

# Mapping Broadband in PA: An Overview

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PennState



SHLB

SCHOOLS, HEALTH & LIBRARIES  
BROADBAND COALITION



INSTITUTE FOR  
Local Self-Reliance

# HELLO!

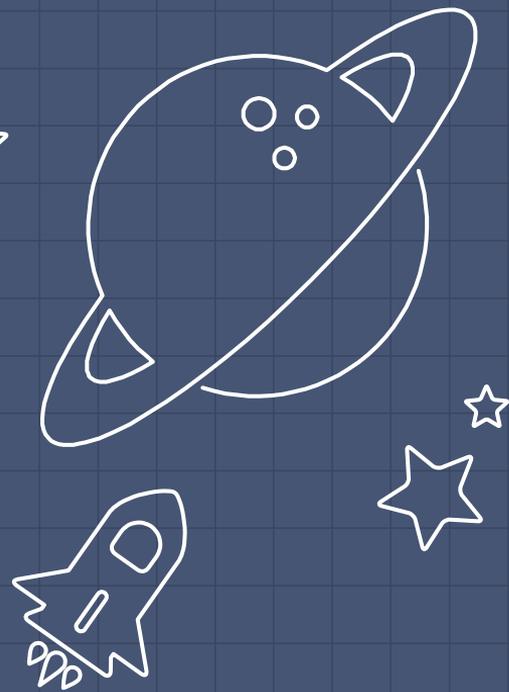
**I am Sascha Meinrath**

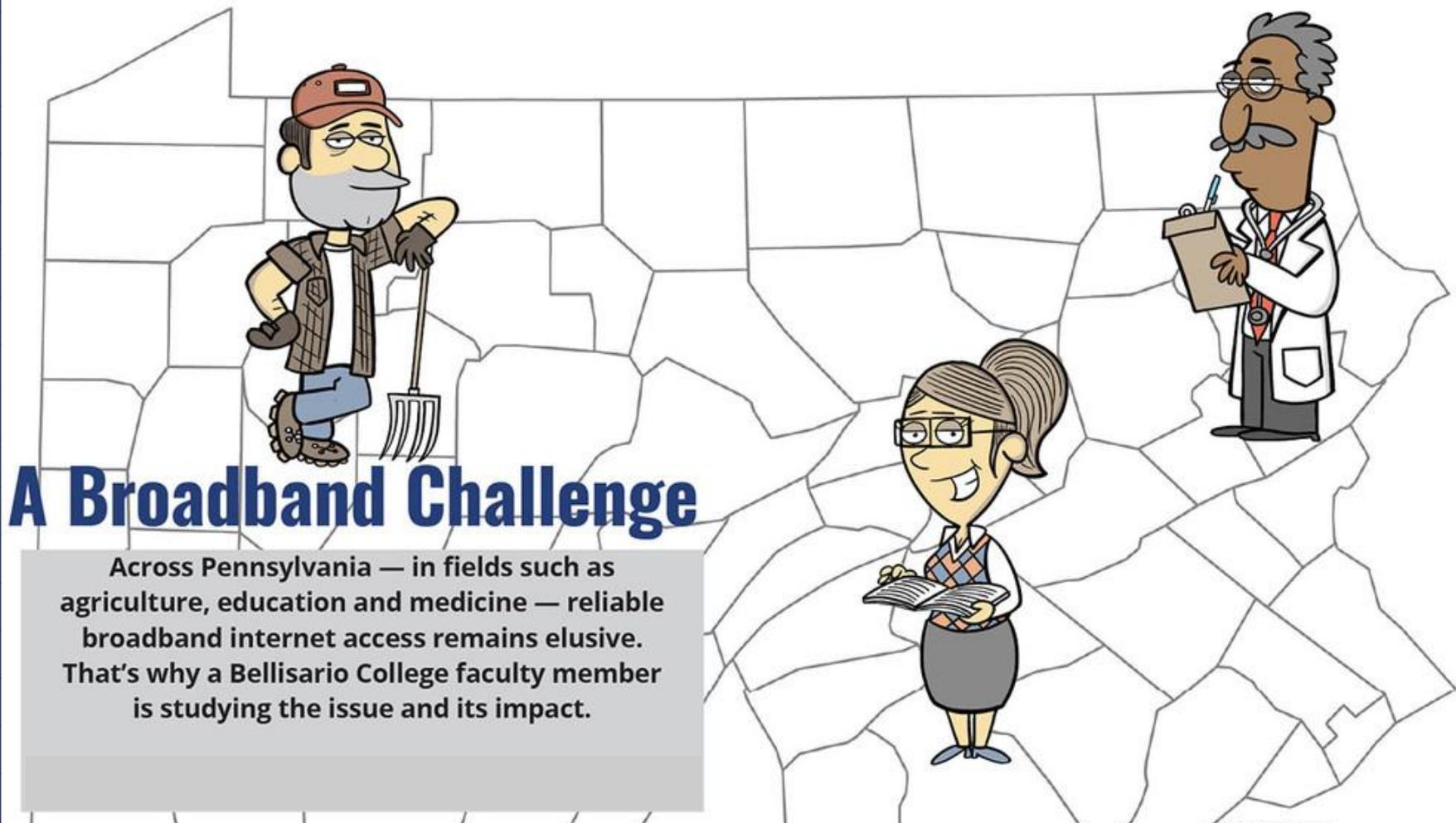
...and I also climb on roofs.

...sometimes in a suit.



# Broadband Mapping

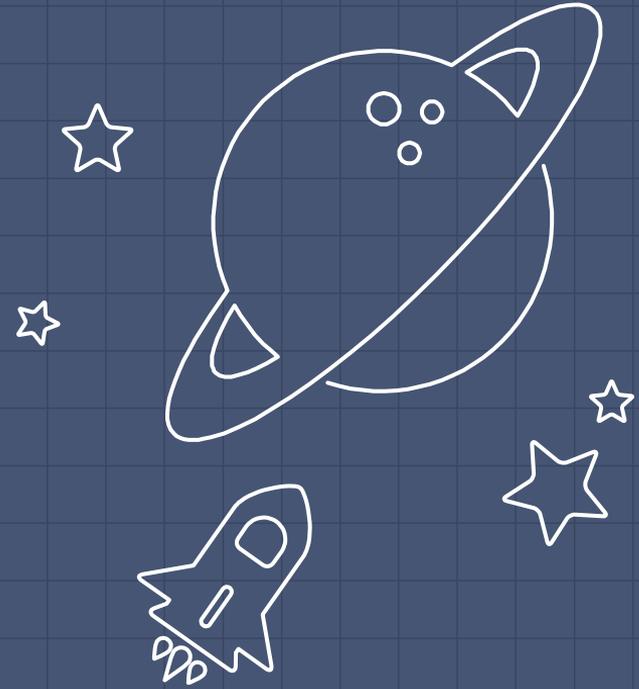




## A Broadband Challenge

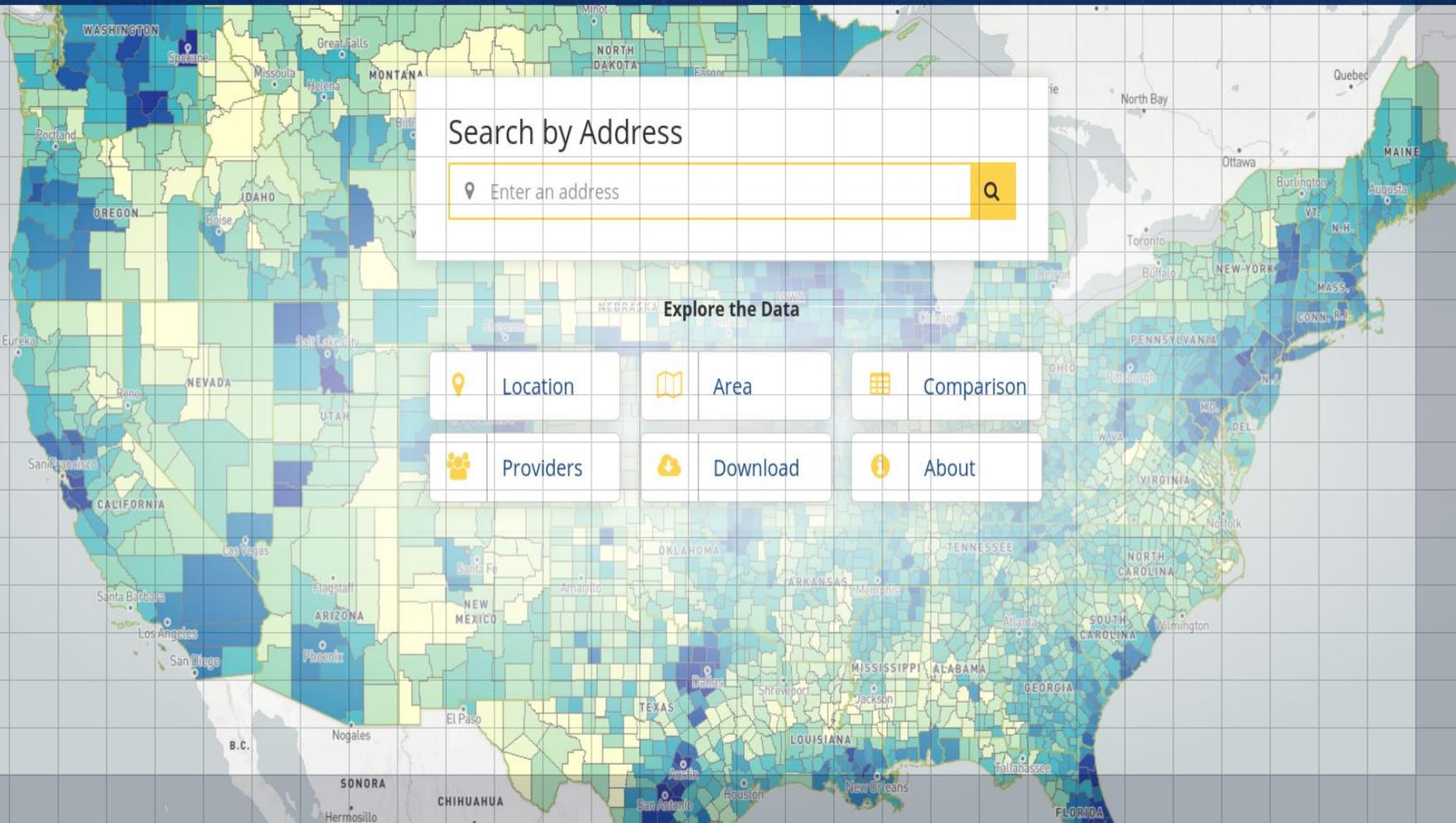
Across Pennsylvania — in fields such as agriculture, education and medicine — reliable broadband internet access remains elusive. That's why a Bellisario College faculty member is studying the issue and its impact.

Back in  
the Day...



CONNECTING  
AMERICA:  
THE NATIONAL  
BROADBAND PLAN

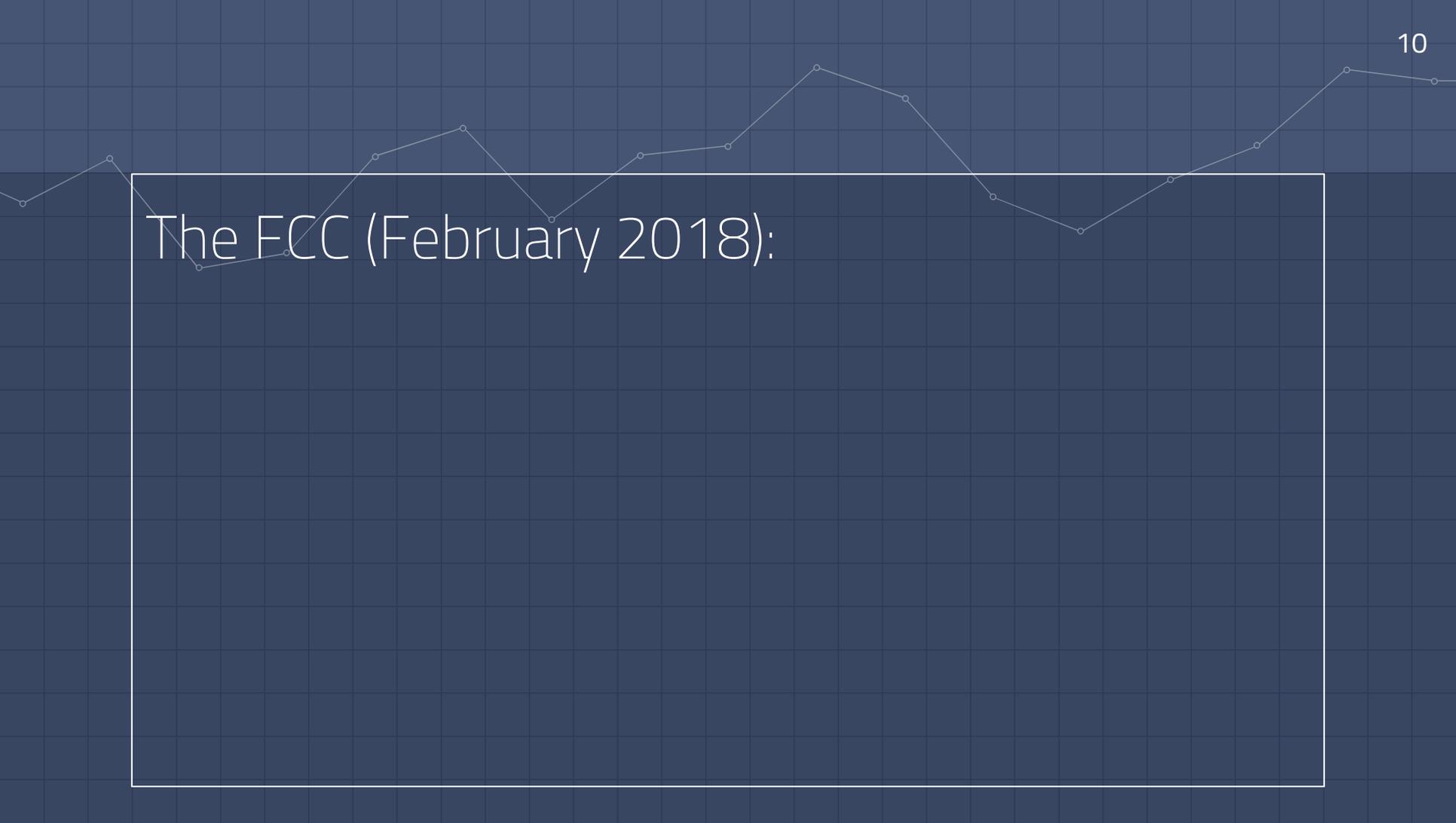
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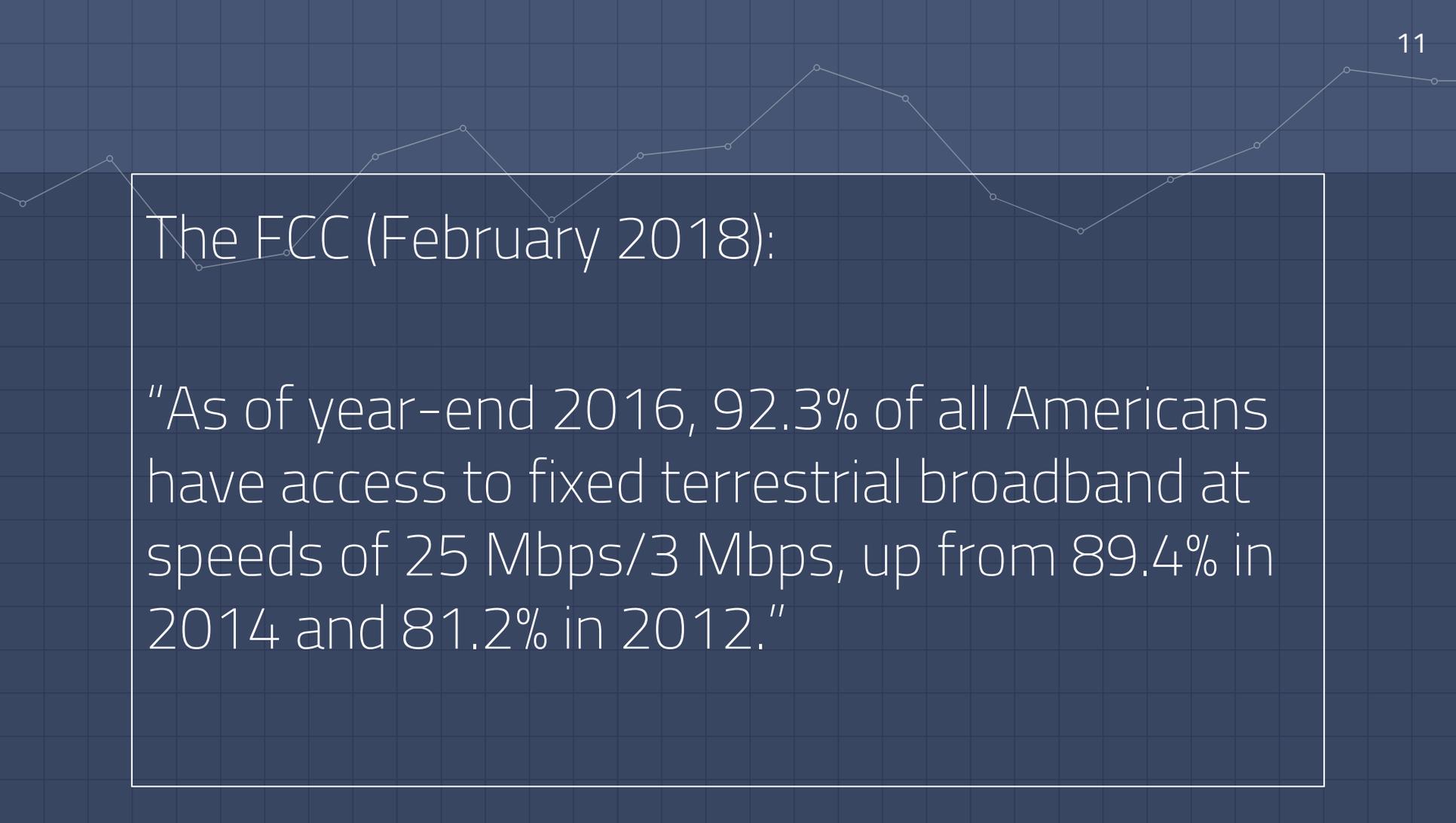
### Search by Address

### Explore the Data

- Location
- Area
- Comparison
- Providers
- Download
- About

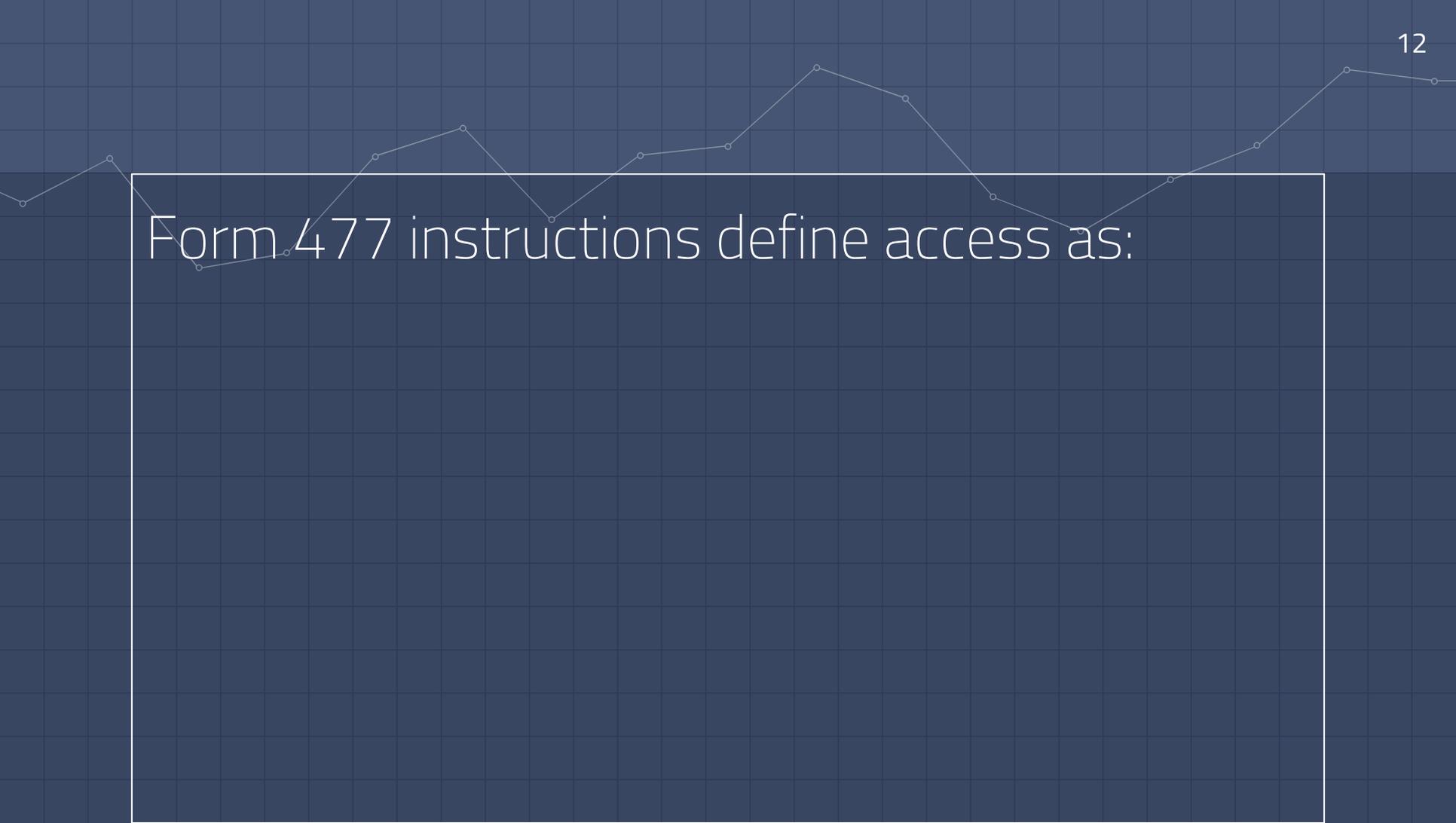


The FCC (February 2018):



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"As of year-end 2016, 92.3% of all Americans have access to fixed terrestrial broadband at speeds of 25 Mbps/3 Mbps, up from 89.4% in 2014 and 81.2% in 2012."



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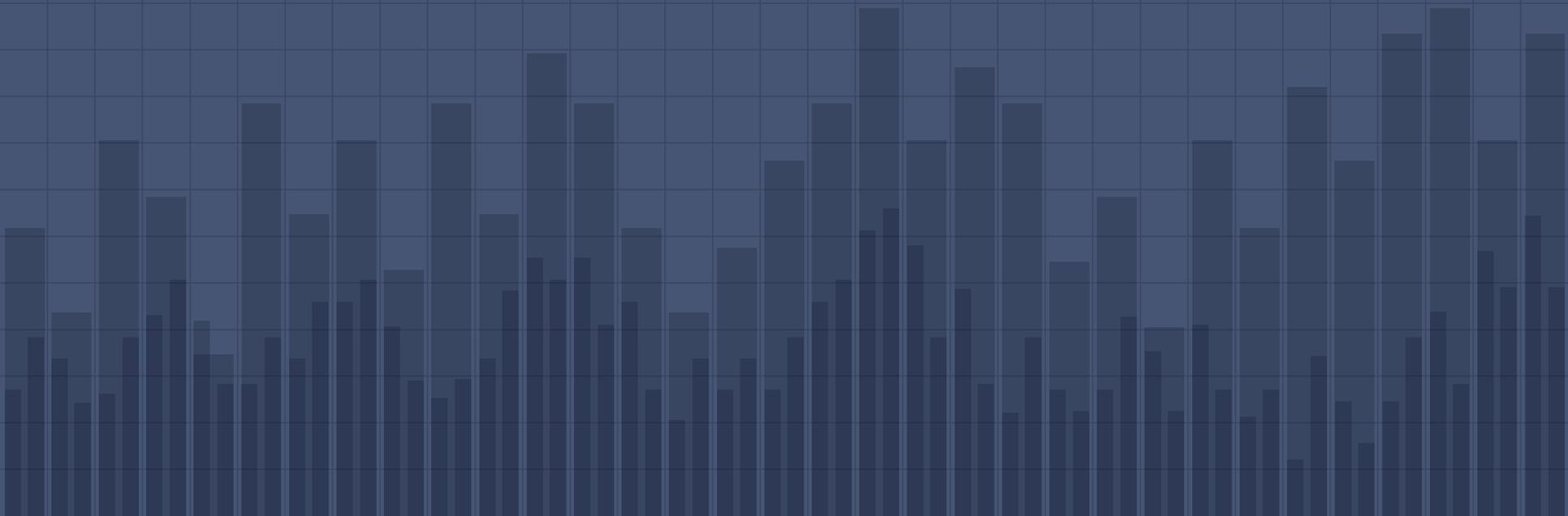
"available in a census block if the provider does, or could, within a service interval that is typical for that type of connection—that is, without an extraordinary commitment of resources—provision two-way data transmission to and from the Internet."

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NDT (Network Diagnostic Tool)

Test your connection speed and receive a sophisticated diagnosis of problems limiting performance.

[▶ Go to NDT \(Network Diagnostic Tool\)](#)



# PA Mapping Methodology (Simplified):



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**FCC Form 477**



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Data on *advertised* broadband speeds and availability.



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## M-Lab



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Open Source Tools  
Open Methodology



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Open Methodology  
Open Data

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## □ Output:



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Data on *actual* broadband speeds and availability.

## **Open Tech**

Open Source Tools  
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Open Data

- Output: state and local/regional maps documenting areas of agreement and discrepancy.

# OUR GOAL?



# 1,000,000 Tests



# 1,000,000 Tests

(That's a whole lot of verification.)



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\* These raw numbers are prior to methodological culling  
**(and may be greatly reduced in final sample size).**

How?

#broadbandtest

# Test Your Broadband Speed

Run the test to measure the actual speed of your Internet connection. This platform is run by the scientific community. We make all test results publicly available via the [MeasurementLab.net](#) website to help promote Internet research. M-Lab's Network Diagnostic Tool collects a number of measures of different facets of your Internet connection. The information published includes each device's IP address, but does not include personal identifying information about you as an Internet user.

[START HERE](#)



broadband speed test



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About 2,740,000 results (0.36 seconds)

## Internet speed test



Check your internet speed in under 30 seconds. The speed test usually transfers less than **40 MB of data**, but may transfer more data on fast connections.

To run the test, you'll be connected to [Measurement Lab](#) (M-Lab) and your IP address will be shared with them. M-Lab conducts the test and publishes all test results to promote internet research. Published information includes each device's IP address, but doesn't include information about you as an internet user.

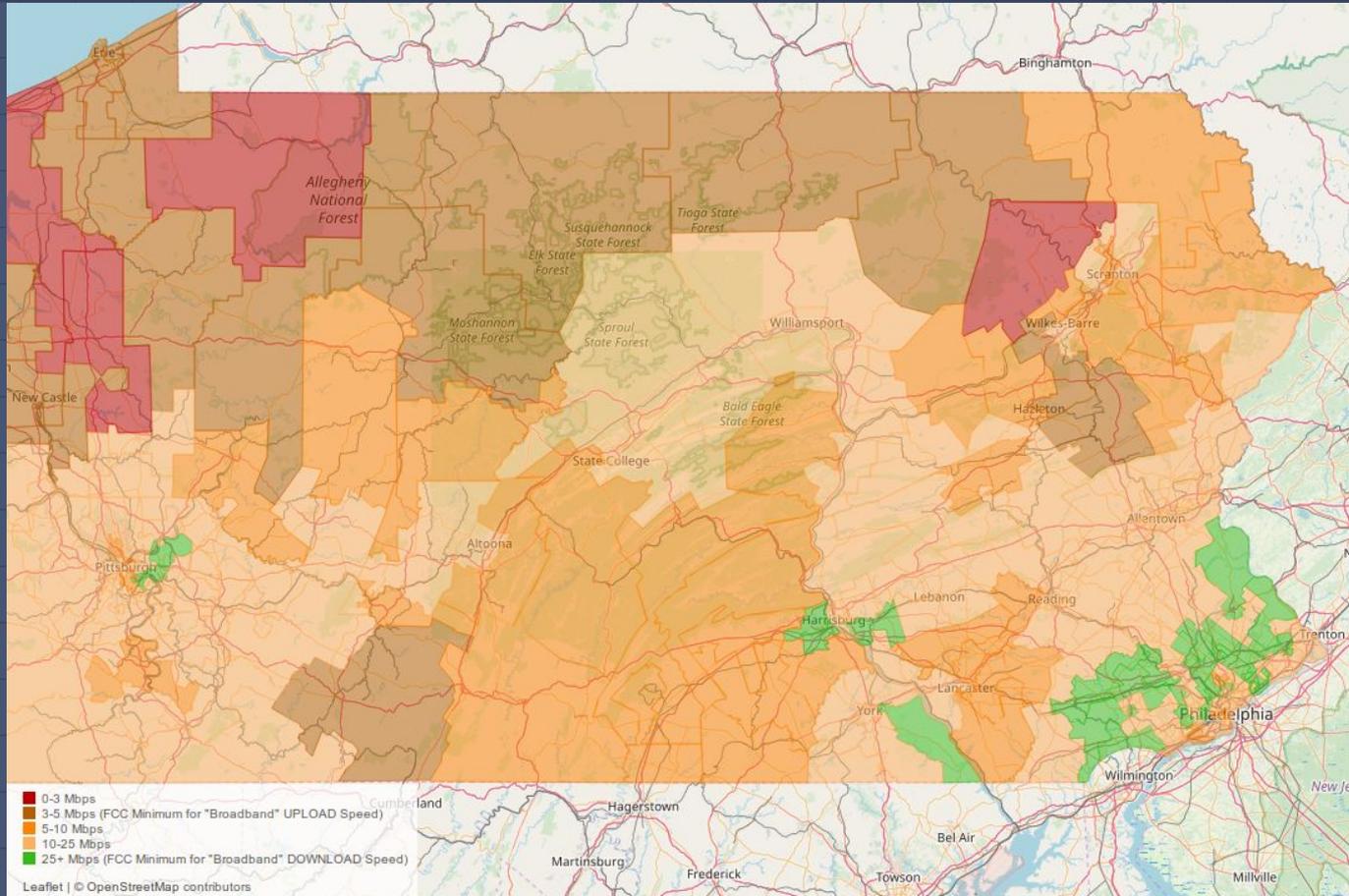
[About](#)

[RUN SPEED TEST](#)

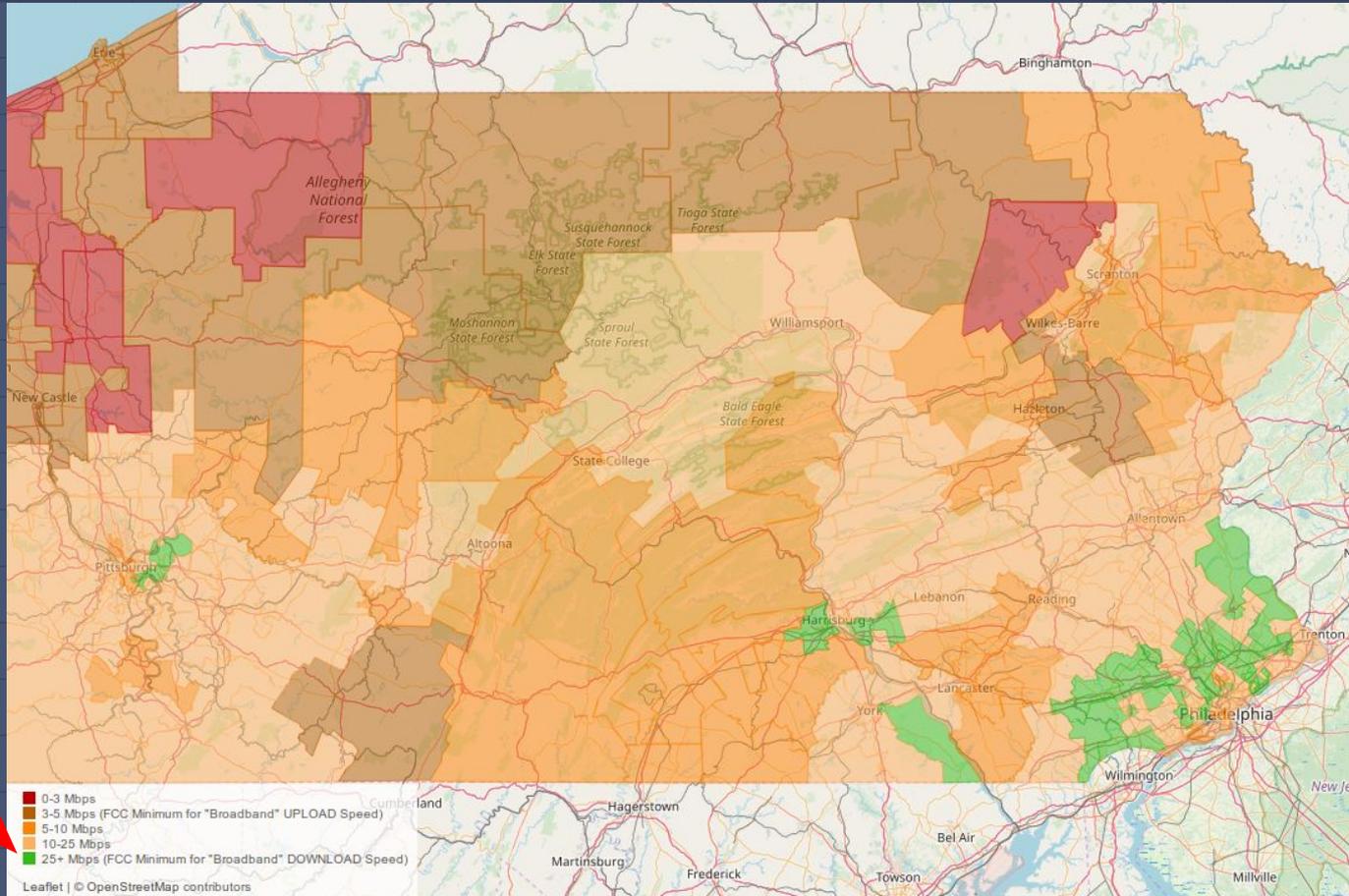
[Feedback](#)

# The (Initial) Results:

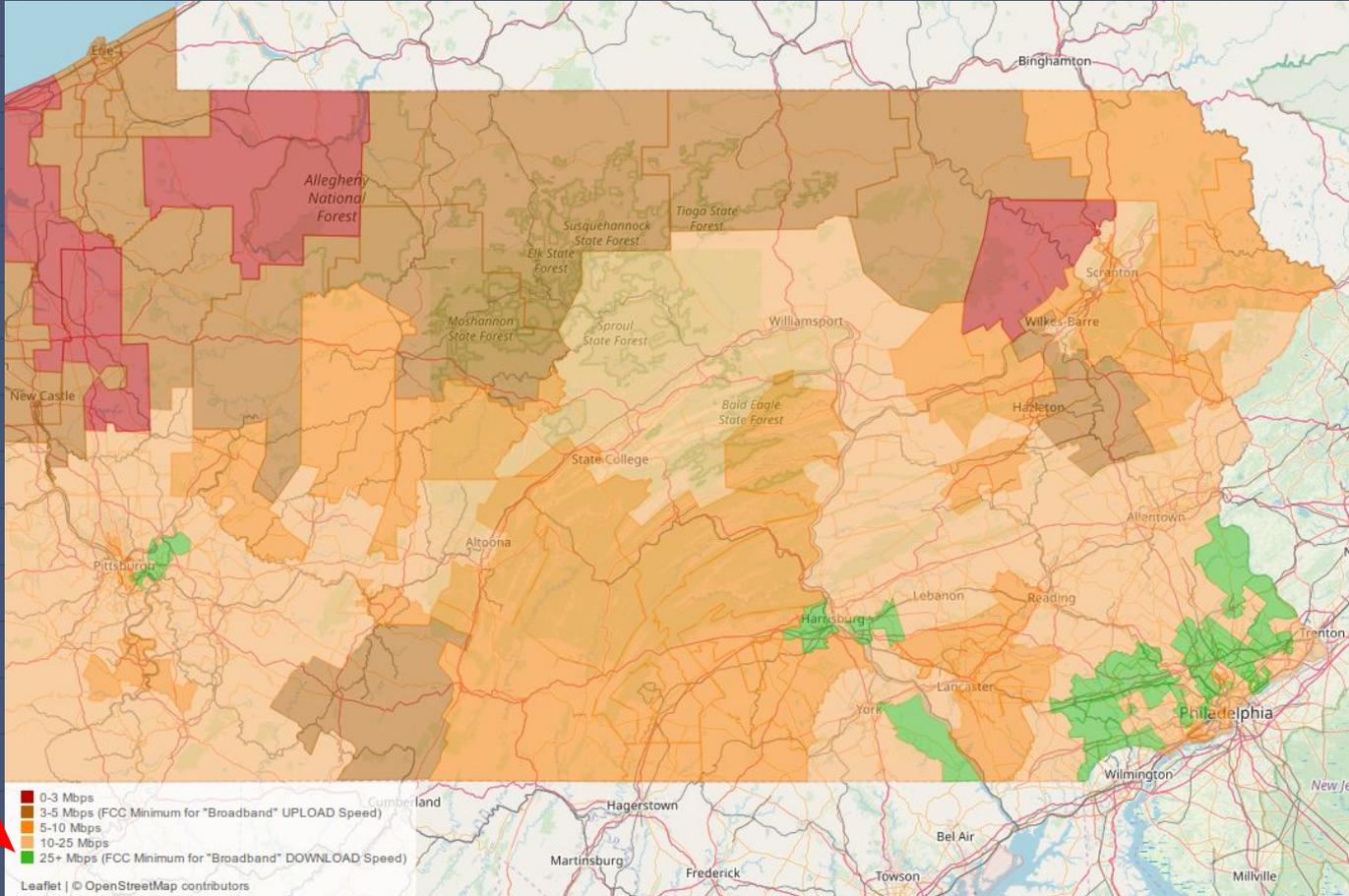
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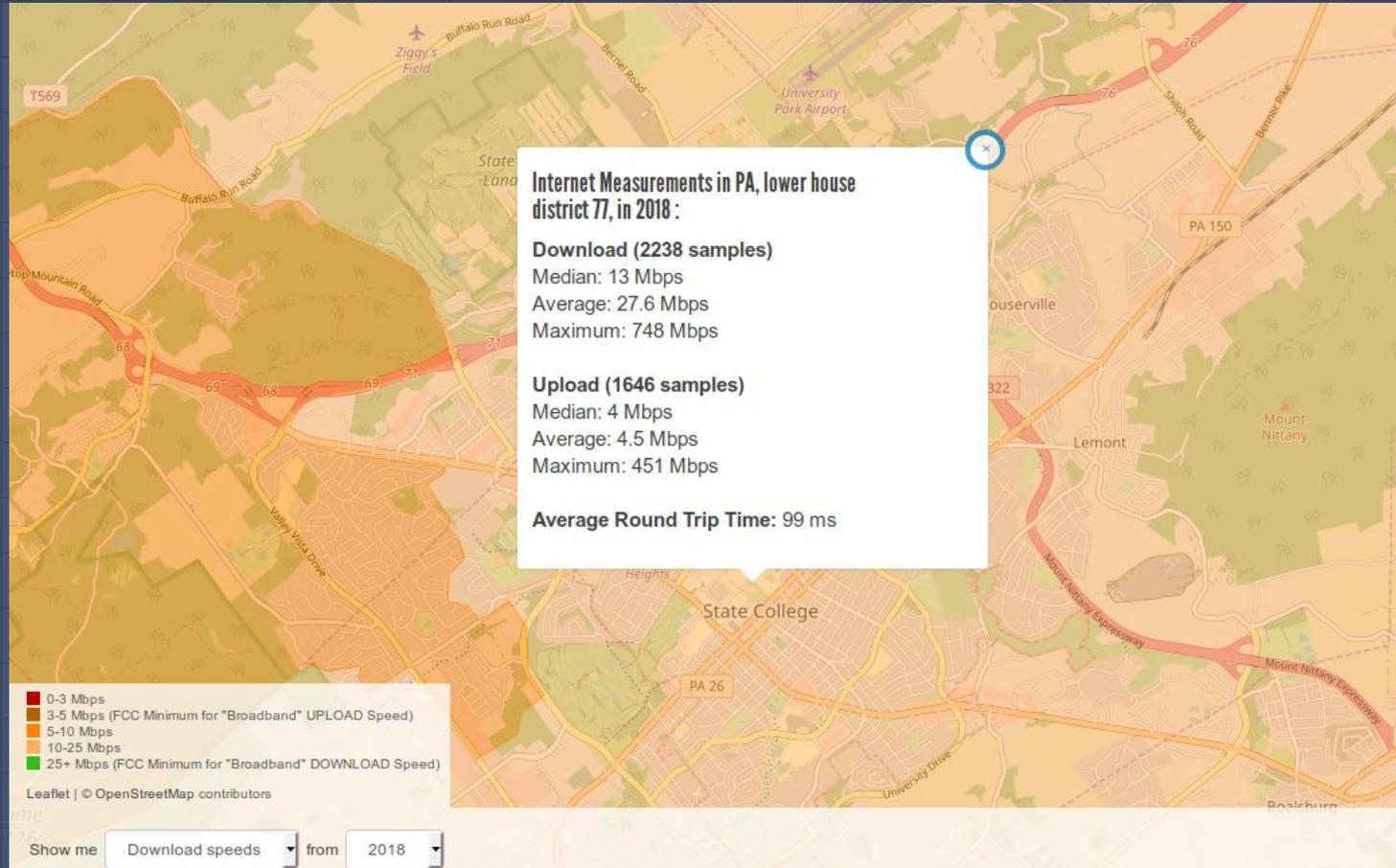


Districts where median speed meets the FCC's *Minimum* for "Broadband"



# The (Initial) Results: State College

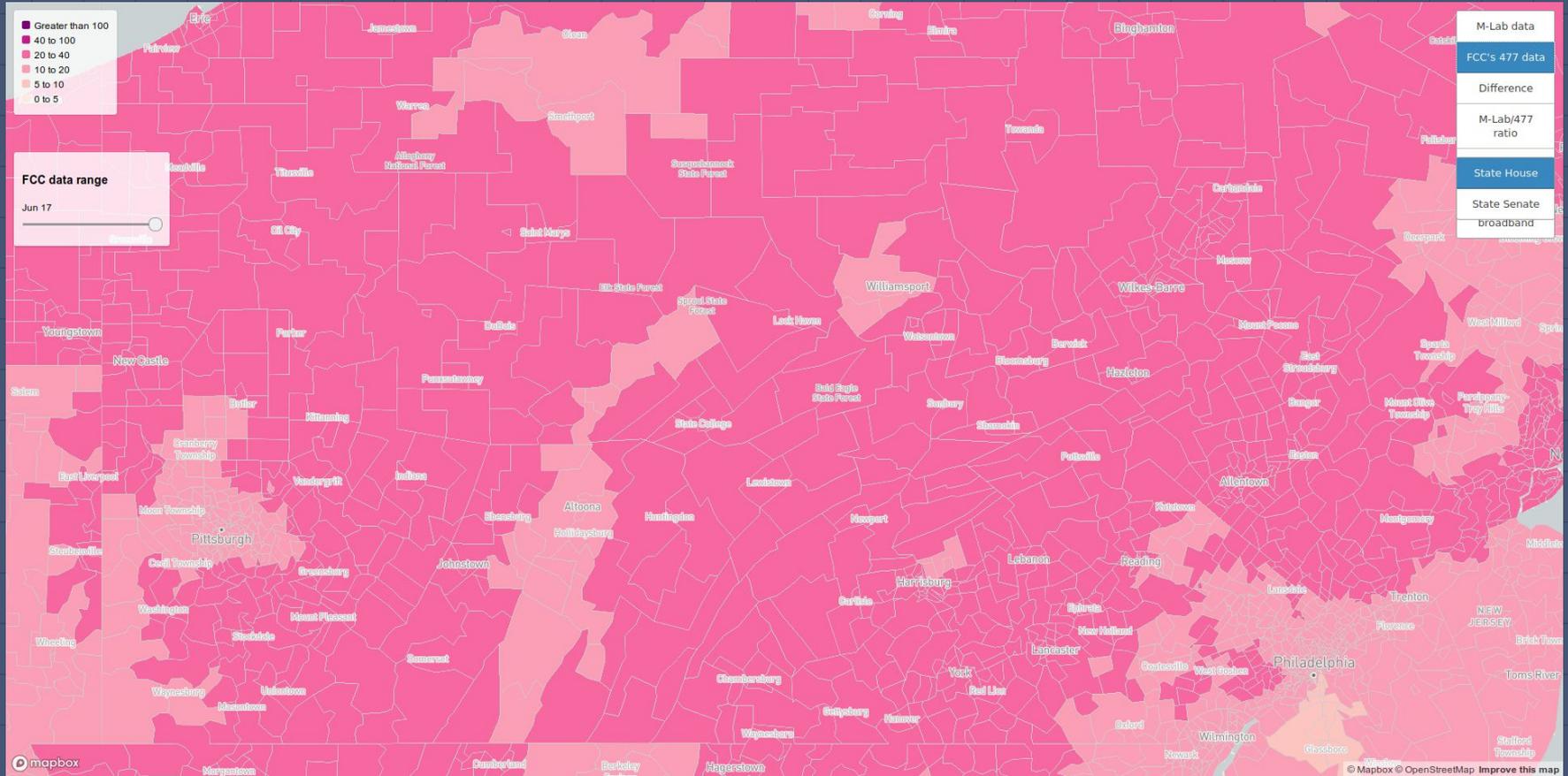
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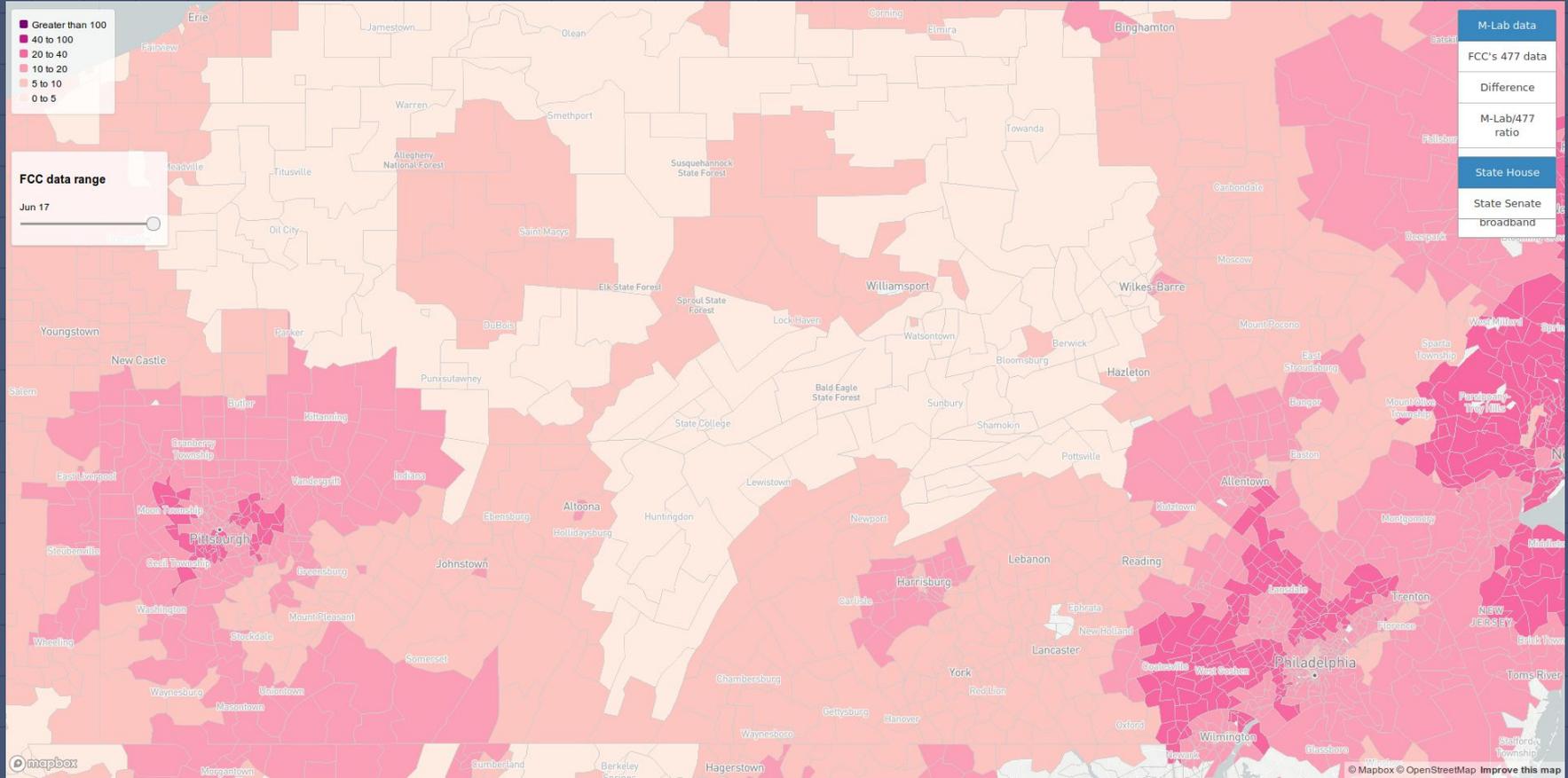
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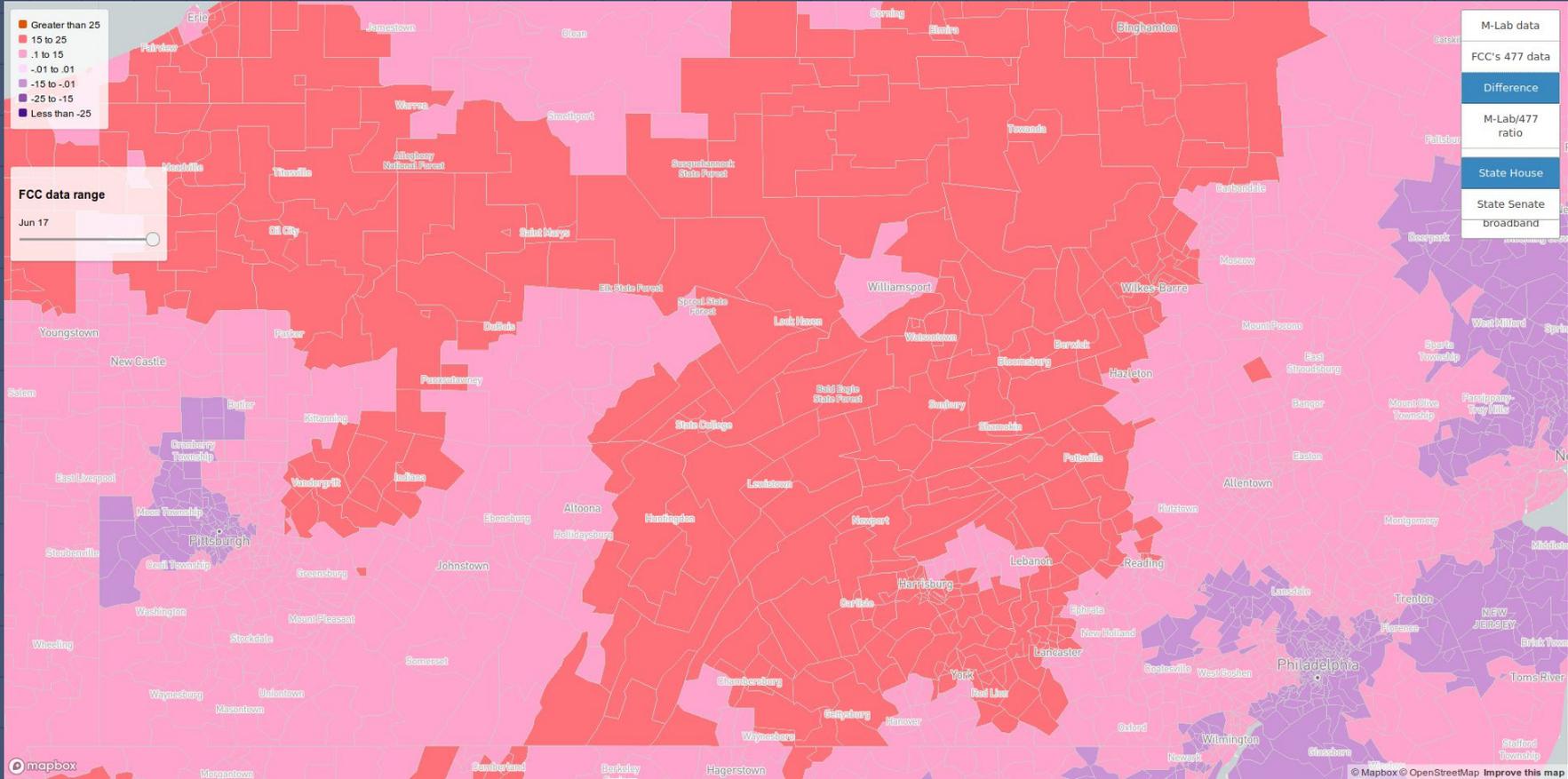
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<https://nthieme.github.io/tangram-deserts/mapbox.html>

# Next Up!

- Partnership w/ Quello Center/MSU/PSU:
  - Broadband pricing.
  - Price elasticity of demand.
  - Demographics & household use metrics.
  - Census/MSFT/M-Lab triangulation.

## QUESTIONS???

Follow-ups:

- [sascha@psu.edu](mailto:sascha@psu.edu)
- [@saschameinrath](https://twitter.com/saschameinrath)
- SLIDES: [tiny.cc/2018caida](https://tiny.cc/2018caida)



# CREDITS

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