

# Data-Driven Infrastructure

Resiliency & Equity by Design



@STATEOFPLACE  
@CITYFOODLOVER

STATE OF PLACE

MARIELA ALFONZO, PH.D.  
FOUNDER/CEO







▲ KODAK PORTA 400

2



2

2

▲ KODAK PORTA 400



2

2

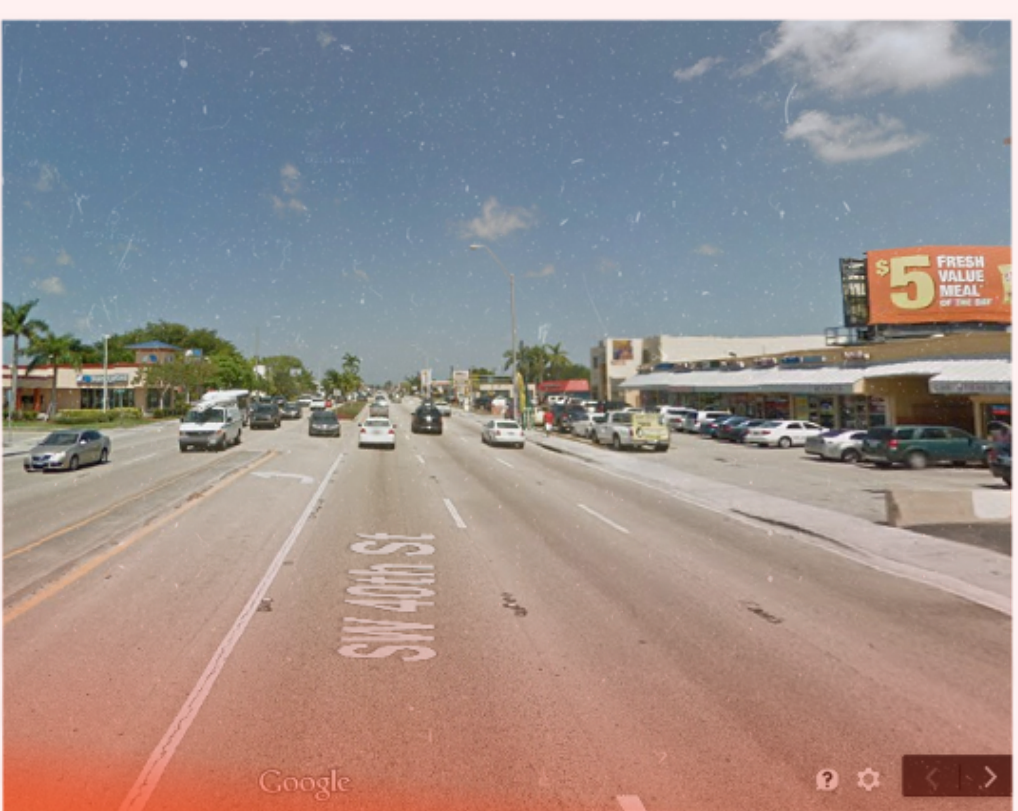


2

2

▲ KODAK PORTA 400

▲ KODAK PORTA 400



2









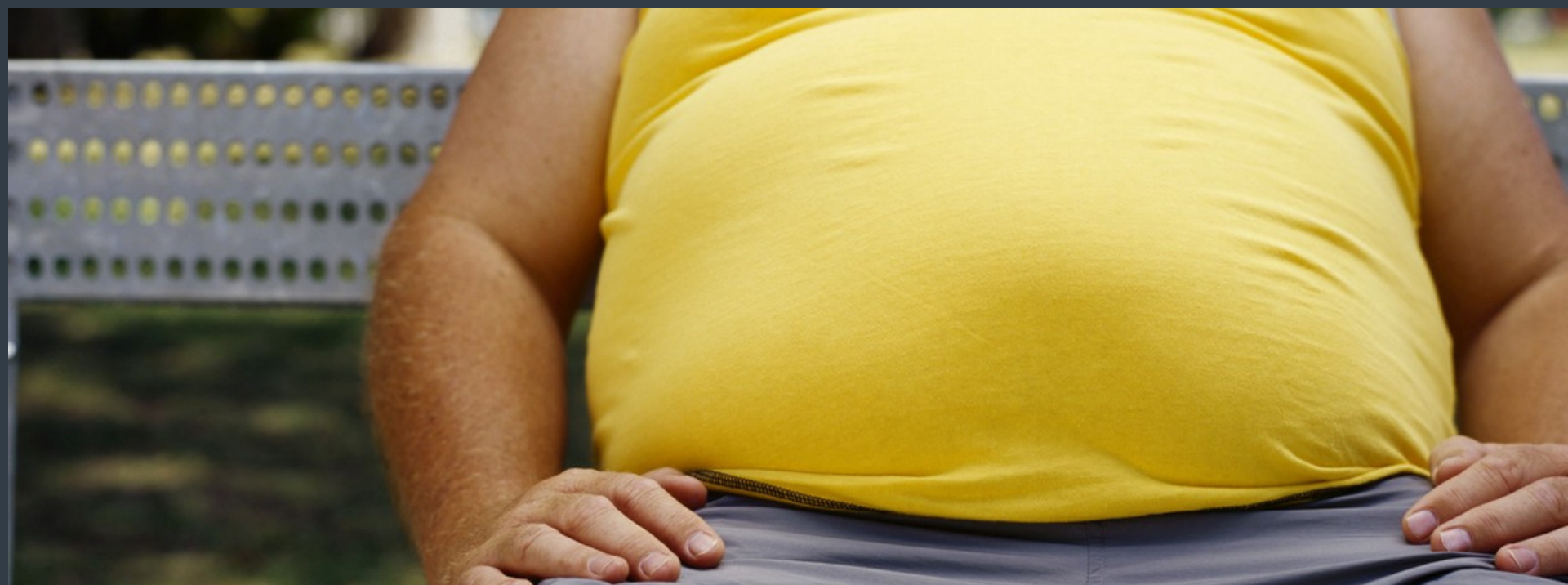
















Place



People



Quality of Life



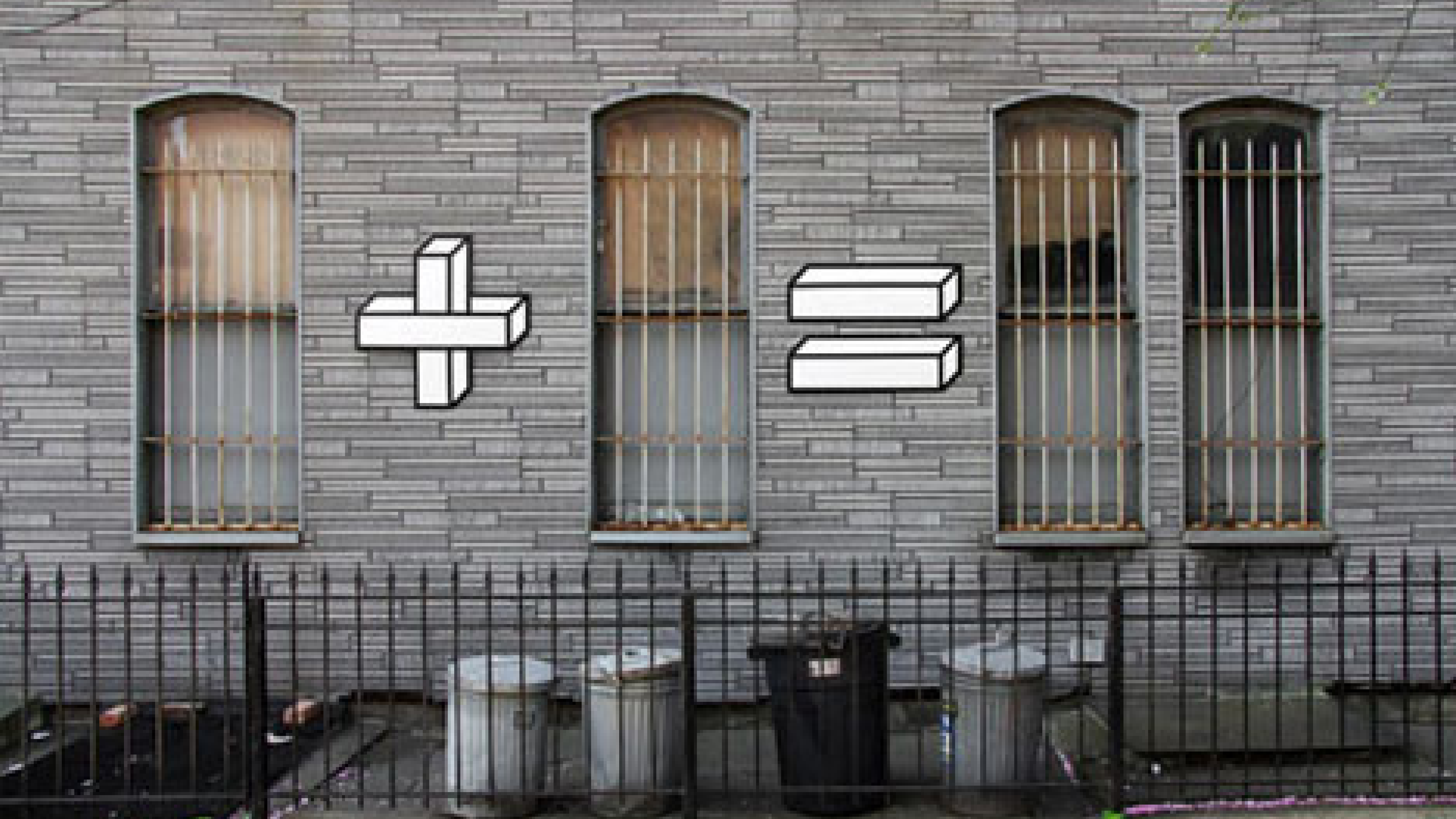


# Infrastructure

## Behaviors & Perceptions

## KPIs & ROI











150+  
TOTAL!

...

...

...

15

14

13

12

10

11

8

6

5

3

2

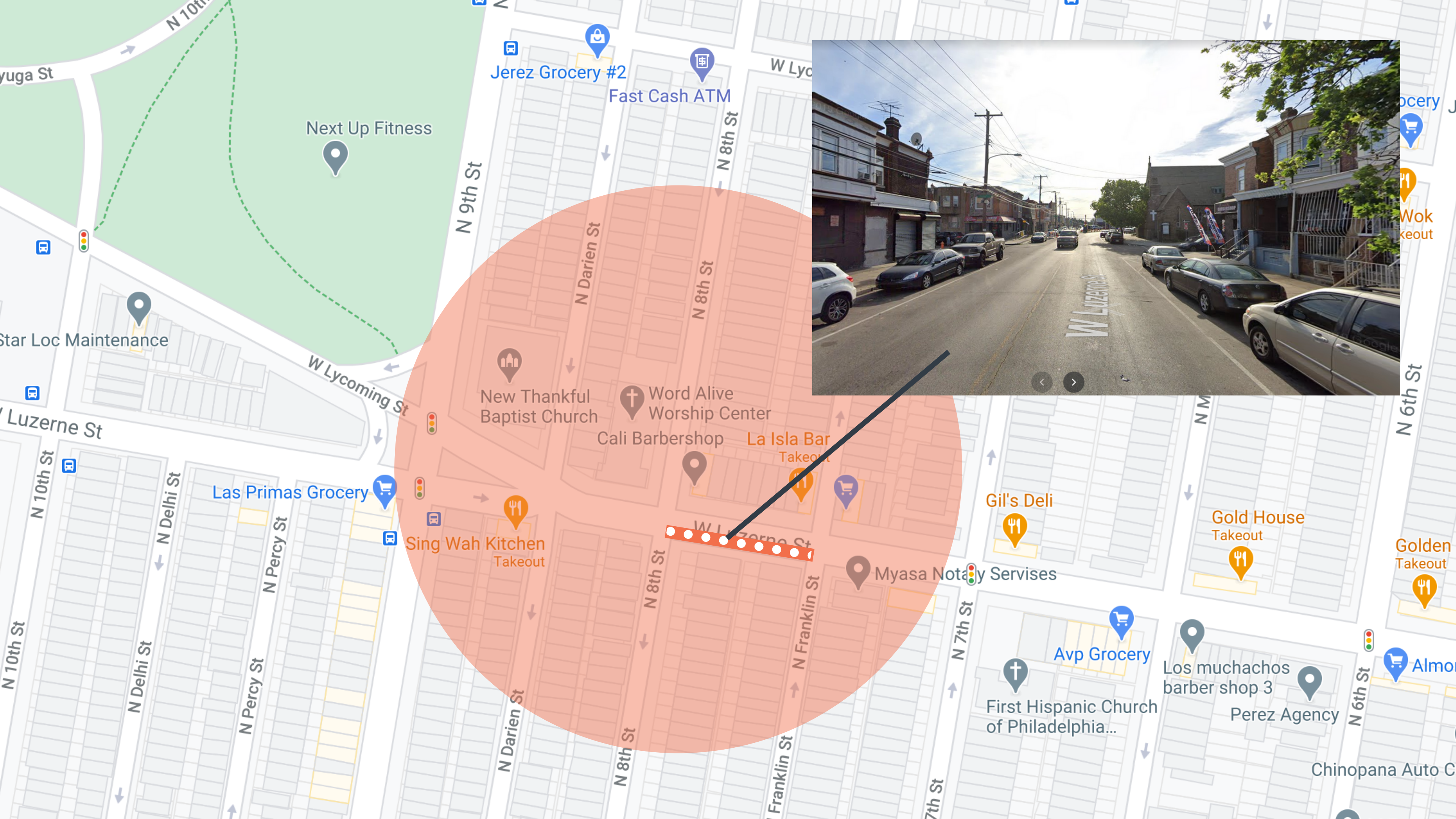
9

7

4

1









Trees/  
Vegetation

Buildings

Cars

Trees/  
Vegetation

Cars







# STATE OF PLACE PROFILE



**Density**

Building Compactness  
& Height



**Form**

Streetscape Continuity  
& Enclosure



**Connectivity**

Ease of Access; Lack of  
Pedestrian/Bike barriers



**Proximity**

Access to Non-  
Residential Destinations  
& Diversity of Land Use



**Public Spaces**

Presence, Quality, &  
Access to Hard & Soft  
Scape Public Spaces



**Rec. Facilities**

Presence of Outdoor &  
Indoor Physical Activity  
Facilities



**Ped/Bike Amenities**

Features that Make it  
Comfortable for  
Pedestrians & Bicyclists



**Traffic Safety**

Quality & Safety of the  
Intersection; Traffic  
Calming Features



**Aesthetics**

Urban Design Features  
that Make Places  
Dynamic & Inviting



**Personal Safety**

Features that Influence  
Perceptions of Personal  
Safety





SELECT LOCATIONS

HEAT MAP

BROWSE DATA

PRIORITIZE

ANALYZE SCENARIOS

FORECAST FINANCIALS

API

## Browse data

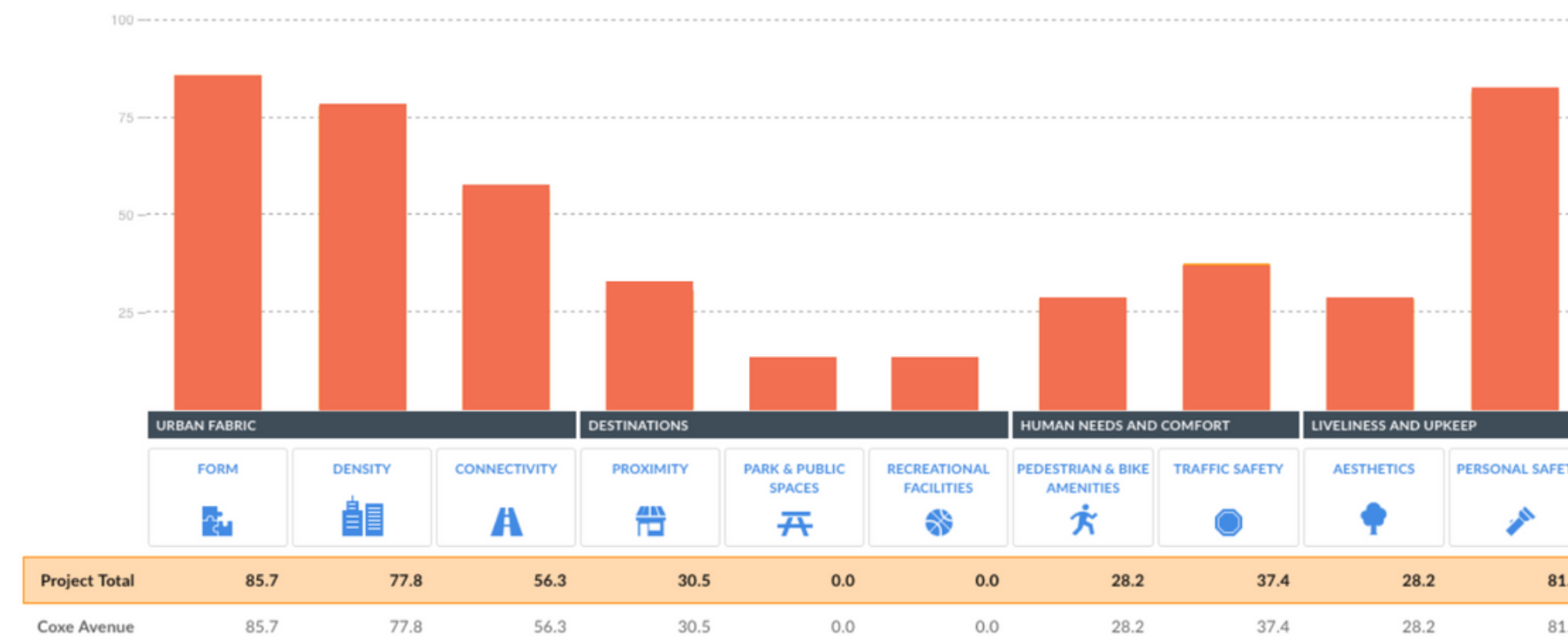
Download report

VIEW DATA FOR

All blocks in the project ▾

### SoP Profile for all blocks in the project

The State of Place Index is composed of ten urban design dimensions empirically known to impact people's decisions to walk. Explore each dimension by clicking on it.



# ASSESS



Downtown Asheville -  
Street Plans



SELECT LOCATIONS

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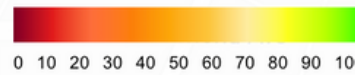
My projects ▾ Feedback Help ▾ Account ▾

## Map

### Display a design dimension

- ☒ State of Place Index
- ☐ Form
- ☐ Density
- ☐ Connectivity
- ☐ Proximity
- ☐ Parks & Public Spaces
- ☐ Recreational Facilities
- ☐ Pedestrian Amenities
- ☐ Traffic Safety
- ☐ Aesthetics
- ☐ Personal Safety

### State of Place Index Range



© Mapbox © OpenStreetMap Improve this map



# ASSESS





# PRIORITIZE



SELECT LOCATION

ASSESS

PRIORITIZE

IMAGINE

OPTIMIZE

## Prioritize Goals

 Download report

VIEW DATA FOR

All blocks in the project ▾

What are this project's most important goals?

- ☒ Walkability
- ☐ Office Rents
- ☐ Retail Rents
- ☐ Retail Revenues
- ☐ Commercial Property Values
- ☒ Job Creation
- ☒ Visitor Satisfaction
- ☐ Visits
- ☐ Chronic Disease Reduction
- ☐ Vehicle Collision Mitigation
- ☐ Vehicle Miles Traveled
- ☐ Flood Mitigation

### Relative importance of each dimension

All blocks in the project

- 1. Pedestrian & Bike Amenities
- 2. Proximity
- 3. Park & Public Spaces
- 4. Traffic Safety
- 5. Density
- 6. Aesthetics
- 7. Recreational Facilities
- 8. Connectivity
- 9. Form
- 10. Personal Safety



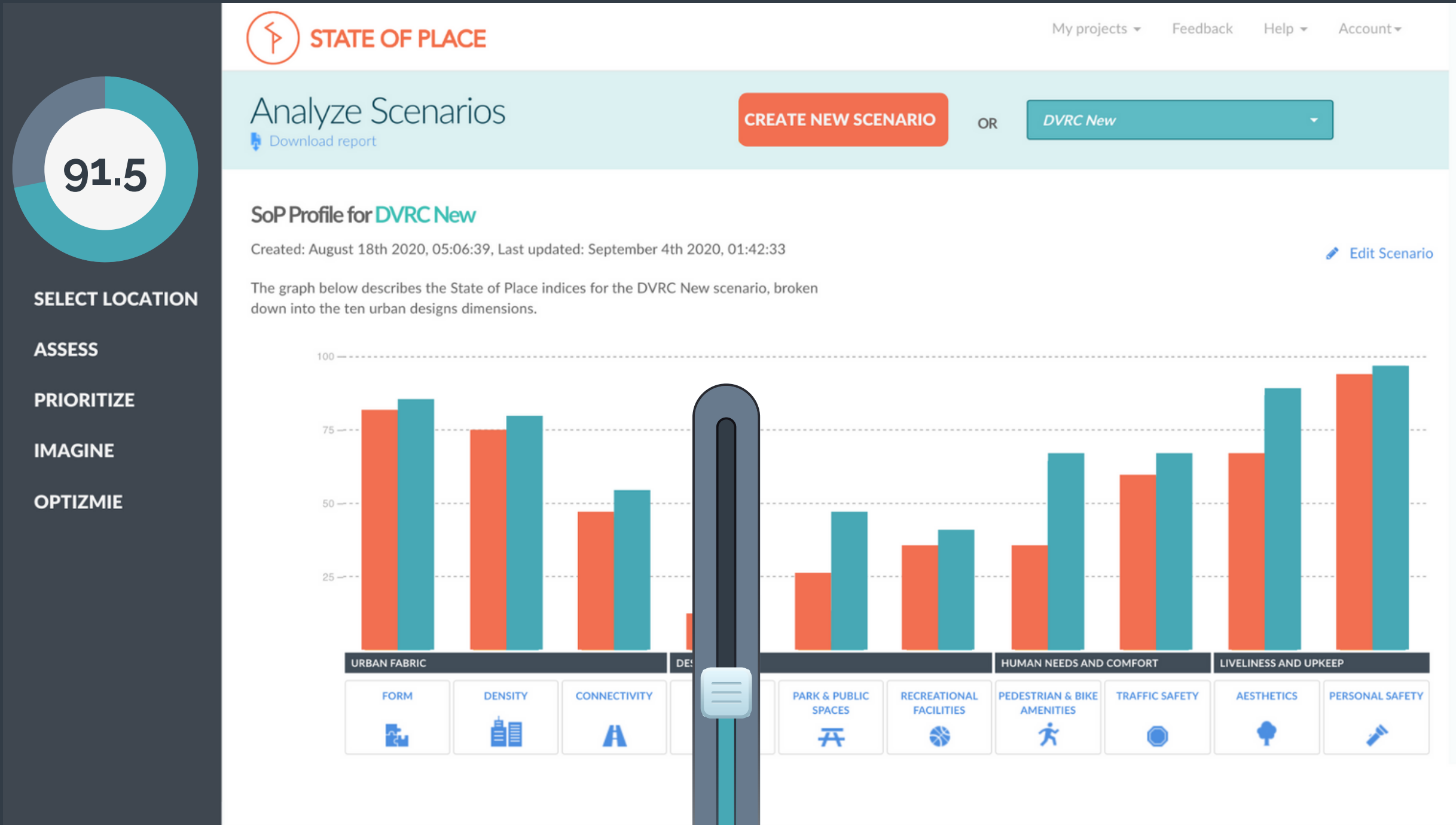
### Relative importance of each dimension

State of Place prioritization identifies which urban design dimensions should be emphasized, considering three key factors:

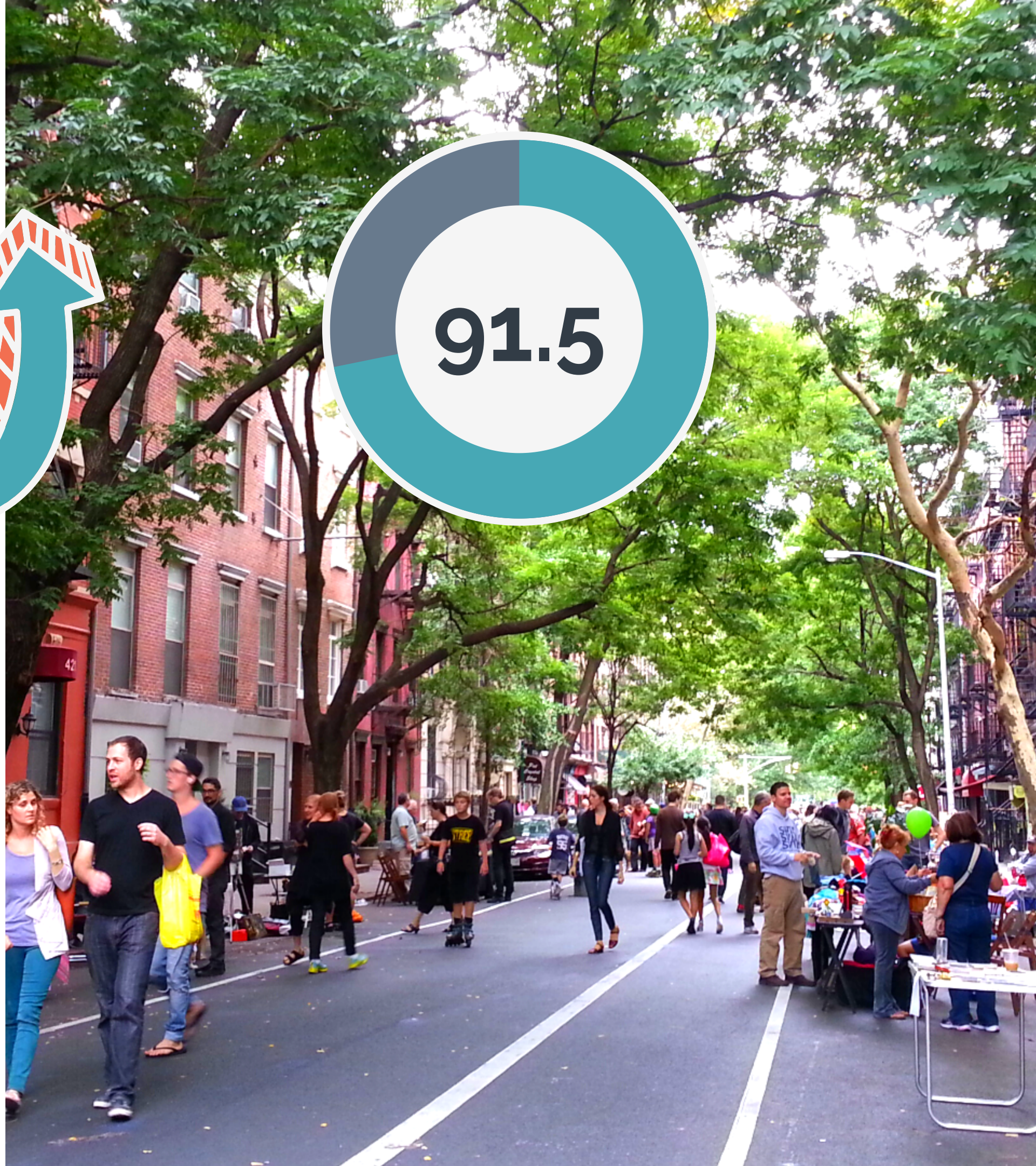
- The project area's current performance across the ten dimensions (SoP Index)
- Predicted impact on key goals
- The feasibility (level of difficulty) in improving each of the ten dimensions

ADJUST FEASIBILITY











## Durham Guess Road



Guess Street  
Scenario(+51.8)

SELECT LOCATION

BROWSE DATA

## PRIORITIZE

## ANALYZE SCENARIOS

## FORECAST QUALITY OF LIFE

## Benefits Forecast for Guess Street Scenario

Total value captured

\$7,388,129.96

ROI (Total Value/Dollar)

9.85

## ESTIMATED HEALTH IMPACTS



42.7%



## ESTIMATED ENVIRONMENTAL IMPACT



32.5%



33.6%

## ESTIMATED ECONOMIC IMPACT



35.2%



23.4%



34.6%



43.1%

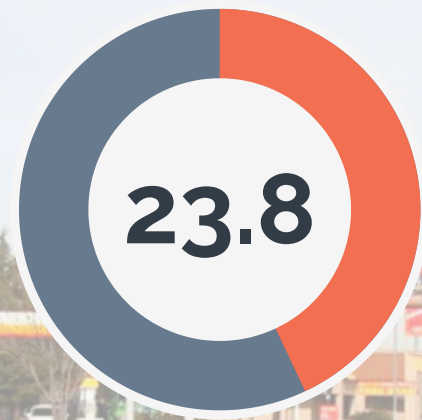


29.9%



# OPTIMIZE





Near 0



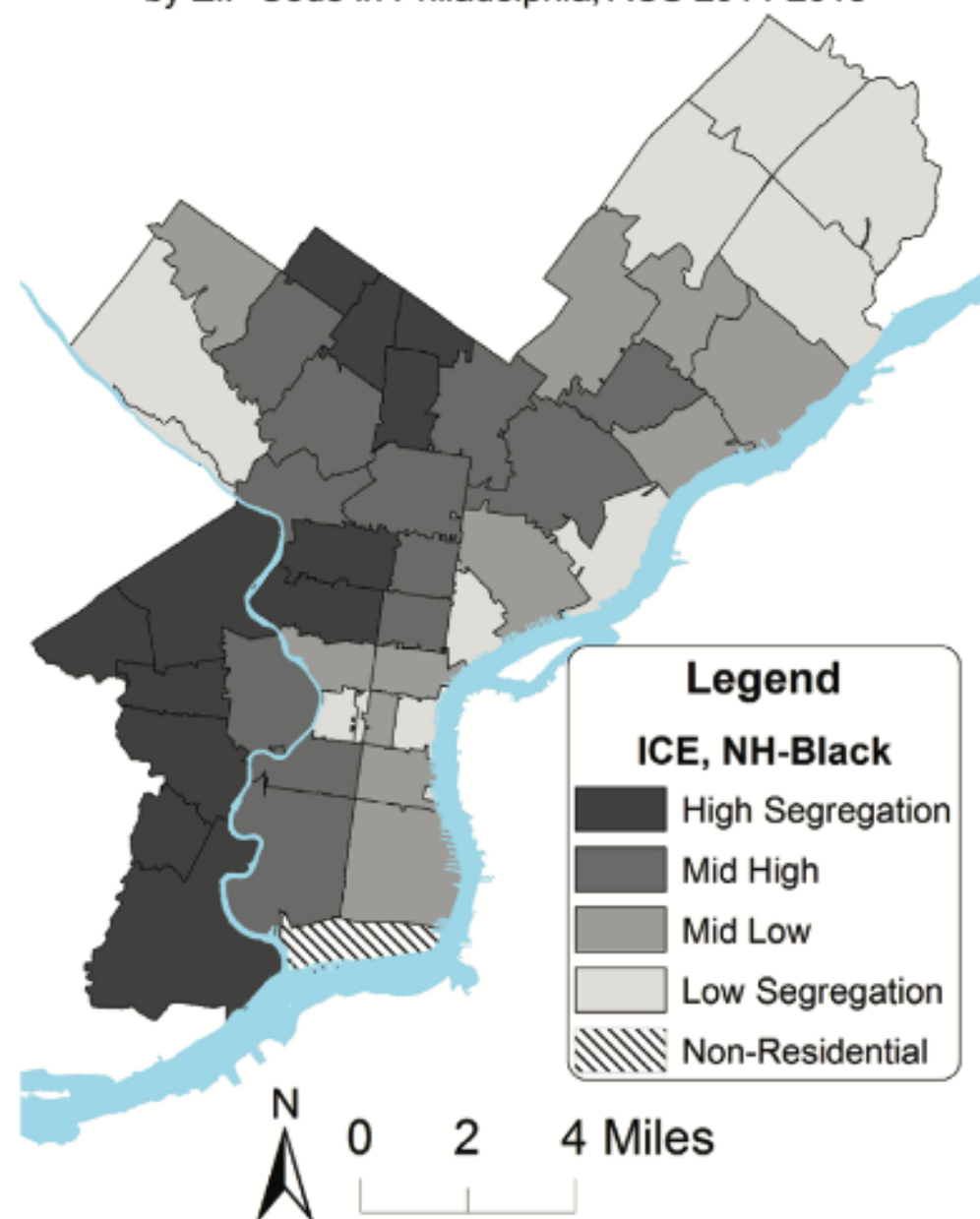
+271%



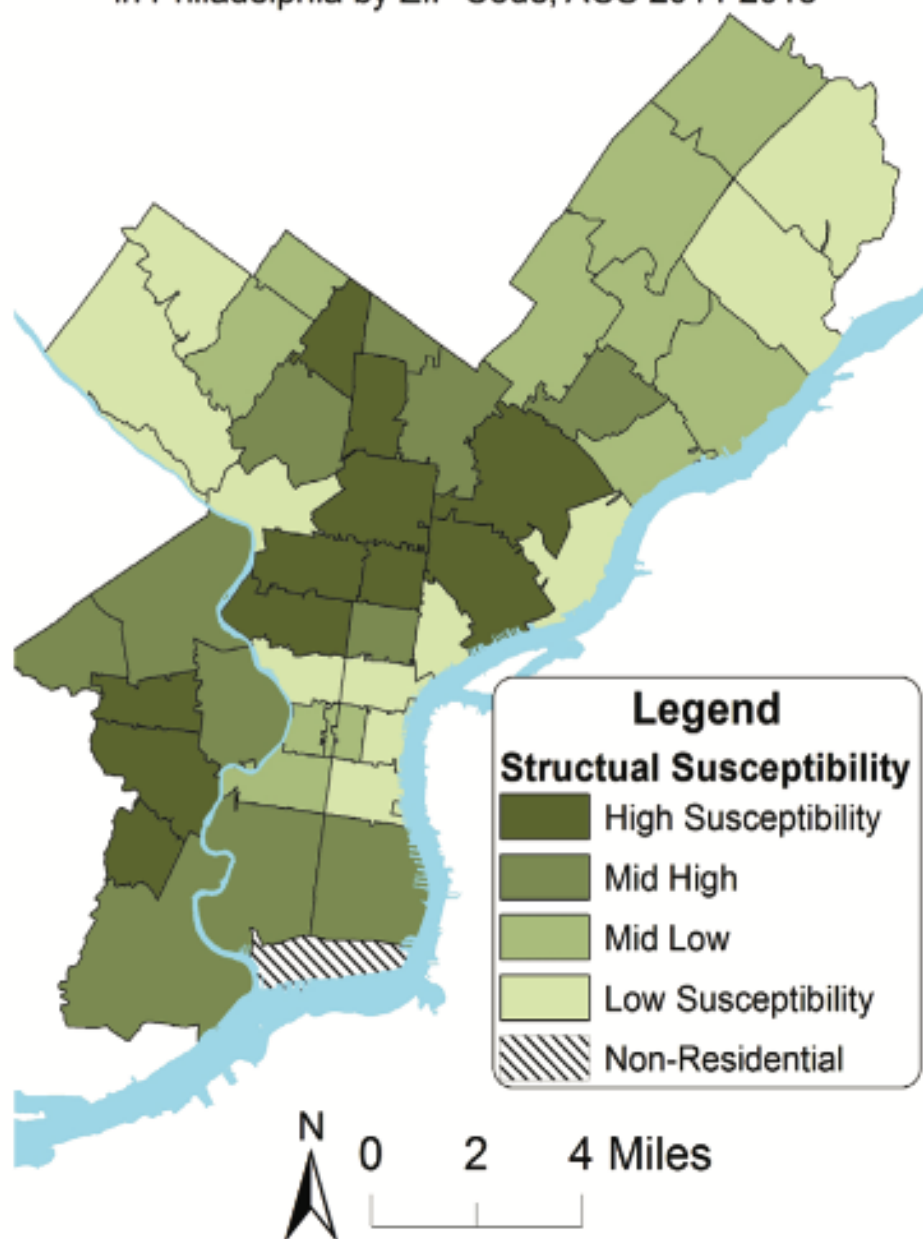




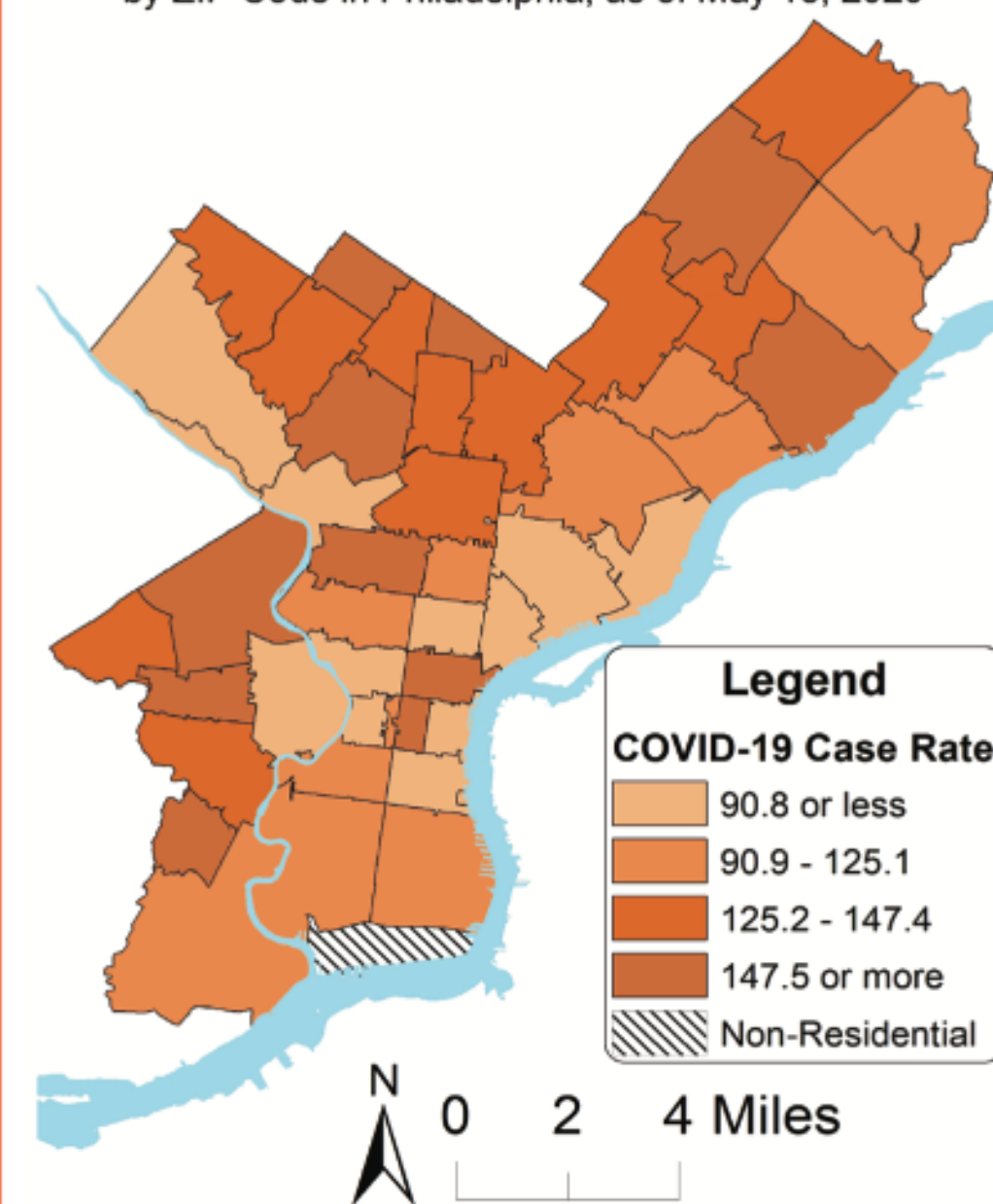
Index of Concentration at the Extremes for NH-Blacks  
by ZIP Code in Philadelphia, ACS 2014-2018



Structural Susceptibility to COVID-19  
in Philadelphia by ZIP Code, ACS 2014-2018

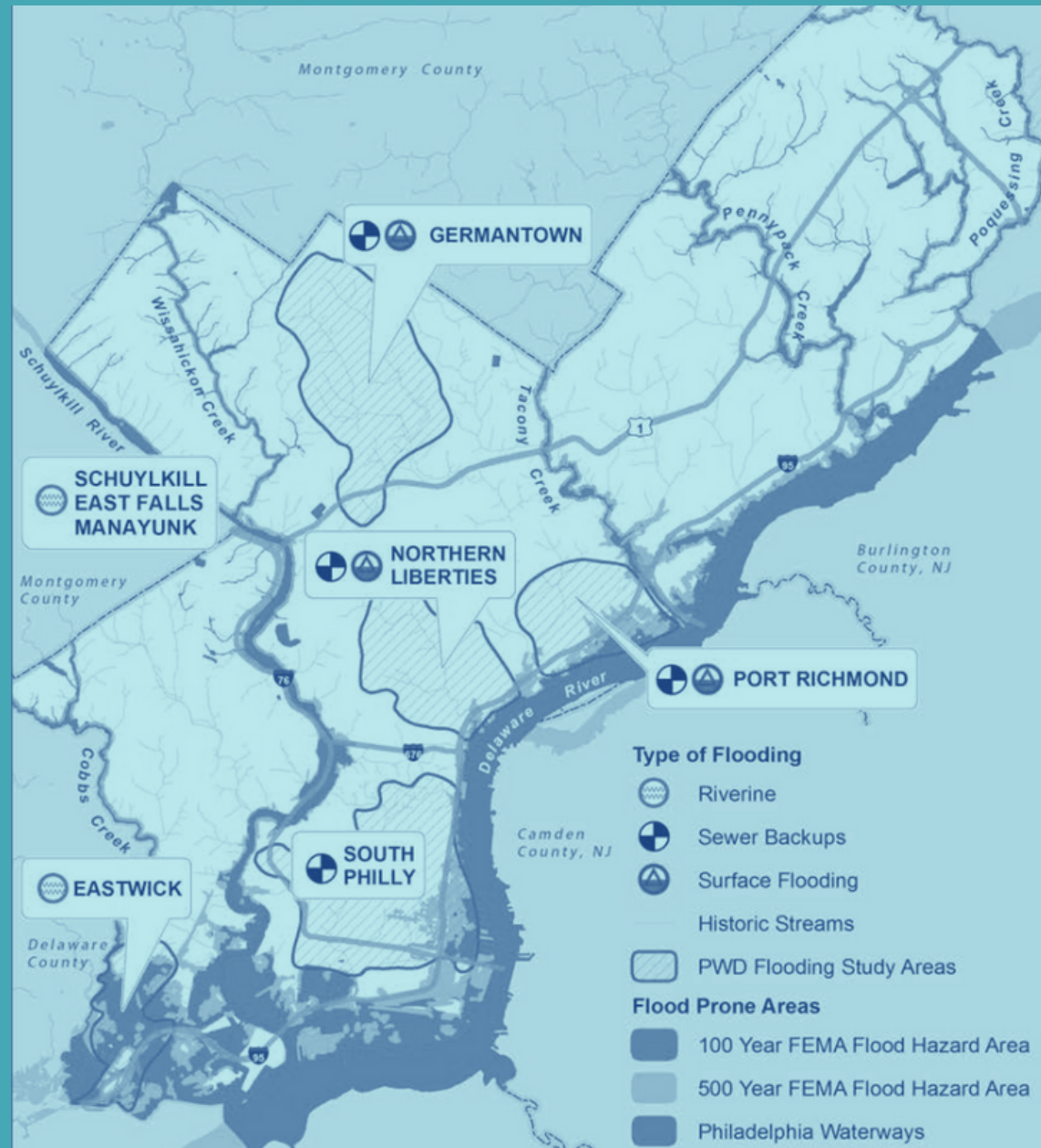


Confirmed COVID-19 Cases per 10,000 Residents  
by ZIP Code in Philadelphia, as of May 15, 2020

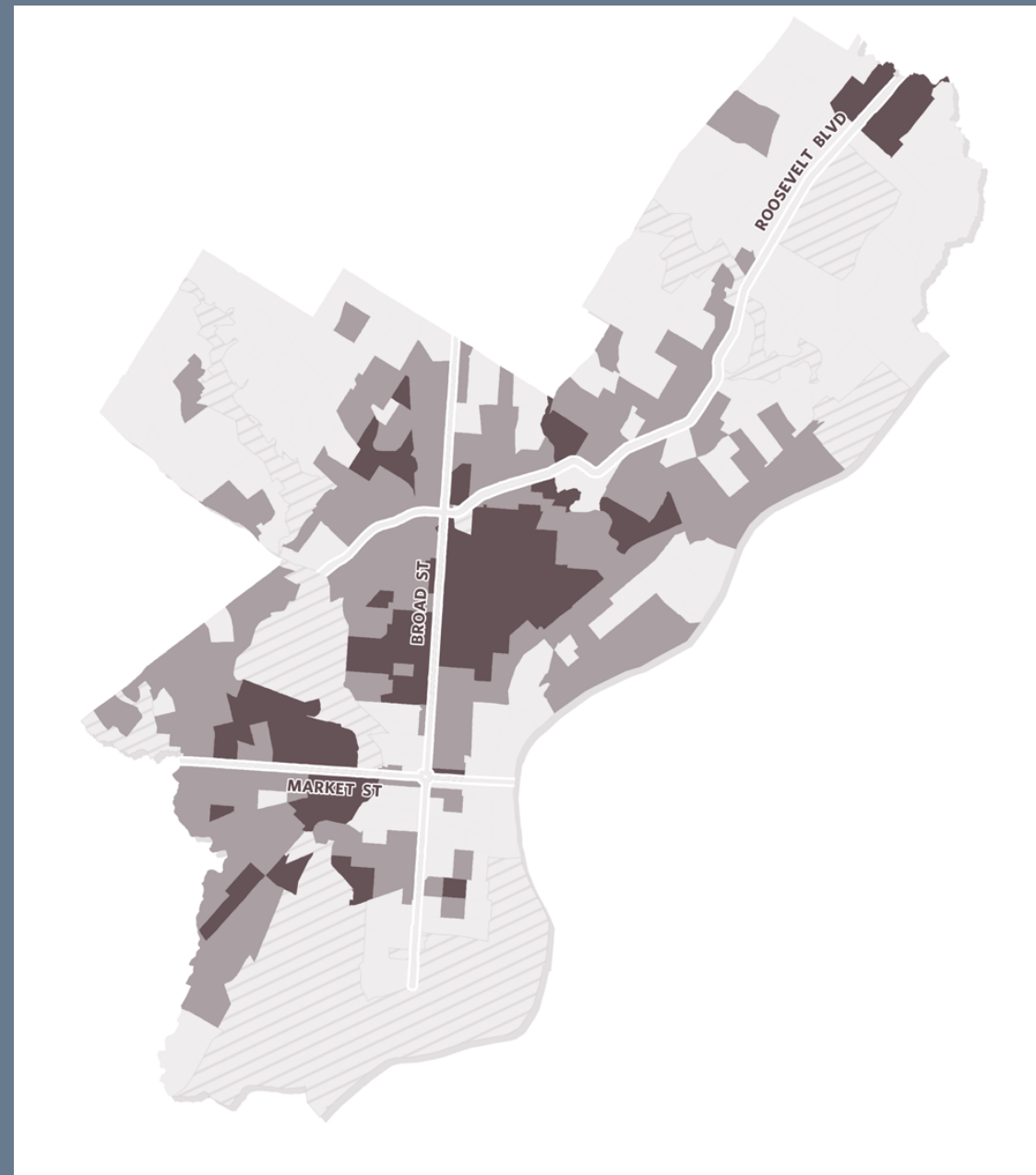




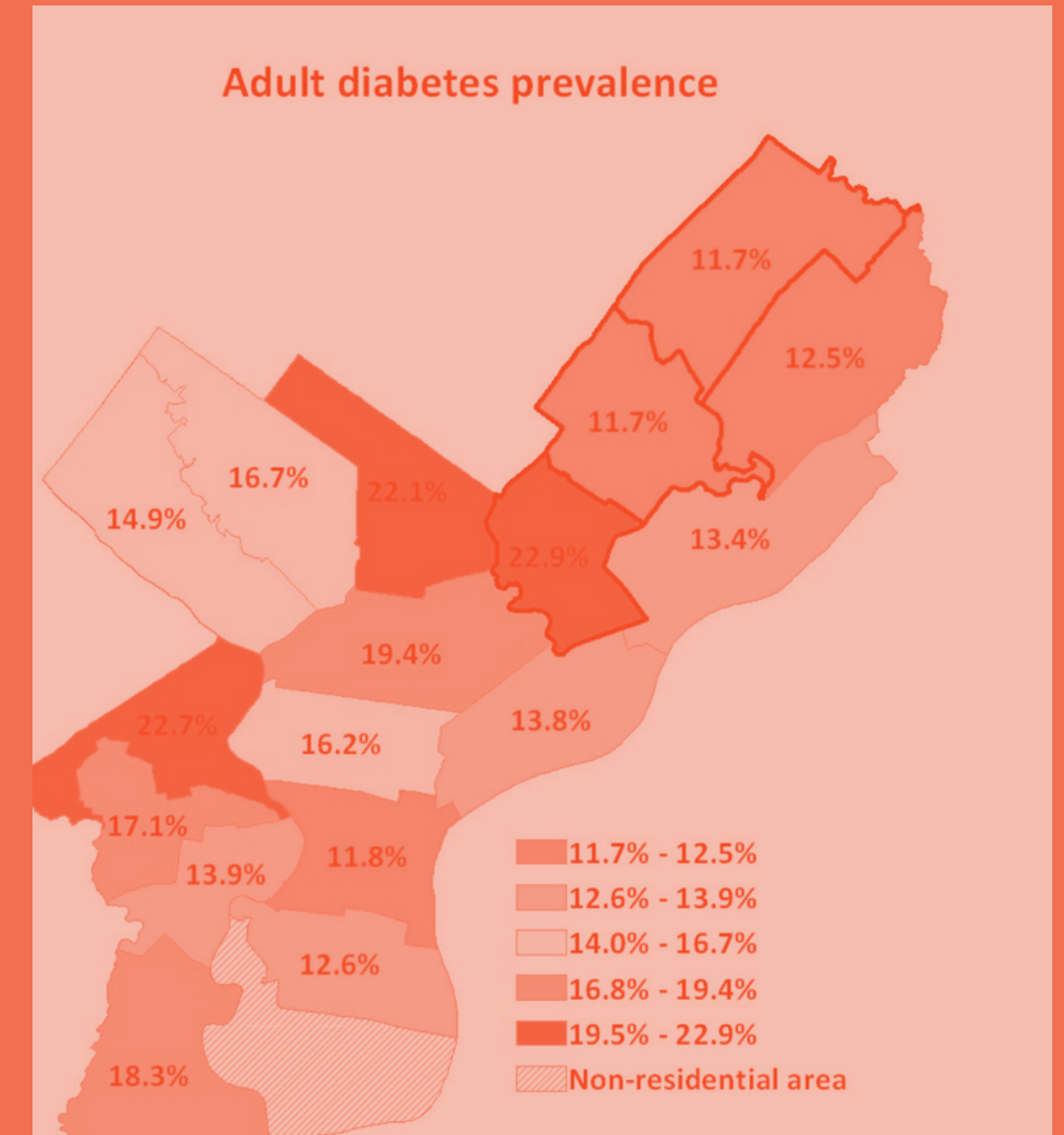
# Flood



# Poverty



# Diabetes









Downtown Asheville -  
Street Plans



SELECT LOCATIONS

HEAT MAP

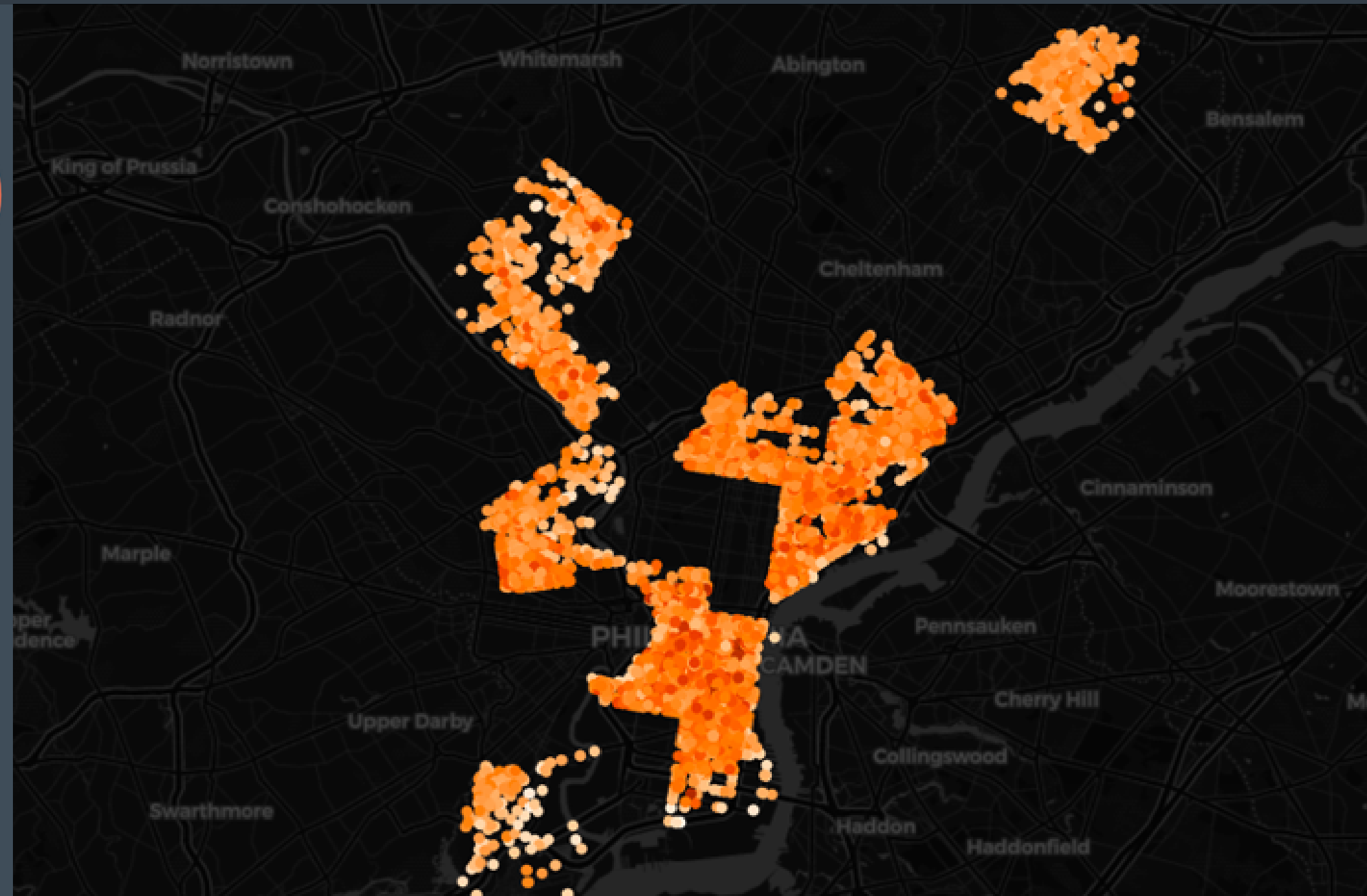
BROWSE DATA

PRIORITIZE

ANALYZE SCENARIOS

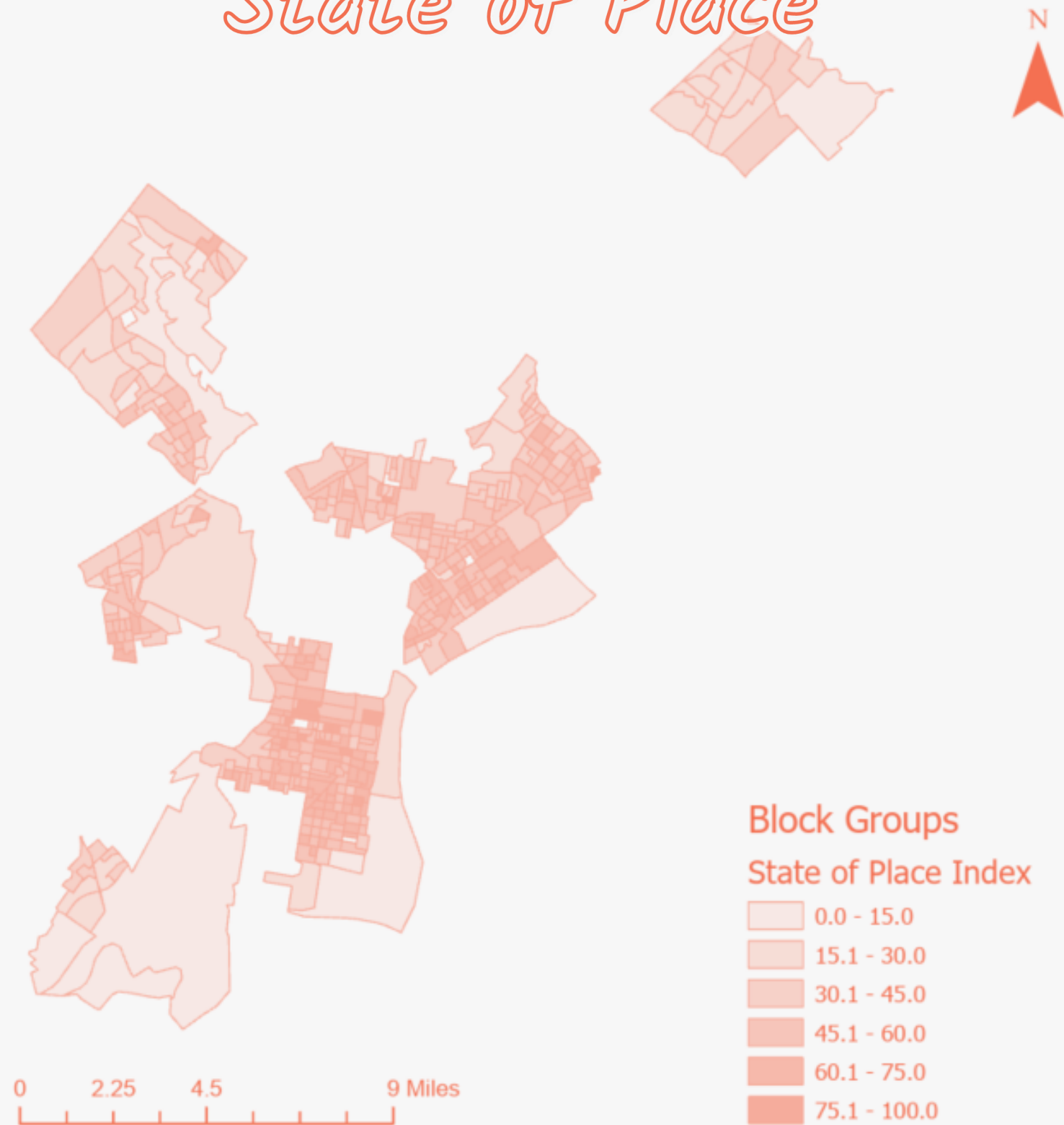
FORECAST FINANCIALS

API

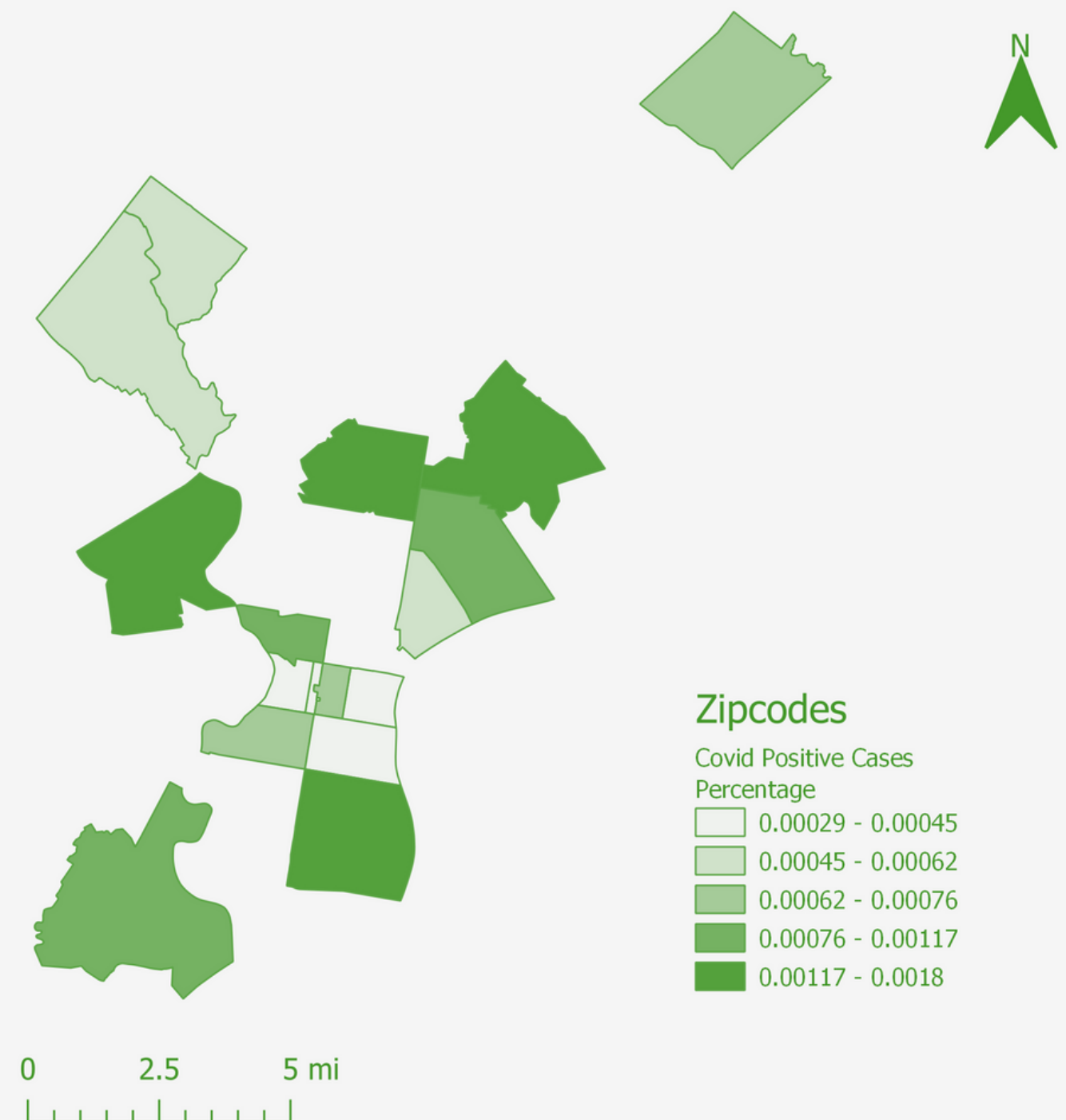




# State of Place

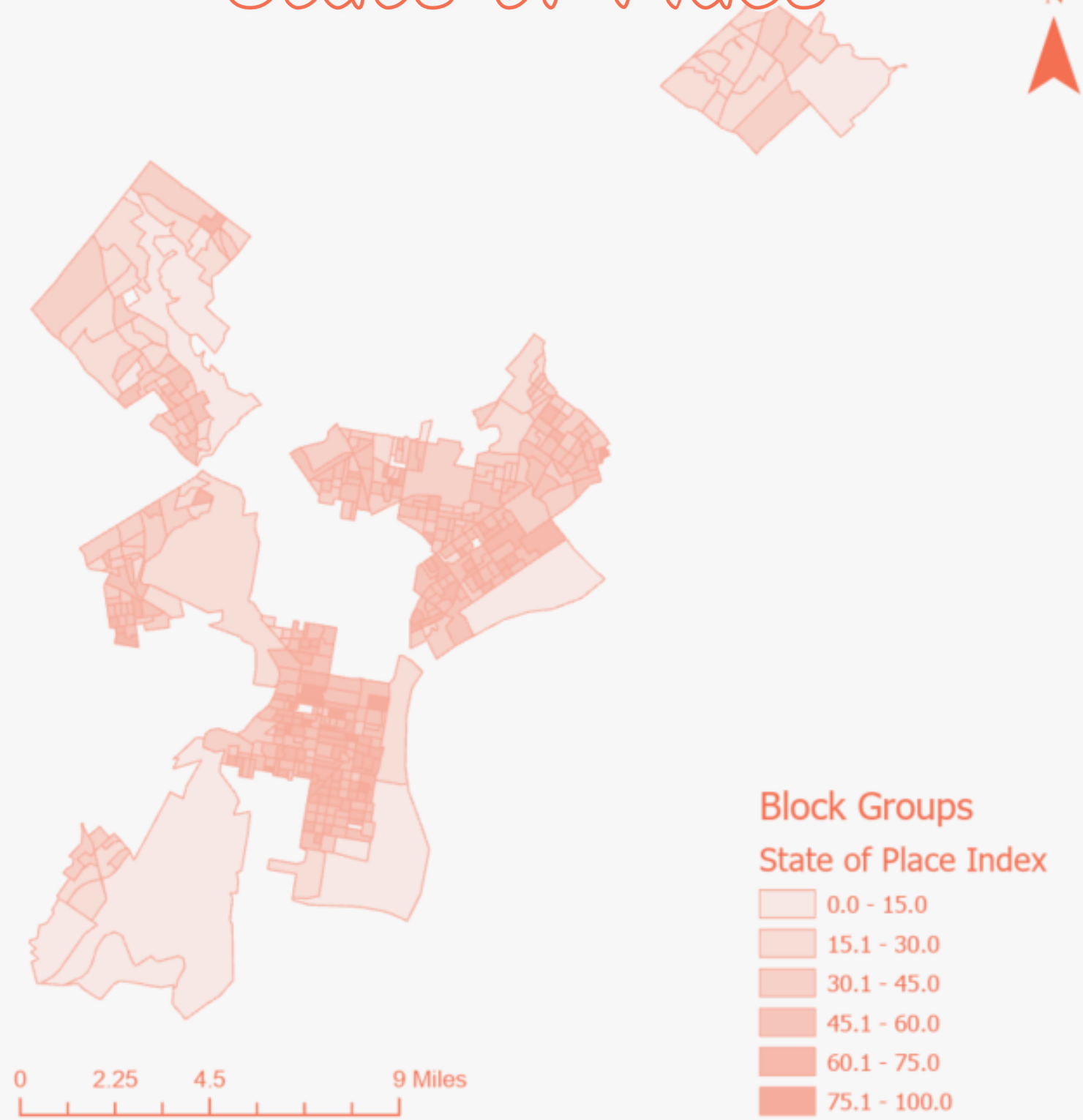


# Covid Rates

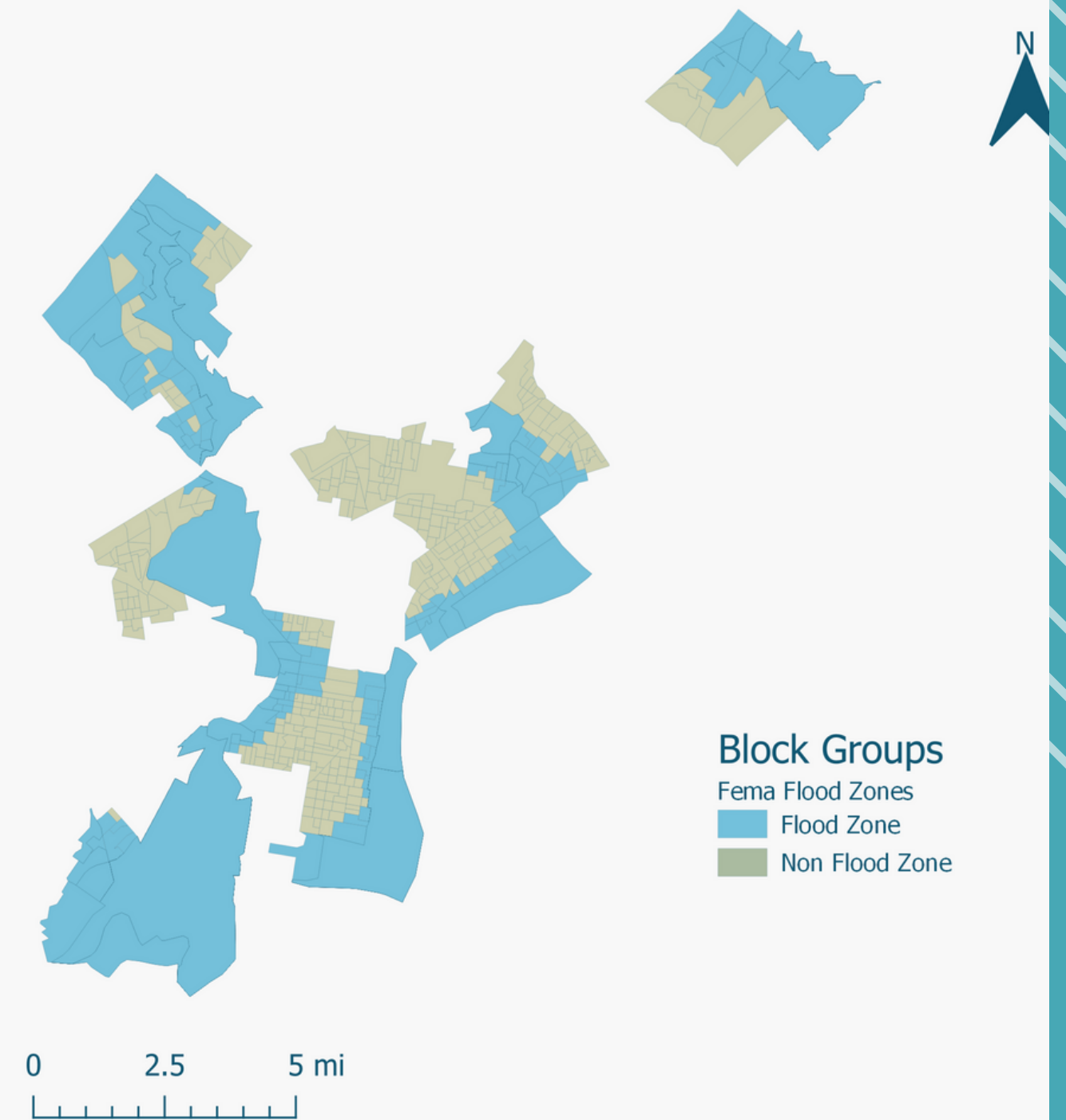




# State of Place

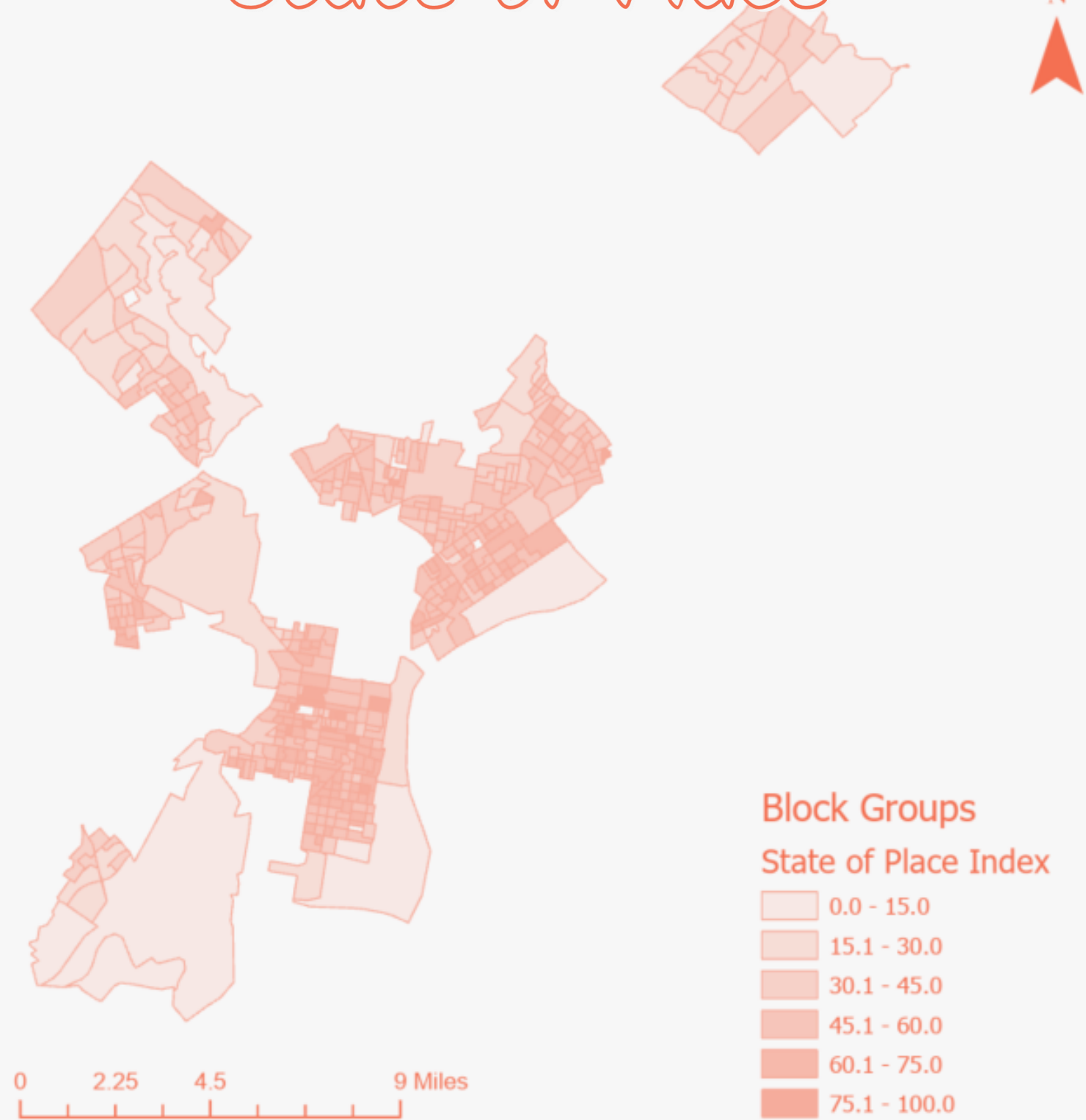


# Flood Plain

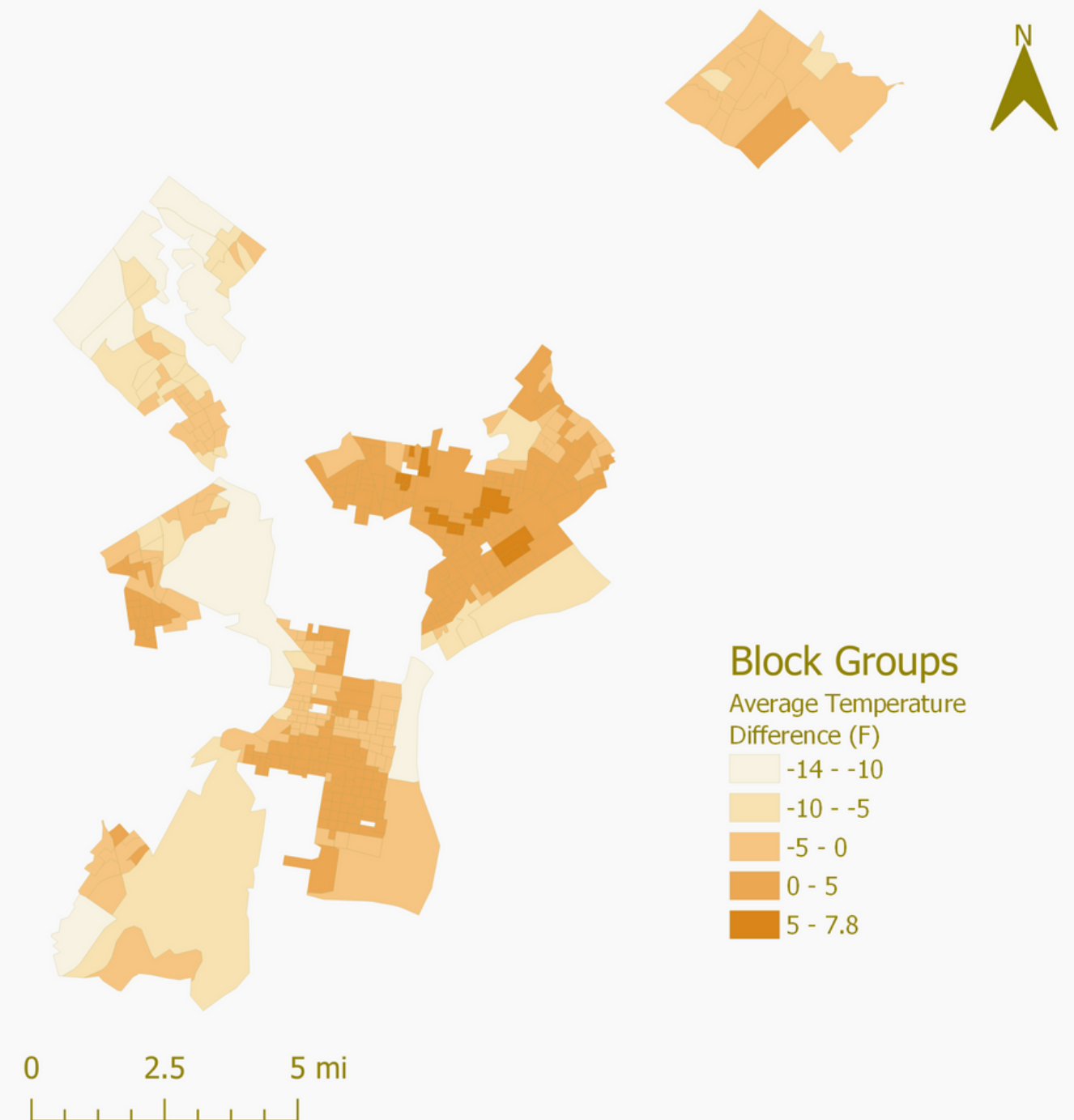




# State of Place

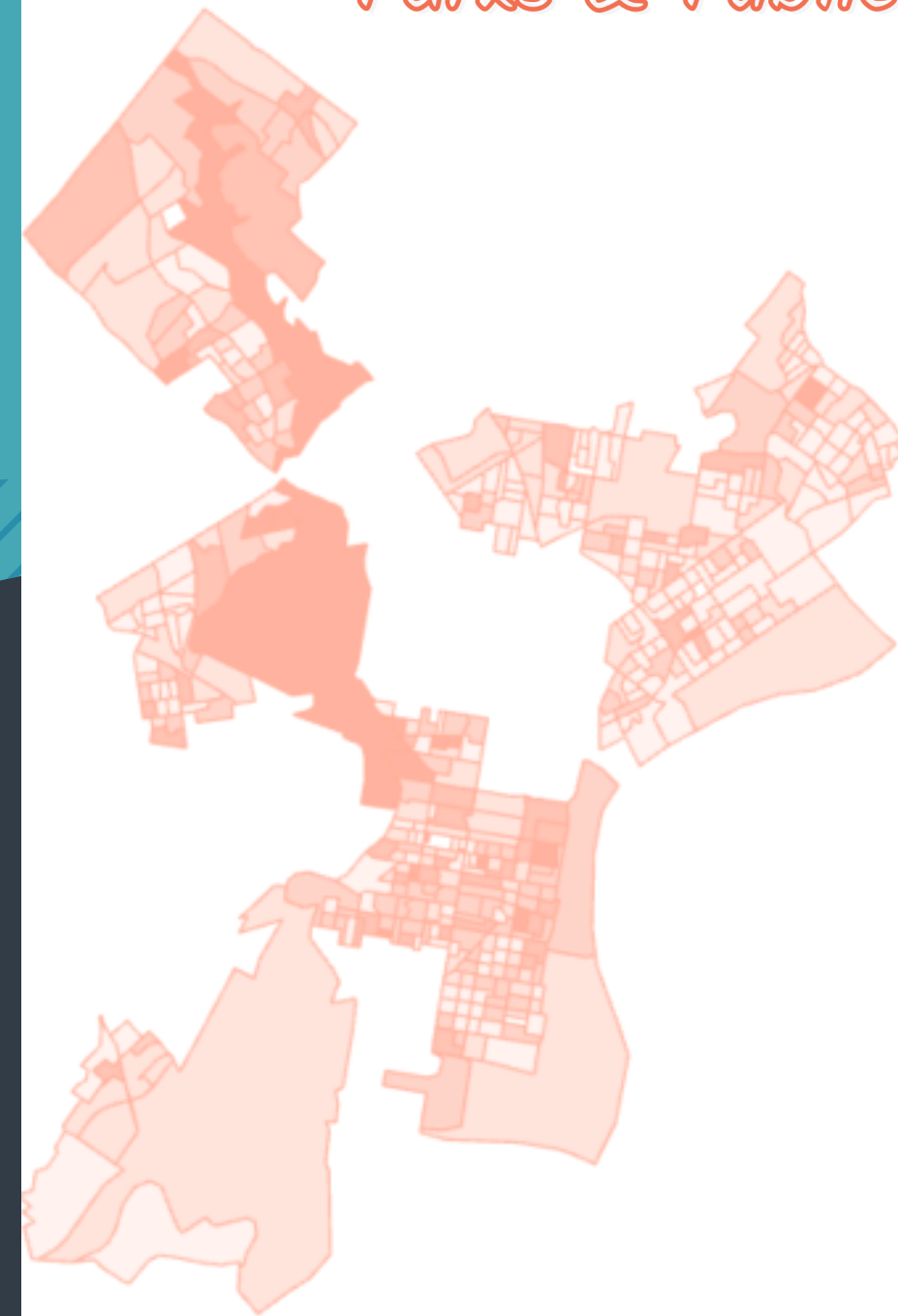


# Heat Diffs.

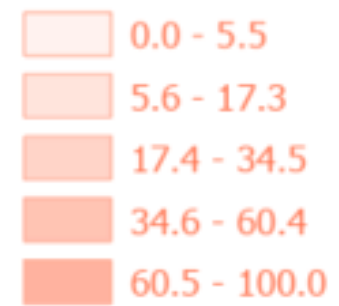




# State of Place - Parks & Public Spaces

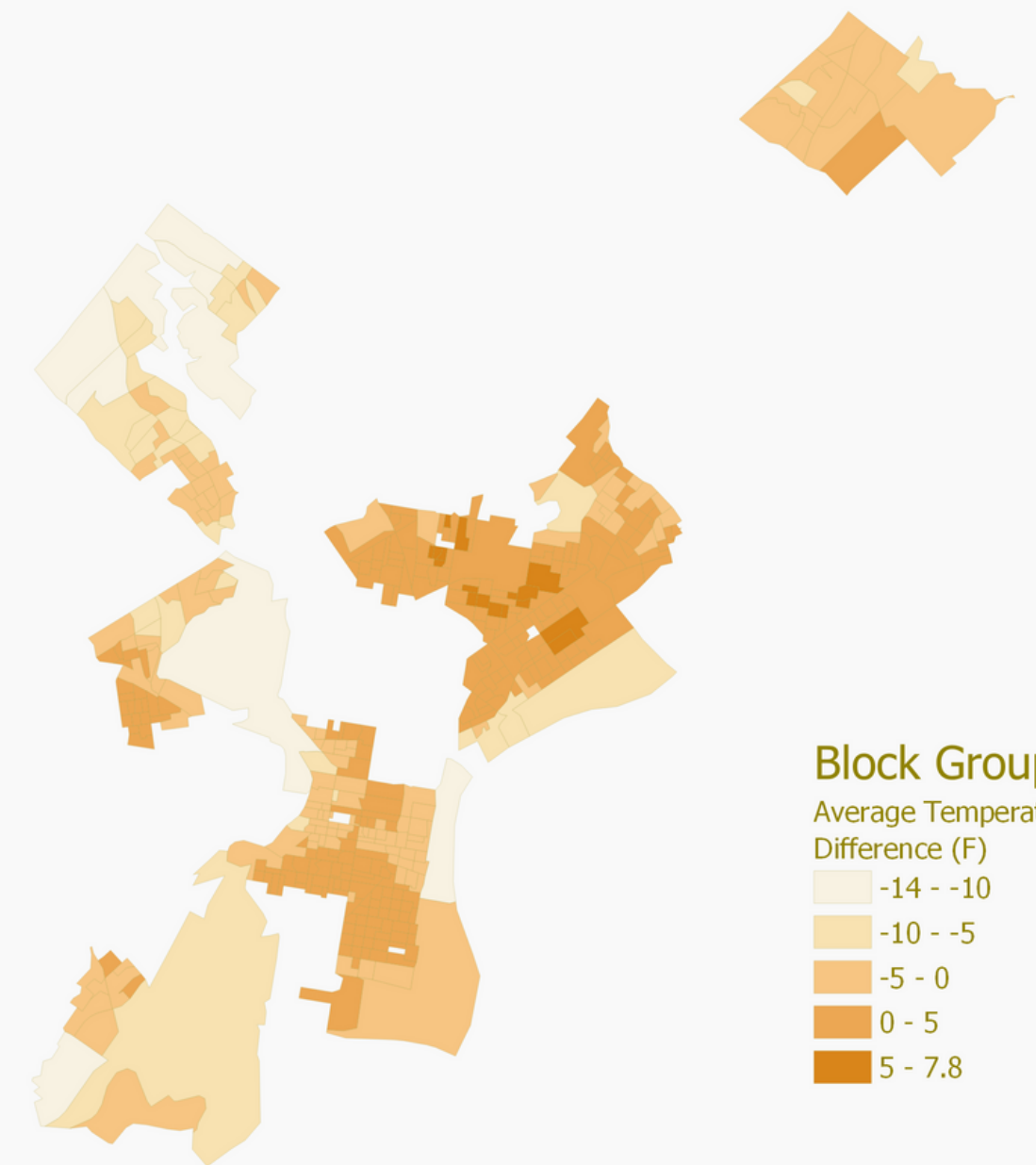


Block Groups  
SoP Parks and Recreation

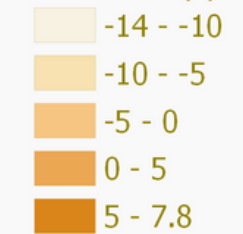


2.25 4.5 9 Miles

# Heat Diffs.

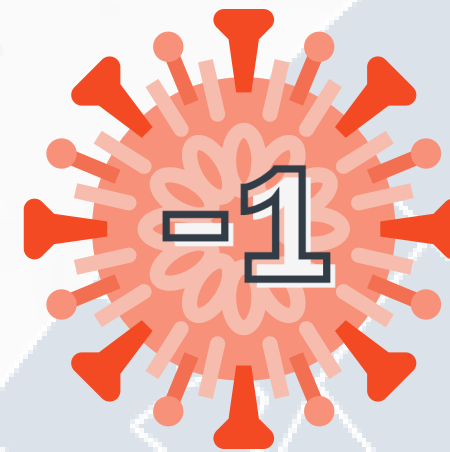


Block Groups  
Average Temperature  
Difference (F)



0 2.5 5 mi





*Deaths*

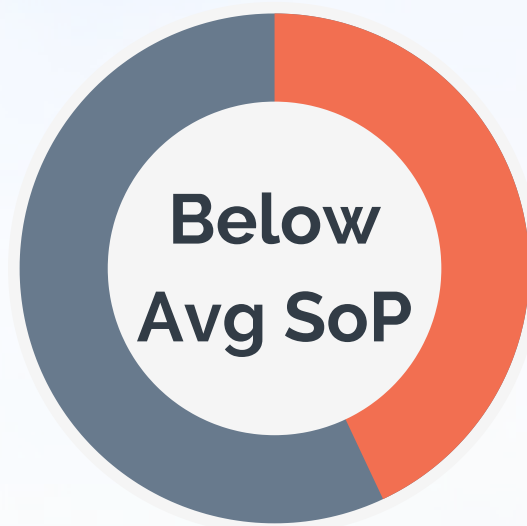


*Hospitalizations*

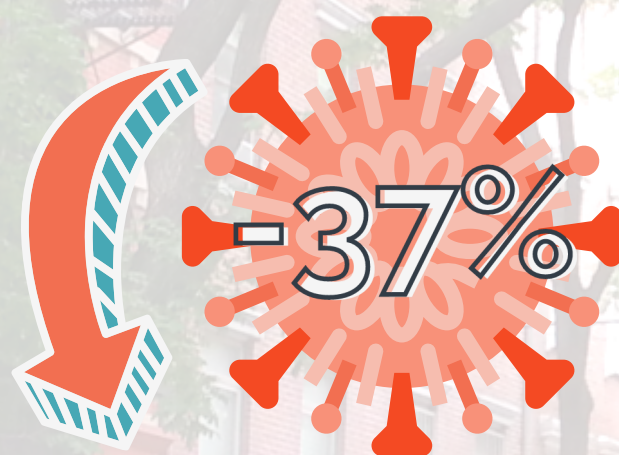
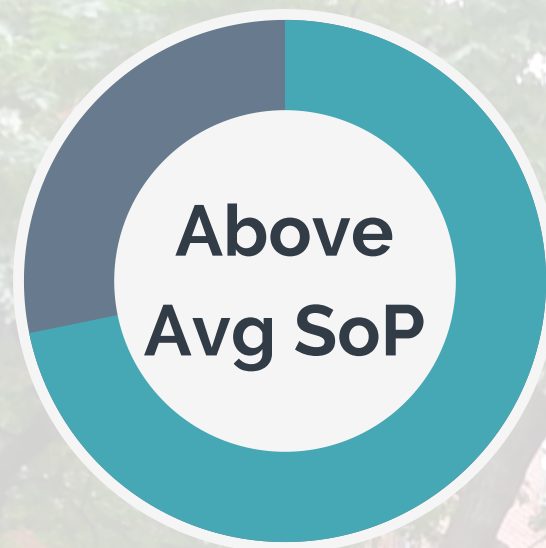


*Positivity Rate*

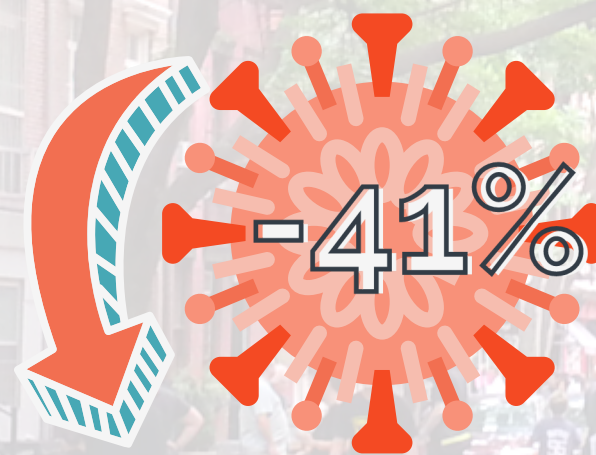




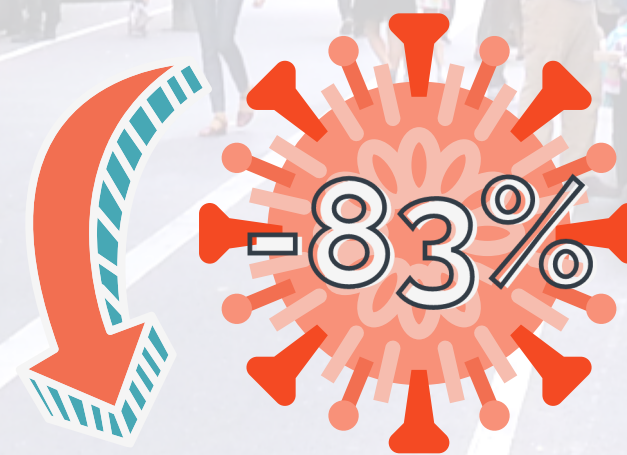
VS



Positivity  
Rate



Hospitalization  
Rate

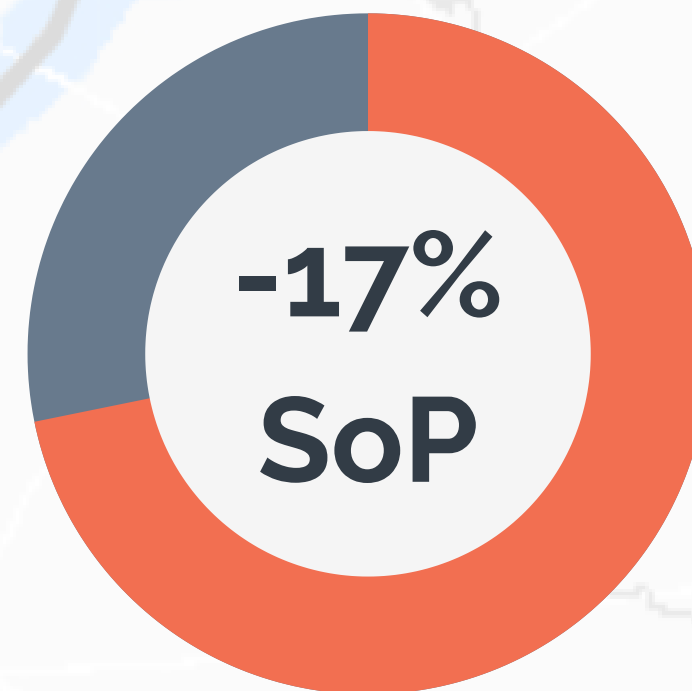


Fatality  
Rate

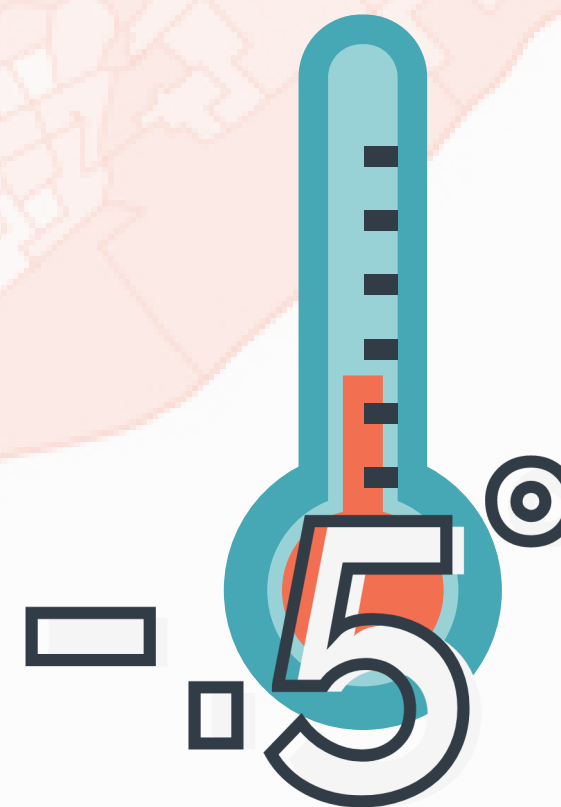
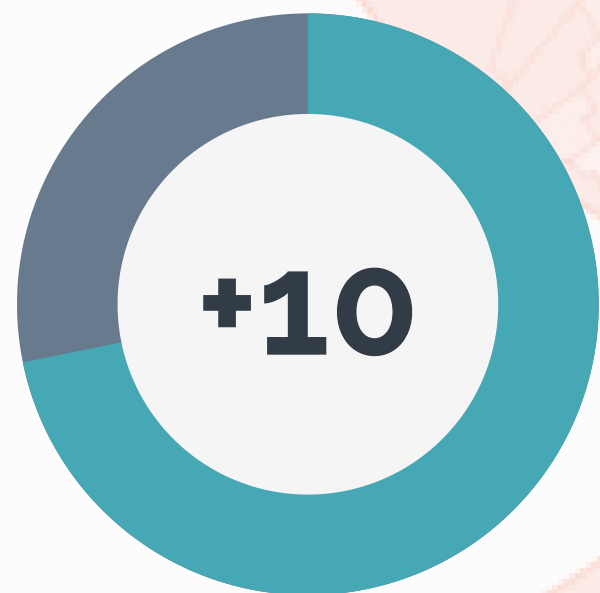




*Flood Plain*

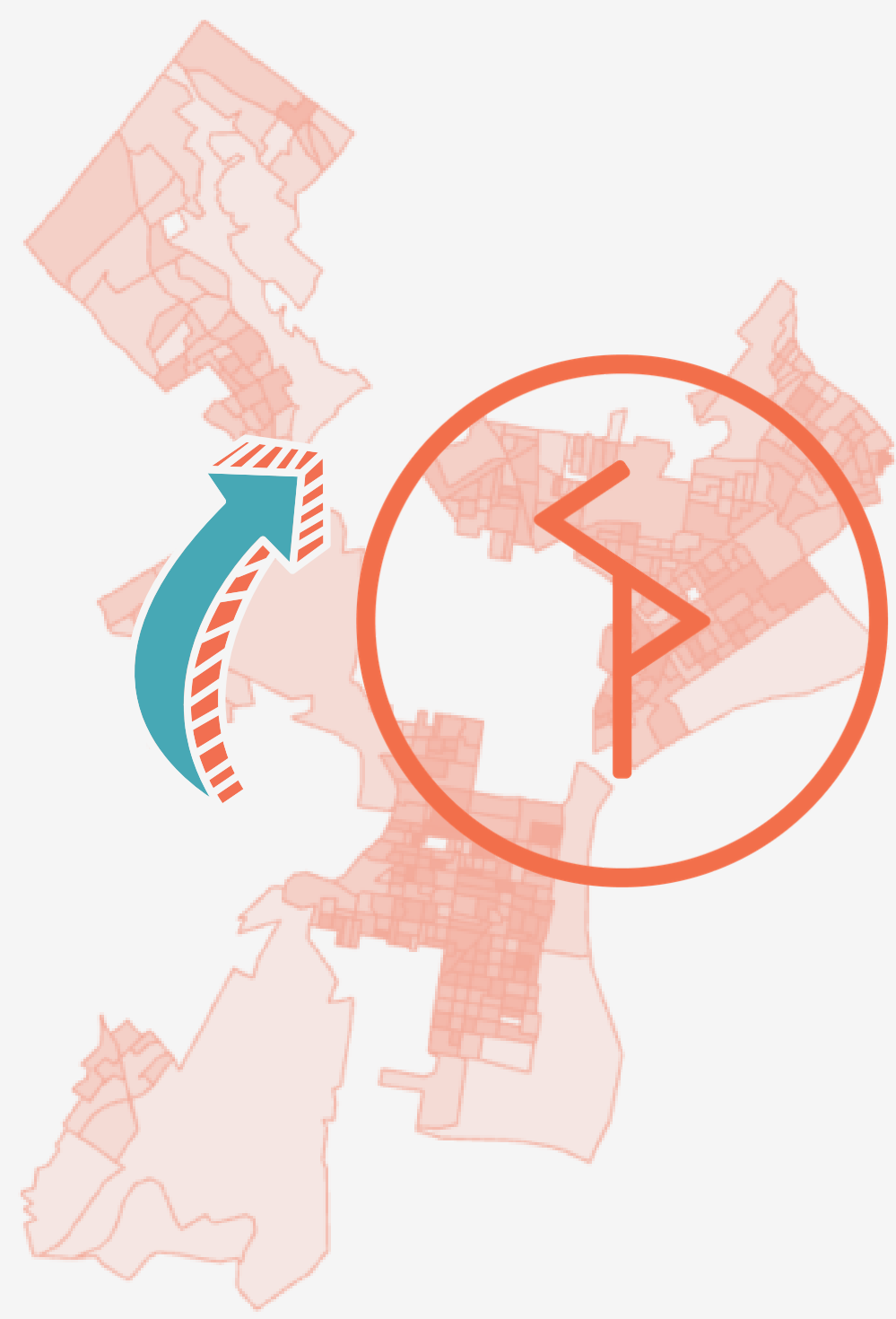






*Heat Diff*

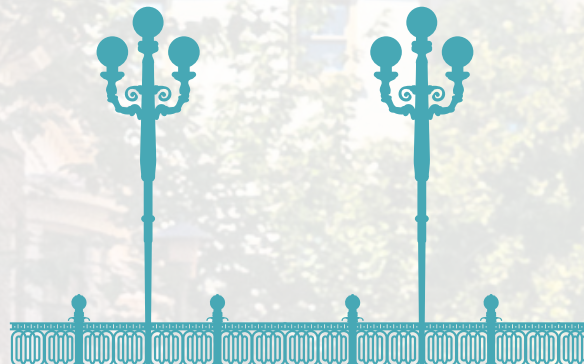
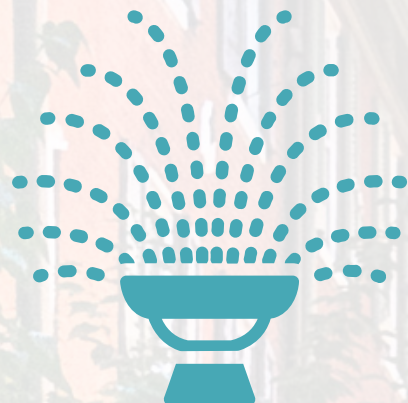
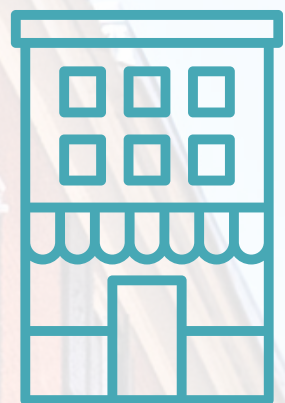




0 2.25 4.5 9 Miles











Micro-scale  
Data

Effective  
Prioritization of Funds



Awesome  
Infrastructure



Predictive  
Forecasting



Community  
Engagement & Trust

Resilient, Happy  
People & Places







# THANK YOU!

**@STATEOFPLACE**  
**@CITYFOODLOVER**

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