

Santa Fe

82,927

Population

52.3 mi<sup>2</sup>

Area

1,584 persons/mi<sup>2</sup>

Population Density

\$51,572

Median Household Income

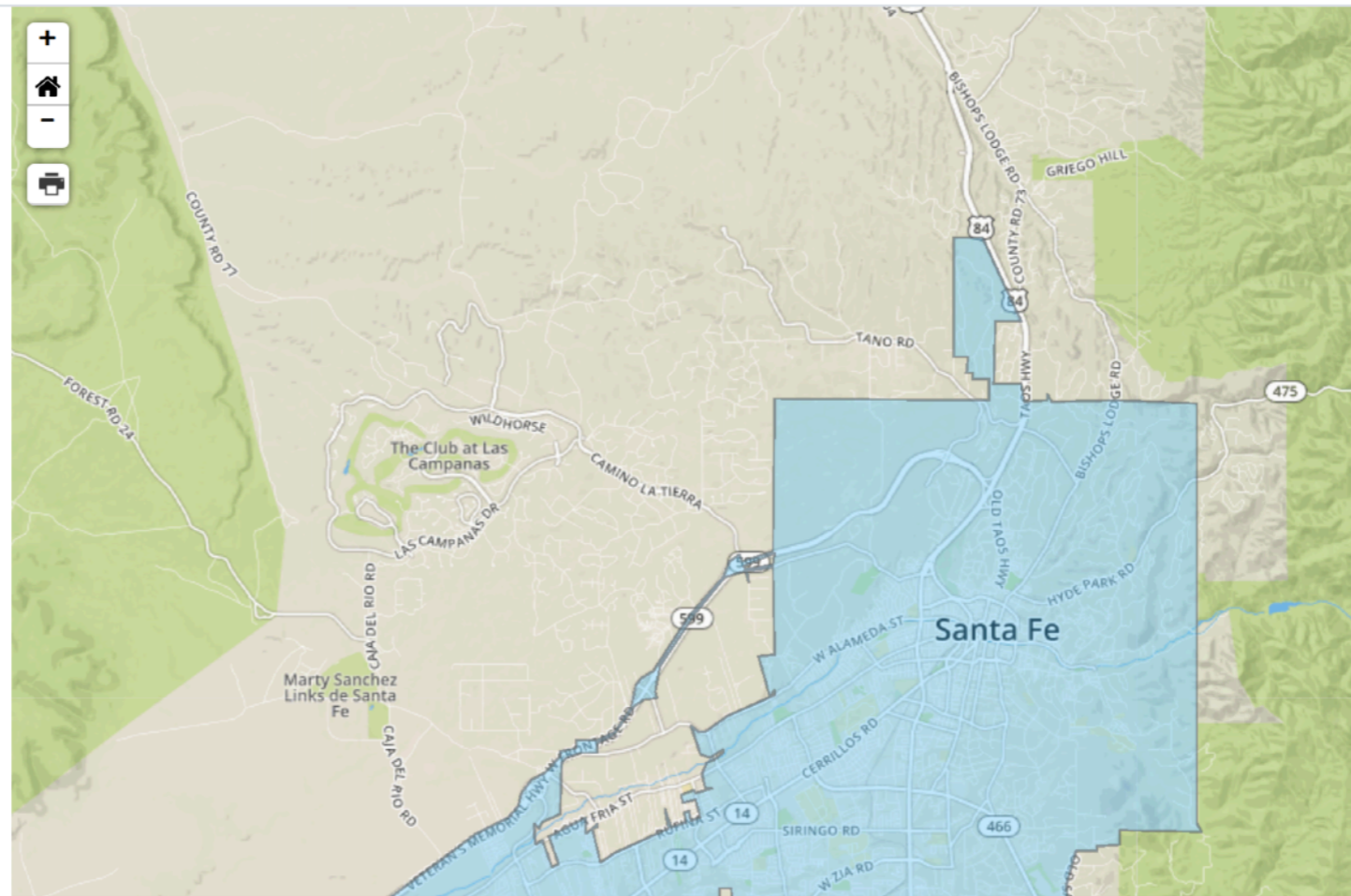
18.20%

Household Poverty Rate

[Eco Regions](#)

6.2 Western Cordillera

10.1 Cold Deserts



PROJECT

**BROADBAND MAPPING**

For anyone who knows that her or his broadband options are limited and wants to make their situation better.

DATE 07/02/2018

Client ALL OF THE ABOVE

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# Hypotheses

- \* Understanding your local situation is the jumping-off point for improving Internet connectivity
- \* The platform provides a resource for discovering the “right” data views
- \* Empowering local/state planners and activists will help to coverage in underserved communities
- \* By providing the “data plumbing,” users can learn about their situation without mastering complex data manipulations

# Goals

- \* Work with places where we live: named places and towns, states, counties, school and Congressional districts, Tribal nations
  - \* *Nobody lives in a Metropolitan Statistical Area*
  - \* *Nobody cares about the average download speed in the USA*
- \* Fuse multiple data sources so that broadband planners can understand their local situation
  - \* Provide multiple viewpoints
  - \* Combine data for depth of vision
- \* Achieve best and highest use of US Government Open Data, *as currently delivered*
  - \* The data is notorious
  - \* Additional data, like the speed test data adds important dimensions
- \* Ensure better understanding with background information

# Adoption

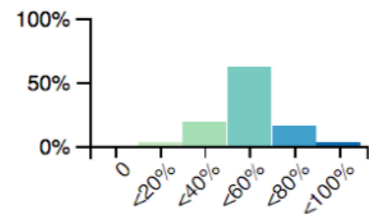
Speed: 10 down/1 up (from FCC analysis)

Geography: Census tract

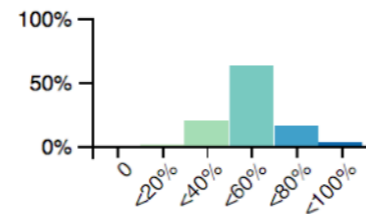
Adoption data is based on the December 2016 analysis of FCC 477 data.

[More...](#)

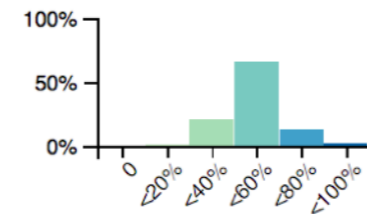
Tracts (%)



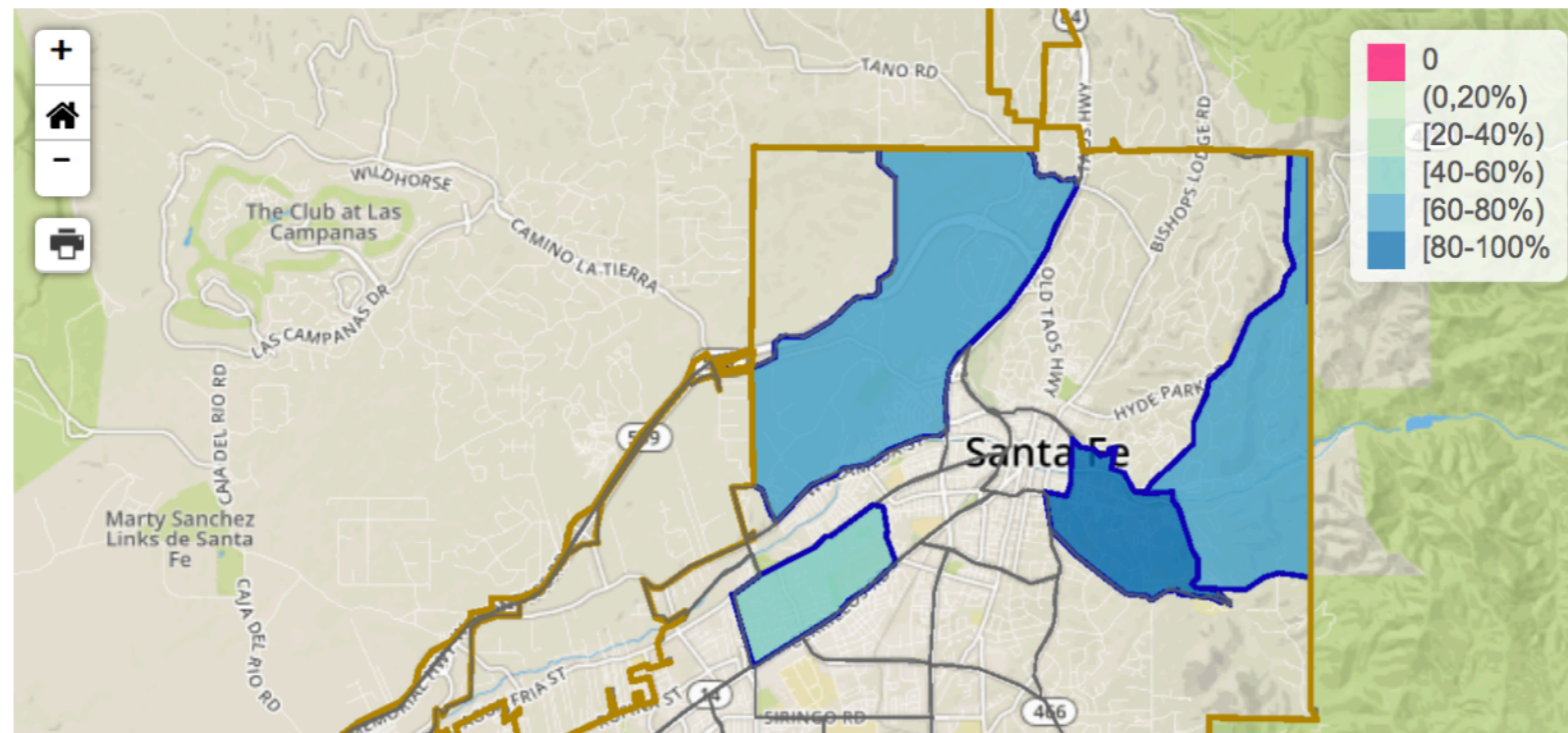
Households (%)




Population\* (%)



Households in Poverty



**DATA VIEWS: MAPS WITH FUSION**

▲  ▼ Santa Fe, NM

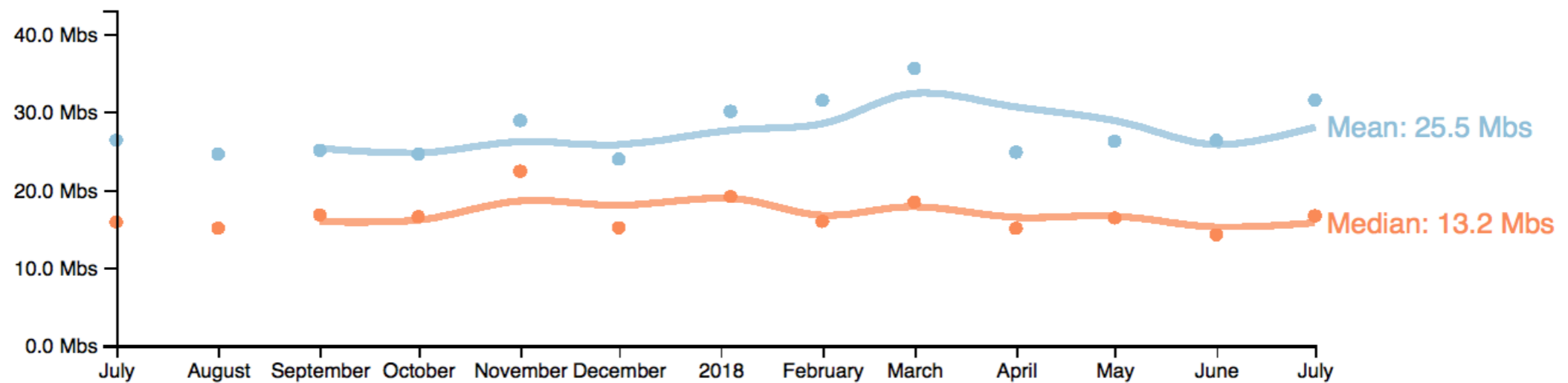
July 1, 2017 - July 25, 2018

## Speed test data from the Measurement Lab

Speed test data is based on [M-Lab speed test data](#).

The data is shown for both average (mean) and median values of the speed test. The dots show the actual values, while the line shows a 3 time-period rolling average.

Click on a dot to see the underlying data, or choose  to see more details.



## DATA VIEWS: SIMPLIFIED &

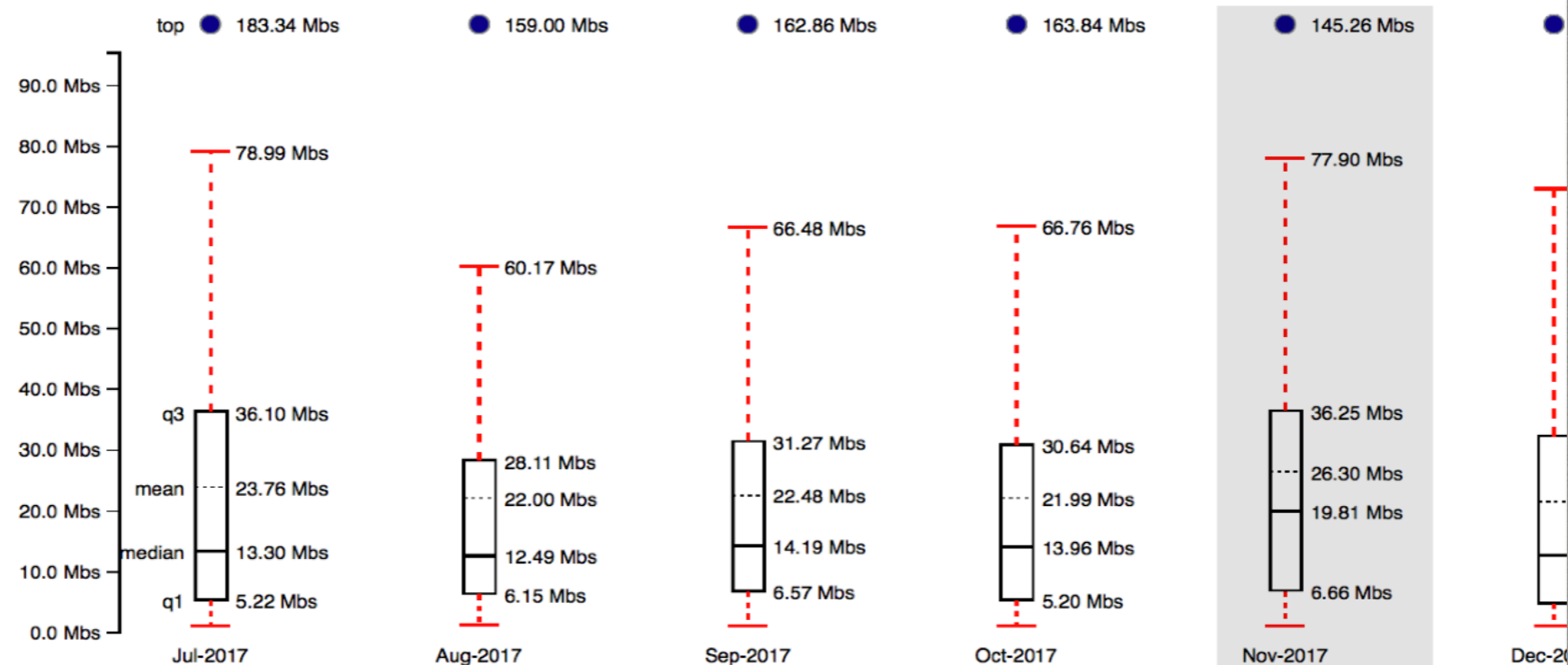
# Speed test data from the Measurement Lab

Speed test data is based on [M-Lab speed test data](#).

The data is shown in a "box and whiskers" chart. The chart contains a *lot* of information. Here is a [refresher](#) on how to get the most from the display.

**TLDR:** Look at the median values. Half of all the tests are lower than that speed. Then the look at the trend for the maximum outlier and the highest ever speeds.

Click on a box to see the underlying data, or choose **Mean/Median** to see a simpler view.



## Data for Nov-2017

Total runs	232
Fastest observed speed:	145.26 Mbs
Fastest outlier	77.90 Mbs



Santa Fe

Views

4G LTE

Block



# Cellular Broadband Providers for Santa Fe

Geography: Census Block

Areas having less than 10.0% area covered are not counted.

Provider data is based on the

**Description** [FCC 477 Wireless Data, Actual Area Methodology](#)  
**Date** [December 2016 , Version 1](#)  
**Link** <https://www.fcc.gov/mobile-deployment-form-477-data>

[More...](#)[Download CSV](#)

Provider	Blocks	(%)
<b>Santa Fe city</b>		
Choice_Wireless	1946	100.0%
T_Mobile	1946	100.0%

## DATA VIEWS: TABULAR



# M-Lab Speed Data

// [M-Lab](#) is a consortium of research, industry and public-interest partners dedicated to:

- Providing an open, verifiable measurement platform for global network performance
- Hosting the largest open Internet performance dataset on the planet
- Creating visualizations and tools to help people make sense of Internet performance

Measurement Lab records and analyzes over 242 million user generated internet speed tests from over 87,000 cities.

You can explore detailed reports of a location you're interested in by visiting the [M-Lab Visualizations Page](#).

When you look up M-Lab data, the system queries the latest M-Lab results from the Google Cloud.

## Speed Tests and Your own Broadband

One of the best ways you can help everyone to understand your broadband situation is to regularly run an [M-Lab Speedtest](#). This can be as simple as running a test from your [browser](#). The nice thing about M-Lab is that your results are added to a global database of speed tests, so that tools like this one can share the information. What data is collected? See the [M-Lab tests page](#).

# Data Sources

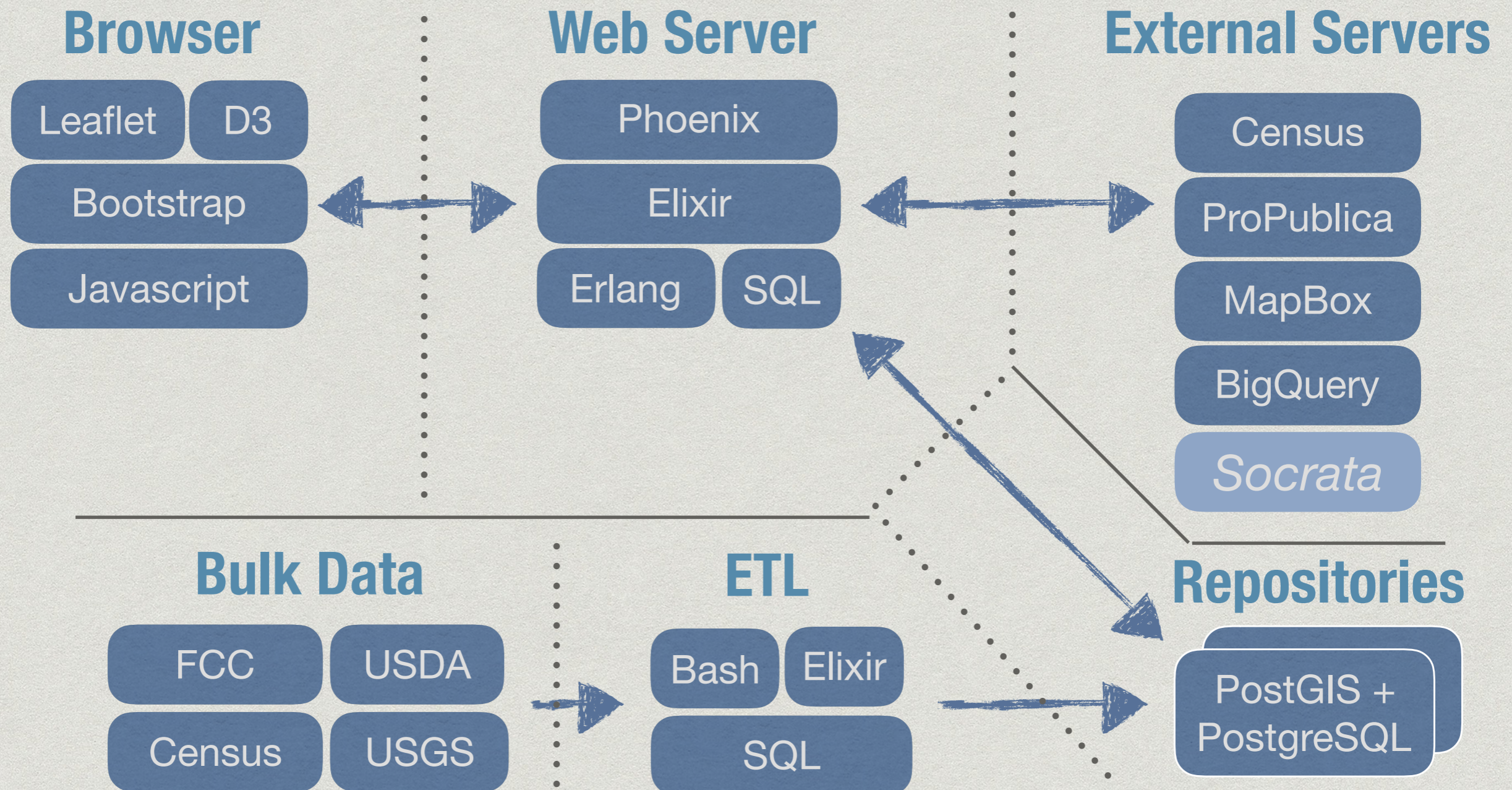
## Deployed

- \* FCC Form 477 Fixed-Line Data
  - \* Deployment
  - \* Adoption
- \* FCC Form 477 Wireless Data
  - \* Estimated coverage
- \* US Census ACS 5-year data
- \* EPA (Eco-Regions)
- \* USDA (County Typology)
- \* **Measurement Lab Speed Test**
- \* ProPublica Congress API
- \* MapBox, OpenStreetMap
- \* US Census Tiger Line Shape Files

## Pending

- \* State legislative districts
- \* FCC 477 Trends across Time
- \* FCC Form 477 Wireless Data
  - \* *actual coverage boundaries*
- \* NTIA Current Population Survey (state)
- \* US Census SAIPE (county, school districts)
- \* Community Anchor institutions
  - \* USAC Schools, Higher Ed
  - \* IMLS Libraries
  - \* IMLS Museums
- \* Google Open Civic Data
- \* Crowdsourced and location specific data
- \* **Pricing data?**
- \* *What else do you suggest?*

# Architectural Components





Santa Fe, NM

Views

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### Eco Regions

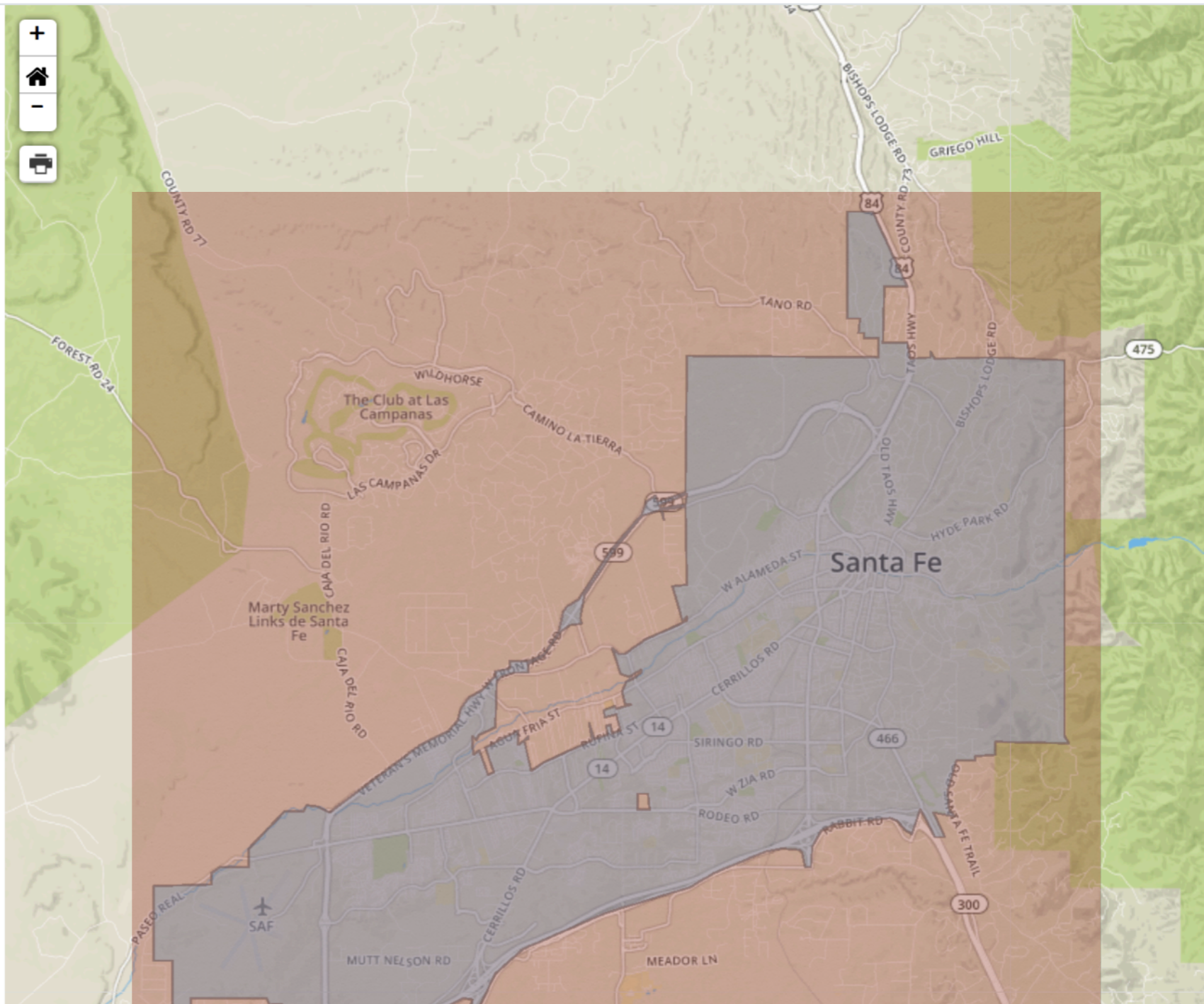
6.2 Western Cordillera

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### County Info

Santa Fe County

Metro:Federal/State Government



**CAN WE DO BETTER THAN BOUNDING BOXES?**

# What are your experiences?

- \* What are the most effective presentations?
- \* How can we best show complex details while still performing most hard computation on the Google side?

# Next Steps

- \* Deliver a baseline for selected teams to gather feedback
  - \* Hosting (soon!) at <https://i3cex.internet-is-infrastructure.org>
  - \* Use survey tool & web tools to gather feedback
  - \* Roll out mailing list
  - \* Email: [bob@internet-is-infrastructure.org](mailto:bob@internet-is-infrastructure.org)
  - \* Props to Southwest Cyberport for hosting!