

Characteristics of Metro Fiber Deployments in the US

TMA 2020

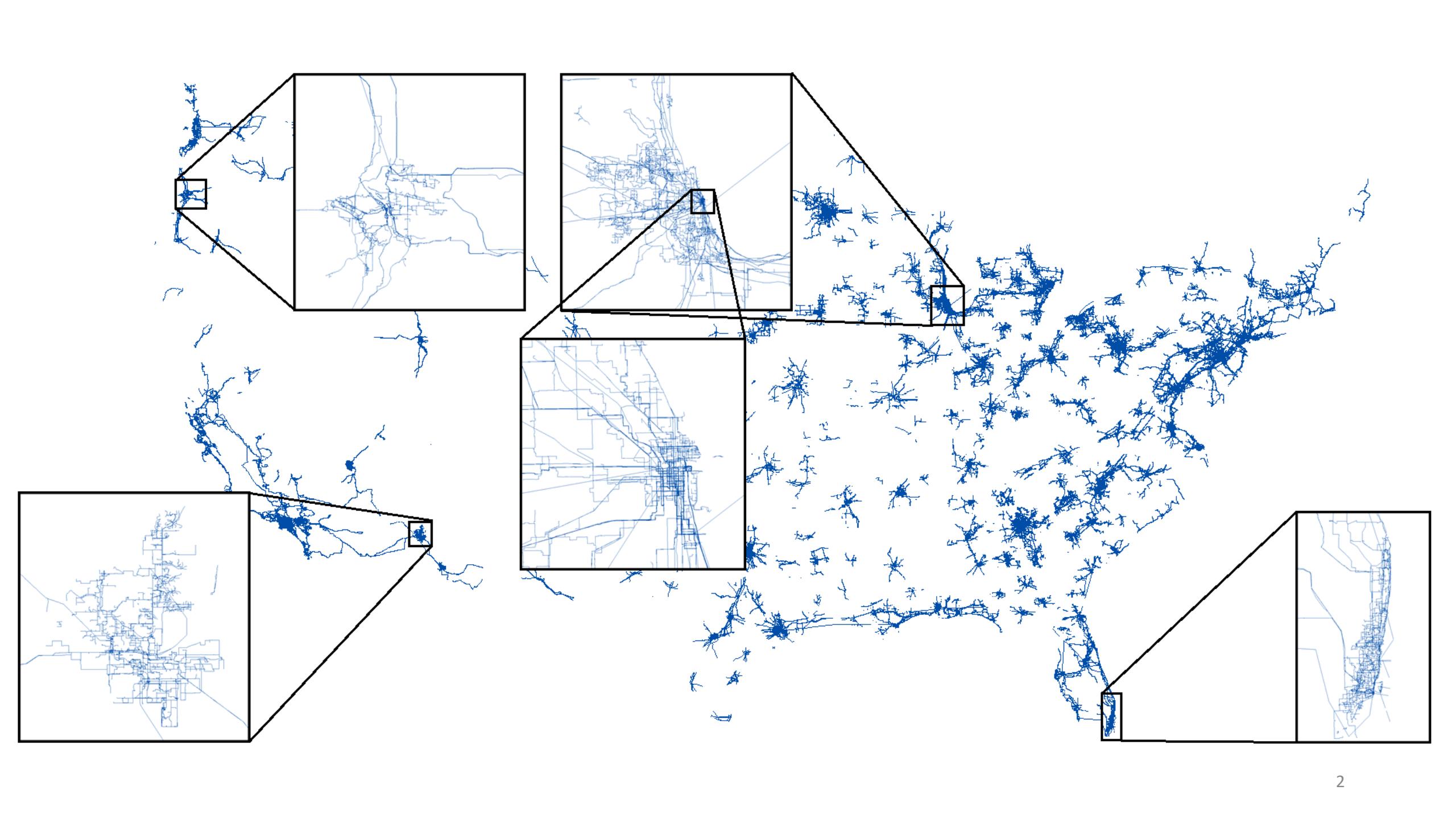
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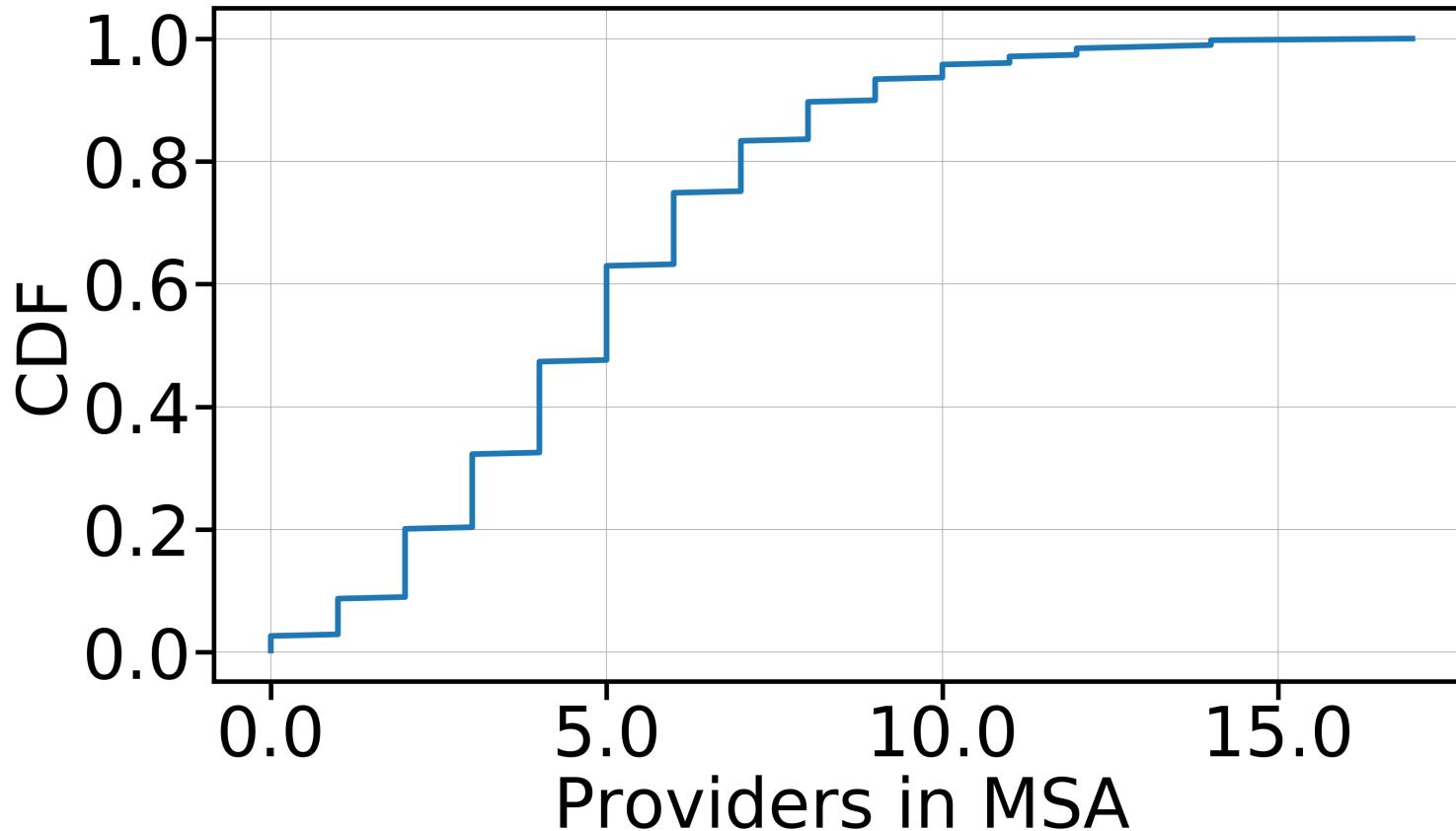


Motivation and approach

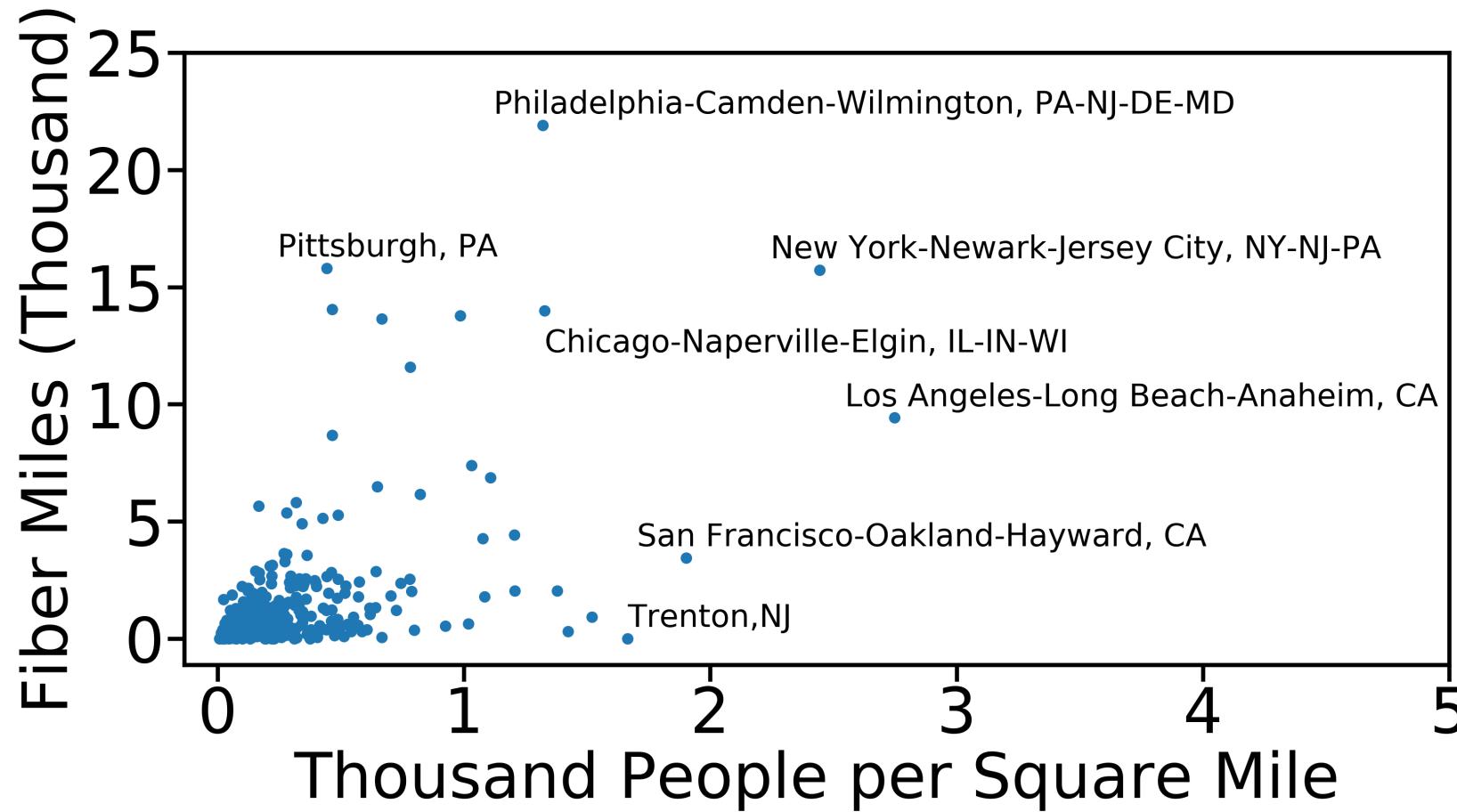
- Fiber deployments in metropolitan areas are critical for information to businesses and large segments of the population
 - Metro fiber sits between long haul and last mile/broadband
- Focus on elucidating characteristics of metro fiber
 - Service options
 - Routes/deployment
 - Density related to population
 - Proximity to data centers
- Utilize 204 metro fiber maps from Internet Atlas
 - Subset of these will be made available as a new data set in IMPACT



Fiber provider availability



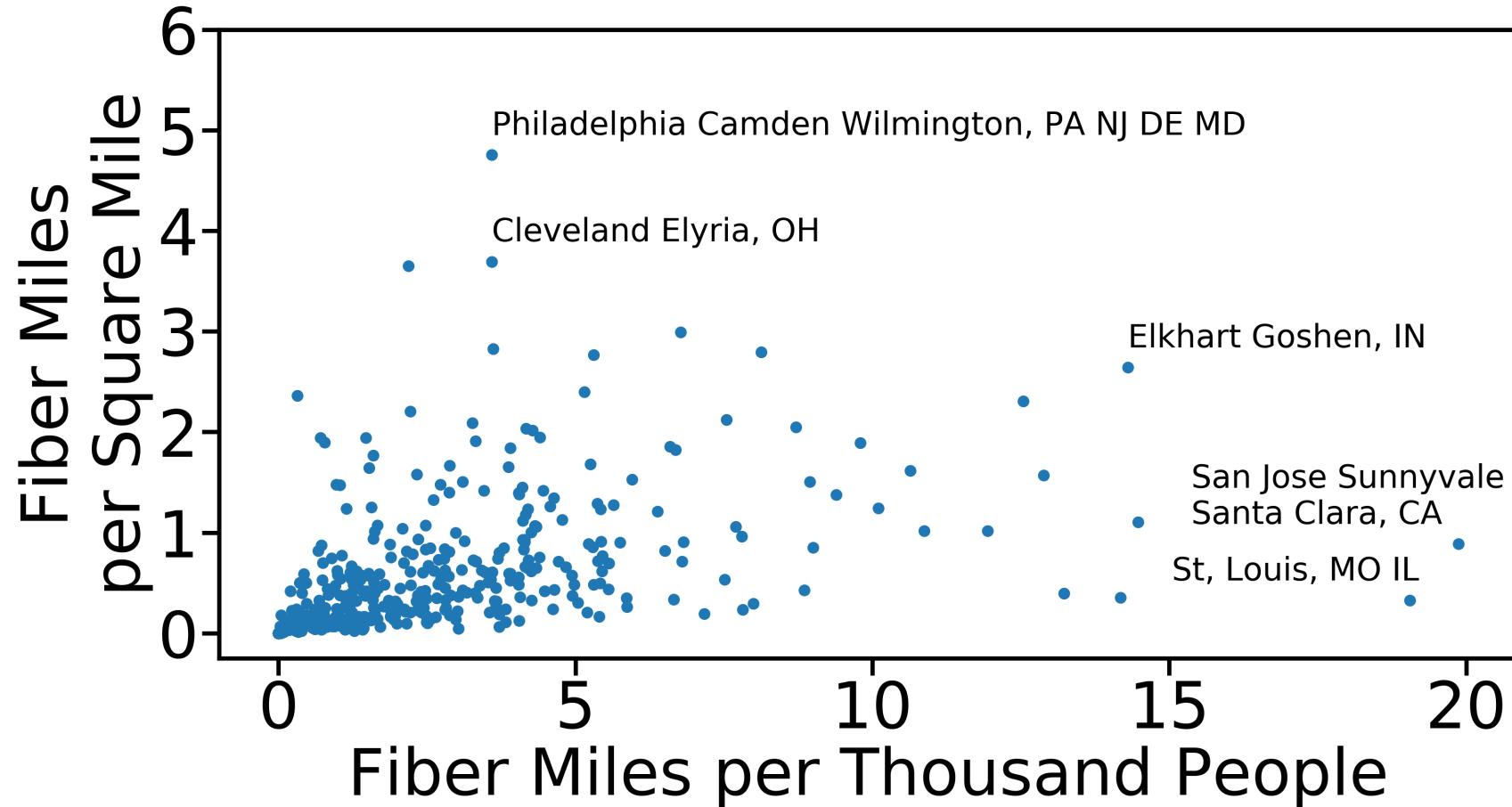
Fiber density vs. population density



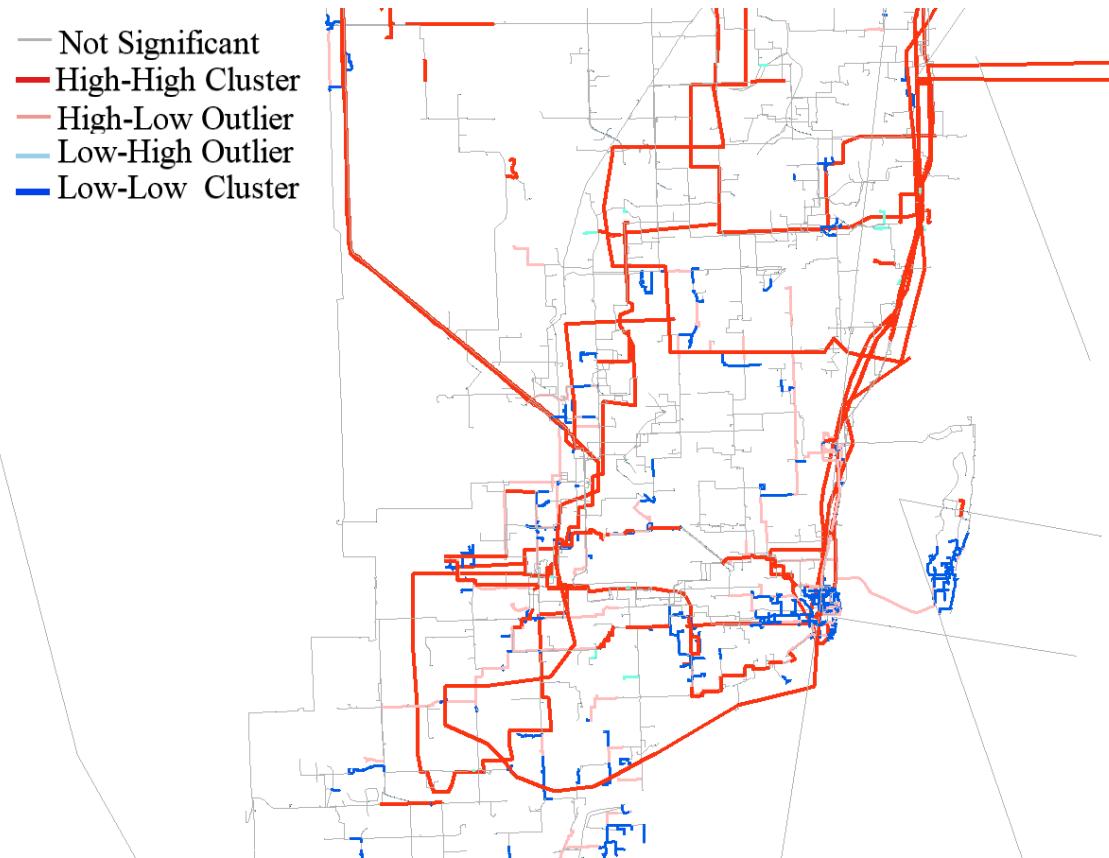
Ranking MSAs

- How should we look at fiber coverage?
 - We want to quantify how well the infrastructure serves a region
- How can we compare coverage between MSAs?
 - Just use total fiber distance?
 - No, smaller MSAs will have less fiber distance
 - Also, densely populated areas need more fiber infrastructure
 - The rank should increase with total fiber distance
decrease with population and land area.
 - Key metrics: *Availability* (i.e., fiber miles per person)
Density (i.e., fiber miles per unit area)

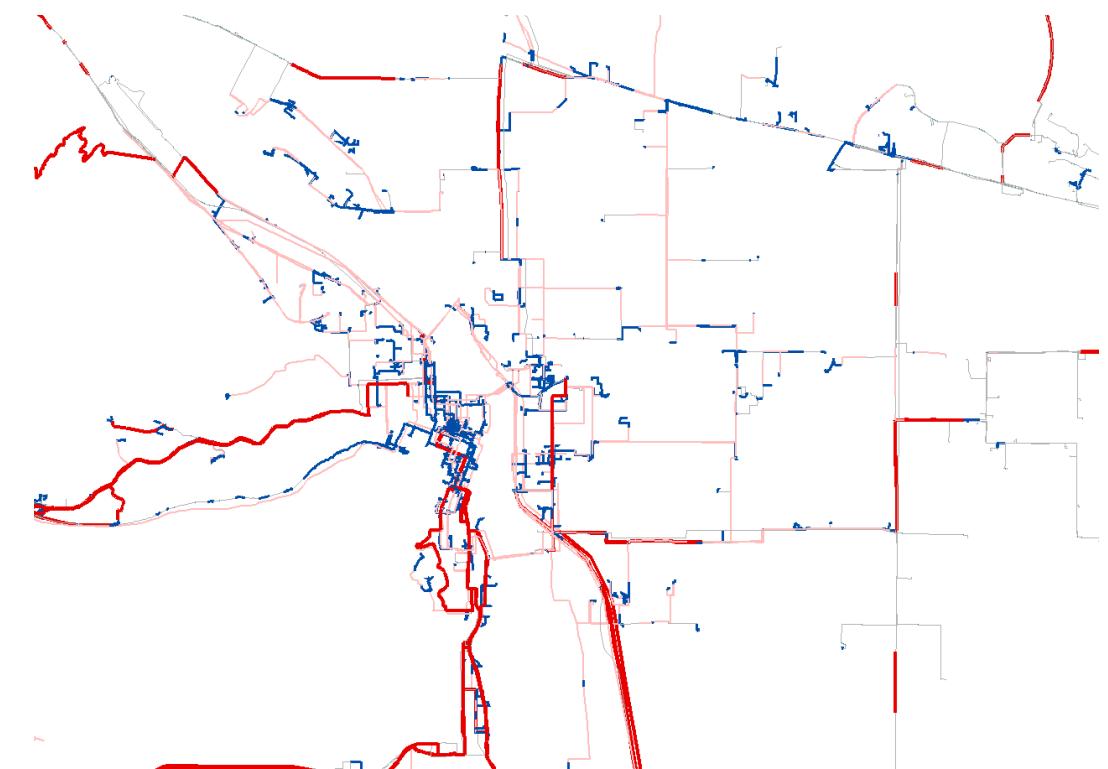
Another view on fiber density



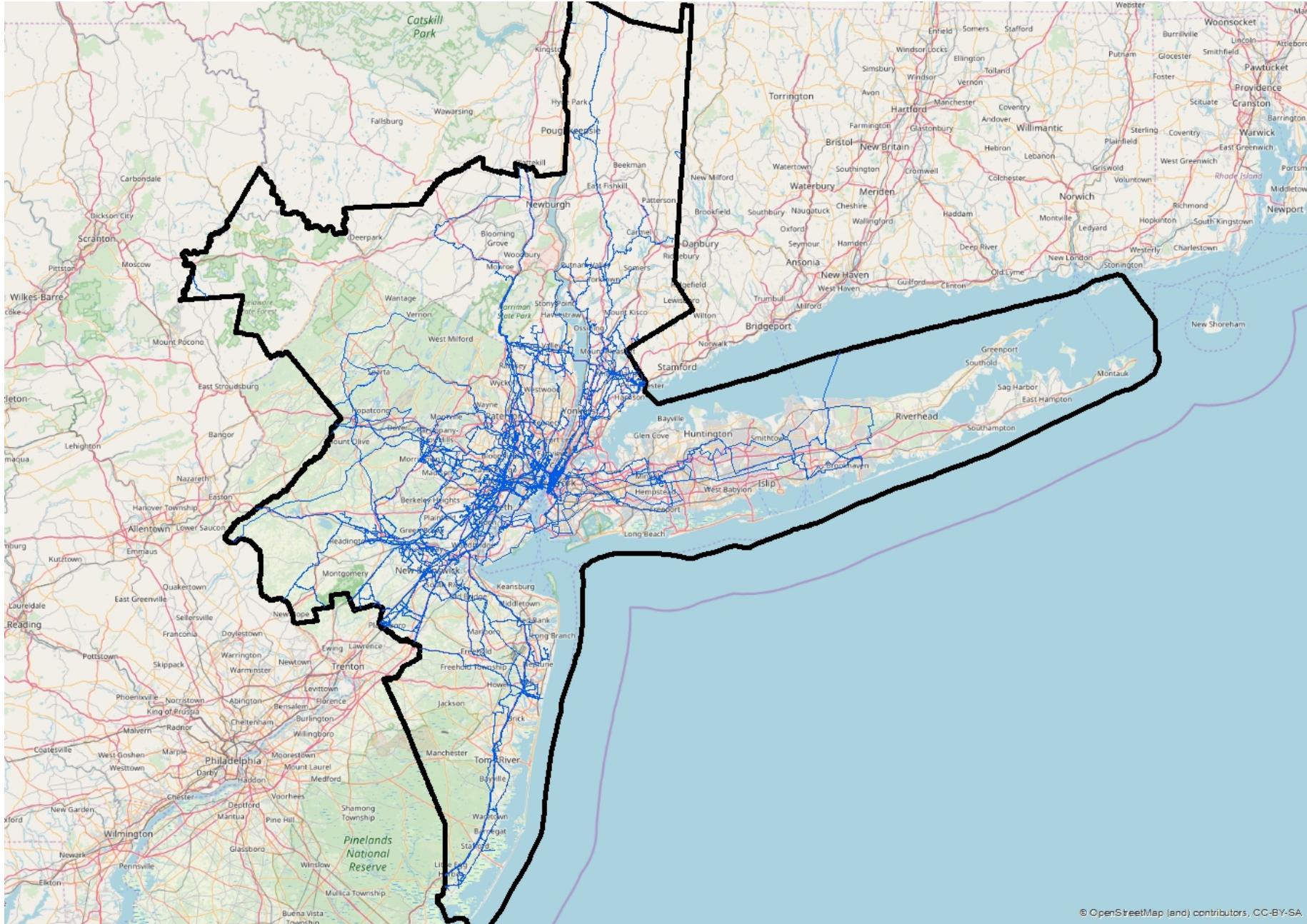
Clustering via Moran's I

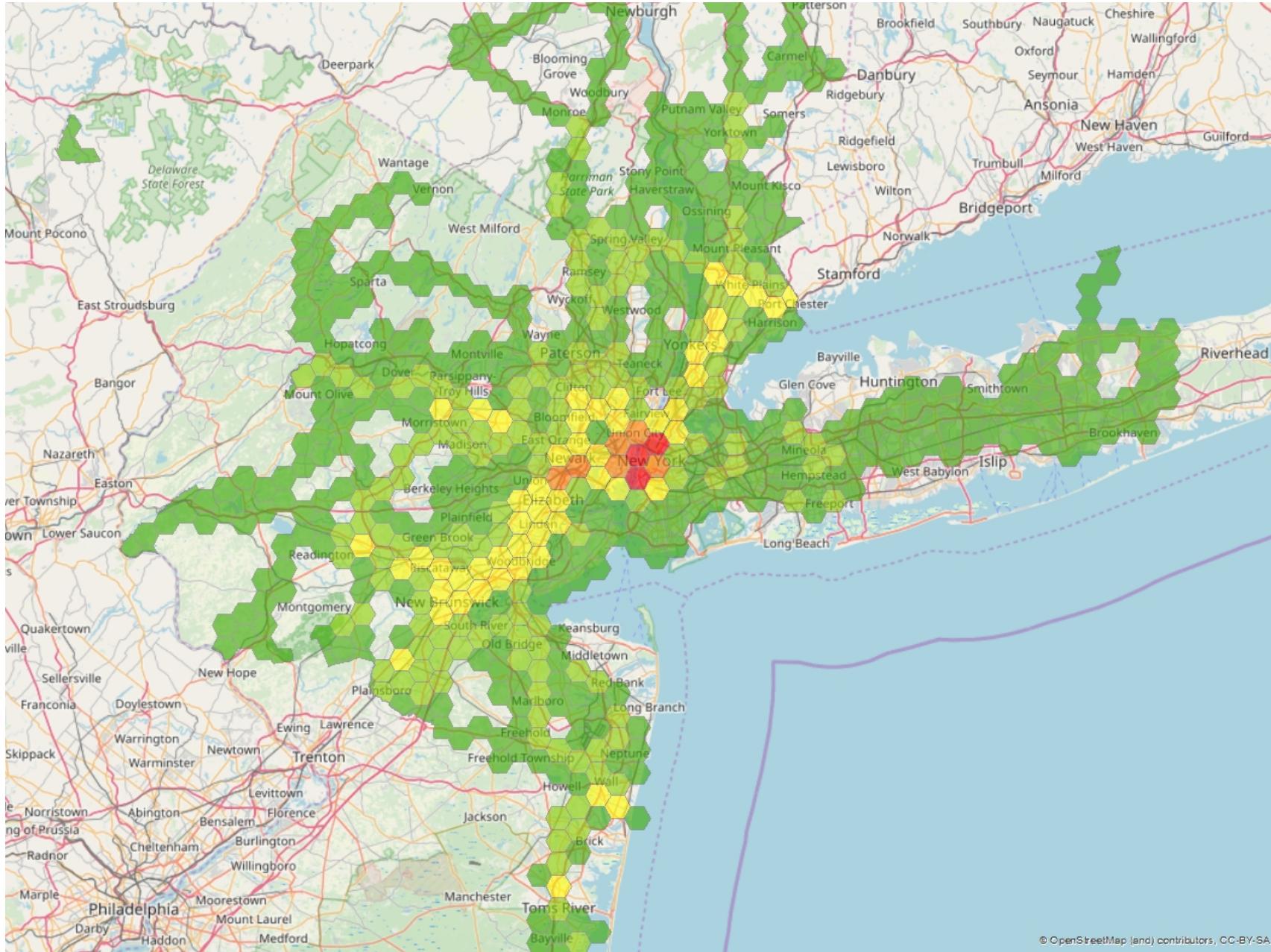


Miami, FL



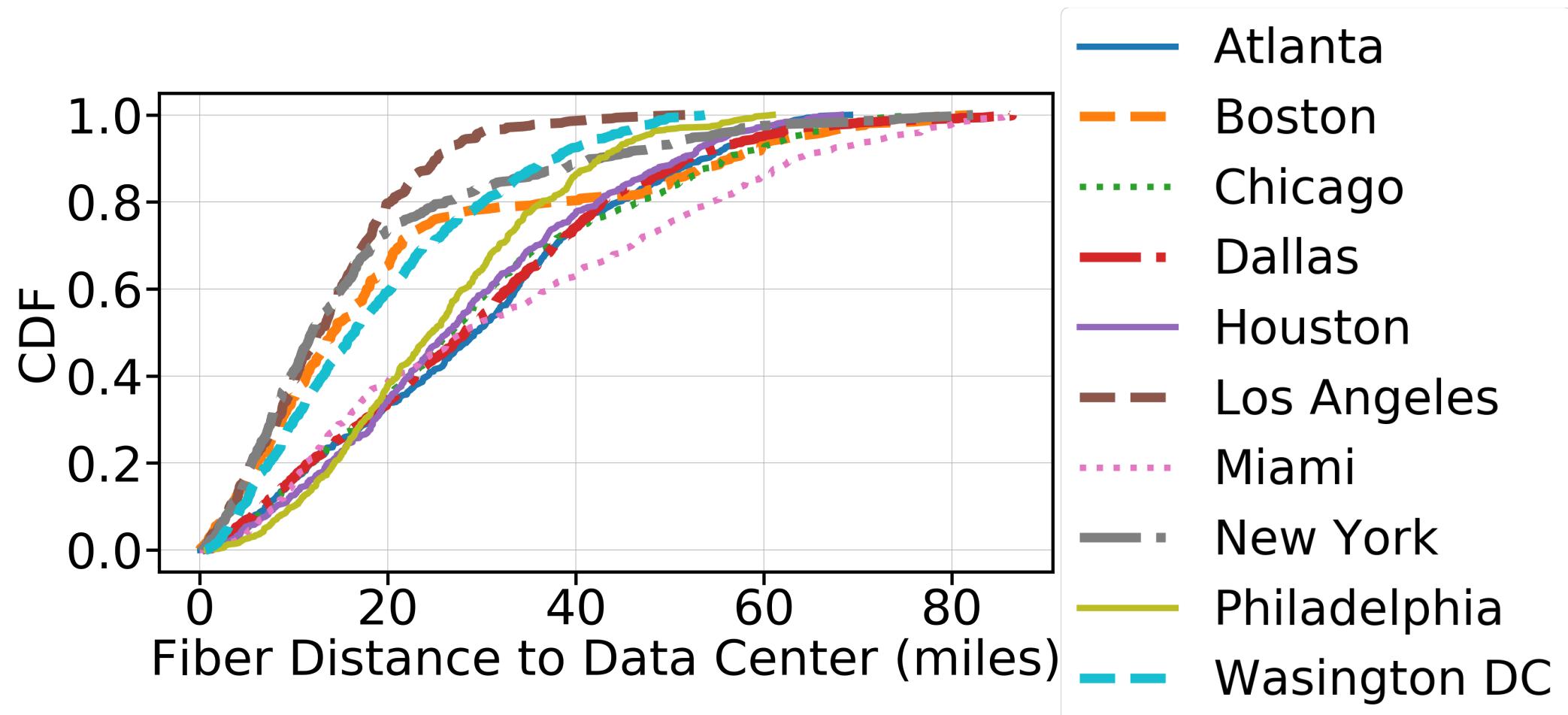
Portland, OR



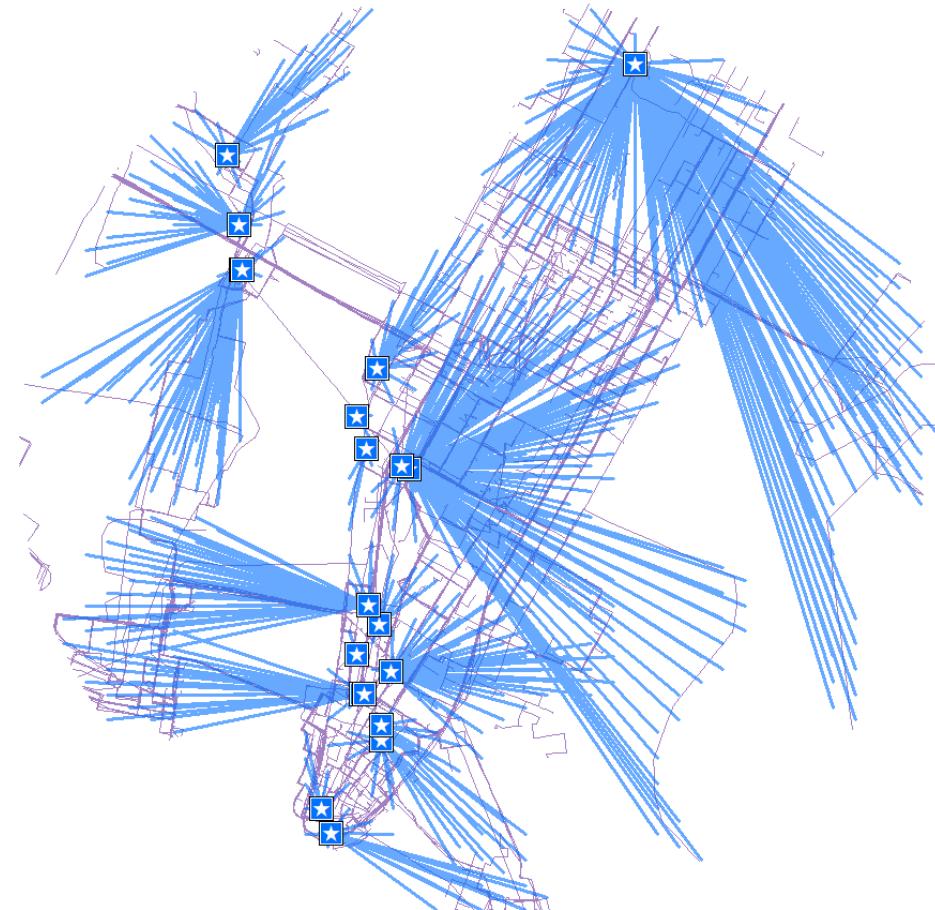


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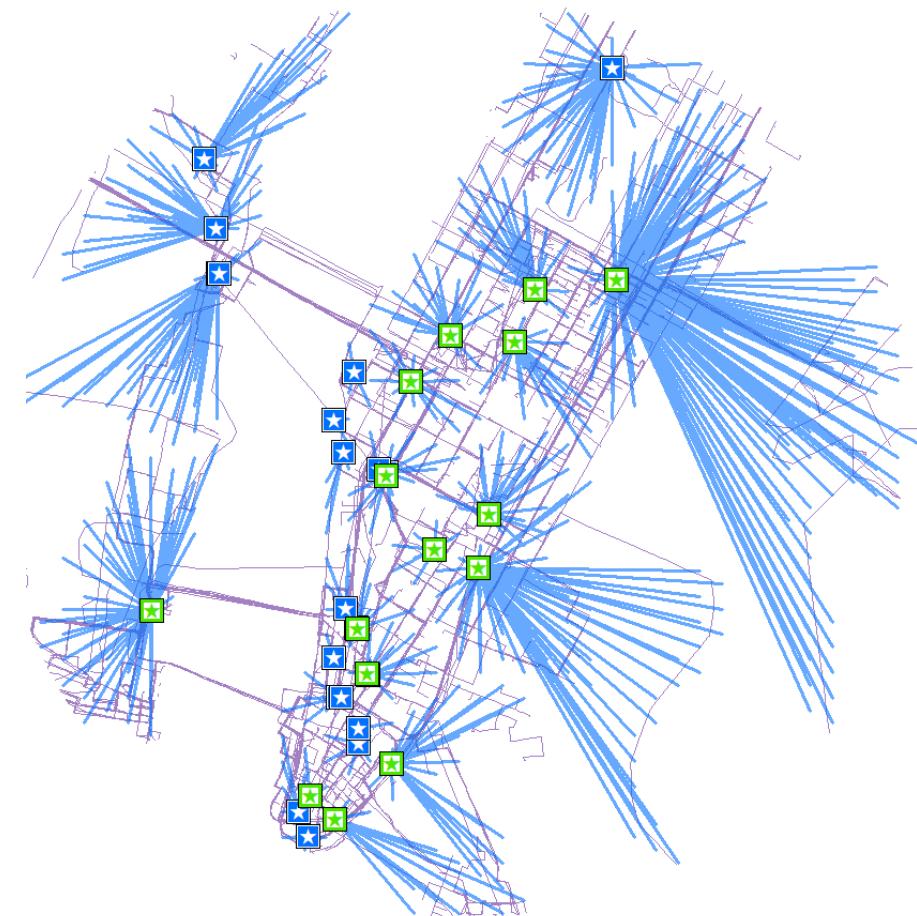
Distance to data centers



Improving data center connectivity



LOS to existing DC's



LOS to existing DC's and MDC's in PoPs

See the data

- <https://www.impactcybertrust.org/>

Questions?