Statewide Park and Trail Visitation

Key findings from a Legacy-funded joint research project

CLEAN WATER LAND & LEGACY AMENDMENT

June 1 2023 **Raven McKnight**

Lake Elmo Park Reserve

Contents

Project background

- Two-year joint research project funded by MN Legacy Parks and Trails Fund
  - Coordinate Among Partners pillar
  - Joint powers agreement
  - **Collaboration was valuable**
- Question: Is location-based services (LBS) data useful for park and trail research?
  - Exploratory project
  - 204 parks, 174 trails (3600+ miles)
  - Goal: Park- and trail-level use estimates

DEPARTMENT OF NATURAL RESOURCES

GREATER MINNESOTA REGIONAL Parks and Trails COMMISSION

METROPOLITAN COUNCIL

What is LBS data?

- StreetLight Data, Inc was our data vendor
- Location-based services data
- Smartphones with opt-in GPS
- Aggregated and **anonymized**
- **Can't** identify individuals, **can** look at patterns of travel
- Continuously generated
  - No in-field work required
  - Spatial and temporal granularity

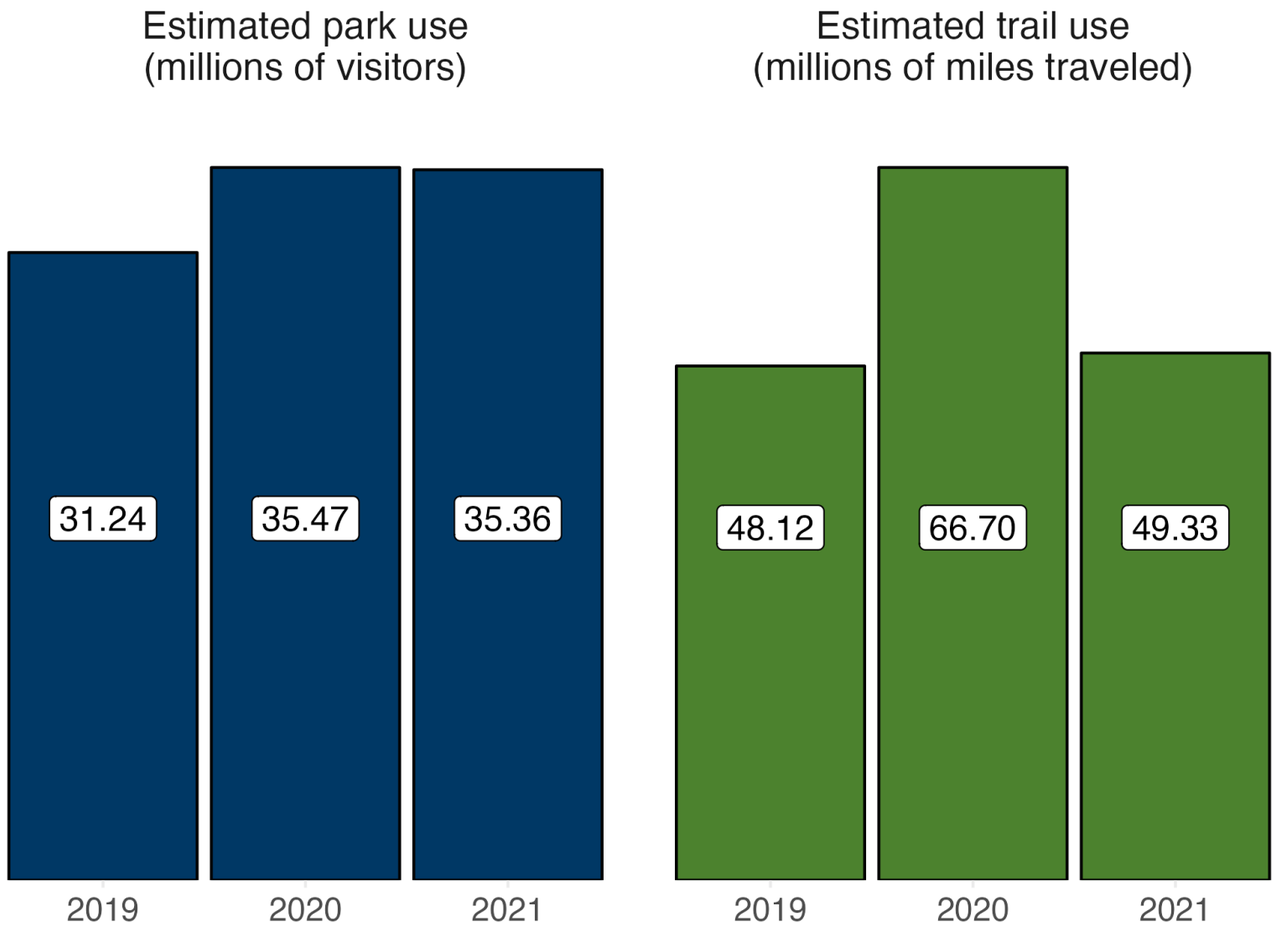
STREETLIGHT DATA

What can we measure with LBS?

- Definitions do not agree 100% with annual use estimates or visitor survey
- Estimated **weekly visits to parks** (bike, pedestrian, and vehicle)
- Estimated **monthly miles of use on trails**
- Inferred visitor home locations and demographics
- January 2019 – April 2022

Finding: parks and trails are valuable

Metropolitan regional park and trail use



Source: StreetLight Data, Inc. Accessed April 2023.

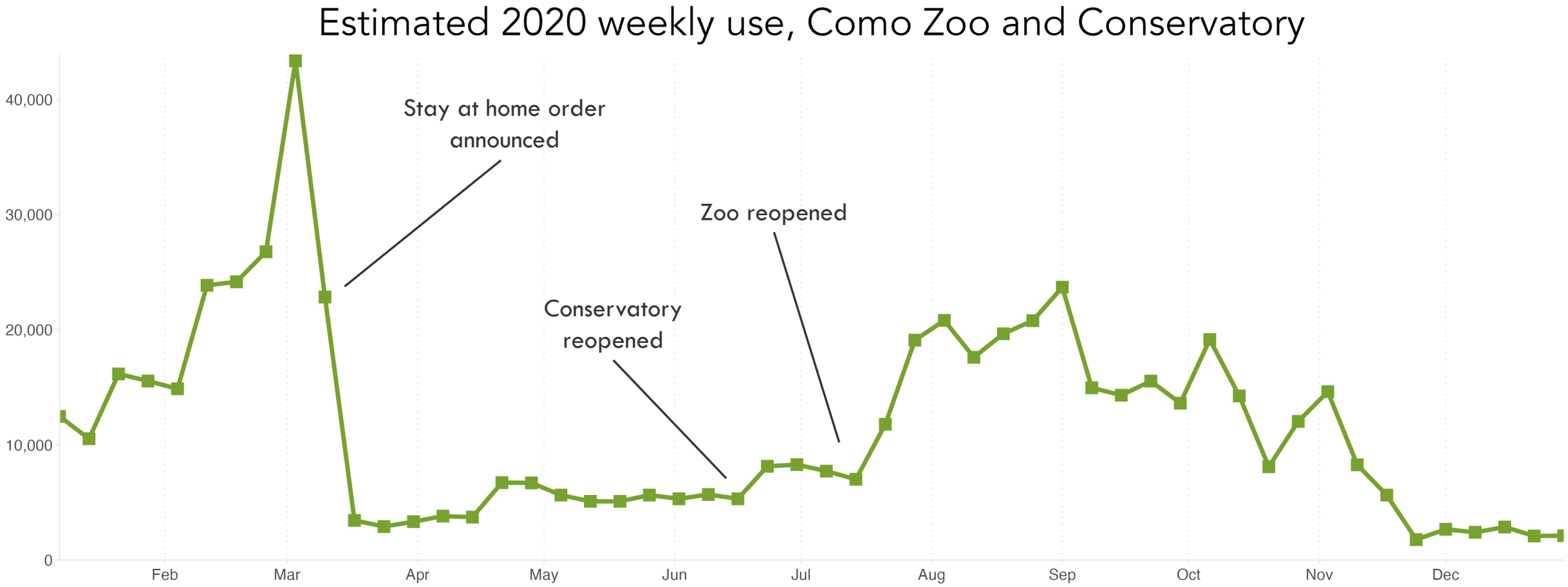
- Average of 34 park visits and 57 miles of trail use per 7-county resident
- COVID-19 affected trails more than parks
- Use trended upward 2019–2021

Park Findings

Como Conservatory

- COVID-19 affected individual parks differently
  - Behavior change = more use
  - Closed amenities = less use
- Most visitors arrive around noon or shortly after work (5-7pm)
  - Specific to regional parks
- 58% of park visitors arrive by vehicle
  - 35% pedestrian, 7% bicycle

Weekly detail



Source: StreetLight Data, Inc. Accessed May 2023.

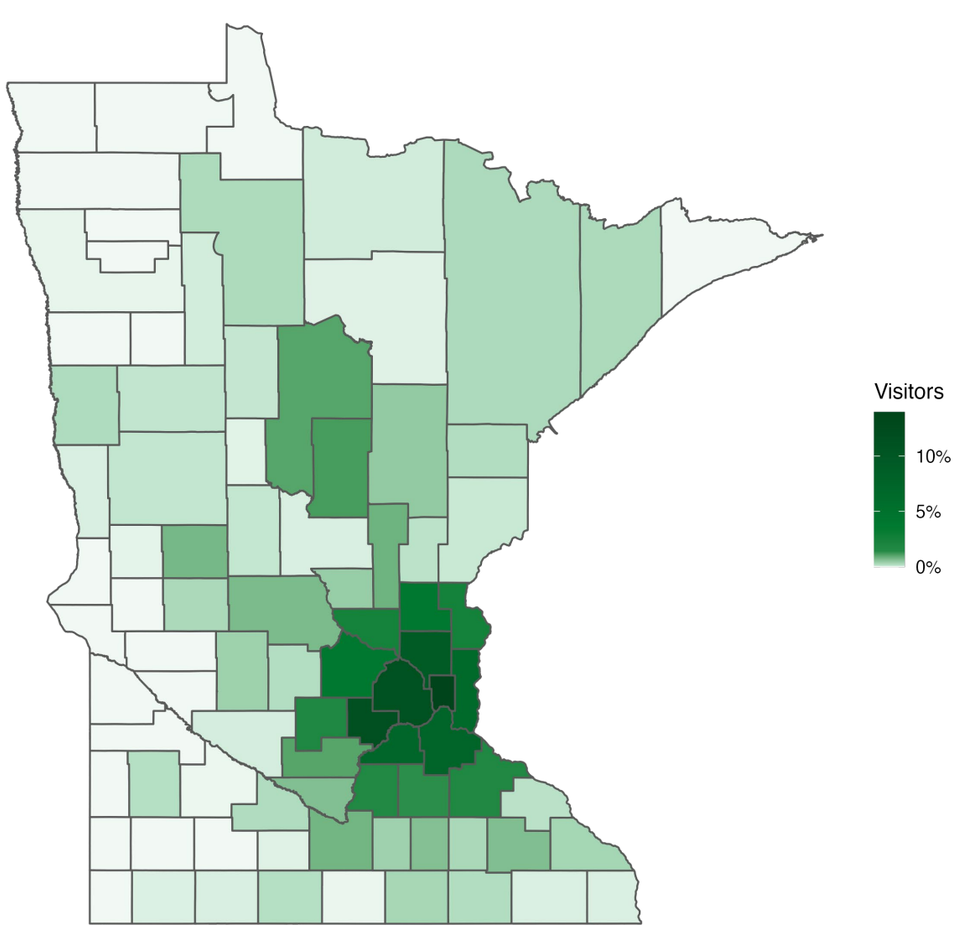
Trail Findings

Theodore Wirth

- Trails had a larger “COVID effect” than parks
- Bikes make up the majority of use (60%)
- Pedestrians have a larger share:
  - during the winter
  - in walkable areas
- Many trails are busy at 9am and 5pm
  - Integral to transportation and recreation

Finding: Metro region attracts statewide visitors

Inferred home locations of visitors to metropolitan regional parks
Minnesota counties, summer 2021



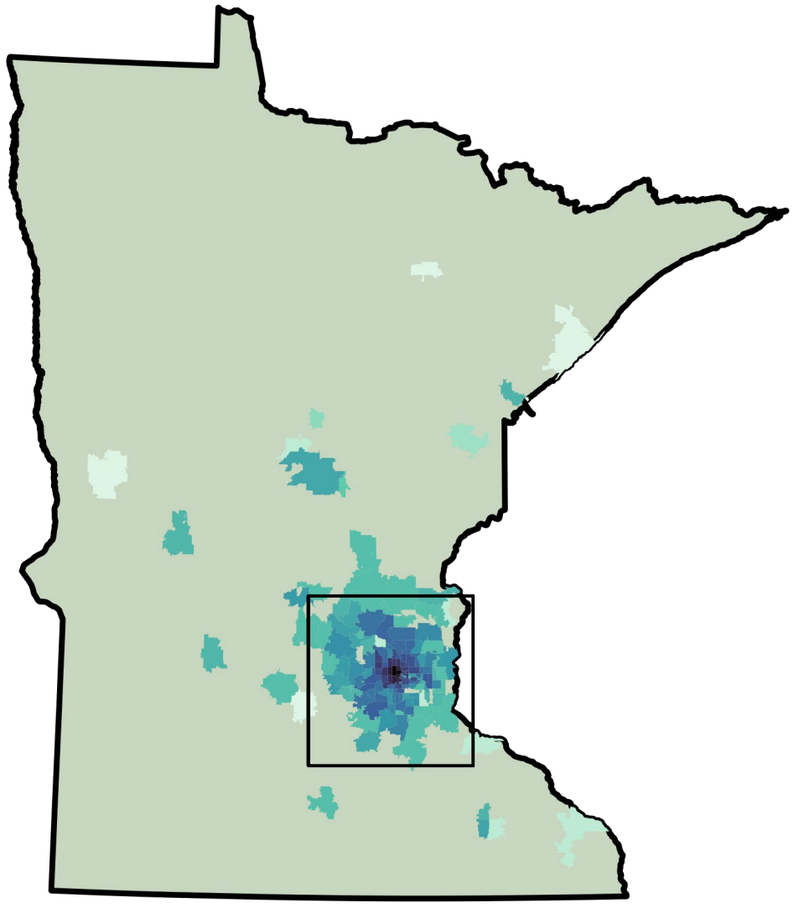
- 21% of visitors came from a different county
- 7.5% of visitors came from out of state
  - Adjacent states
  - California, Texas, Florida
  - All lower 48 states represented
- Data available at park or trail level

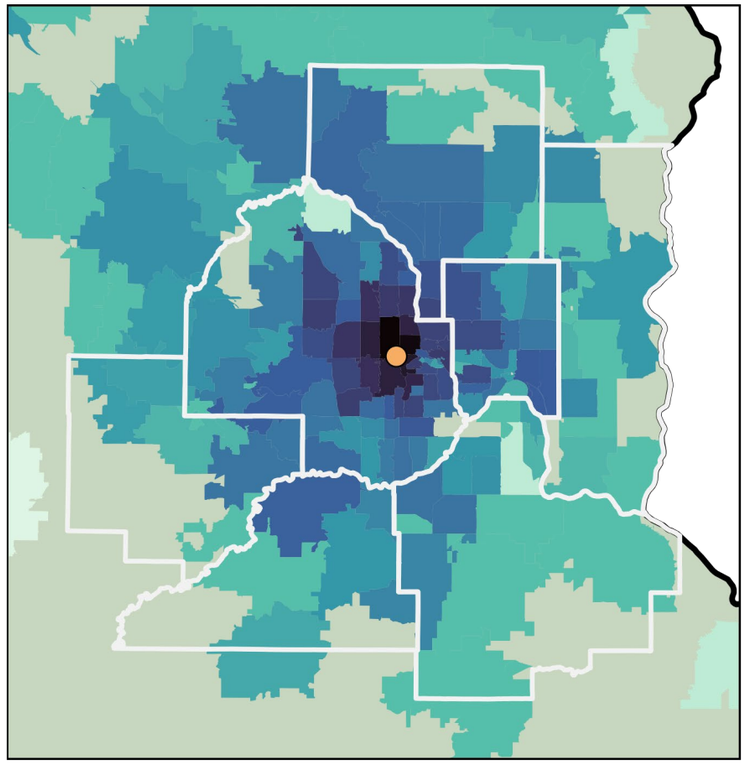
Source: StreetLight Data, Inc. Accessed April 2023.

Example: Theodore Wirth

Visitor home locations

Zip codes, summer 2021



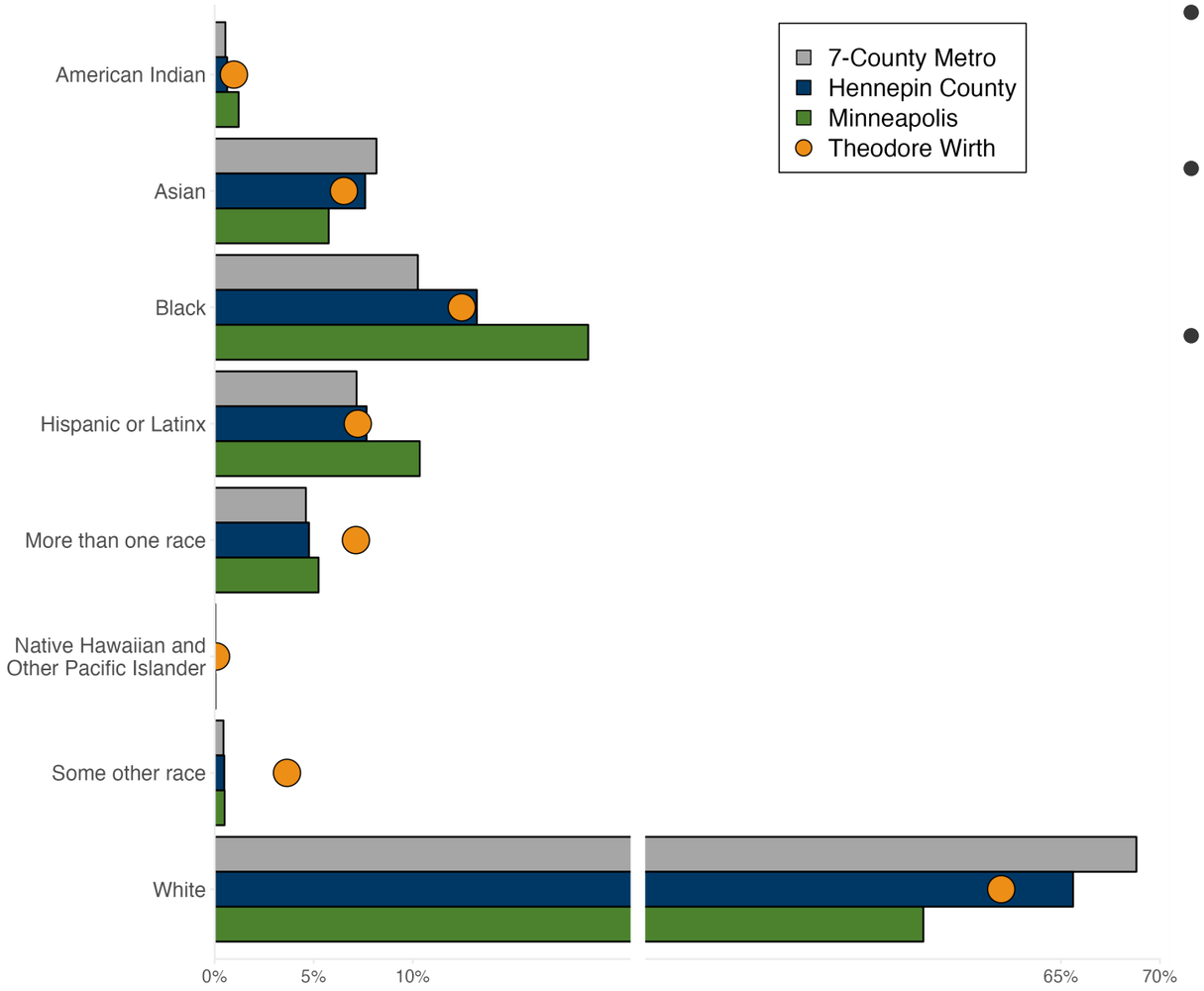


Only zip codes with > 0.1% of all 2021 visitors are shown.

Inferred demographics

- Based on inferred home locations and 2020 US Census data
- Inferred data is different than intercept survey data
- Needs to be considered at the park or trail level
  - Summaries are less meaningful
  - **Context is critical**
- Next steps: share detailed data with experts

Example: Theodore Wirth



Source: 2020 US Census, StreetLight Data, Inc. Accessed May 2023.

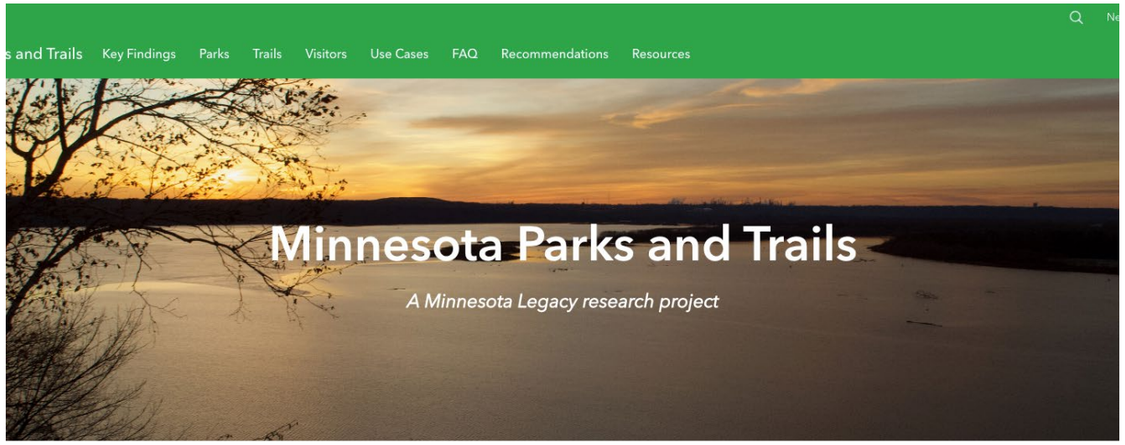
- Visitors may not represent the region's population
- Requires expert knowledge
  - Who is the "audience" for the park?
- Differs by unit
  - Ex) state vs regional parks

Group	Estimated percent Black	Data source
7-county metro population	10.3%	2020 Census
Hennepin county population	13.2%	2020 Census
Minneapolis population	18.9%	2020 Census
Theodore Wirth visitors	12.5%	LBS

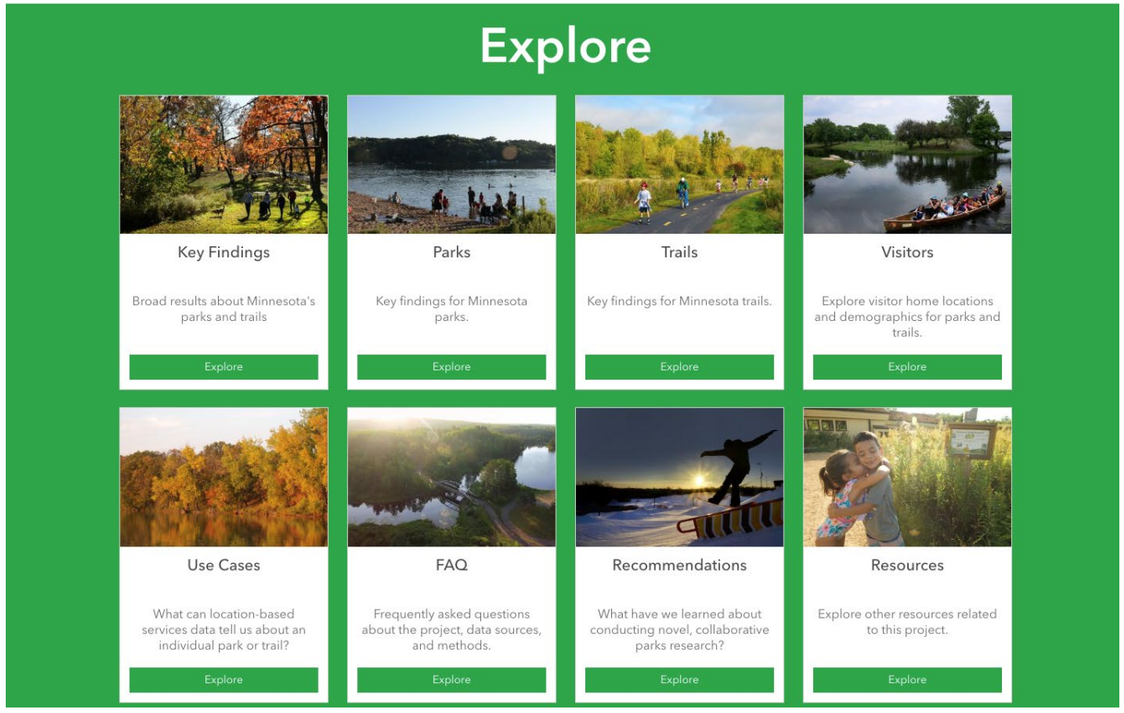
Research Products

We'll share

- Project website
- Complete data downloads
- Written documentation
- Interactive visualizations
- Summaries for each park and trail
- Webinar recordings



Location-based services data provides unprecedented detail about when and where people travel. What can it tell us about Minnesota's parks and trails?

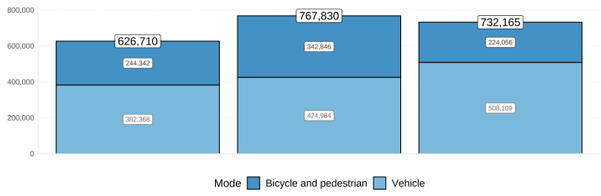


Factsheet: Battle Creek Regional Park (Ramsey County)

This factsheet summarizes unit-level data for Battle Creek Regional Park. Park use estimates were derived using location-based services (LBS) data and represent the number of visitors arriving to the park by vehicle, bike, or foot. An agency-level vehicle multiplier of 1.84 was used to convert vehicle counts to visitor counts. Visitation at Battle Creek Regional Park may have been affected by the COVID-19 pandemic, poor air quality in 2021, or park-specific events.

LBS data was obtained from StreetLight Data, Inc and was accessed in April, 2023. This project was funded with Legacy Partnership Research Funds from the State of Minnesota Parks and Trails Legacy Fund.

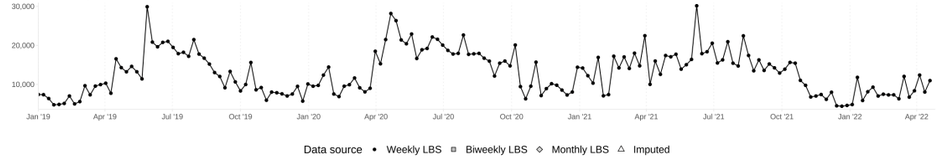
Total annual visits



Bicycle and pedestrian visits are combined for legibility.

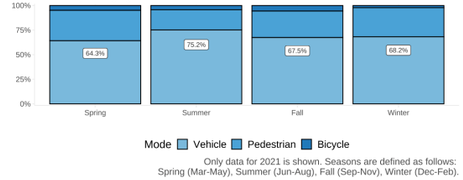
Battle Creek is part of the Twin Cities regional park system. The park is in Ramsey County under Ramsey County Parks and Recreation. Park boundaries were accessed via the Minnesota Geospatial Commons in April, 2023 and may have been edited to remove unrelated roadways to improve LBS data performance.

Weekly visits



Seasonal mode share

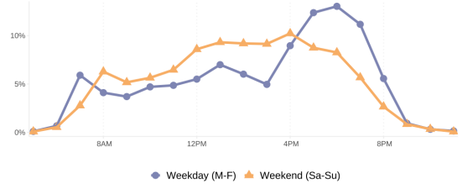
During summer 2021, approximately 75% of visitors arrived to Battle Creek in vehicles. Strong seasonal patterns in mode share generally indicate changes in visitor behavior caused by changing weather.



Only data for 2021 is shown. Seasons are defined as follows: Spring (Mar-May), Summer (Jun-Aug), Fall (Sep-Nov), Winter (Dec-Feb).

Hourly use

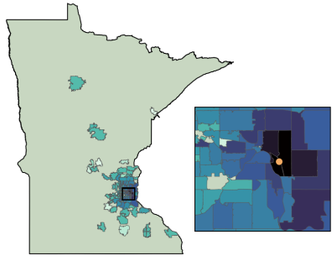
Regional parks tend to have high use after the work day (around 5-7pm on weekdays).



Only data for summer 2021 is shown.

Visitor home locations

Inferred visitor home locations are reported at the zip code level. Darker colors indicate more visitors from a given zip code. During summer 2021, approximately 4% of visitors to Battle Creek lived outside of Minnesota.



Only zip codes with > 0.1% of all 2021 visitors are shown.

Visitor demographics are inferred based on inferred home locations and data from the 2020 US Census. The table below compare Minnesota's population (Census data) to inferred demographics for visitors to Battle Creek during summer 2021 (LBS data).

Category	Census Group	State Total	Park Estimate
Race/ethnicity	American Indian/Alaska Native	1.0%	0.8%
	Asian/Asian American	5.2%	12.8%
	Black/African/African American	6.9%	10.9%
	Hispanic/Latinx/Latino	6.1%	8.3%
	Multiple races/ethnicities	4.1%	7.1%
	Native Hawaiian/Pacific Islander	0.0%	0.1%
	Some Other Race	0.4%	3.8%
	White	76.3%	56.2%
Household income	Less than $25,000	10.4%	15.1%
	$25,000 - 39,999	11.2%	12.0%
	$40,000 - 59,999	15.1%	15.5%
	$60,000 - 74,999	10.0%	10.1%
	$75,000 - 99,999	14.1%	14.1%
	$100,000 - 149,999	18.3%	17.6%
	$150,000 or higher	20.8%	15.6%
Highest educational attainment	High school	30.9%	32.6%
	Associate degree/some college	32.4%	30.3%
	4-year degree	24.2%	24.3%
	Graduate or professional degree	12.6%	12.8%

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This Project was funded with Legacy Partnership Research Funds from the State of Minnesota Parks and Trails Legacy Fund in collaboration with the Minnesota Department of Natural Resources, the Greater Minnesota Regional Parks and Trails Commission, and the Metropolitan Regional Park Agencies.