Ke'pel Creek, CA
We are currently working with the Yurok Tribe to protect 2,000 acres of timberland here.
Photo by: Chris Bennett

Park Qualities Incubator

Session IV - Visualizing Metrics Pt. 2 - Natural Areas

March 15, 2023

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Connecting everyone to the outdoors™

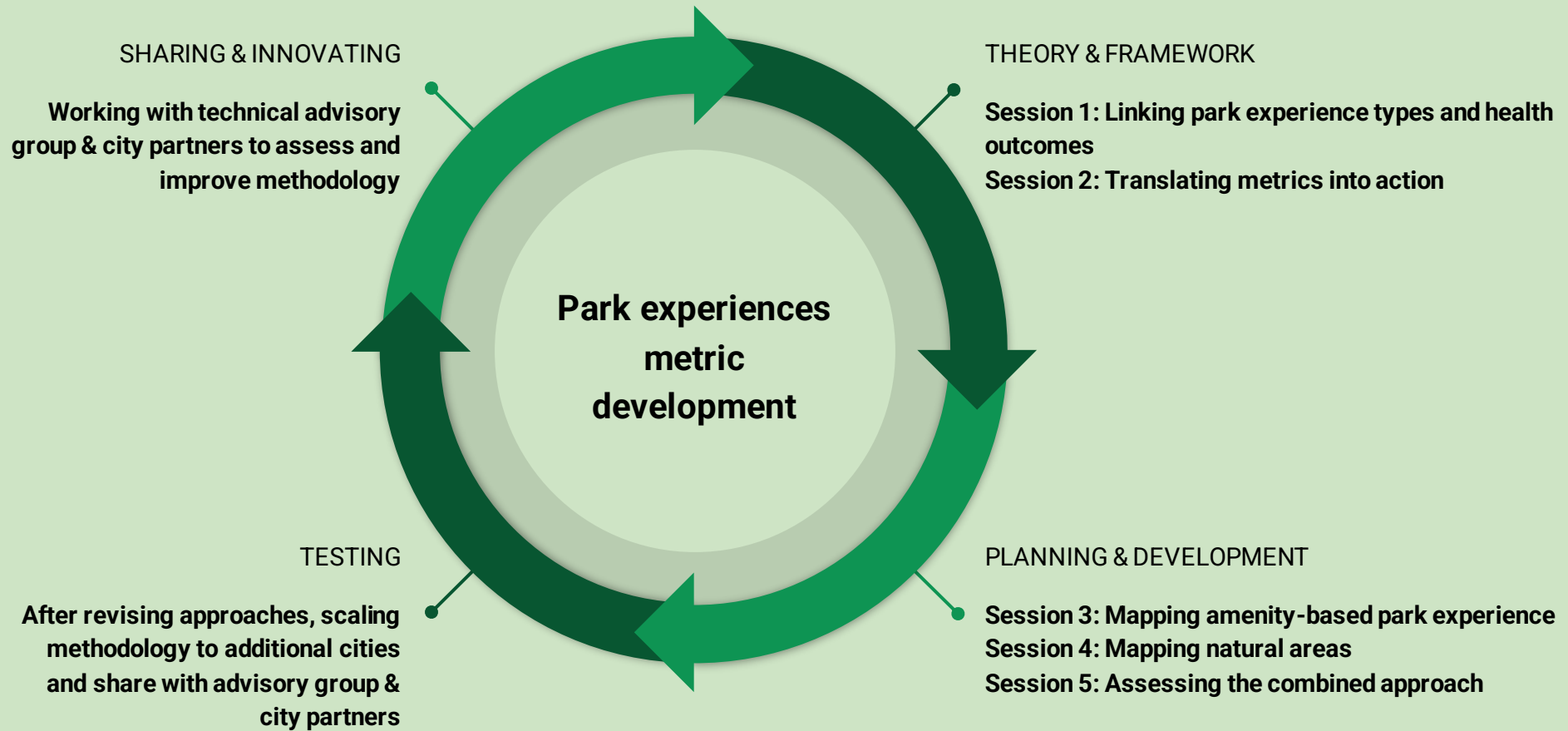# Park Qualities Incubator, Session IV

- *Nov 16: Framework – Linking park experience types and health outcomes*
- *Dec 14: Framework – Translating concepts to metrics and action*
- *Jan 18: Workshop – Review new mapping approaches developed from the first two sessions*
- **Today: Workshop – Review revised approaches and open review period for participants**
- Apr 19: Beyond experiences – Exploring additional approaches to park quality metrics

Today's Agenda:

- Process review
- Recap January's session
- TPL Presentation
- Breakout Groups (50min)
- Session Closing & Exit Poll

Series Overview - What's next?

SHARING & INNOVATING

Working with technical advisory group & city partners to assess and improve methodology

THEORY & FRAMEWORK

Session 1: Linking park experience types and health outcomes
Session 2: Translating metrics into action

Park experiences metric development

TESTING

After revising approaches, scaling methodology to additional cities and share with advisory group & city partners

PLANNING & DEVELOPMENT

Session 3: Mapping amenity-based park experience
Session 4: Mapping natural areas
Session 5: Assessing the combined approach

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Recap: Mapping amenity-based park experiences

- By mapping the distribution of active and social gathering amenities, we're able to better characterize parks and understand the spatial distribution of amenity-rich or deficient parks
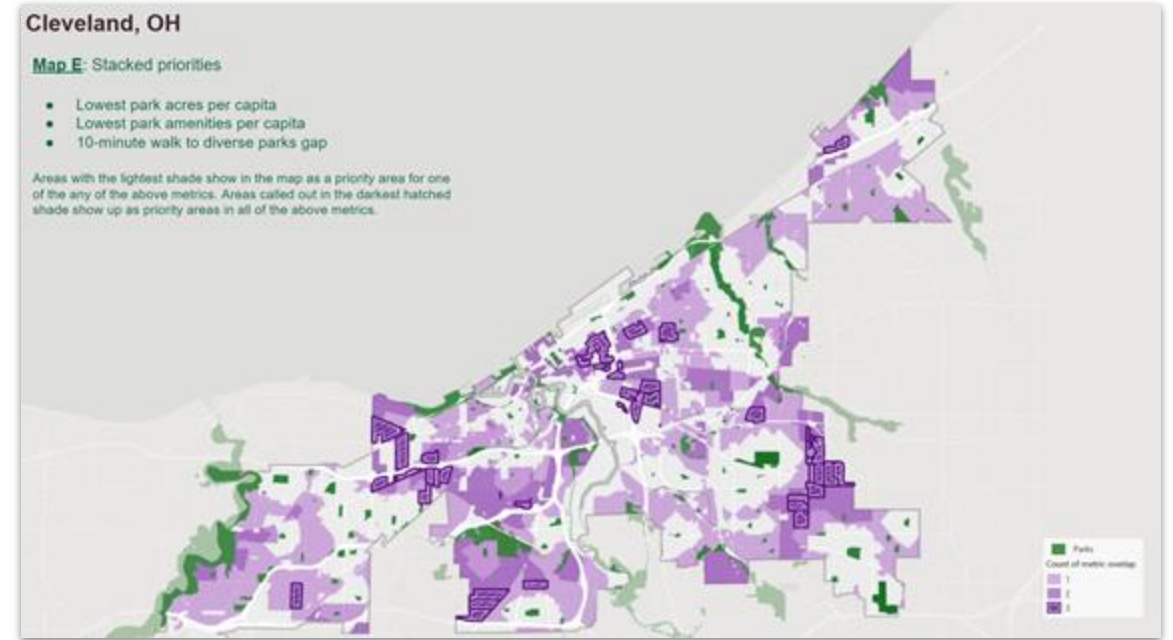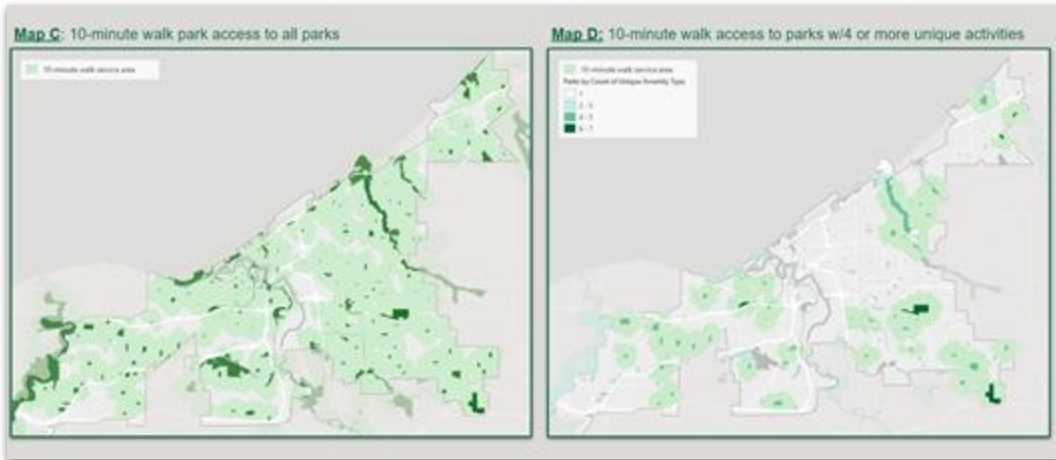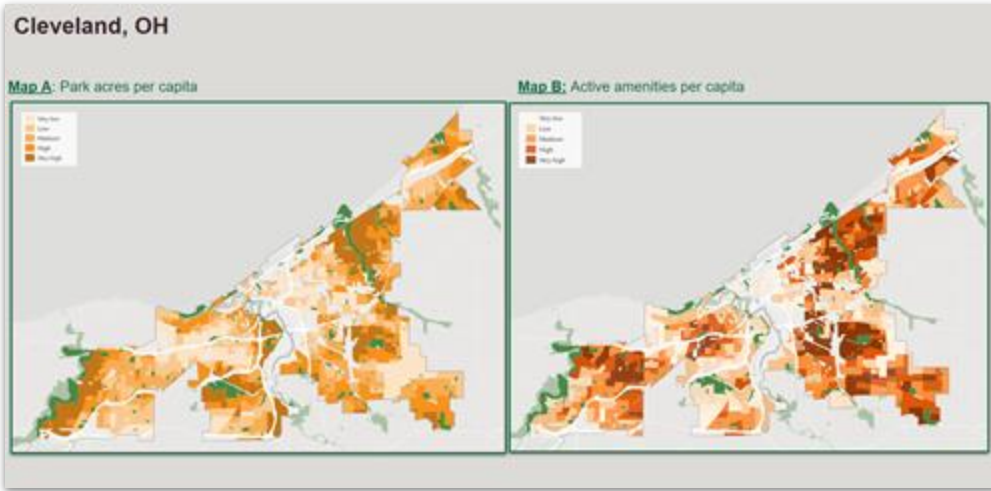

Characterizing parks - by amenity count
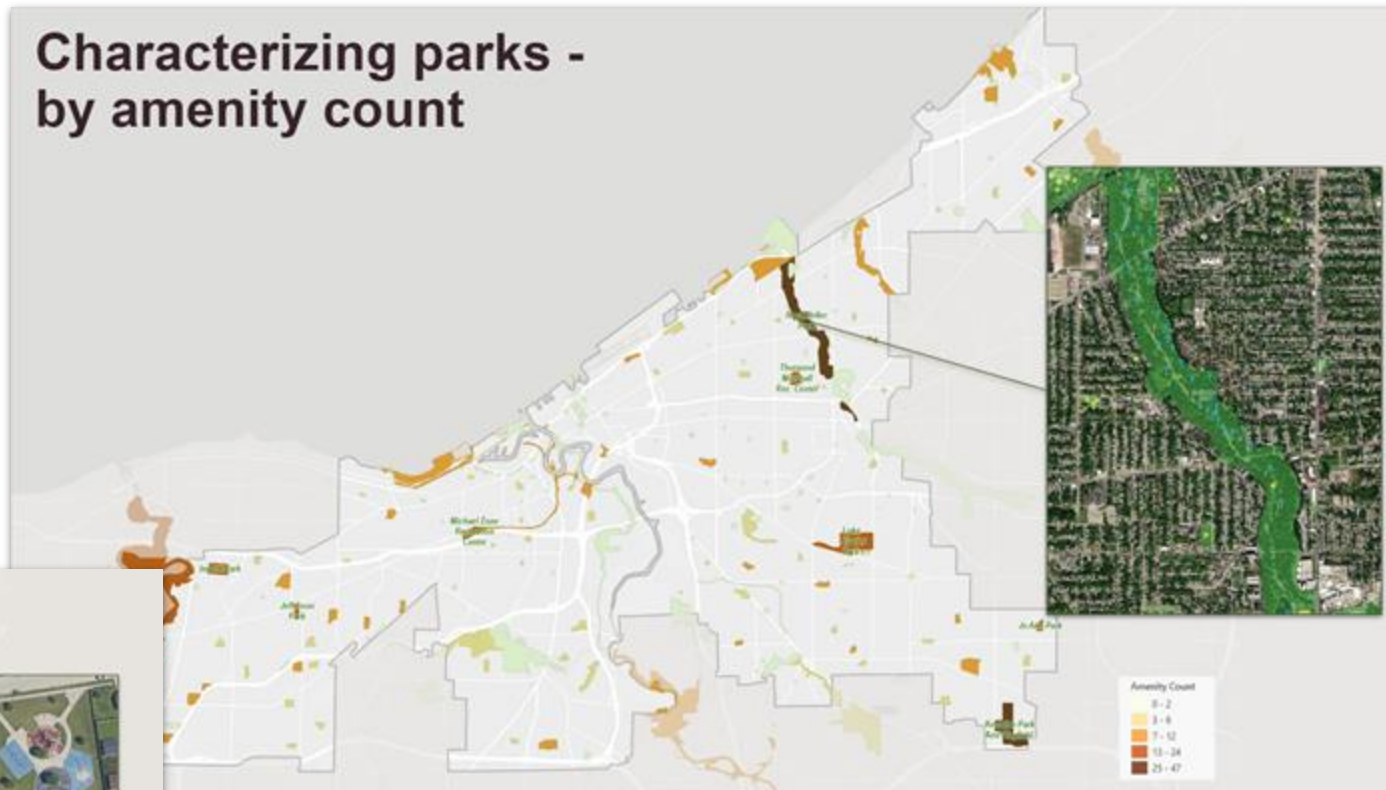
Characterizing parks - by density of amenities

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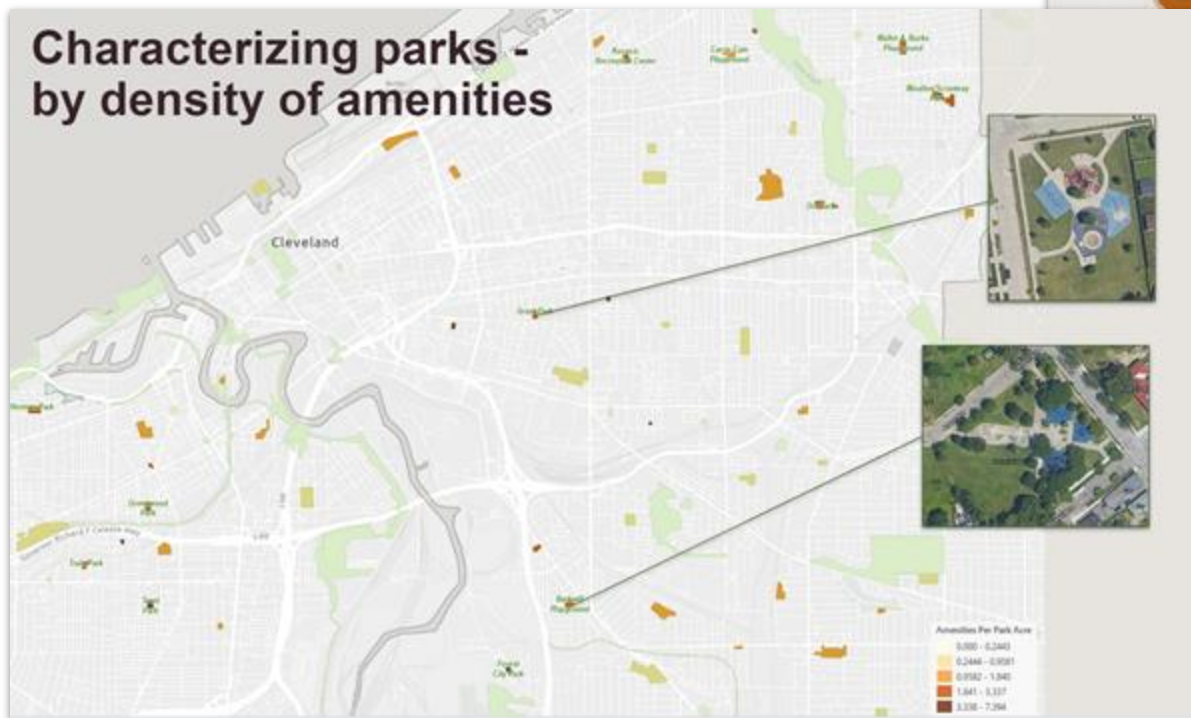
Recap: Incorporating amenity mapping to park prioritization

Recap: What we heard

Suggested approaches/feedback for calculating city and neighborhood access to active & social park experiences:

Reflections:

- Approach of mapping amenities is helpful because open space areas can skew the data when just looking at acreage alone
- Great for prioritizing active amenities in existing parks rather than just prioritizing park gaps
- Mapping the amount of unique amenities could reflect differences in investment

Limitations/Suggestions:

- Need to account for amenities in neighboring jurisdictions and also account for neighborhoods private spaces like backyards, pools, etc.
- There is value in **natural areas** without amenities
- When looking at access to parks with multiple unique amenities, this could negate the value of one active amenity that could provide a benefit to a neighborhood. For this approach, also need to factor in community feedback in the identification of unique amenities
- Symbology & labelling adjustments on maps
- Create a data viewer with the ability to toggle service areas for different park experiences
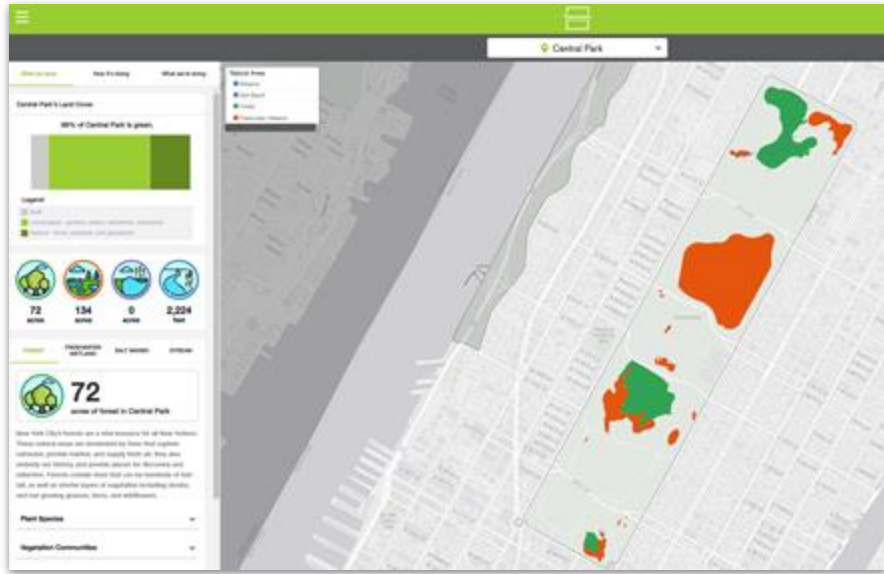
Reflections on stacked priorities:

- Need to factor in the lack of **investment** over time and would be useful to add in **usage**
- Unsure of the value of stacking since they can point to different areas of the city
- Need to add an equity lens because this tips the scales

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Mapping Access to Natural Park Experiences

Mapping Nature Access
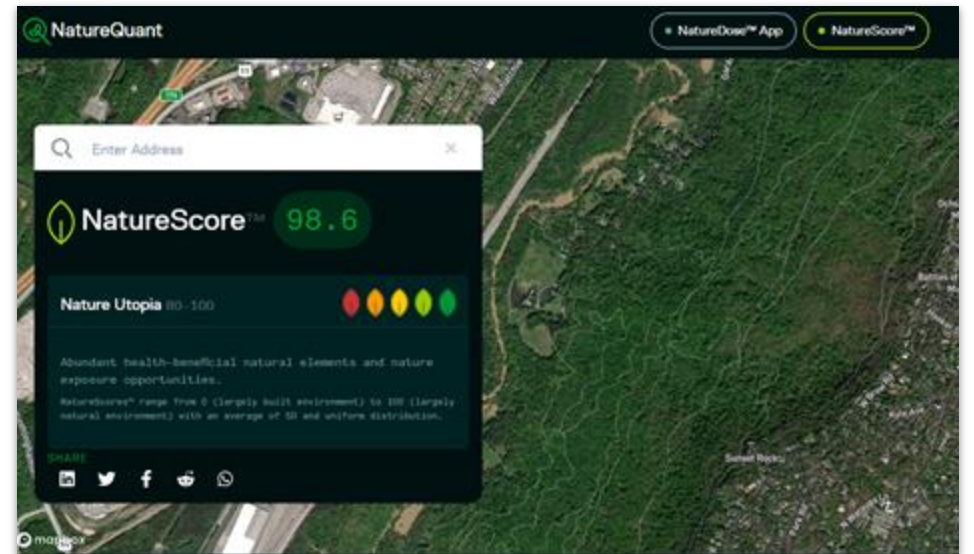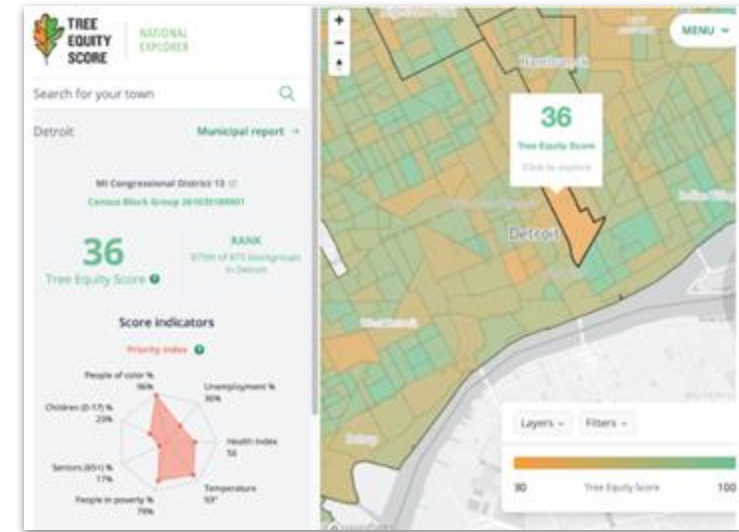
Our focus - Mapping Natural Park Experiences

- Rather than addressing urban greening and nature exposure within cities, our focus here is on identifying **park destinations** where visitors can spend time in nature and these as **critical pathways for health**

Where are there opportunities to…

get active?

enjoy nature?

gather?

Approaches to identifying natural areas

By classifying according to **park type**

By classifying according to **land cover data**

Approach 1: Mapping Access to Natural Experiences - by park type

Current definition of Natural Areas: Naturals lands are either pristine or reclaimed areas that are open to the public and left largely undisturbed and managed for their conservation and ecological value (i.e., wetlands, forests, deserts). **While they may have trails and occasional benches, they are not developed for any recreation activities beyond walking, running, and cycling**.

Nature Preserves

Community park w/ trails along water or in forest

Greenway / trailway

Open space / Drainage

Greened Vacant Lot

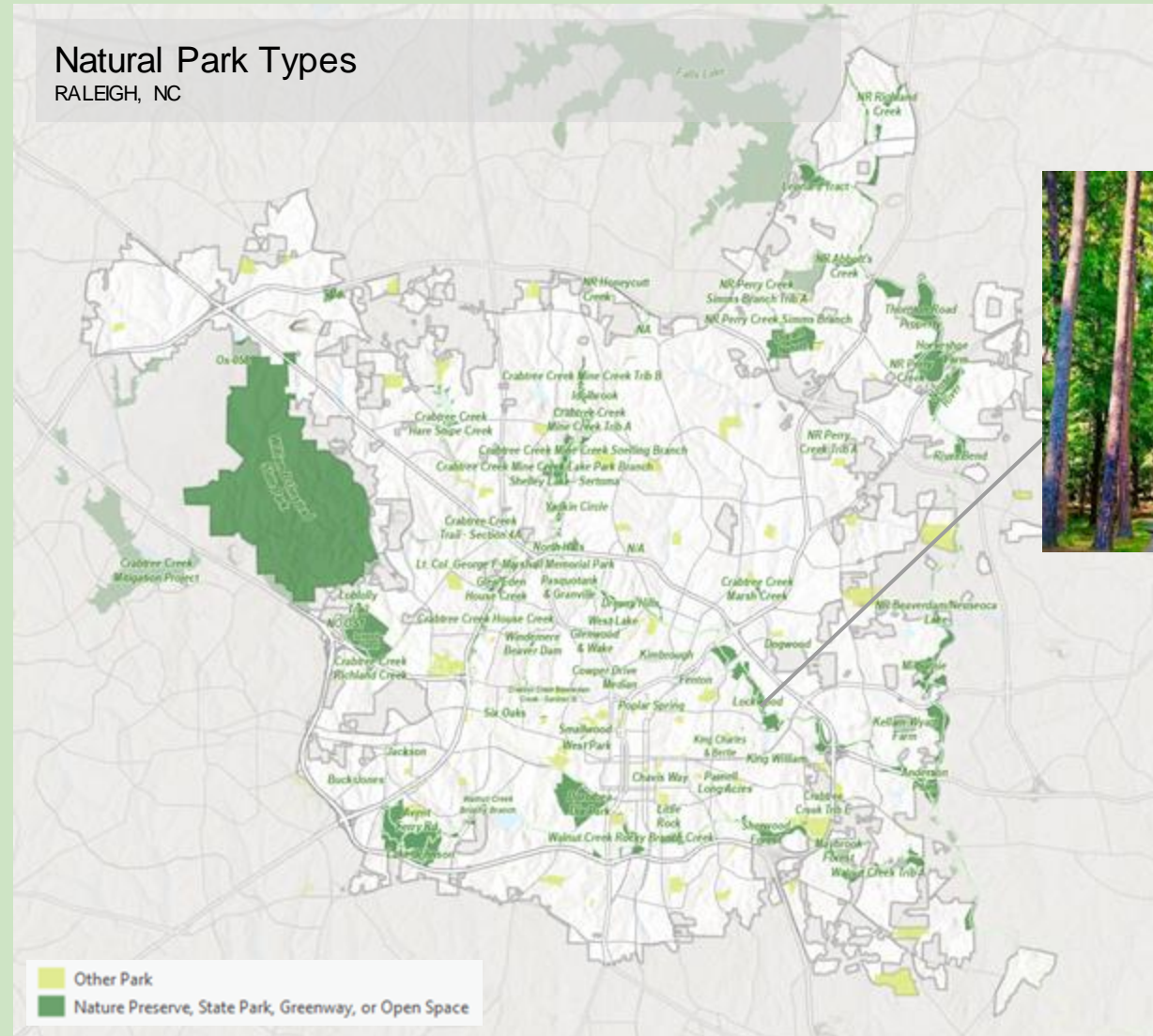# Classifying Natural Areas - by park type

In Raleigh, we classified natural areas as the following park types:
- Greenways
- Nature Preserves
- Open Space
- Forests
- Parks along lakes/waterfront

*Critical to all park types is that they are **open** and **publicly accessible**

Natural Park Types
RALEIGH, NC

Other Park

Nature Preserve, State Park, Greenway, or Open Space

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Access to Natural Experiences - by park type

10-minute walk access to natural area park types
RALEIGH, NC

Park w/public access

Nature preserve, greenway, forest, or other natural area

10-minute walk service area
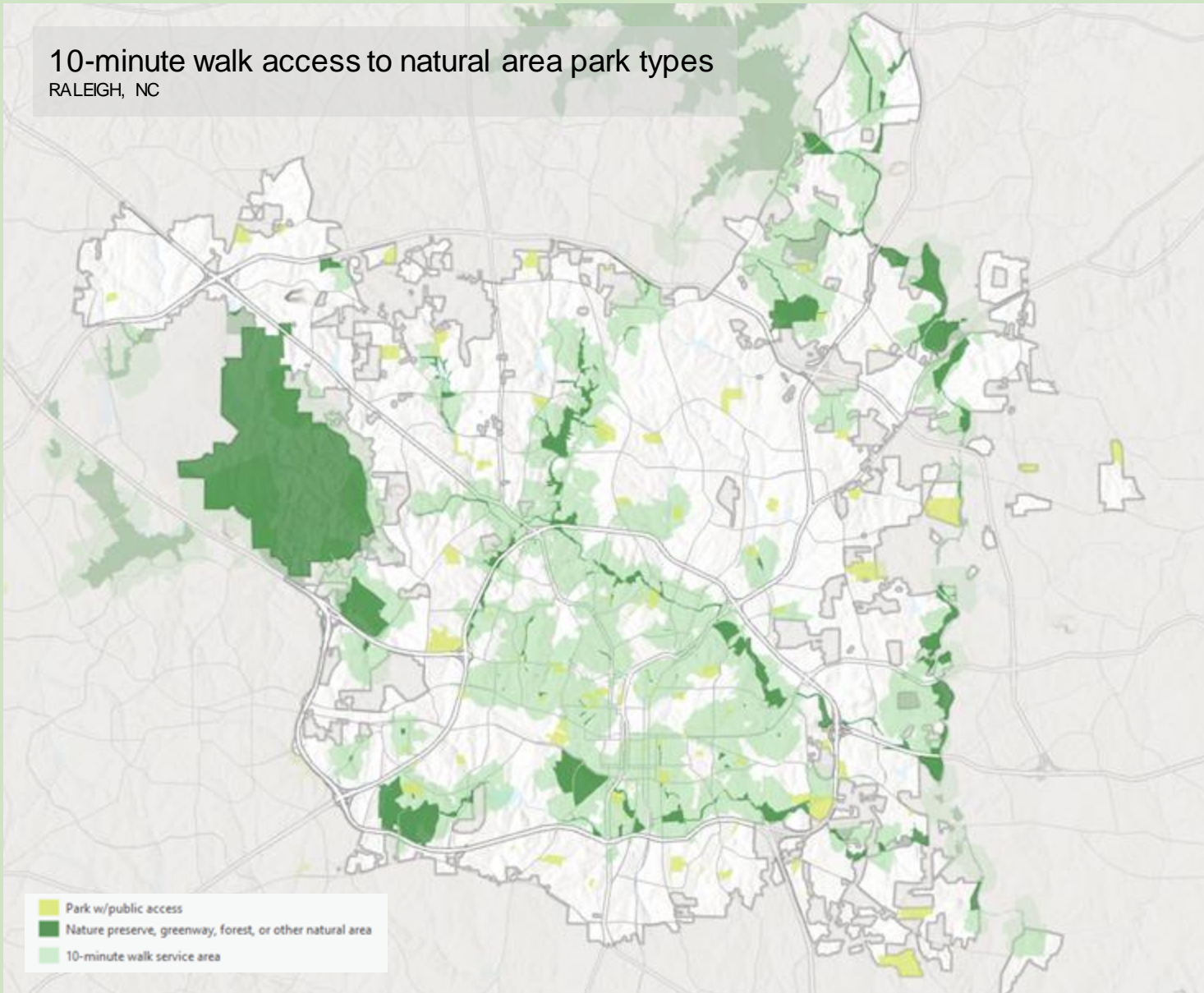
- **27%** of residents have 10-minute walk access to natural park type

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Distribution of natural park acres - by park type

Natural park acres per capita
RALEIGH, NC

Natural Park Acres Per Cap
- 0.000000 - 0.000710
- 0.000711 - 0.011828
- 0.011829 - 0.034918
- 0.034919 - 0.102119
- 0.102120 - 9.077465

- Other Park
- Nature Preserve, State Park, Greenway, or Open Space
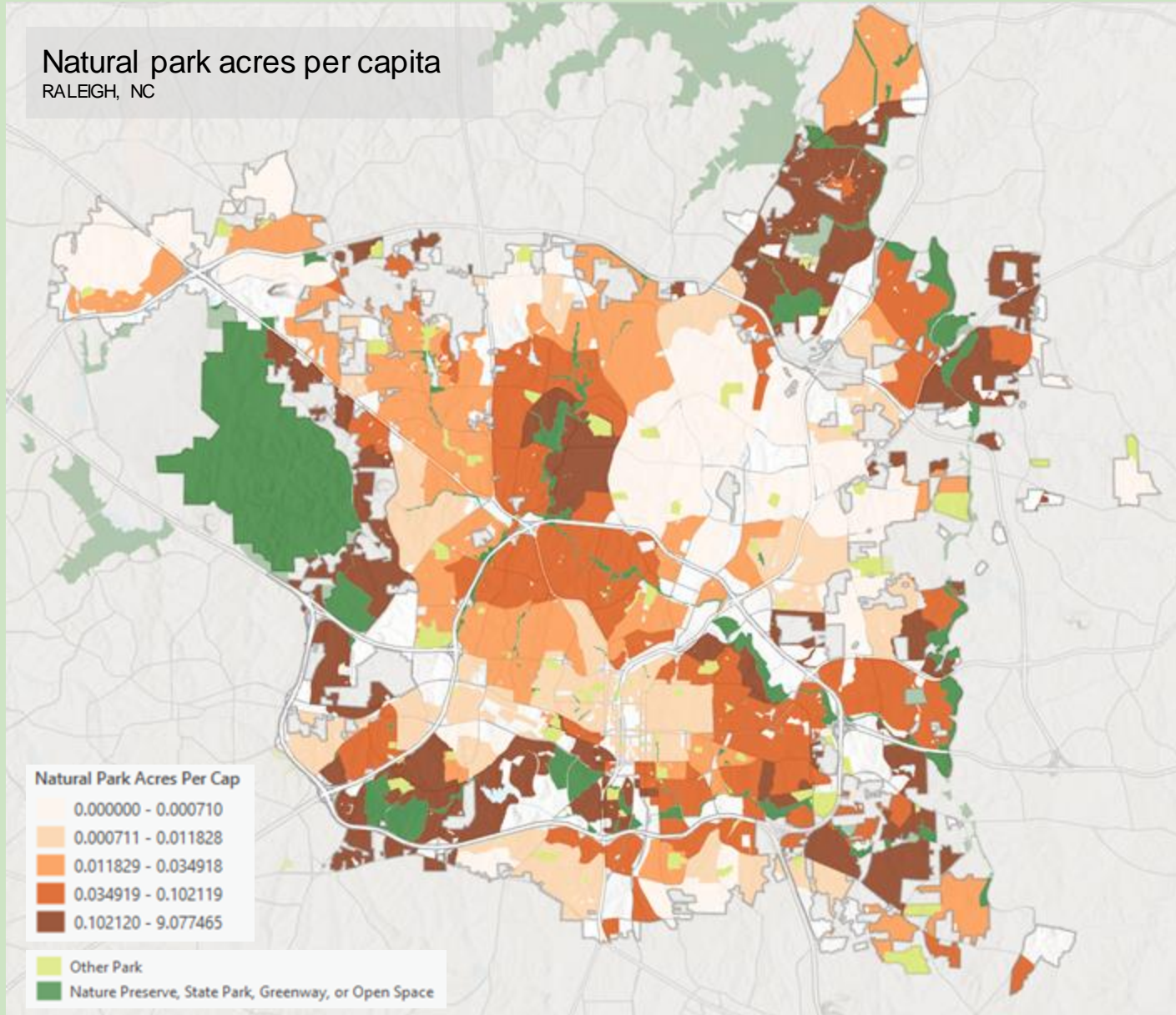
Potential benefits of this approach:

- Focuses on parkland that is managed primarily as natural
- Park typologies can reflect local context

Potential limitations:

- Excludes smaller parks with mixed types (average park size included is 220 acres)
- Excludes spaces not tracked or identified as natural
- Prevalence of tracking natural park types is low

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Approach 2: Classifying Natural Areas - by land cover

By using available land cover data, we can identify natural areas that may exist within larger park polygons or parks that would otherwise be excluded from a natural park typology
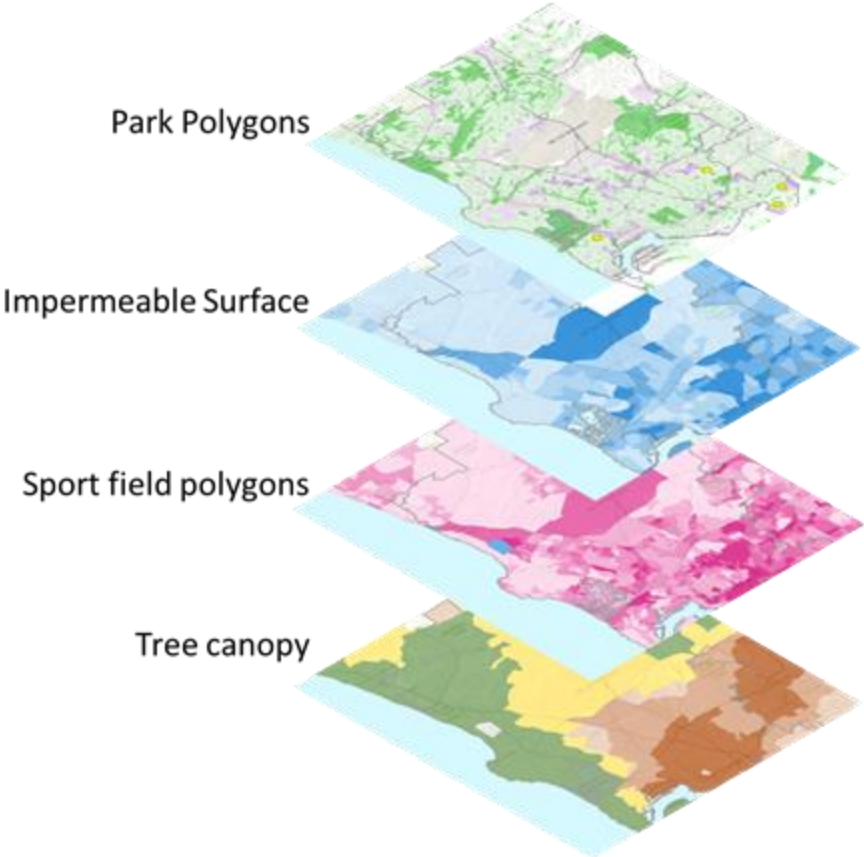
Parks in Lincoln, NE classified according to permeable surface and tree canopy (relative to city). Highlands Park highlighted in **green** would be classified as having natural area features.

By augmenting natural park types with parks with greater than 90% permeable surface, we can capture additional parks **with natural and amenitized experiences** like the following:

Strickland Road Park - 99.9% permeable surface, 80.7% tree canopy

Wooten Meadow Park - 95.3% permeable surface, 73.1% tree canopy

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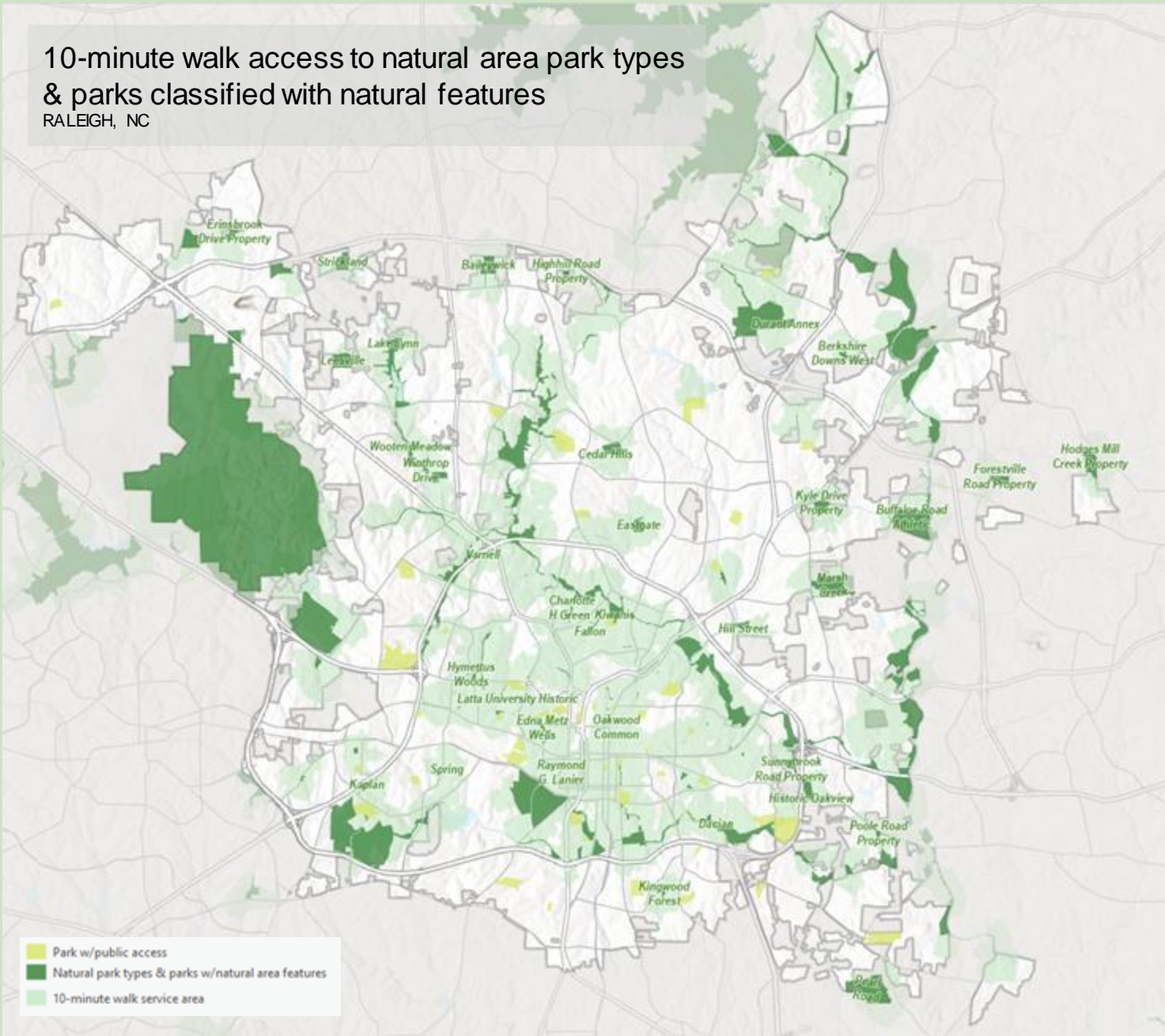This approach still excludes parks like the following:

Hertford Village Park - 76% permeable

LeVelle Moton Park - 46% permeable

10-minute walk access to natural area park types & parks classified with natural features
RALEIGH, NC

- **33%** of residents have 10-minute walk access to natural park type or park with a natural area

Legend:
- Park w/public access
- Natural park types & parks w/natural area features
- 10-minute walk service area

Parks that were not included in the previous approach are labelled here

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Permeable surface acres per capita
RALEIGH, NC

Permeable acres per cap
- 0.00 - 0.006
- 0.006 - 0.021
- 0.022 - 0.053
- 0.053 - 0.119
- 0.119 - 9.022

- Other Park
- Nature Preserve, State Park, Greenway, or Open Space
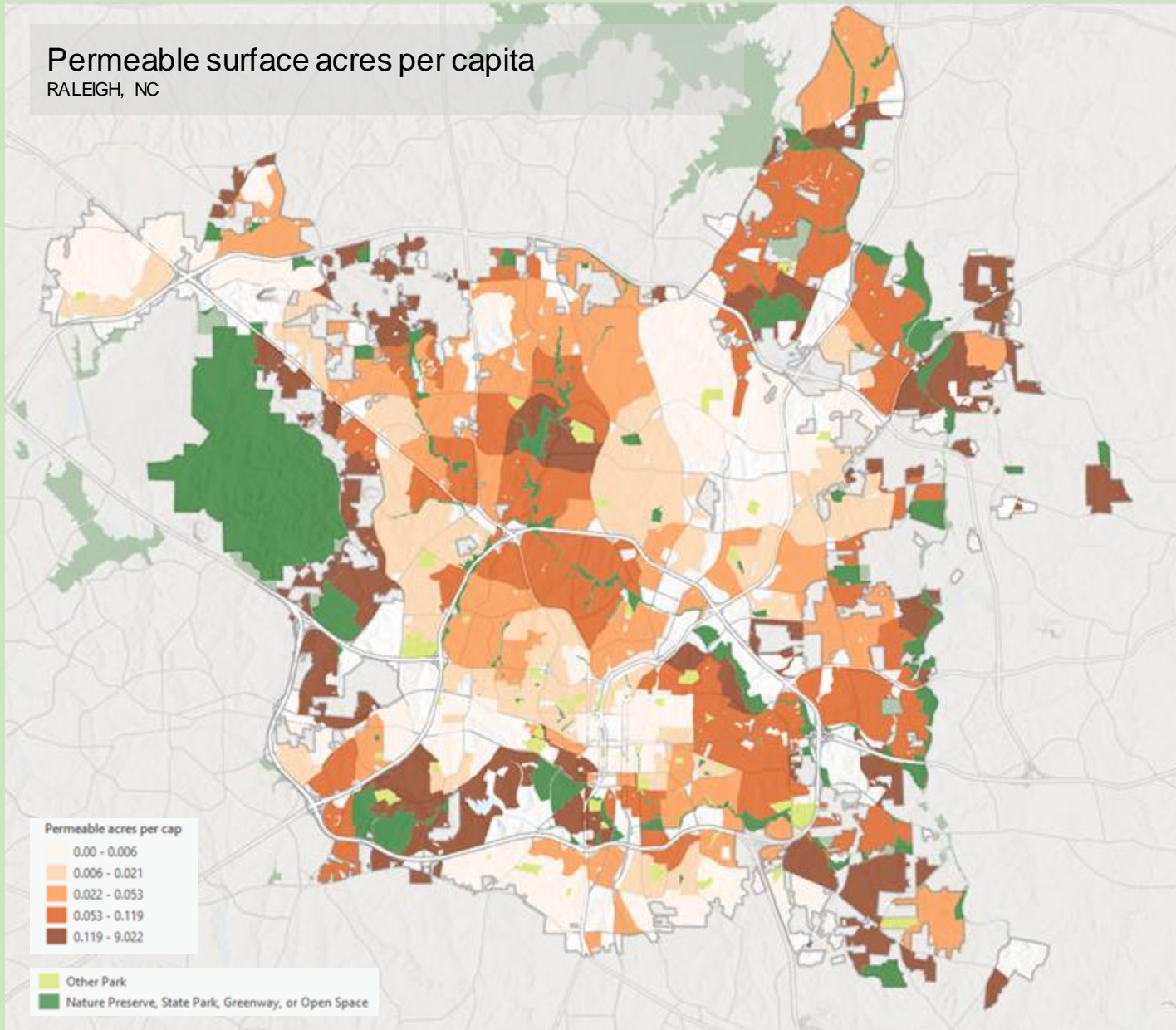
Potential benefits of this approach:

- Includes natural areas within larger parks
- Ability to scale this approach using national datasets (NLCD & NDVI)
- Ability to have a standard classification approach

Potential limitations:

- Could mistakenly identify parks as natural that are not perceived as such locally
- Low spatial resolution of national datasets
- Accuracy will vary across geographies

Building data capacity for natural area identification

Methods for Raleigh were based on publicly available impervious and tree canopy rasters from NLCD, known limitations start with

- low resolution - 30m
- no distinction between permeable surface types like natural greenspace vs. turf
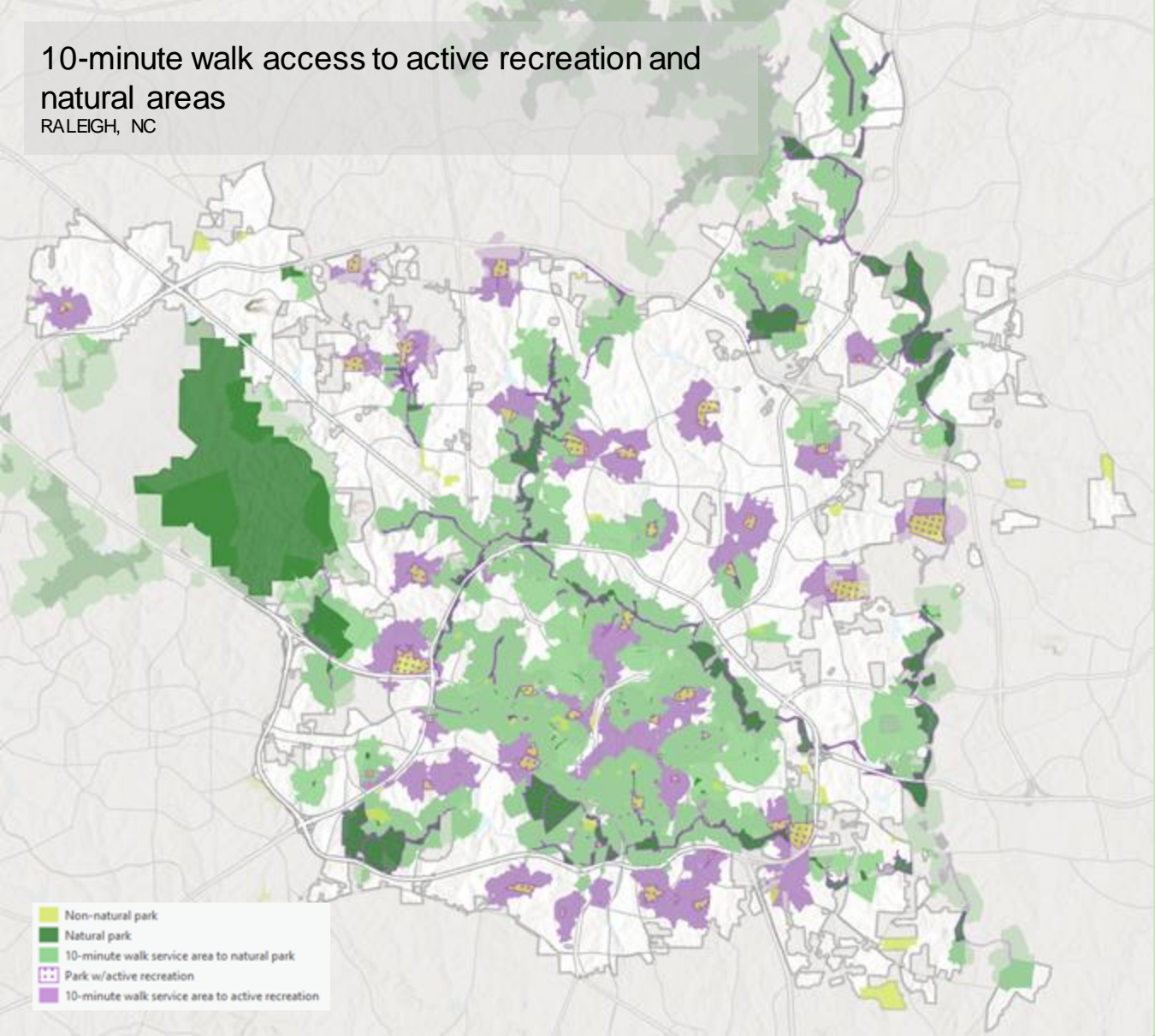

Hertford Village Park - 88.1% permeable

Multiple pathways exist to improve the approach with higher resolution or additional feature inputs:

- Locally created & managed datasets for vegetation and land cover types (eg. drone-based tree canopy assessments)
- High resolution imagery (eg. 5m resolution tree canopy data)
- Machine learning models to extract park amenity features
- National Hydrography Dataset (NHD) to identify waterfront parks and water features

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Putting it all together - Mapping Active Recreation & Natural Areas

10-minute walk access to active recreation and natural areas
RALEIGH, NC

Legend:
- Non-natural park
- Natural park
- 10-minute walk service area to natural park
- Park w/active recreation
- 10-minute walk service area to active recreation

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Comparing Per Capita Distribution of Active Recreation & Natural Acres

Active amenities per capita
RALEIGH, NC

Active Amenities Per Capita
0.000000 - 0.010249
0.010250 - 0.026966
0.026967 - 0.058564
0.058565 - 0.160097
0.160098 - 1.121212

Natural park acres per capita
RALEIGH, NC

Natural Park Acres Per Cap
0.000000 - 0.000710
0.000711 - 0.011828
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Other Park
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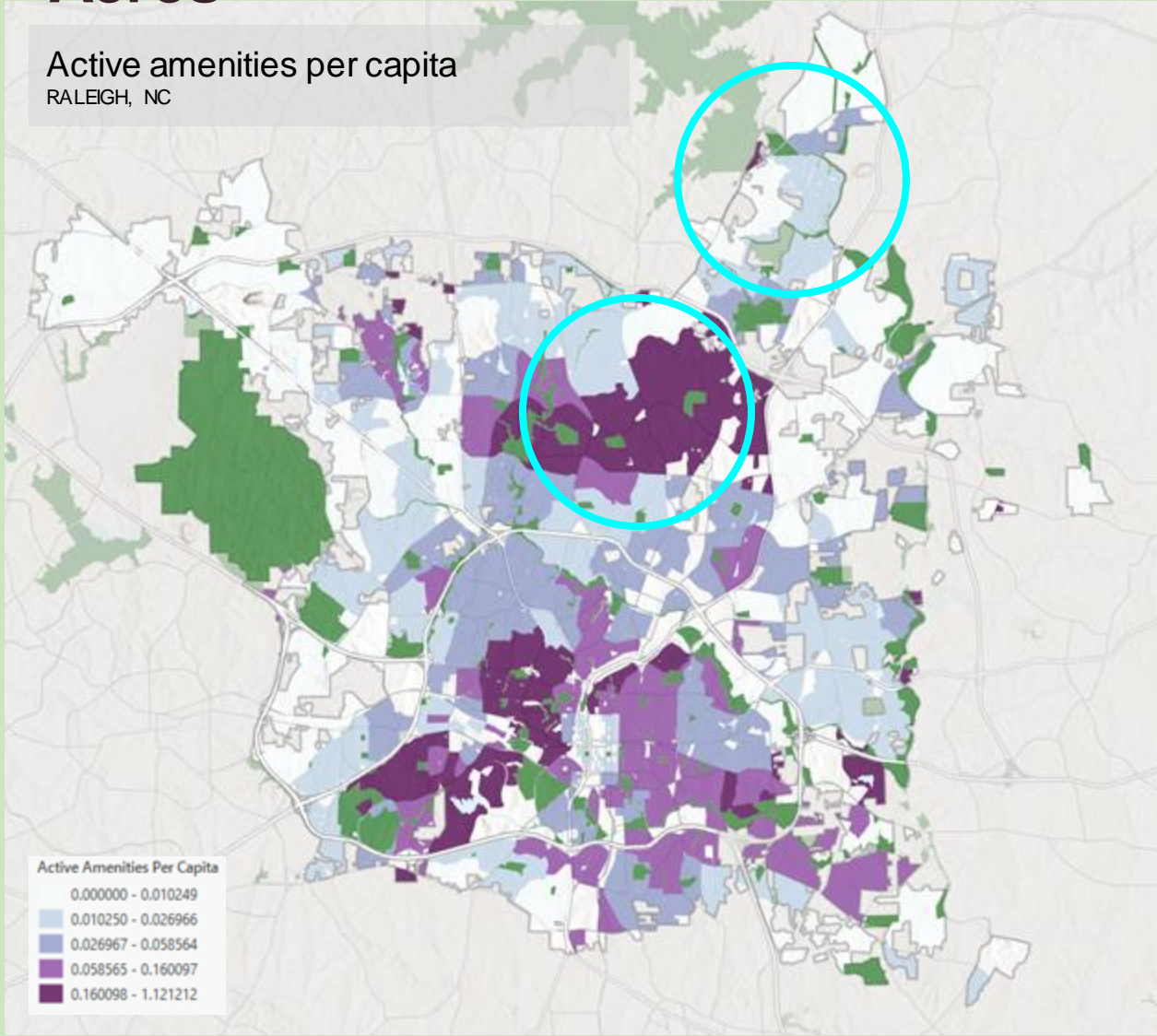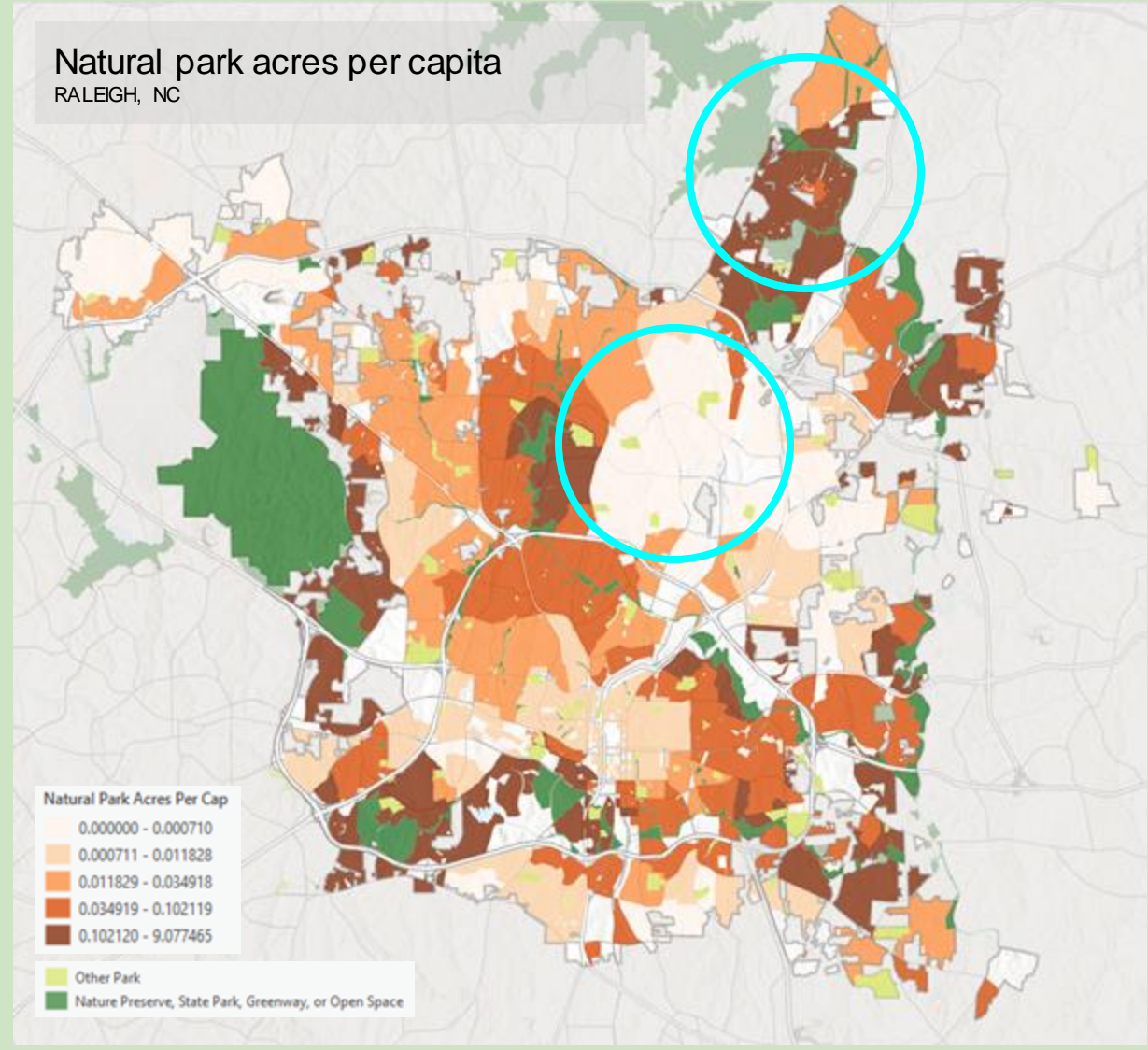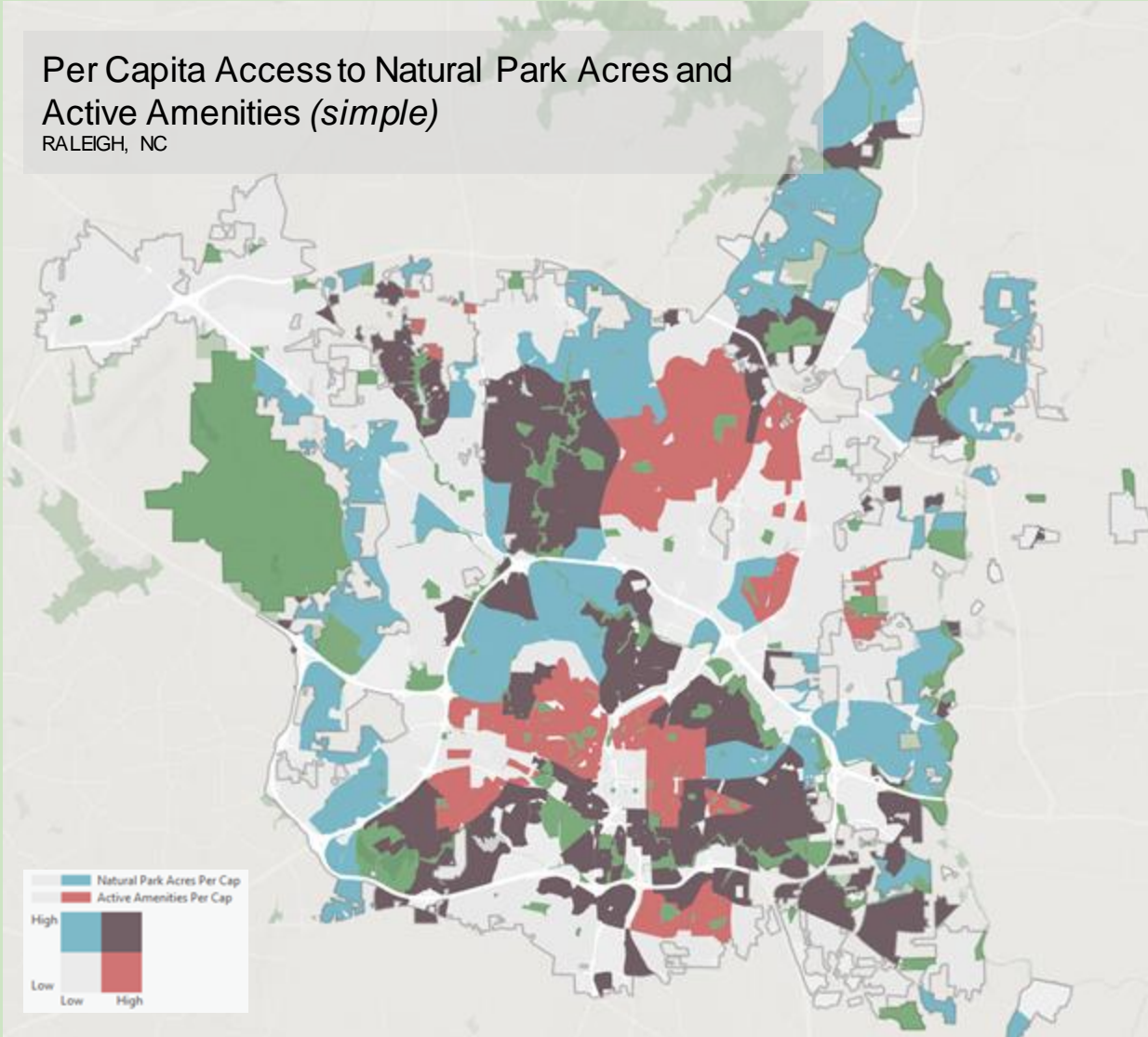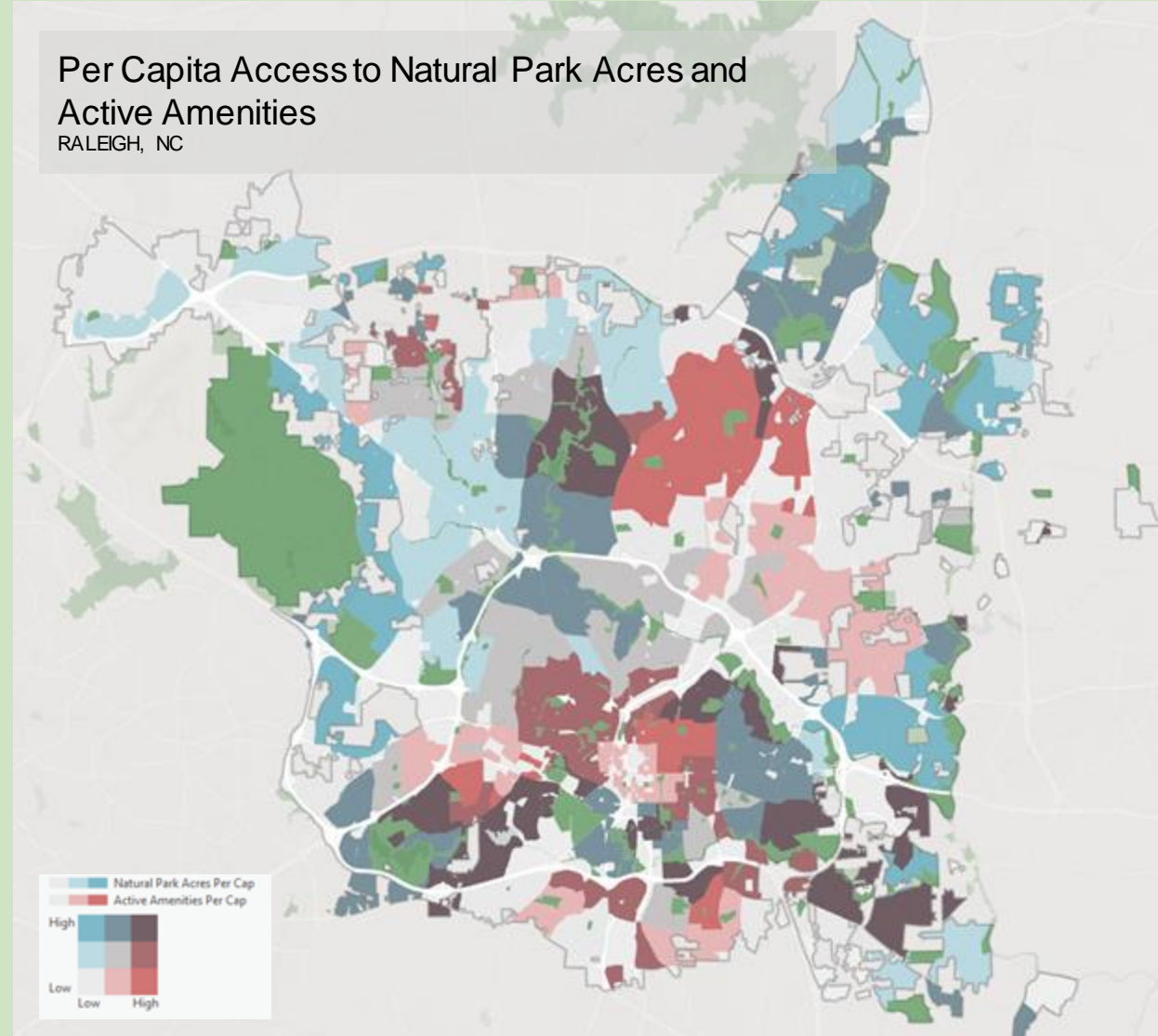
Combining measures - where are the most natural vs. active recreation opportunities?
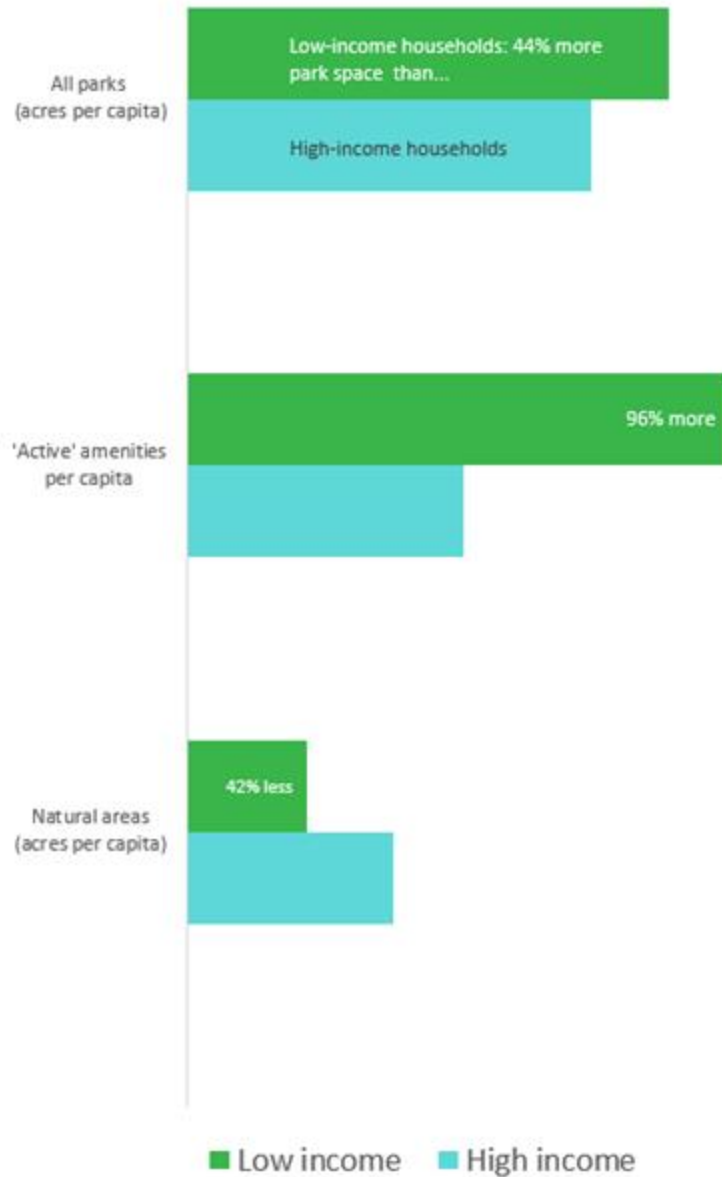

Per Capita Access to Natural Park Acres and Active Amenities *(simple)*
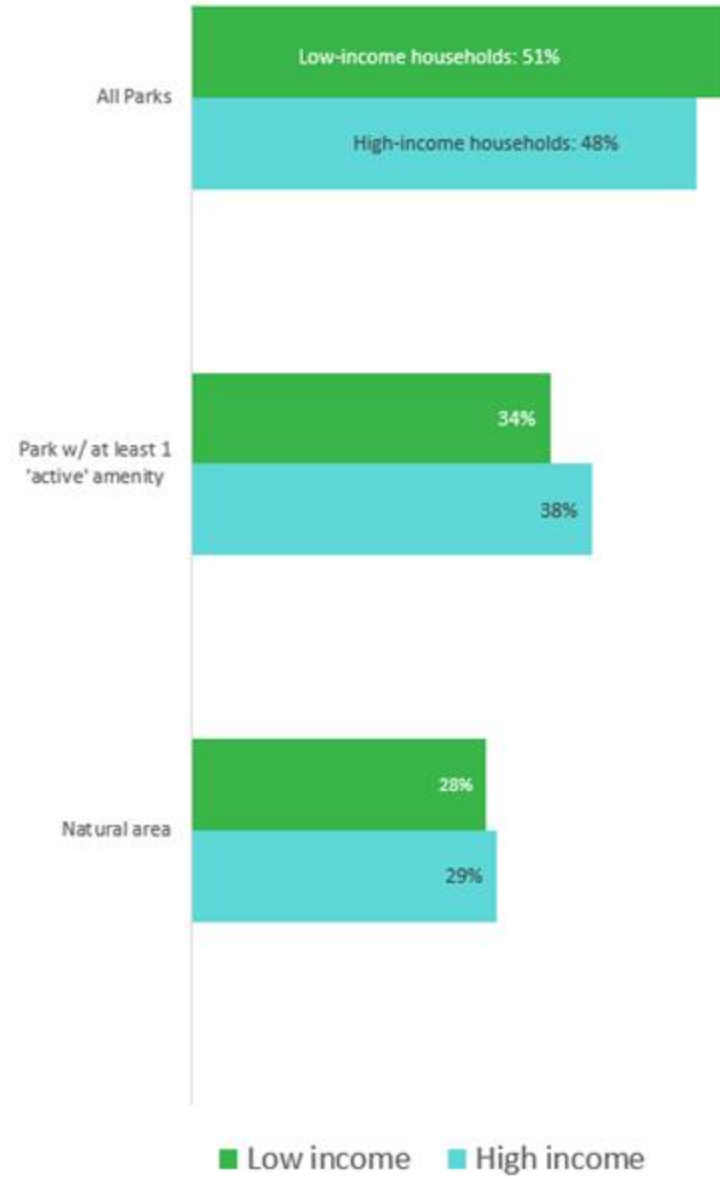RALEIGH, NC

Natural Park Acres Per Cap
Active Amenities Per Cap

High

Low
Low   High

Per Capita Access to Natural Park Acres and Active Amenities
RALEIGH, NC

Natural Park Acres Per Cap
Active Amenities Per Cap

High

Low
Low   High

Acres or Amenities Per Capita

All parks (acres per capita)
- Low-income households: 44% more park space than...
- High-income households

'Active' amenities per capita
- 96% more

Natural areas (acres per capita)
- 42% less

■ Low income ■ High income

Percentage of residents within a 10 minute walk of...

All Parks
- Low-income households: 51%
- High-income households: 48%

Park w/ at least 1 'active' amenity
- 34%
- 38%

Natural area
- 28%
- 29%

■ Low income ■ High income

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Breakout Groups

For this session's breakout groups, we will be focused on zooming out to look at how these approaches align with how you identify natural areas in your city and how these tools could fit into you planning toolkit. TPL facilitators will guide you through a series of questions on the following topics:

- **Topic 1: Natural areas - what counts?**
- **Topic 2: Map review - reflections & feedback**
- **Topic 3: Assessing the potential impacts of the approach**
- **Topic 4: The combined approach - how could the combined approaches of mapping active recreation and natural areas serve your policy and planning goals? What are the limitations?**

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Breakout Poll & Wrap-Up

- **Share your answers from the breakouts with the larger group:** https://pollev.com/christinajan159

- **Next session on April 19th:** Beyond experiences – Exploring additional approaches to park quality metrics

>>Please share feedback on sessions & materials in the exit ticket:
https://docs.google.com/forms/d/e/1FAIpQLScESVZsZbXvROQd1yph-U3qomkt4G-i_qJFHYfWt6Zirj3Unw/viewform

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