, Capitol Hill
12 Baltimore	65	Federal Hill, Fells Point, Inner Harbor
13 Milwaukee	62	Lower East Side, Northpoint, Murray Hill
14 Cleveland	60	Downtown, Ohio City-West Side, Detroit Shore
15 Louisville	58	Central Business District, Limerick, Phoenix Hil
16 San Diego	56	Core, Cortez Hill, Gaslamp Quarter
17 San Jose	55	Buena Vista, Burbank, Rose Garden
18 Las Vegas	55	Meadows Village, Downtown, Rancho Charlestc
19 Fresno	54	Central, Fresno-High, Hoover
20 Sacramento	54	Richmond Grove, Downtown, Midtown
21 Albuquerque	53	Downtown, Broadway Central, Raynolds
22 Atlanta	52	Five Points, Poncey-Highland, Sweet Auburn
23 Detroit	52	Downtown, New Center, Midtown
24 Dallas	51	West End Historic District, Oak Lawn, m Street
25 Tucson	51	Iron Horse, El Presidio, Ocotillo Oracle
26 Houston	51	Downtown, Montrose, River Oaks
27 Columbus	50	Weinland Park, Victorican Village, Downtown
28 Phoenix	50	Encanto, Central City, Camelback East
29 Austin	49	Downtown, University Of Texas, West Universi
30 Mesa	48	Southwest, West Central, Central
31 El Paso	45	Golden Hills, Houston Park, Manhattan Heights

Interactive Feature

Map: Where Americans Are Moving

Jon Bruner

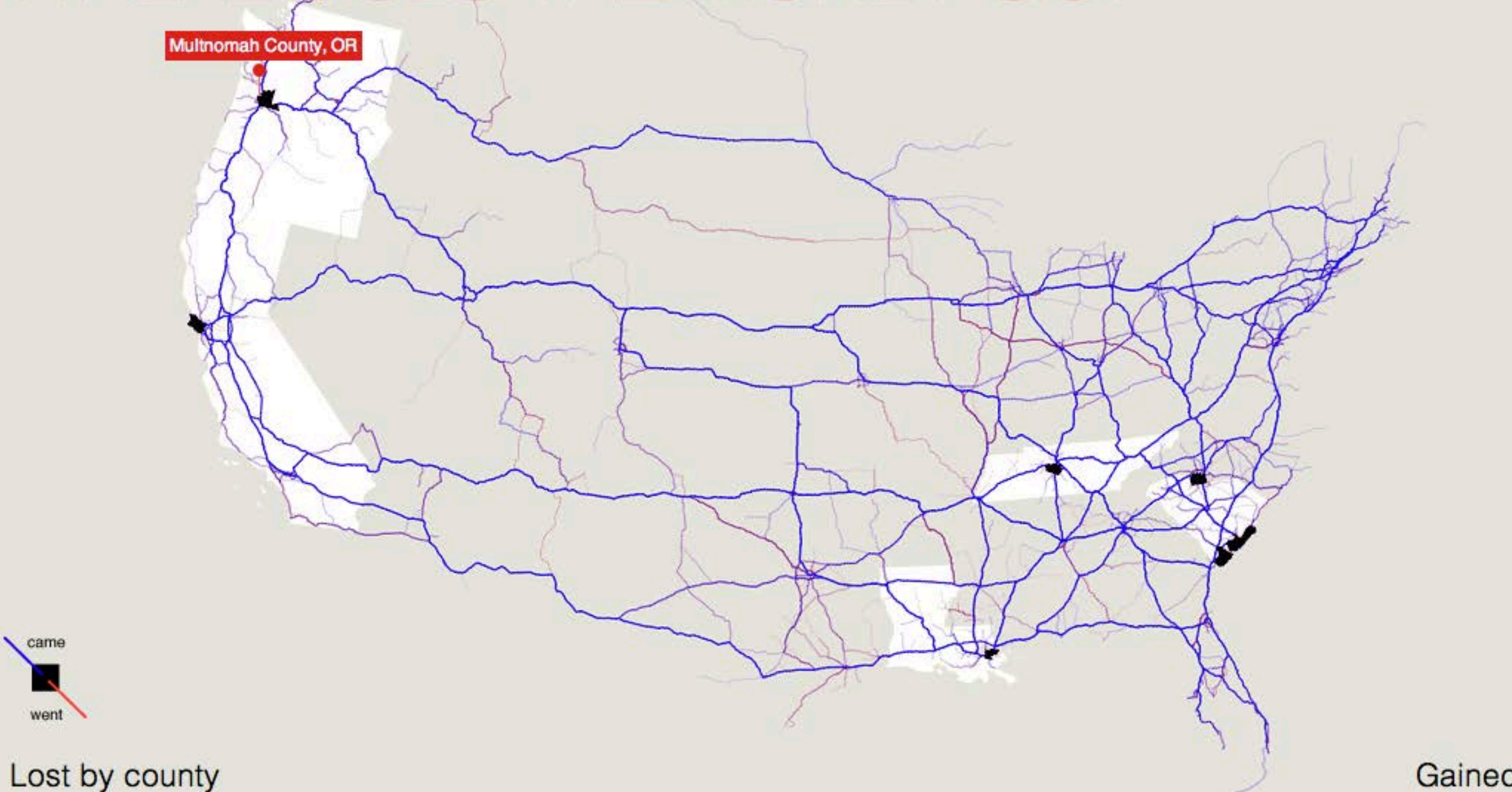
More than 10 million Americans moved from one county to another during 2008. The map below visualizes those moves. Click on any county to see comings and goings: black lines indicate net inward movement, red lines net outward movement.



WHERE DOES THE MONEY GO?

Multnomah County, OR clear

Multnomah County, OR



came
went

Lost by county

Gained



County	Population
Multnomah	\$135 million
York	\$143 million
Orleans	\$146 million
Williamson	\$149 million
Clark	\$150 million
Charleston	\$159 million
Marin	\$159 million
Beaufort	\$161 million

Party Affiliation Shifts in Exurbs, circa 2006

Nathaniel V. KELSO

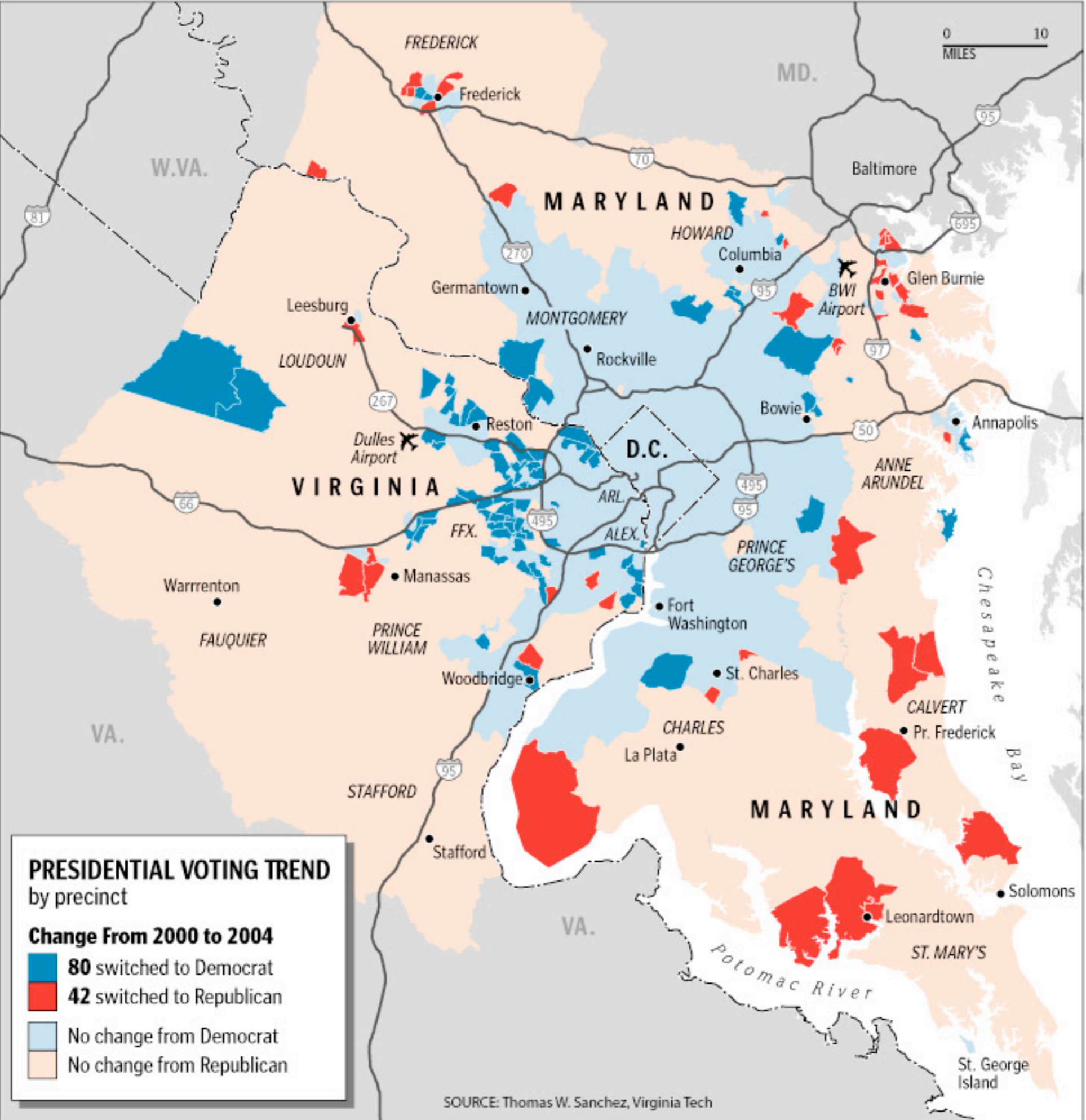
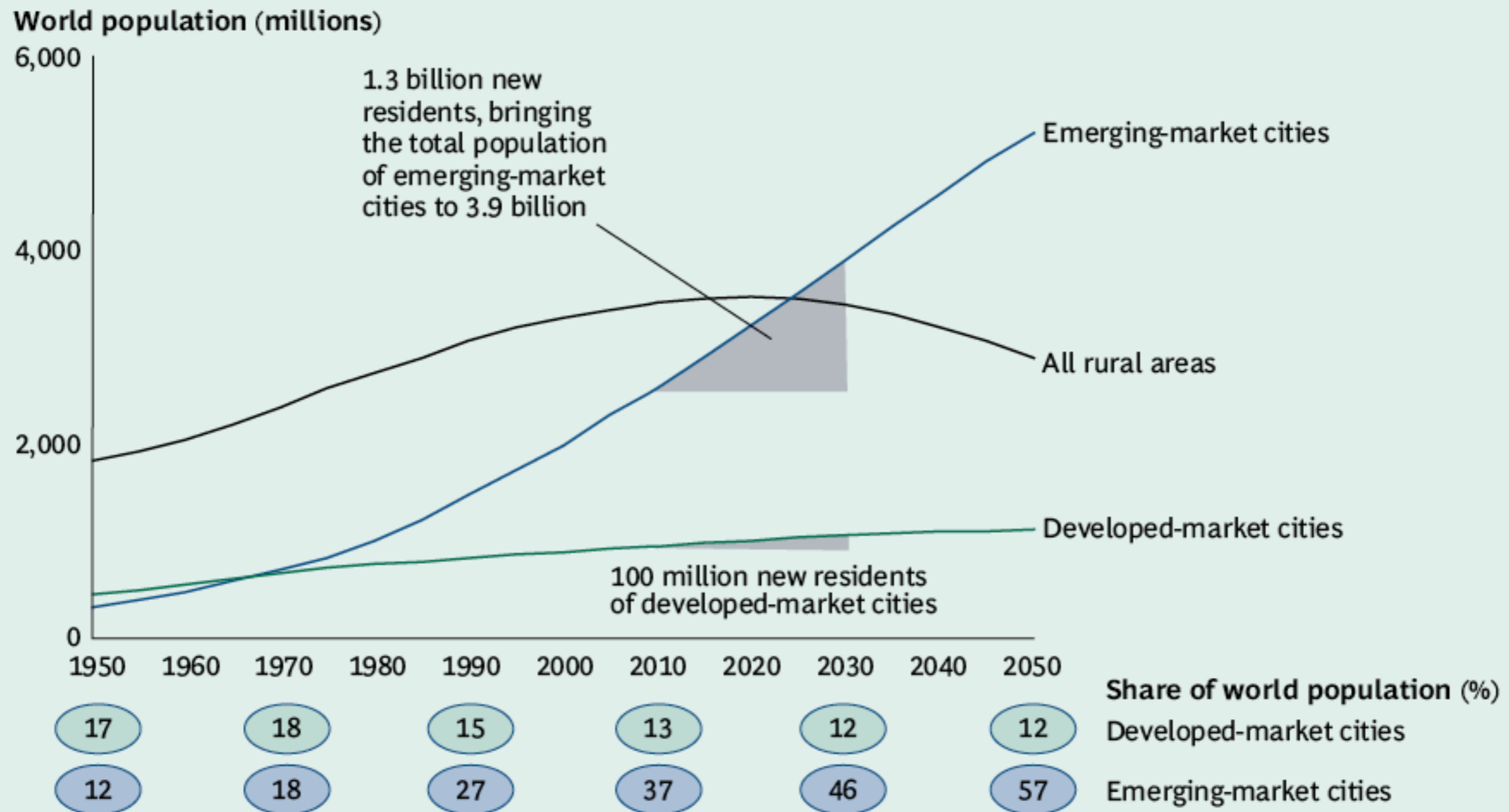


Exhibit 1. Rapid Growth Will Further Boost the Population of Emerging-Market Cities

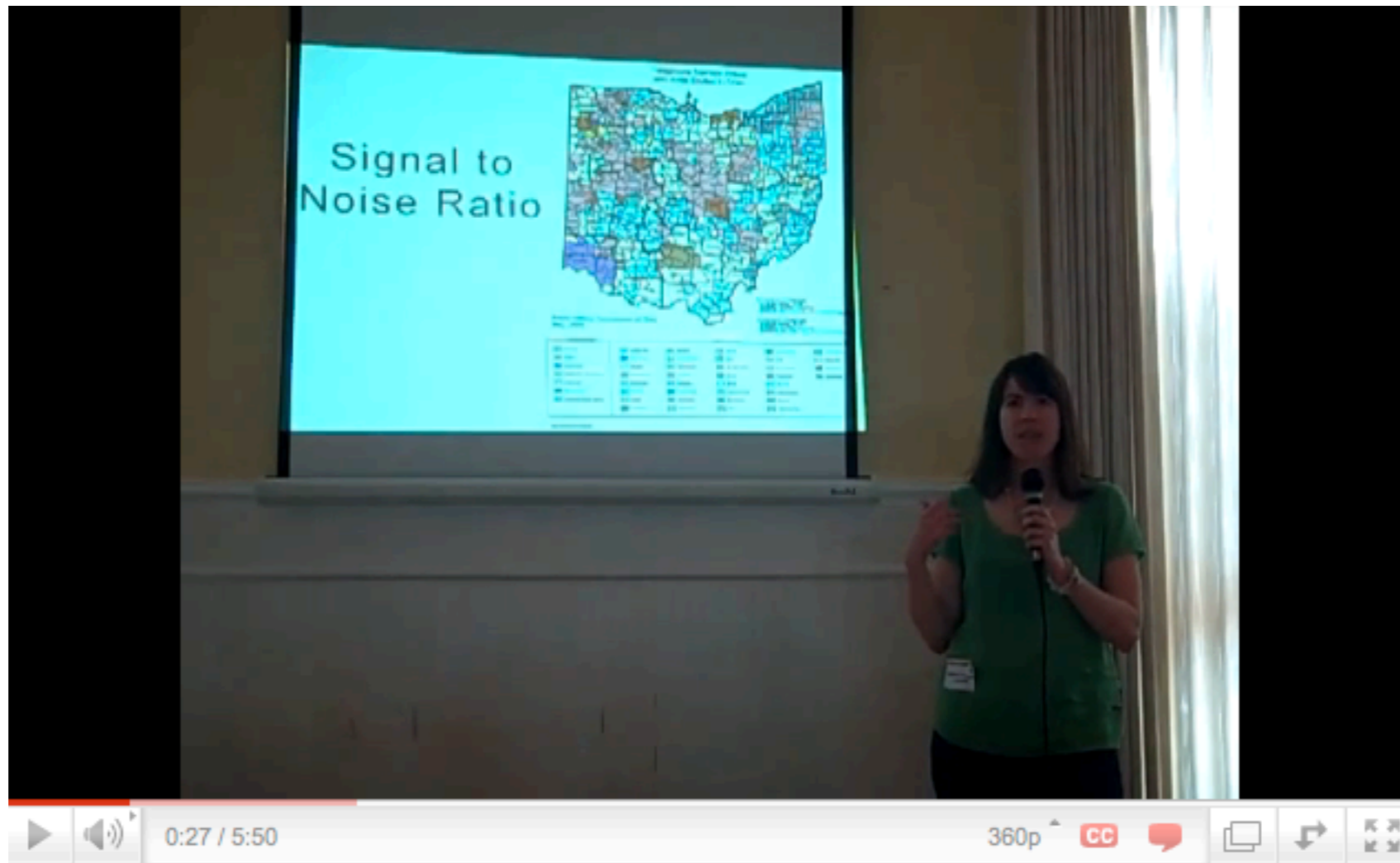
By 2030, another 1.3 billion people will live in emerging-market cities, more than the total population of today's developed-market cities



Sources: United Nations, *World Urbanization Prospects: The 2009 Revision*; Economist Intelligence Unit; Chan, K.W., "Fundamentals of China's Urbanization and Policy," *China Review* 10:1, 2010; Mitra, Arup and Mayumi Murayama, "Rural to Urban Migration: A District Level Analysis for India," IDE Discussion Paper No. 137, 2008; BCG analysis.

Making better maps // Gretchen Peterson

YouTube: "Mapping : please don't do this"





[<embed>](#)



Type a location

Find

<embed>

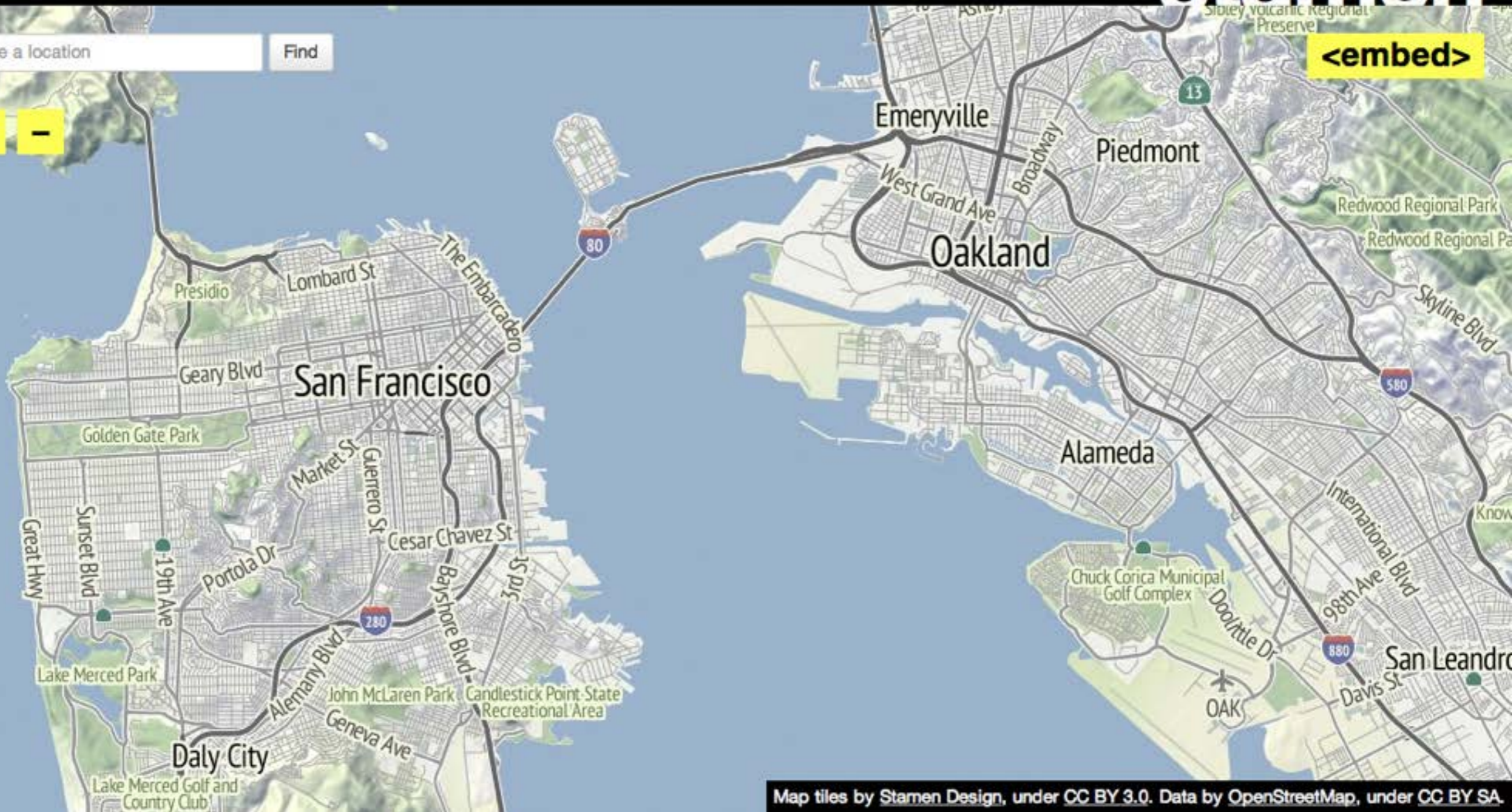


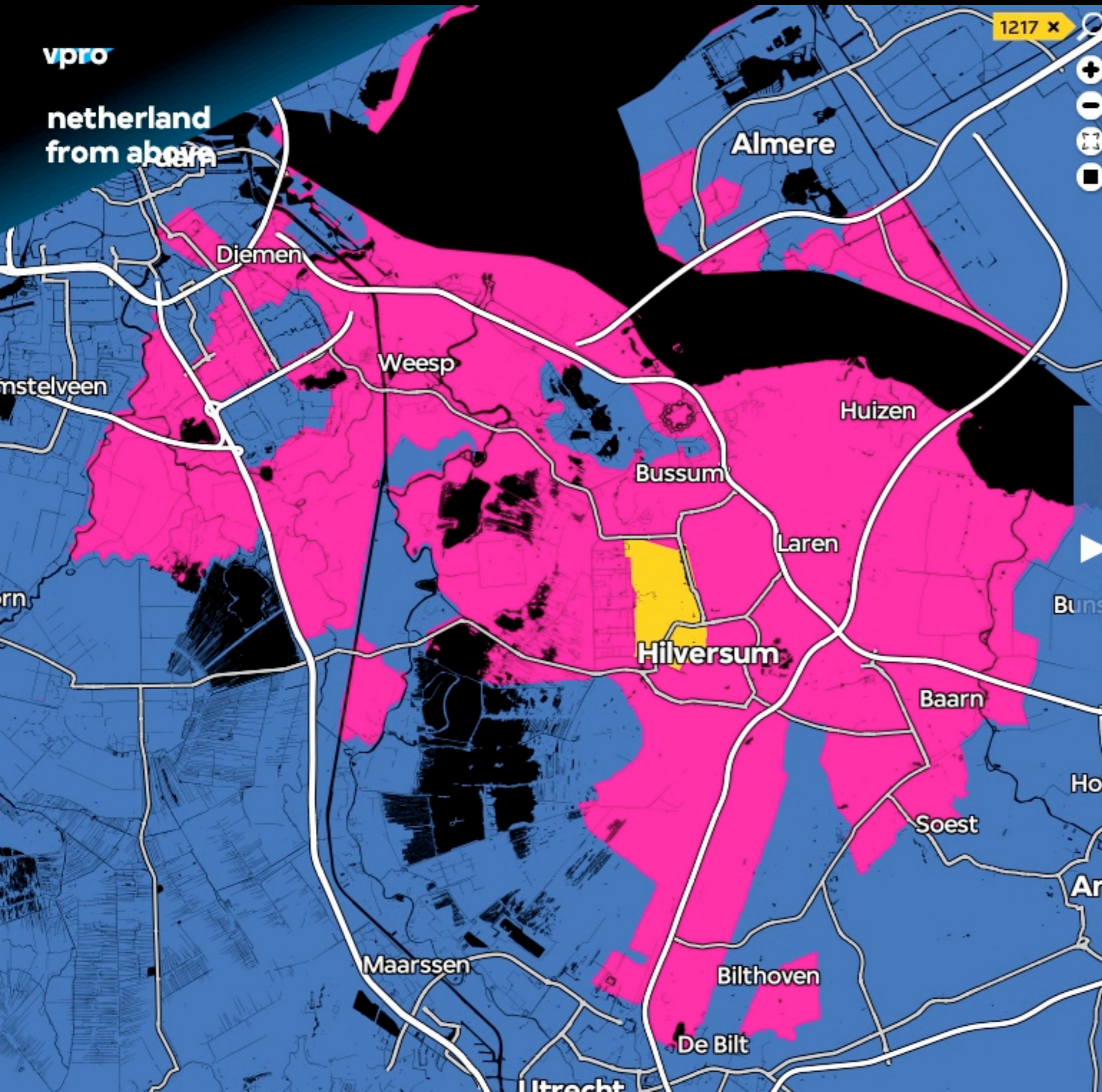
Type a location

Find



<embed>





1217 x



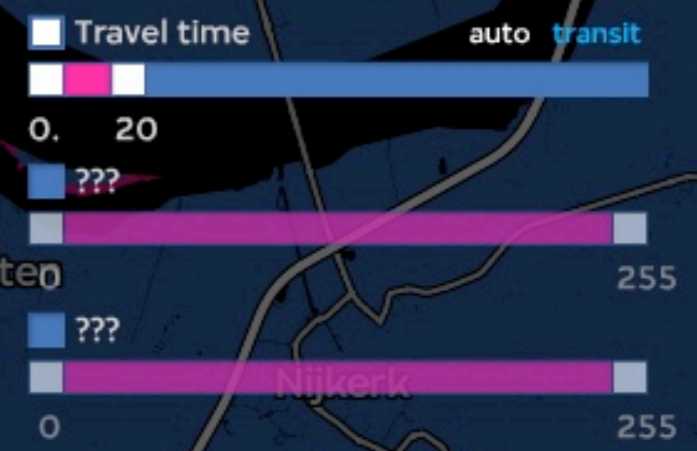
1217 X Find

Current Location: 1217 Hilversum, Hilversum

- Topics:
- Mobility
 - Farming
 - Test

Mobility

How we get from A to B



Presets:

default

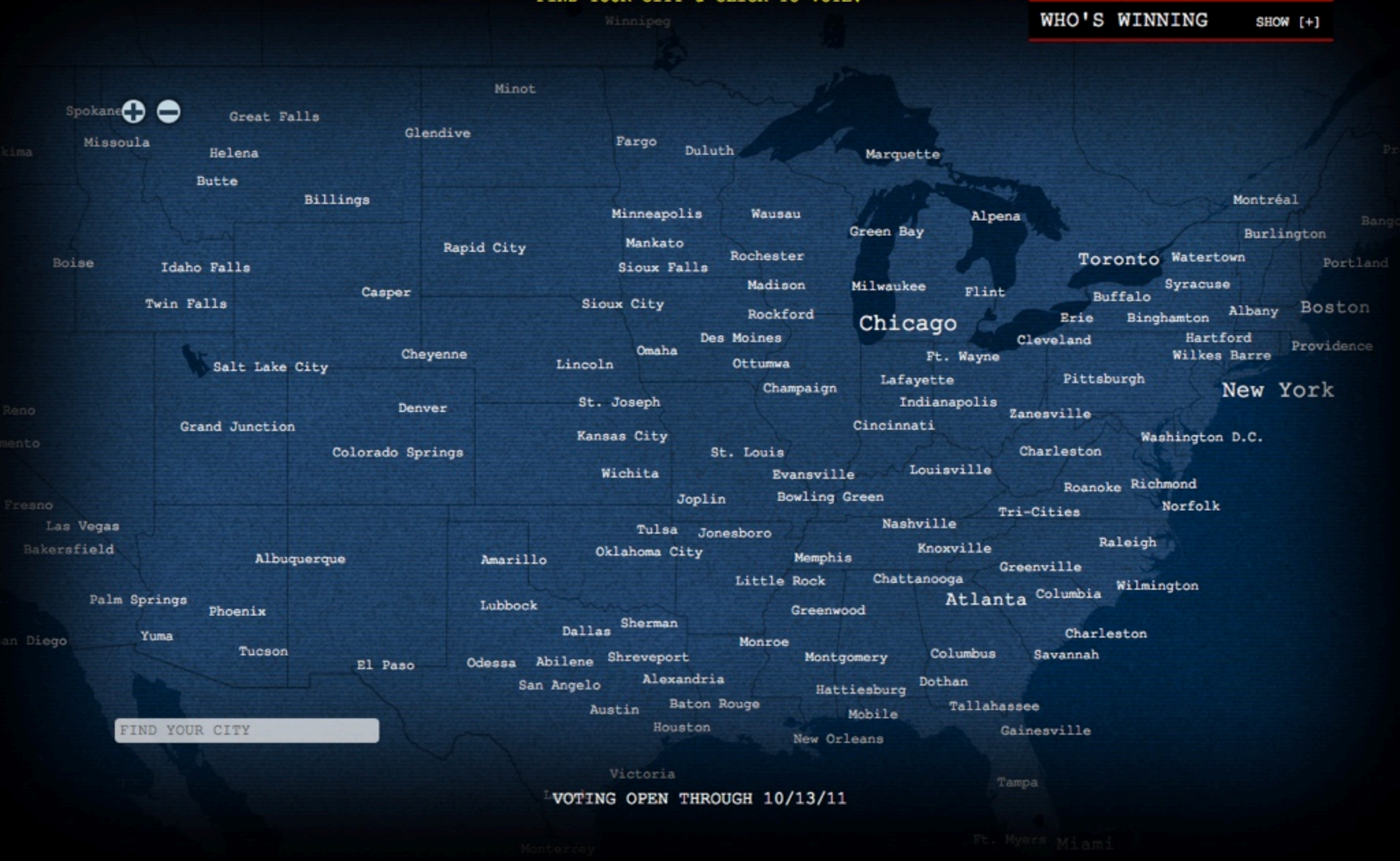
Amerstoort

PARANORMAL 3 ACTIVITY

IN THEATRES EVERYWHERE 10/21/2011

TOP 20 CITIES WILL SEE PARANORMAL ACTIVITY 3 FIRST.
FIND YOUR CITY & CLICK TO VOTE.

WHO'S WINNING [SHOW \[+\]](#)



FIND YOUR CITY

VOTING OPEN THROUGH 10/13/11



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For additional release information visit

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Choose a Procedure:

Colon Surgery

Coronary Artery Bypass Graft

Hip Replacement

Knee Replacement

A surgical procedure to the large intestine, located in the lower part of your digestive tract.

Hospitals

- Citrus Valley - Intercommunity
- Citrus Valley - Queen of the Valley
- City of Hope
- Comm. Hosp. of the Monterey Peninsula
- Eisenhower Med. Ctr.
- El Camino Hosp. - Mountain View
- Grossmont Hosp.
- John Muir Med. Ctr. - Concord
- John Muir Med. Ctr. - Walnut Creek
- Kaiser - Fremont
- Kaiser - Hayward
- Kaiser - Oakland
- Kaiser - Richmond
- Kaiser - Sunset
- Kaiser - Walnut Creek
- Loma Linda Univ. Heart & Surgical
- Loma Linda Univ. Med. Ctr.
- Loma Linda Univ. Med. Ctr. - East

Legend

- Infection ratio available
- Insufficient data

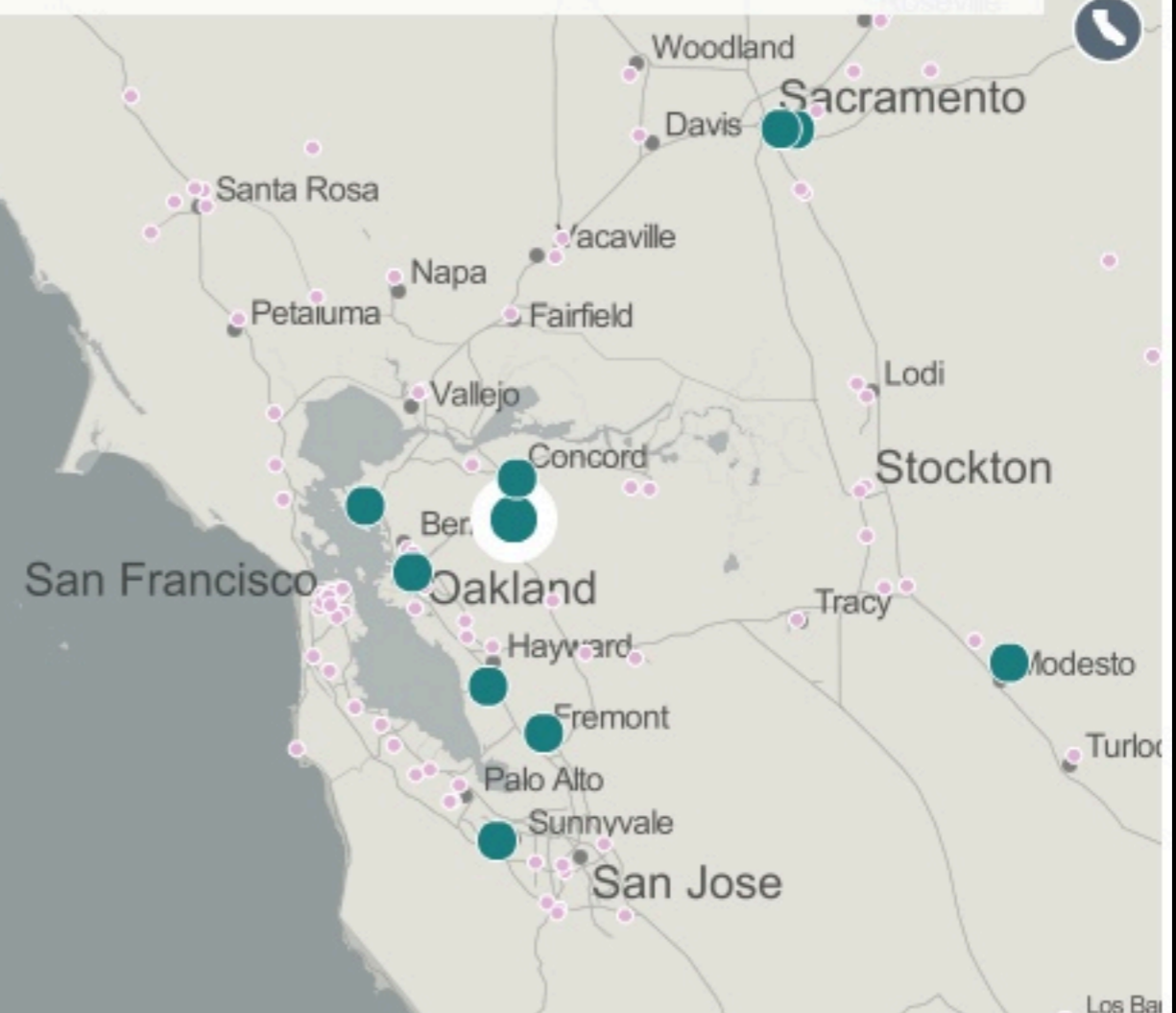
John Muir Medical Center - Walnut Creek Campus

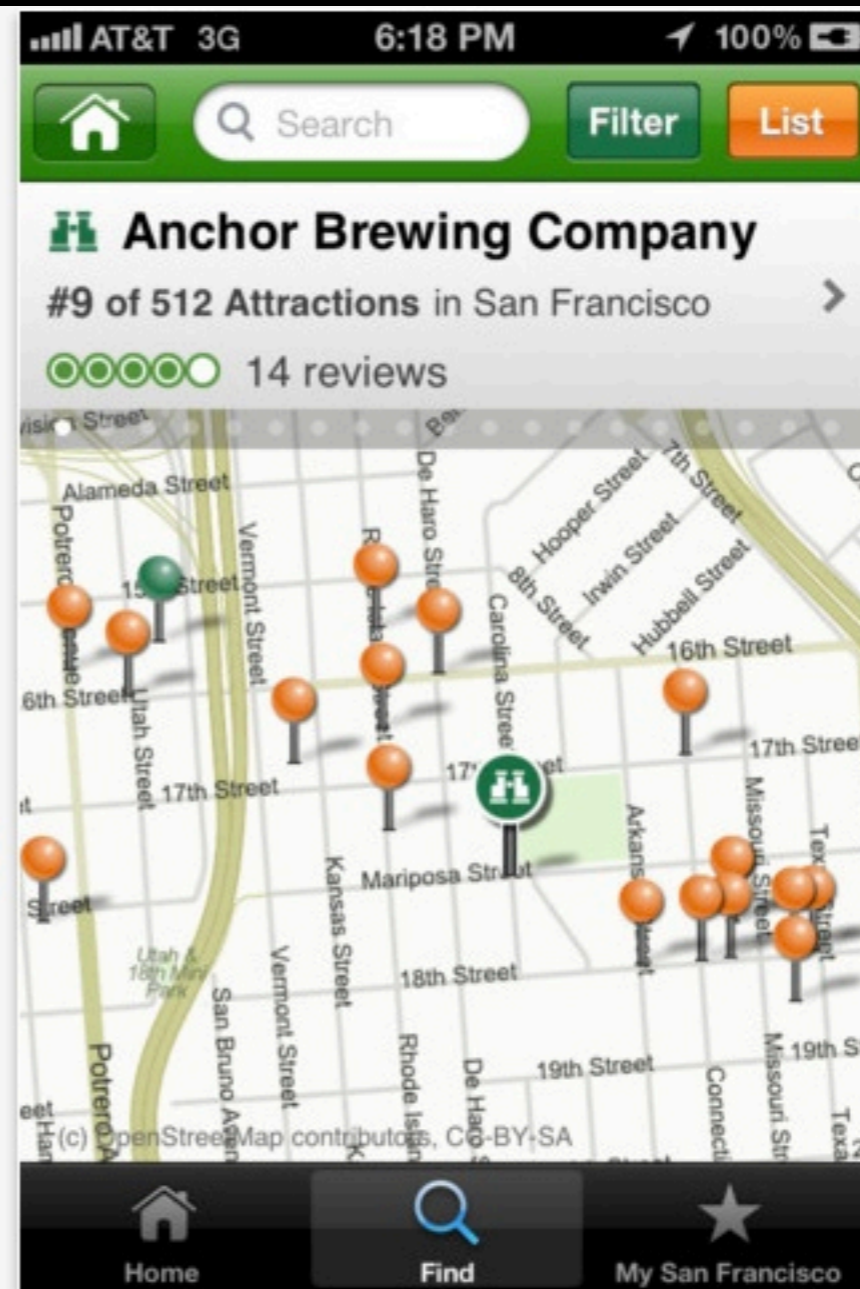
Colon Surgery

Procedures: **50** Infections: **4**

Standardized Infection Ratio (SIR): **Within the predicted range for this hospital's patient population.***

*Scroll down to KEY TERMS for more information about the SIR









West Mission Bay Drive

Ingraham Street

Sea World Drive

Sea World Drive

Sea World Drive

Sea World Drive

Frars R

Sunset Cliffs Boulevard

Nimitz Boulevard

West Point Loma Boulevard

Voltaire Street

Rosecrans Street

Nimitz

Field Papers

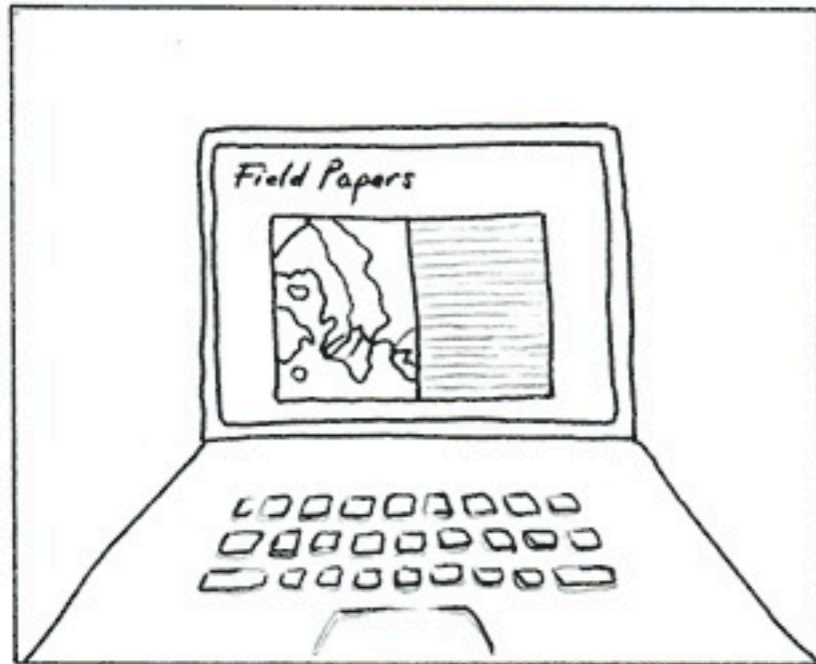
MAKE
an atlas to print

UPLOAD
pages you've marked

WATCH
recent activity

LOG IN
or create an account

Welcome to Field Papers



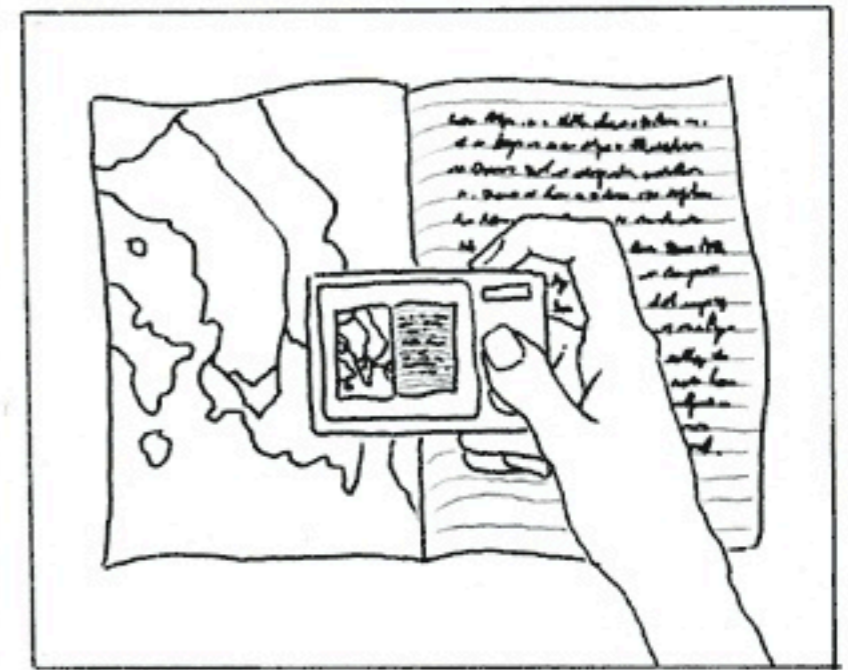
Make yourself an Atlas.

Print out anywhere in the world.



Take it into the field.

Scribble on it, draw things, make notes.



Take pictures of your notes.

[Upload](#) pages you've photographed.

Field Papers is built by [Stamen Design](#).

Map data [CC-BY-SA OpenStreetMap](#), [Toner](#) by Stamen, [Bing](#) by Microsoft, or a combination thereof.

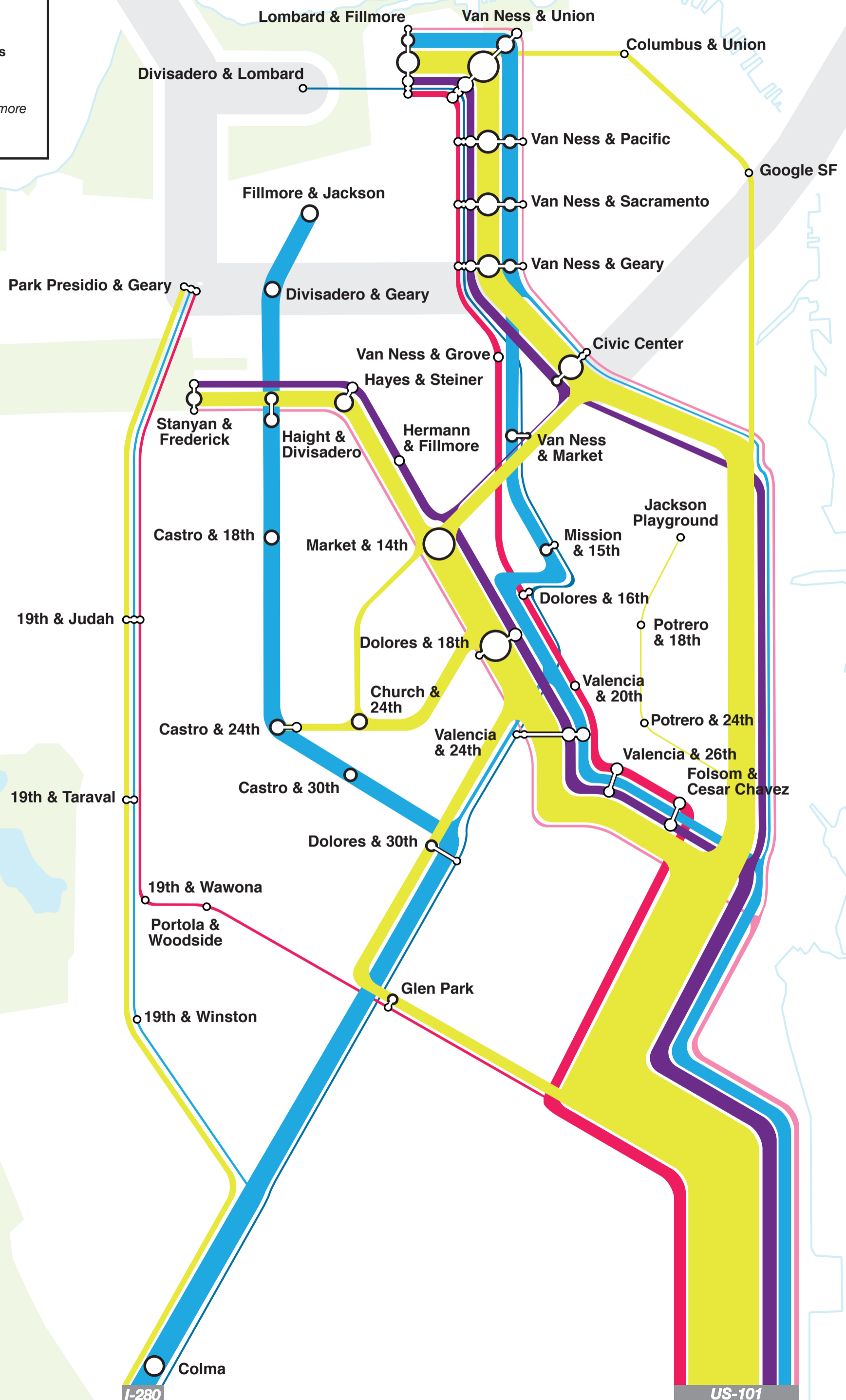
PRIVATE BUS LINES IN SAN FRANCISCO TO SILICON VALLEY

AS SURVEYED BY
STAMEN DESIGN

IN AUGUST 2012

- Apple
- eBay
- Electronic Arts
- Facebook
- Google
- Yahoo

bus stop thicker lines = more trips per day



I-280

US-101

Roll your own maps using data from:

- NaturalEarthData.com
- OpenStreetMap

Prepare the maps in:

- QGIS, Mapnik, TileMill, etc
- Esri ArcGIS
- Adobe Illustrator
- D3.js
- Kartograph.js

Should your map be interactive?

- Web map API frameworks and viz kits

Natural Earth







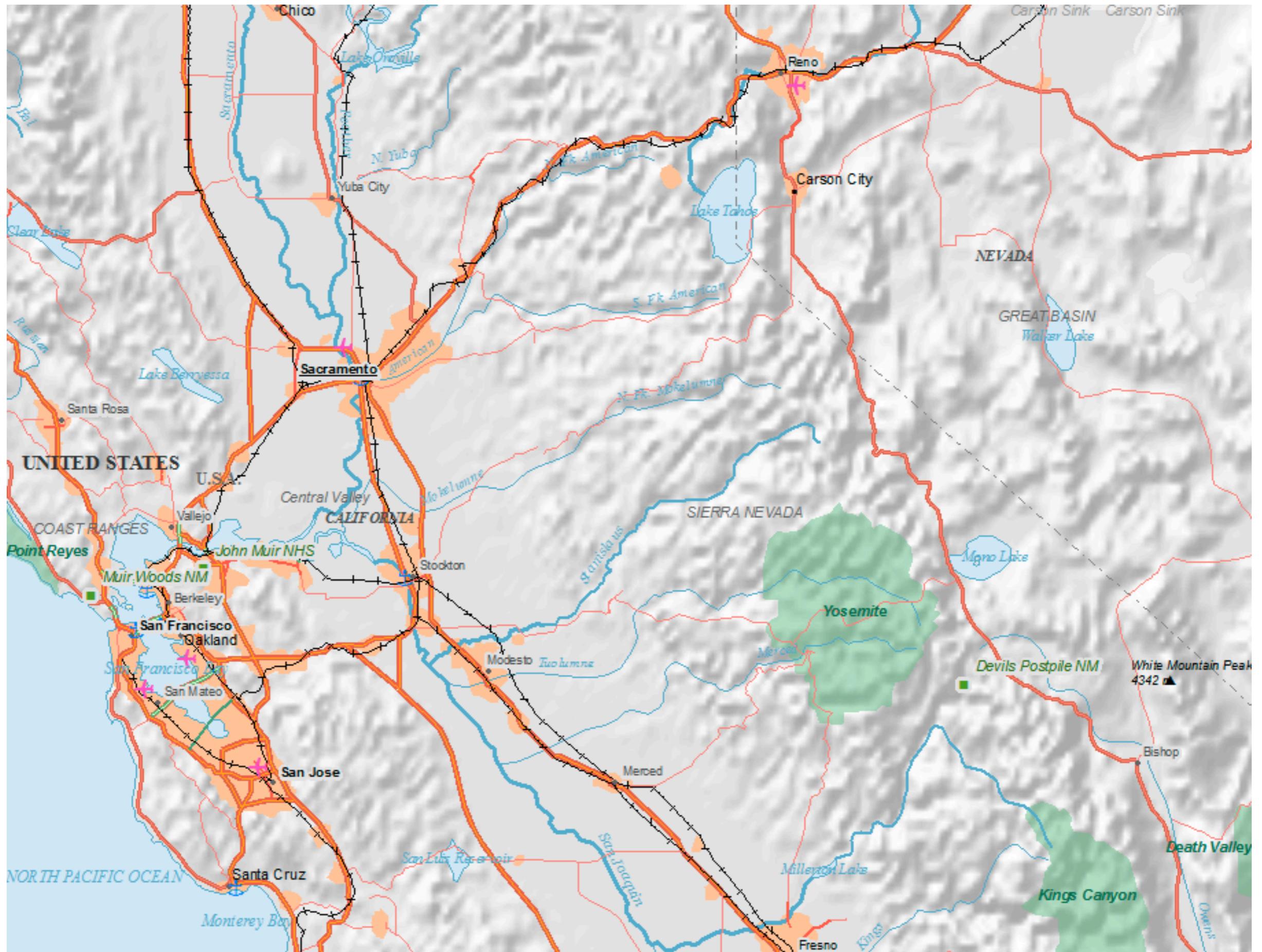


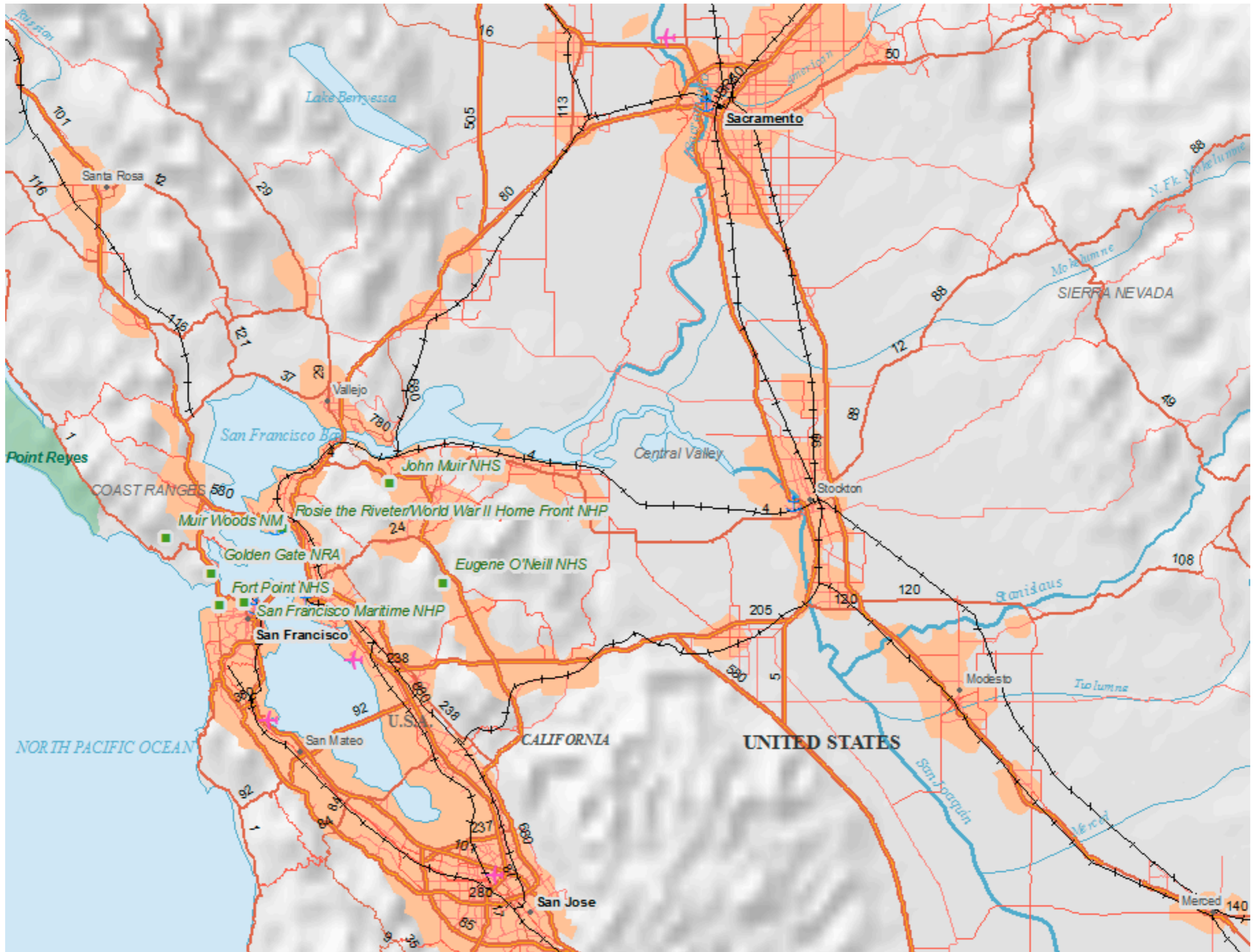


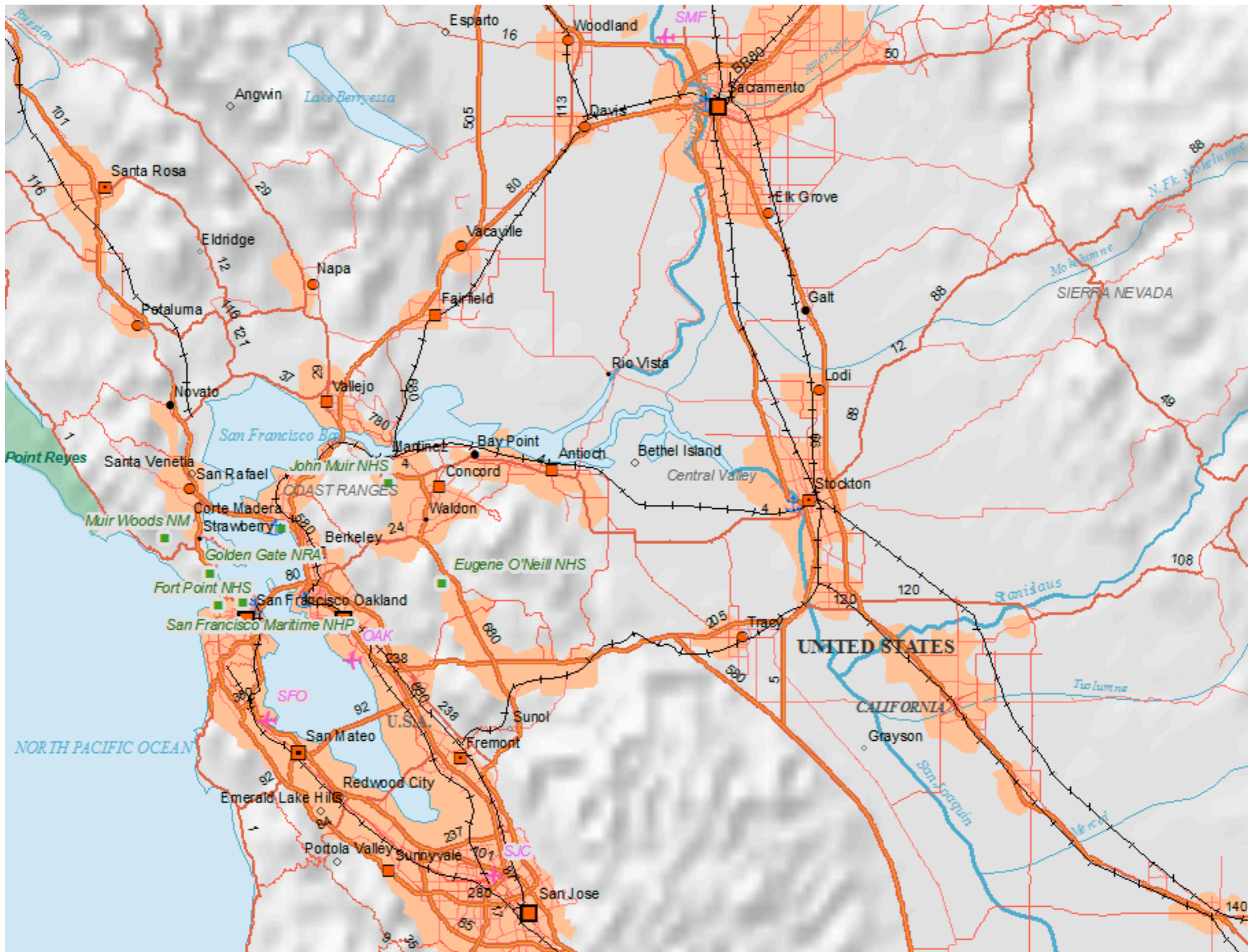


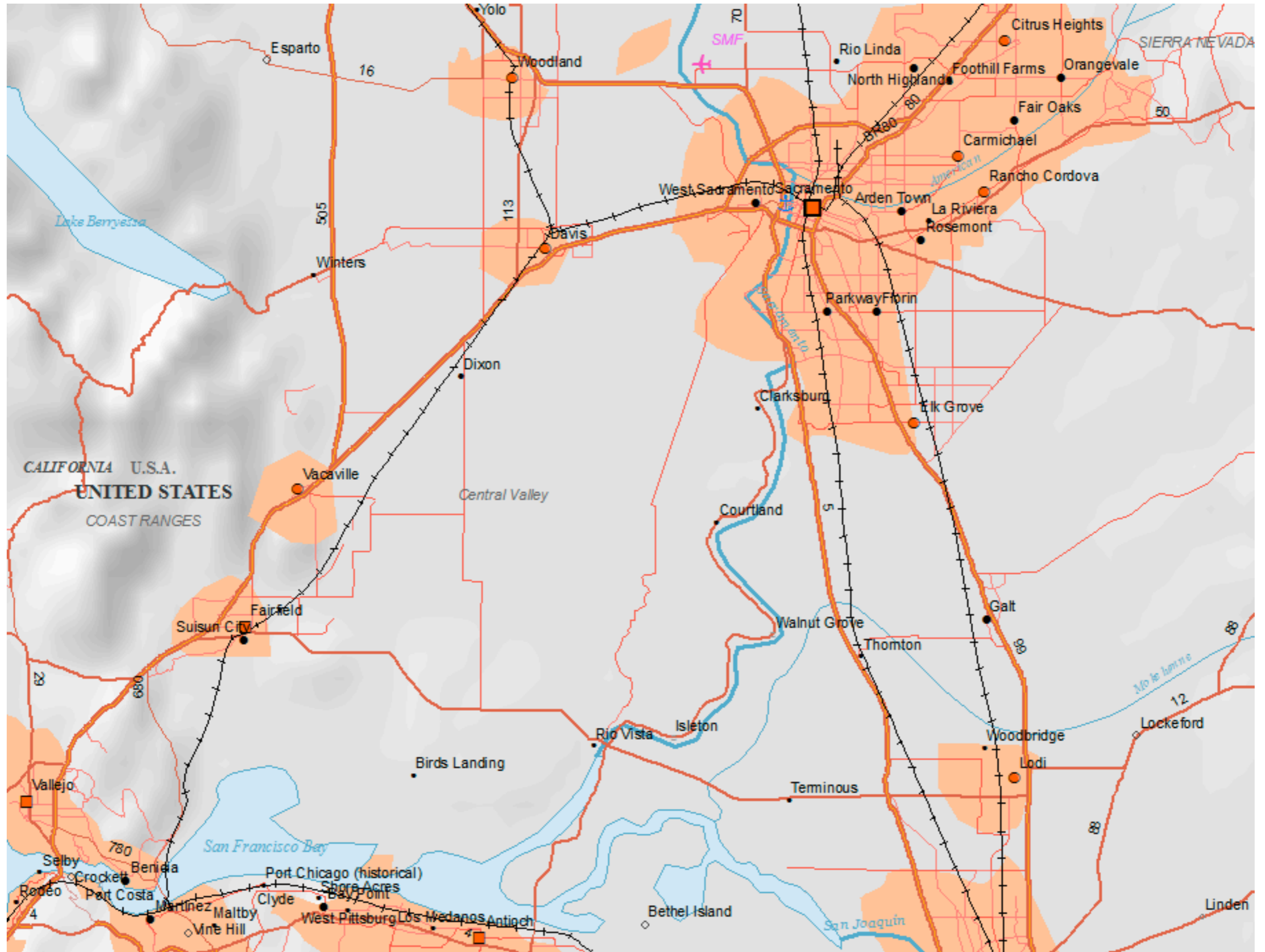












Questions?

Presentation

kelso.it/x/davis2012

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[@kelsosCorner](https://twitter.com/kelsosCorner)

Blog

kelso.it/blog

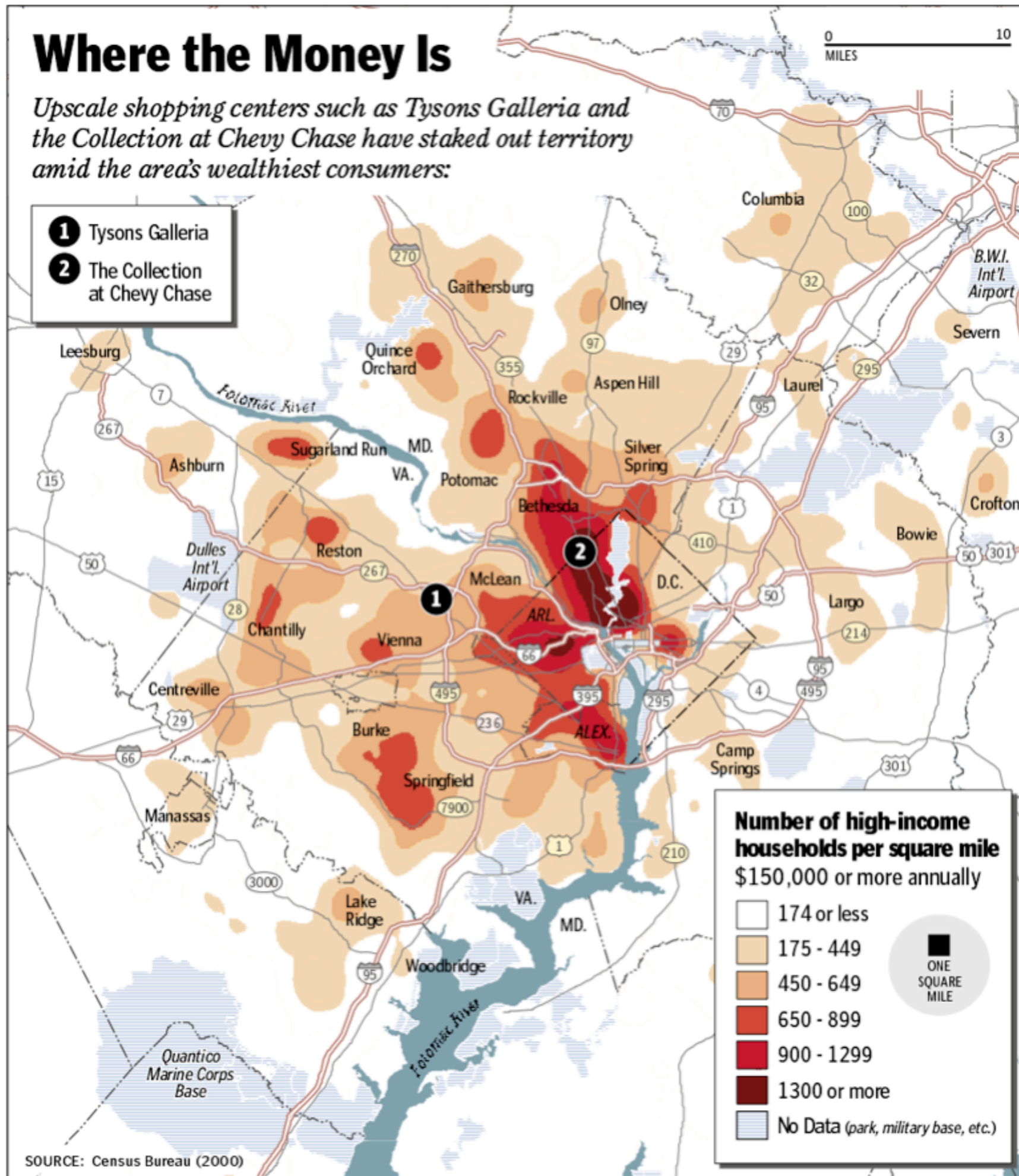
big ideas worth pursuing
stamen desian

Extra slides

Where the Money Is

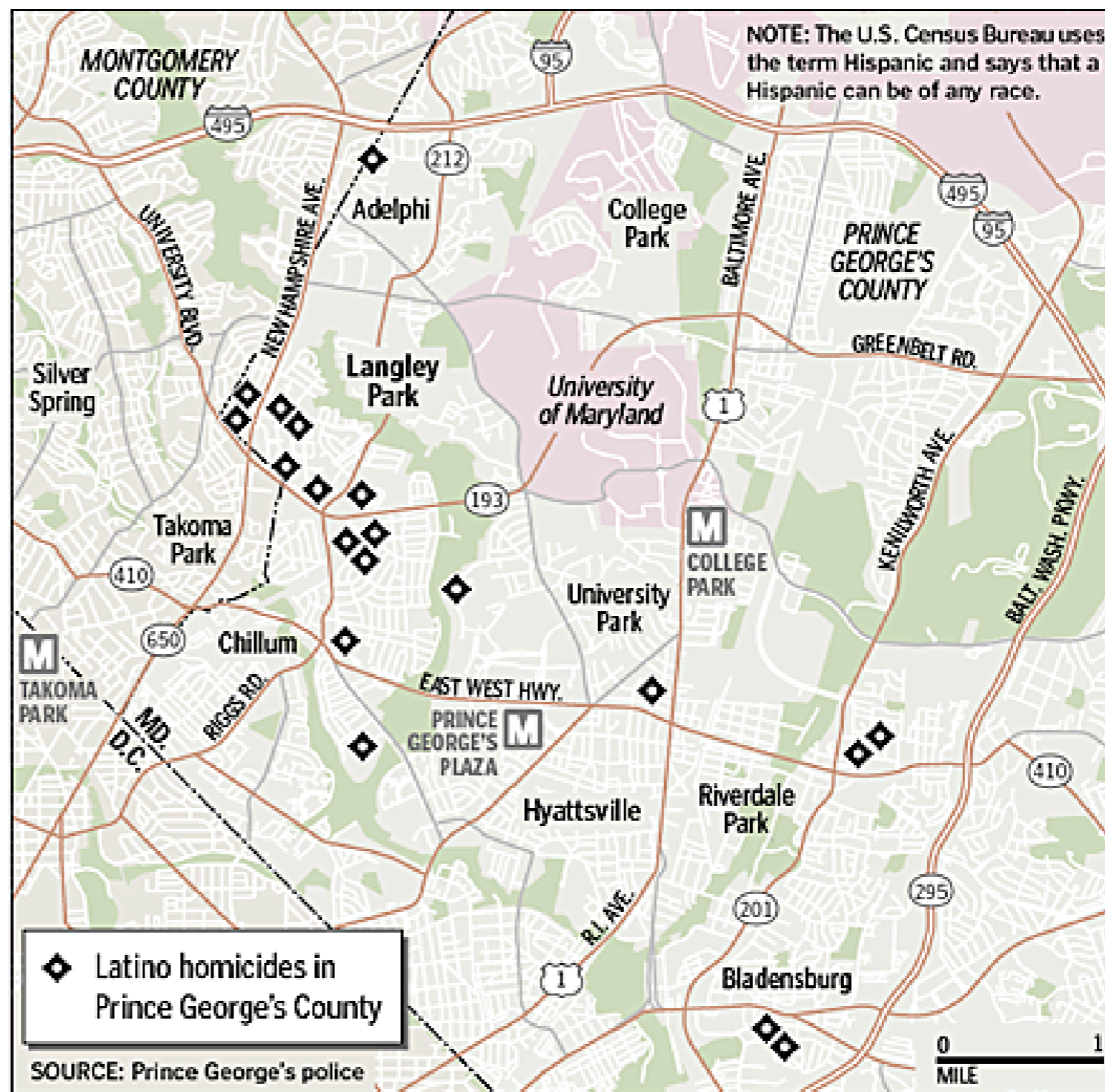
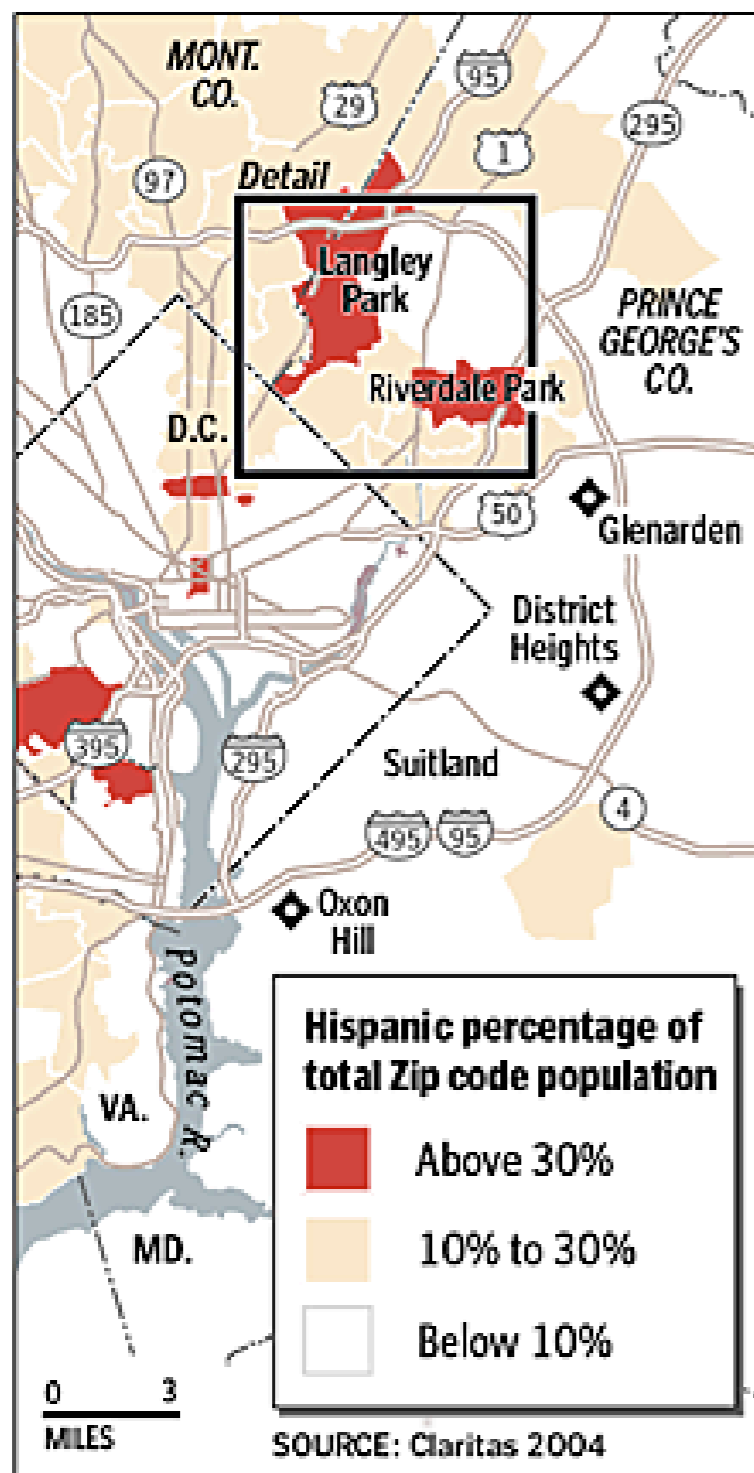
Upscale shopping centers such as Tysons Galleria and the Collection at Chevy Chase have staked out territory amid the area's wealthiest consumers:

- 1** Tysons Galleria
- 2** The Collection at Chevy Chase



The Danger Zone

Homicides have claimed the lives of more Latinos in Prince George's County this year than in all other area jurisdictions combined. Latinos account for a disproportionately large share of victims.



BY NATHANIEL VAUGHN KELSO — THE WASHINGTON POST

New Orleans Moves Forward, Slowly

By CECI CONNOLLY
Washington Post Staff Writer

NEW ORLEANS, Sept. 26 — The Bud Light truck made a delivery on Bourbon Street, Brandon Gilmore picked up diapers at a neighborhood donation center, and Susan Koenig stood in yet another line — this one at Western Union — on Monday as New Orleans again attempted to come back from the dead.

Four weeks to the day after Hurricane Katrina wiped out the city, a smattering of residents, business owners and contractors ventured back in. In 90-degree heat, the pioneers hammered plywood onto shattered windows, hauled refrigerators to the curb and searched in vain for an open gas station.

Only healthy adults — no children, elderly or infirm — were welcome in New Orleans, and only in a few select neighborhoods, according to a memo from Mayor C. Ray Nagin. And anyone returning faced a litany of warnings and advice.

"You are entering the City of New Orleans at your own risk, whether you are a business owner or resident. There are still many health and safety issues," the document begins. The mayor's memo

A Neighborhood Opens

The mayor allowed residents and business owners to return to some areas of New Orleans yesterday. With newly breached levees repaired, engineers pumped out floodwaters from Hurricane Rita.



BY LARIS KARKLIS — THE WASHINGTON POST

to begin reopening the city, Nagin moved forward Monday with a modest effort. The first few allowed back into the city were

way of food, gasoline, banks or medical facilities available.

"This is the grocery store for most people," Barbara Longworth

al Guardsmen distributed bags of ice and cases of water. One grocery store has opened in Algiers, but lines were long and many people

A Weekend of Protests

A coalition of antiwar protesters will rally at the Ellipse at 11 a.m. Saturday, begin marching at 12:30 p.m. and hold a peace festival and concert on the grounds of the Washington Monument. The festival resumes Sunday. Groups also plan protests around the two-day meetings of the World Bank and International Monetary Fund, including a rally at 11:30 a.m. Saturday at Dupont Circle. A number of streets will be affected for these events. Metro will operate on a normal weekend schedule.

More antiwar activities will take place Sunday and Monday.

A coalition of counterprotesters has mobilized in the past two weeks to plan its own series of events, including rallies, a concert, a cross-country caravan and news conferences to support the war.

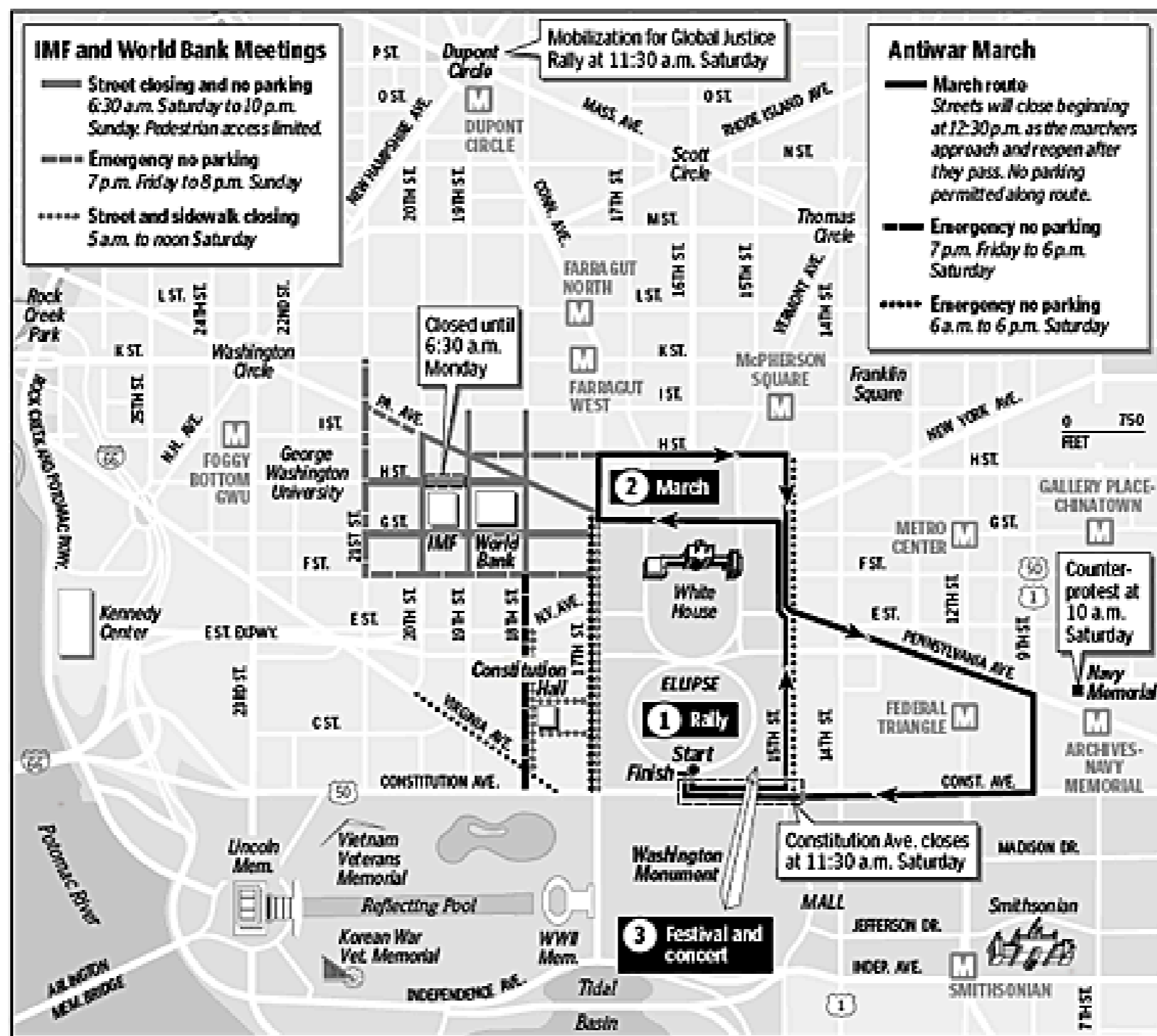
Although the antiwar demonstrators will be speaking mostly with one voice tomorrow, they represent a variety of ideologies and causes.

The two primary organizers of the march, for which planning began in May, are ANSWER and United for Peace and Justice. Both groups have sponsored other major demonstrations against the war in Iraq but also protested U.S. foreign policy in places ranging from Haiti to the Gaza Strip.

Another sponsor is Code Pink, a women's antiwar group that is widely criticized by war supporters for undertaking a humanitarian mission on behalf of refugees from the Iraqi city of Fallujah, an action that some said was helping the Iraqi insurgency.

Other sponsors include Black Voices for Peace, a network of blacks who argue that the war has diverted spending on domestic housing, education and social services; the Muslim American Society Freedom Foundation, which has complained about U.S. law enforcement treatment of Arabs and Muslims in this country; and the Mobilization for Global Justice, which has led protests against the World Bank and IMF in U.S. and European cities that featured masked anarchists, civil disobedience and street theater.

Then there are the organizations that have focused solely on the Iraq



BY NATHANIEL VLAHIN/KELSO — THE WASHINGTON POST

holding meetings all weekend in rally or meeting to express an opinion when they began to donate

centives for on-time performance

Complaints against the company grew so severe that they led to a review in 2002 by the Federal Transit Administration, which concluded that LogistiCare did a poor job of scheduling rides, staff

Alexandria Over Access

By RUBEN CASTANEDA
Washington Post Staff Writer

A large, Alexandria-based developer violated federal law by building 100 apartment complexes nationwide — 13 in the Washington area — that are not accessible to people who have disabilities, according to a federal civil lawsuit filed yesterday in Maryland.

AvalonBay Communities Inc. constructed buildings with apartments that have thresholds that are too high for wheelchair users to enter, bathrooms and kitchens that do not have enough floor space for a person in a wheelchair to maneuver, and light switches at heights inaccessible to someone in a wheelchair, according to the lawsuit, which was filed in U.S. District Court in Greenbelt.

The 23-page lawsuit was filed by private attorneys working on a pro bono basis and the Washington Lawyers' Committee for Civil Rights and Urban Affairs on behalf of the Equal Rights Center. The Lawyers' Committee and the Equal Rights Center are public



The Six Rivers Region

Northwestern California and Southern Oregon

Rivers connect the arid interior with the rainforest coast

The Six Rivers region is a land of dramatic contrasts. Far from urban centers in both Oregon and California, natural resources are an important base for the economy. Salmon run up coastal rivers through forests of redwood and Douglas-fir. Snow melts and engorges small creeks running out of mountainous wilderness areas. Placid rivers run through pastoral landscapes dotted with farms.

What is a watershed?

A watershed is defined as the boundary between two streams. Rain or snow falling on opposite sides of this boundary would run downhill into two different streams. These boundaries run along ridgetops and divide our landscape into the many river basins we enjoy. The areas of land that drain into a river are properly called basins or catchments.

The Six Rivers region is made up of four major river basins that reach from the mountains down to the sea. These rivers are the Smith, Klamath, Mad and Eel. Two additional rivers are big enough to historically be added to the list of major rivers. The Trinity River actually drains into the Klamath (at Weitchpec, CA), and the Van Duzen River drains into the Eel River (near Fortuna, CA).

Watershed Basins

Land Ownership & Management

Streamflow Monthly Average

Temperature January Minimum

Precipitation Annual Average

Seismic Activity 1970-2000

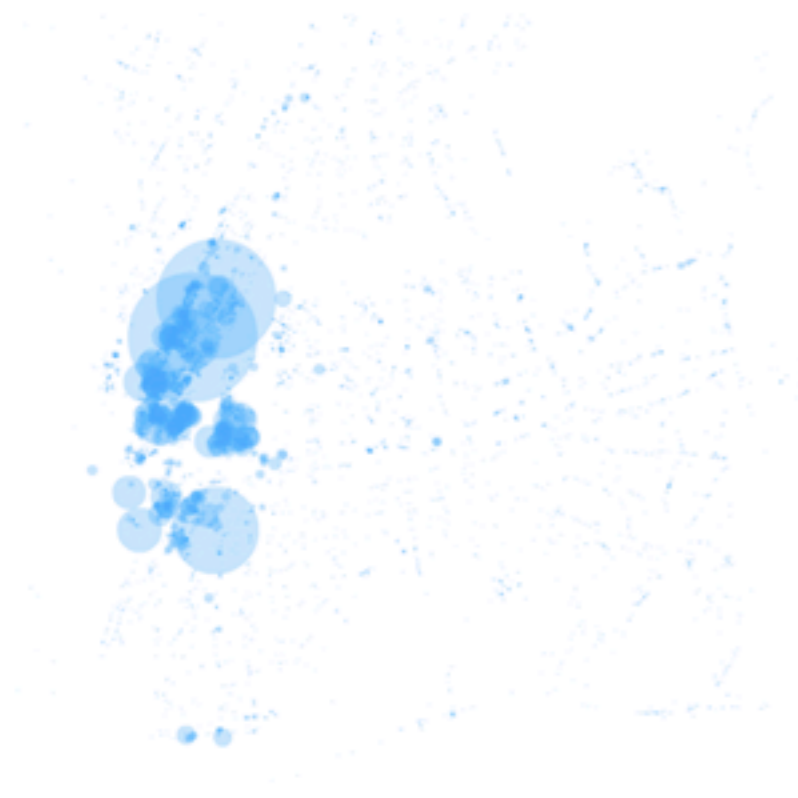
Seismic Activity 1970-2000

Geography: Araya & Kelso, 2002. HSI Cartographic Institute.



Nathaniel V. KELSO

Social archipelago // Comparing metros // urbagram



NYC



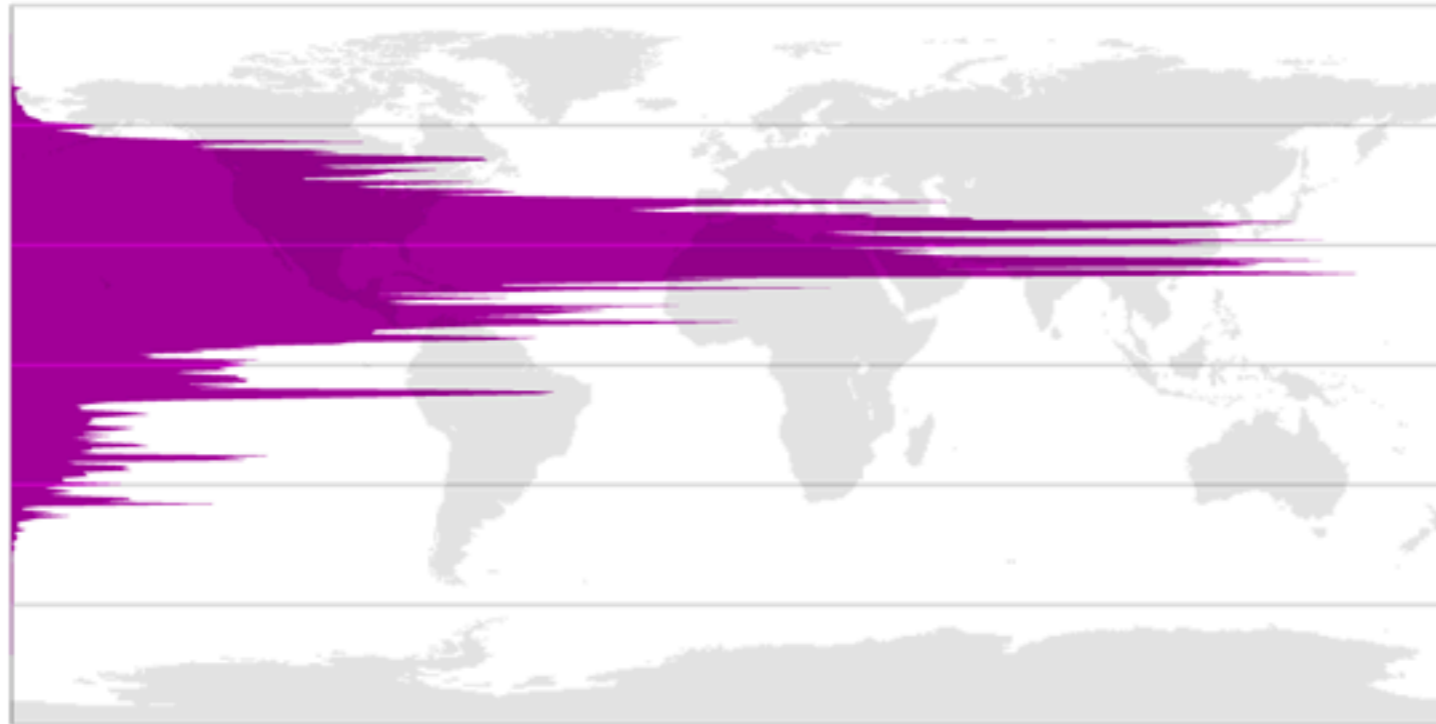
LDN



PAR

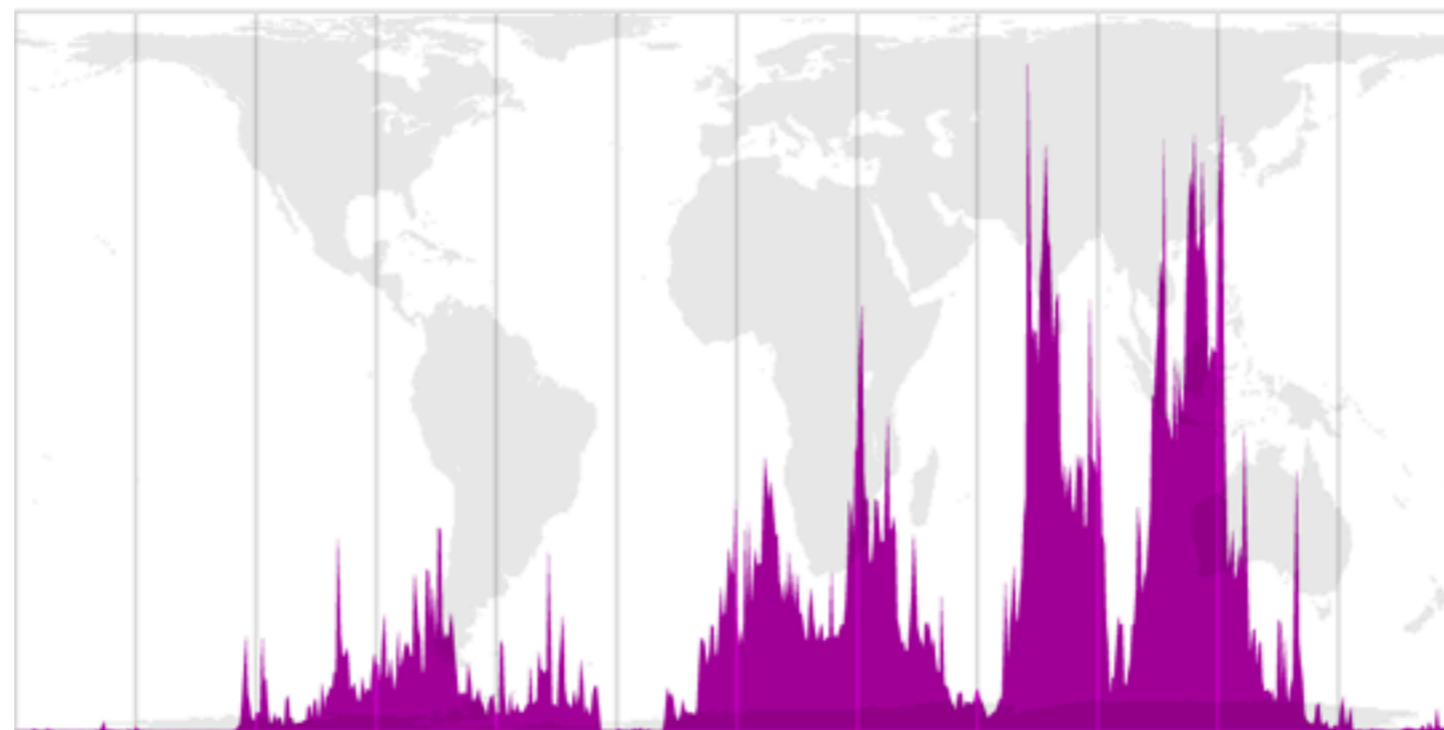
The World's Population in 2000, by Latitude

Bill Rankin



(horizontal axis shows the sum of all population at each degree of latitude)

The World's Population in 2000, by Longitude



180° 120°W 60°W 0° 60°E 120°E 180°

(vertical axis shows the sum of all population at each degree of longitude)

Share of employment in services and trade

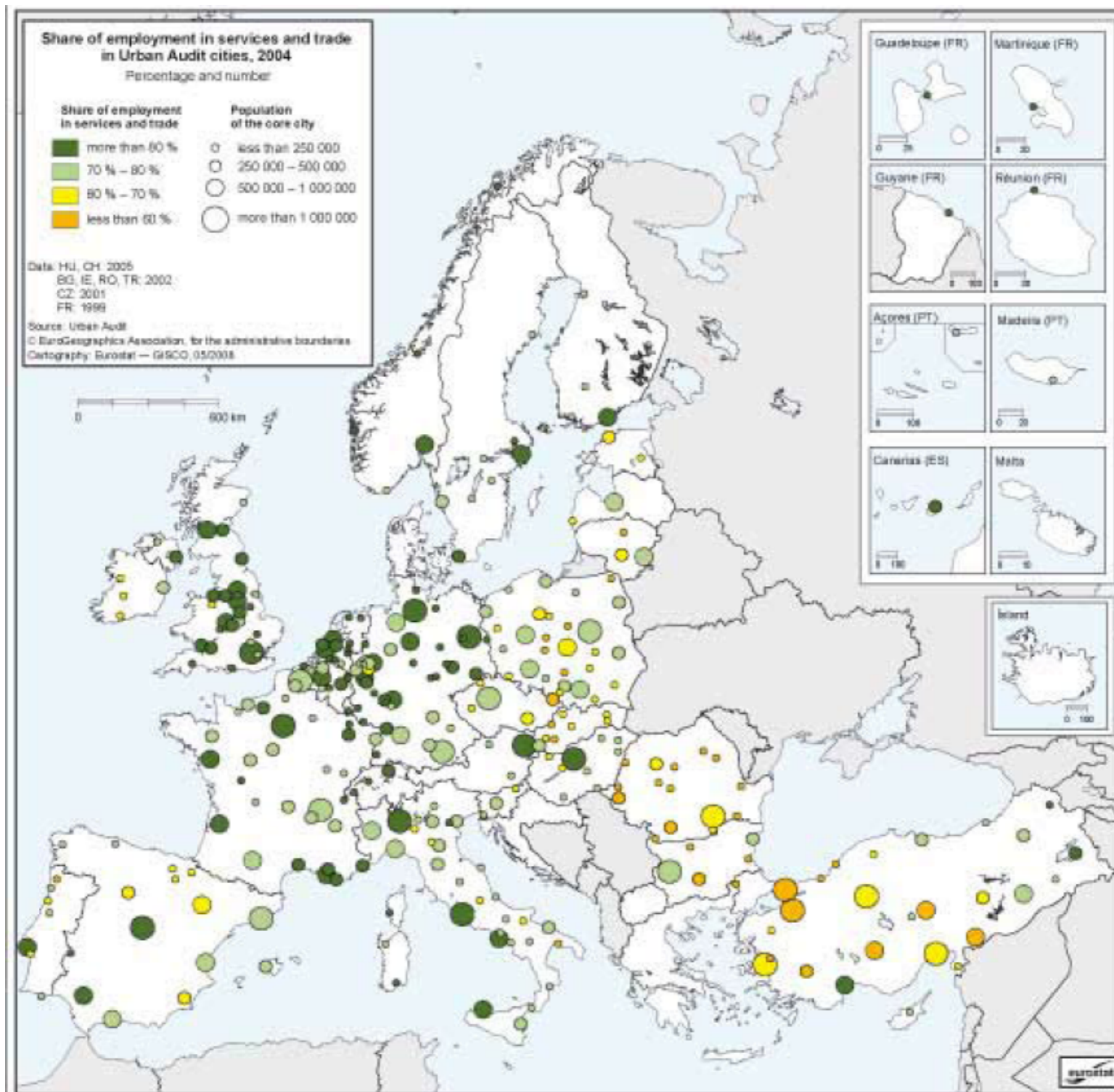
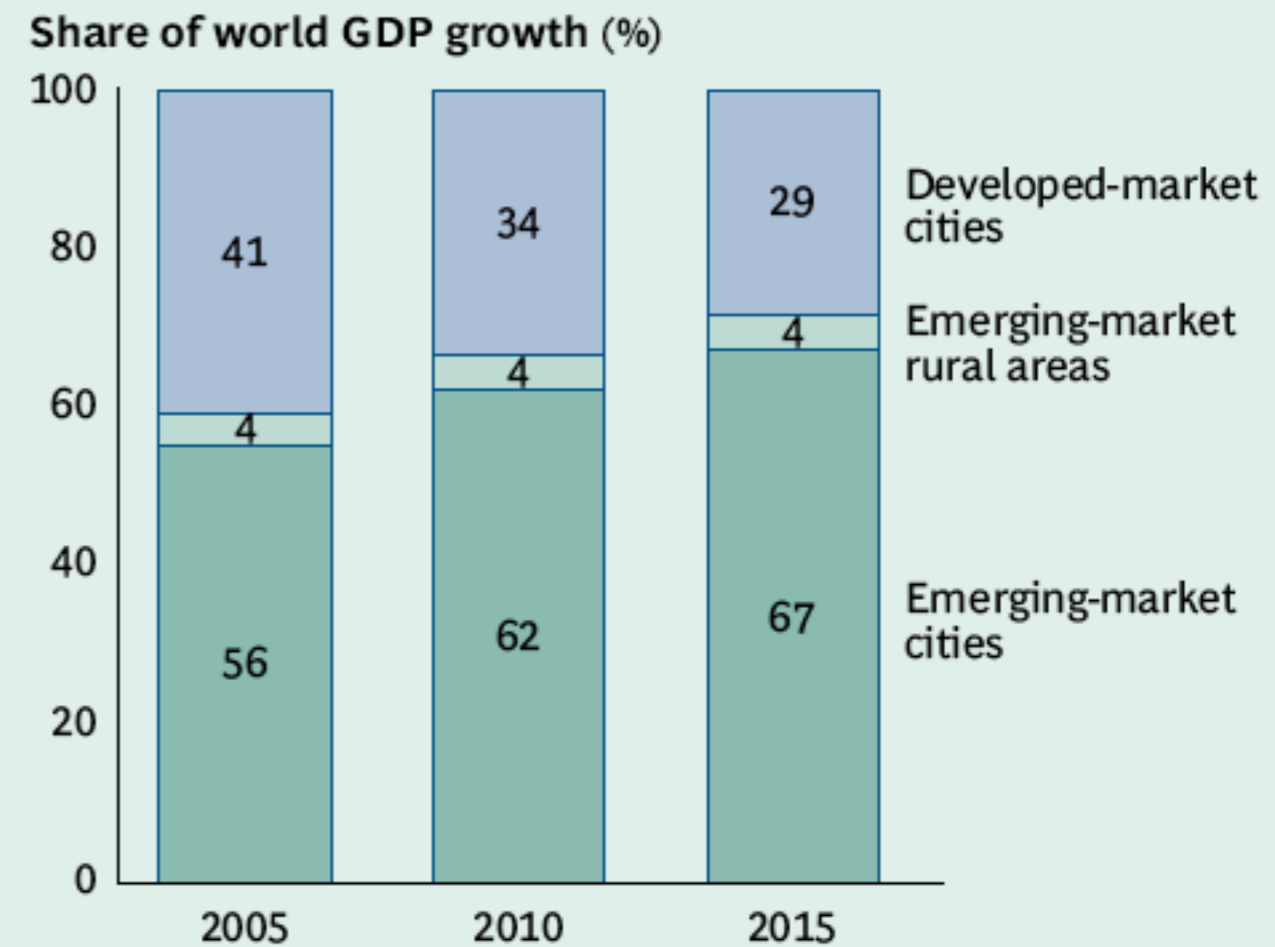
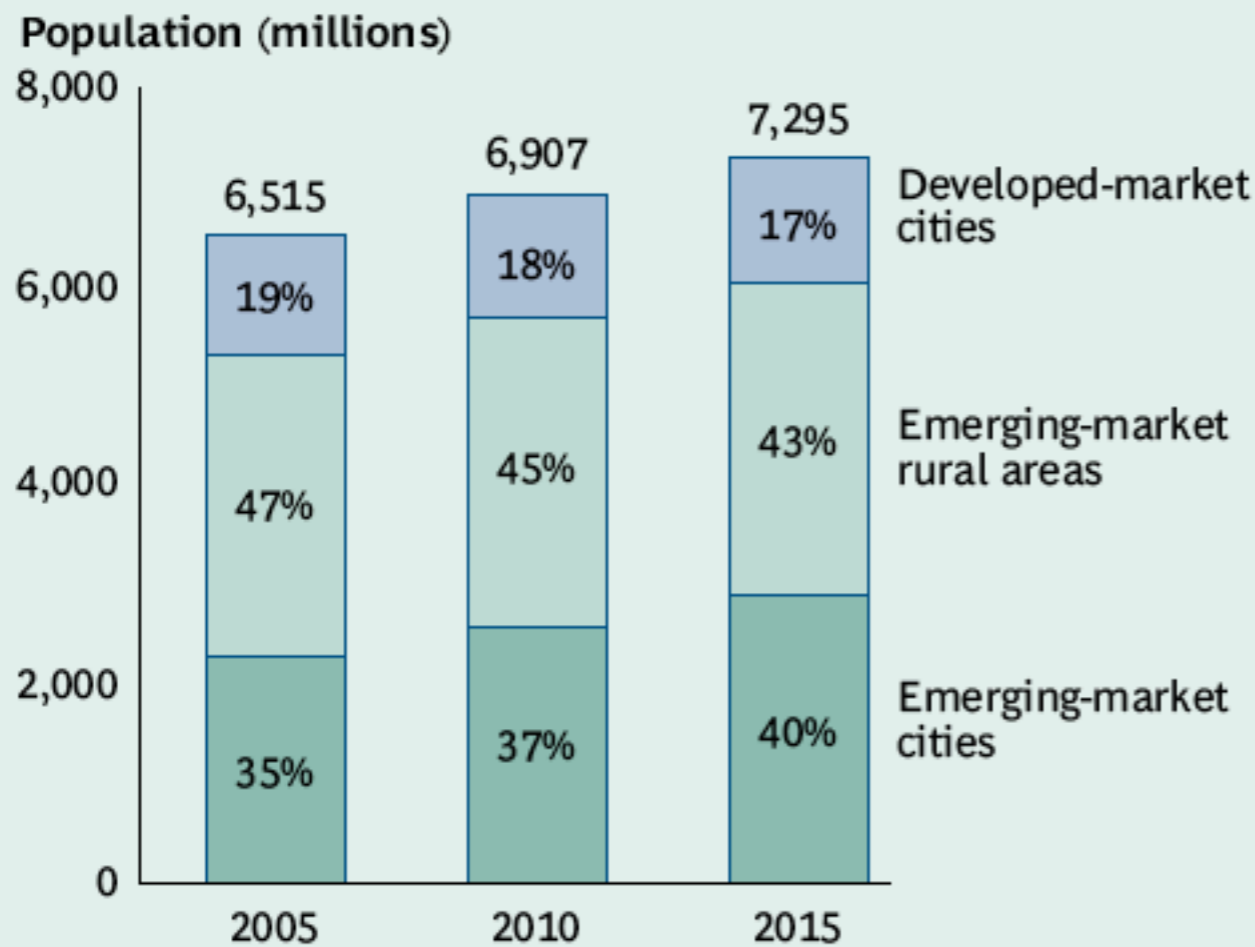


Exhibit 2. Emerging-Market Cities Will Play an Increasingly Large Role in the Global Economy

More than one-third of today's world population resides in emerging-market cities...

...driving more than 60 percent of world GDP growth



Sources: United Nations, *World Urbanization Prospects: The 2009 Revision*; Economist Intelligence Unit; BCG analysis.

Note: Rural GDP is the agricultural portion of GDP; city GDP is nonagricultural GDP. Some figures do not add up to 100 because of rounding.

World map of touristyness // BlueMoon.ee

