Parks Project

An Analysis Of Park Usage & Users In 3 Boston Parks

boston planning & development agency

A Collaboration between BPDA Research and Boston Parks and Recreation Department

Parks Project

1. Introduction
2. Characterizing Park Usage: Ringer, McLaughlin, Ronan
3. Characterizing Park Users: Ringer, McLaughlin, Ronan
4. Factors Affecting Park Usage
5. Conclusion

Introduction

Research Question

How can we characterize park use?

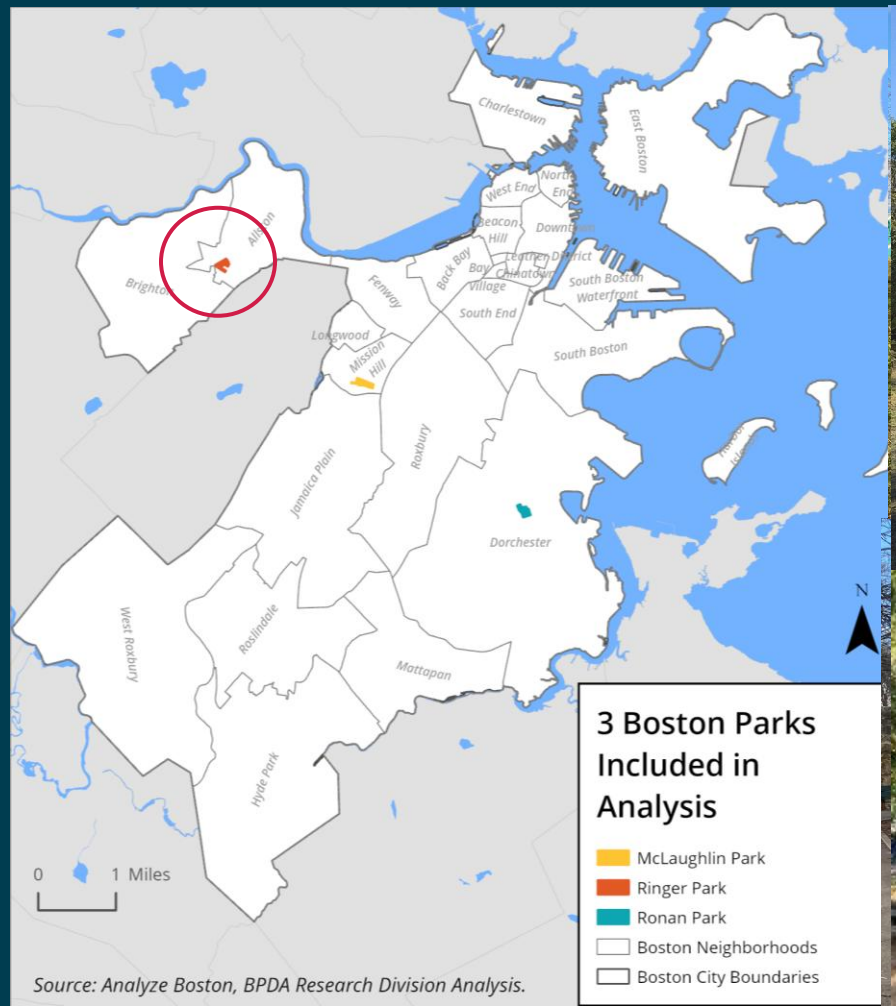
- How many people visit the park?
- How has park use changed over time?
- How do patterns of park use vary between parks?
- Who uses the park?
- What factors might affect park use?

Research Project Scope

In Ringer, McLaughlin, and Ronan park?

Park #1: Ringer Park

Where is it?



Characteristics

- Ringer a pet and family friendly neighborhood park located in Allston.
- Ringer is a 10.26 acre park with the following assets:
  - **Softball field,**
  - **Basketball courts,**
  - **Tennis courts,**
  - **Playground,**
  - **Chess tables,**
  - **Water feature,**
  - **Benches,**
  - **Urban wilds wooded area with hiking trails**

bpda research division

Park #2: McLaughlin Park

Where is it?

Characteristics

- McLaughlin is a pet and family friendly neighborhood park located in Mission Hill.
- McLaughlin is a 11.67 acre park with the following assets:
  - **Softball field,**
  - **Basketball courts,**
  - **Playground,**
  - **Tot lots,**
  - **Batting cages,**
  - **Benches,**
  - **Urban wilds wooded area with hiking trails**

bpda research division

Park #3: Ronan Park

Where is it?

Characteristics

- Ronan is a pet and family friendly neighborhood park located in Dorchester.
- Ronan is a 11.24 acre park with the following assets:
  - **Baseball field,**
  - **Basketball courts,**
  - **Playground,**
  - **Fenced-in dog area,**
  - **Splash pad/tot spray,**
  - **Benches,**
  - **Multi-purpose open field space**

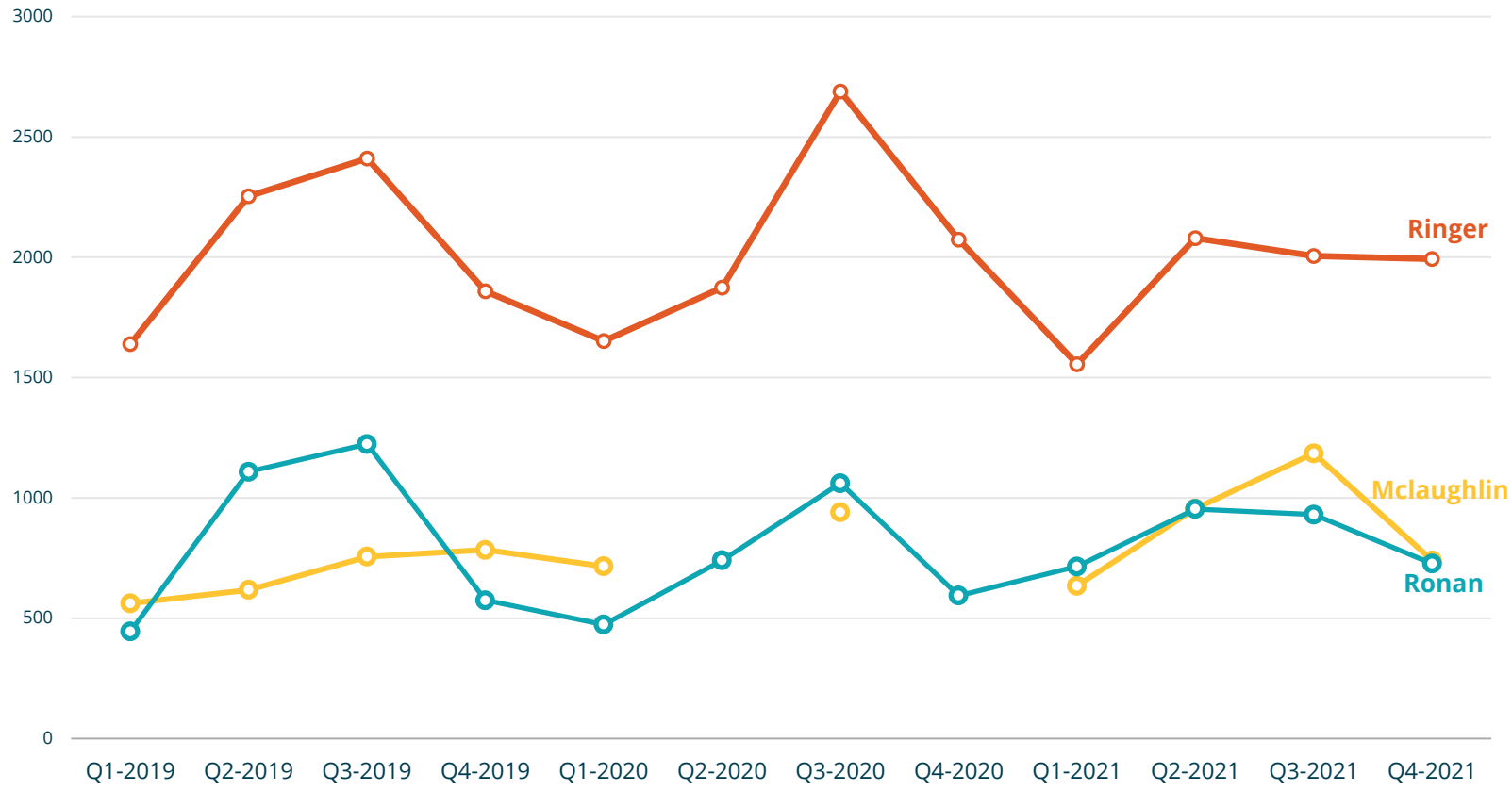
bpda research division

Parks Project

1. Introduction
2. **Characterizing Park Usage: Ringer, McLaughlin, Ronan**
3. Characterizing Park Users: Ringer, McLaughlin, Ronan
4. Factors Affecting Park Usage
5. Conclusion

Ringer had the highest overall average stoppers & passers for 2019 to 2021

Average Daily Zone Traffic by year by 3 mo increment, 2019 - 2021



- **Ringer** park had the highest average combined stoppers and passers over the data period, followed by Ronan then McLaughlin.
- **Ronan** and **Ringer** followed similar patterns in average daily zone traffic between 2019 and 2021.

Source: Streetlight Insight, BPDA Research Division Analysis.

bpda research division

Park usage patterns of passers vs stoppers differ between the 3 parks

Summarizing Patterns in Park Use, 2019 - 2022

	Ringer	McLaughlin	Ronan
% Passers 2021	74%	85%	64%
% Passers 2019-21	decreased	increased	increased
Avg Traffic 2019-21	decreased	increased	increased
Most Popular	July - September	July - September	July - September
Least Popular	January - March	January - March	January - March

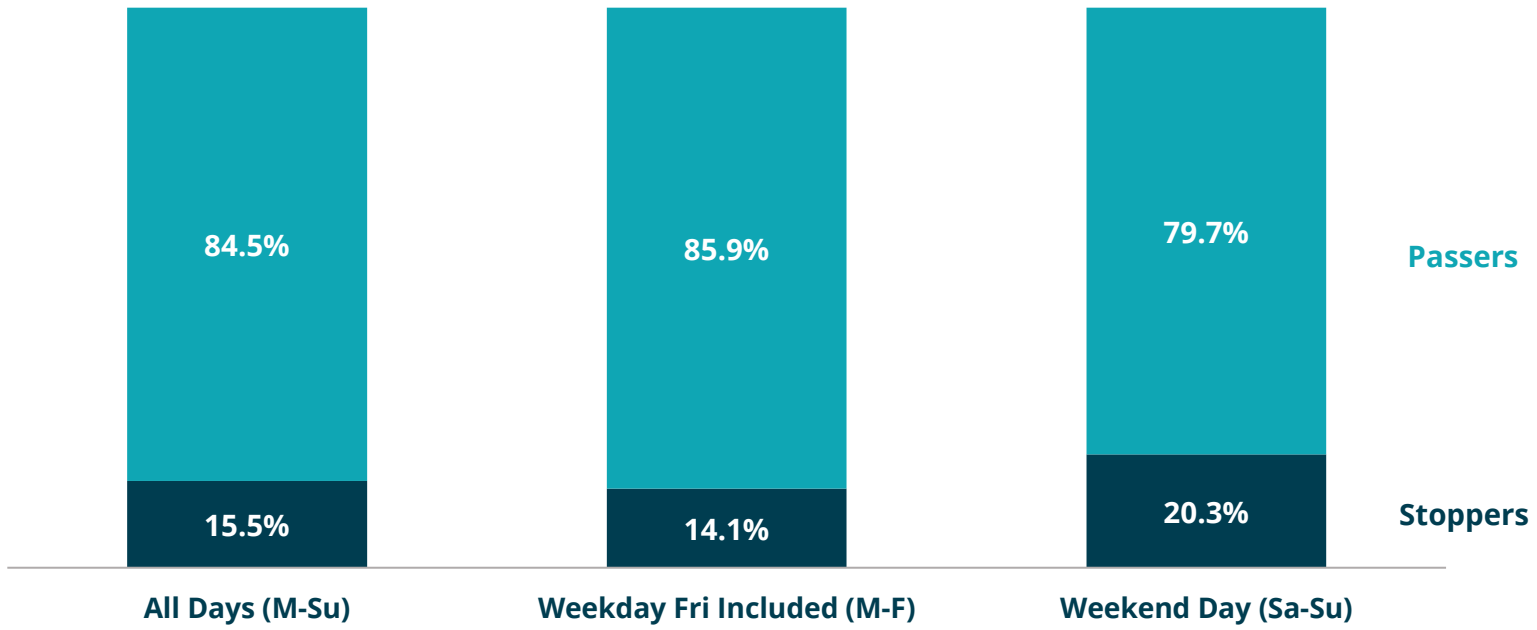
research division

Most McLaughlin Park Users are Passers

How do people use the park?

Proportion of Stoppers vs Passers

McLaughlin Park 2021 by Day Type



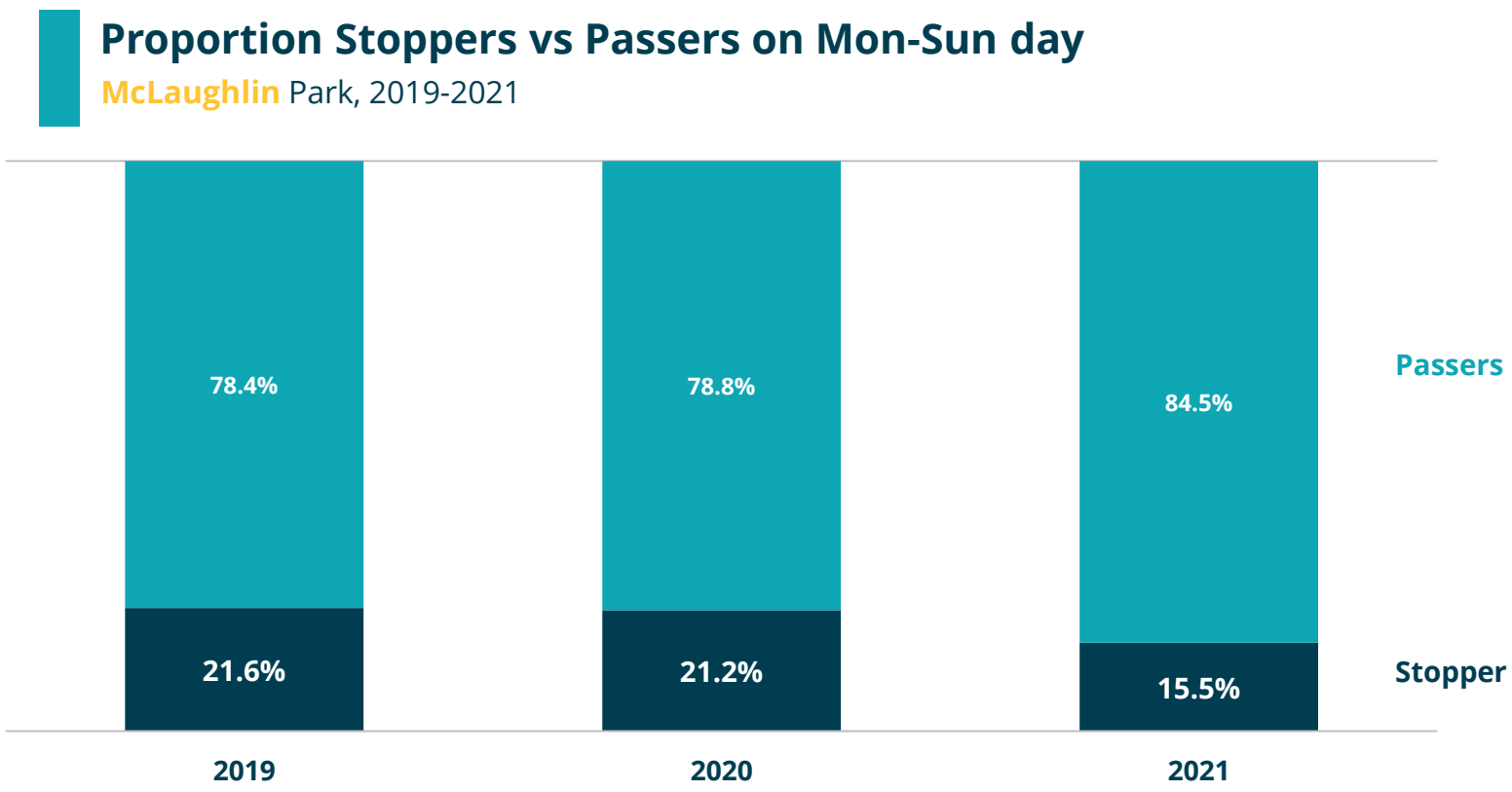
- Overall, McLaughlin is mostly used as a pass-through park.
- On weekdays, the proportion of passers is higher than on weekends.
- On weekends, 1 in 5 park users stop in McLaughlin park.

Source: Streetlight Insight, BPDA Research Division Analysis.

bpda research division

Proportion of passers increased over time

How do people use the park? How has that changed over time?



- For all 3 years, the proportion of passers is larger than the proportion of stoppers.
- 2021 saw the lowest proportion of stoppers.
- 2019 saw the highest proportion of stoppers.

Source: Streetlight Insight, BPDA Research Division Analysis.

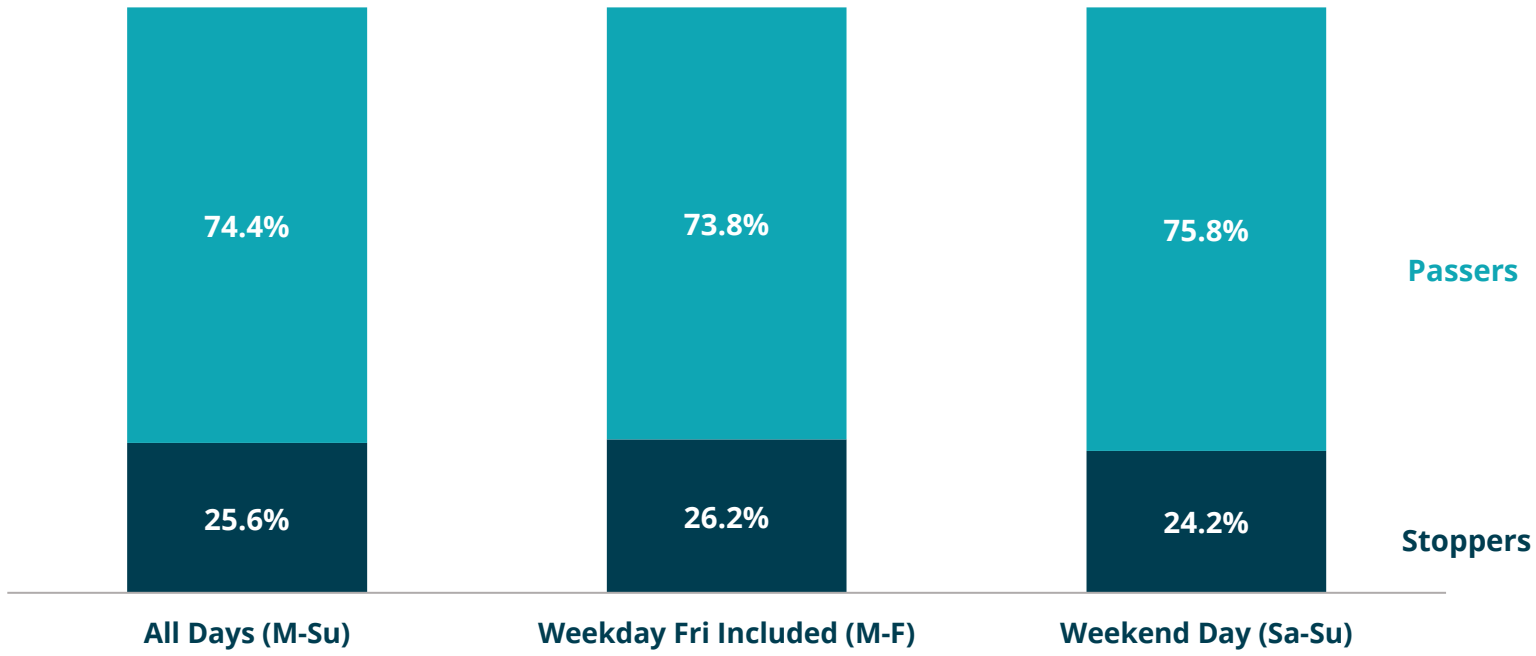
bpda research division

Most Ringer Park Users are Passers

How do people use the park?

Proportion of Stoppers vs Passers

Ringer Park 2021 by Day Type



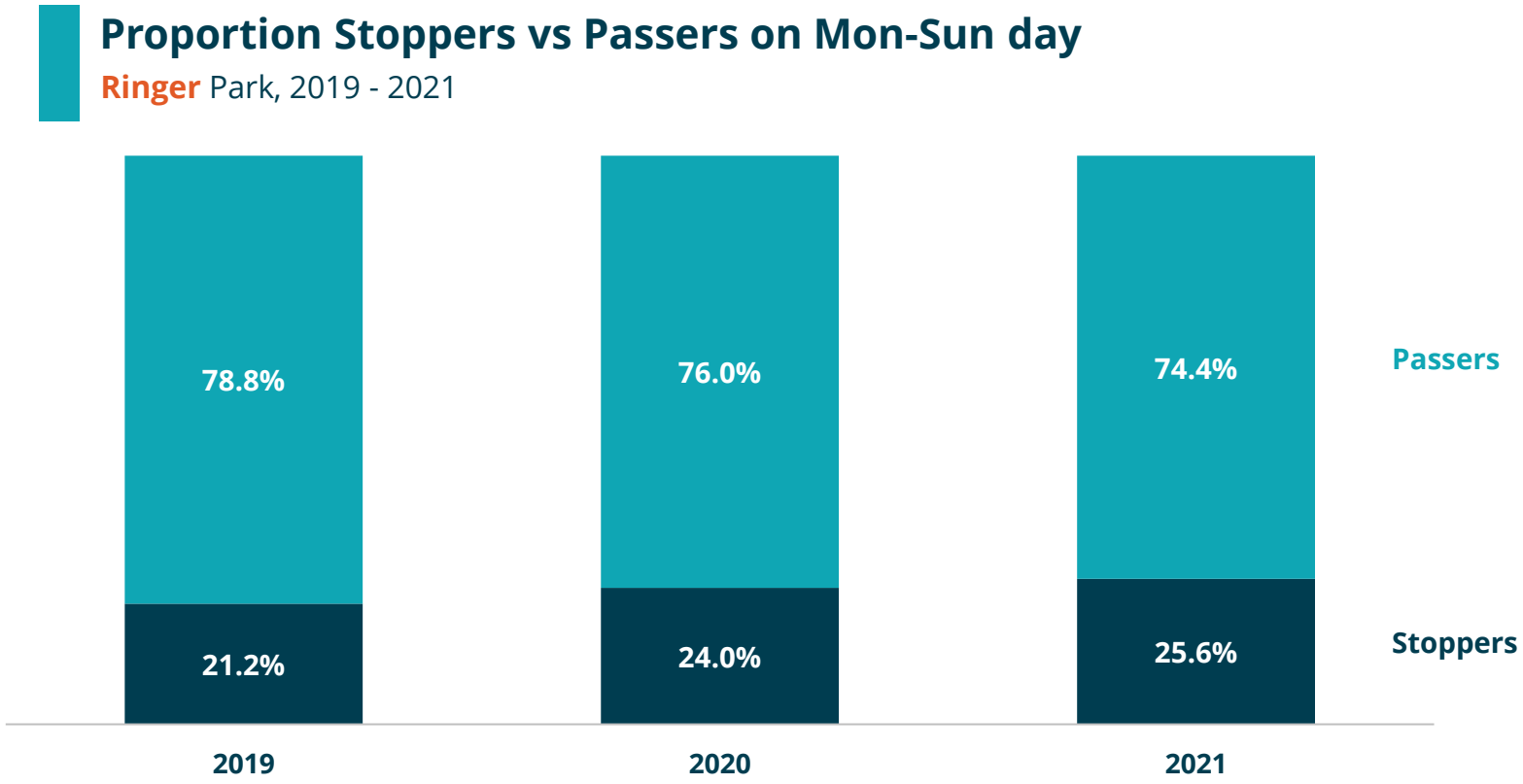
- Overall, Ringer is mostly used as a **pass-through** park.
- On a typical Mon-Sun day, 1 in 4 park users stop in Ringer park.
- On weekdays, the proportion of stoppers is slightly higher than on weekends.

Source: Streetlight Insight, BPDA Research Division Analysis.

bpda research division

Proportion of stoppers increased 2019-21

How do people use the park? How has that changed over time?



- For all 3 years, the proportion of passers is larger than the proportion of stoppers.
- 2021 saw the highest proportion of stoppers.
- 2019 saw the lowest proportion of stoppers.

Source: Streetlight Insight, BPDA Research Division Analysis.

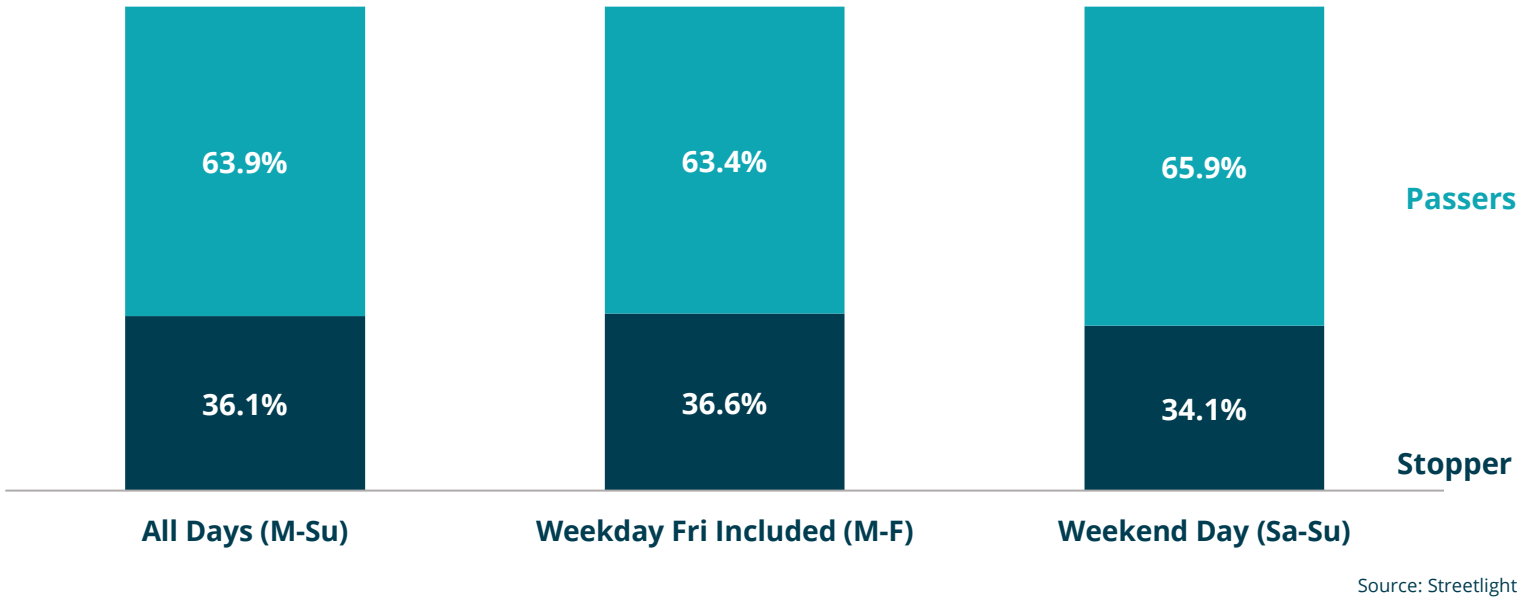
bpda research division

Most Ronan Park Users are Passers

How do people use the park?

Proportion of Stoppers vs Passers

Ronan Park 2021 by Day Type



Source: Streetlight

- Overall, **Ronan** is mostly used as a **pass-through park**.
- On a typical Mon-Sun day, **1 in 3 park users stop** in Ronan park.
- On weekends, the proportion of passers is slightly higher than on weekdays.

Source: Streetlight Insight, BPDA Research Division Analysis.

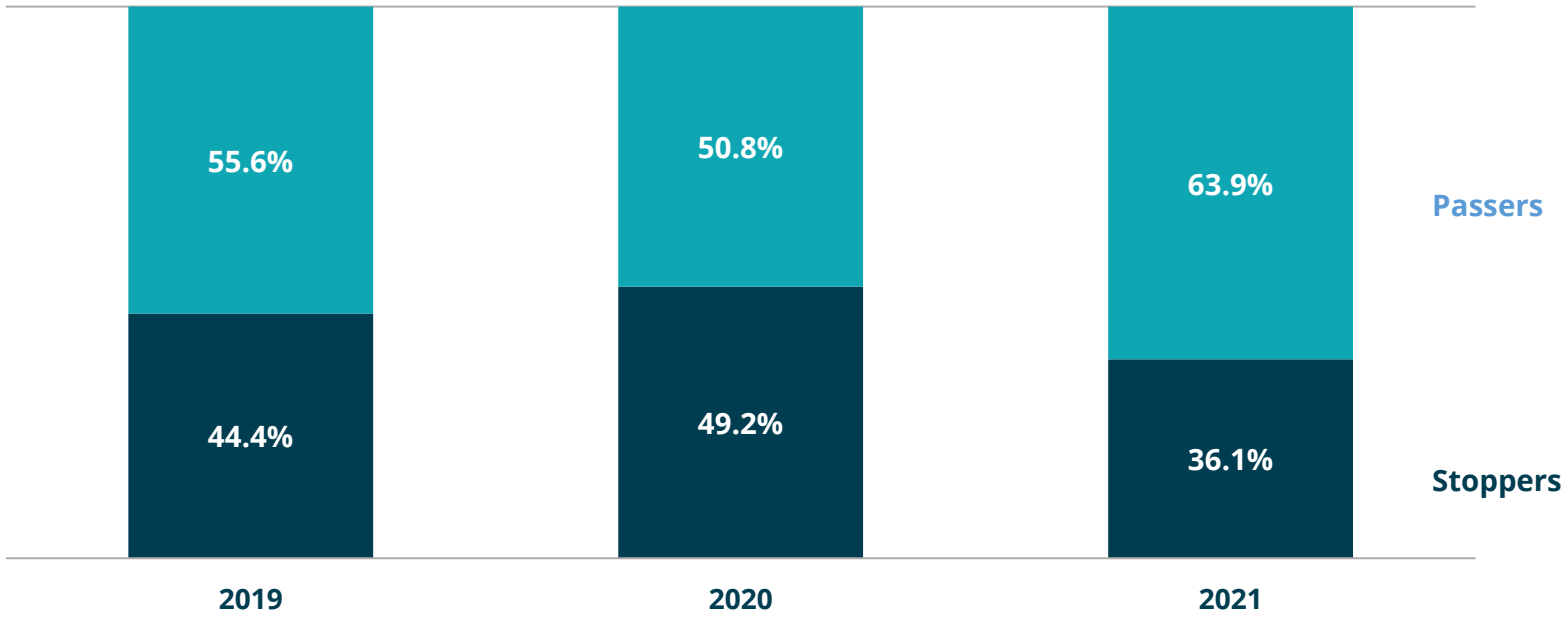
bpda research division

Proportion of passers increased 2019-21

How do people use the park? How has that changed over time?

Proportion Stoppers vs Passers on Mon-Sun day

Ronan Park, 2019 - 2021



Source: Streetlight

- While in 2019 and 2020 more Ronan park users stopped than passed through, in 2021 more park users passed through.
- 2021 saw the highest proportion of passers.
- 2020 saw the lowest proportion of passers.

Source: Streetlight Insight, BPDA Research Division Analysis.

bpda research division

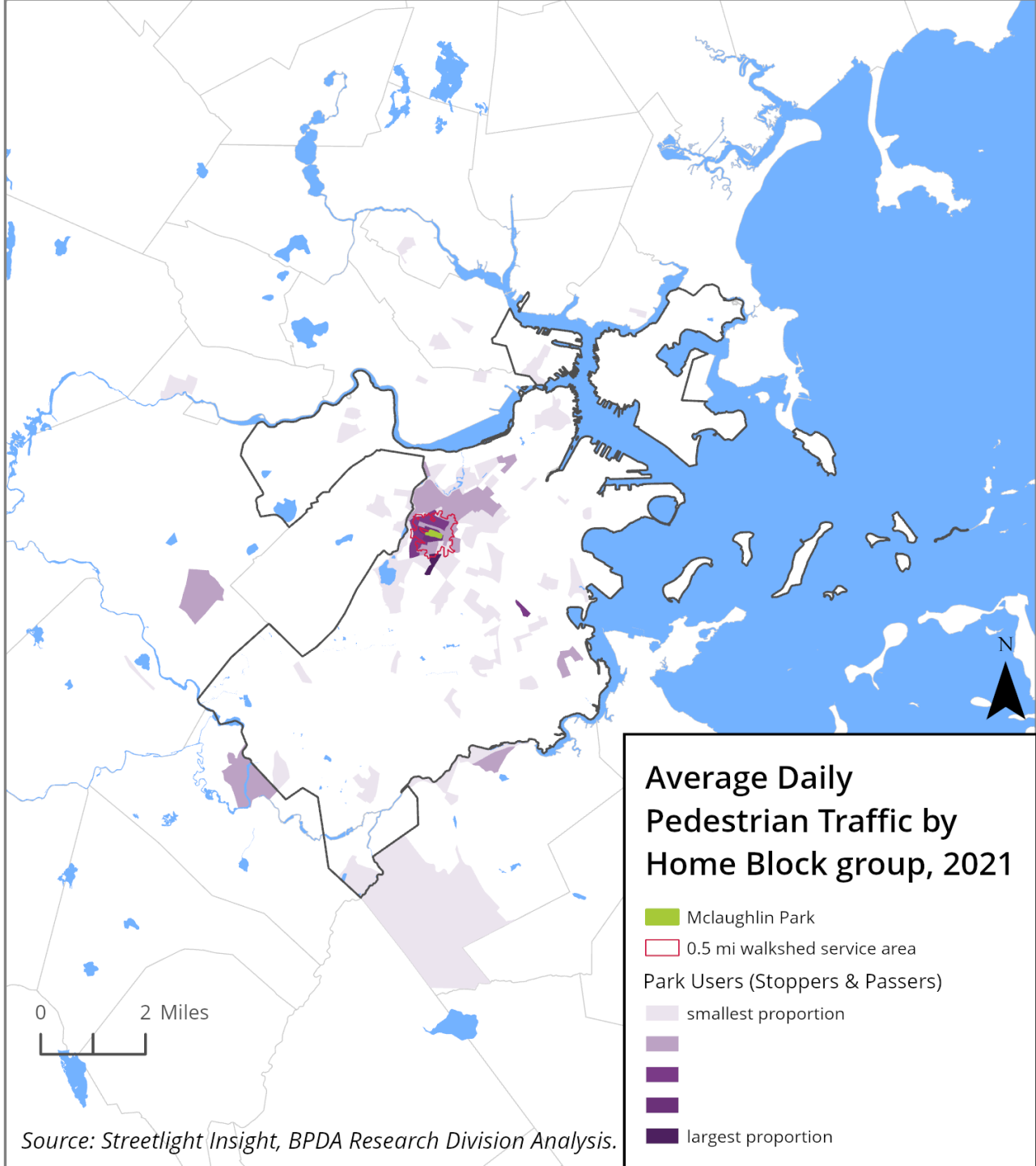
Parks Project

1. Introduction
2. Characterizing Park Usage: Ringer, Mclaughlin, Ronan
3. **Characterizing Park Users: Ringer, Mclaughlin, Ronan**
4. Factors Affecting Park Usage
5. Conclusion

Where do McLaughlin Park users live?

46.7% of McLaughlin park users* live within the 15 min walkshed service area

*total restricted to the greater Boston area bounded by I-95

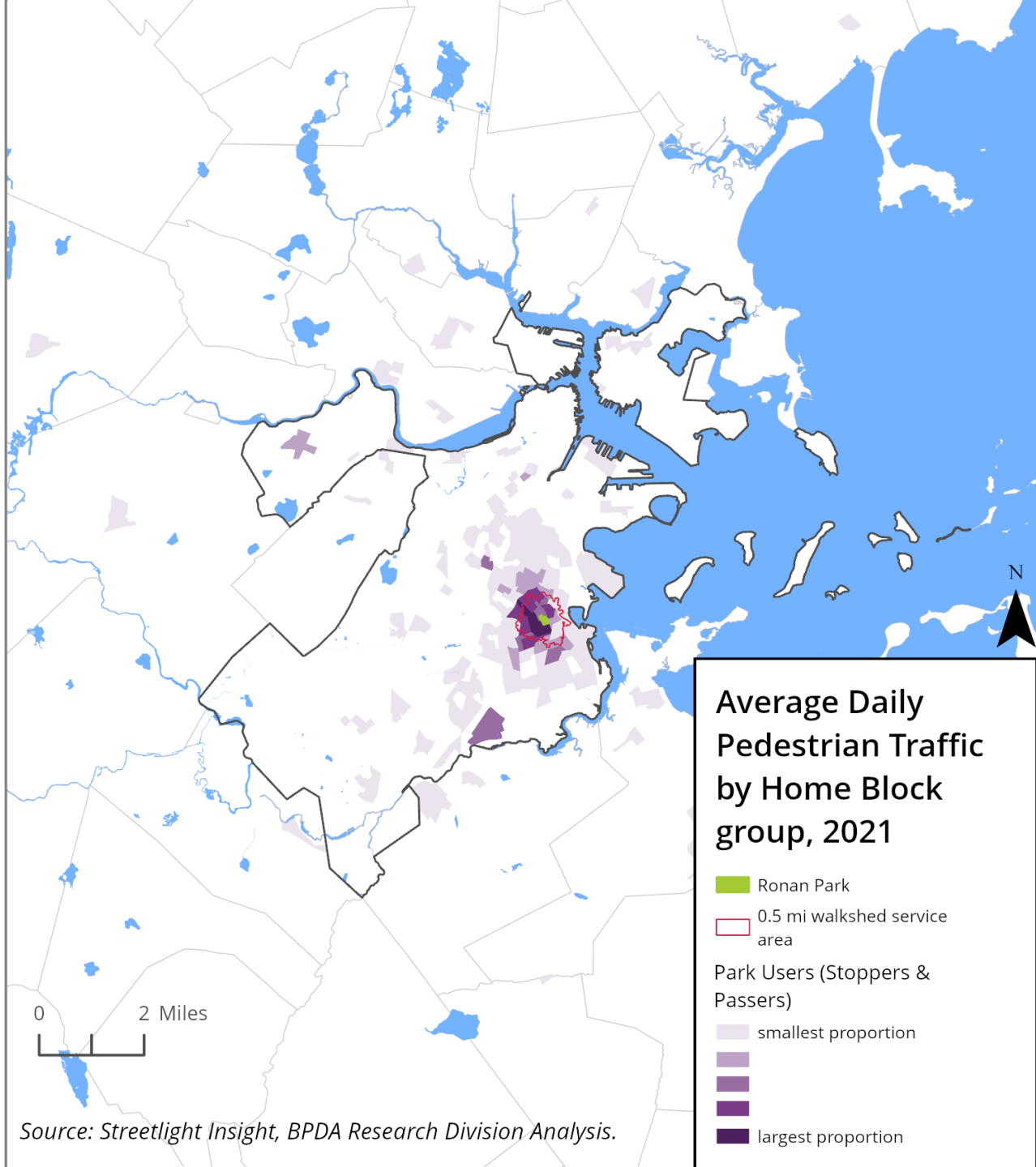


Source: Streetlight Insight, BPDA Research Division Analysis.

Where do Ronan Park users live?

35.6% of Ronan park users* live within the 15 min walkshed service area

*total restricted to the greater Boston area bounded by I-95

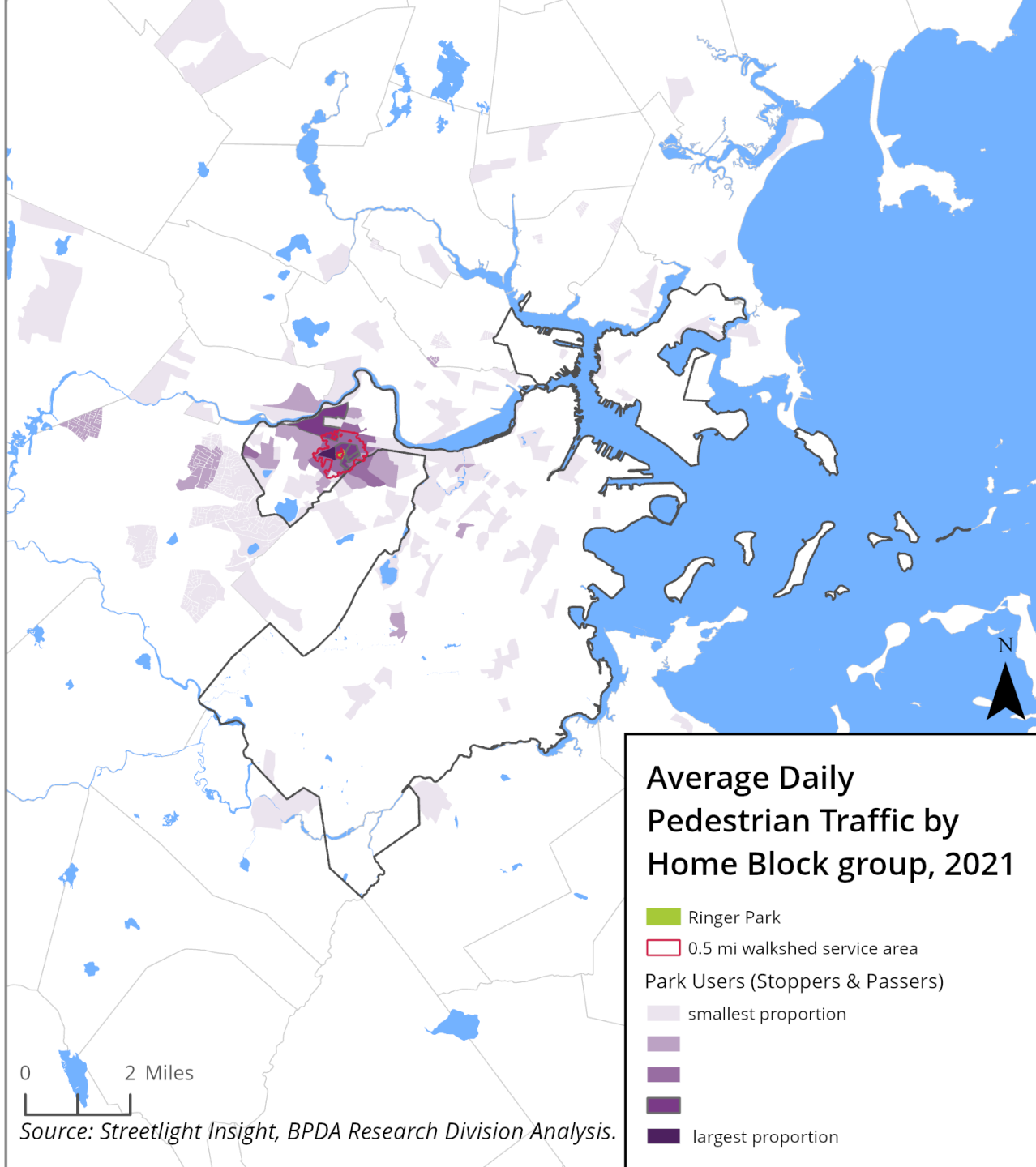


Source: Streetlight Insight, BPDA Research Division Analysis.

Where do Ringer Park users live?

41.2% of Ringer park users* live within the 15 min walkshed service area

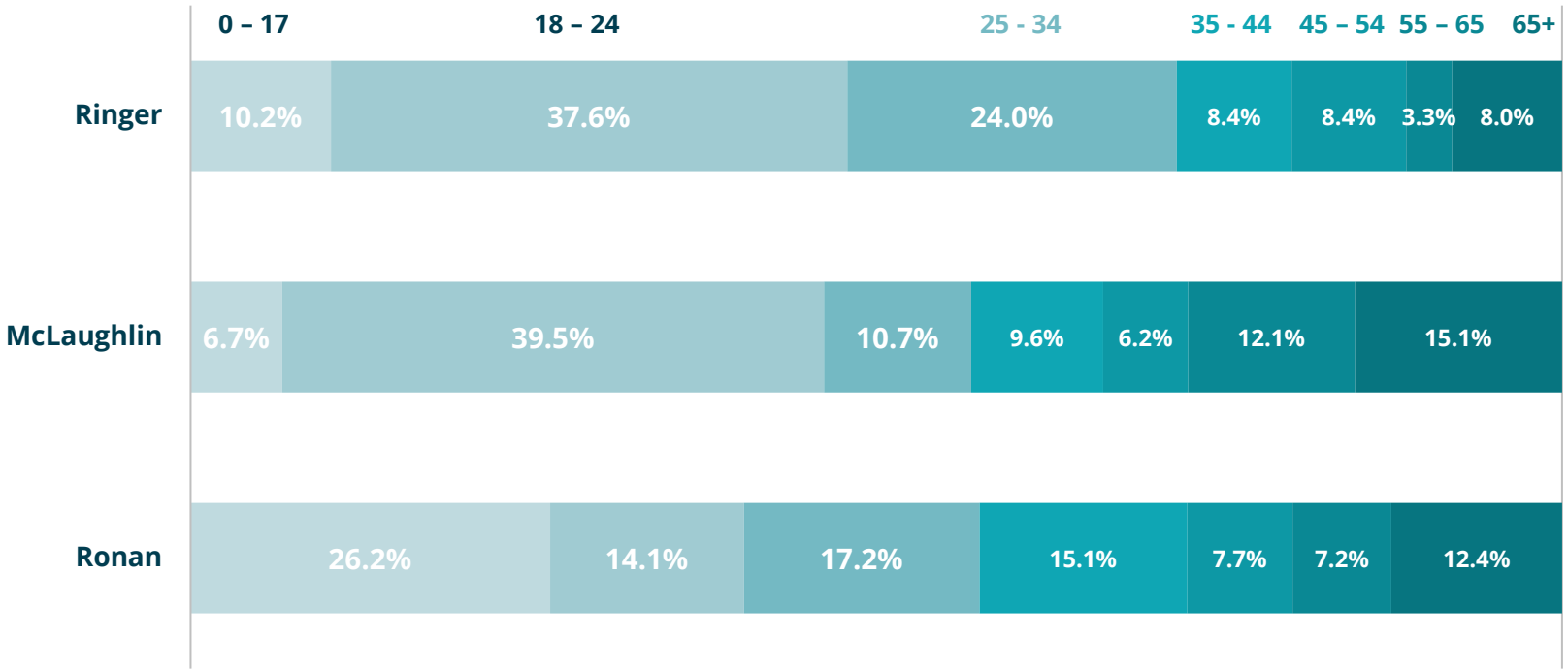
*total restricted to the greater Boston area bounded by I-95



Source: Streetlight Insight, BPDA Research Division Analysis.

Over 1 in 3 McLaughlin and Ringer park users are between 18 and 24 years old

Park Users by Age Group by Park, 2022



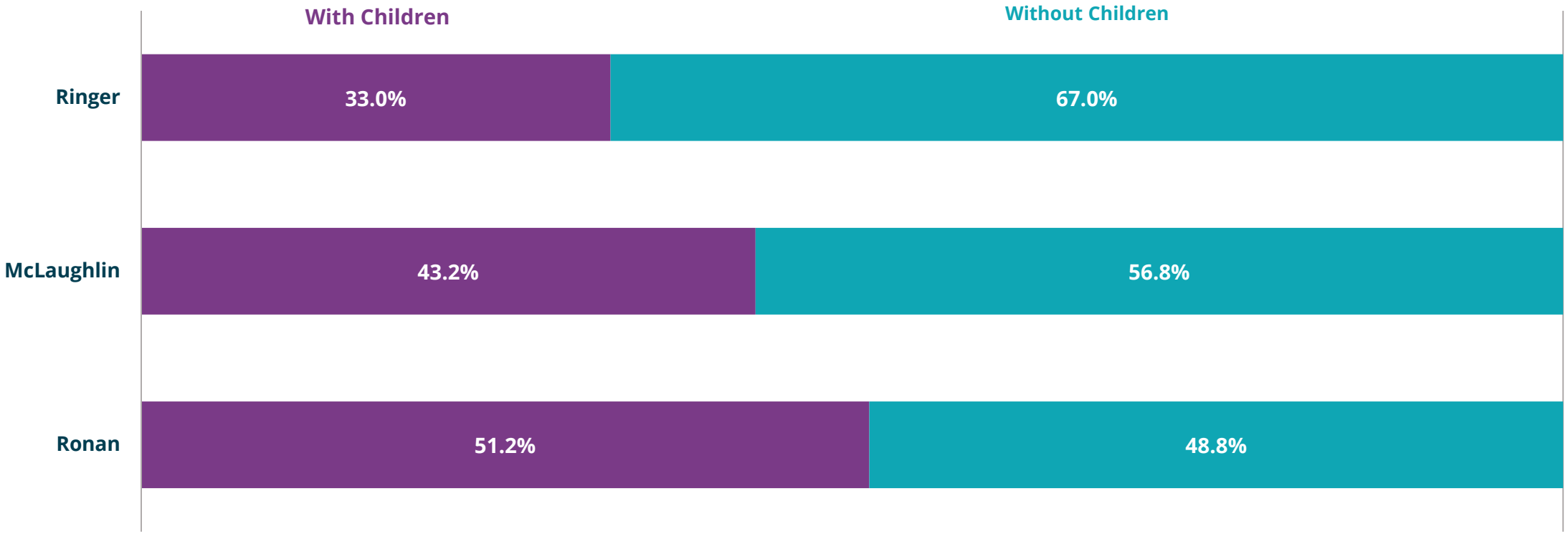
- **Ringer** park users are most likely aged 18 – 24 and 25 – 34 years.
- **McLaughlin** park users are most likely aged 18 – 24 years or 65+ years.
- **Ronan** park users are most likely aged 0 - 17 or 35 - 44 years

Source: Spectus (formerly Cuebiq), American Community Survey 2017 – 2021, BPDA Research Division Analysis.

bpda research division

Ronan park users are more likely come from households with children than McLaughlin & Ringer park users

Park Users by Park by Household Composition Type, 2021

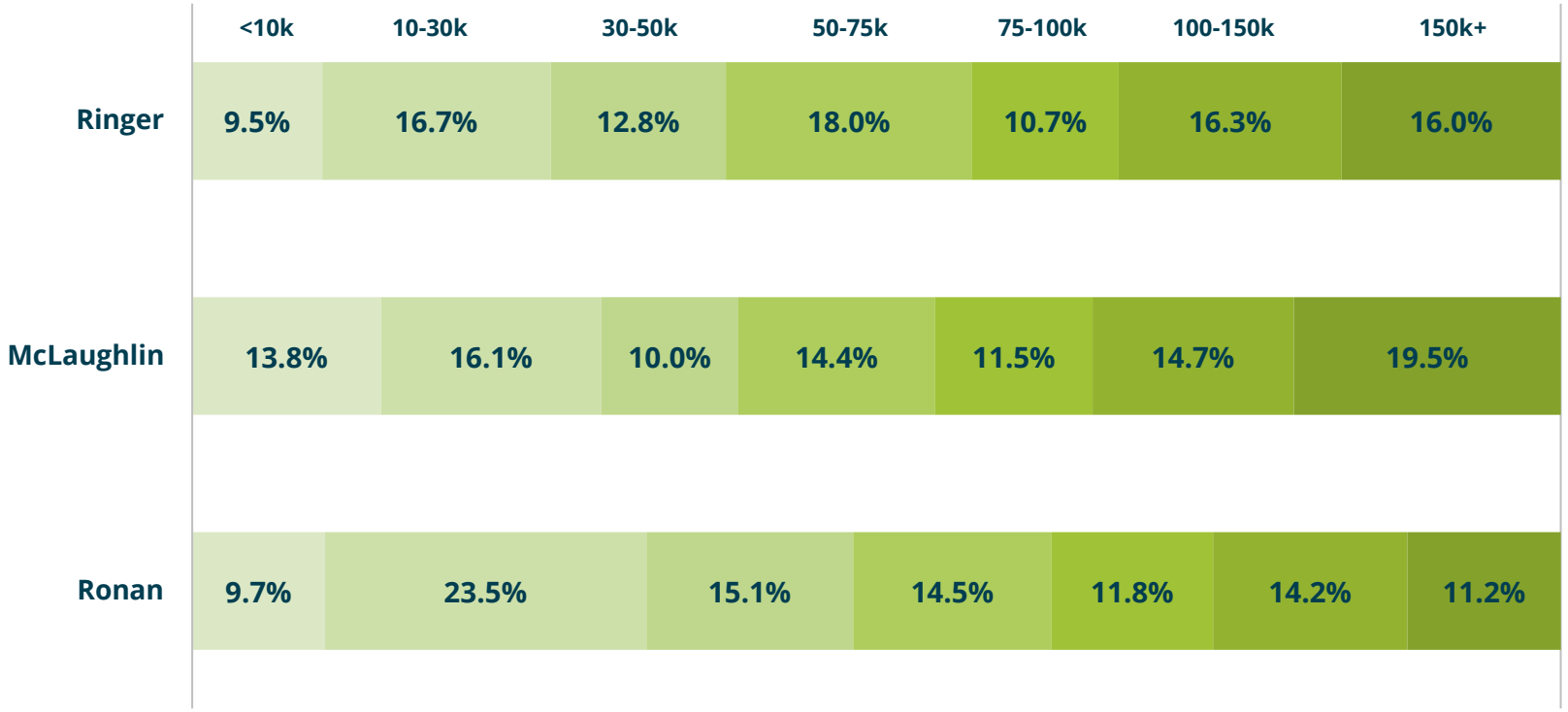


Source: Streetlight Insight, BPDA Research Division Analysis.

bpda research division

For all 3 parks, the first or second most likely annual household income was 10-30k

Park Users by Park by Income Group, 2021



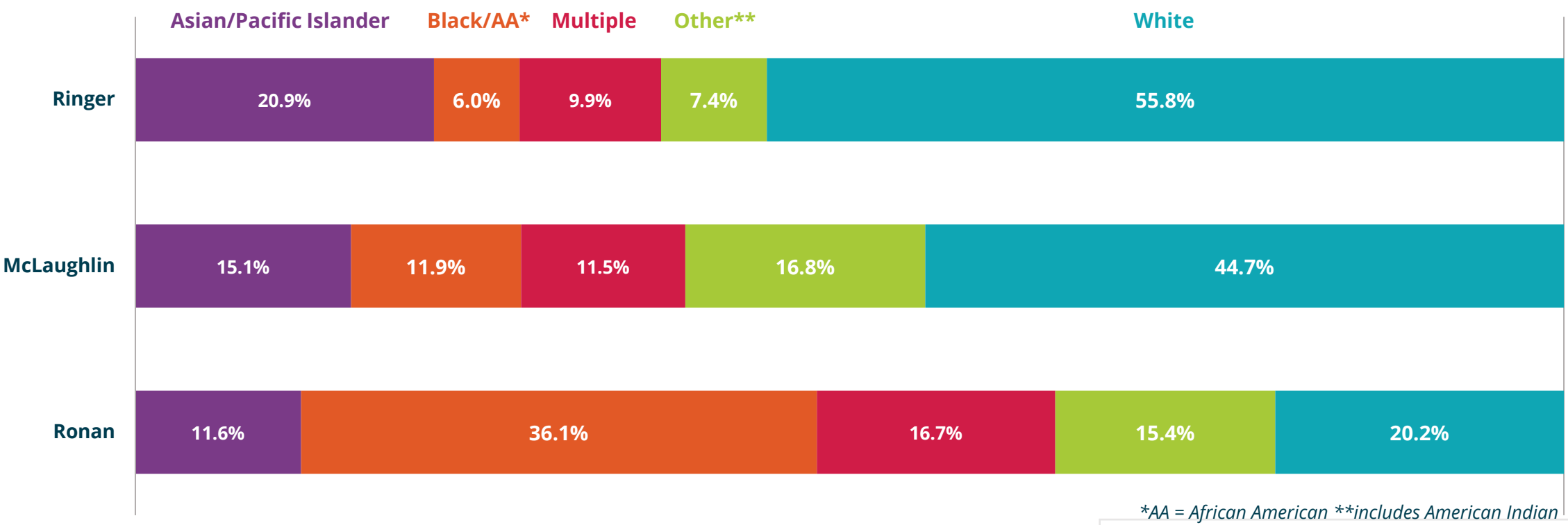
- **Ringer** park users are most likely to report household incomes of **50 – 75k** or **10 – 30k** a year.
- **Mclaughlin** park users are most likely to report household incomes of **10-30k** or **150k+** a year.
- **Ronan** park users are most likely to report household incomes of **10 – 30k** or **30 – 50k** a year.

Source: Streetlight InSight, BPDA Research Division Analysis.

bpda research division

Ronan park users are most likely to be Black/ African American while Ringer & McLaughlin park users are most likely to be White

Park Users by Park by Race, 2021



*AA = African American **includes American Indian

Source: Streetlight InSight, BPDA Research Division Analysis.

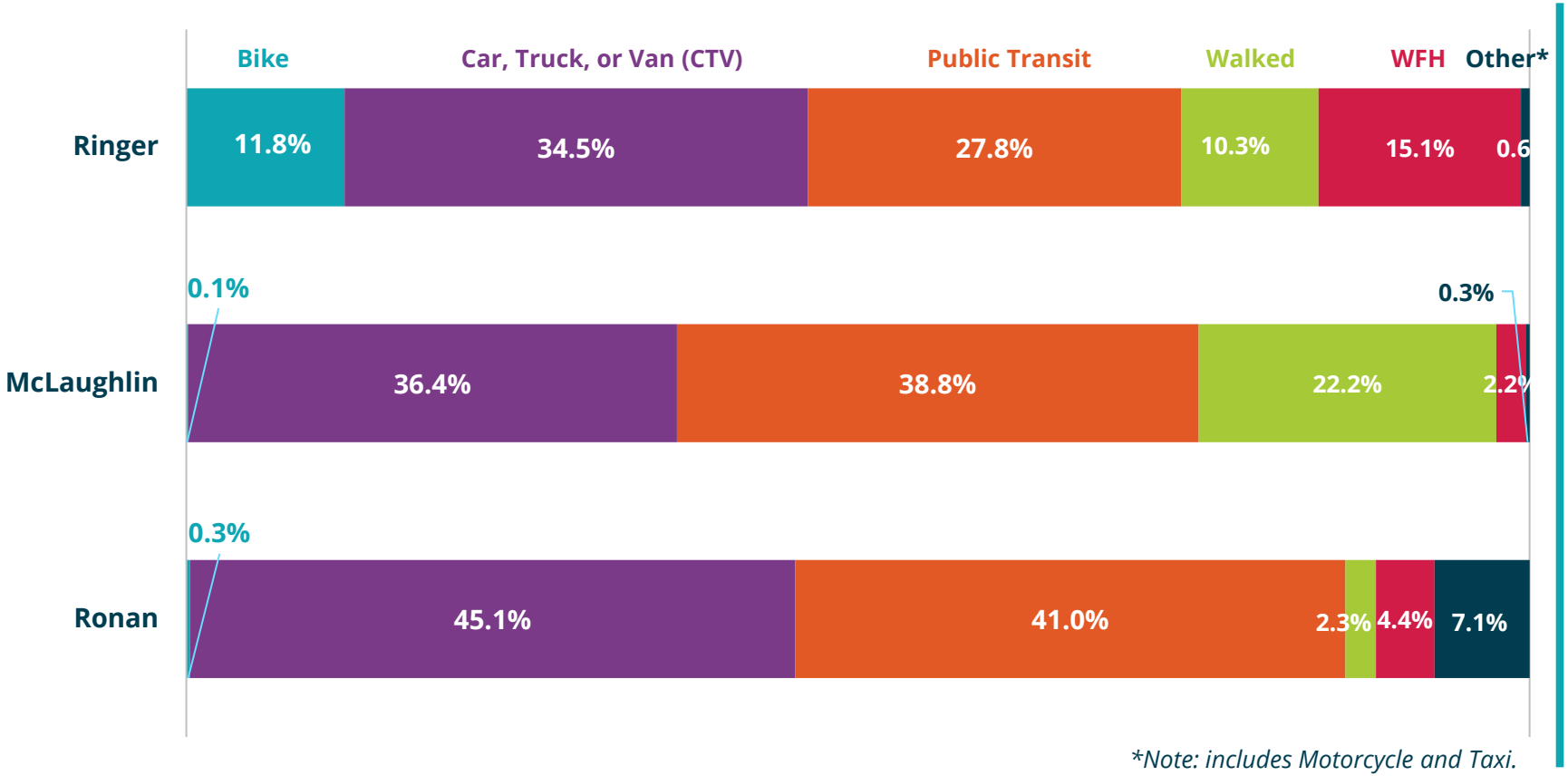
Note: As Streetlight tabulates Hispanic ethnicity separately, individuals identifying as Hispanic are included in the stated racial groups.

Demographic Comparison Continued

	Ringer	McLaughlin	Ronan
Foreign Born	34%	25.8%	36.5%
English Level Speaking English "less than very well"	18.8%	12.3%	24.5%
Hispanic Ethnicity	13.2%	28.1%	22%
Renters	77.2%	72.4%	65.5%
Disability	8.8%	9.7%	14.4%

Most park users of all 3 parks take a Car Truck or Van or Public Transit to get to work

Park Users by Park by Means of Transportation to Work, 2022



*Note: includes Motorcycle and Taxi.

- **Ringer** park users showed the **most diversity** in means of transportation to work and the **highest WFH** population.
- **Mclaughlin** park users tended to use **Public transit** most, followed by **CTV** and **walking**, to get to work.
- Approximately 86% of **Ronan** park users used **CTV** or **Public transit** to get to work.

Source: Spectus (formerly Cuebiq), U.S. Census American Community Survey 2017 – 2021, BPDA Research Division Analysis.

bpda research division

Ringer park users are less likely to have access to a vehicle than McLaughlin & Ronan park users

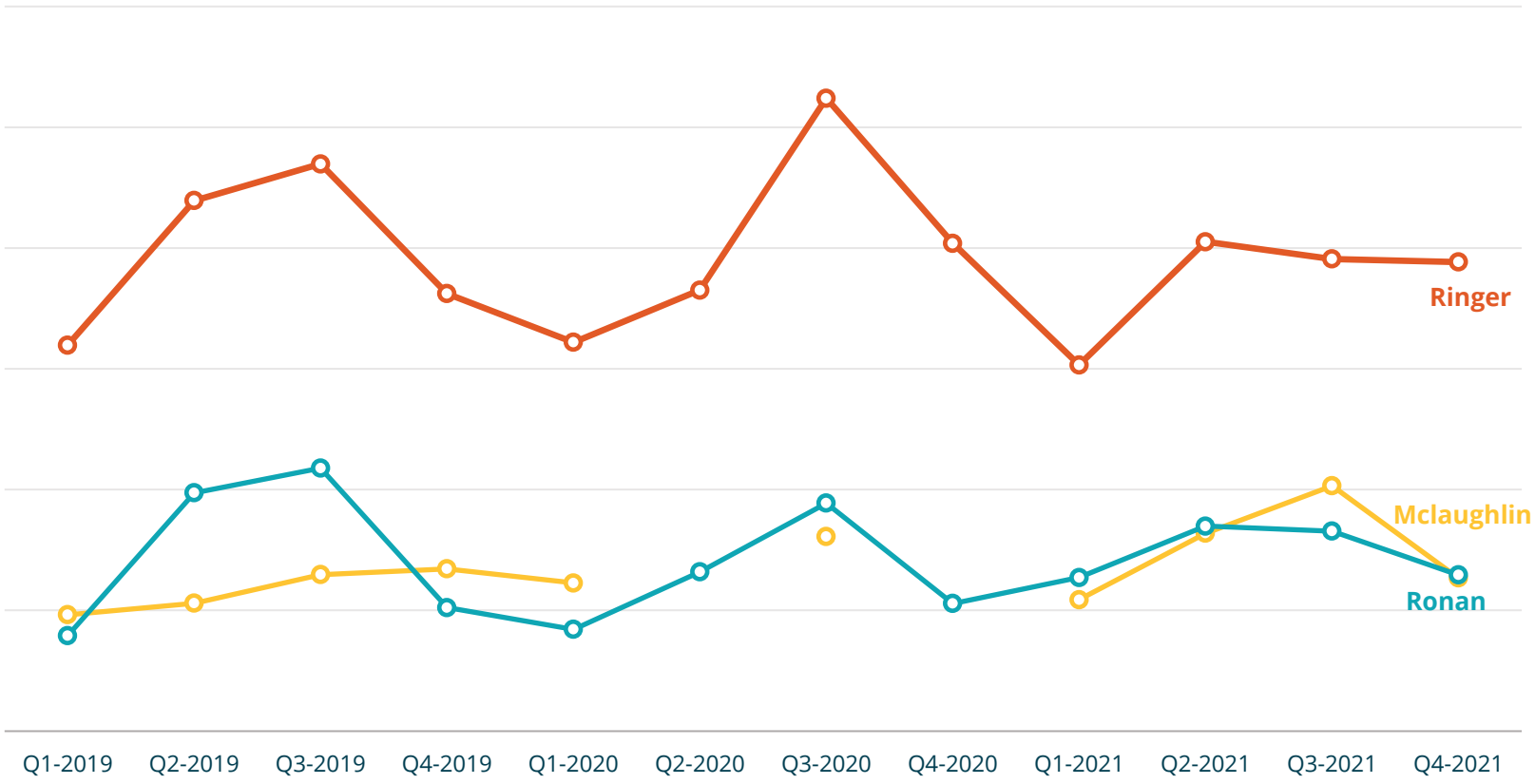
	Ringer	McLaughlin	Ronan
No Vehicles	38.9%	37.9%	28.1%
1 Vehicle	37.6%	41.7%	45%
2 Vehicles	18.4%	15.9%	20.7%
3 + Vehicles	5%	4.3%	6.2%

Parks Project

1. Introduction
2. Characterizing Park Usage: Ringer, McLaughlin, Ronan
3. Characterizing Park Users: Ringer, McLaughlin, Ronan
4. **Factors Affecting Park Usage**
5. Conclusion

Ringer park remains the park with the highest average daily traffic when adjusted for size

Acerage-Adjusted Average Daily Zone Traffic by Year by 3 mo increment, 2019 - 2021



- When adjusted for size, **Ringer** has the most activity, followed by **Ronan**, then **McLaughlin**.
- The order does not change when adjusted for size.
- Measuring park usage by average daily zone traffic (stoppers & passers), **Ringer** park is the most 'used'

Source: Streetlight Insight, BPDA Research Division Analysis.

bpda research division

Internal Factors affecting park usage

What does the literature say about park usage?

1

Recreation Facilities

Playgrounds, dog parks, spray play, etc.

2

Inclusiveness

Accessibility ramps, benches, drinking fountains, restrooms

3

Green & Blue Infrastructure

Landscaping, presence of water, tree canopy coverage, etc.

4

Flexibility of Movement

Number of entrances, paths, etc.

Sources: Lee 2018, Bahriny and Bell 2020, Kongphunphin and Srivanit 2021, Zeng and Liu 2023.

Internal Factors

Movement Flexibility, Green & Blue Infrastructure

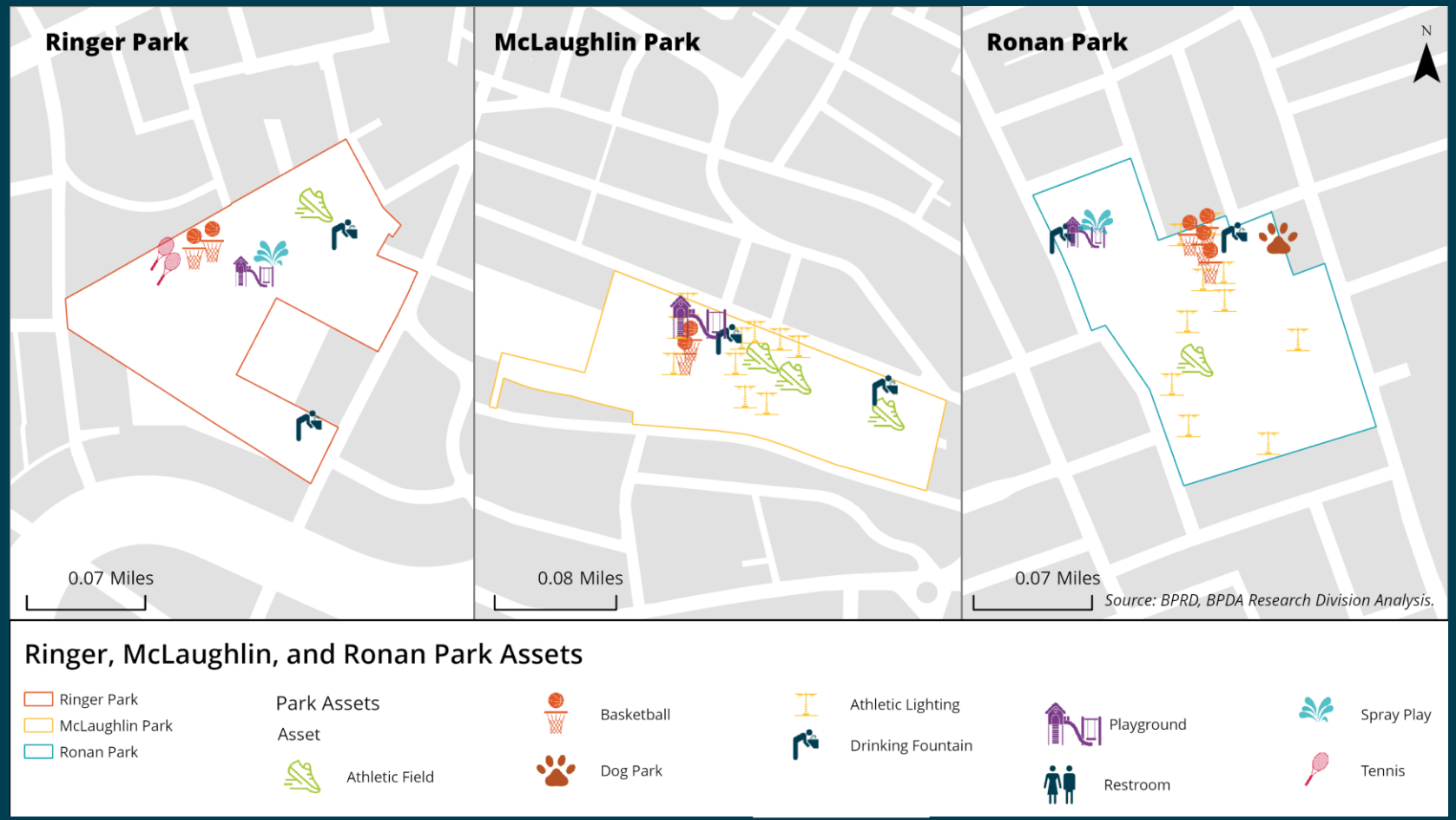
	Ringer	McLaughlin	Ronan
Tree Canopy Coverage	65%	53.8%	22.2%
Water Coverage	0%	0%	0%
Water Feature	2 Fountain, Spray Play	0	1 Spray Play
# Entrances	7	9	10

Source: BPRD, BPDA Research Division Analysis.

Internal Factors

Recreational Facilities

Map of Recreation Park Assets



	Ringer	Ronan	McLaughlin
Basketball Courts	2	4	2
Athletic Fields	1	1	3
Spray Play	1	1	0
Play grounds	1	1	1
Dog Parks	0	1	0
Tennis Courts	2	0	0
Total Facilities	7	8	6

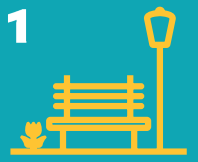
Source: BPRD, BPDA Research Division Analysis.

Internal Factors

Inclusiveness

Facilities Supporting Park Visitorship

1



Benches

Rest, longer dwell times, age-inclusive design

2

Tables

Longer dwell times, social cohesion and interaction

3

Drinking Fountains

4

Public Restrooms

Available to all, children

bpda research division

External Factors affecting park usage

What does the literature say about park usage?

5

Surrounding Land Use

% commercial, % multi-family residential, %single-family, etc.

6

Surrounding Open Space

Presence of other open spaces near the park

7

Transportation Infrastructure

of transport modes to get to there, bus stops, subway, light rail nearby

8

Pedestrian Oriented Design

Sidewalks, bike routes, tree canopy

Sources: Lee 2018, Bahriny and Bell 2020, Kongphunphin and Srivanit 2021, Zeng and Liu 2023.

External Factors affecting park usage

What does the literature say about park usage?

5

Surrounding Land Use

% commercial, % multi-family residential, %single-family, etc.

6

Surrounding Open Space

Presence of other open spaces near the park

7

Transportation Infrastructure

of transport modes to get to there, bus stops, subway, light rail nearby

8

Pedestrian Oriented Design

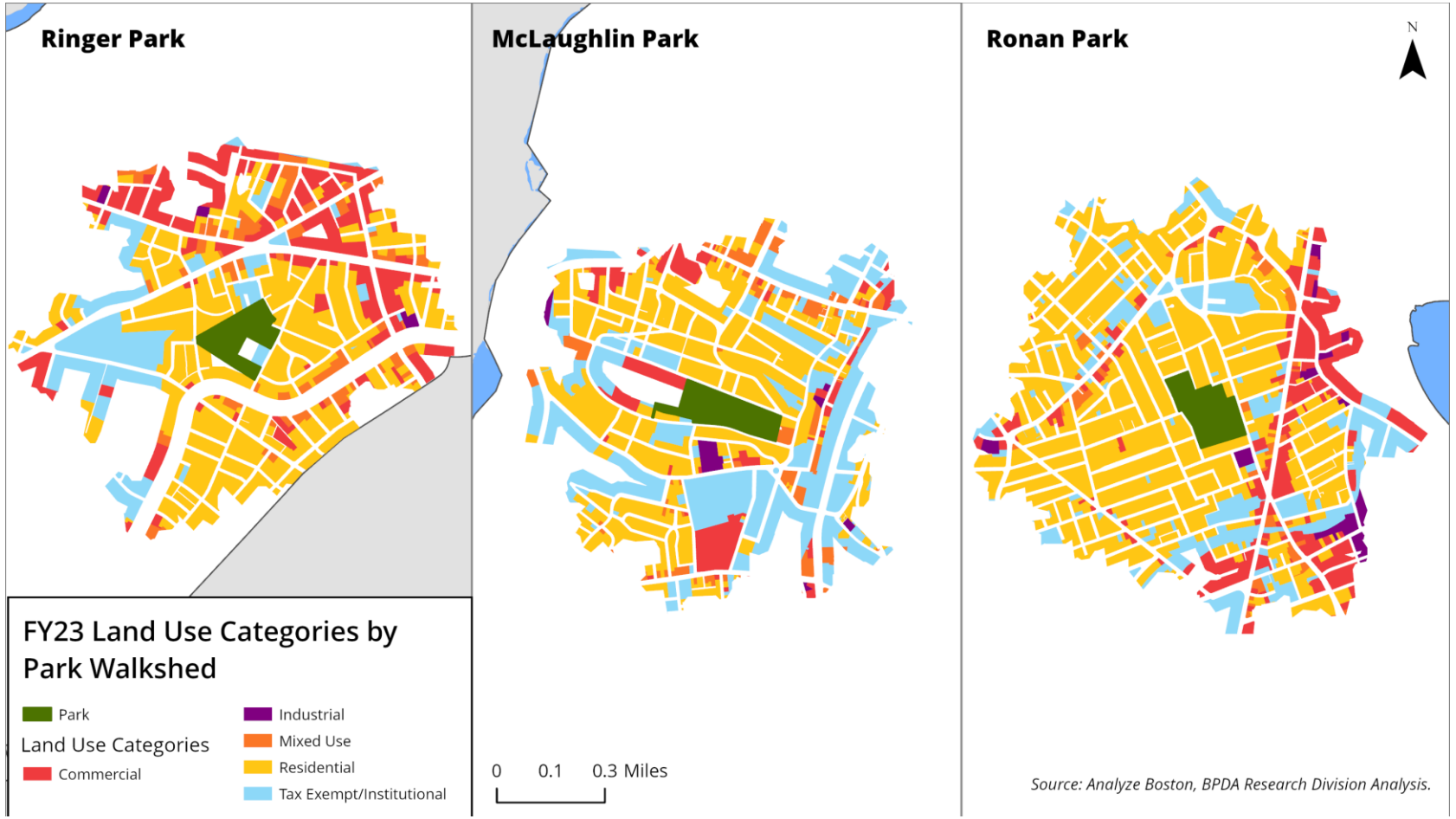
Sidewalks, bike routes, tree canopy

Sources: Lee 2018, Bahriny and Bell 2020, Kongphunphin and Srivanit 2021, Zeng and Liu 2023.

External Factors

Surrounding Land Use Mix

FY2023 Land Use Categories by Park Walkshed, 2021



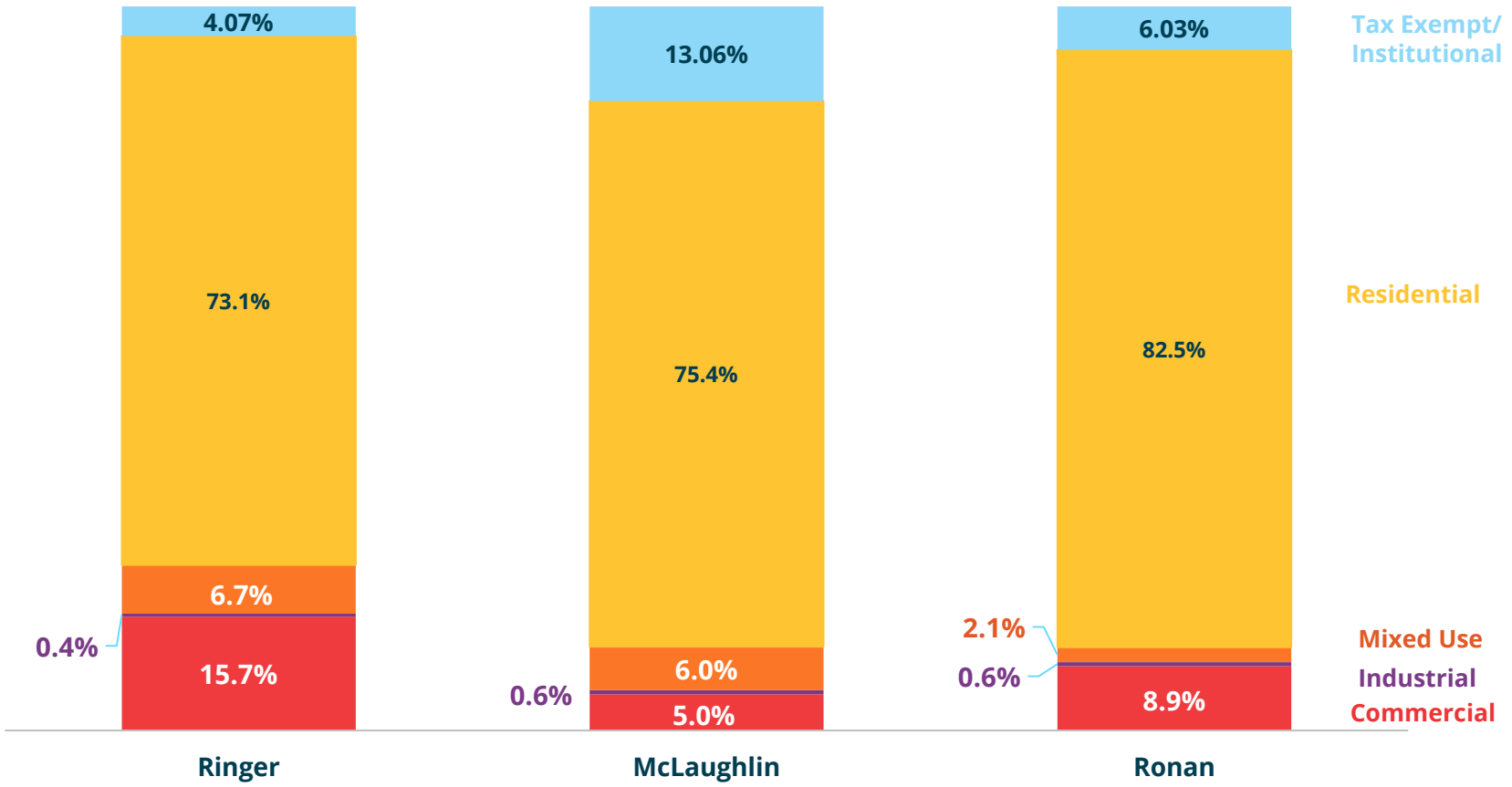
- All 3 parks exhibit a high degree of **residential land use** directly around their vicinity.
- **Commercial** and **tax-exempt** properties like schools or other parks are near all three parks, with **Ringer** and **Ronan** close to commercial hubs.

bpda research division

External Factors

Surrounding Land Use Mix

FY2023 Land Use Categories by Park Walkshed, 2021



- Ringer has the **most diverse surrounding** land use mix.
- Ronan has the **least diverse surrounding** land use mix.

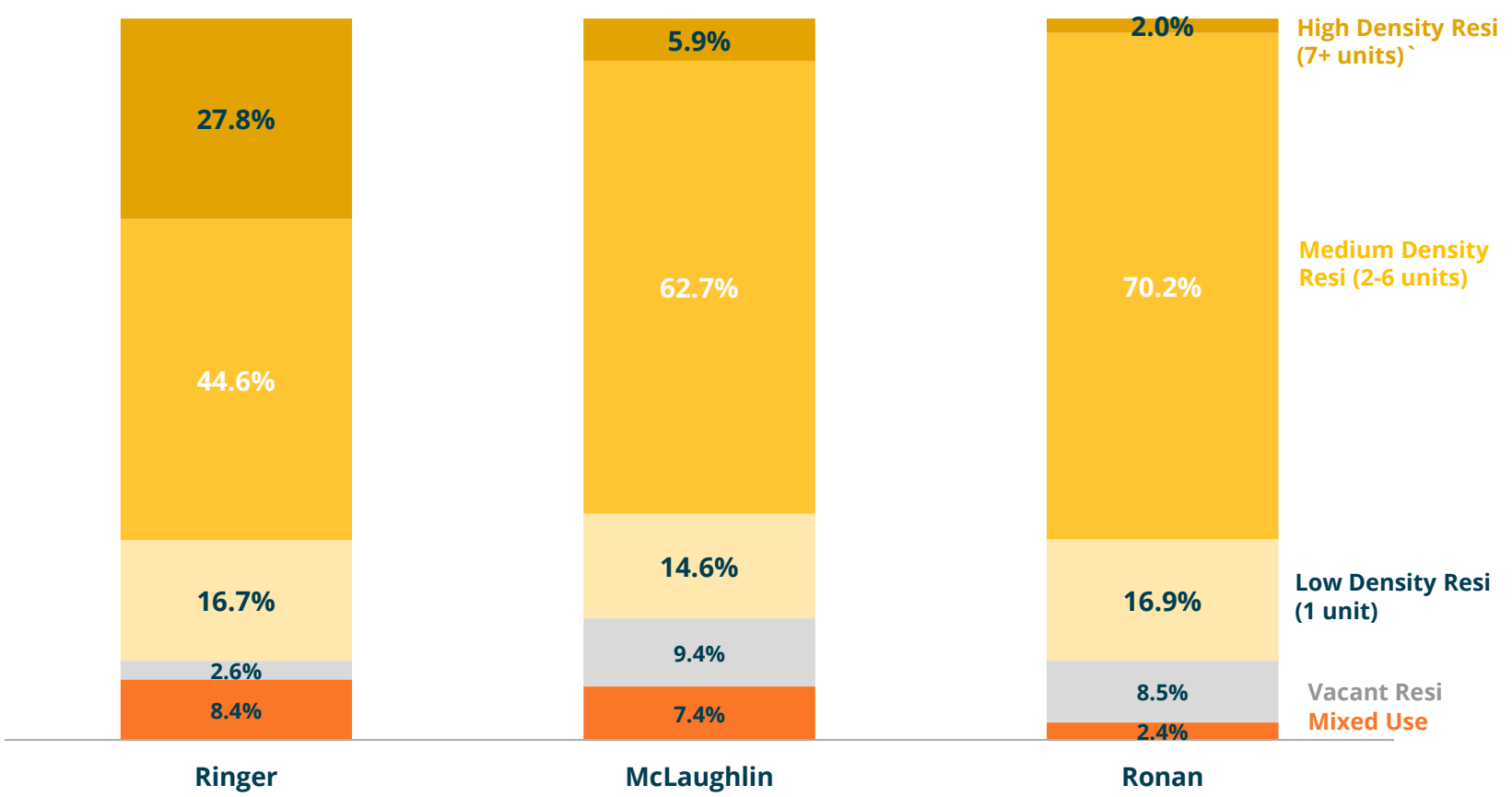
Source: BPDA Research Division Analysis.

bpda research division

External Factors

Surrounding Land Use Mix: Residential

FY2023 Residential Land Use by Park Walkshed



- **Ringer** park has the most diverse surrounding **residential land use mix**.
- **Ronan** park has the least diverse surrounding **residential land use mix**.
- Ringer, the park with the **highest usage**, is also the park with the most diverse surrounding residential land use mix.

Source: BPDA Research Division Analysis.

bpda research division

External Factors

Surrounding Open Space

Open Space Types by Park Walkshed, 2021

Source: Analyze Boston, BPDA Research Division Analysis.

Total Open Space* Intersecting Park Walkshed

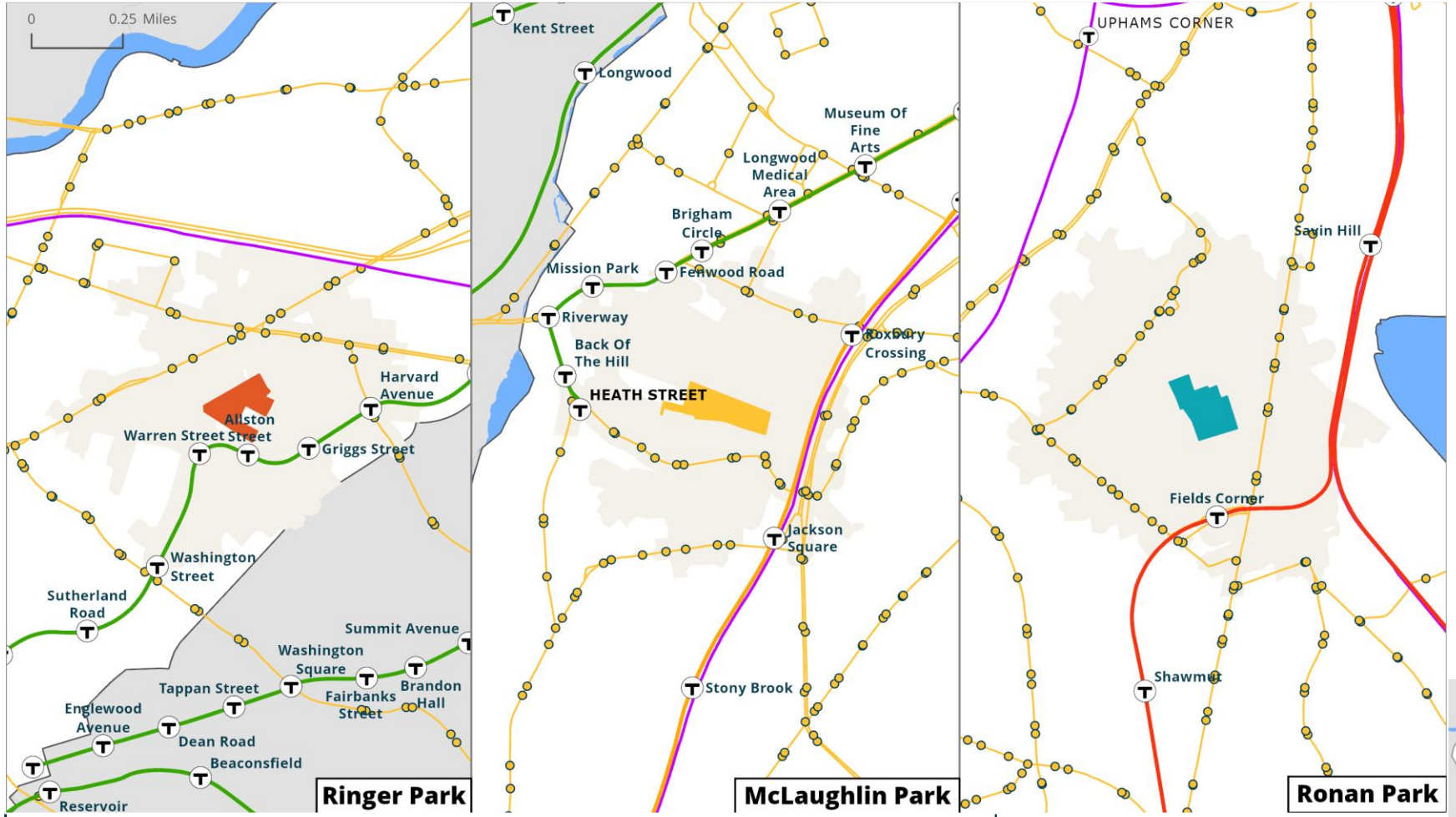
	Ringer	McLaughlin	Ronan
Acres	17.6	79.3	21.7
Number	6	11	9
Types	2	4	3

*includes Ringer, McLaughlin, and Ronan park respectively

division

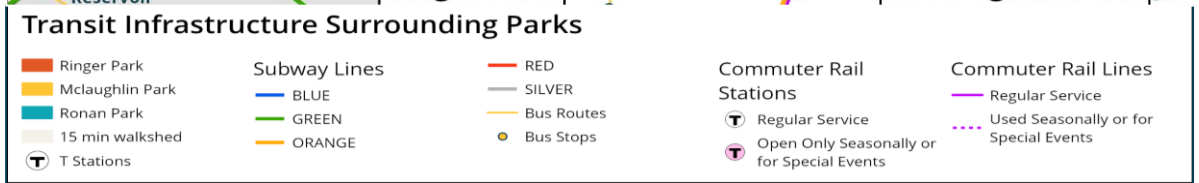
External Factors

Transportation Infrastructure



of Stops in Walkshed

	Ringer	McLaughlin	Ronan
Bus	27	40	52
Rapid Transit	5	4	1
Comm-uter Rail	0	0	0



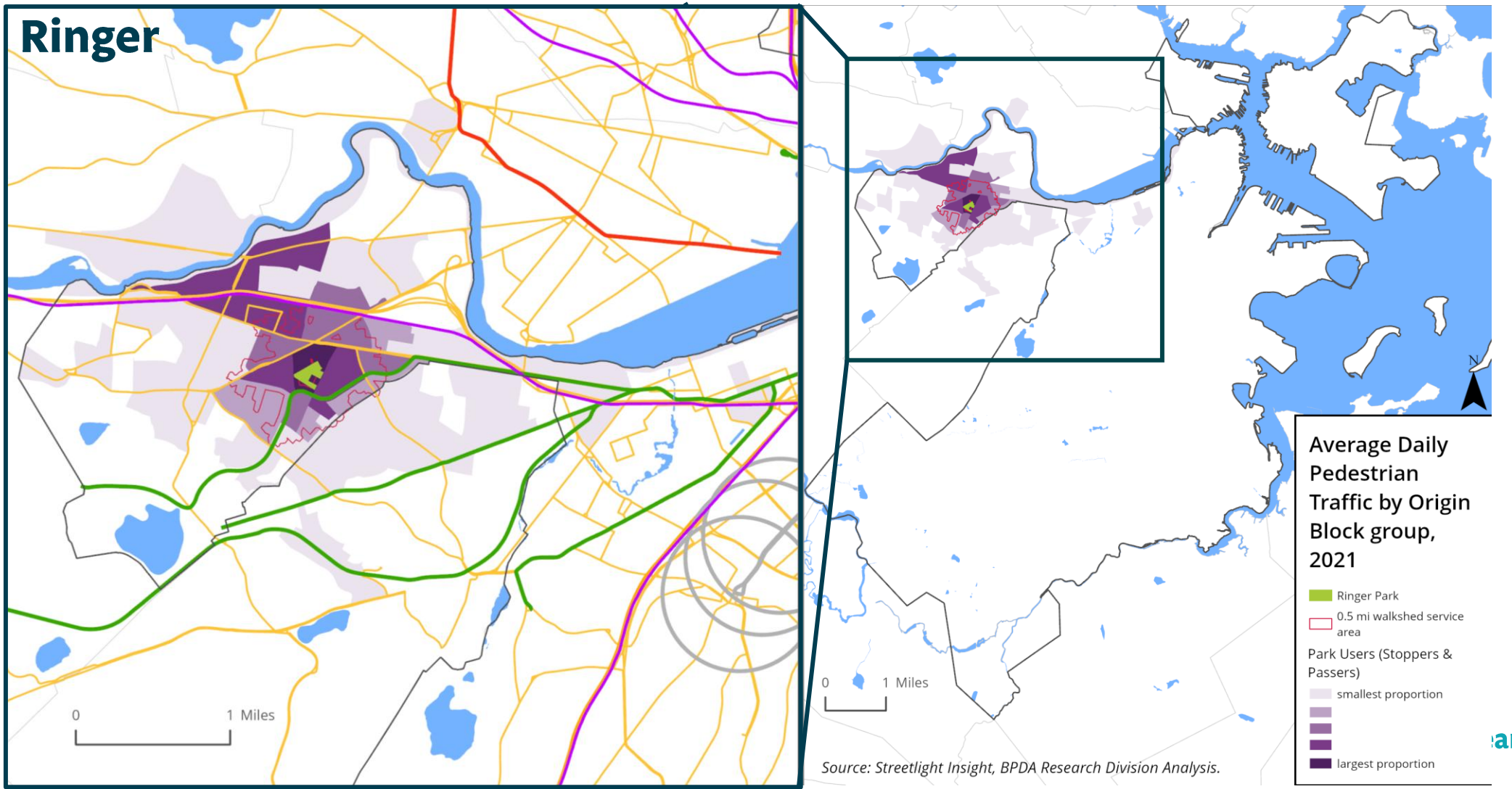
Source: Analyze Boston, BPDA Research Division Analysis.

ivision

External Factors

Transportation Infrastructure

To Better Understand Pedestrian Traffic Origins

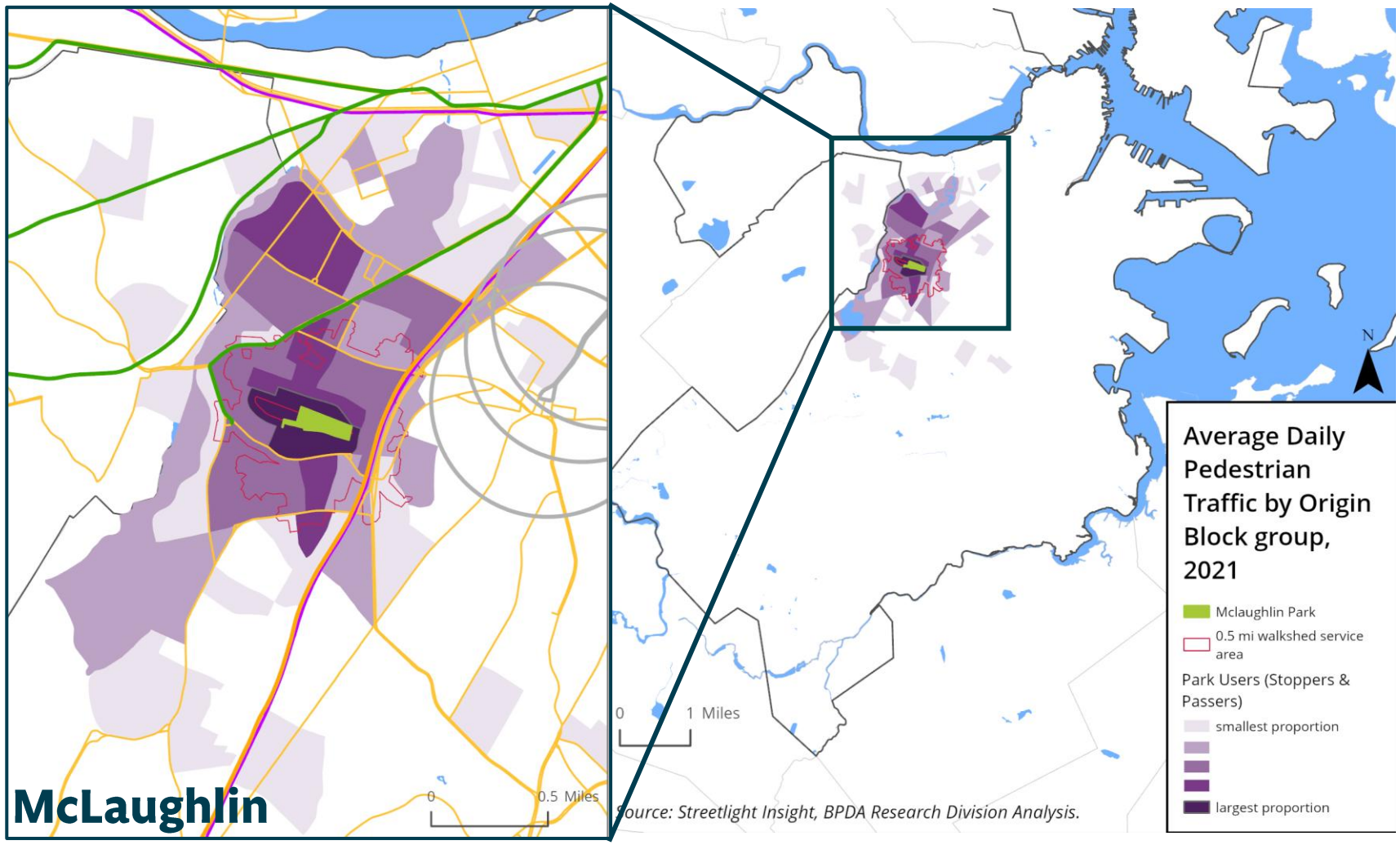


arch division

External Factors

Transportation Infrastructure

To Better Understand Pedestrian Traffic Origins

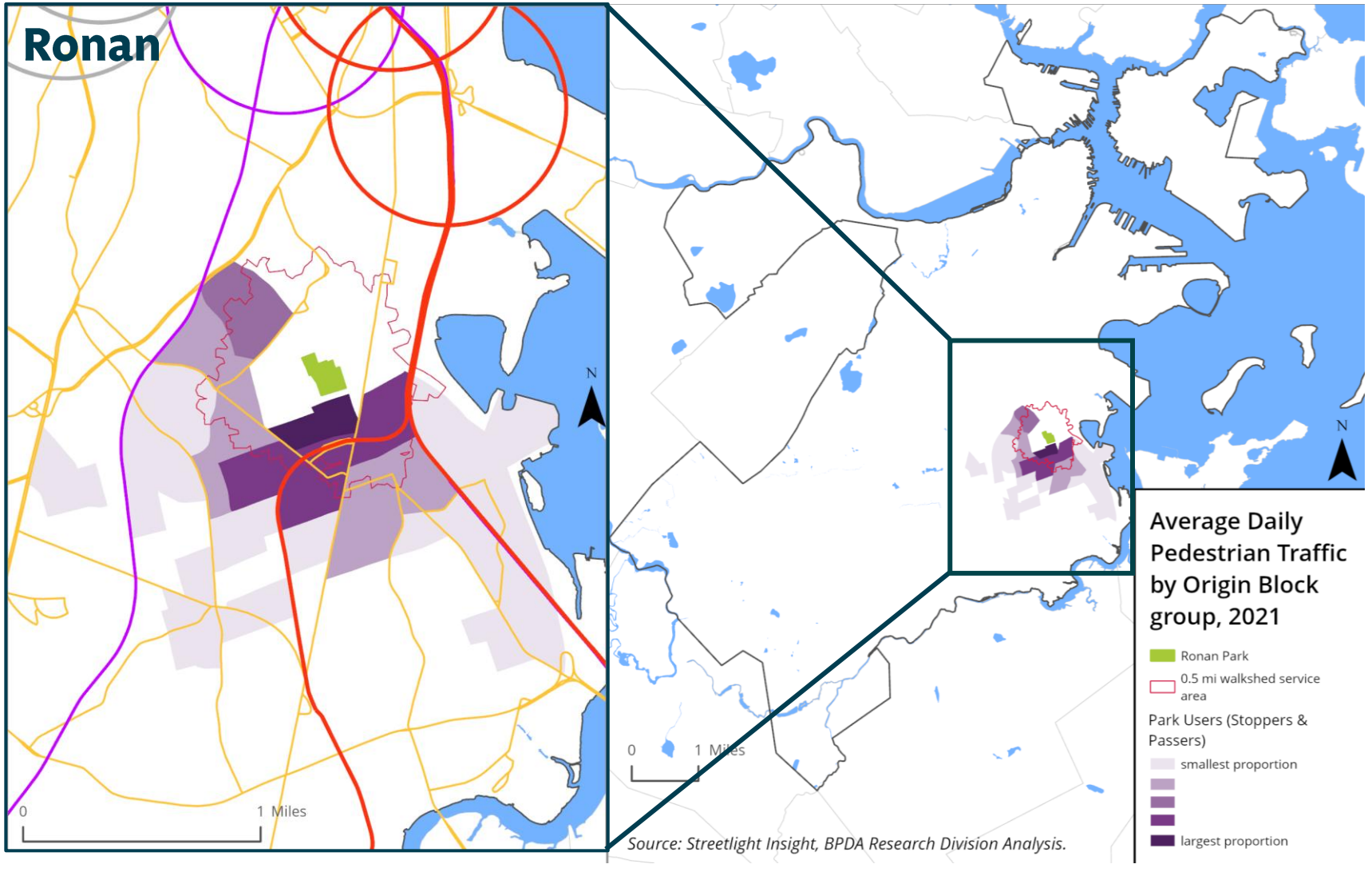


bpda research division

External Factors

Transportation Infrastructure

To Better Understand Pedestrian Traffic Origins



bpda research division

Parks Project

1. Introduction
2. Characterizing Park Usage: Ringer, McLaughlin, Ronan
3. Characterizing Park Users: Ringer, McLaughlin, Ronan
4. Factors Affecting Park Usage
5. Conclusion

Characterizing Park Usage

What we've learned about how these 3 Boston parks are used

1 **Ringer**	• Around 7 in 10 park users pass through the park • The proportion of passers has decreased over time • In 2021 average traffic down from 2019
2 **Ronan**	• Around 2 in 3 park users pass through the park • The proportion of passers has increased over time • In 2021 average traffic up from 2019
3 **McLaughlin**	• Around 4 in 5 park users pass through the park • The proportion of passers has increased over time • In 2021 average traffic up from 2019

Characterizing Park Users

What we've learned about who uses these 3 Boston parks

1 **Ringer**	• 41.2% of users live within the 0.5 mile walkshed service area. • Users are most likely to be aged 18 - 24, white, make 50 - 70k a year, not have children, take a car truck or van to work, have access to 0 or 1 vehicle, and rent.
2 **Ronan**	• 35.6% of users live within the 0.5 mile walkshed service area. • Users are most likely to be aged 0 - 17, black/african american, make 10 - 30k a year, have children, take a car truck or van to work, have access to 1 vehicle, and rent.
3 **McLaughlin**	• 46.7% of users live within the 0.5 mile walkshed service area. • Users are most likely to be aged 18 - 24, white, make 150k+ a year, not have children, take public transit to work, have access to 1 vehicle, and rent.

Questions for Future Research

All Boston Parks

How can we expand this analysis of visitorship to other Boston parks? How can this supplement our current taxonomy of Boston's parks?

In-person Data Validation

How does the data compare to real observed park usage?

Granular Observations

Where applicable, can we identify specific types of paths/entrances/etc. that park users seem to use most/more? How could this change future park design?

LEVEL OF SERVICE ANALYSIS

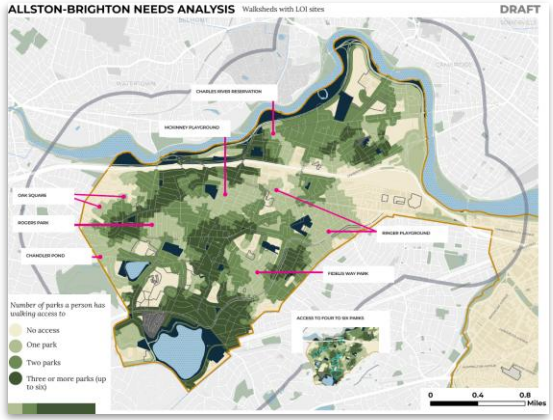
Bridging the gap between system-wide needs and site-specific decisions.

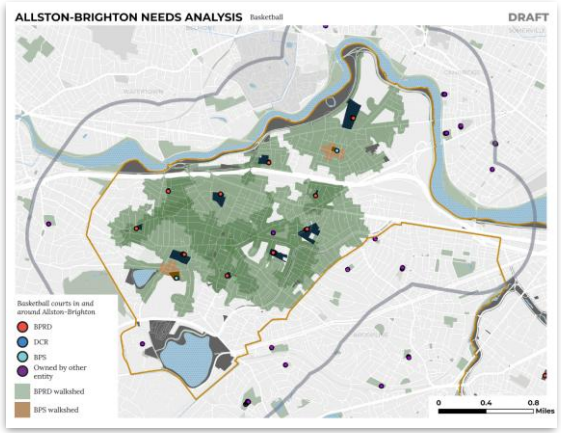
- Providing system-level guidance that can be used in a park's capital improvement project.
- Identifying sites where a system-level need can be met.

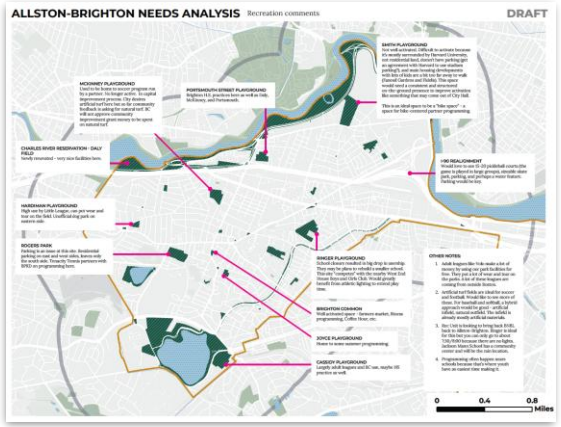
*Analysis: Strategically assess **facility** and **programmatic** needs across the city to inform capital improvement priorities using data and metrics, community input, and planning.*

LEVEL OF SERVICE ANALYSIS

- *2023-2029 OSRP research and action plan*
- *Case study review*
- *Preliminary geospatial analysis*
- *Staff interviews*
- *Facility briefs*







PLANNING AND ANALYSIS AT PARKS AND RECREATION

- 2023-2029 Open Space and Recreation Plan
- Park System Expansion
- Level of Service Analysis
- 2025 Canopy Coverage Analysis
- Recreational Facilities Mapping with Mayor's Office

CLIMATE

CANOPY AND BIODIVERSITY | HEAT+FLOOD RISK/DESIGN | ENERGY USE

TRANSPORTATION ACCESS

PUBLIC TRANSPORT | PARKING+ TRANSPORT AMENITIES | TRAVEL TIME/ EXPERIENCE

HEALTH + SAFETY

SAFETY | ACCESS TO NATURE | RECREATION +ACTIVITIES

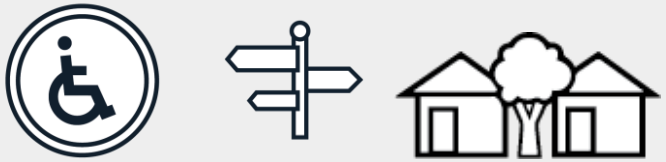
DIVERSITY OF PLAY

TYPES OF INTERACTIONS | ACCOMODATIONS

ACTIVATION

FRIENDS GROUPS | PROGRAMMING | OTHER AMENITIES

ACCESSIBILITY + INCLUSION



ACCESSIBLE ASSETS AND ROUTES | WAYFINDING | PERIMETER LAND USE AND DESIGN

Appendix: About the Data

Streetlight

- Used their **estimated pedestrian traffic data**: modeled data **estimate** of the **average** pedestrian traffic in the zone for a **typical day/time** **combination** in the time series.
- **Metric: StreetLight Pedestrian Volume**
  - = the number of pedestrian trips that interact with your zone of analysis.
  - Pedestrian Trips identified in location data sources (including cellphone mobility data) and differentiated from trips using other modes.
- **Streetlight** calculates the Pedestrian volume estimate by:
    - Computing a population factor for each trip and using these factors to weight the pedestrian trip sample by local population.
    - Using the vehicle penetration rate near the target zone to estimate pedestrian penetration rate.
    - Reducing the Pedestrian Volume estimate by a constant factor to index more closely to permanent pedestrian counters.

Sources: Streetlight Insight Whitepapers