Using Technology & Data to Enhance Accessibility

Greater & Greener | CITY PARKS ALLIANCE

CONFERENCE TRACK

Inclusive Parks and Public Spaces

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Support for this session is provided by:

KNIGHT FOUNDATION

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PROFESSIONAL AND CONTINUING EDUCATION

GENERAL CEUs

- Ensure your conference badge is scanned upon entering and exiting the session.
- Request your session transcript from a City Parks Alliance staff member.
- Transcript requests will be fulfilled within 10 business days of the request date.

LA CES

- Ensure your conference badge is scanned upon entering and exiting the session.
- Complete the session evaluation in the mobile app.
- Request your session transcript from a City Parks Alliance staff member.
- Transcript requests will be fulfilled within 10 business days of the request date.

AICP

- Self-report your participation on the AICP website
- Ensure your conference badge is scanned upon entering and exiting the session.
- Complete the session evaluation in the mobile app.

Participation data is shared electronically with the accrediting agencies.

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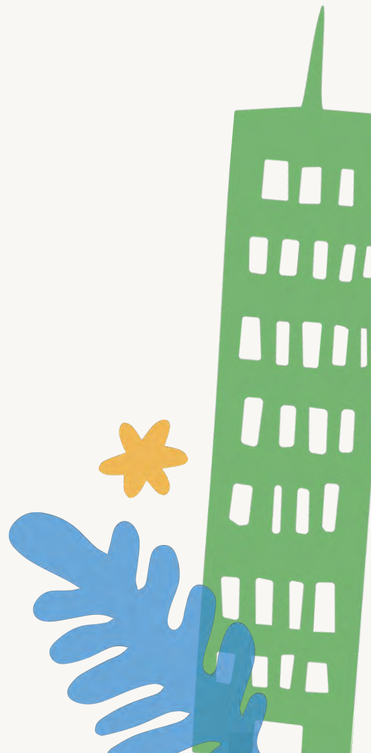

Boston Harbor Now Waterfront Data Project

AN EQUITY STUDY OF BOSTON'S PUBLIC WATERFRONT

2019 - 2023

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Boston Waterfront

A Tale of Two Cities

BOSTON PARADOX

BOSTON

- Minority-Majority city since 2000
- 6th largest per-capita GDP in the world
- 14th in TPL ParkScore Rating with 100% of residents with-in 10 minute walk to a park.

BOSTON

- White visitors represent 60% of Harborwalk visitation
- 2nd Worst City in America for Income Inequality
- Lower income residents have nearly 22% less park space than their high income neighbors.

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Carson Beach 2022

"Summer Send Off" public community event

Carson Beach 1977

"Take Back the Beaches" civil rights protest

East Boston 1992

Dirty, dangerous, and derelict

A Boston Harbor For All

$20B Public Investments

- Boston Harbor Cleanup
- Big Dig Project
- 43-mile Harborwalk
- Urban Beach Renewal
- 28 Waterfront Parks
- Boston Harbor Islands NSP
- Other ongoing investments

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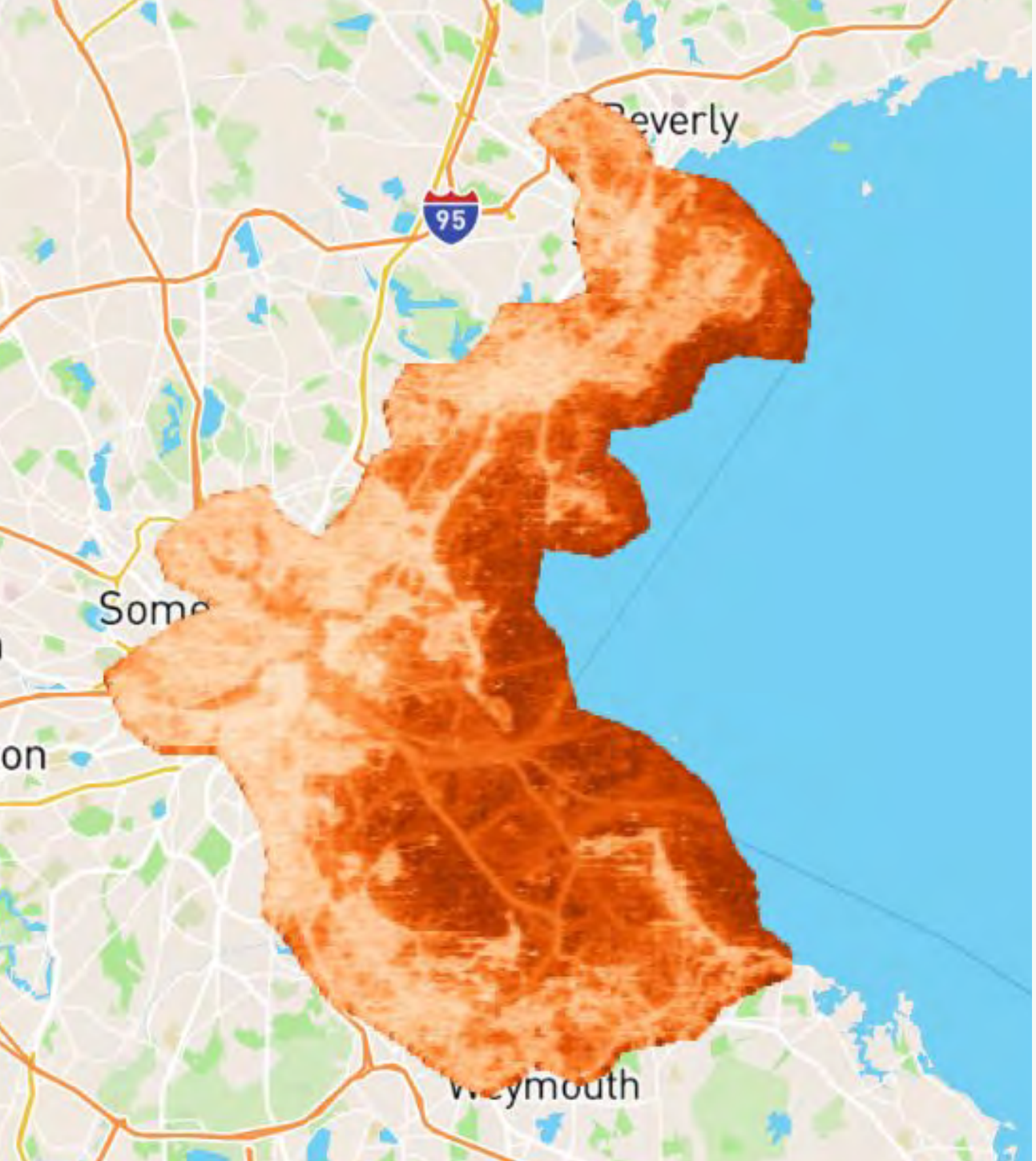
But Is It Working?

Who are utilizing the city's blue and green public open spaces?



Location Intelligence

Measuring Visitation with Big Data

With the aid of Tectonix super-computing platform, billions of anonymized mobile data records were analyzed, painting a picture of the region's public space usage for the first time.

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Sub-Study For Validation

Minimizing bias with groundtruthing

Contractor conducted daily visitor counts of five waterfront park sites and collected over 1500 in-person surveys to validate our mobility data.

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WHAT THE DATA SAYS

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Annual Visitation

Topline Data

The study provided the first empirical measurements of annual visitation to the Greater Boston region's waterfront.

Broad Waterfront

300M

Harborwalk

11M

Waterfront Parks

2.4M

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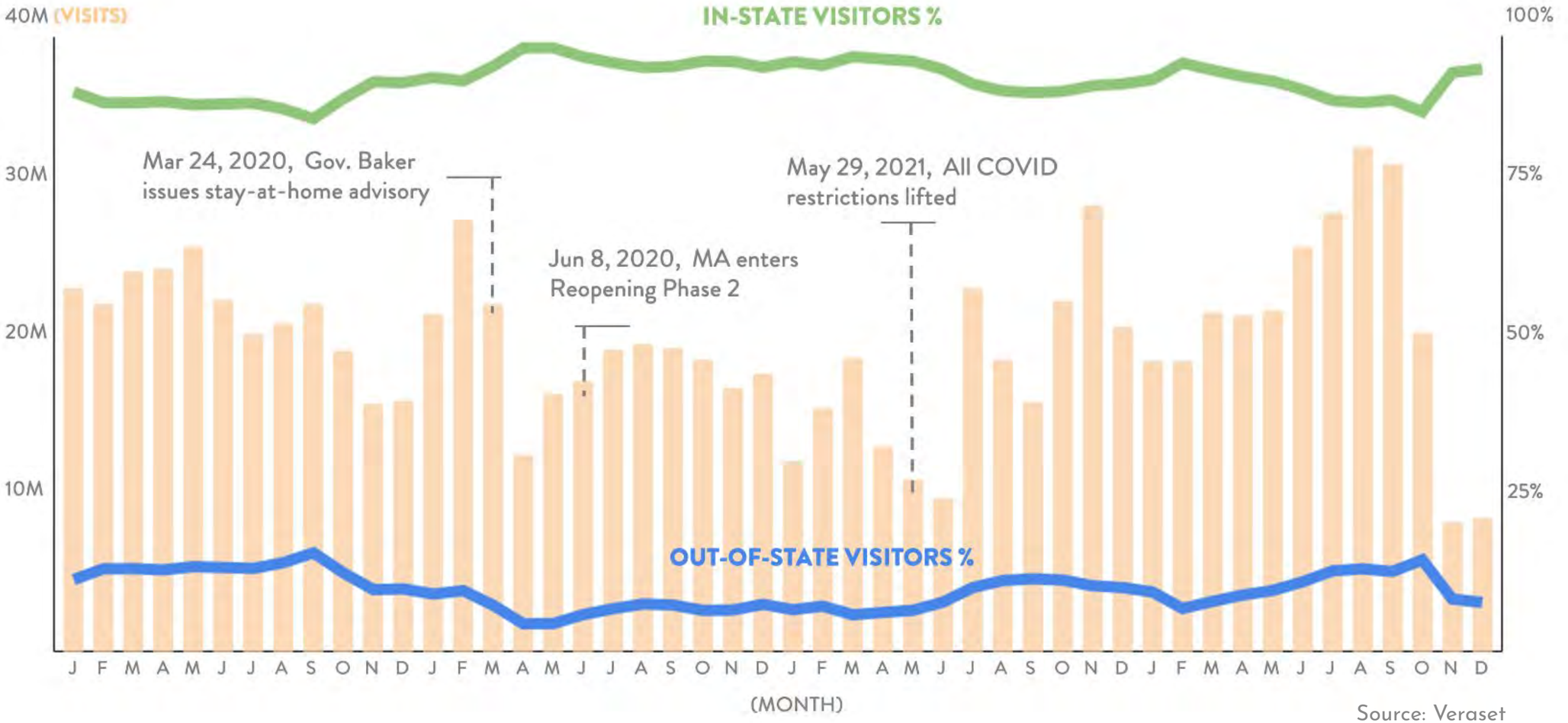
Monthly Visits to Boston's Waterfront Through COVID



Source: Veraset

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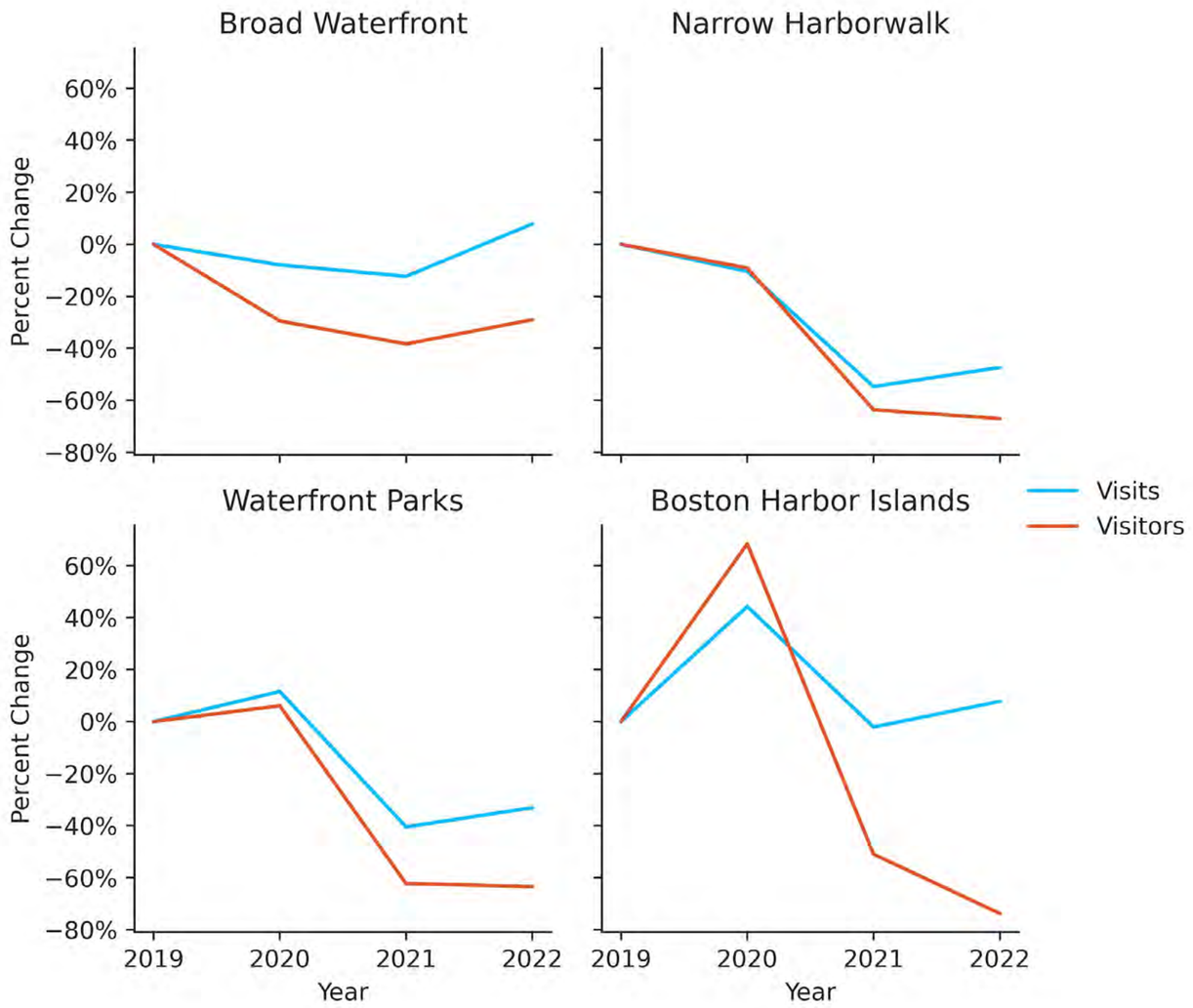
Visitors Versus Visits Trends



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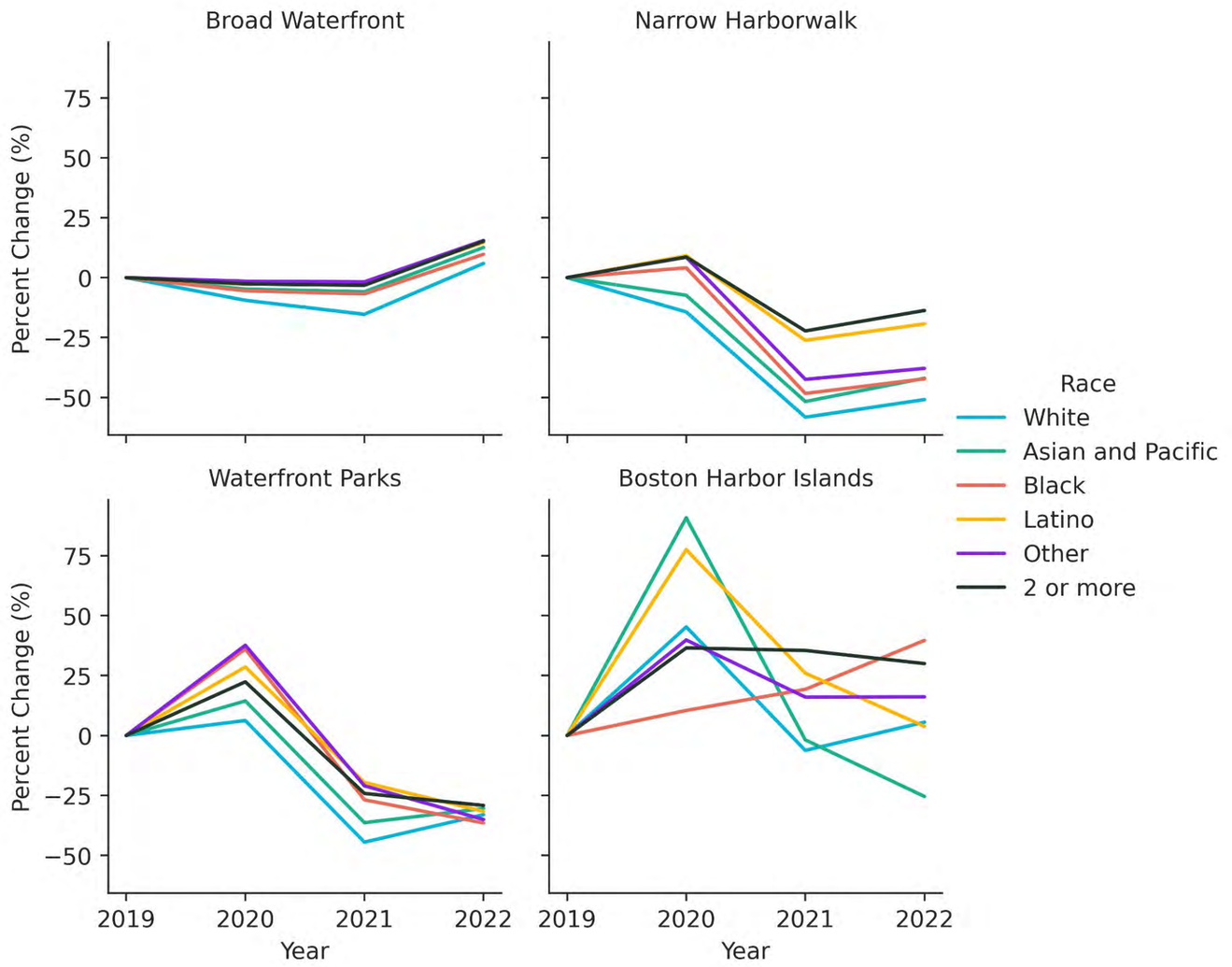
Visitation Pattern By Race



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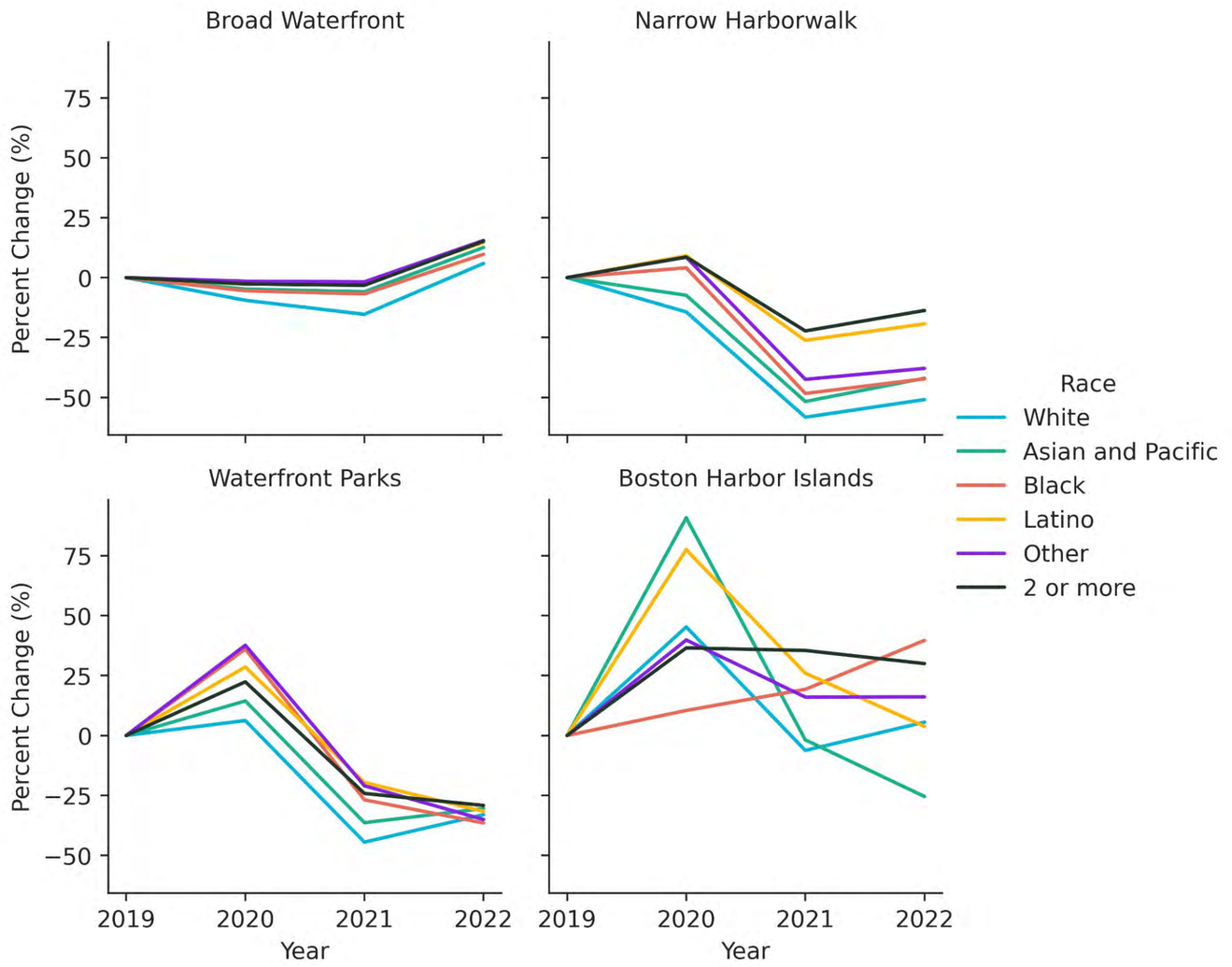
Visitation Pattern By Race



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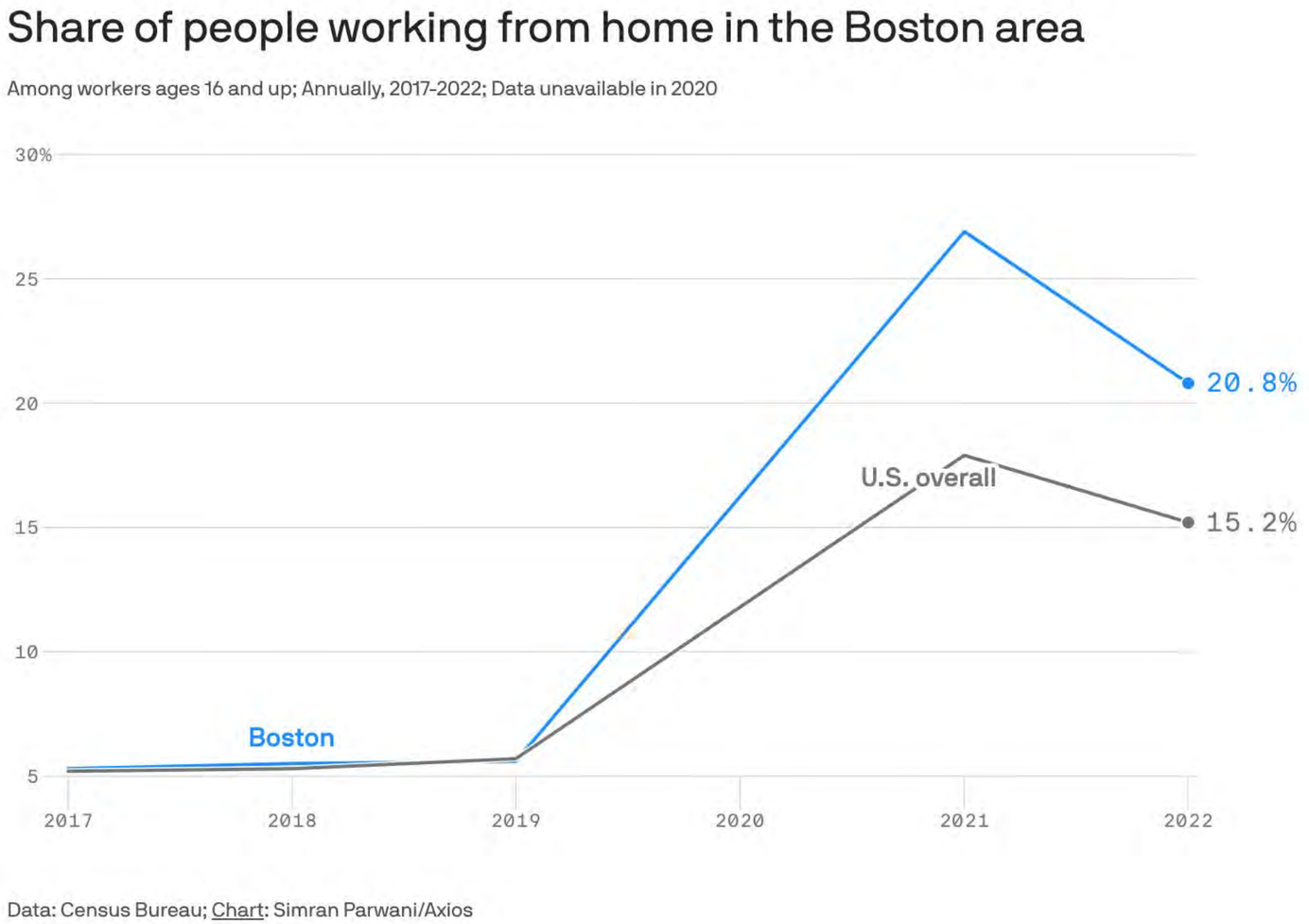
Waterfront Visitation Deficit Mirrors Work-From-Home Statistics



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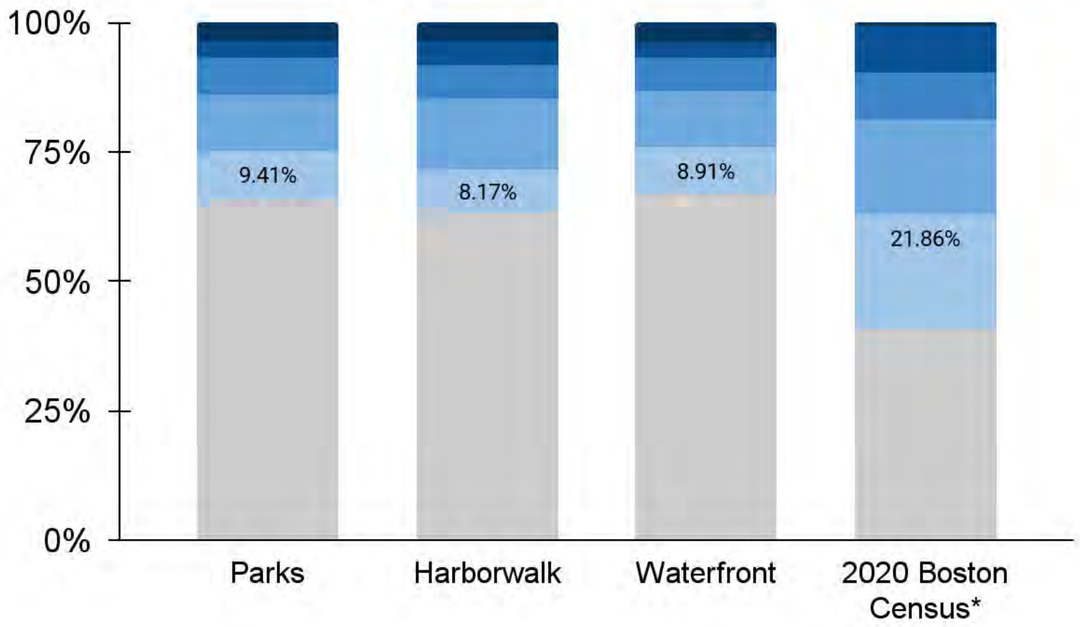
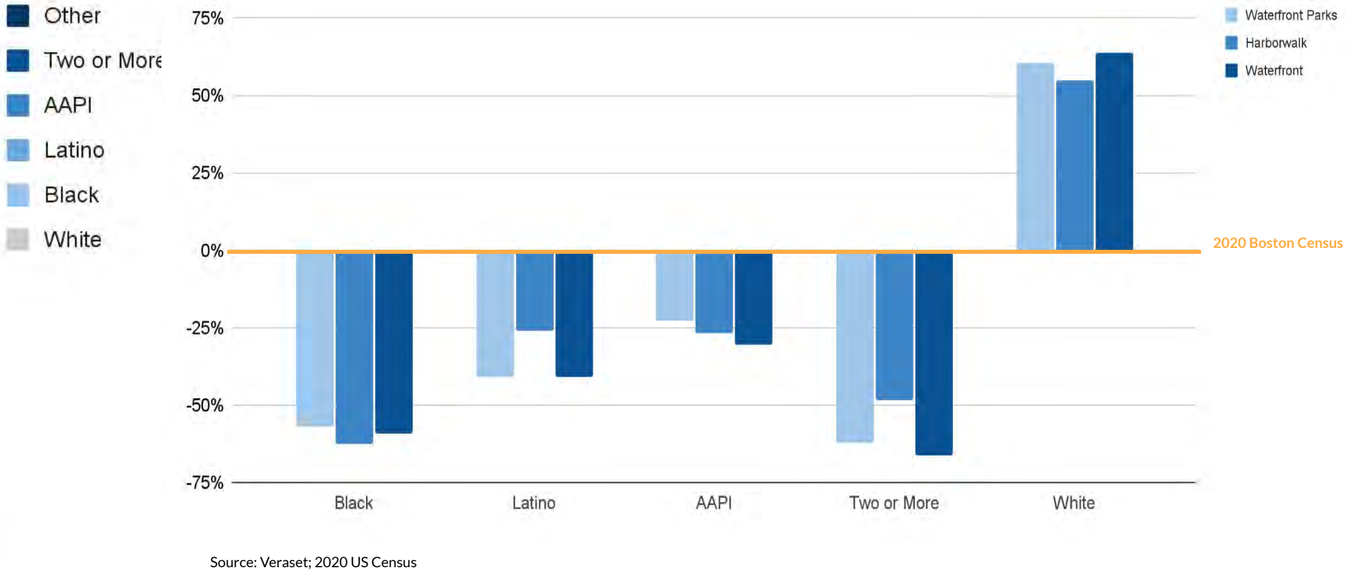
Racial Equity Deficits in Boston's Waterfront Space Use





Source: Veraset; 2020 US Census

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“

Tell me how you will measure me, and then I will tell you how I will behave. If you measure me in an illogical way, don’t complain about illogical behaviour. – Eli Goldratt

”

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Thank You!

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DENVER PARKS & RECREATION USE OF DATA

Greater & Greener

June 25, 2024

DENVER
PARKS & RECREATION

GAME PLAN
for a Healthy City

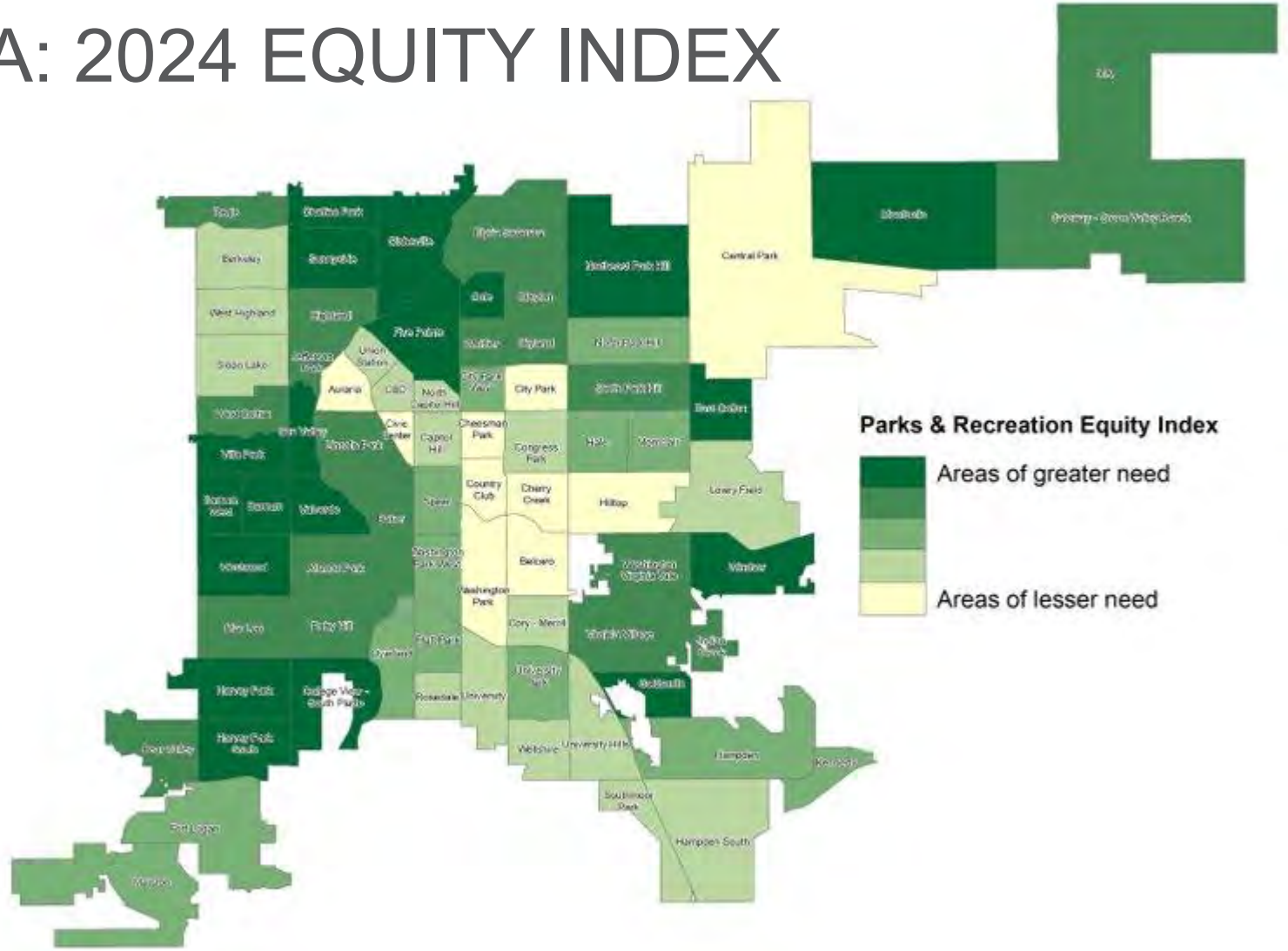
CURRENT DATA PICTURE (THE 5 W'S TO THE HOW)

Who	Census Data, Survey Data, Active Net, Workday, ***PLACER AI***
What	GIS Data, Asset Condition Data, ***Cartegraph***
When	***PLACER AI, Cartegraph***
Where	GIS Data, Survey Data, Trust for Public Land Data, Census Data
Why	Gameplan for a Heathy City
How	***How do we attract more visitors? How do we attract a greater diversity of visitors? How do we make sure that we are making the right investments where they are most needed?***

FOUNDATIONAL DATA: 2024 EQUITY INDEX

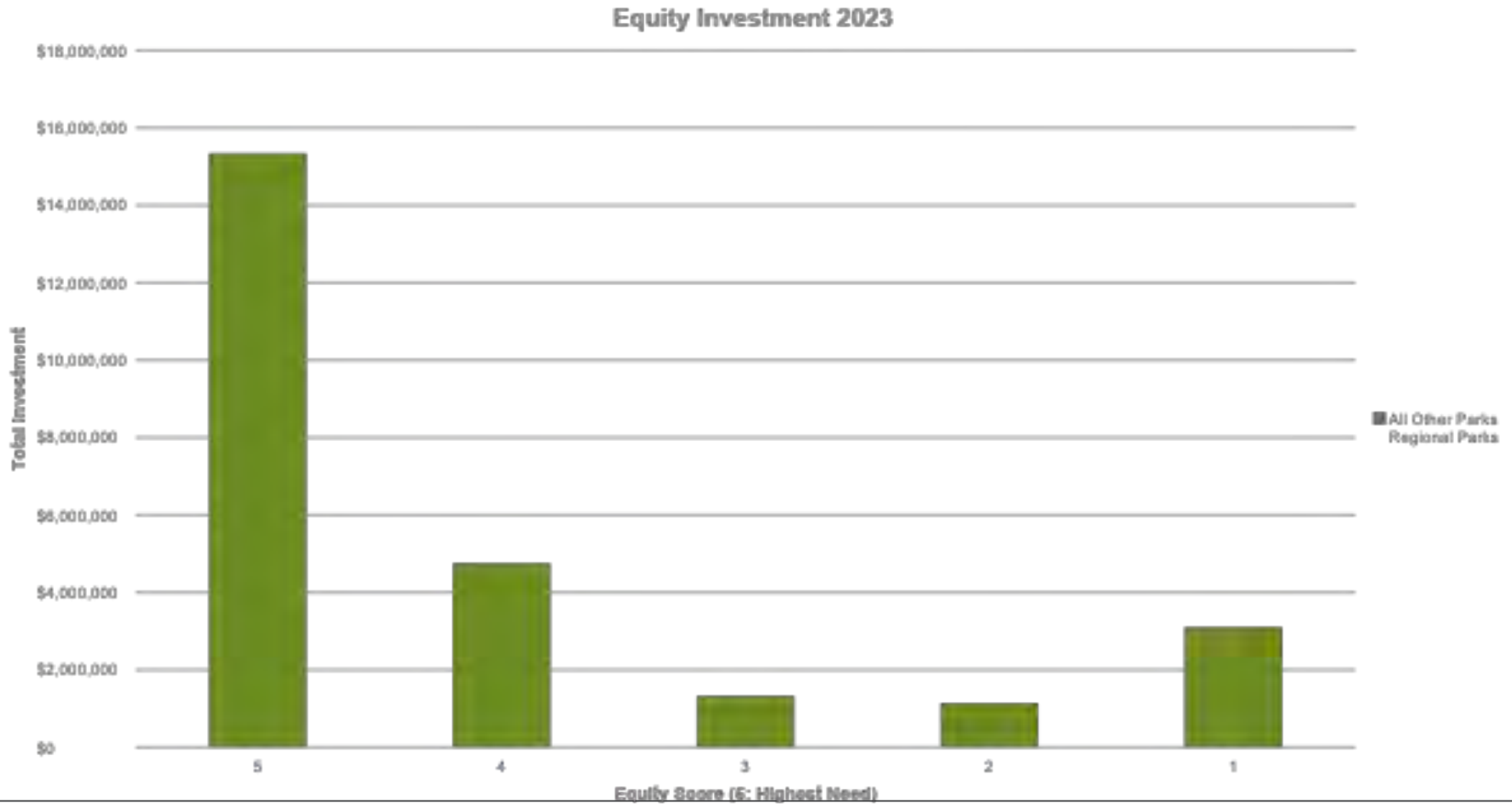
Park Indicators
- 10-Minute Walk or Roll Access
- Total Park Acreages
- Park Capital Investment History

Socioeconomic Indicators
- Communities of Color
- Youth Populations
- Low Income Populations
- Health Disparities
- Population Density



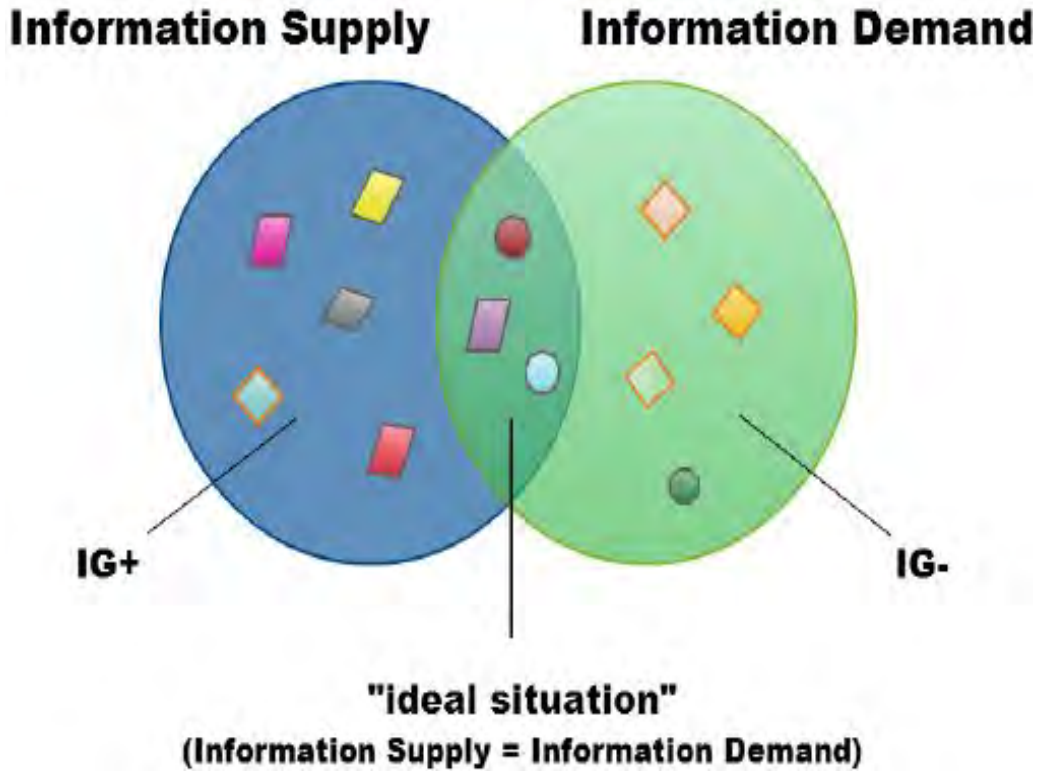
DENVER PARKS & RECREATION

GAME PLAN for a Healthy City


Equity Investment 2023
$18,000,000
$16,000,000
$14,000,000
$12,000,000
$10,000,000
$8,000,000
$6,000,000
$4,000,000
$2,000,000
$0
Total Investment
5
4
3
2
1
Equity Score (5: Highest Need)
All Other Parks
Regional Parks

CHALLENGES FOR DATA COLLECTION IN PARKS

- DPR has used surveys and information from staff in the field to understand park usage
- Many surveys are project specific, which doesn't provide information on who or how the park is used, especially over time
- Surveys tend to skew towards demographics of those already engaged, missing a large section of visitors
- Staff is only able to provide what they see when they are out, this leaves large gaps in information
- This does not represent the average park user nor even the average resident of Denver



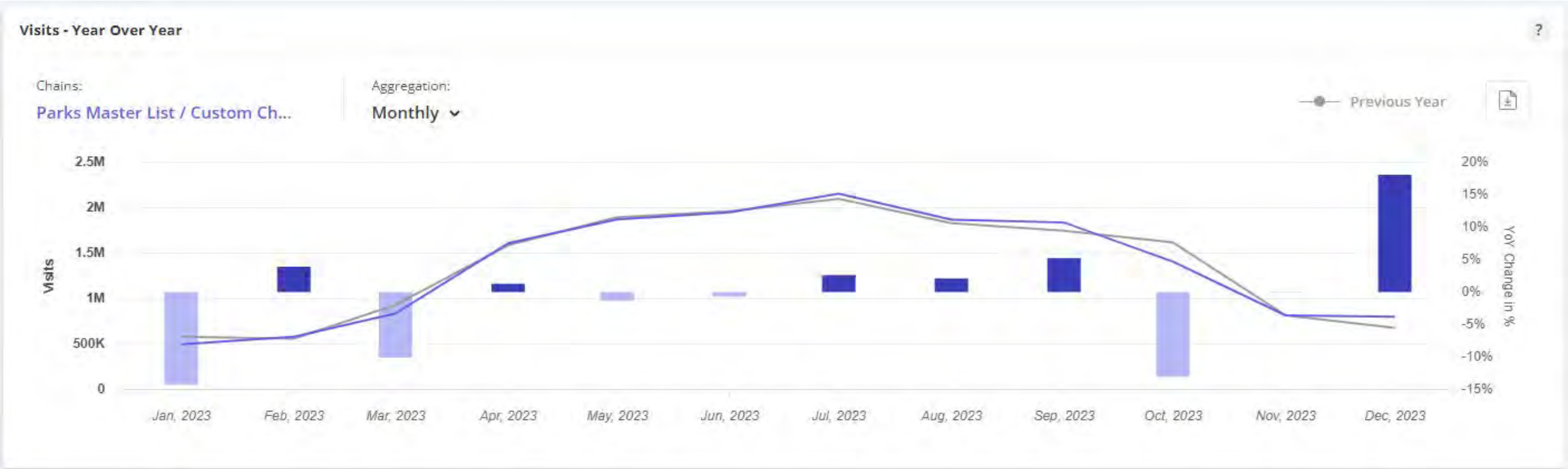
PLACER AI DATA OVERVIEW

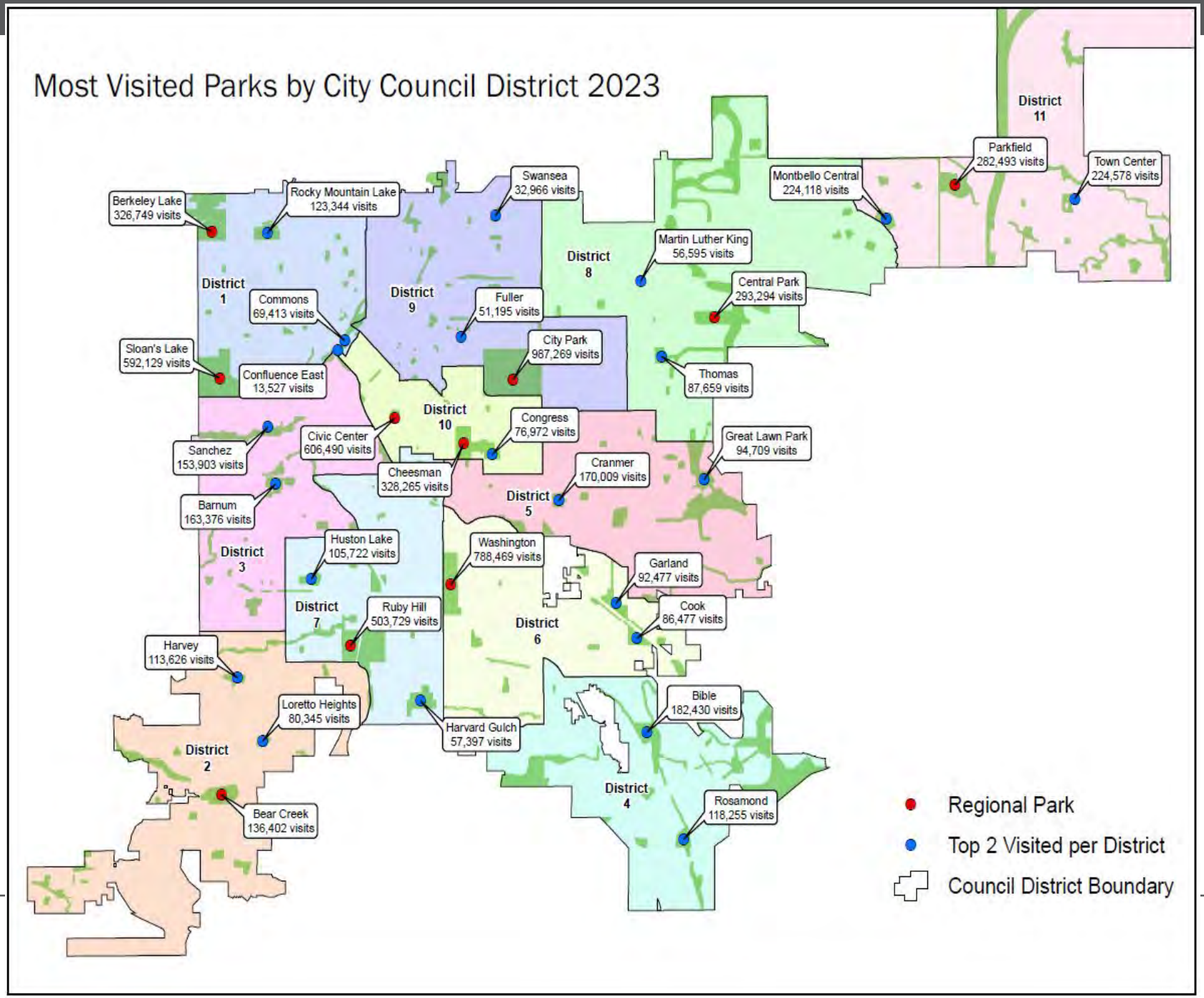
- Placer.ai uses de-identified location information from a panel of tens of million devices and processes the data using industry-leading AI and machine learning capabilities to make estimations about overall visits to specific locations. Placer.ai Explanier (Video) - https://www.youtube.com/watch?v=oQSdBAuQipk
- DPR is **not** collecting any information on residents nor park users
- Users agree to share certain information through apps that they use
- This data already exists regardless of DPR's use
- DPR is only buying access to the data

Park Category Example	Average Annual Visit per Location	Total Visits (2023)	Top performer
Mountain *Echo Lake*	*249.06K*	*4.98 Million*	Red Rock: 2,000,000**
Neighborhood *Robinson Park*	**17.72K**	**1.87 Million**	Loretto Heights: 80,300
Community *Bible Park*	**75.25K**	**2.86 Million**	Town Center Park: 244,578
Regional *City Park*	**484.53K**	**4.85 Million**	City Park: 984,530
Athletic Complex *Jackie Robinson Fields*	**75.95K**	**683.52K**	Northfield Athletic Complex: 324,500
Pocket *29th and Fairfax*	**8.67K**	**52K**	Highland Gateway Park: 7,700
Special Use (excluding BG) *Denver Skate Park*	**43.6K**	**495K**	Gates Tennis Center: 105,300
Open Space *DEN Open Space*	**10.03K**	**120.34K**	Lowry Open Space: 107,200
Linear *Frog Hollow Park*	**14.68K**	**352.28K**	Greenway Park: 82,600
Total:		**16,260,000**	

** Removed the 1.6 million in ticketed visitors

SEASONAL VISITATION PATTERNS (YEAR OVER YEAR)

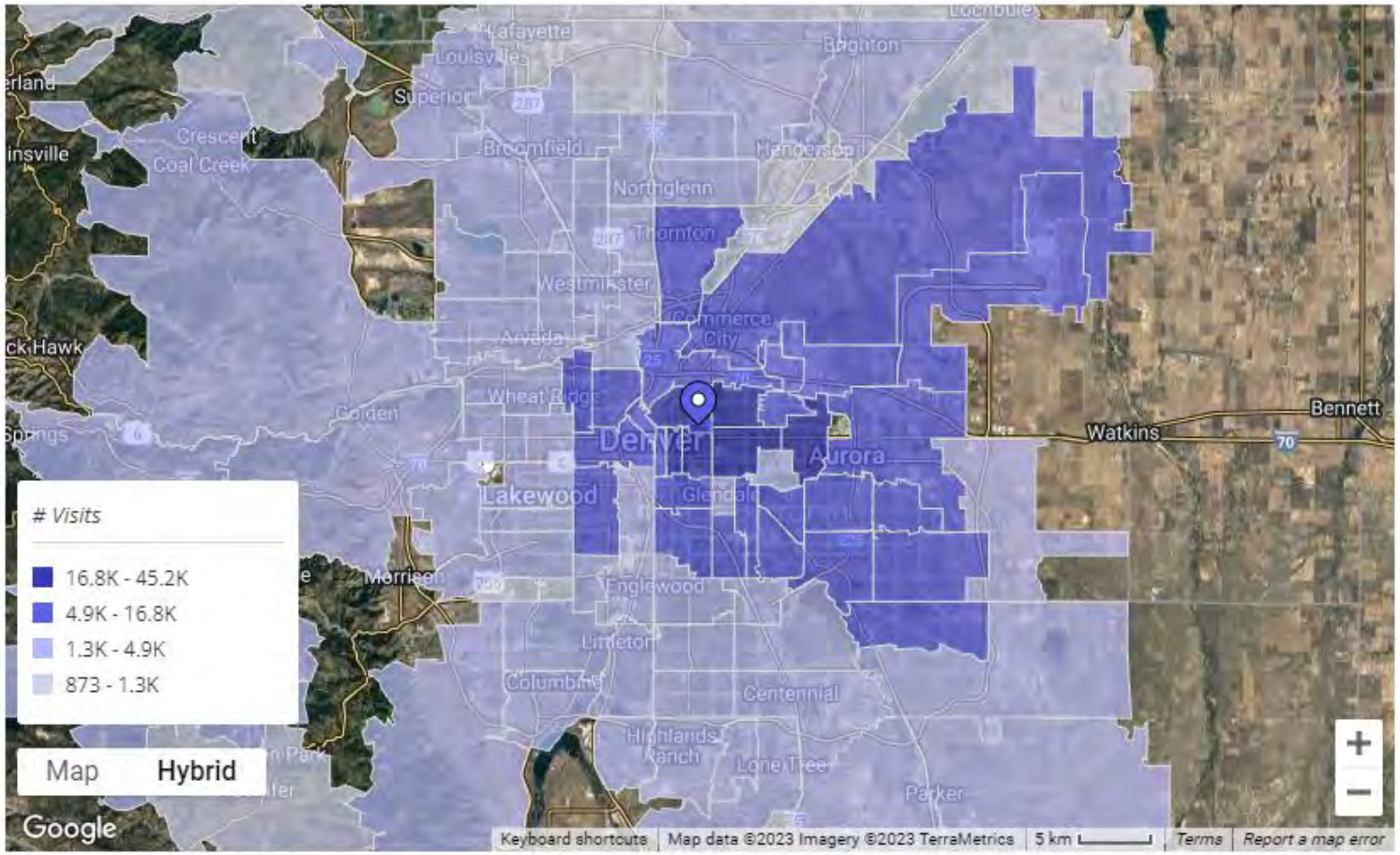



Most Visited Parks by City Council District 2023
District 1
District 2
District 3
District 4
District 5
District 6
District 7
District 8
District 9
District 10
District 11
Berkeley Lake 326,749 visits
Rocky Mountain Lake 123,344 visits
Swansea 32,966 visits
Commons 69,413 visits
Fuller 51,195 visits
Sloan's Lake 592,129 visits
Confluence East 13,527 visits
City Park 967,269 visits
Martin Luther King 56,595 visits
Montbello Central 224,118 visits
Parkfield 282,493 visits
Town Center 224,578 visits
Central Park 293,294 visits
Thomas 87,659 visits
Sanchez 153,903 visits
Civic Center 606,490 visits
Congress 76,972 visits
Cheesman 328,265 visits
Great Lawn Park 94,709 visits
Cranmer 170,009 visits
Barnum 163,376 visits
Huston Lake 105,722 visits
Washington 788,469 visits
Garland 92,477 visits
Cook 86,477 visits
Ruby Hill 503,729 visits
Harvey 113,626 visits
Loretto Heights 80,345 visits
Harvard Gulch 57,397 visits
Bible 182,430 visits
Bear Creek 136,402 visits
Rosamond 118,255 visits
Regional Park
Top 2 Visited per District
Council District Boundary

City Park

Visitors By Origin

Venues: Origin: Home Location Metric: Visits View: # of Visits | % of Visits | YoY Change



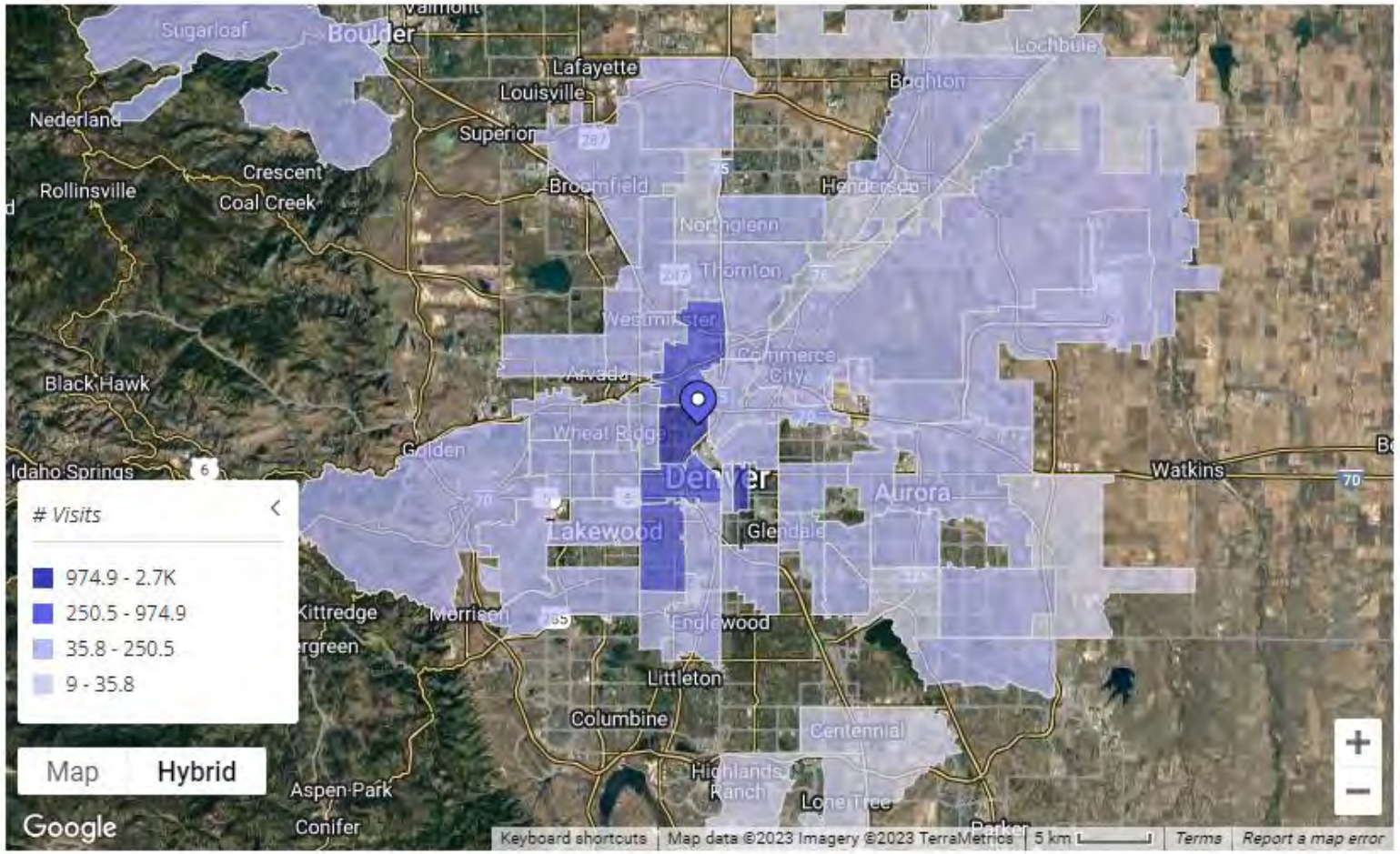
Zipcode / City	Visits (% of Total)
80220 Denver, CO	45.2K (6.6%)
80205 Denver, CO	44.5K (6.5%)
80207 Denver, CO	36.1K (5.2%)
80206 Denver, CO	35.6K (5.2%)
80218 Denver, CO	27.9K (4.1%)
80010 Aurora, CO	19.4K (2.8%)
80203 Denver, CO	15.6K (2.3%)
80211 Denver, CO	14.9K (2.2%)
80239 Denver, CO	13K (1.9%)
80238	11K (1.6%)

*Showing data for top 100 Zip Codes of this property. Download the CSV file for full results.

La Raza Park

Visitors By Origin

Venues: | Origin: Home Location | Metric: Visits | View: # of Visits | % of Visits | YoY Change



Zipcode / City	Visits (% of Total)
80218 Denver, CO	2.7K (25.7%)
80211 Denver, CO	1.6K (15.3%)
80219 Denver, CO	496 (4.7%)
80221 Denver, CO	355 (3.4%)
80204 Denver, CO	316 (3%)
80229 Denver, CO	250 (2.4%)
80601 Brighton, CO	228 (2.2%)
80212 Denver, CO	223 (2.1%)
80226 Denver, CO	211 (2%)
80216	207 (2%)

*Showing data for top 100 Zip Codes of this property. Download the CSV file for full results.

DENVER PARKS & RECREATION

GAME PLAN for a Healthy City

HOW CAPITAL PROJECTS AFFECT VISITS

Maintenance Projects bring the same people back more often: 2019 vs 2022

Property:
Robinson Park / Denver, CO

Visits	34.6K
Visits / sq ft	N/A
Size - sq ft	N/A
Visitors	13K
Visit Frequency	2.66

Property:
Robinson Park / Denver, CO

Visits	47.7K
Visits / sq ft	N/A
Size - sq ft	N/A
Visitors	13.8K
Visit Frequency	3.46

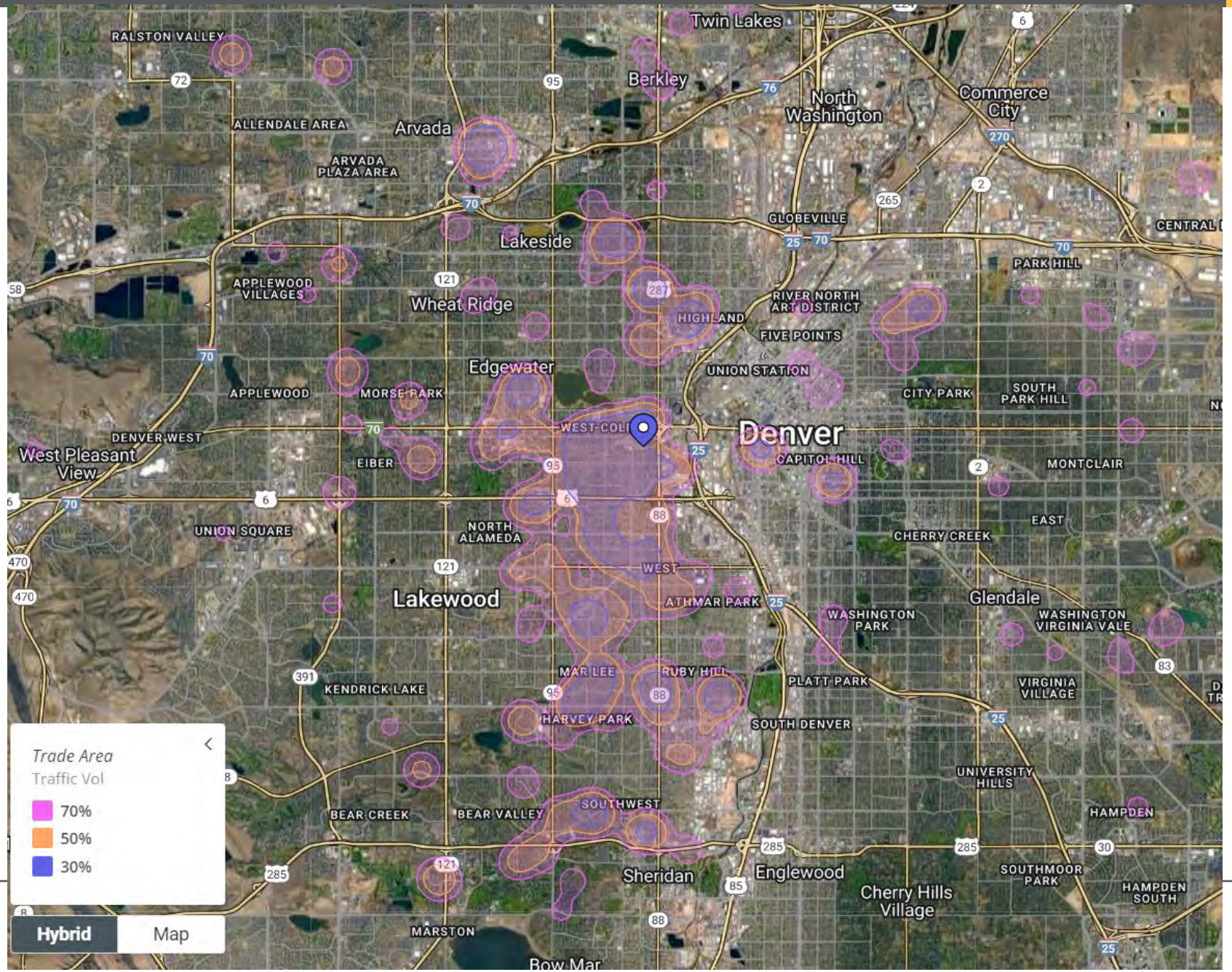
HOW CAPITAL PROJECTS AFFECT VISITS

Expansion Projects bring new visitors to the park: 2017 vs 2022

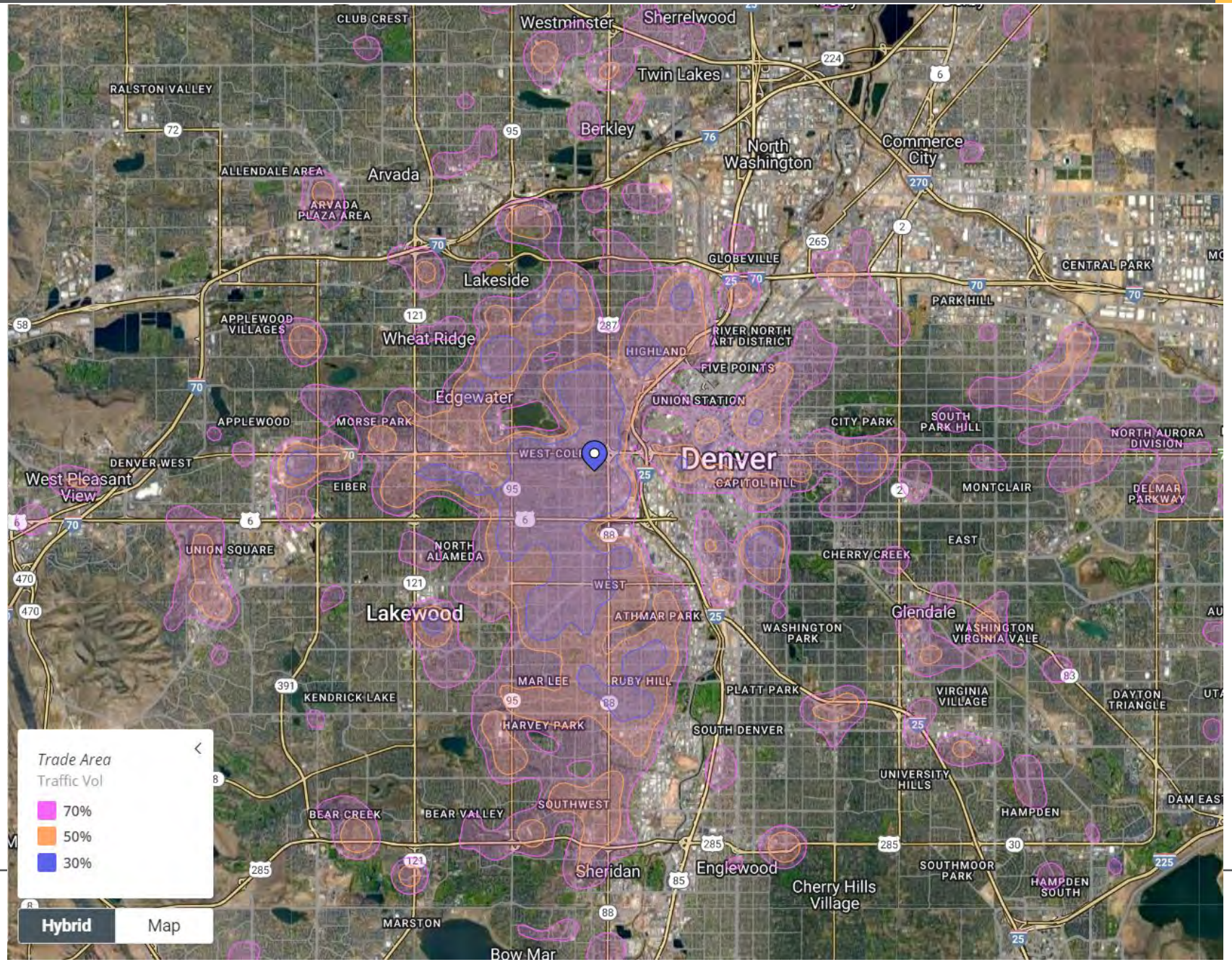
Property: Sanchez (Paco) Park / Knox Ct,...	
Visits	20.4K
Visits / sq ft	N/A
Size - sq ft	N/A
Visitors	7.5K
Visit Frequency	2.71

Property: Sanchez (Paco) Park / Knox Ct,...	
Visits	164.2K
Visits / sq ft	N/A
Size - sq ft	N/A
Visitors	85.8K
Visit Frequency	1.92

2017 Paco Sanchez Park Trade Area



2022 Paco Sanchez Park Trade Area



2017 PACO SANCHEZ SERVICE MARKETS

Search Group or Attribute	Captured Market	Potential Market	% Difference
Households			
Ethnicity			
Hispanic or Latino	36.7% 204	41% 228	-10.6%
Two or more races	2.8% 114	2.4% 96	+18%
Other	<0.5% 81	<0.5% 67	+21.1%
Native Hawaiian and Other Pacific Islander	<0.5% 108	<0.5% 139	-22.3%
Asian	2.1% 38	2.1% 39	-2.8%
American Indian and Alaska Native	<0.5% 43	<0.5% 73	-41.4%
Black	7.7% 62	7.1% 58	+7.6%
White	50.1% 83	46.5% 77	+7.8%

2022 PACO SANCHEZ SERVICE MARKETS

Search Group or Attribute	Captured Market	Potential Market	% Difference
Households			
Ethnicity			
Hispanic or Latino	44.6% 248	36.8% 204	+21.3%
Two or more races	1.9% 76	2% 83	-7.8%
Other	<0.5% 53	<0.5% 63	-15.2%
Native Hawaiian and Other Pacific Islander	<0.5% 35	<0.5% 68	-48.1%
Asian	2.8% 51	3.4% 52	-17.6%
American Indian and Alaska Native	0.7% 104	0.6% 86	+20.1%
Black	5.7% 46	6.1% 50	-6.8%
White	44.2% 73	50.8% 84	-13.2%

HOW TO IMPROVE UNDERPERFORMING PARK?

Metrics

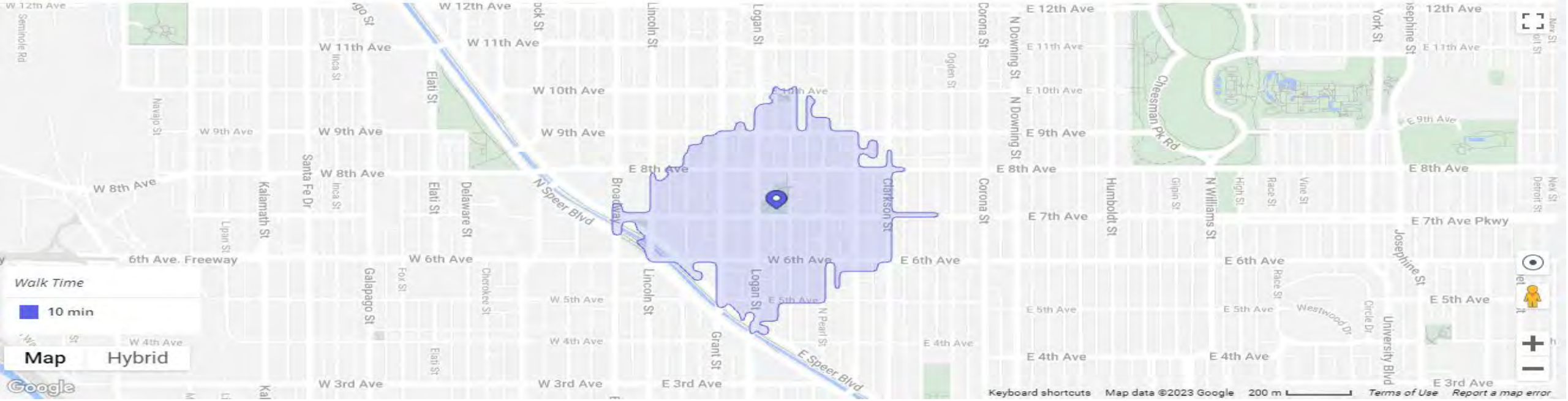
Property:
Governors Park / Denver, CO

Visits	6.4K
Visits / sq ft	N/A
Size - sq ft	N/A
Visitors	3.5K
Visit Frequency	1.81

ASSET CONDITION DATA: WHAT IS THERE?

Row Labels	Sum of Quantity	Sum of Replacement Cost
Good		
Buildings- Shade Structure	1	$25,000.00
Furnishings- Park ID Sign	1	$8,500.00
Walk-Hard	1213	$72,780.00
Walk-Right of way	668	$33,400.00
Poor		
Playground-Neighborhood	1	$450,000.00
Very Poor		
Furnishings- Drinking Fountain	1	$10,000.00
Grand Total	**1885**	**$599,680.00**

Venues: | View: Captured vs Potential | Based On: Walk Time | Walk Time: 10min

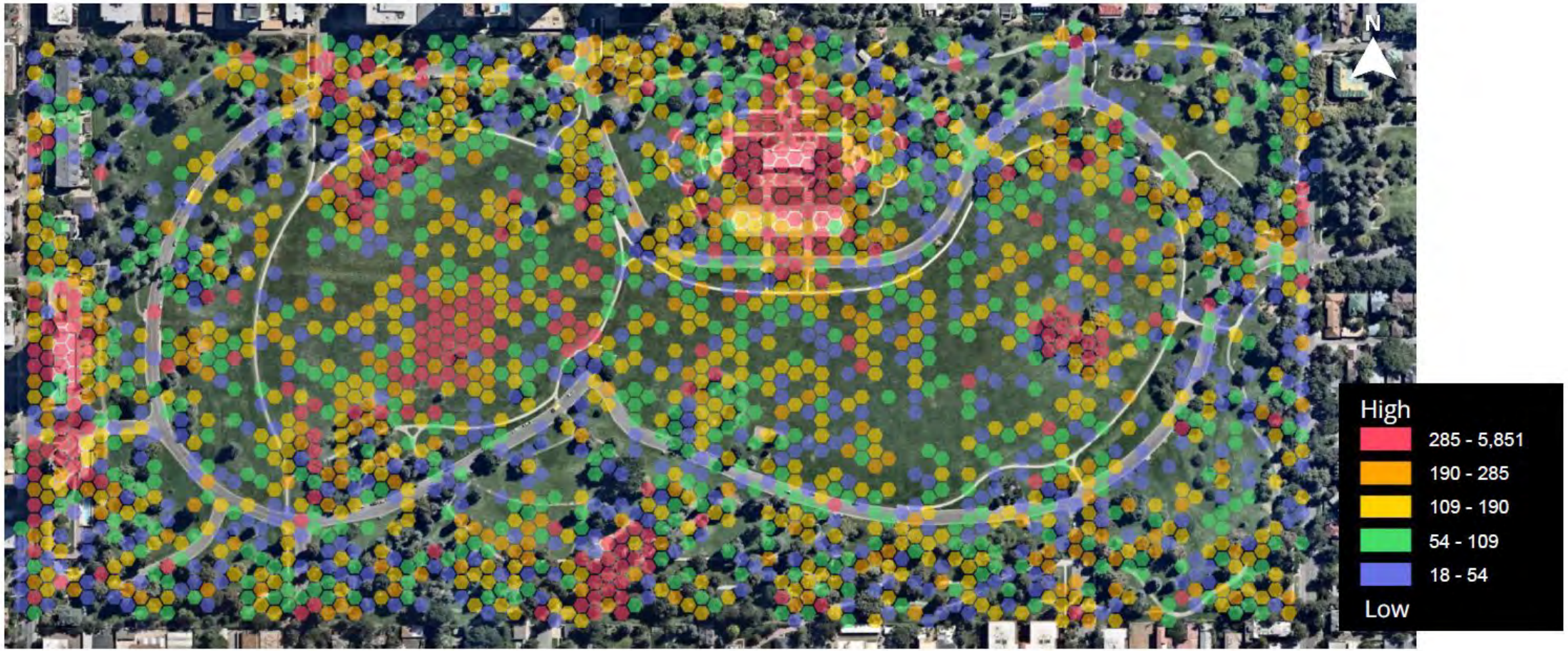


Search Group or Attribute

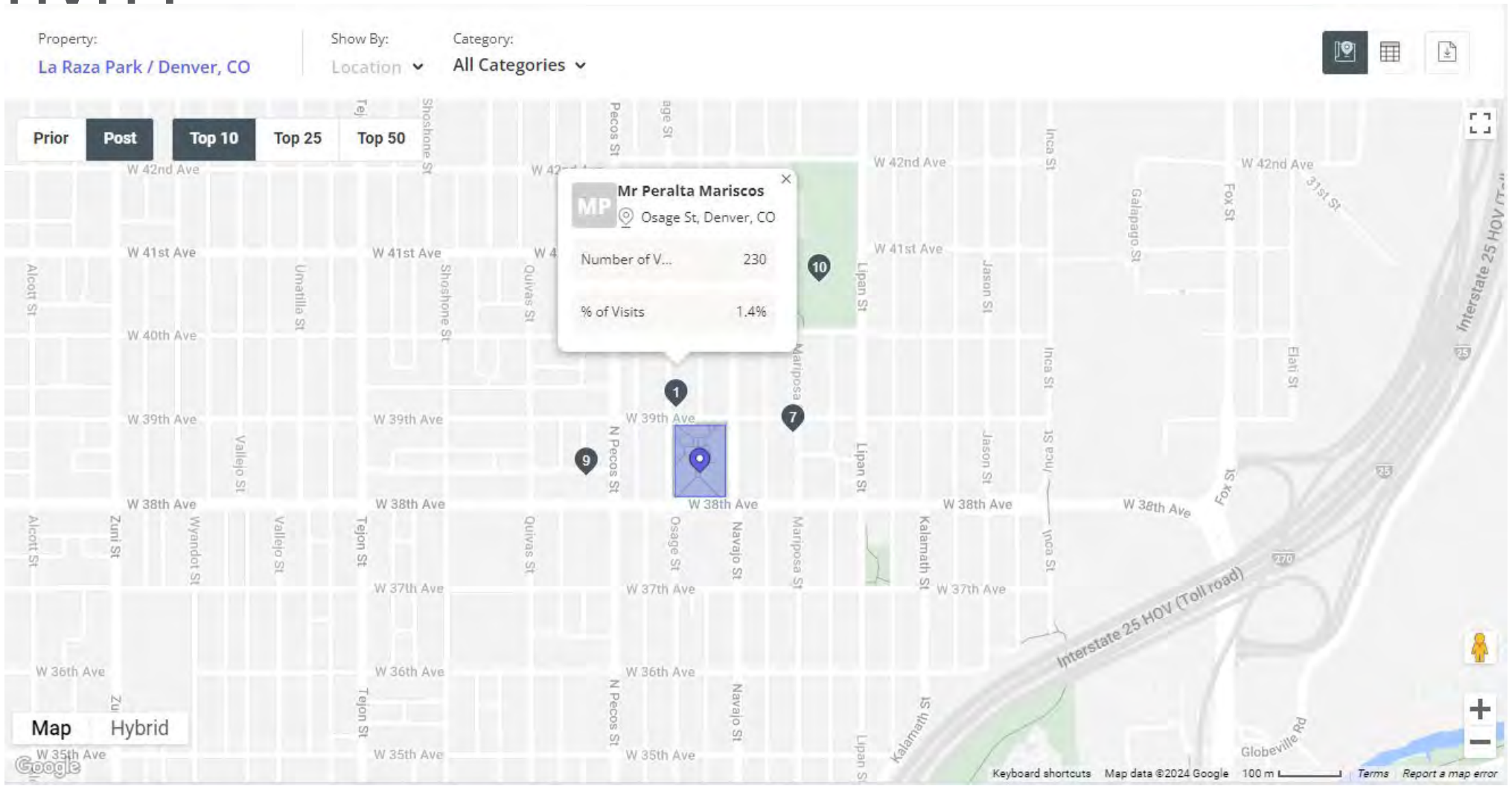
	Captured Market		Potential Market		% Difference
Households					
Family Households	17.4%	27	15.9%	24	+9.5%
Non-Family Households	82.6%	239	84.1%	244	-1.8%
Persons per Household	1.41	53	1.46	54	-2.9%

Cheeseman Park - Denver, CO

Hexagon heatmap based on foot-traffic



VISITOR'S JOURNEY: HOW PARKS HELP ECONOMIC ACTIVITY



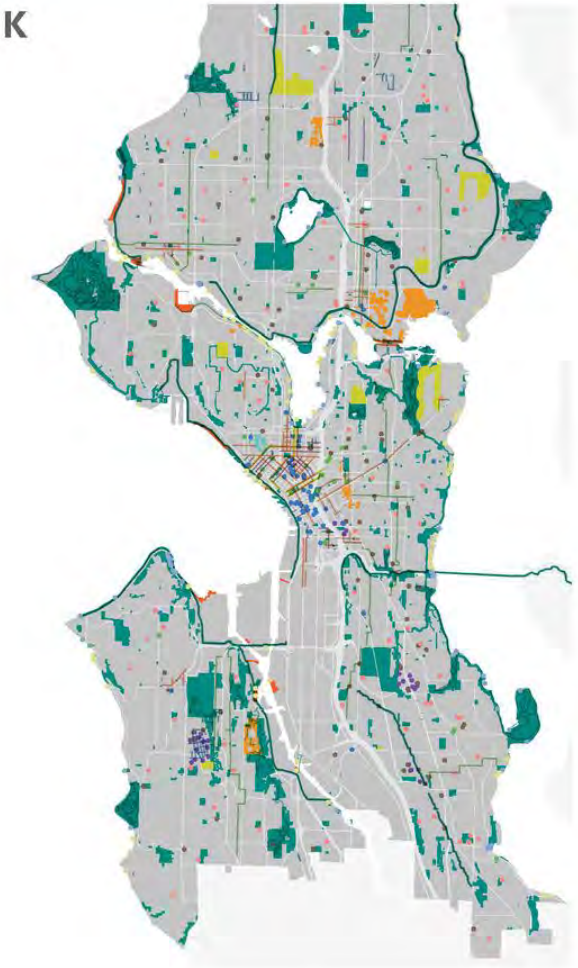
QUESTIONS?

Leveraging Data for Equitable Public Space Planning

Seattle's public space network is robust and diverse...

SEATTLE'S PUBLIC SPACE NETWORK

- Seattle Parks and Recreation
- Seattle Center
- Port of Seattle and Army Corps of Engineers parks
- SPU public space
- Seattle Housing Authority parks
- Public schoolyards
- Campus green spaces
- Cemeteries and private golf courses
- P-Patches
- Shoreline street ends
- Boat launches and ramps
- Privately Owned Public Space (POPS)
- Parklets, Streateries and Pavement to Parks
- Green stormwater infrastructure in the right of way
- Regional Trail
- Local Trail (at least 1 mile long)
- Neighborhood Greenway
- Green Street
- Streetscape Concept Plan
- Urban Marked Trail
- Other ROW



But it is also:

1. Inequitably distributed → GROW
2. Not being used to its fullest potential → IMPROVE
3. Fragmented → CONNECT

GROW

PROBLEM

Distributional Inequity

STRATEGIES

Create

Expand

Repurpose

IMPROVE

PROBLEM

Underutilized space

STRATEGIES

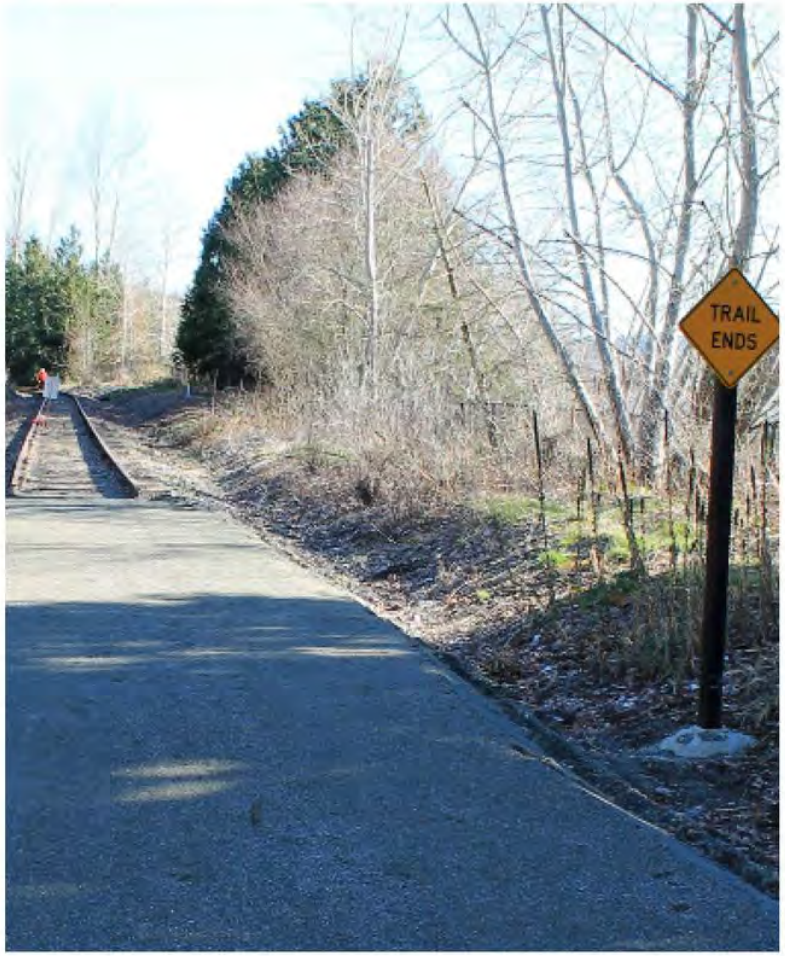
Stack benefits

Activate

Integrate infrastructure and public space.

CONNECT

PROBLEM



Fragmentation

STRATEGIES

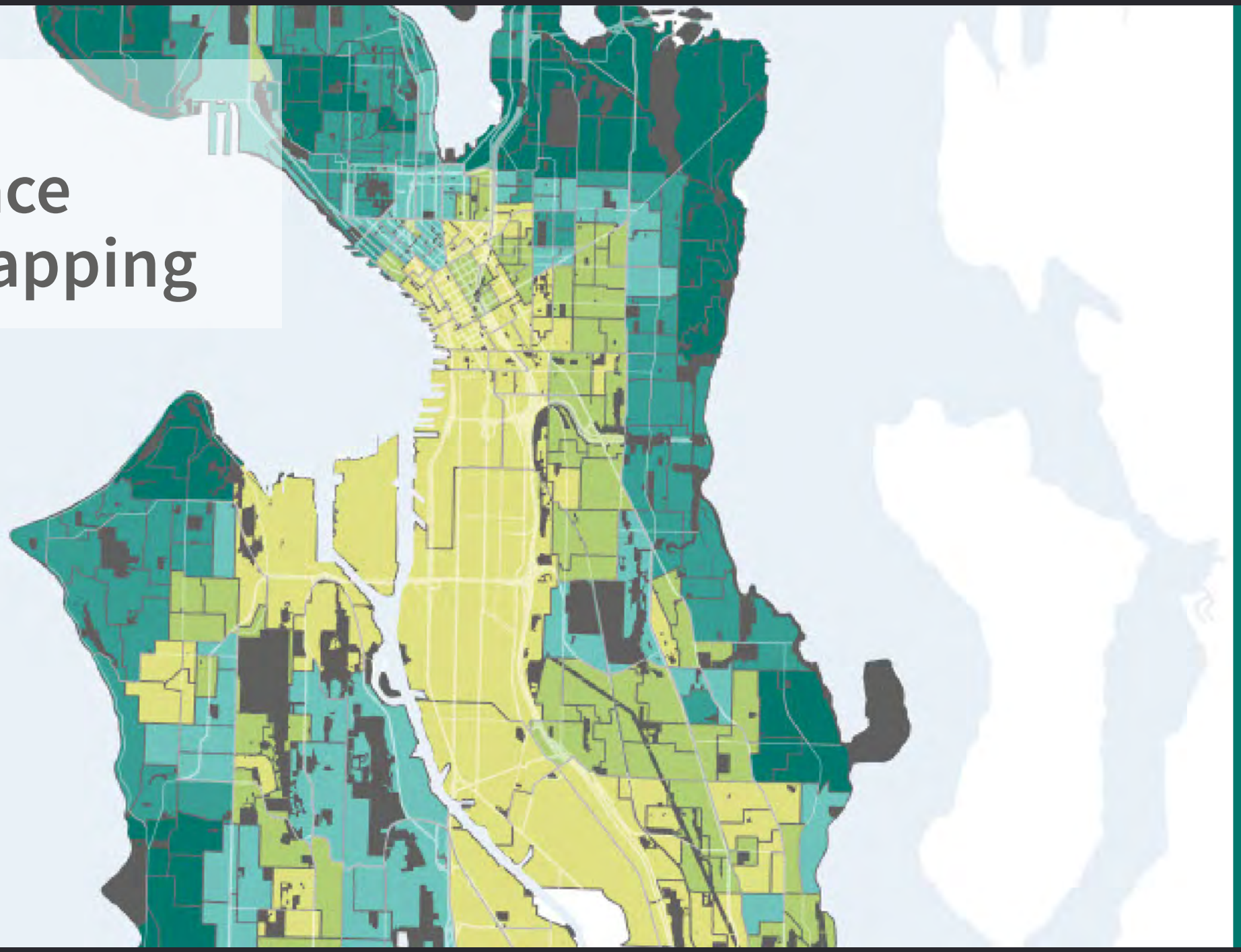
Invite people outside

Stitch together

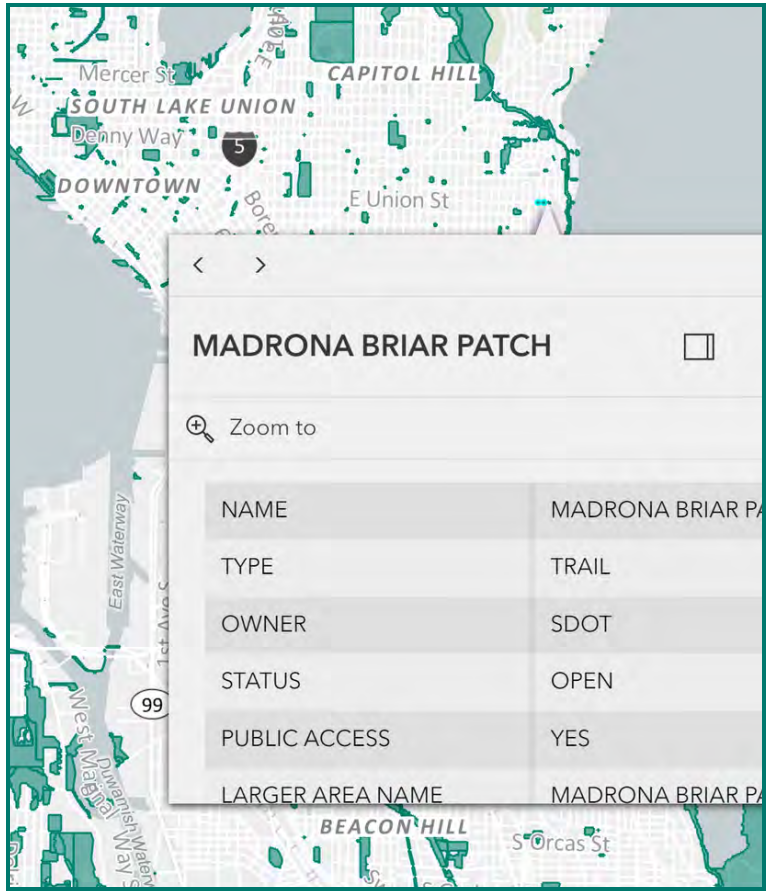
Relate spaces to community identities

Outside Citywide

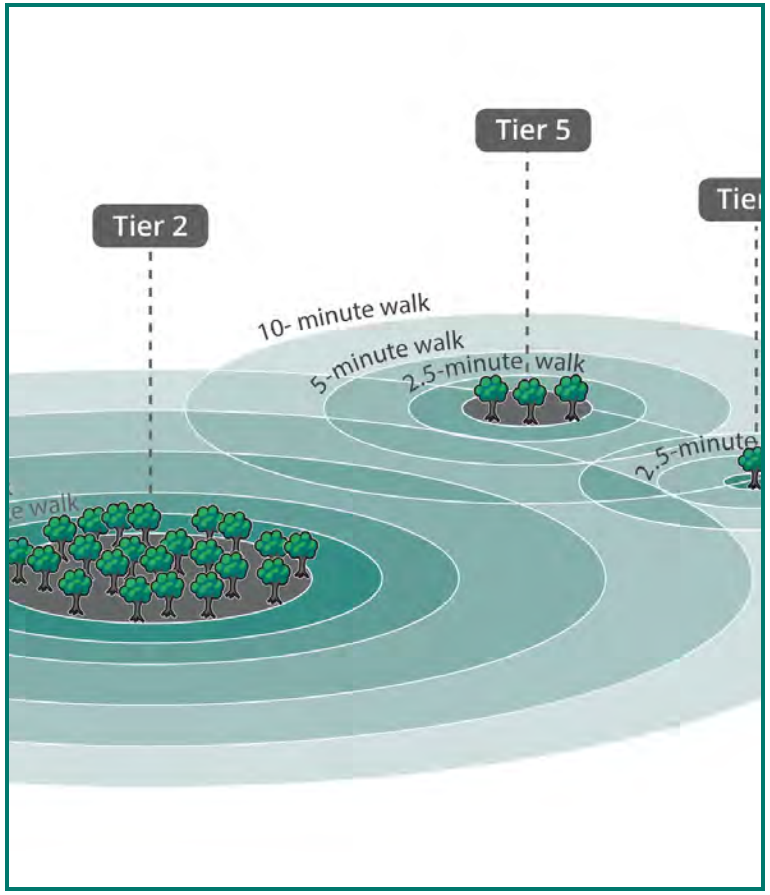
Public Space Priority Mapping



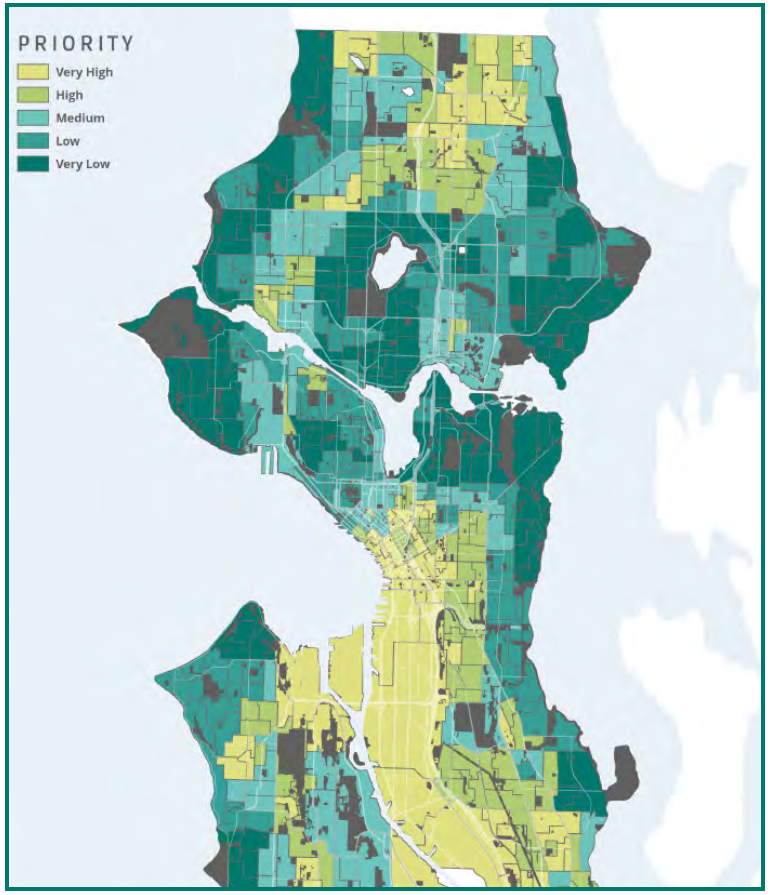
Components



Comprehensive Public Space Data



Public Space Access Analysis



Priority Areas for Future Public Space Improvements

Comprehensive Public Space Data

- ## All-Encompassing

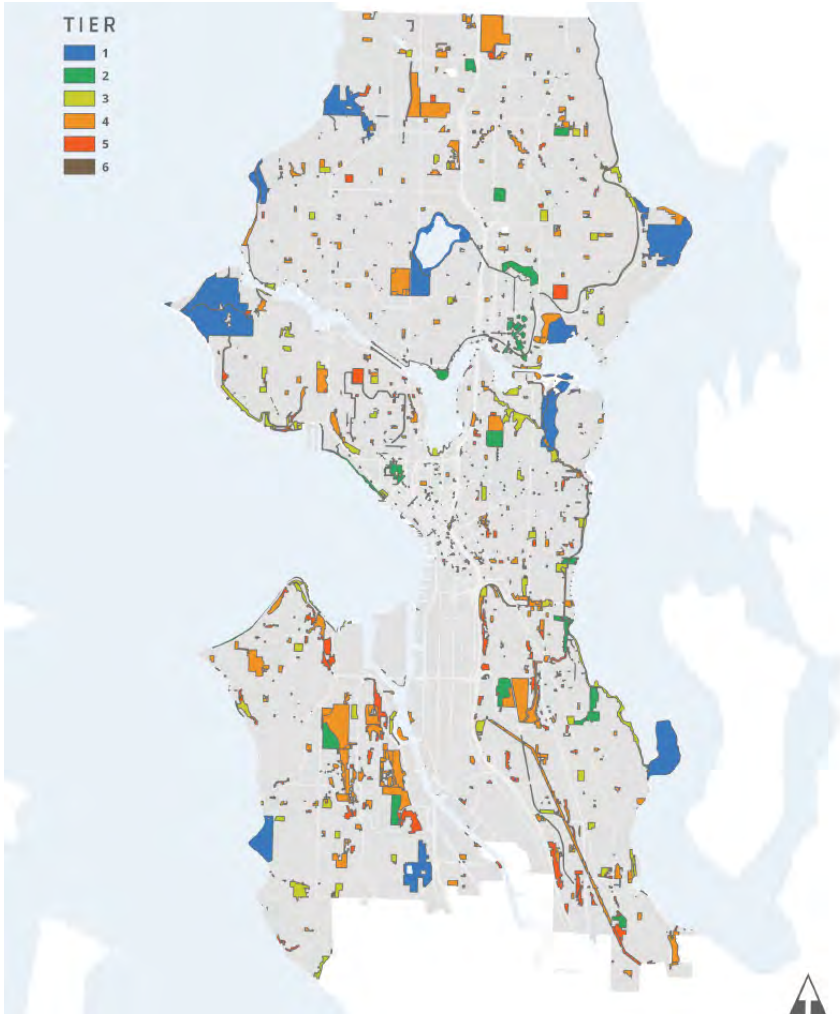
  Accounts for all 1,001 public spaces in Seattle across all forms of ownership

- ## Detailed Information

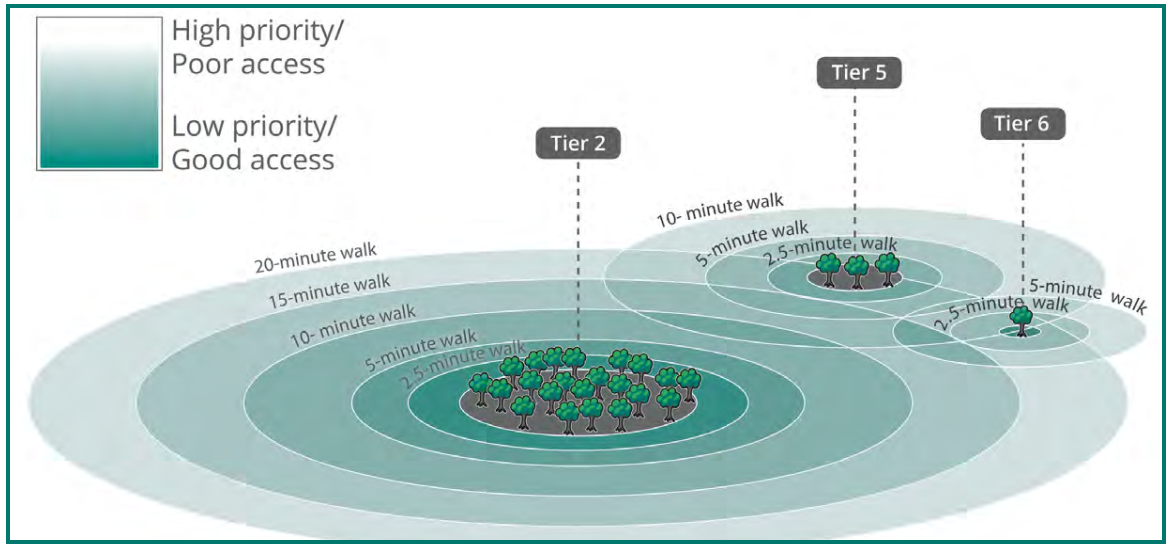
  Data contains information on the characteristics of each public space such as who owns it, what amenities it contains, if there are any public access limitations, etc.

- ## Tiered System

  Qualities like size, type, and number of amenities are used to sort each public space into six tiers. Tier 1 includes the biggest public spaces with the most amenities and tier 6 includes small spaces with fewer amenities, such as a parklet.



Public Space Access Analysis



Walkshed Analyses

- Size of walksheds are based on tier system. Larger public spaces get larger walksheds, smaller public spaces get smaller walksheds.
- Areas with access to multiple public spaces get points from each space.
- **Intended to reflect how people actually experience public space.** People are willing to walk farther to get to an exceptional public space and enjoy having a variety of options to walk to.

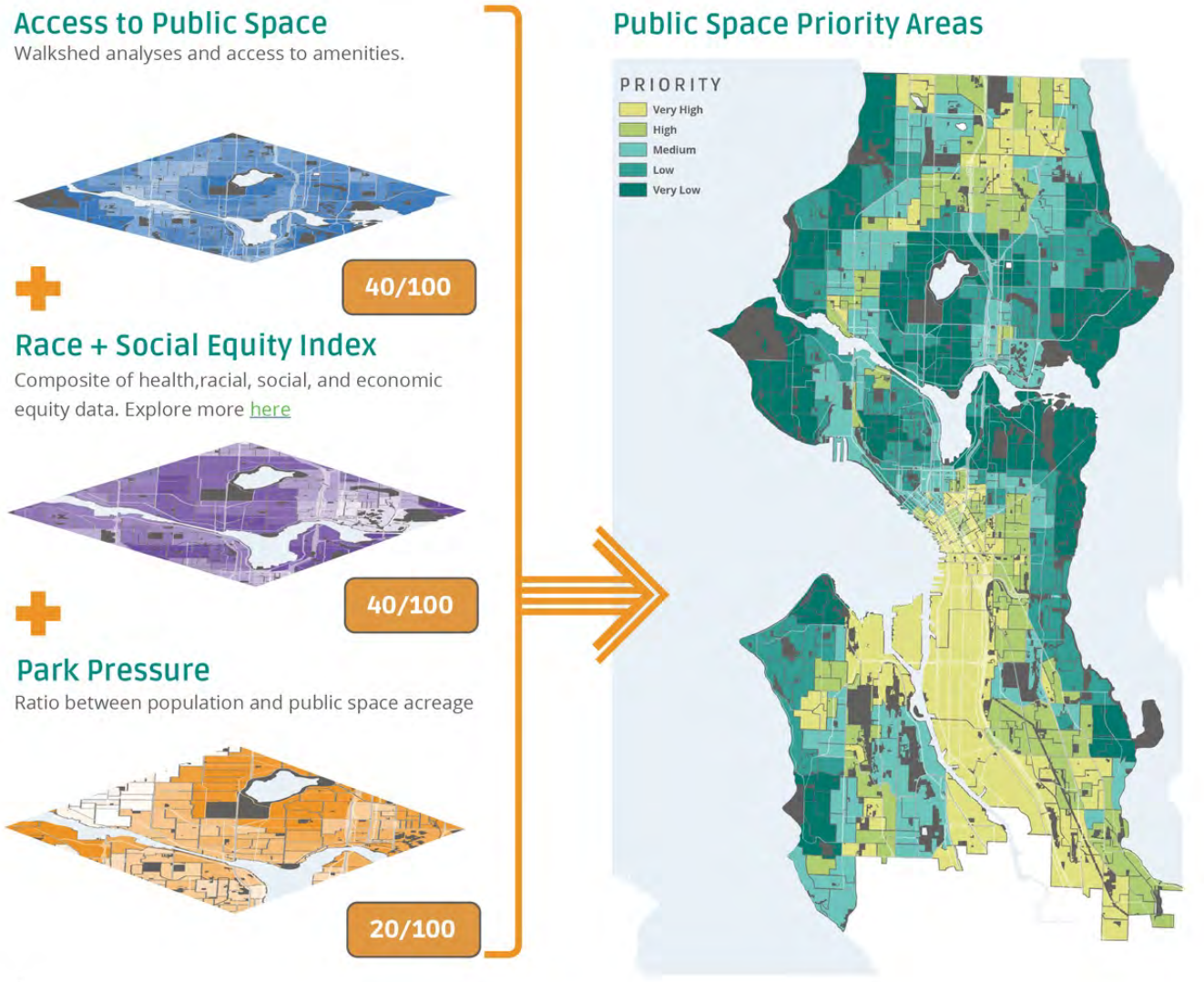
Access to Amenities

- 5-, 10-, and 15-minute walksheds are generated to each basic amenity category listed above.
- Areas within a 5-minute walk to each amenity type are found to have the best access, areas that are more than a 15-minute walk to each type of amenity are found to have the worst access.

Priority Areas for Future Public Space Improvements

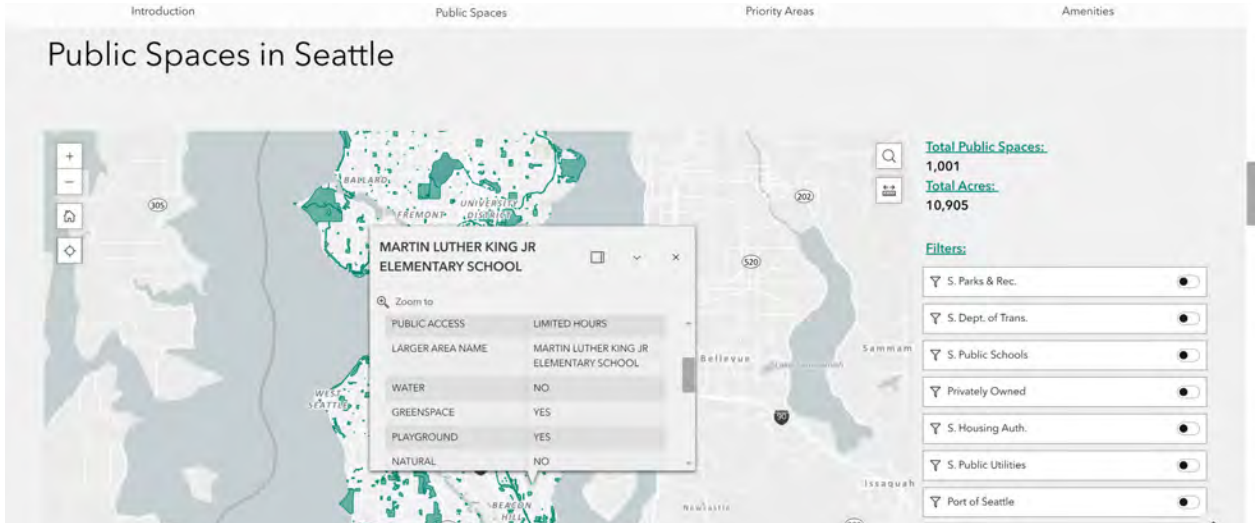
Emedding Equity

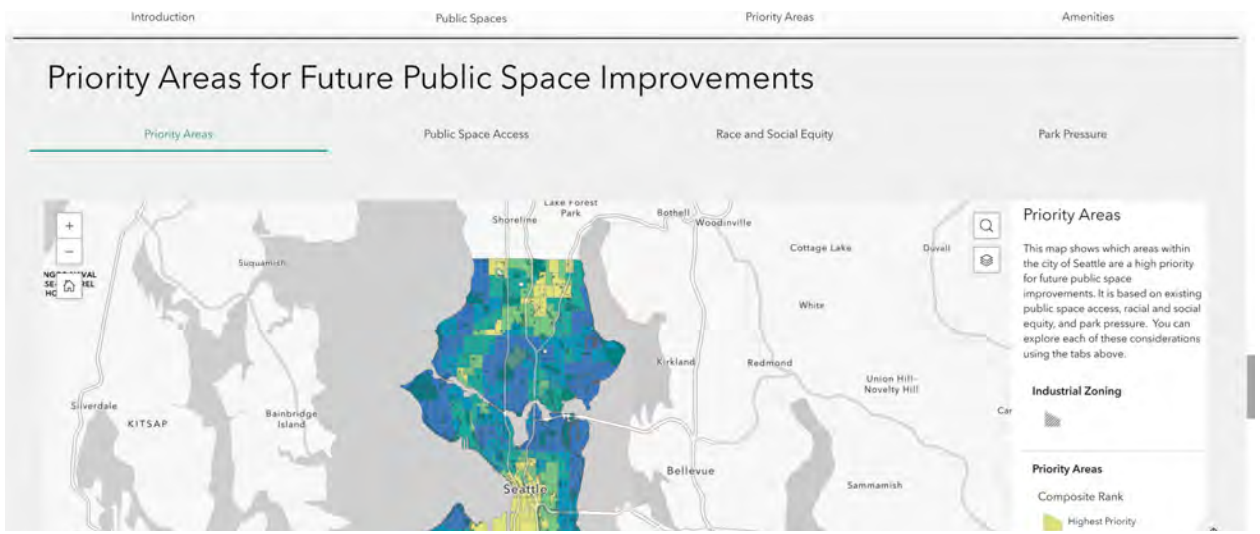
- Considerations of race and social equity and population density are combined with the access analyses to derive the final priority areas.
- The Race and Social Equity Index assigns priority based on a variety of equity considerations such health outcomes and educational attainment.
- The Park Pressure analysis reflects the ratio between the total population in a neighborhood and the total acres of walkable public spaces.

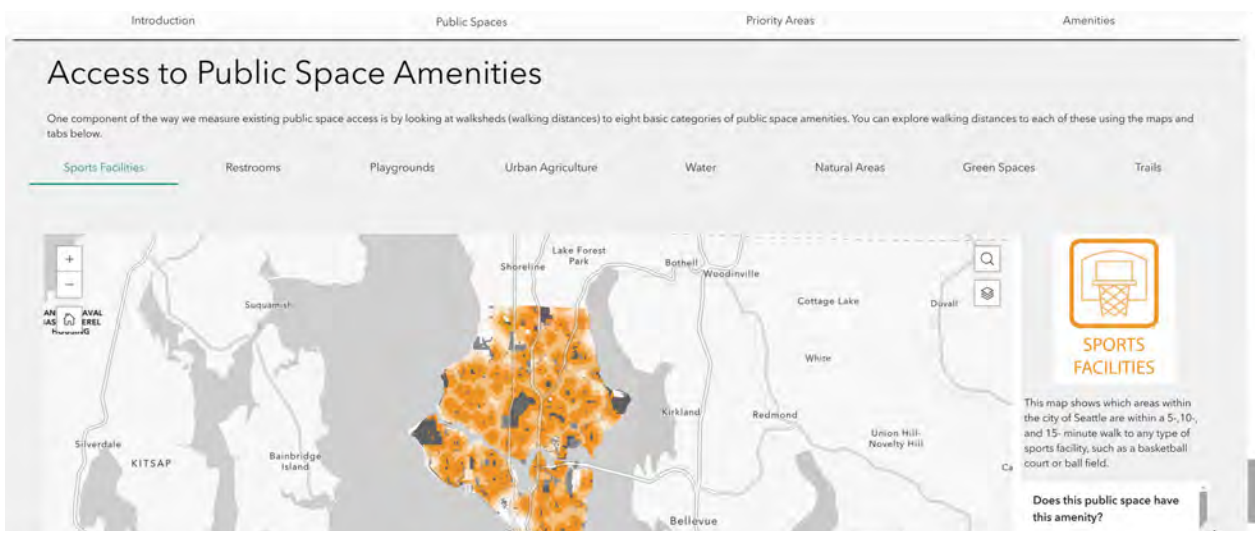


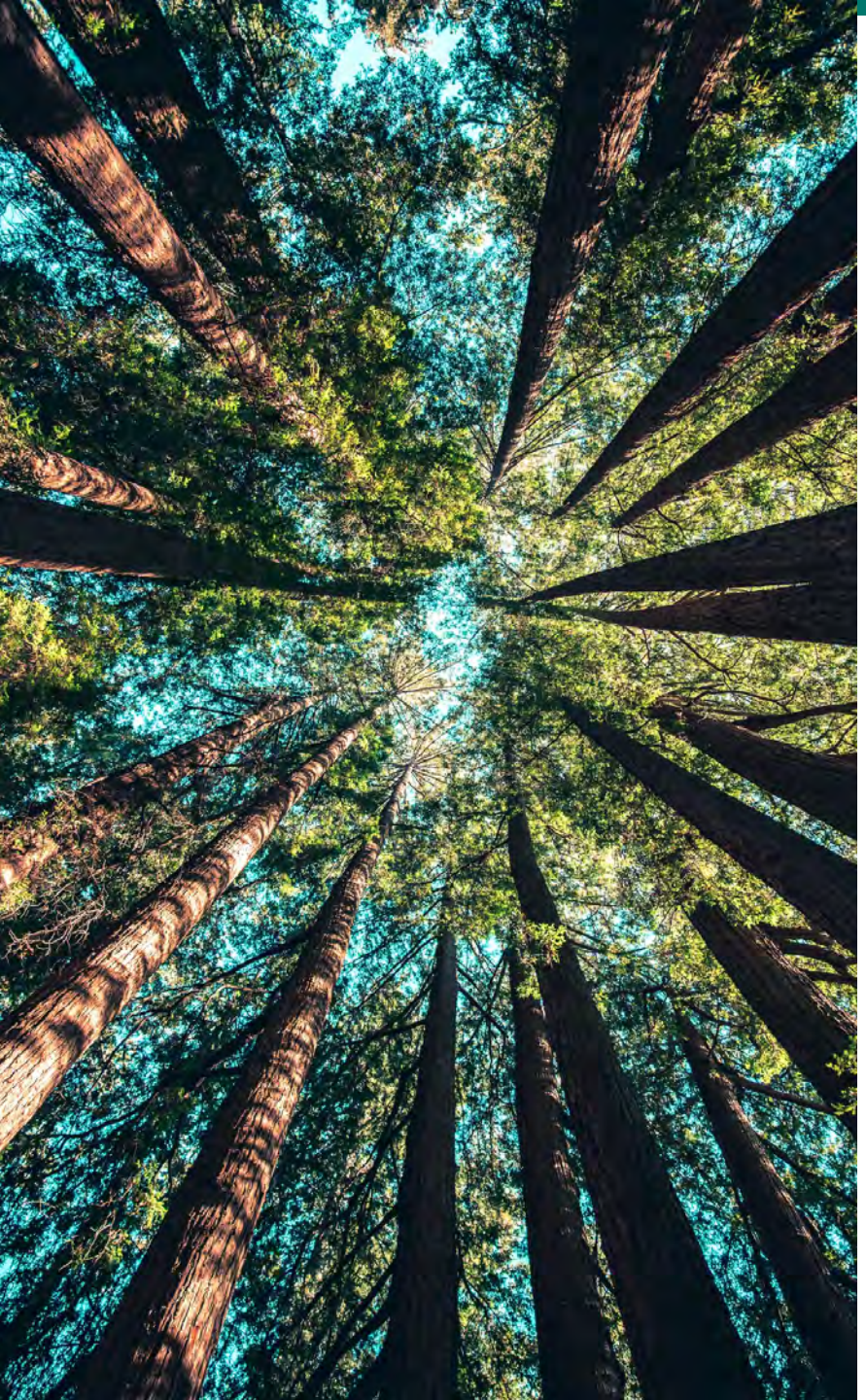
Outside Citywide Public Space Data Explorer

This online tool allows users to explore Seattle's public space system and dig into the access and priority analyses









SPR Planning & Capital Development

- Responsible for the capital planning and asset management
- Utilize priority areas to determining timing of work among other parameters
- Work to assess, inventory, and map all asset classes
- Identify projects to spend ~$120m annually over 6 years from a special levy: Park District
- Rely on data for a more comprehensive and transparent planning process

Asset Management + Capital Planning

Condition

Site assessments conducted with an annual, three-, or five-year planning horizon.

Equity Priority Area

Projects within the two highest equity priority areas are rated more highly.

Efficiencies

Cross check assets at similar sites to mobilize, plan and design multiple projects at once.

Usage

The future!