City of Boulder Open Space and Mountain Parks
2021-2023 Public Opinion and Visitor Experience Survey

Two-Year Technical Report

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Cover photograph: Survey administration and onlooking deer. Photo By: Shay Kole

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Individually, and collectively, we thank you.

EXECUTIVE SUMMARY

The 2021-2023 Public Opinion and Visitor Experience Survey (POVES) is the fourth in a series of system-wide intercept surveys (previously conducted in 2004-2005, 2010-2011, and 2016-2017). The overall goals of the study were to quantify various aspects of visitors to city-managed open space and to support the department and public in making data-informed decisions.

APPROACH

Staff conducted an on-site, self-administered survey of visitors leaving city-managed open space from September 1, 2021, through August 31, 2023. Staff administered the questionnaire to visitors aged 18 or older at randomly selected access point locations estimated to receive a minimum of 1,000 annual visits. Visitors were intercepted at the end of their visit to support gathering feedback regarding their experiences during that specific visit. For each visitor that agreed to participate, staff provided an iPad with the questionnaire loaded and asked the visitor to complete all digital pages.

RESULTS

Findings include an overview of visitor demographics, visitation frequency, visitor activities, trip lengths, transportation and arrival information, group size and composition, motivations for visiting, service and experience ratings, preferences, and areas no longer visited. The results and percentages presented in this report were derived from these survey respondents' answers. Where applicable, trend information has been summarized over time.

WHO ARE OUR VISITORS?

- Most survey respondents lived in the City of Boulder (58%) or outside the city but within Boulder County (23%).
- Half of respondents identified as male (52%), 48% as female, the median respondent age was 47 years old, and nearly half of visitors are over 50 years old.
- Most visitors were hiking/walking (52%), dog walking (18%), running (14%) or biking (11%).

How do people visit?

- Most respondents visited open space alone on the day of the survey (56%) or with one other person (31%), and only 6% of groups came with one or more children (under 18).
- A third of visitor groups (35%) brought their dog(s) with them.
- The top three primary motivations for visiting OSMP were physical fitness (33%), enjoying nature (18%), and being with my dog(s) (16%).
- People with dogs visit the most frequently and being with their dog(s) is most important over other reasons to visit OSMP.

- Runners and cyclists are coming primarily for fitness and almost everyone identifies enjoying nature as an important motivation for their visit.

What are the experiences people have on OSMP lands?

Visitor experiences

- Only a small number of visitors (7%) experienced conflict with others, and most had somewhat or very pleasant encounters with other visitor groups.
- Most visitors did not experience high levels of crowding, with only 8% of visitors having experienced moderate or extreme crowding at the trailhead or while on the trail.
- Top site characteristics contributing to quality experiences were scenery/viewpoints, close by access, and dogs are allowed.
- Close by access and intangible aspects of OSMP, such as scenery, viewpoints, and contribution to quality of life are important to most visitors.
- A small percentage (9%) reported no longer visiting areas they once frequented, primarily due to crowding, conflicts related to dogs, trail closures, and issues with bikers. The most commonly cited locations were Chautauqua, Sanitas, Doudy Draw, and Marshall Mesa.
- Overall, trip quality was high, with 98% of visitors reporting excellent or good overall satisfaction. This overall positive experience underscores the continued value of OSMP lands and quality of service delivery from the department to our visitors.
- All things considered, most visitors are having a good time and attain expected experiences.

COVID-19 effects

- The COVID-19 pandemic impacted 11% of respondents' visitation to city open spaces. The main reasons were crowded trails, fear of being exposed to COVID-19, and people not social distancing. Most people (70%) said they planned to go back to visiting OSMP like they did before the pandemic once it was declared as being over.
- Most visitors did not experience barriers to visitation during the COVID-19 pandemic.

What feedback and preferences have visitors shared?

Services and facilities

- Of the respondents that used them, services and facilities rated extremely important by the most respondents include trails (83%), dog stations (78%), trash or recycling bins (66%), and vehicle parking (65%). All four received high-quality ratings, with 95% (trails), 94% (dog stations), 93% (trash or recycling bins), and 87% (vehicle parking) of visitors that used them reporting good or very good quality.
- Half of visitors arrive by vehicle, most found parking easy, and about half of those arriving by vehicle did not park in an OSMP managed lot.

Information sources

- Most (78%) visitors used one or more information sources for pre-trip planning and the most frequently used were the OSMP website, Google/Apple Maps, friends/family, and trail apps such as AllTrails or COTREX.

Nature education

- Fourteen percent of visitors or their family members participated in nature education within the past year. Popular education sources included the Chautauqua Ranger Cottage, staff at the trailhead, staff on the trail, or during programs such as virtual, in-person, Jeff and Paige, or school programming.

Public input

- Visitor feedback and engagement with OSMP during the past 12 months included 9% providing feedback to OSMP (on any topic) and 5% participating in any type of formal public engagement (such as an open house or Open Space Board of Trustees meeting).

Charter purposes

- Many charter purpose statements were rated extremely or moderately important by greater than 90% of respondents.
    - Preservation of scenic areas or vistas (95%)
    - Preservation of land for its aesthetic value and contribution to quality of life (94%)
    - Preservation of fragile ecosystems (93%)
    - Preservation of land for passive recreational use (93%)
    - Preservation or restoration of unusual or unique natural areas (93%)
    - Preservation of water resources in their natural or traditional state (92%)

Visitor use management

Respondents rated their level of support or opposition to a series of potential visitor use management strategies related to addressing increasing visitation levels, addressing visitor conflict, and protection of plants and wildlife.

- Strategies receiving the highest levels of support were requiring visitors to stay on designated trails (78%) and constructing new trails (77%), while hardening existing trails (63%) and requiring a permit or reservation during peak visitation times (62%) were opposed by a majority of visitors.
- Most respondents supported visitor use management strategies included constructing new trails and trailheads and keeping visitors and dogs on designated trails.

Overall trends (2004-2005, 2010-2011, 2016-2017, 2021-2023)

Consistent over time

- Most visitors live in the city of Boulder or Boulder County
- Most visitors come by themselves or with one other person

- The median trip length is about an hour
- Most visitors have been coming to OSMP for at least five years
- The percentages of visitors hiking, walking dog(s), running, and biking are fairly stable and these remain the top primary activities
- Most visitors come at least once a week and one-fifth visit >20 times per month
- About one-third of visitors arrive on foot (i.e., walking or running), and one-tenth arrive by bike
- About one-third of visitor groups brought a dog(s) with them
- Most visitors rate the overall quality of OSMP services as good or very good
- Daily conflict rates have ranged between 5-7% and most visitors have positive experiences with others
- City of Boulder residents visit frequently, and most visit more than once a week

Changes over time

- The percentage of visitors coming alone is increasing
- Percentages of visitors aged 60+ are increasing and visitors aged 30-49 are decreasing
- Average trip length is increasing, and more visitors are staying for 2+ hours
- The percentage of visitors arriving by vehicle is decreasing
- Median monthly visitation frequency is increasing
- The percentages of first-time visitors and those that have been visiting for >20 years are both increasing

APPLICATIONS

The insights gleaned from POVES serve a range of management applications that contribute to the adaptive management and data-driven decision-making processes within OSMP. These applications include:

- **Speaking to visitor, policy, and recreation research topics:** The survey data provides valuable insights into visitor demographics, behaviors, preferences, and experiences, which can inform future research on various topics related to visitor management, policy development, and recreation planning.
- **Informing Master Plan strategy implementation and evaluation:** The survey results can be used to assess the effectiveness of existing management strategies outlined in the Master Plan and guide the implementation of new strategies to address emerging trends and challenges.
- **Supporting data-informed decision-making and public processes for future recreation planning and Visitor Master Plan updates:** The survey data offers objective evidence to support decision-making and facilitate public engagement in future recreation planning efforts and updates to the Visitor Master Plan.

- **Providing insight for operations and day-to-day management, such as amenity provision:** The survey findings can inform operational decisions related to the provision and maintenance of amenities, ensuring they meet the needs and expectations of visitors.
- **Detecting changes in visitor demographics, attributes, and preferences:** The longitudinal nature of the survey allows for the tracking of changes in visitor demographics, behaviors, and preferences over time, enabling OSMP to adapt its management strategies to meet the evolving needs of the community.
- **Determining variance in visitor attributes and recreation preferences across time and space:** The survey data can be analyzed to identify variations in visitor characteristics and preferences across different time periods and locations within OSMP, facilitating targeted management interventions and tailored visitor experiences.

I. INTRODUCTION

The city of Boulder's Open Space and Mountain Parks (OSMP) Department protects over 46,000 acres of open space land in and around the city of Boulder. The city charter's open space purposes, as outlined in the Boulder Revised Code (Boulder City Charter, Article XII Section 176), guide the management and use of this land. These charter purposes are reflected in OSMP's mission "to preserve and protect the natural environment and land resources that characterize Boulder," and "foster appreciation and use that sustain the natural values of the land for current and future generations." Two of these charter purposes are especially tied to this study:

- (c) "Preservation of land for passive recreational use, such as hiking, photography or nature studies, and, if specifically designated, bicycling, horseback riding, or fishing."
- (h) "Preservation of land for its aesthetic or passive recreational value and its contribution to the quality of life of the community."

In support of its mission and charter purposes, OSMP offers over 155 miles of designated trails for passive recreation activities (Open Space and Mountain Parks, About OSMP section). Visitor surveys were identified in the Visitor Master Plan (City of Boulder, 2005) as a tool to monitor recreation activities, public perceptions regarding OSMP management, and to measure community satisfaction with various OSMP facilities and services. System-wide on-site visitor intercept surveys have taken place in 2004-2005, 2010-2011, 2016-2017, and recently with the 2021-2023 Public Opinion and Visitor Experience Survey (POVES; Vaske & Donnelly, 2008; Giolitto, 2012; VanderWoude & Kellogg, 2018; VanderWoude et al., 2024). This document provides an overview of the 2021-2023 POVES project, comprehensive two-year results and interpretation, seasonal highlights, visitor survey trends for repeated questions, comparisons to the American Community Survey (ACS; American Community Survey demographic and housing estimates for Boulder city and County of Boulder section, 2021) data, and select area specific data.

1.1 GOAL AND OBJECTIVES

The 2021-2023 POVES aimed to quantify visitor characteristics, experiences, and preferences to inform data-driven decisions. Specific objectives included understanding:

1. Who are our visitors? (e.g., demographics),
2. How do people visit? (e.g., activities participated in, time spent visiting),
3. What are the experiences people have on OSMP lands? (e.g., encounters with other activity groups, crowding),
4. What feedback and preferences have visitors shared? (e.g., ratings of OSMP facilities and services, information sources, visitor use management strategies, plus participation in engagement and nature education).

In addition to the four study objectives, staff also analyzed trends in visitor attributes from previous surveys, evaluated seasonal effects on responses, compared POVES data to ACS data, and identified key attributes for specific areas within the OSMP system.

II. METHODS

We conducted an on-site, self-administered survey of adult visitors (aged 18 or older) leaving city-managed open space from September 2021 to August 2023. The survey sessions were two hours long and covered all four seasons, across two years. Visitors of the target population were intercepted at the end of their visit to gather feedback regarding their experiences during that specific visit.

2.1. 2021-2023 SURVEY INSTRUMENT

The questions were based on prior visitor survey instruments, staff input, and the former Resident Survey content (Appendix A: Rational for integrating visitor and resident surveys). A mix of repeated (sometimes modified) and new questions addressed current topics like pandemic recreation habits and information sources.

To keep completion time within 5-10 minutes, we created two versions, "Recreation Experience" and "Land Management", and each of these had two variations (four questionnaires in total). All four variations had the same set of core questions along with version-specific questions. This approach resulted in different sample sizes for specific topics across the variations, and these are shown with each result.

2.2. SAMPLING

Staff used a multi-stage sampling design to randomly sample visitors exiting at 184 system-wide sample locations across the OSMP system (Figure 1, Appendix B: 2021-2023 POVES sample locations). These locations met the following access point criteria:

1. Estimated annual visitation of at least 1,000 annual visits (average of 3 visits per day)
2. Accessible without traveling across non-OSMP property (unless OSMP has explicit permission to be on the property)
3. Open to visitor access for most of the study period
4. If an undesignated trail, it was established and estimated to receive at least three visits per day

The multi-stage sampling strategy ensured comprehensive coverage of year-round visitation across the OSMP system. To achieve this, locations, dates, time periods, and start hours were randomly selected within each season, encompassing all daylight hours. The survey was conducted across four seasons for each year: fall (September 1 through November 30), winter (December 1 through February 28), spring (March 1 through May 31), and summer (June 1 through August 31). The two-year study period included survey sessions across a.m., mid-day, and p.m. time periods, and each location was sampled four times (several sites did not receive a total of four due to closures or other events that prohibited sessions).

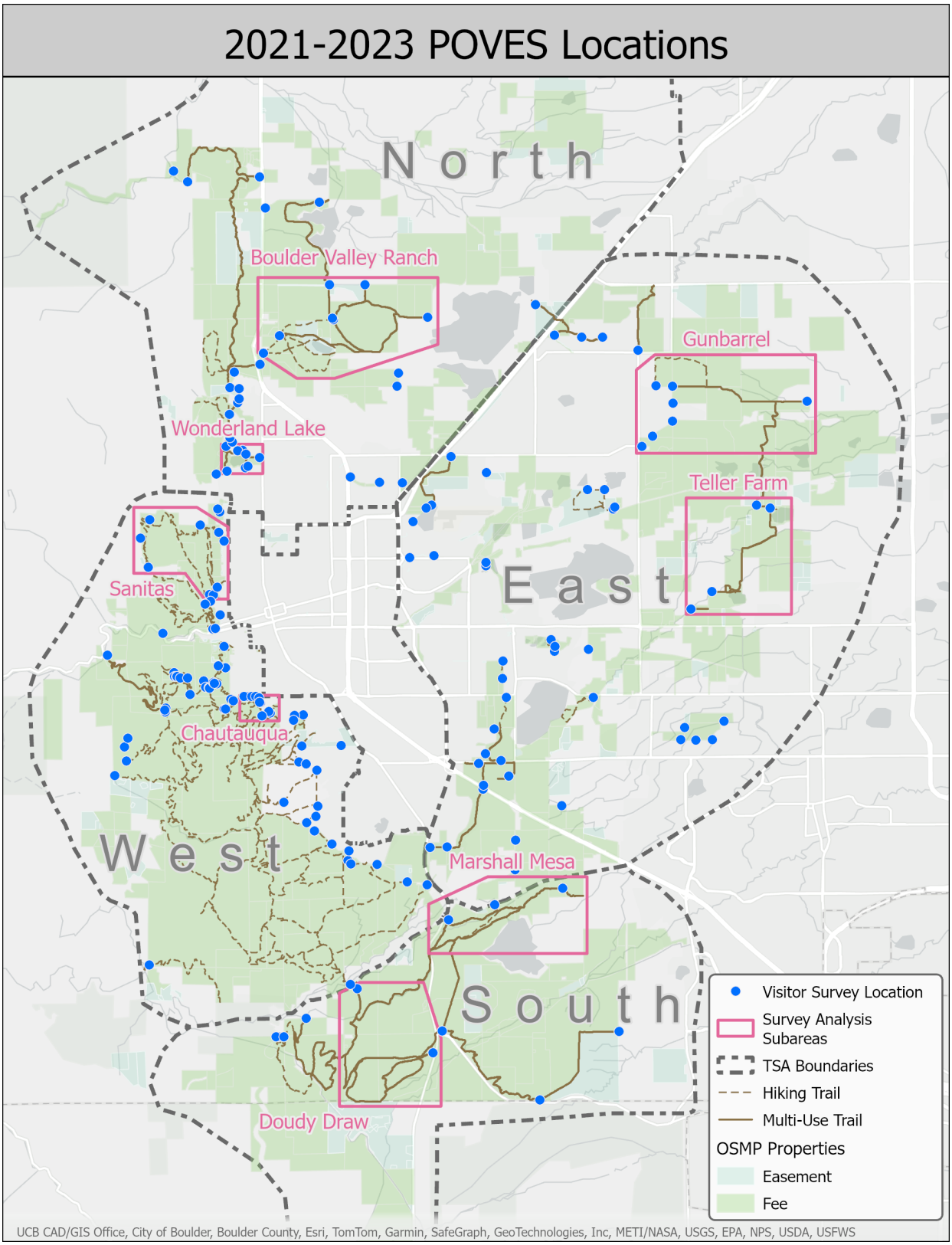


Figure 1. 2021-2023 POVES survey site locations and sub areas.
Detailed sub area maps can be found in Appendix F: Area specific highlights

2.3. FIELD OPERATIONS

Field staff intercepted visitors that appeared to be aged 18 or older as they left the OSMP system at the survey locations. If a visitor was by themselves, the surveyor asked that individual to participate in the survey. For groups of two or more, only one adult was selected to participate. Visitors who agreed were provided with an iPad to complete a digital questionnaire in the Survey123 field app. For visitors who declined, staff recorded the group size, perceived activity, presence of a dog, and asked the visitor where their primary residence was. This information was used to calculate a response rate (the proportion of eligible visitors contacted by the survey administrator who agreed to participate in the survey) and evaluate possible under-sampling of specific groups of visitors.

2.4. DATA MANAGEMENT AND ANALYSIS

Survey data were collected through ArcGIS Survey123 and stored in a hosted feature layer in ArcGIS Online. Data were queried from the hosted feature layer into an Excel workbook for transformation and validation using PowerQuery. The cleaned data were then imported into JMP (a statistical analysis platform) for additional processing and analysis. Data will be stored long-term on OSMP's enterprise database server.

III. RESULTS

This report represents comprehensive results for the two year period from September 2021 to August 2023. As available, staff have included trends as well as seasonal and spatially specific highlights. Spatially specific highlights are presented in several ways, Trail Study Areas (TSAs) and site-specific sub areas. Trail Study Areas were identified in the Visitor Master Plan (VMP) as area-specific plans to establish implementation strategies that improve visitor experience and provide a sustainable trail system while protecting natural and cultural resources. Additionally, POVES demographic data were compared to ACS data for both Boulder County and city of Boulder. Results are shared in both counts (n) and percents (%). Response rates vary per question and n values are provided in parentheses. The sum of percentages may not add up to 100% as they are rounded to the nearest percent. Actual zero results are shown as 0% and results less than one percent, but more than zero, are shown as <1%.

3.1. SAMPLE

The final sample frame included 184 data collection locations in varying visitation volume classes, management area designations, and trail study areas (Table D- 21). Between September 2021 and August 2023, 734 survey sessions occurred and:

- 499 occurred on weekdays and 235 on weekends
- 175 occurred during summer season, 223 in fall, 171 in winter, and 165 in spring
- 469 occurred on pedestrian trails and 265 on multi-use trails
- 267 occurred during the a.m. time period, 235 during mid-day, and 232 during p.m.
- The “Recreation Experience” and “Land Management” versions each had 367 sessions
- 173 sessions resulted in zero responses (no visitors exited during the session and/or those that refused to participate)

3.2. RESPONSE RATE

We achieved a 74% response rate, with 3,157 questionnaires completed across 734 survey sessions. While we had an exceptional response rate by industry standards, it's important to note that not all 4,257 visitors approached agreed to participate. Of those that declined to participate, they were:

- visitors participating in activity types that were mostly similar to the reported activities of those that did respond, with runners and bikers slightly more likely to refuse, and therefore slightly underrepresented; and
- visitors with residences that were mostly similar to reported residences of those that did respond, with city of Boulder residents slightly more likely to refuse, and therefore slightly underrepresented.

3.3. WHO ARE OUR VISITORS?

3.3.1. Demographics

The survey offered an expanded list of gender identities to support inclusion and self-identification. Respondents identified slightly more frequently as a man (50%) than a woman (47%; Table 1). Two percent selected that they prefer not to identify with a gender identity, 1% as genderqueer or gender non-conforming, and less than 1% as transgender man, transgender woman, or the different identity category.

Similarly, slightly more than half of the respondents selected male (52%) as their sex assigned at birth, with (48%) selecting female (Table 2). Intersex and "other" categories each accounted for less than 1%.

The median age of survey respondents was 47 years, with a similar mean age. Nearly half (over 46%) of respondents fell into the over 50 age categories. There were similar percentages of visitors in each 10-year age group between 20 and 69 years old (Figure 2).

While previous surveys suggested an aging visitor population, the data indicates a stabilization at a median age of 47 (Table C- 15). It's worth noting that the percentage of visitors aged 60-69 has tripled since 2005 (from 6% to 18%), and those aged 70+ have grown from 2% in 2005 to 8% in 2023.

While direct comparisons of median age between OSMP visitors and the ACS population are limited due to differences in age categories and survey eligibility requirements, we can analyze the percentage of adults (ages 20 years and over) within specific age ranges. This comparison reveals that OSMP visitors are more likely to fall within the 45-54 and 55-64 age groups compared to the broader city of Boulder and Boulder County populations (Table E- 1). This suggests that OSMP caters to a proportionally older demographic than the general area.

Respondents were asked about race and Hispanic, Latino, or Spanish origin as two separate questions, as defined by the US Census Bureau prior to 2024. The vast majority (91%) of respondents identified as white only (Table 3). Six percent of respondents identified as of Hispanic, Latino, or Spanish origin (Table C- 14) and within this group, the majority identified as white (65%) or the "other" race category (23%).

Nearly all respondents (99%) reported English as their primary language at home. The survey also identified visitors speaking "other" languages, including Spanish, French, German, Hebrew, Chinese, Korean, Russian, Japanese, Persian, and Polish.

Most survey respondents (88%) reported a bachelor's degree or higher, with half (50%) achieving a graduate or professional degree or PhD (Figure 3). Looking at only respondents who

reside within Boulder County (including city of Boulder) and are ages 25 and over, the percentage of respondents with a bachelor's degree or higher increases further to 93%, with 56% holding a graduate, professional degree or PhD (Table E- 5). In comparison, the 2021 ACS 5-year estimates show that 63% of Boulder County residents have a bachelor's degree or higher, and 28% hold a graduate, professional degree or PhD.

Survey results reveal a higher income level among OSMP visitors from Boulder County compared to the Boulder County population median. Over 64% of Boulder County respondents reported a total annual household income exceeding $100,000, and 30% exceeded $200,000 (Table E- 6, Figure 4). This is significantly higher than the Boulder County median household income of $92,466.

Homeownership rates among OSMP visitors from Boulder County are slightly higher at 71% than the ACS population estimates of 63% (Table E- 7). Looking just at visitors from the city of Boulder, the difference is more pronounced, with a 69% homeownership rate among OSMP visitors compared to 48% homeownership for the city of Boulder population overall.

These findings, along with the high educational attainment observed previously, suggest that OSMP visitation skews towards a demographic with higher socioeconomic status compared to Boulder County.

The majority of OSMP visitors (82%) reside within Boulder County (Table 4). Among county residents, the largest percentage comes from the city of Boulder (58%). Unincorporated Boulder County contributes 10% of visitors, followed by smaller percentages from Louisville (4%), Lafayette (4%), Longmont (3%), and other Boulder County municipalities (2%; Table 5). The remaining 18% of visitors come from outside Boulder County.

These current results continue to demonstrate a remarkably stable visitor residence distribution since 2005, with the majority of visitors originating from either the city of Boulder (58%) or Boulder County outside city limits (24%; Table C- 10). This suggests that even as the surrounding Front Range experiences population growth, the relative percentages of visitors from different residency categories to OSMP remains stable (Table C- 9).

Table 1. Gender identity (n=2,255).

Gender	Count	Percent
Man	1,131	50%
Woman	1,058	47%
Prefer not to identify	38	2%
Genderqueer/gender non-conforming	16	1%
Transgender man	4	<1%
Different identity	4	<1%
Transgender woman	4	<1%
Total	**2,255**	**100%**

Table 2. Sex assigned at birth (n=2,287).

Sex Assigned at Birth	Count	Percent
Male	1,178	52%
Female	1,095	48%
Other	10	<1%
Intersex	4	<1%
Total	**2,287**	**100%**

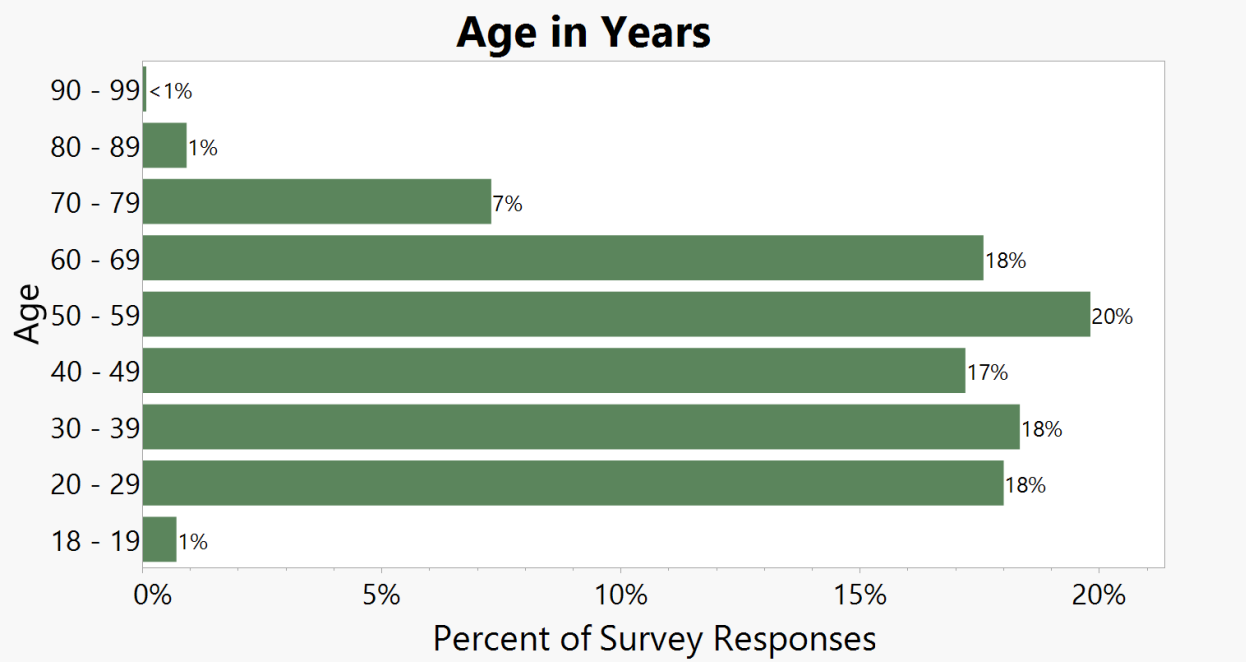


Figure 2. Age in years (n=2,371).

Table 3. Race (n=2,454).
Respondents could select more than one race.

Race	Count	Percent
White only	2,225	91%
2 Or more races	75	3%
Asian only	72	3%
Other race only*	61	2%
Black or African American only	12	<1%
American Indian or Alaska Native only	7	<1%
Native Hawaiian or Other Pacific Islander only	2	<1%
Total	**2,454**	**100%**

*Other race only included human, brown, European American, Filipino-Irish, Middle Eastern, Nepalese and Russian.

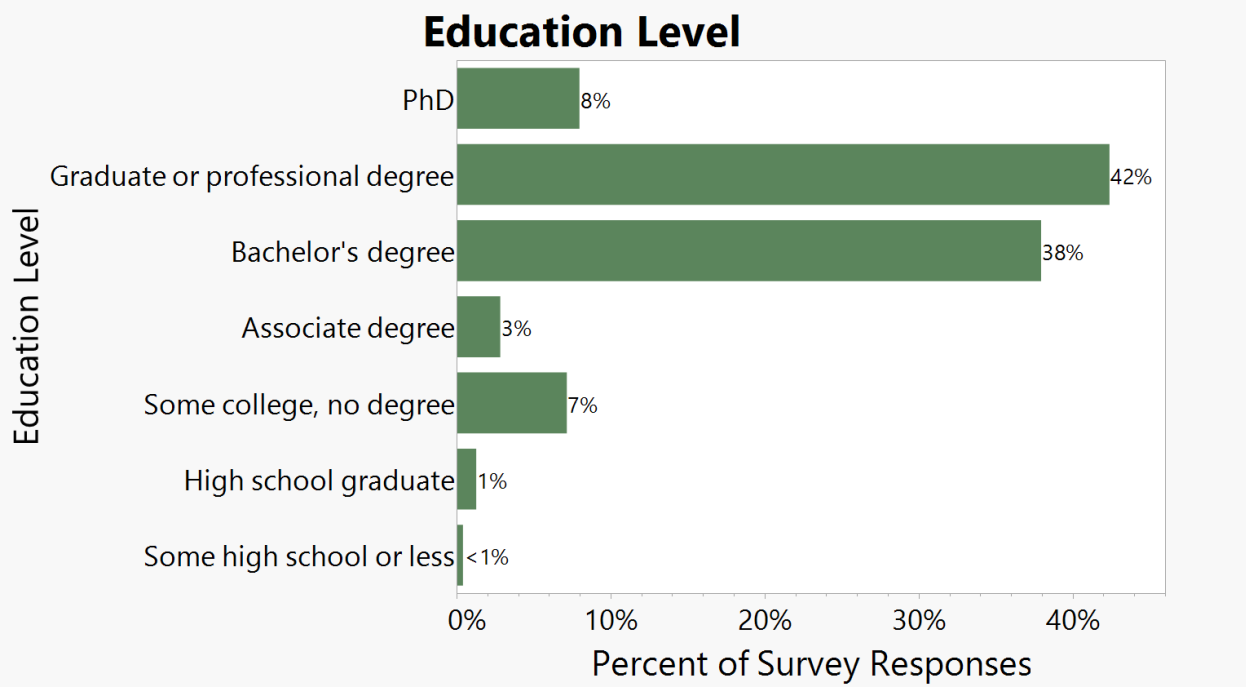


Figure 3. Education level (n=2,432).

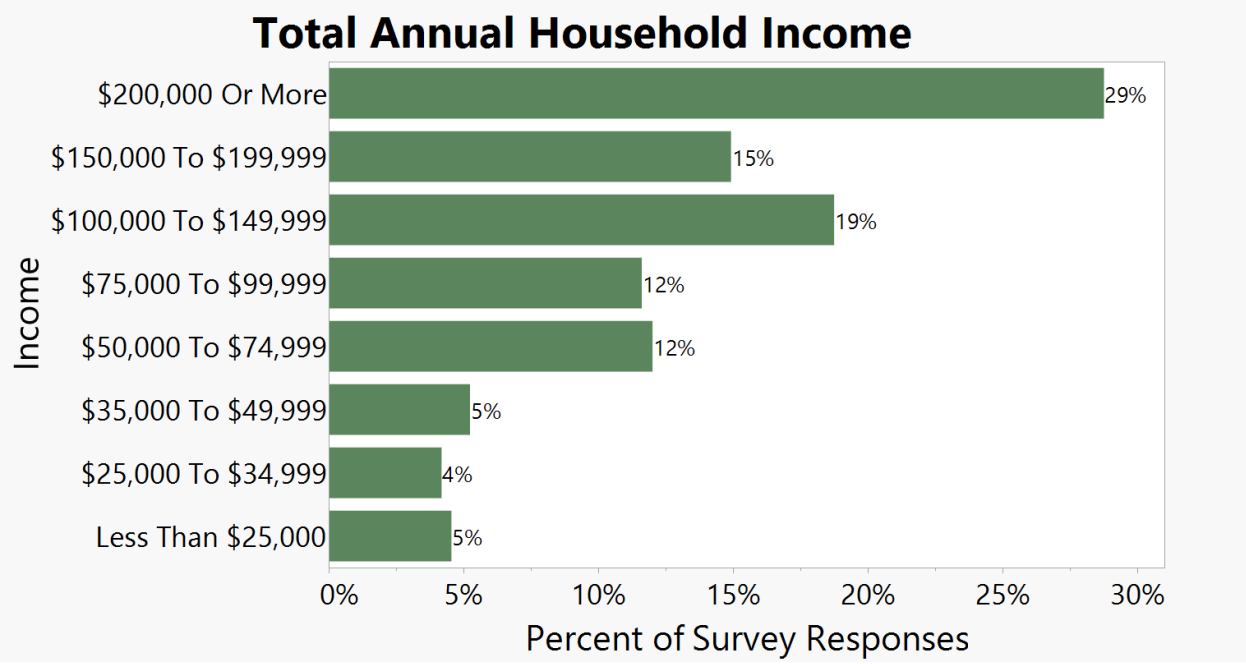


Figure 4. Total annual household income (n=2,748).

Table 4. Primary residence binned (n=3,031).

Primary Residence Binned	Count	Percent
Boulder (within city limits)	1,771	58%
Boulder County (outside city limits)	702	23%
Outside Boulder County	558	18%
Total	**3,031**	**99%**

Table 5. Primary residence (n=3,031).

Primary Residence	Count	Percent
Boulder (within city limits)	1,771	58%
Unincorporated Boulder County	292	10%
Other U.S. State	189	6%
Metro Denver	182	6%
Other area in Colorado	142	5%
Louisville	124	4%
Lafayette	107	4%
Longmont	78	3%
Other city in Boulder County	62	2%
Other Country	45	1%
Superior	39	1%
Total	**3,031**	**100%**

3.3.2. Years visiting and visitation frequency

The survey results reveal a visitor population with a mix of long-term and newer visitors. Nearly half (45%) reported visiting OSMP for more than ten years, while about a third (34%) have been coming for one to ten years (Figure 5). The remaining 21% have been coming for less than one year or are first-time visitors. First-time visitors (11%) were more likely to reside outside Boulder County (79%). Among first-timers, the most popular areas visited were Chautauqua (20%) and Boulder Falls (10%).

For those who have visited for a year or longer, the median number of years visiting is 15 years (Table C- 17). This indicates that a substantial portion (79%) of the visitor base has a long-standing (over one year) relationship with visiting OSMP.

Compared to past surveys, there is a notable increase at both ends of the visitation spectrum. The percentage of visitors reporting over 20 years of visitation has grown significantly (from 14% in 2005 to 26% in 2023). There's also a substantial rise (200% increase) in the percentage of visitors who have been coming for less than a year (from 7% in 2005 to 21% in 2023). These results indicate that both long-term visitors and those who are new to OSMP are increasingly making up the visitor population. This trend suggests a potential need to consider a range of visitor experiences and expectations across these divergent visitor groups.

Not including first time visitors, on average, the survey results reveal a distribution of visitation that is skewed toward frequent visits of at least once per week. The majority of visitors (70%) reported visiting OSMP on average more than once per week (Figure 6). Within this group, 28% visit 5-12 times per month, while 12% visit daily or even more than once per day. The remaining 12% visit less frequently than once per month.

Looking specifically at visitors who come to OSMP at least once per month, the average number of monthly visits is 15, with a median of 12 (Table C- 18). Notably, 85% of this group visit more than once per week.

Visitation frequency to OSMP, similar to years visiting, has also shown some variation over time. Interestingly, along with the increase in newer visitors (less than one year visiting), there has also been an increase in the percent of visitors who come very frequently (30 or more times per month). In 2005, 7% reported visiting daily or more, compared to 12% for 2023. The median monthly visit frequency has also increased, from 6 monthly visits in 2005 to 12 monthly visits in 2023.

The survey also explored visitation frequency at the specific location where respondents completed the questionnaire. These results reveal a distribution that is similarly skewed toward frequent visitation but suggests that it is also frequently to the same location multiple times per month. Over a quarter (26%) reported visiting 13 or more times per month, and another quarter (25%) visited 5-12 times per month. This indicates that many locations likely have a core group of highly frequent visitors. The locations that most frequently saw respondents visit five or more times a month were Dry Creek (70%), Wonderland Lake at Quince Circle (80%) and Fourmile Creek Path at Campo Court (91%). Of those who visited a particular site five or more times a month, their reported primary activity was 43% hiking/ walking, 25% dog walking or 19% running. For those who most frequently visited (30 or more times per month), 51% were

dog walkers and 37% were hiking/ walking. Overall, 72% of respondents go to their chosen OSMP location multiple times per month, while 28% visit once per month or less.

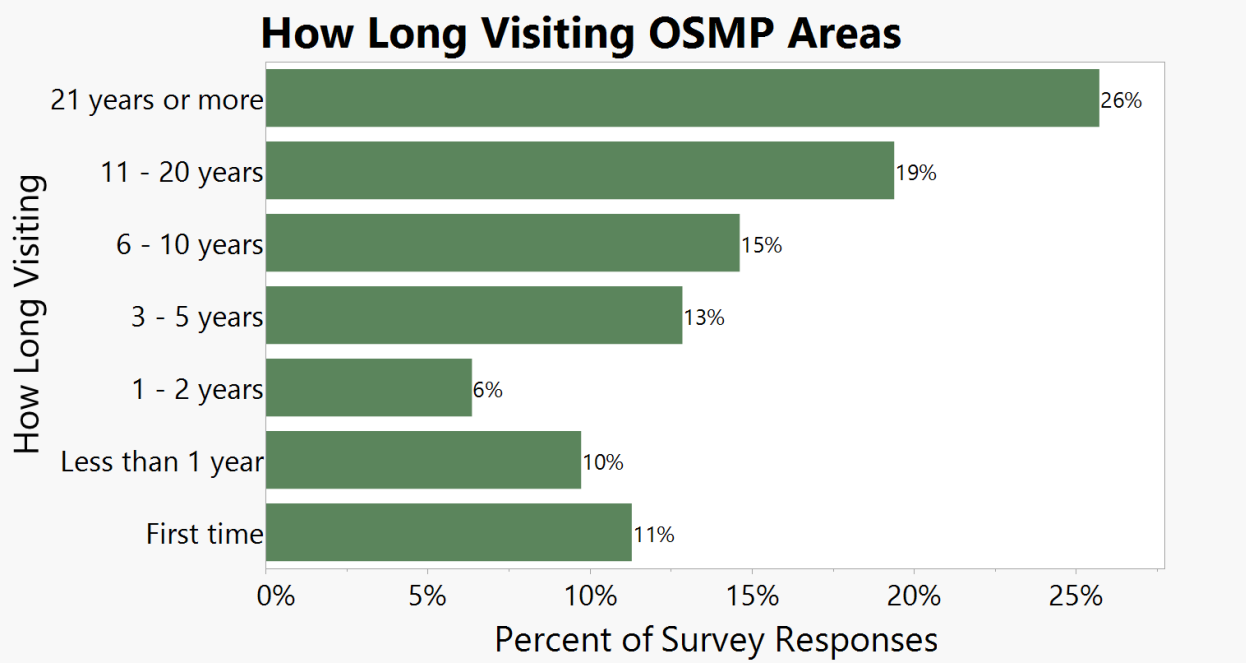


Figure 5. How long visiting Open Space and Mountain Parks areas (n=2,434).

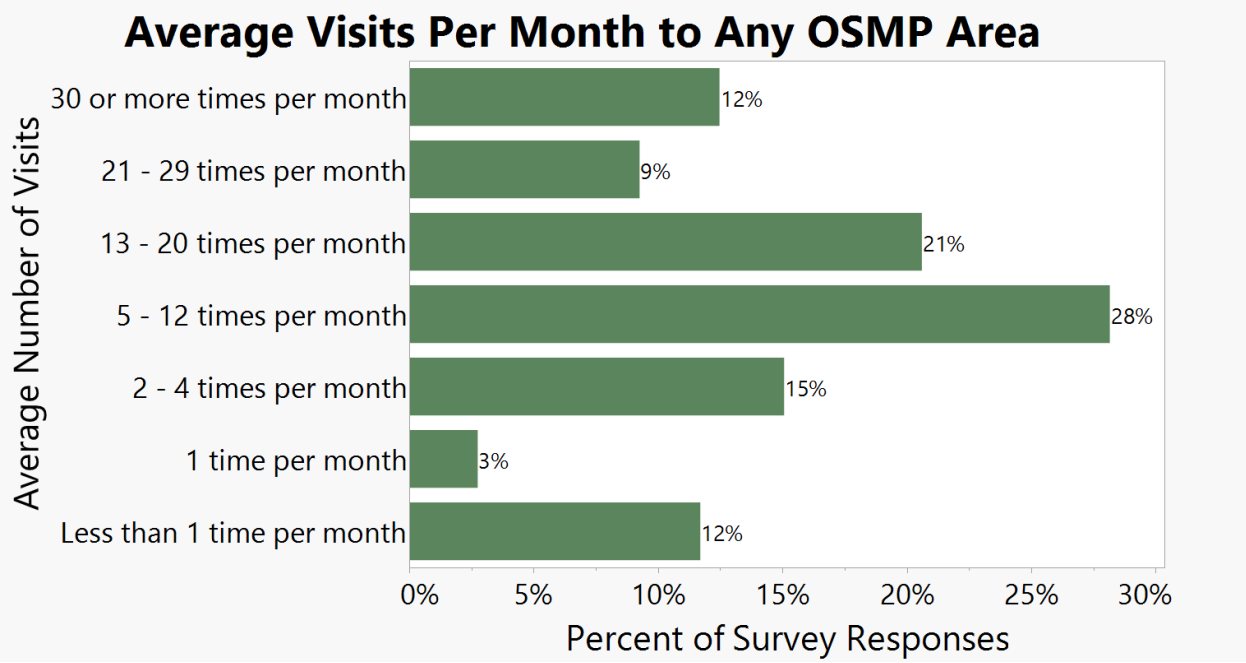


Figure 6. Average visits per month to any Open Space and Mountain Parks area (n=2,582).

3.4. HOW DO PEOPLE VISIT?

3.4.1. Activities

Hiking and walking were the most popular activities among OSMP visitors, with over half (52%) reporting it as their primary activity on the day of the survey (Table 6). Dog walking followed in popularity (18%), with running (14%) and biking (11%) also being common choices. Notably, 2% or less of visitors participated in activities like climbing/bouldering, fishing, or horseback riding. Wildlife viewing (birding and butterfly watching), art (photography and painting), winter activities (skiing and snowshoeing), and other activities (sight-seeing, sitting in nature, and yoga) were listed as “other” activities.

Hiking participation varied seasonally, with the highest rates occurring in fall (58%) and the lowest in winter (46%). Conversely, dog walking was least popular in fall (13%) and most popular in winter (29%). Biking as a primary activity dropped significantly during winter (3%).

Compared to past surveys, there has been an increase in hiking as a primary activity (Table C-19). There has also been a decrease in the percentage of visitors reporting "other" activities, which could be partly due to changes in the survey response options offered. While hiking increased from 34% in 2005 to 52% in 2023, “other” activities decreased from 14% in 2005 to 2% in 2023.

The popularity of specific activities varied by location within OSMP. Hiking was most prominent in the West Trail Study Area (TSA) (67%) and North TSA (49%; Table D- 22). Dog walking tied with hiking (32%) as the top activity in the East TSA, while visitors to the South TSA reported biking (44%) and hiking/ walking (35%) most frequently.

Participants were also asked about additional activities they participated in other than their primary activity on the day of their visit. The top additional activities were viewing scenery (46%) and hiking/walking (44%; Table 7).

Table 6. Primary activity overall (n=3,140) and by 2021-2023 season.

Primary Activity	Overall System-wide (n=3,140)	2021-2023 Season			
		Fall (n=1,201)	Spring (n=707)	Summer (n=638)	Winter (n=594)
Hiking/Walking	52%	58%	49%	52%	46%
Dog walking	18%	13%	20%	15%	29%
Running	14%	12%	16%	14%	18%
Biking	11%	13%	11%	15%	3%
Other*	2%	2%	2%	2%	3%
Climbing/Bouldering	2%	2%	2%	1%	1%
Fishing	<1%	<1%	1%	<1%	<1%
Horseback riding	<1%	0%	0%	<1%	<1%
Total	**100%**	**100%**	**99%**	**99%**	**100%**

*Other activities included wildlife viewing (birding and butterfly watching), art (photography and painting), winter activities (skiing and snowshoeing), and other activities (sight-seeing, sitting in nature, and yoga).

Table 7. Additional activities participated in on day of visit (n= 2,230). Respondents could select up to five additional activities.

Additional Activities (n=2,230)	Yes	No
Viewing scenery	46%	54%
Hiking/Walking	44%	56%
Viewing wildlife	27%	73%
Dog walking	25%	75%
Contemplation/Meditation	19%	81%
Photography	17%	83%
Running	11%	89%
Social gathering	11%	89%
Biking	10%	90%
Nature study	6%	94%
Climbing/Bouldering	4%	96%
Other*	4%	96%
Picnicking/Eating	3%	97%
Fishing	1%	99%
Horseback riding	<1%	99%

*Other activities included yoga, disc golf, art, and paragliding.

3.4.2. Trip lengths

Over three-quarters (78%) of trip lengths to OSMP were 60+ minutes in length, with 28% of visits being 2+ hours in duration (Table 8). The mean trip length was 85 minutes, the median length was 60 minutes, and 15 respondents reported visiting for 6+ hours. Respondents had to have visited OSMP for at least 10 minutes to participate**.** Duration of visits varied throughout different seasons of the year. In the summer and fall, about one third of respondents visited over two hours, and another third visited 60-89 minutes each season. In the winter and spring, nearly half of each season's visits were 60-89 minutes in duration.

The median trip length has remained around an hour over time, but the mean has increased from 59 to 85 minutes, with the percentage of visitors with trip lengths of 2+ hours increasing from 10% in 2005 to 28% in 2023 (Table C- 20).

Table 8. Trip length overall (n=3,084) and by 2021-2023 season.

Trip Length in Minutes	Overall System-wide (n=3,084)	2021-2023 Season			
		Fall (n=1,167)	Spring (n=700)	Summer (n=629)	Winter (n=588)
10 - 29	7%	7%	7%	9%	6%
30 - 59	15%	13%	16%	16%	17%
60 - 89	40%	37%	43%	36%	46%
90 - 119	10%	12%	8%	8%	12%
120+	28%	32%	25%	31%	19%

3.4.3. Transportation

Visitors arrive at OSMP trails using a variety of transportation methods, with a slight majority arriving by vehicles (51%). Walking (31%), biking (10%), and running (7%) are also common choices (Table 9). Less common write-in options included skates, rollerblades, scooters, wheelchair, horse, Lyft, and cabs.

For visitors that arrive by vehicle, most report parking in OSMP parking lots (54%). Road shoulders (19%) and neighborhood streets (18%) are also common parking locations (Figure 7). Finding parking appears to be relatively easy for most drivers, with 78% reporting it as very easy or easy. About 8% found parking to be difficult.

Mode of arrival varied geographically across the OSMP system, with a lower percentage of vehicle arrivals in the North and East TSAs (32% and 39%, respectively) and a significantly higher percentage of visitors walking to OSMP in the North TSA (48%). In the South TSA, visitors were more likely to arrive by vehicle (69%) or by bike (25%), while visitors in the West TSA primarily arrived by vehicle (60%) or by walking (29%).

Notably, the percentage of visitors who arrive to OSMP by vehicle has been decreasing over time. In 2005, 58% of visitors drove to the trailhead, compared to 51% in 2023 (Table C- 21). In contrast, walking and running have collectively increased during the same time period, from 32% to 38%. Biking has remained relatively stable, hovering around 9- 10% since 2005. Less than 1% of visitors currently arrive at OSMP by bus or “other” modes such as rideshare or horse.

Table 9. Primary mode of transport overall (n=3,153) and by Trail Study Area.

Transport	Overall System-wide (n=3,153)	Trail Study Area			
		West (n=1,457)	North (n=583)	East (n=809)	South (n=254)
Vehicle	51%	60%	32%	39%	69%
Walk	31%	29%	48%	33%	5%
Bike	10%	4%	11%	16%	25%
Run	7%	6%	7%	11%	2%
Bus	<1%	<1%	0%	<1%	0%
Other*	<1%	<1%	1%	<1%	<1%

*Other modes of transport included by horse and Lyft.

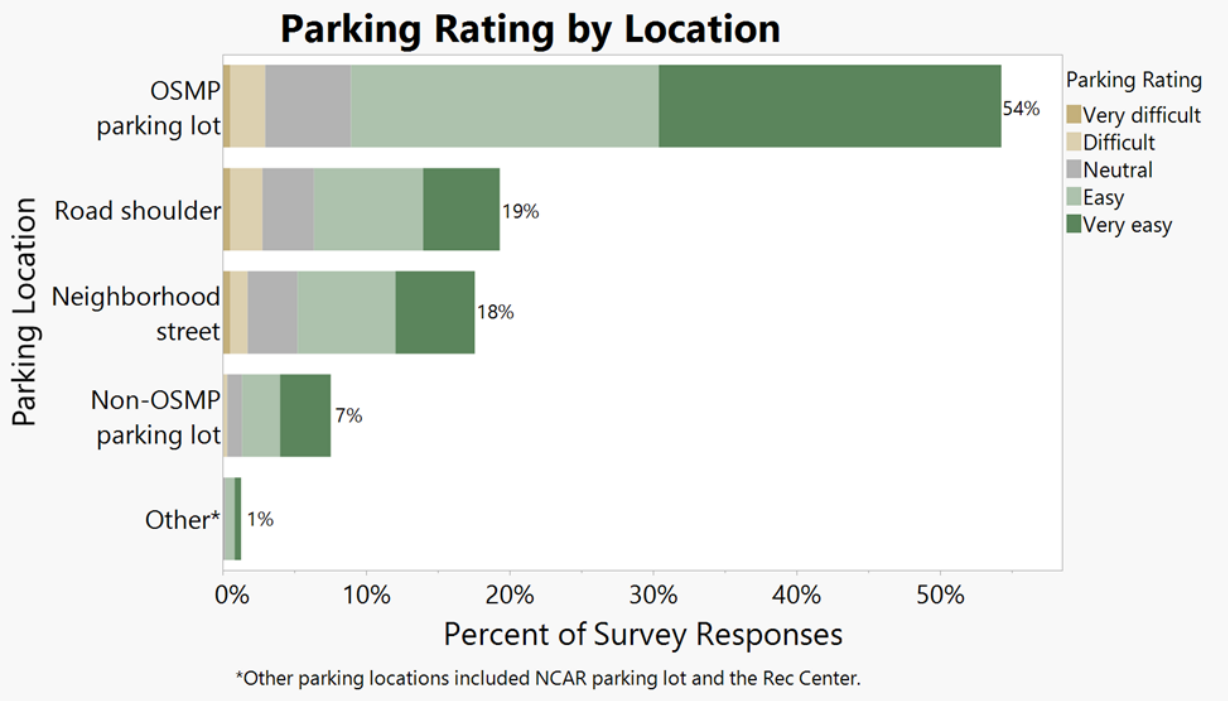


Figure 7. Parking rate location (n=1,553).

3.4.4. Group size and composition

Most visitors come to OSMP by themselves (56%) or with just one other person (31%; Figure 8). Children under 18 are present in only 6% of visitor groups, and when they are present, most groups have one child (60%) or two children (23%). The majority of runners (84%), bikers (70%) and dog walkers (63%) visited by themselves, whereas hikers were more likely than other

activity groups to have three or more people in their group (19%; (Table D- 3). About a third (35%) of visitor groups bring dogs with them on their visit to OSMP. Among those with dogs, most groups had one or two canine companions (Table 10). The overall percentage of visitors bringing dogs has remained relatively stable over time (Table C- 24). When asked about their group composition, respondents identified as just me (57%), family (26%), friends (16%), and organized group (2%; Table C- 23).

There has been a trend towards more visitors coming to OSMP by themselves. In 2005, about one-third (32%) came by themselves, compared to 56% in 2023. Conversely, the percentage of visitors coming with groups of three or more people has decreased from 27% in 2005 to 14% in 2023.

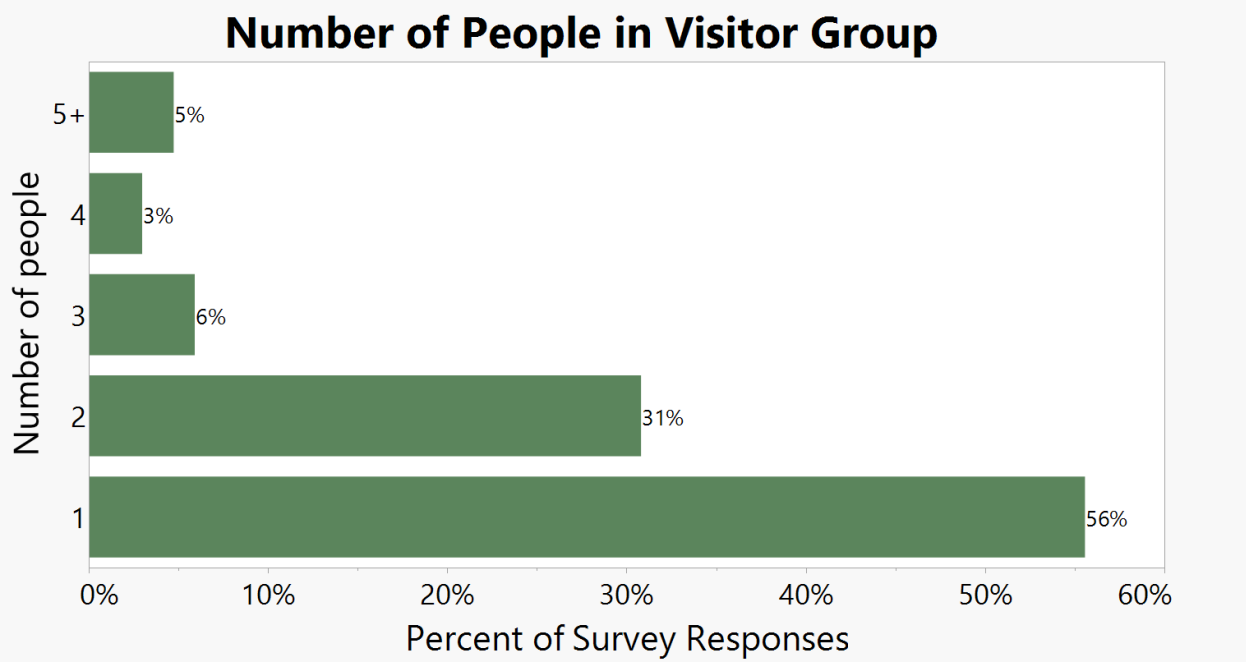


Figure 8. Number of people in visitor group (n=2,217).

Table 10. Number of dogs in visitor group (n=2,413).

Number of Dogs in Group	Count	Percent
0	1,574	65%
1	622	26%
2	180	7%
3	28	1%
4	6	<1%
5+	3	<1%
Total	**2,413**	**100%**

3.4.5. Motivations

People come to OSMP for a variety of reasons, but the top three primary motivations are physical fitness (33%), enjoying nature (18%), and being with my dog(s) (16%), which is consistent with the 2016-2017 survey results (Figure 9, Table C- 25). These motivations align with specific activities, with physical fitness being primary for runners (73%), being with my dog(s) for dog walkers (71%), and physical fitness for bikers (54%).

Why people come to OSMP can vary depending on the season. Physical fitness (38%) was highest in the spring, while being with my dog(s) (27%) and spending time with family/friends (12%) was more prominent in winter (Table C- 4).

Regardless of their primary motivation, some sentiments were consistent across all visitor groups. When asked to rate the importance of additional reasons for visiting OSMP, motivations rated extremely important were enjoying nature (69%), getting out of the house (56%), and physical fitness (54%). Notably, enjoying nature was rated extremely important by most visitor groups, hikers/walkers (71%), runners (69%), dog walkers (65%), and bikers (64%; Table 11).

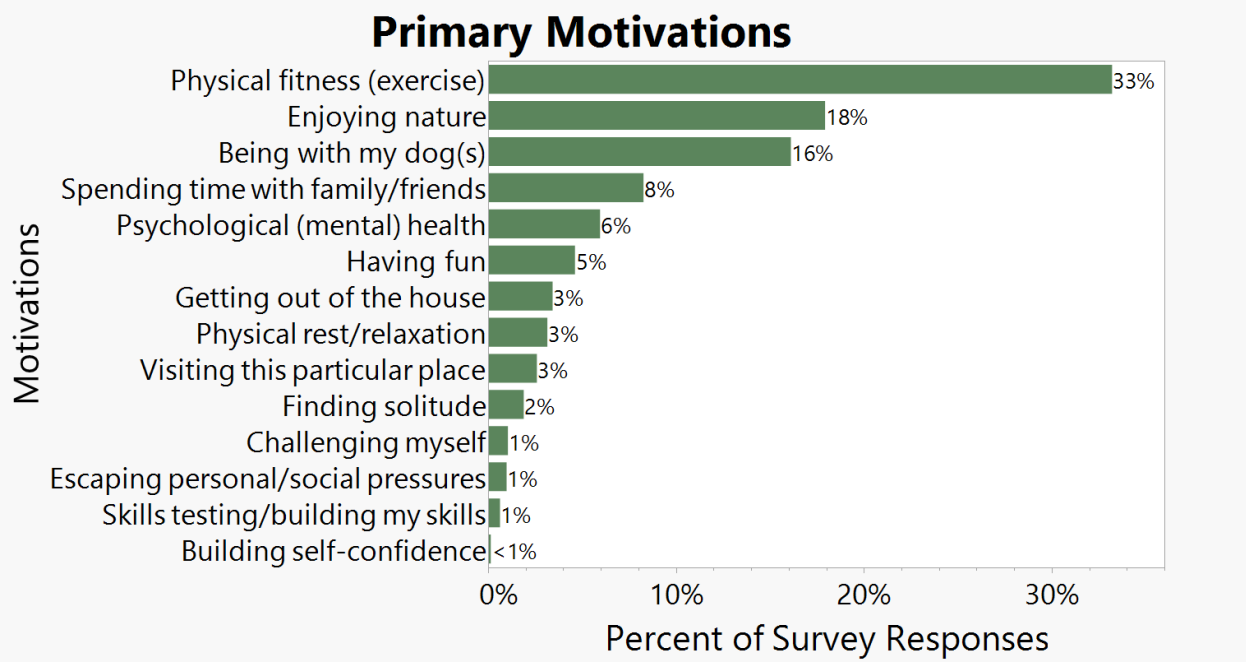


Figure 9. Primary motivations (n=1,427).

Table 11. Motivation importance ratings.

Motivation	Extremely Important	Moderately Important	Somewhat Important	Slightly Important	Not At All Important
Enjoying nature (n=1,410)	69%	24%	5%	1%	1%
Getting myself/my family out of the house (n=1,290)	56%	26%	9%	3%	6%
Physical fitness (exercise) (n=1,397)	54%	28%	11%	4%	3%
Having fun (n=1,285)	53%	29%	12%	3%	2%
Psychological (mental) health (n=1,351)	50%	31%	12%	3%	4%
Physical rest/relaxation (n=1,294)	37%	27%	17%	9%	9%
Finding solitude (n=1,351)	36%	26%	16%	11%	11%
Escaping personal/social pressures (n=1,317)	33%	26%	16%	11%	14%
Spending time with famly/friends (n=1,254)	33%	15%	9%	7%	36%
Visiting this particular place (n=1,285)	30%	30%	22%	10%	8%
Being with my dog(s)* (n=1,263)	30%	7%	3%	2%	58%
Challenging myself (n=1,316)	27%	21%	20%	15%	17%
Skills testing/building my skills (n=1,211)	16%	15%	19%	18%	31%
Building self-confidence (n=1,229)	14%	15%	22%	18%	31%

*Note 839 respondents reported having at least one dog in their visitor group on the day of their visit.

3.5. WHAT ARE THE EXPERIENCES PEOPLE HAVE ON OSMP LANDS?

3.5.1. Encounters, crowding, and expected experiences

The majority of visitors report positive experiences with other visitors at OSMP. Only 7% indicate experiencing conflict during their visit. Respondents who reported running as their primary activity experienced the highest level of conflict (9%), whereas hikers/walkers and those who selected "other" as their primary activity for the day had a 7% conflict rate (Table D-5). The majority of encounters (n=1,320 respondents and n=3,753 responses, as respondents could select more than one encounter) with hikers/ walkers (82%), on-leash dogs (79%), off-leash dogs (75%), horseback riders (75%), runners (74%), "other" activity groups (such as climbers, cross-country skiers and rollerbladers; 72%), and bikers (67%) were rated as pleasant (Table 12). Whereas, encounters with off-leash dogs and "other" activities were both reported as the highest encounter ratings for conflict at 9%, followed by 6% conflictual encounters with cyclists (Table C- 26). It is worth noting the small sample size for those who selected "other" activities. Overall, these findings align with the previous 2016-2017 survey, with most visitors reporting pleasant or neutral encounters with other visitors and an overall positive experience during their visit.

Interestingly, the conflict rate is slightly lower in the spring (5%) compared to other seasons (Table C- 6). Visitors from the city of Boulder were more likely to experience conflict (10%) compared to those from elsewhere in Boulder County (4%) or outside the county (3%; Table D-6). Notably, there is a slightly higher conflict rate of 10% for both newer visitors (1- 2 years) and long-term visitors (21+ years). No first-time visitors reported experiencing conflict during their visit (Table D- 8). Forty-six respondents reported no encounters with other visitors.

Similar to conflict, crowding wasn't a major issue for most visitors. Only 8% reported feeling moderately or extremely crowded at the trailhead or on the trail itself, with an additional 12-14% experiencing somewhat crowded conditions. Crowding was most frequent in the summer, with 13% of visitors feeling moderately or extremely crowded at the trailhead (Table C- 7) and 12% feeling moderately or extremely crowded on the trail (Table C- 8). The most common reason for feeling crowded was simply the presence of other people. Other factors included dogs, parking issues, difficulty passing others, and narrow trails.

While some visitors reported experiencing crowding (up to 14% feeling somewhat crowded), the vast majority of respondents (96%) reported having the experiences they expected on the day of their visit. Only 4% indicated partially attaining their expected experiences, and a very small percentage (1%) were unable to achieve them entirely. The number of other visitors at both the trailhead and on the trail presented no impact for respondents to achieve their expected experiences, for 71% and 69% of respondents respectively (Table 13). However, at the trailhead 16% reported the number of other visitors greatly improved or somewhat improved

their experience, while 12% stated it somewhat or greatly detracted from their expected experience. On the trail, the number of other visitors similarly (18%) greatly improved or somewhat improved their experience, and 13% shared it somewhat or greatly detracted from their experience. Interestingly, for the few who didn't fully achieve their expected experiences (4%), the top barriers reported were the trail was crowded, poor trail conditions, and parking was difficult. This suggests that crowding and trail conditions can sometimes hinder visitors' ability to have the experience they envisioned.

People who encountered conflict with another group were more likely to say they felt moderately or extremely crowded on the trail (16% as opposed to 7% overall). They were also more likely to say trail crowding negatively impacted their experience (30% as opposed to 12% overall). In addition to crowding, people who experienced conflict listed off-leash dogs, dog feces/bags, and speeding bikes as detractions from their expected experience.

The survey also invited visitors to share, in their own words, what contributed to and detracted from their experiences. These responses are presented as word clouds (Figure 10, Figure 11).

Table 12. Visitor encounter(s) on day of visit (n=1,320).

Activity (Percent Encountered)	Rating Sample Size	Pleasant	Neutral	Conflict
Hiker/Walker (85%)	1,128	82%	17%	0.5%
Runner (70%)	765	74%	24%	2%
Visitor With On-Leash Dog (61%)	811	79%	18%	2%
Visitor With Off-Leash Dog (46%)	616	75%	16%	9%
Biker (33%)	378	67%	27%	6%
Other (3%)	43**	72%	19%	9%
Horseback Rider (1%)	12*	75%	25%	0%

*Small sample size and not suitable for generalization

**Other activities included items such as climbers, cross-country skiers, and rollerbladers

Table 13. Ability for the respondent to achieve ones expected experience based on the number of other visitors.

Number of other visitors	Greatly improved	Somewhat improved	No Impact	Somewhat detracted	Greatly detracted
At the trailhead (n=456)	9%	7%	71%	9%	3%
On the trail (n=445)	8%	10%	69%	11%	2%

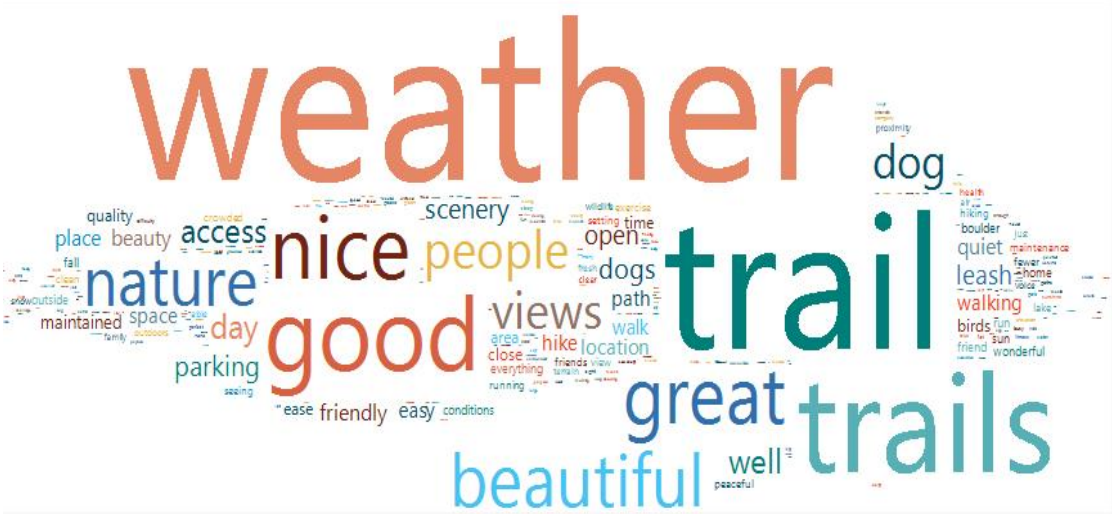


Figure 10. Things contributing to attaining expected experiences (n=635).

Figure 11. Things detracting from attaining expected experiences (n=286).

3.5.2. Site characteristics

Visitors to OSMP highly value the natural beauty and accessibility of OSMP lands and trails. Respondents consistently ranked scenery/viewpoints (63%) and close-by access (61%) among their top five characteristics contributing to a positive experience (Table 14). These factors were important regardless of location or activity type.

While these characteristics were generally valued across visitor groups, preferences did vary. Visitors to Marshall Mesa valued narrow trails and cycling options, while those in the western parts of OMSP valued access to hilly/ steep terrain. Dog walkers naturally prioritized dog-friendly characteristics, and hikers/walkers often found hilly/ steep terrain valuable. Visitors in the south also valued loop options and access to narrow trails (Table F- 6).

While dog-friendly characteristics are undoubtedly crucial for visitors with canine companions, the absence of dogs does not emerge as a priority requirement for a positive OSMP experience among other groups. Only 1% of respondents selected "dogs not allowed" as a top characteristic, suggesting that most visitors without a dog are not significantly impacted by the presence or absence of dogs.

Respondents could also share in their own words what top three site characteristics of the particular place they were visiting contributed to their experience quality. These responses can be seen in the in a word cloud (Figure 12).

Table 14. Top categorical site characteristics contributing to quality experiences (n=1,421).

Site Characteristic (n=1,421)	Selected	Not Selected
Scenery/viewpoints	63%	37%
Close by access	61%	39%
Dogs ARE allowed	37%	63%
Access to hilly/steep terrain	33%	67%
Able to find parking	27%	73%
Loop options	24%	76%
Various distance options	24%	76%
Wildlife (fauna) viewing	22%	78%
Access to narrow trails	19%	81%
Access to wide trails	18%	82%
Access to flat terrain	17%	83%
Access to forests	14%	86%
Few other visitors	14%	86%
Minimal development/amenities	12%	88%
Cycling IS allowed	10%	90%
Cycling IS NOT allowed	9%	91%
Access to waterways	8%	92%
Many amenities (e.g., restrooms, picnic tables, grills)	4%	96%
Lots of other visitors	2%	98%
Other*	2%	98%
Dogs are NOT allowed	1%	99%
Far away access	1%	99%

*Other characteristics included things such as off-leash dogs allowed, good snow conditions, and dry trails

Figure 12. Top site characteristics in respondents' own words (n=1,411).

3.5.3. Trip satisfaction

At the end of the questionnaire, we asked about overall trip satisfaction for the day of their visit. Ninety-eight percent reported their trip satisfaction as excellent or good (Figure 13).

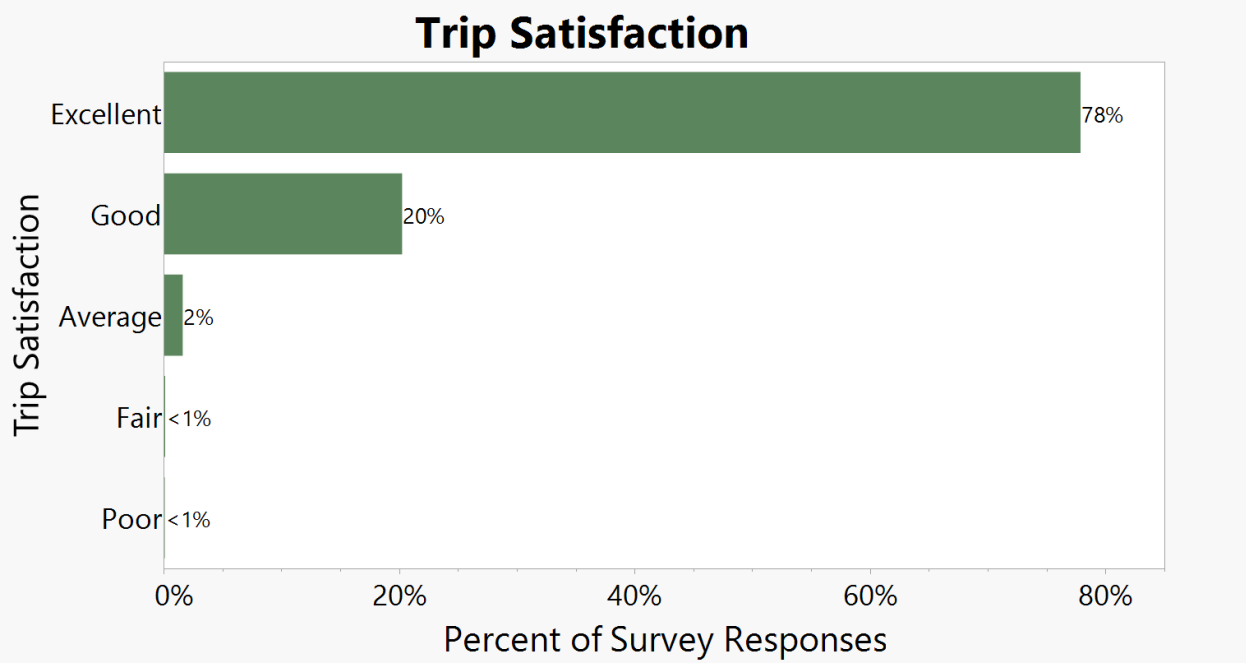


Figure 13. Trip satisfaction (n=2,956).

3.5.4. Areas no longer visited

While most visitors haven't been displaced from areas they used to frequent at OSMP (91%), a small portion (9%) reported no longer visiting specific locations (Table C- 27). The most common areas visitors abandoned were Chautauqua, Sanitas, Doudy Draw, and Marshall Mesa. Reasons cited for displacement included crowding, issues with dogs, trail closures, parking issues, and problems with bikers. It's important to note that interpretations of locations and reasons for displacement should be cautious due to the low sample sizes for the specific areas and reasons mentioned (n=38 for locations and n=37 for reasons).

The percentage of visitors experiencing displacement has fluctuated slightly over time, ranging from 9% (current survey and 2010-2011 survey) to a high of 14% in the 2016-2017 survey. Interestingly, the current survey suggests age might be a factor, with visitors between 50-79 years old reporting higher displacement rates (12-21%) compared to younger visitors 20-39 years old (2-4%; Table D- 10). Additionally, those who visited OSMP for 11-20 years or 21+ years showed a higher displacement rate (13-14%) compared to newer visitors.

The results also suggest a possible correlation between activity type and displacement. Runners had the highest displacement rate (12%), whereas bikers reported the lowest (7%). Of those who reported displacement, nearly all (97%) rated their visit on the day of the survey as good or excellent, suggesting they have found satisfactory other locations to visit.

3.5.5. Recreation during COVID-19 pandemic

The COVID-19 pandemic undeniably impacted visitation patterns at OSMP. While the overall impact was felt by 11% of respondents, the reasons for this varied (Table 15). The most commonly reported barriers to visiting during the pandemic were crowded trails (47%), fear of exposure to COVID-19 (44%), and a lack of social distancing by other visitors (27%). These findings suggest that concerns about safety and crowding played a significant role in affecting visitation for some during this time.

Interestingly, the pandemic also appears to have influenced visitation patterns in both directions. Nearly a quarter (24%) of respondents reported modifying their visits to OSMP. Of those who modified their behavior, 39% actually visited more frequently, while 28% visited less frequently compared to pre-pandemic times (Figure 14). This suggests that some people sought out the solace and health benefits of outdoor recreation during the pandemic, while others opted to avoid crowded spaces.

During the first year of the pandemic, visitors adjusted their typical pre-pandemic behavior on OSMP. The behaviors respondents always or often did included maintaining 6+ feet from other visitors (83%), wearing a face cover when less than 6 feet from others (74%), avoiding visiting

on the weekends (55%), and visiting with the same people to minimize exposure (54%; Table 16).

In anticipation of the COVID-19 pandemic coming under control, respondents were asked about their expected visitation habits in the future. The World Health Organization eventually declared the COVID-19 pandemic no longer a public health emergency on May 5, 2023 (World Health Organization, Coronavirus disease (COVID-19) pandemic section). The data collected of all respondents during year one, and most respondents during year two of data collection, revealed most (70%) reported they intended to return or had already returned to their pre-pandemic visitation habits at OSMP.

Table 15. Barriers to visitation during the COVID-19 pandemic (n=86).

Barriers to Visitation During the COVID-19 Pandemic (n=86)	**Yes**	**No**
Trails were too crowded	47%	53%
Fear of exposing myself to COVID-19	44%	56%
People not social distancing	27%	73%
I didn't want to recreate with a face cover on	19%	81%
Fear of exposing others to COVID-19	13%	87%
Other*	12%	88%
Didn't want to burden healthcare system	8%	92%
Didn't want to violate travel restrictions	8%	92%
I had less time to recreate	7%	93%
Felt unsafe using facilities	5%	95%
Regulations were too burdensome	5%	95%

*Other barriers included things such as closed parking, living outside Boulder County, being out of town, and the need to drive.

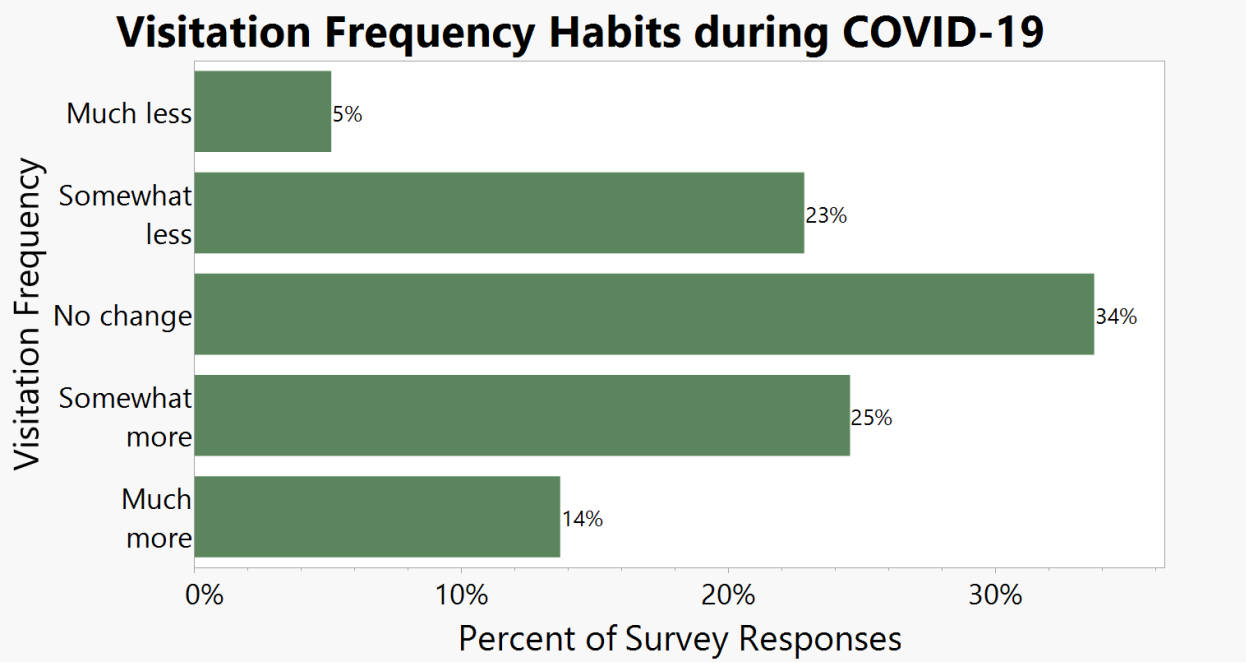


Figure 14. Visitation frequency habits during COVID-19 (n=804).

Table 16. Visitor behaviors during COVID-19 pandemic.

COVID-19 Behavior	Percent Always	Percent Often	Percent Sometimes	Percent Seldom	Percent Never
Maintain 6+ feet from other visitors (n=173)	49%	34%	12%	4%	2%
Wear a face cover when less than 6 feet from other visitors (n=171)	44%	30%	15%	6%	5%
Avoid visiting on the weekends (n=175)	23%	32%	21%	7%	16%
Visit with the same people to minimize exposure (n=159)	21%	33%	20%	11%	16%
Visit an area with fewer visitors than my normal choice(s) (n=166)	17%	28%	33%	8%	15%
Visit without my friends or family (alone) (n=157)	13%	25%	31%	11%	20%
Visit at a different time of day (n=170)	11%	32%	34%	9%	15%
Visit an area closer than my normal choice(s) (n=168)	8%	25%	29%	17%	21%
Visit an area further away than my normal choice(s) (n=160)	8%	19%	25%	29%	19%
Visit a different area (n=163)	6%	26%	34%	17%	17%

3.6. WHAT FEEDBACK AND PREFERENCES HAVE VISITORS SHARED?

3.6.1. Services and facilities

Visitors consistently rated key services and facilities as extremely or moderately important. These include trails (93%), dog stations (94%), trash/recycling bins (85%), and vehicle parking (88%; Table 17). Similarly, quality ratings for these amenities were also very high, with over 87% of users reporting good or very good quality. Furthermore, all four categories showed an increase in positive ratings since the 2017 survey.

Trails were the most highly rated amenity and likely used by almost all visitors (Table 18). However, selecting trails as an amenity used during their visit may not have been as clear to some respondents compared to selecting other facilities like dog stations or trash bins. This could explain the difference between the high rating (83% extremely important) for trails and the slightly lower percentage (79%) of visitors explicitly reporting using a trail.

Overall, visitor ratings for facilities and services remained positive and comparable between the 2016-2017 and 2021-2023 surveys. Trails, parking, trash/recycling, and dog stations continue to be the most appreciated amenities.

Table 17. Services and facilities ratings compared to previous surveys.

Top Seven Services and Facilities Used*	Year	Very Good or Good Quality	Extremely** or Moderately Important
Trails	2021-2023	95%	93%
	2016-2017	93%	98%
Vehicle Parking	2021-2023	87%	88%
	2016-2017	82%	87%
Trash or Recycling Bins	2021-2023	93%	85%
	2016-2017	84%	83%
Dog Stations	2021-2023	94%	94%
	2016-2017	90%	92%
Directional (Trail) Signs	2021-2023	93%	77%
	2016-2017	83%	72%
Trailhead Information Boards	2021-2023	93%	75%
	2016-2017	86%	77%
Restroom	2021-2023	59%	79%
	2016-2017	68%	85%

*Ordered by most used in 2021-2023

**Very Important in 2016-2017

Table 18. Services and facilities used on day of visit (n=549).
Respondents could select more than one service and facility used.

Services and Facilities Used (n=549)	Yes	No
Trails	79%	21%
Vehicle parking	32%	68%
Trash or recycling bins	18%	82%
Dog stations	17%	83%
Directional (trail) signs	16%	84%
Trailhead information boards	16%	84%
Restroom	11%	89%
Shelters	2%	98%
OSMP interactive web map	2%	98%
Picnic tables and grills	1%	99%
Bicycle racks	1%	99%
Accessible infrastructure	<1%	100%
Horse trailer parking	<1%	100%

3.6.2. Nature education, information sources, feedback, engagement

The survey explored how visitors learn about, navigate, and provide feedback on their experiences at OSMP. This included participation in nature education programs, the variety of information sources visitors rely on for trip planning and navigation, and the different ways visitors choose to engage with OSMP management.

Nature Education Opportunities

The majority of respondents (68%) were aware of the nature education programs offered by OSMP. In the past year, 14% of respondents or a family member had participated in these programs, primarily at the Chautauqua Ranger Cottage, through interactions with staff on the trails, or through virtual and in-person events such as school programs and Jeff and Paige programs (Table 19). Most respondents (75%) and/or a family member had received education 1-3 times in the past 12 months (Figure 15). Wildlife and vegetation information were the topics rated as most important by participants (Table 20).

Nature education participants tended to be more represented in the 70-79 age group, and less represented in those aged 20-29. Participants were also higher educated with two-thirds having a graduate, professional or PhD education level, as compared to half of overall survey participants holding the same level of education.

In 2022 OSMP piloted a Presence on the Land initiative to enhance staff and volunteer presence on OSMP with the goal of engaging and informing visitors on a variety of topics. This initiative

was implemented throughout the system, yet especially focused at high visitation areas. Respondents who experienced nature education interactions with staff on the trail and at the trailheads shared the most important type of information they received was about wildlife/vegetation, OSMP land management and rules/regulations. This data supports the Education and Outreach's determination that the program was a success and will be a continued, on-going effort.

Information Sources for Trip Planning and Navigation

For pre-trip planning, most visitors (78%) used at least one information source, with the OSMP website, trail apps like AllTrails or CORTEX, Google/Apple Maps, and recommendations from friends and family being the most popular choices. Trail apps and Google/Apple Maps were used most frequently, and all four sources received high ratings for quality. Interestingly, nearly a quarter of respondents (23%) didn't use any information sources for planning.

During their visits, a large majority (85%) of visitors relied on information sources within OSMP. Signs at trailheads, directional signs, regulatory signs, and displayed trail maps were the most common resources used. Directional and regulatory signs were used most frequently, and all four types received positive quality ratings.

Feedback and Public Engagement

While a relatively small percentage of visitors (9%) provided feedback to OSMP in the past year, their input covered a variety of topics. The most frequent reported topics included visitor use management (parking, dogs, and trail access), trail maintenance, and expressing gratitude for park staff and OSMP in general. Emailing park staff (41%), speaking directly with staff during a visit (38%), and emailing the Open Space Advisory Board (25%) were the most common methods for providing feedback.

Public engagement opportunities were also available, with online surveys, email requests for feedback, and open houses being the most common formats. While the percent of visitors who reported participating in public engagement events is small (only 5% of respondents), the quality ratings for these methods were generally positive.

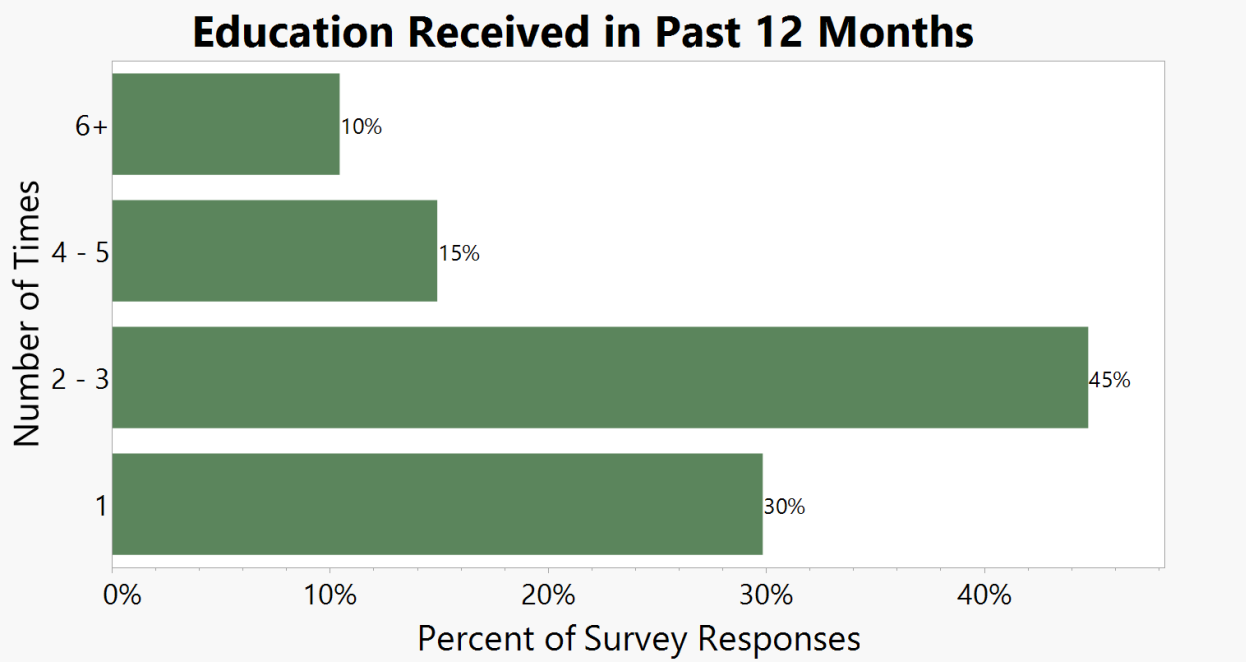


Figure 15. Number of times education received in past 12 months (n=67).

Table 19. Location where respondent or a family member received nature education (n=78).

Education Information Location	Yes	No
Chautauqua Ranger Cottage	40%	60%
Staff at the trailhead	33%	67%
Staff on the trail	32%	68%
Virtual OSMP education program	29%	71%
Online self-learning @OSMP website	24%	76%
Jeff and Paige kids program	18%	82%
School programs	12%	88%
In-person OSMP guided programs	10%	90%
Other*	10%	90%

*Other locations included OSMP Hub and OSMP scavenger hunt.

Table 20. Importance ratings for education topics (n=62).

Education Information Topic	Yes	No
Wildlife/vegetation	74%	26%
Rules/regulations	29%	71%
Trail directions	27%	73%
OSMP land management	21%	79%
Safety tips	21%	79%
Other*	6%	94%

*Other topics included the history of the area and kid's programming.

3.6.3. Charter purposes

Several charter purpose statements were rated extremely or moderately important by >90% of respondents (Table 21).

- Preservation of scenic areas or vistas (95%)
- Preservation of land for its aesthetic value and contribution to quality of life (94%)
- Preservation of fragile ecosystems (93%)
- Preservation of land for passive recreational use (93%)
- Preservation or restoration of unusual or unique natural areas (93%)
- Preservation of water resources in their natural or traditional state (92%)

The relatively least important charter purpose was preservation of agricultural uses and land suitable for agricultural production, however this purpose was still rated extremely or moderately important by the majority of respondents (65%).

Table 21. Importance ratings of OSMP's charter purposes.

Charter Purpose Statement	Extremely Important	Moderately Important	Somewhat Important	Slightly Important	Not At All Important
Preservation of land for its aesthetic value and contribution to quality of life (n=1,568)	78%	16%	4%	1%	0.6%
Preservation of scenic areas or vistas (n=1,571)	77%	18%	4%	1%	0.4%
Preservation of fragile ecosystems (n=1,493)	76%	17%	5%	1%	0.5%
Preservation of water resources in their natural or traditional state (n=1,565)	74%	18%	6%	1%	0.5%
Preservation of land for passive recreational use (n=1,420)	72%	21%	5%	0.7%	0.7%
Preservation or restoration of unusual or unique natural areas (n=1,540)	72%	21%	5%	1%	0.7%
Utilization of land for shaping the development of the city and limiting sprawl (n=1,371)	57%	23%	12%	5%	4%
Utilization of land to prevent encroachment on floodplains (n=1,551)	55%	29%	11%	3%	1%
Utilization of non-urban land for spatial definition of urban areas (n=1,455)	45%	27%	15%	7%	5%
Preservation of agricultural uses and land suitable for agricultural production (n=1,609)	39%	26%	20%	9%	6%

3.6.4. Visitor use management

This section explored visitor support for 26 various strategies OSMP might employ to manage increasing visitation, address visitor conflict, and protect plants and wildlife. Each strategy was unique to the 3 management themes, except the strategy of "keeping things the way they are now", which was asked about in all three. It's important to consider some limitations of the data, such as sample size variations across strategies and activity groups. However, the findings offer valuable insights for OSMP and specific activity ratings for all three themes can be found in Appendix D (Table D- 18, Table D- 19, and Table D- 20).

Addressing Increasing Visitation

Visitors are open to some trail expansion strategies for managing increased access, but they also prioritized maintaining the natural character and access to trails over permits and restrictions. Overall strong support for new trails (77%) and trailheads (73%) was contrasted with opposition to hardening existing trails (63%), suggesting that the character of trails is also important (Table 22). Support for constructing new trails varied by activity group ranging from 72% for hikers/walkers to the highest level of support coming from bikers (90%). Opposition to requiring permits or reservations (62%) suggested that open access is important to many visitors. Widening existing trails is fairly evenly rated with opposition and neutrality across hikers/walkers dog walkers runners, and bikers. Runners had the highest opposition (36%) to update no-parking hours "sunset to sunrise" compared to other activity group's opposition ratings ranging from 21-28%. A strategy that received similar support across all activity types was closing OSMP parking lots when full and letting a car in when someone leaves. Overall, there was support (38%) and neutral (38%) ratings, yet bikers had the highest support (51%).

Addressing Visitor Conflict

Overall, the most supported strategies to address visitor conflict were for keeping things generally the way they are now (56%) and for requiring one-way travel for cyclists on trails (54%; Table 23). These two strategies were the top highest support ratings for visitor conflict management, yet are the lowest percentages for the top two support ratings across the three management themes, with the other top two support ratings averaging 75%.

Strategies focusing on user separation and clear expectations received mixed support by individual activity groups. Requiring one-way travel for cyclists garnered overall support (54%), with dog walkers (60%) and hikers/walkers (59%) most in favor. However, runners (45%) and bikers (39%) were less enthusiastic. Similarly, requiring dogs to be leashed had moderate support (49%), with bikers (62%) having the highest level of support, whereas dog walkers (56%) had the most opposition. Conversely, designating or restricting trails for specific user groups (cyclists only, dogs prohibited and equestrian only) received the most overall opposition (42%, 43%, 44%, respectively). However, ratings contrasted between various user groups for

these three management strategies. In designating existing OSMP trails as cyclist only, bikers had the highest support ratings (38%) and the least opposition rating (32%), where opposition from other user groups was 57% for runners, 42% for dog walkers, and 41% for hikers/walkers. Although designating more existing trails as dogs prohibited was opposed by 71% of dog walkers, other activity groups opposition was mixed ranging from 38% for hikers/walkers, 45% for runners and 34% for bikers.

Several other strategies received high opposition ratings by individual activity groups if the strategy were to restrict or impose additional rules on the activity group they are a part of. For example, prohibiting cyclists on existing trails was opposed by 64% of bikers and requiring dogs to be on leash was opposed by 56% of dog walkers. Yet, other activity groups had mixed support and opposition for each of these strategies. These findings highlighted the importance of considering different user perspectives when developing conflict resolution strategies.

Protecting Plants and Wildlife

Strategies that encourage responsible use received strong support. Requiring visitors and dogs to stay on designated trails received high overall support (78% and 68%, respectively; Table 24). However, 36% of dog walkers opposed requiring dogs to stay on designated trails, whereas hikers/walkers, runners and bikers had opposition ratings of 10%. For supporting this strategy, bikers had the strongest support (74%), followed by hikers/walkers (72%). Bikers also had the strongest support of the activity groups for requiring visitor to stay on designated trails (85%), along with closing trails when muddy (74%).

There is overall support for maintaining the status quo (72% for "no action"), with dog walkers having the most support at 78%, as compared to the other activity groups support rating at 70%. While some opposition was expressed for closing areas seasonally (19%) or closing parking areas at night (19%), these percentages were relatively low. Runners opposed both of these strategies more than any activity group (24% and 27%, respectively). Permanently closing and restoring undesignated trails was also highly opposed by runners (28%) as compared to all activity groups which rated opposition to this strategy at 17%. In general, this data suggests most visitors recognize the importance of minimizing their impact on the natural environment.

Table 22. Support ratings of management strategies for addressing increasing visitation levels.

Increasing Visitation Management Strategy	Support	Neutral	Oppose
Constructing new trails (n=671)	77%	17%	6%
Constructing new trailheads (n=697)	73%	21%	6%
Encouraging visitors to frequent lesser visited areas by adding amenities (n=713)	57%	26%	16%
Providing low or no-cost shuttles (n=664)	52%	36%	11%
Keeping things generally the way they are now (n=679)	50%	44%	6%
Adding additional parking to existing trailheads (n=654)	48%	30%	22%
Update no-parking hours "sunset to sunrise" (n=673)	39%	36%	25%
Closing OSMP parking lots when full and letting a car in when someone leaves (n=646)	38%	38%	24%
Widen existing trails (n=682)	23%	40%	37%
Charging for parking at more OSMP trailheads (n=649)	21%	24%	55%
Requiring a permit or reservation during peak visitation times (n=673)	17%	22%	62%
Hardening existing trails (n=696)	12%	25%	63%

Table 23. Support ratings of management strategies for addressing visitor conflict.

Visitor Conflict Management Strategy	Support	Neutral	Oppose
Keeping things generally the way they are now (n=679)	56%	37%	6%
Requiring one-way travel for cyclists on trails (n=715)	**54%**	**31%**	**15%**
Requiring dogs to be on leash (n=692)	49%	24%	27%
Designating more existing OSMP trails as cyclist prohibited (n=712)	**38%**	**31%**	**31%**
Establishing specific times of day for cyclists and hikers on trails (n=725)	33%	26%	41%
Alternating days for cyclists and hikers on trails (n=712)	**32%**	**26%**	**41%**
Designating existing OSMP trails as cyclist only (n=684)	29%	29%	42%
Designating more existing OSMP trails as dogs prohibited (n=671)	**25%**	**32%**	**43%**
Designating existing OSMP trails as equestrian only (n=675)	21%	35%	44%

Table 24. Support ratings of management strategies for protecting plants and wildlife.

Plants and Wildlife Management Strategy	Support	Neutral	Oppose
Requiring visitors to stay on designated trails (n=724)	78%	13%	10%
Keeping things generally the way they are now (n=715)	72%	**25%**	**3%**
Requiring dogs to stay on designated trails (n=723)	68%	18%	14%
Closing trails when muddy (n=700)	59%	**23%**	**18%**
Permanently closing and restoring undesignated trails (n=724)	56%	27%	17%
Closing trailhead parking areas at night with vehicle gates (n=722)	51%	**30%**	**19%**
Closing areas seasonally (n=709)	51%	30%	19%

Overall Considerations

Collectively, these findings offer valuable insights for OSMP in developing visitor management strategies. While the results suggest a general support among respondents to accommodate increasing visitation, preserving the natural character of the trails and minimizing conflict between user groups are also priorities. Strategies promoting responsible use and clear communication are also well supported by visitors. Additionally, considering the perspectives of different user groups when developing management strategies is likely to be critical for achieving successful implementation.

It is also worth noting “keeping things generally the way they are now" received relatively high support across all three themes (increasing visitation, visitor conflict, plants and wildlife), ranging from 50% to 72%, with only 3-6% opposing (the remainder are neutral). This suggests many visitors may be satisfied with the current management approach.

IV. DISCUSSION

The 2021-2023 Public Opinion and Visitor Experience Survey (POVES) results paint a multifaceted picture of the visitor landscape within the City of Boulder's Open Space and Mountain Parks (OSMP) system, revealing several key themes that offer valuable insights for management and planning.

THE EVOLVING VISITOR DEMOGRAPHIC

The survey findings highlight a demographic shift within the OSMP visitor base. While the majority of visitors continue to be Boulder County residents, there's a notable increase in the proportion of older visitors (60+ years old) and a trend towards more individuals visiting alone. This suggests that OSMP is catering to older population and that people are increasingly recreating on their own. The survey also reveals a higher socioeconomic status among OSMP visitors compared to the general Boulder County population, indicating that OSMP may be more accessible to those with higher incomes and educational attainment.

THE MULTIFACETED MOTIVATIONS FOR VISITATION

The survey findings underscore the diverse motivations driving people to visit OSMP. While physical fitness and enjoying nature remain primary motivators, the importance of spending time with dogs and family/friends is also evident. The high value placed on scenery/viewpoints and close-by access further emphasizes the importance of preserving the natural beauty and accessibility of OSMP lands. The increase in visitation frequency, with most visitors coming at least once a week, suggests that OSMP plays a vital role in the lives of local residents, providing opportunities for recreation, relaxation, and connection with nature.

BALANCING ACCESS AND PRESERVATION

The survey results highlight the delicate balance between providing access and preserving the natural character of OSMP. The strong support for new trails and trailheads, coupled with the opposition to hardening existing trails, indicates that visitors value both access and the preservation of the natural experience. The survey also reveals that some visitors have been displaced from areas they used to frequent, primarily due to crowding, issues with dogs, and trail closures. This underscores the need for adaptive management strategies that can accommodate increasing visitation while minimizing impacts on natural resources and visitor experiences.

NAVIGATING VISITOR CONFLICT AND PROMOTING RESPONSIBLE USE

The survey findings suggest that visitor conflict, while relatively low, remains a complicated management topic. The mixed support for strategies focusing on user separation and clear expectations highlights the complexity of managing diverse recreational activities and user groups within OSMP. The survey also reveals the importance of promoting responsible use and clear communication, with strong support for requiring visitors and dogs to stay on designated trails. This emphasizes the need for continued education and outreach efforts to foster a culture of stewardship and minimize visitor impacts on the natural environment.

The COVID-19 Legacy

The survey findings also shed light on the impacts of the COVID-19 pandemic on visitation patterns at OSMP. While most visitors have returned to their pre-pandemic habits, the pandemic appears to have influenced visitation patterns in both directions, with some visiting more frequently and others less so. The survey also reveals that concerns about safety and crowding played a significant role in affecting visitation during the pandemic, highlighting the importance of adaptive management strategies that can respond to changing circumstances and visitor needs.

Looking Ahead: Data-Driven Decision Making

The 2021-2023 POVES provides a wealth of data that can inform future planning and management decisions for OSMP. By utilizing these insights, OSMP can continue to provide high-quality recreational opportunities while preserving the natural beauty and ecological integrity of this valuable public land. The survey findings also underscore the importance of ongoing monitoring and evaluation to track changes in visitor demographics, behaviors, and preferences, and to adapt management strategies accordingly.

Starting in 2024, we have transitioned to administering POVES annually, with a reduced sampling intensity, visiting all locations over a three-year cycle. The continued use of visitor surveys, coupled with other forms of public engagement, will be crucial for ensuring that OSMP remains a cherished and sustainable resource for generations to come.

Applications

The insights gleaned from POVES serve a range of management applications that contribute to the adaptive management and data-driven decision-making processes within OSMP. These applications include:

- **Speaking to visitor, policy, and recreation research topics:** The survey data provides valuable insights into visitor demographics, behaviors, preferences, and experiences, which can inform future research on various topics related to visitor management, policy development, and recreation planning.
- **Informing Master Plan strategy implementation and evaluation:** The survey results can be used to assess the effectiveness of existing management strategies outlined in the Master Plan and guide the implementation of new strategies to address emerging trends and challenges.
- **Supporting data-informed decision-making and public processes for future recreation planning and Visitor Master Plan updates:** The survey data offers objective evidence to support decision-making and facilitate public engagement in future recreation planning efforts and updates to the Visitor Master Plan.
- **Providing insight for operations and day-to-day management, such as amenity provision:** The survey findings can inform operational decisions related to the provision

and maintenance of amenities, ensuring they meet the needs and expectations of visitors.

- **Detecting changes in visitor demographics, attributes, and preferences:** The longitudinal nature of the survey allows for the tracking of changes in visitor demographics, behaviors, and preferences over time, enabling OSMP to adapt its management strategies to meet the evolving needs of the community.
- **Determining variance in visitor attributes and recreation preferences across time and space:** The survey data can be analyzed to identify variations in visitor characteristics and preferences across different time periods and locations within OSMP, facilitating targeted management interventions and tailored visitor experiences.

V. REFERENCES CITED

City of Boulder. (2005). Visitor Master Plan. City of Boulder, Open Space and Mountain Parks Department, Boulder, Colorado.

City of Boulder. (2019). Master Plan. City of Boulder, Open Space and Mountain Parks Department, Boulder, Colorado.

Giolitto, M. (2012). City of Boulder Open Space and Mountain Parks Department 2010-2011 Visitor Survey Report. City of Boulder, Open Space and Mountain Parks Department, Boulder, Colorado.

Leslie, C. (2018). 2016-2017 Visitation Estimate Report. The City of Boulder, Open Space and Mountain Parks Department. Boulder, Colorado.

VanderWoude, D., Seidel, H., Leslie, C., and Reed, A. (2024). City of Boulder Open Space and Mountain Parks 2021-2023 Public Opinion and Visitor Experience Survey Two-Year Monitoring Protocol. The City of Boulder, Department of Open Space and Mountain Parks. Boulder, Colorado.

VanderWoude, D. and Kellogg, A. (2018). 2016-2017 Visitor Survey Report. City of Boulder Open Space and Mountain Parks Department. Boulder, Colorado.

Vaske, J. & Donnelly, M. (2008). Visitor Characteristics and Beliefs about Boulder Open Space and Mountain Parks. HDNRU Report No. 78. Colorado State University, Warner College of Natural Resources, Human Dimensions of Natural Resources, Fort Collins, Colorado.

Vaske, J. J. (2019). *Survey Research and Analysis* (2nd ed.). Urbana, IL: Sagamore- Venture Publishing.

5.1. ONLINE RESOURCES

About the American Community Survey section https://www.census.gov/programs-surveys/acs/about.html accessed on 8/26/24

Open Space and Mountain Parks, About OSMP section www.bouldercolorado.gov/osmp accessed on 7/30/2024

Boulder City Charter, Article XII Section 176 section https://library.municode.com/co/boulder/codes/municipal_code?nodeId=THCHBOCO_ARTXIIOPSP_S176OPSPPUENSPLA accessed on 9/6/2023

American Community Survey demographic and housing estimates for Boulder city and County of Boulder section

https://data.census.gov/table/ACSDP5Y2021.DP05?q=United%20States&g=010XX00US_160XX00US0807850&d=ACS%205-Year%20Estimates%20Data%20Profiles accessed on 11/27/2023

World Health Organization, Coronavirus disease (COVID-19) pandemic section https://www.who.int/europe/emergencies/situations/covid-19) accessed on 8/5/24

Interagency Visitor Use Management Council Glossary of Key Terms (IVUMC) section https://visitorusemanagement.nps.gov/Content/documents/Glossary.pdf accessed on 8/5/24

VI. GLOSSARY OF TERMS

As defined for use in this study.

Access point: Where visitors can enter/exit OSMP-managed lands, including designated and undesignated locations. Access point identification criteria include:

- Estimated annual visitation of at least 1,000 annual visits (average of three visits per day)
- Accessible without traveling across non-OSMP property (unless OSMP has explicit permission to be on the property)
- Open to visitor access for most of the study period
- If an undesignated trail, it was established and estimated to receive at least three visits per day

American Community Survey (ACS): The American Community Survey is an ongoing survey sent to a sample of addresses on topics including demographics, housing, and education (About the American Community Survey section).

COVID-19 pandemic: A global outbreak of coronavirus- an infectious disease caused by the severe acute respiratory syndrome coronavirus 2. The World Health Organization characterized the outbreak as a pandemic on March 11, 2020 and on May 5, 2023 stated the global emergency it caused was no longer a Public Health Emergency of International Concern (World Health Organization, Coronavirus disease (COVID-19) pandemic section).

Designated trail: Trails which have a way-finding sign with a trail name and are maintained (City of Boulder, 2019).

Eligible visitors: Any person traveling on OSMP lands or trails excluding:

- Any person, paid or non-paid, conducting official OSMP business (i.e., 'on the clock') at the time of the survey; this includes OSMP staff, contractors, lessees, researchers, and volunteers.
- Any person who has previously completed a POVES questionnaire (either version/subset).
- Any person passing by the survey location who has just entered OSMP (not yet traveled on a trail that day).
- Any person who is exiting the selected access point but is not done with their OSMP trip; and/or is continuing on somewhere further upon OSMP.
- Any person exiting from a different (but likely nearby) access point.
- Any person observed to enter/exit ONLY to use the bathroom OR to take a photograph OR never leave the parking lot.
- Any person who is on the trail less than 10 minutes.

- Any person under the age of 18 years old (17 or younger).
- Any person that does not speak English or Spanish fluently enough to complete the English or Spanish versions of the questionnaire.
- Any person with a limitation preventing them from taking the questionnaire.
- Any person leading a group of over 50 individual participants.

Mean: The average of a collection of numbers and is calculated by dividing the sum of the collection of numbers by the total number of numbers.

Median: The middle number in an ordered list of a collection of numbers.

Multi-stage sample: A sampling design method that divides the target population into stages/groups for conducting research more practically.

Multi-use trail: A trail designed and managed to accommodate biking and pedestrian travel, and in some cases, equestrian or authorized motor vehicle use.

Pedestrian trail: A trail designed and managed for pedestrian uses, such as walking, hiking, or running, that is not managed for biking.

Questionnaire: A research tool that includes at least one question which is either open-ended or closed and employs an oral, written or internet-based method for asking these questions.

Respondent: An individual from the target population who completes the questionnaire answering questions about their experience on Open Space and Mountain Parks upon the conclusion of their visit.

Response rate: The proportion of eligible visitors contacted by the survey administrator who agreed to participate in the survey.

Sample: All eligible visitors within the target population who participated in the survey at selected entry/exit access points during the data collection monitoring period.

Sample locations: All access points as defined in this study.

Sample frame: The complete list of OSMP sample locations.

Subset: A sub group of questions within each POVES questionnaire version. Each “Recreation Experience” and “Land Management” version has a subset- Subset A and B.

Survey: A type of research usually involving administering questionnaires to a sample of respondents selected from a particular population (Vaske, 2019).

Target population: All eligible visitors.

Trail Study Area (TSA): TSA plans were identified in the Visitor Master Plan (VMP) as area-specific plans to establish implementation strategies that improve visitor experience and provide a sustainable trail system while protecting natural and cultural resources (City of Boulder, 2005).

Visitation volume classes: Ranges of visitation used to classify OSMP access points. Current classes and associated annual visitation ranges are (Leslie, 2018):

- Very high: >200,000 visits
- High: 75,000- 199,999 visits
- Medium: 25,000 – 74,999 visits
- Low: 10,000 – 24,999 visits
- Very low: 1,000 – 9,999 visits
- Below limit: <1,000 visits

Visitor Master Plan (VMP): A city of Boulder Open Space and Mountain Parks plan created in 2005 with the purpose of providing a framework for decisions that will ensure a continued high quality visitor experience, while at the same time ensuring that the lands are protected and preserved for future generations (City of Boulder, 2005).

Undesignated trail: Trails created or worn into the landscape by visitors repeatedly walking off of designated trails. Sometimes, undesignated trails begin as wildlife or cattle trails that attract the interest of hikers or other visitors. They are not shown on public trail maps and are not maintained (City of Boulder, 2019).

Version: A sub group of POVES questionnaire questions focused on either recreation experience or land management topics.

Visitor: The person visiting OSMP. Any person coming to OSMP is considered a visitor, regardless of personal residency location (i.e. “locals” are visitors for purposes of recreation management).

Visitor experience: The perceptions, feelings, and reactions that a visitor has before, during, and after a visit to an area (IVUMC, 2014).

Visitor use: Human presence in an area for recreational purposes, including education, interpretation, inspiration, and physical and mental health (IVUMC, 2014).

Visitor use management: Proactive and adaptive process for managing characteristics of visitor use and the natural and managerial setting, using a variety of strategies and tools to achieve and maintain desired resource conditions and visitor experiences (IVUMC, 2014).

APPENDIX A: RATIONAL FOR INTEGRATING VISITOR AND RESIDENT SURVEYS

OVERVIEW

The 2021-2023 Public Opinion and Visitor Experience Survey (POVES) includes some strategic enhancements to how we, as a department, have historically collected and managed our major public surveys. This briefing explains the rationale behind the new survey approach, the benefits it will provide, and its relation to the previous surveys we have conducted over the years.

BACKGROUND

OSMP and its predecessors have a long history of conducting public surveys, dating back several decades. The 2005 Visitor Master Plan identified public surveys as a monitoring tool to cyclically obtain representative data on various topics such as opinions of OSMP services and facilities, experiences with others, perceptions regarding OSMP management, level of visitor satisfaction, and to use the survey data for informed decision making and plan implementation.

Since 2015, design, implementation, and management of scientifically designed surveys for OSMP have fallen under the Human Dimensions Program. Human Dimensions Program staff specialize in scientific survey design, administration, and analysis among our various areas of expertise. Our survey research has focused on many different domains over the years, including collecting descriptive statistics of visitor attributes, trip characteristics, acceptability of different management strategies, conflict perceptions, and quantifying various attitudes and beliefs about specific topics such as undesignated trail use and recreation motivations.

POVES combines content from what we previously administered as the on-site intercept Visitor Survey and the Resident Survey, most recently household-based. While historically they have shared some attributes, such as administration frequency and some general topics of inquiry, they also have several differences (Table A- 1).

Most significantly, since 2004 almost all respondents to the Resident Survey (98 to 99%) have indicated that they visit OSMP lands with the vast majority (> 90%) reporting that they visit at least once per month. The consistency of this pattern since 2004 led staff to conclude that the Resident Survey, as designed, had become duplicative in terms of the population being sampled compared to the on-site Visitor Survey. Furthermore, on-site visitor surveys are designed to capture statistically generalizable and scientifically defensible feedback from all visitors and major sub-populations of visitors, including city and county of Boulder residents.

Another important consideration for moving the Resident Survey questions into the on-site Visitor Survey was that the sampling methods for the Resident Survey have historically excluded sizable sub-populations of city residents. Up through 2010 the Resident Survey was

administered as a telephone survey and included sampling from only active registered voters with listed and in service phone numbers. In 2016, the survey was switched to a mailer survey but still excluded many residents who did not have physical addresses in the US Postal Service database.

Table A- 1. Resident/ Visitor Survey and POVES attributes

Attribute	**Resident Survey**	**Visitor Survey**	**POVES**
Objective	Understand public opinions and attributes, particularly on hot topics or potential management strategies typically not included in the Visitor Survey and from those residents that do not or no longer visit OSMP.	Understand on-site visitor demographics, opinions, service ratings, trip attributes.	Integrate objectives and typical content of former Resident and Visitor Surveys into one comprehensive survey effort.
Target Population	Adult city and county residents within the Boulder Valley Comprehensive Planning areas I/II/III	Adult visitors to OSMP areas open for recreation	Adult visitors to OSMP areas open for recreation
Administration Mode	Mailer	On-site intercept	On-site intercept
Frequency	Every 5 to 6 years	Every 5 to 6 years	On-going
Last Conducted	2016	2016-2017	2021-2023
Sample Duration	2 weeks	12 months	24 months, then on-going
Sample Size	584 (2016)	2,143 (2016-2017)	Expected ~3,300
Response Rate	21%	65%	Expected ~70%
Design and Applicability	Generalized: not applicable to specific contexts, places, or time frames; general public sentiment and at-home perceptions	Specific: applicable to specific contexts, places, and time frames; accurately represent day-to-day on OSMP	Specific: applicable to specific contexts, places, and time frames; accurately represent day-to-day on OSMP
Weighted Results	Yes (introduces unknown error)	No	No
Cost	$65,000 (contractor only, doesn't include staff time)	$100,000 (including data collection, analysis, and reporting)	Expected $225,000 for 2021-2023, then ~$50,000 annually
Generalizability	Generalizable to city and county adults within BVCP areas I/II/III	Generalizable to entire visitor population, including adult city and county residents	Generalizable to entire visitor population, including adult city and county residents

The on-site surveys improve upon our ability to sample from all residence sub-populations who visit OSMP lands by significantly lengthening the data collection period and not excluding portions of city and county residents historically not included in Resident Survey sampling (i.e., residents not registered to vote, adult city residents living in CU managed housing, adult residents not living with the geographic boundaries of Boulder Valley Comprehensive Plan (BVCP) areas I/II/III, and residents with only a P.O. box). The Visitor Survey captures adult visitors on OSMP coming from the city and county of Boulder, as well as from outside the county**.** On-site surveys are designed such that sub-setting to specific groups, such as only city residents, is supported, scientifically defensible, and includes statistically representative results.

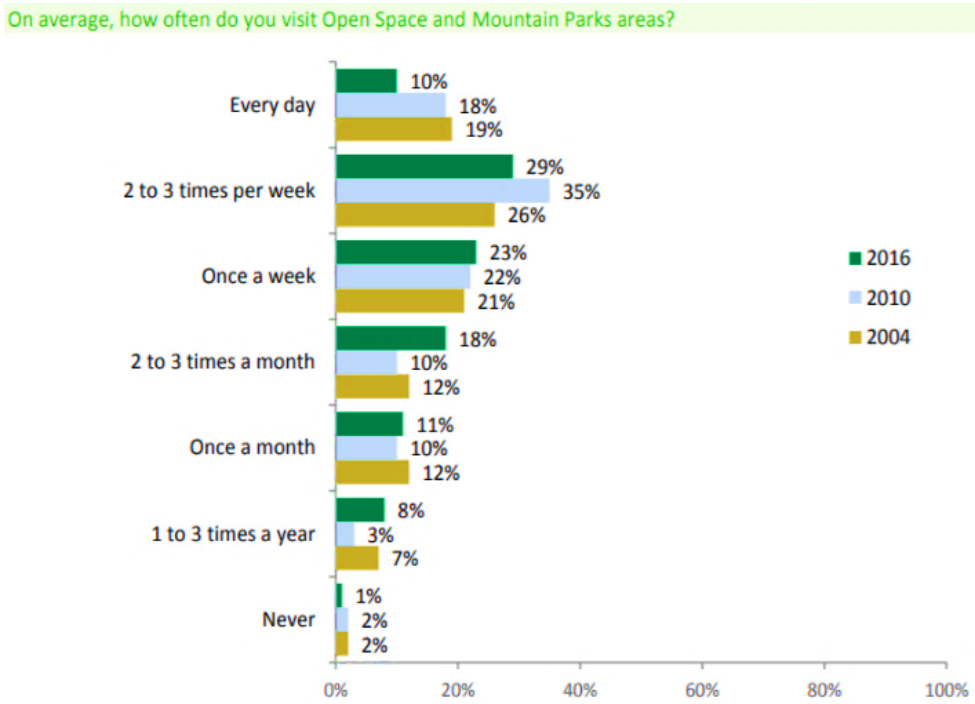


Figure A- 1. OSMP visitation frequency from the 2016 Resident Survey Report.

On-site intercept surveys are administered to visitors at the end of their trip, just before leaving OSMP lands, which provides everyone an opportunity to reflect on the experiences they just had. On-site surveys are the most accurate method to quantify desired metrics such as activity distributions and conflict rates and offer the opportunity to hear from many more city residents than are captured in the Resident Survey.

One of the Resident Survey's secondary objectives was to foster engagement with residents that have never visited OSMP lands or used to visit but no longer do. However, since 2004, the percent of Resident Survey respondents who say they never visit OSMP lands has been less than two percent and, most recently (2016), less than one percent (Figure A- 1). There is value of inquiring with populations who do not actively visit OSMP lands. However, the Resident

Survey is unsuccessful at eliciting responses from this portion of the city and county population.

Historically, the Visitor and Resident Surveys have asked similar questions regarding visitation frequency, experiences with other visitors, and activity participation, but in such a way that they are not directly comparable. By having two different results for similar questions, confusion and misuse of data occurs when trying to determine precisely what each respective result can or cannot be extrapolated or generalized to. Thinking ahead, having one comprehensive dataset to look to will support transparency and consistency in reported visitor metrics across department projects and a shared understanding of visitors and associated attributes for anyone interested in these types of data.

Finally, given the low response rate, short sample duration, incomplete geographic coverage, higher cost per response, need for weighting and associated introduction of unquantifiable error, and redundancy with some Visitor Survey questions, we recommend no longer conducting the Resident Survey as historically designed and implemented. To gather input from residents that no longer visit or have never visited OSMP, a more effective approach may be to identify underrepresented demographic groups from the on-site survey, and then work to gather perceptions via more targeted methods, including reasons for not currently visiting.

STRATEGIC ENHANCEMENT

A key enhancement of the 2021-2023 POVES is the move to an on-site digital survey platform (e.g., tablet/iPad). A digital platform allows us much more flexibility to dynamically structure surveys for field administration, including randomizing which survey subtopic a respondent might receive. Effectively, this allows us to inquire into multiple areas of interest within a single survey effort, but without making the survey too long for any one person.

A significant portion of the resources required to implement a survey project occur during the research design and questionnaire development phases. However, once the research design is finalized, the cost to collect additional survey responses is relatively low. Thus, by combining the initial research design and questionnaire development work for Visitor and Resident surveys into a single survey effort, we have significantly reduced the overall cost when compared to implementing two separate survey efforts. We reinvested these savings into increasing the field data collection effort to capture more survey responses. A larger sample size will, in turn, provide improved spatial coverage to support future system-wide and spatially specific planning efforts. In short, this will allow us to collect more samples at individual locations so that we can provide reliable statistics about specific trailheads and smaller geographic regions than we have in the past. This is important as we are often asked to provide statistics for smaller geographic regions to support area planning and management efforts. Lastly, by moving to a digital survey platform, we have significantly reduced the time necessary

for manual quality control of data, thus lending more time for analysis and reporting capabilities.

SUMMARY

Integrating Resident and Visitor Survey content into one comprehensive on-site effort achieves the following:

- Reduces design and implementation time and cost by having a common administration mode,
- Reduces overall cost of formerly separate survey projects,
- Reduces potential confusion and data misinterpretation caused by having two incomparable results from two separate survey projects for similar items such as activity participation or perceived conflict,
- Supports a shared understanding of visitor attributes by having one comprehensive dataset to look to,
- Improves scientific defense as on-site surveys have a much higher response rate and no need to weight results, and
- Reduces survey fatigue for Boulder residents by eliminating a mailer survey in which almost all (99% in 2016) of respondents indicated that they actively visited OSMP lands (and thus are also part of the POVES survey population).

To gather input from residents that no longer visit or have never visited OSMP, and to quantify any equity in access concerns, a more effective approach may be to identify underrepresented demographic groups from the on-site survey, and then work to gather perceptions and reasons for not currently visiting via more targeted methods.

ONLINE REFERENCES

2005 Visitor Master Plan
2016 Resident Survey
2016-2017 Visitor Survey

APPENDIX B: 2021-2023 POVES SAMPLE LOCATIONS

The 2021-2023 POVES sample included 184 data collection locations, most visited four times and a handful of sites visited two or three times due to closures or other events leading to sessions being canceled.

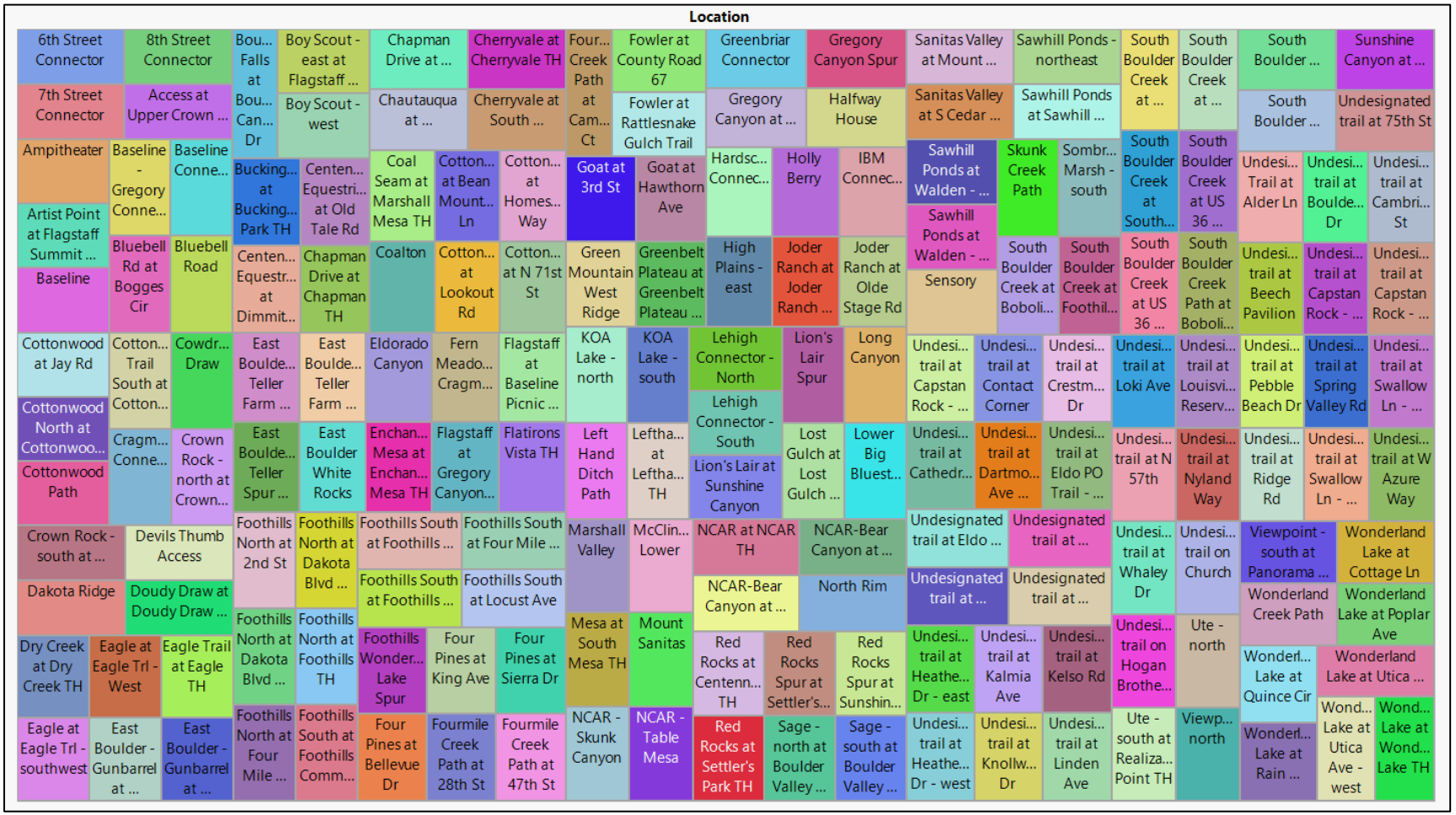


Figure B- 1. All 2021-2023 POVES sample locations.

Table B- 1. All 2021-2023 POVES sample locations and various attributes per site.

ID #	Site Loca on Name	Use Type	Designa on	Visita on Volume Class	Management Area Designa on	TSA Name	Surveys Received	% of Total
96	6th Street Connector	Pedestrian	Designated	Medium	Passive Recrea on Area	West	38	1%
210	7th Street Connector	Pedestrian	Designated	Medium	Passive Recrea on Area	West	13	<1%
213	8th Street Connector	Pedestrian	Designated	Medium	Passive Recrea on Area	West	7	<1%
184	Access at Upper Crown Rock Pulloff	Pedestrian	Undesignated	Very Low	Passive Recrea on Area	West	0	0%
206	Ampitheater	Pedestrian	Designated	Medium	Passive Recrea on Area	West	16	1%
187	Ar st Point at Flagstaff Summit West TH	Pedestrian	Designated	Medium	Passive Recrea on Area	West	10	<1%
217	Baseline	Pedestrian	Designated	Medium	Passive Recrea on Area	West	44	1%
207	Baseline - Gregory Connector	Pedestrian	Designated	Very Low	Passive Recrea on Area	West	6	<1%
203	Baseline Connector	Pedestrian	Designated	Very Low	Passive Recrea on Area	West	2	<1%
305	Bluebell Rd at Bogges Cir	Pedestrian	Designated	Unassigned†	Passive Recrea on Area	West	29	1%
97	Bluebell Road	Pedestrian	Designated	High	Passive Recrea on Area	West	54	2%
459	Boulder Falls at Boulder Canyon Dr	Pedestrian	Designated	Very High	Unassigned	Unassigned	50	2%
192	Boy Scout - east at Flagstaff Summit East TH	Pedestrian	Designated	Very Low	Passive Recrea on Area	West	1	<1%
188	Boy Scout - west	Pedestrian	Designated	Very Low	Passive Recrea on Area	West	4	<1%
269	Buckingham at Buckingham Park TH	Pedestrian	Designated	Medium	Passive Recrea on Area	North	4	<1%
225	Centennial - Equestrian at Old Tale Rd	Mul -Use	Designated	Medium	Natural Area	East	40	1%
223	Centennial Equestrian at Dimmit Dr	Pedestrian	Designated	High	Natural Area	East	4	<1%
172	Chapman Drive at Chapman TH	Mul -Use	Designated	Medium	Habitat Conserva on Area	West	33	1%
304	Chapman Drive at Flagstaff Rd	Mul -Use	Designated	Low	Passive Recrea on Area	West	15	<1%
218	Chautauqua at Chautauqua TH	Pedestrian	Designated	Very High	Passive Recrea on Area	West	86	3%
245	Cherryvale at Cherryvale TH	Mul -Use	Designated	Medium	Habitat Conserva on Area	East	1	<1%
252	Cherryvale at South Boulder Road	Mul -Use	Designated	Low	Natural Area	East	10	<1%
258	Coal Seam at Marshall Mesa TH	Mul -Use	Designated	Medium	Passive Recrea on Area	South	44	1%
264	Coalton	Mul -Use	Designated	Low	Habitat Conserva on Area	South	16	1%
121	Co ontail at Bean Mountain Ln	Mul -Use	Designated	Medium	Natural Area	East	17	1%
120	Co ontail at Homestead Way	Mul -Use	Designated	Unassigned†	Natural Area	East	30	1%
90	Co ontail at Lookout Rd	Mul -Use	Designated	Low	Natural Area	East	16	1%
276	Co ontail at N 71st St	Mul -Use	Designated	Medium	Natural Area	East	25	1%
140	Co onwood at Jay Rd	Mul -Use	Designated	Medium	Natural Area	East	27	1%

ID #	Site Loca on Name	Use Type	Designa on	Visita on Volume Class	Management Area Designa on	TSA Name	Surveys Received	% of Total
158	Co onwood North at Co onwood TH	Mul -Use	Designated	Medium	Natural Area	East	44	1%
303	Co onwood Path	Mul -Use	Designated	Unassigned†	Natural Area	East	48	2%
159	Co onwood Trail South at Co onwood TH	Mul -Use	Designated	Medium	Natural Area	East	6	<1%
281	Cowdrey Draw	Mul -Use	Designated	Medium	Natural Area	South	48	2%
101	Cragmoor Connector	Pedestrian	Designated	Medium	Natural Area	West	30	1%
185	Crown Rock - north at Crown Rock TH	Pedestrian	Designated	Low	Passive Recrea on Area	West	2	<1%
198	Crown Rock - south at Crown Rock TH	Pedestrian	Designated	Low	Passive Recrea on Area	West	9	<1%
118	Dakota Ridge	Pedestrian	Designated	Medium	Passive Recrea on Area	West	46	1%
282	Devils Thumb Access	Pedestrian	Designated	Medium	Natural Area	West	39	1%
108	Doudy Draw at Doudy Draw TH	Mul -Use	Designated	Medium	Natural Area	South	32	1%
103	Dry Creek at Dry Creek TH	Pedestrian	Designated	High	Passive Recrea on Area	East	93	3%
129	Eagle at Eagle Trl - southwest	Pedestrian	Designated	Low	Passive Recrea on Area	North	15	<1%
116	Eagle at Eagle Trl - West	Mul -Use	Designated	Low	Passive Recrea on Area	North	19	1%
115	Eagle Trail at Eagle TH	Mul -Use	Designated	Medium	Passive Recrea on Area	North	24	1%
123	East Boulder - Gunbarrel at Boulderado Dr	Mul -Use	Designated	Medium	Passive Recrea on Area	East	28	1%
128	East Boulder - Gunbarrel at White Rocks TH	Mul -Use	Designated	Very Low	Passive Recrea on Area	East	5	<1%
168	East Boulder - Teller Farm at Teller Farm North TH	Mul -Use	Designated	Medium	Agricultural Area	East	14	<1%
166	East Boulder - Teller Farm at Teller Farm South TH	Mul -Use	Designated	Medium	Agricultural Area	East	33	1%
165	East Boulder - Teller Spur at Willow Creek Drive	Mul -Use	Designated	Very Low	Agricultural Area	East	3	<1%
98	East Boulder Path at 55th St	Mul -Use	Designated	High	Natural Area	East	56	2%
105	East Boulder White Rocks	Mul -Use	Designated	Medium	Habitat Conserva on Area	East	24	1%
315	Eldorado Canyon	Pedestrian	Designated	Very Low	Habitat Conserva on Area	West	4	<1%
220	Enchanted Mesa at Enchanted Mesa TH	Pedestrian	Designated	Medium	Passive Recrea on Area	West	39	1%
310	Fern Meadow-Cragmoor	Pedestrian	Designated	Low	Natural Area	West	9	<1%
197	Flagstaff at Baseline Picnic Area	Pedestrian	Designated	Very Low	Passive Recrea on Area	West	1	<1%

ID #	Site Loca on Name	Use Type	Designa on	Visita on Volume Class	Management Area Designa on	TSA Name	Surveys Received	% of Total
202	Flagstaff at Gregory Canyon Rd	Pedestrian	Designated	Very Low	Passive Recrea on Area	West	11	<1%
333	Fla rons Vista TH	Mul -Use	Designated	Medium	Natural Area	South	45	1%
132	Foothills North at 2nd St	Mul -Use	Designated	Low	Passive Recrea on Area	North	23	1%
131	Foothills North at Dakota Blvd and 2nd St	Mul -Use	Designated	Unassigned†	Passive Recrea on Area	North	20	1%
297	Foothills North at Dakota Blvd and 5th St	Mul -Use	Designated	Unassigned†	Passive Recrea on Area	North	16	1%
91	Foothills North at Foothills TH	Mul -Use	Designated	Low	Passive Recrea on Area	North	6	<1%
332	Foothills North at Four Mile Creek TH	Mul -Use	Designated	Medium	Passive Recrea on Area	North	13	<1%
138	Foothills South at Foothills Community Park North	Mul -Use	Undesignated	Unassigned†	Passive Recrea on Area	North	13	<1%
296	Foothills South at Foothills Community Park South	Mul -Use	Undesignated	Unassigned†	Passive Recrea on Area	North	2	<1%
130	Foothills South at Foothills Dog Park	Mul -Use	Designated	Low	Passive Recrea on Area	North	10	<1%
92	Foothills South at Four Mile Creek TH	Mul -Use	Designated	High	Passive Recrea on Area	North	41	1%
137	Foothills South at Locust Ave	Mul -Use	Designated	Low	Passive Recrea on Area	North	10	<1%
93	Foothills Wonderland Lake Spur	Mul -Use	Designated	Low	Passive Recrea on Area	North	11	<1%
231	Four Pines at Bellevue Dr	Pedestrian	Designated	Low	Passive Recrea on Area	West	8	<1%
230	Four Pines at King Ave	Pedestrian	Designated	Low	Passive Recrea on Area	West	24	1%
232	Four Pines at Sierra Dr	Pedestrian	Designated	Low	Passive Recrea on Area	West	2	<1%
141	Fourmile Creek Path at 28th St	Mul -Use	Designated	Medium	Natural Area	North	20	1%
286	Fourmile Creek Path at 47th St	Mul -Use	Designated	Medium	Natural Area	North	34	1%
142	Fourmile Creek Path at Campo Ct	Mul -Use	Designated	High	Natural Area	North	44	1%
263	Fowler at County Road 67	Mul -Use	Designated	Medium	Natural Area	South	23	1%
267	Fowler at Ra lesnake Gulch Trail	Pedestrian	Designated	Medium	Natural Area	South	16	1%
157	Goat at 3rd St	Pedestrian	Designated	Medium	Passive Recrea on Area	West	6	<1%
155	Goat at Hawthorn Ave	Pedestrian	Designated	Low	Passive Recrea on Area	West	20	1%
244	Green Mountain West Ridge	Pedestrian	Designated	Medium	Habitat Conserva on Area	West	5	<1%
107	Greenbelt Plateau at Greenbelt Plateau TH	Mul -Use	Designated	Medium	Natural Area	South	12	<1%
250	Greenbriar Connector	Pedestrian	Designated	Low	Natural Area	West	9	<1%
205	Gregory Canyon at Gregory Canyon TH	Pedestrian	Designated	Medium	Passive Recrea on Area	West	40	1%
196	Gregory Canyon Spur	Pedestrian	Designated	Low	Natural Area	West	10	<1%
201	Halfway House	Pedestrian	Designated	Low	Passive Recrea on Area	West	5	<1%

ID #	Site Loca on Name	Use Type	Designa on	Visita on Volume Class	Management Area Designa on	TSA Name	Surveys Received	% of Total
106	Hardscrabble Connector	Pedestrian	Designated	Low	Natural Area	West	12	<1%
265	High Plains - east	Mul -Use	Designated	Medium	Habitat Conserva on Area	South	11	<1%
255	Holly Berry	Pedestrian	Designated	Low	Unassigned	West	31	1%
293	IBM Connector	Mul -Use	Designated	Medium	Natural Area	North	3	<1%
271	Joder Ranch at Joder Ranch TH	Mul -Use	Designated	Low	Habitat Conserva on Area	North	6	<1%
270	Joder Ranch at Olde Stage Rd	Mul -Use	Designated	Very Low	Unassigned	North	9	<1%
161	KOA Lake - north	Pedestrian	Designated	Very Low	Natural Area	East	3	<1%
160	KOA Lake - south	Pedestrian	Designated	Very Low	Natural Area	East	4	<1%
302	Le Hand Ditch Path	Mul -Use	Designated	Very Low	Unassigned	East	5	<1%
102	Le hand at Le hand TH	Mul -Use	Designated	Very Low	Natural Area	North	11	<1%
279	Lehigh Connector - North	Pedestrian	Designated	High	Natural Area	West	60	2%
251	Lehigh Connector - South	Pedestrian	Designated	Low	Natural Area	West	17	1%
299	Lion's Lair at Sunshine Canyon	Pedestrian	Designated	Medium	Natural Area	West	17	1%
151	Lion's Lair Spur	Pedestrian	Designated	Low	Natural Area	West	36	1%
195	Long Canyon	Pedestrian	Designated	Very Low	Habitat Conserva on Area	West	1	<1%
180	Lost Gulch at Lost Gulch Overlook TH	Pedestrian	Designated	High	Habitat Conserva on Area	West	24	1%
249	Lower Big Bluestem	Pedestrian	Designated	Very Low	Natural Area	West	9	<1%
259	Marshall Valley	Mul -Use	Designated	Very Low	Passive Recrea on Area	South	1	<1%
219	McClintock Lower	Pedestrian	Designated	Low	Passive Recrea on Area	West	6	<1%
262	Mesa at South Mesa TH	Pedestrian	Designated	High	Passive Recrea on Area	West	27	1%
104	Mount Sanitas	Pedestrian	Designated	High	Passive Recrea on Area	West	27	1%
256	NCAR - Skunk Canyon	Pedestrian	Designated	Low	Unassigned	West	34	1%
283	NCAR - Table Mesa	Pedestrian	Designated	Low	Unassigned	West	28	1%
254	NCAR at NCAR TH	Pedestrian	Designated	Medium	Natural Area	West	78	2%
311	NCAR-Bear Canyon at Stony Hill Rd	Pedestrian	Undesignated	Unassigned[†]	Natural Area	West	8	<1%
312	NCAR-Bear Canyon at Wildwood Rd	Pedestrian	Designated	Low	Unassigned	West	12	<1%
272	North Rim	Mul -Use	Designated	Very low	Agricultural Area	North	9	<1%
156	Red Rocks at Centennial TH	Pedestrian	Designated	High	Passive Recrea on Area	West	27	1%
95	Red Rocks at The People's Crossing TH	Pedestrian	Designated	Medium	Passive Recrea on Area	West	30	1%
149	Red Rocks Spur at Sunshine Canyon Dr	Pedestrian	Designated	Low	Passive Recrea on Area	West	9	<1%
175	Red Rocks Spur at The People's Crossing TH	Pedestrian	Designated	Low	Passive Recrea on Area	West	1	<1%

ID #	Site Loca on Name	Use Type	Designa on	Visita on Volume Class	Management Area Designa on	TSA Name	Surveys Received	% of Total
112	Sage - north at Boulder Valley Ranch TH	Mul -Use	Designated	Medium	Natural Area	North	20	1%
111	Sage - south at Boulder Valley Ranch TH	Mul -Use	Designated	Medium	Passive Recrea on Area	North	14	<1%
117	Sanitas Valley at Mount Sanitas TH	Pedestrian	Designated	High	Passive Recrea on Area	West	72	2%
152	Sanitas Valley at S Cedar Brook Rd	Pedestrian	Designated	Low	Natural Area	West	14	<1%
171	Sawhill Ponds - northeast	Pedestrian	Undesignated	Very Low	Natural Area	East	0	0%
94	Sawhill Ponds at Sawhill Ponds TH	Pedestrian	Designated	Medium	Natural Area	East	20	1%
170	Sawhill Ponds at Walden - east	Pedestrian	Designated	Low	Natural Area	East	7	<1%
169	Sawhill Ponds at Walden - west	Pedestrian	Undesignated	Low	Natural Area	East	11	<1%
190	Sensory	Pedestrian	Designated	Very Low	Passive Recrea on Area	West	3	<1%
306	Skunk Creek Path	Mul -Use	Designated	Very Low	Unassigned	West	13	<1%
235	Sombrero Marsh - south	Pedestrian	Designated	Very Low	Unassigned	East	1	<1%
280	South Boulder Creek at Bobolink TH	Pedestrian	Designated	Medium	Natural Area	East	35	1%
248	South Boulder Creek at Foothills Campus	Pedestrian	Undesignated	Very Low	Natural Area	East	2	<1%
100	South Boulder Creek at Marshall Rd	Mul -Use	Designated	Medium	Natural Area	East	28	1%
222	South Boulder Creek at Ontario Pl	Pedestrian	Undesignated	Low	Natural Area	East	8	<1%
221	South Boulder Creek at South Boulder Rd	Mul -Use	Designated	Very Low	Natural Area	East	2	<1%
314	South Boulder Creek at US 36 North Connector	Mul -Use	Designated	Medium	Natural Area	East	3	<1%
313	South Boulder Creek at US 36 South Connector	Mul -Use	Designated	Medium	Natural Area	East	6	<1%
99	South Boulder Creek Path at Bobolink TH	Mul -Use	Designated	Medium	Natural Area	East	30	1%
119	South Boulder Creek West at S Boulder Crk West TH	Pedestrian	Designated	Low	Natural Area	West	26	1%
146	Sunshine Canyon at Centennial TH	Pedestrian	Designated	High	Passive Recrea on Area	West	26	1%
127	Undesignated trail at 75th St	Pedestrian	Undesignated	Below Limit	Passive Recrea on Area	East	0	0%
300	Undesignated Trail at Alder Ln	Pedestrian	Undesignated	Very Low	Natural Area	West	3	<1%
274	Undesignated trail at Beech Pavilion	Pedestrian	Undesignated	Below Limit	Natural Area	North	1	<1%
122	Undesignated trail at Boulderado Dr	Pedestrian	Undesignated	Medium	Passive Recrea on Area	East	34	1%
124	Undesignated trail at Cambridge St	Pedestrian	Undesignated	Medium	Passive Recrea on Area	East	19	1%
200	Undesignated trail at Capstan Rock - east	Pedestrian	Undesignated	Very Low	Passive Recrea on Area	West	5	<1%

ID #	Site Loca on Name	Use Type	Designa on	Visita on Volume Class	Management Area Designa on	TSA Name	Surveys Received	% of Total
199	Undesignated trail at Capstan Rock - north	Pedestrian	Undesignated	Below Limit	Passive Recrea on Area	West	1	<1%
204	Undesignated trail at Capstan Rock - west	Pedestrian	Undesignated	Unassigned†	Passive Recrea on Area	West	3	<1%
179	Undesignated trail at Cathedral	Pedestrian	Undesignated	Very Low	Habitat Conserva on Area	West	0	0%
183	Undesignated trail at Contact Corner	Pedestrian	Undesignated	Low	Passive Recrea on Area	West	5	<1%
238	Undesignated trail at Crestmoor Dr	Pedestrian	Undesignated	Very Low	Natural Area	East	2	<1%
307	Undesignated trail at Dartmouth Ave East East	Pedestrian	Undesignated	Low	Unassigned	West	37	1%
268	Undesignated trail at Eldo PO Trail - east	Pedestrian	Undesignated	Very Low	Natural Area	South	3	<1%
266	Undesignated trail at Eldo PO Trail - west	Pedestrian	Undesignated	Below Limit	Natural Area	South	3	<1%
173	Undesignated trail at Elephant Bu ress	Pedestrian	Undesignated	Low	Passive Recrea on Area	West	22	1%
239	Undesignated trail at Fairview Rd	Pedestrian	Undesignated	Very Low	Natural Area	East	5	<1%
191	Undesignated trail at Flagstaff Summit Rd	Pedestrian	Undesignated	Very Low	Passive Recrea on Area	West	1	<1%
125	Undesignated trail at Heatherwood Dr - east	Pedestrian	Undesignated	Very Low	Passive Recrea on Area	East	1	<1%
126	Undesignated trail at Heatherwood Dr - west	Pedestrian	Undesignated	Very Low	Passive Recrea on Area	East	1	<1%
153	Undesignated trail at Kalmia Ave	Pedestrian	Undesignated	Medium	Passive Recrea on Area	West	17	1%
143	Undesignated trail at Kelso Rd	Pedestrian	Undesignated	Very Low	Natural Area	North	5	<1%
150	Undesignated trail at Knollwood Dr	Pedestrian	Undesignated	Below Limit	Passive Recrea on Area	West	0	0%
154	Undesignated trail at Linden Ave	Pedestrian	Undesignated	Below Limit	Passive Recrea on Area	West	0	0%
144	Undesignated trail at Loki Ave	Pedestrian	Undesignated	Very Low	Natural Area	North	0	0%
242	Undesignated trail at Louisville Reservoir	Pedestrian	Undesignated	Very Low	Natural Area	East	8	<1%
145	Undesignated trail at N 57th	Pedestrian	Undesignated	Very Low	Natural Area	East	0	0%
243	Undesignated trail at Nyland Way	Pedestrian	Undesignated	Very Low	Natural Area	East	2	<1%
273	Undesignated trail at Pebble Beach Dr	Pedestrian	Undesignated	Below Limit	Natural Area	North	3	<1%
260	Undesignated trail at Richardson*	Pedestrian	Undesignated	Very Low	Habitat Conserva on Area	East	1	<1%
240	Undesignated trail at Ridge Rd	Pedestrian	Undesignated	Very Low	Natural Area	East	3	<1%

ID #	Site Loca on Name	Use Type	Designa on	Visita on Volume Class	Management Area Designa on	TSA Name	Surveys Received	% of Total
136	Undesignated trail at Spring Valley Rd	Pedestrian	Undesignated	Very Low	Passive Recrea on Area	North	2	<1%
237	Undesignated trail at Swallow Ln - north	Pedestrian	Undesignated	Very Low	Habitat Conserva on Area	East	8	<1%
236	Undesignated trail at Swallow Ln - south	Pedestrian	Undesignated	Very Low	Habitat Conserva on Area	East	5	<1%
241	Undesignated trail at W Azure Way	Pedestrian	Undesignated	Low	Natural Area	East	13	<1%
233	Undesignated trail at Whaley Dr	Pedestrian	Undesignated	Very Low	Habitat Conserva on Area	East	1	<1%
246	Undesignated trail on Church	Pedestrian	Undesignated	Low	Habitat Conserva on Area	East	9	<1%
247	Undesignated trail on Hogan Brothers North	Pedestrian	Undesignated	Very Low	Habitat Conserva on Area	East	2	<1%
189	Ute - north	Pedestrian	Designated	Very Low	Passive Recrea on Area	West	6	<1%
182	Ute - south at Realiza on Point TH	Pedestrian	Designated	Medium	Passive Recrea on Area	West	19	1%
177	Viewpoint - north	Pedestrian	Designated	Low	Passive Recrea on Area	West	14	<1%
186	Viewpoint - south at Panorama Point TH	Pedestrian	Designated	Low	Passive Recrea on Area	West	1	<1%
301	Wonderland Creek Path	Mul -Use	Designated	Very Low	Unassigned	East	7	<1%
295	Wonderland Lake at Co age Ln	Mul -Use	Undesignated	Unassigned†	Passive Recrea on Area	North	12	<1%
114	Wonderland Lake at Poplar Ave	Mul -Use	Designated	High	Passive Recrea on Area	North	16	1%
135	Wonderland Lake at Quince Cir	Mul -Use	Designated	High	Passive Recrea on Area	North	60	2%
294	Wonderland Lake at Rain Lilly Ln	Pedestrian	Undesignated	Unassigned†	Passive Recrea on Area	North	2	<1%
113	Wonderland Lake at U ca Ave - east	Mul -Use	Designated	Medium	Passive Recrea on Area	North	31	1%
134	Wonderland Lake at U ca Ave - west	Mul -Use	Designated	Medium	Passive Recrea on Area	North	25	1%
133	Wonderland Lake at Wonderland Lake TH	Mul -Use	Designated	Medium	Passive Recrea on Area	North	30	1%

*Undesignated trail at Richardson was removed from the POVES 2021-2023 sample frame early in the project due to closure for the majority of the study period. However, one ques onnaire from this site was included in the final analysis dataset.

†Unassigned survey loca ons didn't correspond with a monitoring loca on.

APPENDIX C: SEASONAL AND TREND HIGHLIGHTS

These tables are generally presented in the order they appear in the body of the report, with the 2021-2023 seasonal results first, followed by available trend results.

SEASONAL HIGHLIGHTS (2021-2023)

Who are our visitors?

Table C- 1. Age group by 2021-2023 season.

Age Group	2021-2023 Season			
	Fall (n=886)	Spring (n=566)	Summer (n=477)	Winter (n=442)
18 - 19	1%	1%	1%	0%
20 - 29	18%	18%	20%	17%
30 - 39	17%	18%	19%	19%
40 - 49	18%	17%	16%	17%
50 - 59	21%	20%	21%	17%
60 - 69	17%	17%	16%	22%
70 - 79	7%	8%	7%	8%
80 - 89	1%	1%	1%	0%
90 - 99	<1%	0%	<1%	0%
Total	**100%**	**100%**	**100%**	**100%**

Table C- 2. Primary residence by 2021-2023 season.

Primary Residence	2021-2023 Season			
	Fall (n=1,156)	Spring (n=681)	Summer (n=613)	Winter (n=581)
Boulder (within city limits)	59%	52%	60%	62%
In Boulder County (outside city limits)	21%	27%	21%	24%
Outside Boulder County	19%	20%	19%	14%
Total	**100%**	**100%**	**100%**	**100%**

Table C- 3. Years visiting by 2021-2023 season.

Years visiting OSMP	2021-2023 Season			
	Fall (n=947)	Spring (n=554)	Summer (n=483)	Winter (n=450)
First time	12%	12%	13%	7%
Less than 1 year	11%	10%	9%	8%
1 - 2 years	7%	6%	7%	5%
3 - 5 years	12%	14%	12%	15%
6 - 10 years	14%	15%	14%	17%
11 - 20 years	20%	19%	18%	19%
21 years or more	24%	24%	27%	29%
Total	**100%**	**100%**	**100%**	**100%**

How do people visit?

Table C- 4. Primary motivation by 2021-2023 season.

Primary Motivation	2021-2023 Season			
	Fall (n=489)	Spring (n=315)	Summer (n=335)	Winter (n=288)
Physical fitness (exercise)	34%	38%	32%	29%
Enjoying nature	18%	21%	21%	11%
Being with my dog(s)	11%	11%	18%	27%
Spending time with family/friends	9%	5%	6%	12%
Psychological (mental) health	8%	6%	4%	5%
Having fun	6%	4%	4%	4%
Getting myself/my family out of the house	3%	4%	3%	4%
Physical rest/relaxation	3%	4%	4%	1%
Visiting this particular place	2%	2%	4%	2%
Finding solitude	1%	2%	2%	3%
Challenging myself	1%	1%	1%	<1%
Escaping personal/social pressures	2%	0%	1%	<1%
Skills testing/Building my skills	1%	<1%	<1%	<1%
Building self-confidence	0%	<1%	<1%	0%

What are the experiences people have on OSMP lands?

Table C- 5. Encounter rates by 2021-2023 season.

Encounter Rates	2021-2023 Season			
	Fall (n=403)	Spring (n=320)	Summer (n=346)	Winter (n=297)
Hiker/Walker	88%	80%	86%	87%
Biker	33%	41%	37%	21%
Runner	71%	74%	78%	56%
Dog off-leash	39%	47%	50%	51%
Dog on-leash	54%	67%	67%	58%
Horseback rider	2%	<1%	2%	1%
Other*	4%	3%	3%	4%
No encounters	5%	3%	3%	4%

*Other responses included climbers, cross-country skiers, and rollerbladers.

Table C- 6. Average daily conflict rates by 2021-2023 season.

Average Daily Conflict Rates	2021-2023 Season			
	Fall (n=398)	Spring (n=320)	Summer (n=344)	Winter (n=292)
No	92%	95%	92%	93%
Yes	8%	5%	8%	7%

Table C- 7. Crowding at the trailhead by 2021-2023 season.

Crowding at the Trailhead	2021-2023 Season			
	Fall (n=109)	Spring (n=81)	Summer (n=181)	Winter (n=121)
Not at all	64%	58%	38%	52%
Slightly	25%	27%	33%	30%
Somewhat	8%	6%	17%	13%
Moderately	2%	7%	10%	4%
Extremely	1%	1%	3%	1%

Table C- 8. Crowding on the trail by 2021-2023 season.

Crowding on the Trail	2021-2023 Season			
	Fall (n=104)	Spring (n=79)	Summer (n=172)	Winter (n=112)
Not at all	56%	54%	32%	50%
Slightly	32%	28%	37%	31%
Somewhat	6%	13%	19%	14%
Moderately	6%	4%	9%	4%
Extremely	1%	1%	3%	1%

TREND HIGHLIGHTS (2004-2005, 2010-2011, 2016-2017, 2021-2023)

Who are our visitors?

Table C- 9. Primary residence compared to previous surveys.

Primary Residence	2021-2023 (n=3,031)	2016-2017 (n=2,135)	2010-2011 (n=2,523)	2004-2005 (n=2,788)
Boulder (within city limits)	**58%**	55%	59%	57%
Unincorporated Boulder County	**10%**	10%	8%	10%
Other U.S. State	**6%**	7%	8%	7%
Metro Denver	**6%**	7%	9%	8%
Other area in Colorado	**5%**	3%	4%	3%
Lafayette	**4%**	5%	2%	4%
Louisville	**4%**	5%	3%	4%
Longmont	**3%**	3%	3%	4%
Other city in Boulder County	**2%**	2%	1%	1%
Superior	**1%**	2%	2%	1%
Other Country	**1%**	1%	1%	2%

Table C- 10. Primary binned residence compared to previous surveys.

Primary Residence	2021-2023 (n=3,031)	2016-2017 (n=2,135)	2010-2011 (n=2,523)	2004-2005 (n=2,788)
Boulder (within city limits)	58%	55%	59%	57%
Boulder County (outside city limits)	24%	27%	19%	24%
Outside Boulder County	18%	18%	22%	20%

Table C- 11. Total annual household income compared to previous survey.

Income Range	2021-2023 (n=2,748)	2016-2017 (n=1,972)
$200,000 or more	29%	n/a
$150,000 - $199,999	15%	30%
$100,000 - $149,999	19%	21%
$75,000 - $99,999	12%	14%
$50,000 - $74,999	12%	13%
$35,000 - $49,999	5%	8%
$25,000 - $34,999	4%	6%
Less than $25,000	5%	9%
Median*	**$100,000 - $149,999**	**$100,000***

*Roughly speaking as exact break point is unknown due to capturing responses in pre-determined income ranges.

Table C- 12. Highest level of education completed compared to previous survey.

Education	2021-2023 (n=2,350)	2016-2017 (n=2,120)
Some high school	<1%	1%
High school graduate	1%	3%
Some college, no degree	7%	8%
Associate degree	3%	3%
Bachelor's degree	38%	37%
Graduate or professional degree	42%	39%
Ph.D.	8%	9%

Table C- 13. Race compared to previous survey.

Race	2021-2023 (n=2,454)	2016-2017 (n=2,087)
White only	91%	93%
Asian only	3%	3%
Other race*	2%	2%
2 or more races	3%	1%
Black or African American only	<1%	1%
Native Hawaiian or Other Pacific Islander only	<1%	<1%
American Indian or Alaskan Native only	<1%	<1%

*Other responses included Latina, Irish-American, Russian, Nepalese, Mexican, Jewish, Filipino-Irish, and Hispanic.

Table C- 14. Hispanic, Latino, or Spanish origin (of any race) compared to previous survey.

Hispanic, Latino, Spanish origin	2021-2023 (n=2,503)	2016-2017 (n=2,059)
No	94%	95%
Yes	6%	5%

Table C- 15. Age compared to previous survey.

Age Group	2021-2023 (n=2,371)	2016-2017 (n=2,109)	2010-2011 (n=2,455)	2004-2005 (n=2,675)
<20*	1%	2%	2%	3%
20-29	18%	15%	17%	23%
30-39	18%	17%	21%	25%
40-49	17%	21%	21%	23%
50-59	20%	22%	22%	18%
60-69	18%	17%	13%	6%
70+	8%	7%	4%	2%
Median age (years)	**47**	**48**	**42**	**39**
Mean age (years)	**47**	**47**	**44**	**40**

*POVES 2021-2023 required respondents to be at least 18 years old to participate.

Table C- 16. Gender identity compared to previous survey.

Gender	2021-2023 (n=2,255)	2016-2017 (n=2,130)
Woman	47%	52%
Man	50%	48%
Genderqueer/gender non-conforming	1%	<1%
Choose not to identify	2%	n/a
Trans female/trans woman	<1%	<1%
Trans male/trans man	<1%	0%
Different identity	<1%	<1%

Table C- 17. Years visiting compared to previous surveys.

Years Visiting	2021-2023 (n=2,434)	2016-2017 (n=2,084)	2010-2011 (n=2,516)	2004-2005 (n=2,653)
First visit	11%	6%	6%	7%
<1 year	10%	9%		
1 - 2 years	6%	8%	17%	23%
>2 - 5 years	13%	14%	15%	19%
>5 - 10 years	15%	15%	16%	20%
>10 - 20 years	19%	23%	25%	19%
>20 years	26%	24%	22%	14%
Median (years)*	**15 (n=1,922)**	**15 (n=1,761)**	**10 (n=2,358)**	**7 (n=2,384)**

*Median for only respondents having visited at least one year.
Mean is not reported because time period is unknown for respondents who have been visiting for less than one year.

Table C- 18. Average visits per month compared to previous surveys.

Average visits per month	2021-2023 (n=2,857)	2016-2017 (n=2,105)	2010-2011 (n=2,526)	2004-2005 (n=2,573)
First visit	10%	6%	5%	5%
<1 time/month	11%	<1%		
1 - 4 times/month	16%	26%	32%	41%
5 - 12 times/month	25%	27%	27%	26%
13 - 20 times/month	19%	21%	19%	16%
21-29 times/month	8%	7%	7%	6%
30+ times/month	11%	12%	10%	7%
Median (times/month)*	**12 (n=2,280)**	**10 (n=1,979)**	**9 (n=2,381)**	**6 (n=2,436)**

*Median for only respondents having visited at least once per month.

How do people visit?

Table C- 19. Primary activity on day of visit compared to previous surveys.

Primary Activity	2021-2023 (n=3,140)	2016-2017 (n=1,992)	2010-2011 (n=2,272)	2004-2005 (n=2,517)
Hiking	52%	42%	41%	34%
Walking dog(s)	18%	22%	19%	19%
Running	14%	16%	18%	19%
Biking	11%	10%	11%	9%
Climbing/Bouldering	2%	2%	2%	3%
Fishing	<1%	1%	<1%	<1%
Horseback riding	<1%	<1%	<1%	1%
Other*	2%	7%	8%	14%

*Other activities included things such as aerobics, yoga, meditation, photography, and viewing scenery and wildlife.

Table C- 20. Trip duration compared to previous surveys.

Trip Duration in Minutes	2021-2023 (n=3,084)	2016-2017 (n=2,070)	2010-2011 (n=2,511)	2004-2005 (n=2,715)
<30	7%	16%	16%	22%
30-59	15%	33%	35%	35%
60-89	40%	27%	20%	23%
90-119	10%	12%	13%	10%
120+	28%	12%	16%	10%
Median (minutes)	**60**	**60**	**60**	**50**
Mean (minutes)	**85**	**66**	**73**	**59**

Table C- 21. Primary mode of transport compared to previous surveys.

Transport	2021-2023 (n=3,153)	2016-2017 (n=2,122)	2010-2011 (n=2,517)	2004-2005 (n=2,788)
Vehicle	51%	56%	57%	58%
Walk/Run	38%	34%	34%	32%
Bike	10%	9%	9%	9%
Bus	<1%	1%	<1%	1%
Other*	<1%	<1%	<1%	n/a

*Other modes of transport responses included skate, rollerblades, scooter, wheelchair, horse, Lyft, and cab.

Table C- 22. Group size compared to previous surveys.

Group size	2021-2023 (n=2,217)	2016-2017 (n=1,973)	2010-2011 (n=2,536)	2004-2005 (n=2,802)
1	56%	53%	45%	32%
2	31%	36%	36%	41%
3	6%	6%	9%	11%
4	3%	3%	4%	9%
5+	5%	2%	6%	7%

Table C- 23. Group composition compared to previous survey.

Group composition	2021-2023 (n=2,428)	2016-2017 (n=1,891)
Just me	57%	54%
Family	26%	26%
Friends	16%	19%
Organized group	2%	1%

Table C- 24. Number of dogs in group compared to previous surveys.

Number of Dogs in Group	2021-2023 (n=2,413)	2016-2017 (n=1,629)	2010-2011 (n=2,517)	2004-2005 (n=2,805)
0	65%	63%	69%	70%
1	26%	27%	23%	20%
2	7%	9%	6%	8%
3	1%	1%	1%	1%
4	<1%	<1%	<1%	<1%
5+	<1%	<1%	0%	<1%

Table C- 25. Primary motivation compared to previous survey.

Primary Motivation	2021-2023 (n=1,427)	2016-2017 (n=1,891)
Physical fitness (exercise)	33%	34%
Enjoy nature	18%	18%
Being with my dog(s)	16%	14%
Spending time with family/friends	8%	10%
Psychological (mental) health	6%	8%
Having fun	5%	7%
Getting out of the house	3%	n/a
Finding solitude	2%	2%
Psychological rest	n/a	2%
Escape personal/social pressures	1%	2%
Physical rest/relaxation	3%	2%
Visiting a particular place	3%	1%
Learning	n/a	<1%
Skills testing/Building my skills	1%	n/a
Challenging myself	1%	n/a
Building self-confidence	<1%	n/a

What feedback and preferences have visitors shared?

Table C- 26. Encounter ratings compared to previous survey.

Activity	Year	Sample Size	Pleasant	Neutral	Conflict
Hiker/Walker	2021-2023	1,128	82%	17%	0.5%
	2016-2017	1,433	81%	18%	1%
Runner	2021-2023	765	74%	24%	2%
	2016-2017	1,306	75%	23%	2%
On-Leash Dog	2021-2023	811	79%	18%	2%
Off-Leash Dog	2021-2023	616	75%	16%	9%
Dogs	2016-2017	1,470	76%	20%	4%
Biker	2021-2023	378	67%	27%	6%
	2016-2017	662	69%	26%	6%
Other*	2021-2023	43	72%	19%	9%
	2016-2017	62	71%	26%	3%
Horseback Rider	2021-2023	12**	75%	25%	0%
	2016-2017	77	65%	27%	8%

*Other activities included items such as climbers, cross-country skiers, and rollerbladers

**Small sample size and not suitable for generalization

Table C- 27. OSMP area no longer visited compared to previous surveys.

OSMP area no longer visit	2021-2023 (n=829)	2016-2017 (n=1,964)	2010-2011* (n=2,436)
Yes	9%	14%	9%
No	91%	86%	91%

*In 2010-2011 included visiting an area less often or stopped using entirely.

APPENDIX D: 2021-2023 BI-VARIATE HIGHLIGHTS

VISITATION FREQUENCY

Table D- 1. Primary activity by visitation frequency.

Primary Activity	First Time	Less Than 1 Time Per Month	1 Time Per Month	2 - 4 Times Per Month	5 - 12 Times Per Month	13 - 20 Times Per Month	21 - 29 Times Per Month	30 Or More Times Per Month
Hiking/Walking (n=1,483)	14%	14%	3%	15%	22%	16%	7%	8%
Dog walking (n=506)	3%	6%	1%	8%	25%	17%	12%	27%
Running (n=422)	4%	1%	1%	9%	34%	31%	10%	9%
Biking (n=314)	5%	8%	2%	17%	34%	21%	9%	5%
Other* (n=59)	15%	20%	5%	24%	19%	7%	3%	7%
Climbing/Bouldering (n=48)	13%	21%	2%	19%	19%	19%	4%	4%
Fishing (n=10)**	0%	40%	10%	30%	10%	10%	0%	0%
Horseback riding (n=3)**	0%	33%	0%	67%	0%	0%	0%	0%

*Other activities included activities such as wildlife viewing, other types of exercise, photography, painting, and sitting in nature.
**Small sample size and not suitable for generalization.

Table D- 2. Primary residence by visitation frequency.

Primary Residency	First Time	Less Than 1 Time Per Month	1 Time Per Month	2 - 4 Times Per Month	5 - 12 Times Per Month	13 - 20 Times Per Month	21 - 29 Times Per Month	30 Or More Times Per Month
Boulder (within city limits) (n=1,610)	2%	5%	2%	13%	28%	24%	12%	14%
In Boulder County (outside city limits) (n=649)	3%	10%	3%	15%	31%	18%	7%	13%
Outside Boulder County (n=523)	40%	28%	4%	12%	11%	3%	1%	<1%

GROUP COMPOSITION

Table D- 3. Primary activity by group size.

Primary Activity	1 Person	2 People	3 People	4 People	5+ People
Hiking/Walking (n=1,159)	44%	37%	8%	5%	6%
Dog walking (n=412)	63%	31%	3%	1%	2%
Running (n=321)	84%	10%	2%	<1%	3%
Biking (n=221)	70%	24%	2%	1%	2%
Other*(n=46)	35%	22%	17%	4%	22%
Climbing/Bouldering (n=47)	32%	45%	15%	4%	4%
Fishing (n=7)**	43%	43%	0%	14%	0%
Horseback riding (n=2)**	50%	50%	0%	0%	0%

*Other activities included things such as wildlife viewing, other types of exercise, photography, painting, and sitting in nature.
**Small sample size and not suitable for generalization.

Table D- 4. Primary residence by number of dogs in group.

Primary Residency	Didn't have dog	1 dog	2 dogs	3 dogs	4 dogs	5+ dogs
Boulder (within city limits) (n=1,370)	66%	26%	7%	1%	<1%	<1%
In Boulder County (outside city limits) (n=505)	54%	33%	11%	1%	1%	0%
Outside Boulder County (n=442)	74%	17%	7%	1%	<1%	<1%

DAILY CONFLICT RATES

The overall average daily conflict rate was 7%.

Table D- 5. Average annual daily conflict rate by primary activity.

Primary Activity	No (n=1,252)	Yes (n=93)
Hiking/Walking	93%	7%
Dog walking	94%	6%
Running	91%	9%
Biking	94%	6%
Other*	93%	7%
Climbing/Bouldering	100%	0%
Fishing	100%	0%
Horseback riding	100%	0%

*Other activities included things such as wildlife viewing (birding, butterfly watching), other types of exercise (e-biking, skiing, roller blading, skating, snowshoeing, yoga) and other types of activities (photography, painting, sight-seeing, sitting in nature).

Table D- 6. Average daily conflict rate by primary residence.

Primary Residence	No (n=1,206)	Yes (n=92)
Boulder (within city limits)	90%	10%
In Boulder County (outside city limits)	96%	4%
Outside Boulder County	97%	3%

Table D- 7. Average daily conflict rate by age group.

Age Group in Years	No	Yes
18 – 19* (n=10)	100%	0%
20 – 29 (n=174)	97%	3%
30 – 39 (n=174)	92%	8%
40 – 49 (n=176)	93%	7%
50 – 59 (n=197)	92%	8%
60 – 69 (n=177)	92%	8%
70 – 79 (n=74)	93%	7%
80 - 89 (n=8*)	88%	13%
90 - 99 (n=2*)	100%	0%

*Small sample size and not suitable for generalization.

Table D- 8. Average daily conflict rate by years visiting OSMP.

Years Visiting	No	Yes
First time (n=124)	100%	0%
Less than 1 year (n=104)	96%	4%
1 - 2 years (n=70)	90%	10%
3 - 5 years (n=137)	94%	6%
6 - 10 years (n=150)	92%	8%
11 - 20 years (n=215)	94%	6%
21 years or more (n=251)	90%	10%

DISPLACEMENT RATES

The overall displacement rate was 9%.

Table D- 9. Displacement rate by primary residence.

Primary Residence	No (n=744)	Yes (n=68)
Boulder (within city limits)	91%	9%
In Boulder County (outside city limits)	88%	12%
Outside Boulder County	98%	2%

Table D- 10. Displacement rate by age group.

Age Group in Years	No	Yes
18 – 19* (n=8)	100%	0%
20 – 29 (n=107)	98%	2%
30 – 39 (n=133)	96%	4%
40 – 49 (n=121)	90%	10%
50 – 59 (n=119)	88%	12%
60 – 69 (n=113)	87%	13%
70 – 79 (n=38)	79%	21%
80 - 89* (n=4)	100%	0%
90 - 99* (n=2)	50%	50%

*Small sample size and not suitable for generalization.

DAILY CROWDING RATES

The overall average daily moderate or extreme crowding rate was 8%.

Table D- 11. Crowding rate at trailhead by primary residence.

Primary Residence	Not at all	Slightly	Somewhat	Moderately	Extremely
Boulder (within city limits) (n=295)	52%	31%	11%	5%	1%
In Boulder County (outside city limits) (n=100)	50%	25%	16%	7%	2%
Outside Boulder County (n=75)	47%	25%	13%	9%	5%

Table D- 12. Crowding rate on trail by primary residence.

Primary Residence	Not at all	Slightly	Somewhat	Moderately	Extremely
Boulder (within city limits) (n=279)	43%	37%	13%	6%	2%
In Boulder County (outside city limits) (n=98)	52%	27%	14%	7%	0%
Outside Boulder County (n=69)	45%	30%	16%	6%	3%

Table D- 13. Crowding rate at trailhead by primary activity.

Primary Activity	Not at all	Slightly	Somewhat	Moderately	Extremely
Hiking/Walking (n=249)	49%	31%	12%	6%	2%
Dog walking (n=95)	46%	27%	16%	8%	2%
Running (n=95)	57%	24%	11%	7%	1%
Biking (n=27)**	59%	33%	7%	0%	0%
Other* (n=11)**	64%	36%	0%	0%	0%
Climbing/Bouldering (n=8)**	38%	50%	13%	0%	0%
Fishing (n=3)**	67%	0%	33%	0%	0%
Horseback riding (n=1)**	100%	0%	0%	0%	0%

*Other activities included activities such as wildlife viewing, other types of exercise, photography, painting, and sitting in nature.
**Small sample size and not suitable for generalization.

Table D- 14. Crowding rate on trail by primary activity.

Primary Activity	Not at all	Slightly	Somewhat	Moderately	Extremely
Hiking/Walking (n=235)	42%	34%	14%	7%	2%
Dog walking (n=87)	47%	30%	15%	7%	1%
Running (n=92)	42%	36%	14%	5%	2%
Biking (n=27)**	74%	15%	11%	0%	0%
Other* (n=11)**	73%	27%	0%	0%	0%
Climbing/Bouldering (n=8)**	38%	50%	13%	0%	0%
Fishing (n=3)**	33%	33%	0%	33%	0%
Horseback riding (n=1)**	100%	0%	0%	0%	0%

*Other activities included things such as wildlife viewing, other types of exercise, photography, painting, and sitting in nature.
**Small sample size and not suitable for generalization.

Table D- 15. Crowding rate at trailhead by volume class.

OSMP Visitation Volume Class	Not at all	Slightly	Somewhat	Moderately	Extremely
Other* (n=39)	56%	33%	5%	3%	3%
Very low (n=46)	57%	24%	15%	4%	0%
Low (n=93)	72%	24%	3%	1%	0%
Medium (n=218)	44%	30%	15%	9%	2%
High (n=79)	39%	33%	16%	8%	4%
Very high (n=17)	29%	41%	18%	6%	6%

*Other includes unassigned survey locations that didn't correspond with a monitoring location.

Table D- 16. Crowding rate on trail by volume class.

OSMP Visitation Volume Class	Not at all	Slightly	Somewhat	Moderately	Extremely
Other* (n=38)	34%	39%	18%	5%	3%
Very low (n=46)	54%	28%	13%	4%	0%
Low (n=87)	63%	33%	2%	1%	0%
Medium (n=209)	43%	32%	17%	8%	1%
High (n=71)	34%	34%	18%	8%	6%
Very high (n=16)	38%	38%	13%	6%	6%

*Other includes unassigned survey locations that didn't correspond with a monitoring location.

SITE CHARACTERISTICS

Table D- 17. Top categorical site characteristics contributing to quality experiences by primary activity.

Primary Activity	First Characteristic	Second Characteristic	Third Characteristic
Hiking/ Walking (n=764)	Scenery/ Viewpoints	Close by access	Access to hilly/ steep terrain
Dog walking (n=262)	Dogs are allowed	Close by access	Scenery/ Viewpoints
Running (n=202)	Close by access	Scenery/ Viewpoints	Access to hilly/ steep terrain
Biking (n=123)	Cycling is allowed	Close by access	Scenery/ Viewpoints
*Other (n=32)	Close by access	Scenery/ Viewpoints	Able to find parking

*Other activities included things such as wildlife viewing, other types of exercise, photography, painting, and sitting in nature.

Activity types with sample sizes less than 30 are not suitable for generalization, therefore are not displayed.

VISITOR USE MANAGEMENT RATINGS

For all visitor use management rating tables (D- 18, D -19, and D- 20) activity types with sample sizes less than 30 were not included, as they are not suitable for generalization.

Table D- 18. Support and opposition ratings of management strategies for addressing increasing visitation levels by primary activity.

Increasing Visitation Management Strategy	Support	Neutral	Oppose
Constructing new trails (n=671)	77%	17%	6%
Hiking/Walking (n=332)	72%	21%	7%
Dog walking (n=116)	81%	14%	5%
Running (n=99)	80%	16%	3%
Biking (n=87)	90%	7%	3%
Constructing new trailheads (n=697)	73%	21%	6%
Hiking/Walking (n=250)	72%	21%	7%
Dog walking (n=92)	76%	18%	7%
Running (n=74)	74%	21%	5%
Biking (n=64)	72%	20%	8%
Encouraging visitors to frequent lesser visited areas by adding amenities (n=713)	57%	26%	16%
Hiking/Walking (n=356)	57%	26%	18%
Dog walking (n=126)	49%	29%	21%
Running (n=102)	58%	25%	18%
Biking (n=90)	69%	23%	8%
Providing low or no-cost shuttles (n=664)	52%	36%	11%
Hiking/Walking (n=330)	52%	35%	13%
Dog walking (n=118)	47%	41%	13%
Running (n=96)	49%	41%	10%
Biking (n=82)	58%	33%	8%
Keeping things generally the way they are now (n=679)	50%	44%	6%
Hiking/Walking (n=338)	50%	42%	8%
Dog walking (n=116)	56%	41%	3%
Running (n=98)	52%	44%	4%
Biking (n=88)	40%	51%	9%

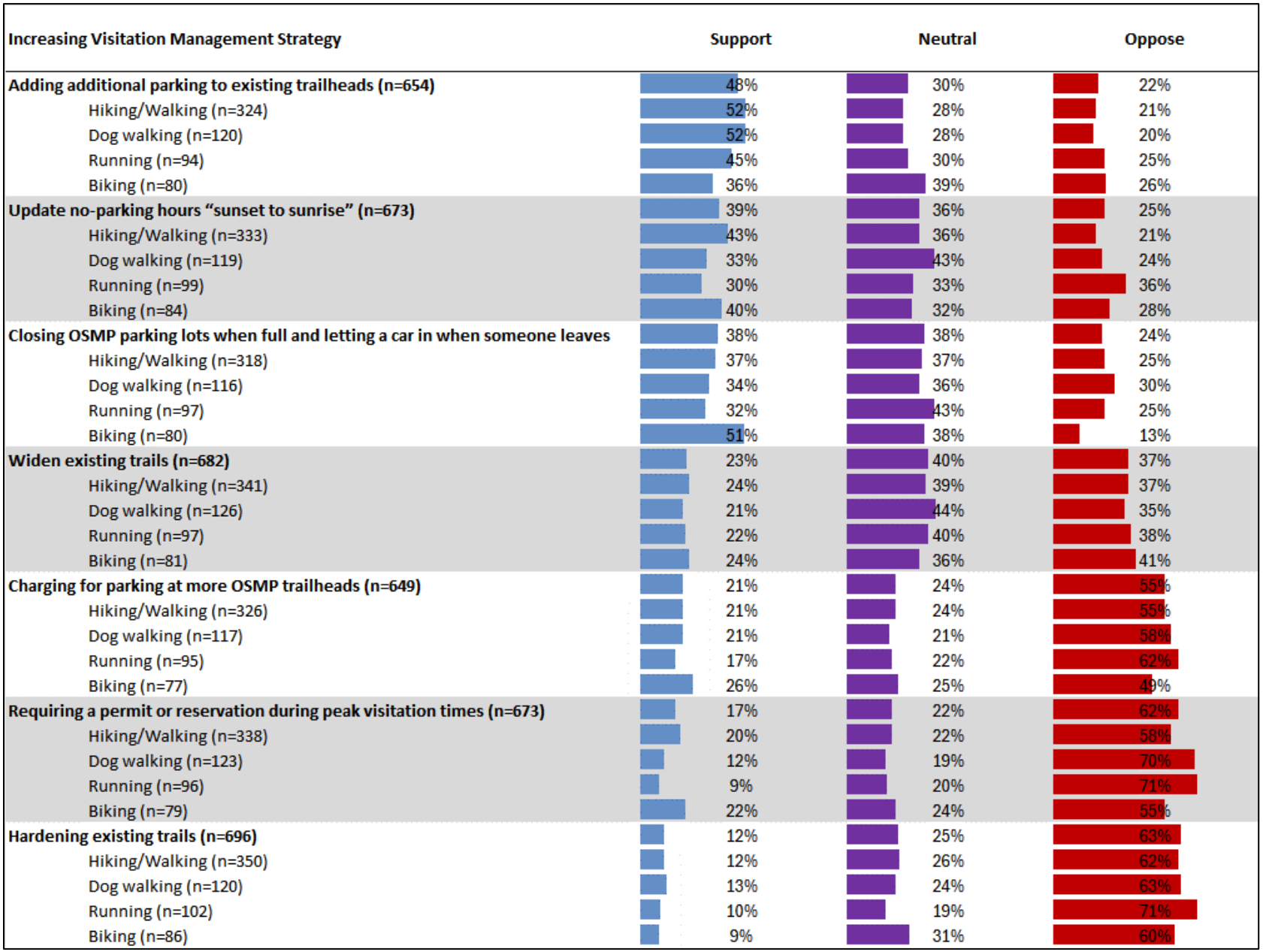

Increasing Visitation Management Strategy
Support
Neutral
Oppose
Adding additional parking to existing trailheads (n=654) 48% 30% 22%
Hiking/Walking (n=324) 52% 28% 21%
Dog walking (n=120) 52% 28% 20%
Running (n=94) 45% 30% 25%
Biking (n=80) 36% 39% 26%
Update no-parking hours "sunset to sunrise" (n=673) 39% 36% 25%
Hiking/Walking (n=333) 43% 36% 21%
Dog walking (n=119) 33% 43% 24%
Running (n=99) 30% 33% 36%
Biking (n=84) 40% 32% 28%
Closing OSMP parking lots when full and letting a car in when someone leaves 38% 38% 24%
Hiking/Walking (n=318) 37% 37% 25%
Dog walking (n=116) 34% 36% 30%
Running (n=97) 32% 43% 25%
Biking (n=80) 51% 38% 13%
Widen existing trails (n=682) 23% 40% 37%
Hiking/Walking (n=341) 24% 39% 37%
Dog walking (n=126) 21% 44% 35%
Running (n=97) 22% 40% 38%
Biking (n=81) 24% 36% 41%
Charging for parking at more OSMP trailheads (n=649) 21% 24% 55%
Hiking/Walking (n=326) 21% 24% 55%
Dog walking (n=117) 21% 21% 58%
Running (n=95) 17% 22% 62%
Biking (n=77) 26% 25% 49%
Requiring a permit or reservation during peak visitation times (n=673) 17% 22% 62%
Hiking/Walking (n=338) 20% 22% 58%
Dog walking (n=123) 12% 19% 70%
Running (n=96) 9% 20% 71%
Biking (n=79) 22% 24% 55%
Hardening existing trails (n=696) 12% 25% 63%
Hiking/Walking (n=350) 12% 26% 62%
Dog walking (n=120) 13% 24% 63%
Running (n=102) 10% 19% 71%
Biking (n=86) 9% 31% 60%

Table D- 19. Support and opposition ratings of management strategies for addressing visitor conflict by primary activity.

Visitor Conflict Management Strategy	Support	Neutral	Oppose
Keeping things generally the way they are now (n=679)	56%	37%	6%
Hiking/Walking (n=338)	56%	36%	8%
Dog walking (n=118)	58%	41%	2%
Running (n=102)	54%	39%	7%
Biking (n=84)	59%	35%	6%
Requiring one-way travel for cyclists on trails (n=715)	**54%**	**31%**	**15%**
Hiking/Walking (n=359)	**59%**	**30%**	**11%**
Dog walking (n=126)	**60%**	**28%**	**12%**
Running (n=102)	**45%**	**31%**	**24%**
Biking (n=86)	**39%**	**33%**	**29%**
Requiring dogs to be on leash (n=692)	49%	24%	27%
Hiking/Walking (n=347)	54%	25%	21%
Dog walking (n=118)	22%	22%	56%
Running (n=99)	41%	26%	32%
Biking (n=87)	62%	22%	16%
Designating more existing OSMP trails as cyclist prohibited (n=712)	38%	31%	31%
Hiking/Walking (n=358)	45%	34%	21%
Dog walking (n=123)	38%	30%	33%
Running (n=103)	28%	34%	38%
Biking (n=87)	15%	21%	64%
Establishing specific times of day for cyclists and hikers on trails	33%	26%	41%
Hiking/Walking (n=360)	36%	29%	35%
Dog walking (n=126)	26%	32%	42%
Running (n=107)	28%	21%	51%
Biking (n=90)	25%	16%	59%

Visitor Conflict Management Strategy	Support	Neutral	Oppose
Alternating days for cyclists and hikers on trails (n=712)	32%	26%	41%
Hiking/Walking (n=359)	31%	30%	39%
Dog walking (n=122)	29%	27%	44%
Running (n=100)	33%	20%	47%
Biking (n=90)	31%	21%	47%
Designating existing OSMP trails as cyclist only (n=684)	29%	29%	42%
Hiking/Walking (n=347)	29%	29%	41%
Dog walking (n=118)	25%	32%	42%
Running (n=95)	20%	23%	57%
Biking (n=85)	38%	31%	32%
Designating more existing OSMP trails as dogs prohibited (n=671)	25%	32%	43%
Hiking/Walking (n=337)	30%	32%	38%
Dog walking (n=116)	10%	19%	71%
Running (n=97)	22%	33%	45%
Biking (n=85)	24%	42%	34%
Designating existing OSMP trails as equestrian only (n=675)	21%	35%	44%
Hiking/Walking (n=341)	24%	38%	39%
Dog walking (n=113)	15%	35%	50%
Running (n=96)	12%	29%	58%
Biking (n=86)	14%	33%	53%

Table D- 20. Support and opposition ratings of management strategies for protecting plants and wildlife by primary activity.

Plants and Wildlife Management Strategy	Support	Neutral	Oppose
Requiring visitors to stay on designated trails (n=724)	78%	13%	10%
Hiking/Walking (n=364)	79%	11%	10%
Dog walking (n=126)	79%	13%	8%
Running (n=103)	71%	17%	12%
Biking (n=88)	85%	8%	7%
Keeping things generally the way they are now (n=715)	72%	25%	3%
Hiking/Walking (n=356)	70%	27%	4%
Dog walking (n=125)	78%	21%	2%
Running (n=103)	70%	25%	4%
Biking (n=89)	70%	27%	3%
Requiring dogs to stay on designated trails (n=723)	68%	18%	14%
Hiking/Walking (n=364)	72%	18%	10%
Dog walking (n=124)	52%	12%	36%
Running (n=104)	66%	25%	10%
Biking (n=89)	74%	16%	10%
Closing trails when muddy (n=700)	59%	23%	18%
Hiking/Walking (n=349)	56%	25%	19%
Dog walking (n=123)	55%	24%	20%
Running (n=100)	57%	22%	21%
Biking (n=87)	74%	15%	10%
Permanently closing and restoring undesignated trails (n=724)	56%	27%	17%
Hiking/Walking (n=361)	58%	26%	16%
Dog walking (n=127)	57%	25%	18%
Running (n=104)	47%	25%	28%
Biking (n=89)	59%	28%	12%

Plants and Wildlife Management Strategy	Support	Neutral	Oppose
Closing trailhead parking areas at night with vehicle gates (n=722)	51%	30%	19%
Hiking/Walking (n=361)	53%	30%	17%
Dog walking (n=125)	50%	30%	19%
Running (n=104)	41%	32%	27%
Biking (n=89)	51%	29%	19%
Closing areas seasonally (n=709)	51%	30%	19%
Hiking/Walking (n=356)	50%	30%	20%
Dog walking (n=126)	58%	28%	14%
Running (n=102)	48%	28%	24%
Biking (n=85)	53%	33%	14%

TRAIL STUDY AREA HIGHLIGHTS

These results are presented by OSMP's current (2024) Trail Study Areas (TSA). These include the West, North, East, and South TSAs.

Table D- 21. Number of data collection locations by Trail Study Area.

Trail Study Area	Number of 2021-2023 POVES Data Collection Sites	Total Responses Received for 2021-2023 Study Period
Unassigned	1	50
South	12	254
North	37	584
East	55	810
West	79	1,459

Table D- 22. Primary activity by Trail Study Area.

Primary Activity	Trail Study Area			
	West (n=1,454)	North (n=583)	East (n=801)	South (n=254)
Hiking/Walking	67%	49%	32%	35%
Dog walking	11%	22%	32%	5%
Running	13%	16%	18%	13%
Biking	3%	11%	15%	44%
Other*	2%	2%	2%	1%
Climbing/Bouldering	3%	0%	<1%	1%
Fishing	<1%	<1%	1%	<1%
Horseback riding	0%	<1%	<1%	0%

*Other activities included things such as wildlife viewing (birding, butterfly watching), other types of exercise (e-biking, skiing, roller blading, skating, snowshoeing, yoga) and other types of activities (photography, painting, sight-seeing, sitting in nature).

Table D- 23. Average daily conflict rate by Trail Study Area.

Trail Study Area	No	Yes
West (n=630)	94%	6%
North (n=264)	93%	7%
East (n=347)	90%	10%
South (n=83)	94%	6%

APPENDIX E: POVES 2021-2023 RESPONDENT DEMOGRAPHICS COMPARED TO BOULDER COUNTY AND CITY OF BOULDER AMERICAN COMMUNITY SURVEY (ACS) DATA

POVES Boulder County results include city of Boulder results as well as other areas within the county.

Table E- 1. POVES respondent age (for ages 20 years and over) compared to Boulder County and city of Boulder ACS population estimates.

Age (years)*	All Respondents	Boulder County		City of Boulder	
	POVES (n=2,354)	POVES (n=1,886)	ACS	POVES (n=1,348)	ACS
20-24	6%	6%	13%	7%	26%
25-34	22%	18%	18%	20%	21%
35-44	17%	16%	17%	16%	13%
45-54	19%	21%	17%	19%	13%
55-64	20%	22%	16%	21%	11%
65-74	12%	14%	12%	14%	9%
75-84	3%	3%	5%	4%	4%
85+	<1%	<1%	2%	0%	2%
Total	**100%**	**100%**	**101%**	**100%**	**100%**
Median age	**47**	**50**		**50**	

Data sources:
2021 – 2023 Public Opinion and Visitor Experiences Survey (POVES)
2017 – 2021 5-Year American Community Survey (ACS)

*An additional <1% (n=17) is excluded from POVES respondents aged 18-19, as this age range is incomparable with census 0-19 years data ranges.

Median age of adult respondents, for ages 20 years and older.
Median age for ACS data not available because data is binned.

Due to differences in age categorization between POVES and the ACS, respondents aged 18-19 are excluded from this analysis. The ACS groups individuals aged 15-19 into a single category, while POVES requires respondents to be at least 18 years old to participate. This exclusion affects a small portion of the sample (n=17), representing less than 1% of the total respondents.

While we didn't ask the age of under 18 visitors, we know 6% of all respondent groups had one or more people <18 years old with them on the day of the survey. Proportionately, these <18

visitors made up 6-7% of all sampled groups. This suggests people under 18 years of age are underrepresented as visitors to OSMP when compared to the 5-year ACS.

Table E- 2. POVES respondent race compared to compared to Boulder County and city of Boulder ACS population estimates.

Race	All Respondents	Boulder County		City of Boulder	
	POVES (n=2,454)	POVES (n=1,958)	ACS	POVES (n=1,404)	ACS
White only	91%	92%	85%	92%	84%
Asian only	3%	3%	5%	3%	6%
Black or African American only	<1%	<1%	1%	<1%	1%
American Indian and Alaska Native only	<1%	<1%	<1%	<1%	<1%
Native Hawaiian and Other Pacific Islander only	<1%	0%	<1%	0%	<1%
Other* race only	2%	2%	2%	2%	2%
Two or more races	3%	2%	7%	3%	7%
Total	**100%**	**100%**	**101%**	**100%**	**100%**

Data sources:
2021 – 2023 Public Opinion and Visitor Experiences Survey (POVES)
2017 – 2021 5-Year American Community Survey (ACS)
*Other races not listed here because they differ by data source.

Table E- 3. POVES respondent Hispanic, Latino, or Spanish origin compared to compared to Boulder County and city of Boulder ACS population estimates.

Hispanic, Latino, Spanish origin?	All Respondents	Boulder County		City of Boulder	
	POVES (n=2,503)	POVES (n=2,004)	ACS	POVES (n=1,436)	ACS
No	94%	95%	86%	95%	89%
Yes	6%	5%	14%	5%	11%
Total	**100%**	**100%**	**100%**	**100%**	**100%**

Data sources:
2021 – 2023 Public Opinion and Visitor Experiences Survey (POVES)
2017 – 2021 5-Year American Community Survey (ACS)

Table E- 4. POVES respondent sex assigned at birth compared to Boulder County and city of Boulder ACS population estimates.

Sex	All Respondents	Boulder County		City of Boulder	
	POVES (n=2,287)	POVES (n=1,818)	ACS	POVES (n=968)	ACS
Female	48%	48%	50%	47%	48%
Male	52%	51%	50%	52%	52%
Other	<1%	<1%	n/a	<1%	n/a
Total	**100%**	**100%**	**100%**	**100%**	**100%**

Data sources:

2021 – 2023 Public Opinion and Visitor Experiences Survey (POVES)
2017 – 2021 5-Year American Community Survey (ACS)

Table E- 5. POVES respondent highest level of education attainment, including only adults 25+ years old, compared to Boulder County and city of Boulder ACS population estimates.

Highest Education Level (for ages 25 years and over)	All Respondents	Boulder County		City of Boulder	
	POVES (n=2,159)	POVES (n=1,740)	ACS	POVES (n=1,225)	ACS
Less than high school graduate	<1%	<1%	5%	<1%	3%
High school graduate	1%	1%	11%	1%	6%
Some college, no degree	5%	4%	15%	3%	11%
Associate's degree	3%	2%	7%	2%	4%
Bachelor's degree	38%	36%	35%	34%	37%
Graduate or professional degree, PhD	54%	56%	28%	59%	40%
Total	**100%**	**100%**	**101%**	**100%**	**101%**

Data sources:

2021 – 2023 Public Opinion and Visitor Experiences Survey (POVES)
2017 – 2021 5-Year American Community Survey (ACS)

Table E- 6. POVES respondent total annual household income in dollars compared to Boulder County and city of Boulder ACS population estimates.

Annual Household Income Level	All Respondents	Boulder County		City of Boulder	
	POVES (n=2,748)	POVES (n=2,183)	ACS	POVES (n=1,566)	ACS
$200,000 or more	29%	30%	17%	31%	17%
$150,000 to $199,999	15%	16%	12%	15%	10%
$100,000 to $149,999	19%	18%	18%	18%	14%
$75,000 to $99,999	12%	11%	12%	10%	10%
$50,000 to $74,999	12%	11%	14%	12%	14%
$35,000 to $49,999	5%	5%	8%	5%	9%
$25,000 to $34,999	4%	4%	6%	4%	7%
Less than $25,000	5%	4%	13%	5%	21%
Total	**100%**	**99%**	**100%**	**100%**	**102%**
Median income	**$100,000 to $149,999**	**$100,000 to $149,999**	**$92,466**	**$100,000 to $149,999**	**$74,902**

Data sources:

2021 – 2023 Public Opinion and Visitor Experiences Survey (POVES)

2017 – 2021 5-Year American Community Survey (ACS)

Table E- 7. POVES respondent rental and homeownership compared to Boulder County and city of Boulder ACS population estimates.

Category	All Respondents	Boulder County		City of Boulder	
	POVES (n=2,323)	POVES (n=1,872)	ACS	POVES (n=989)	ACS
Rent	30%	27%	37%	29%	52%
Own	68%	71%	63%	69%	48%
Other	2%	2%	n/a	2%	n/a
Total	**100%**	**100%**	**100%**	**100%**	**100%**

Data sources:

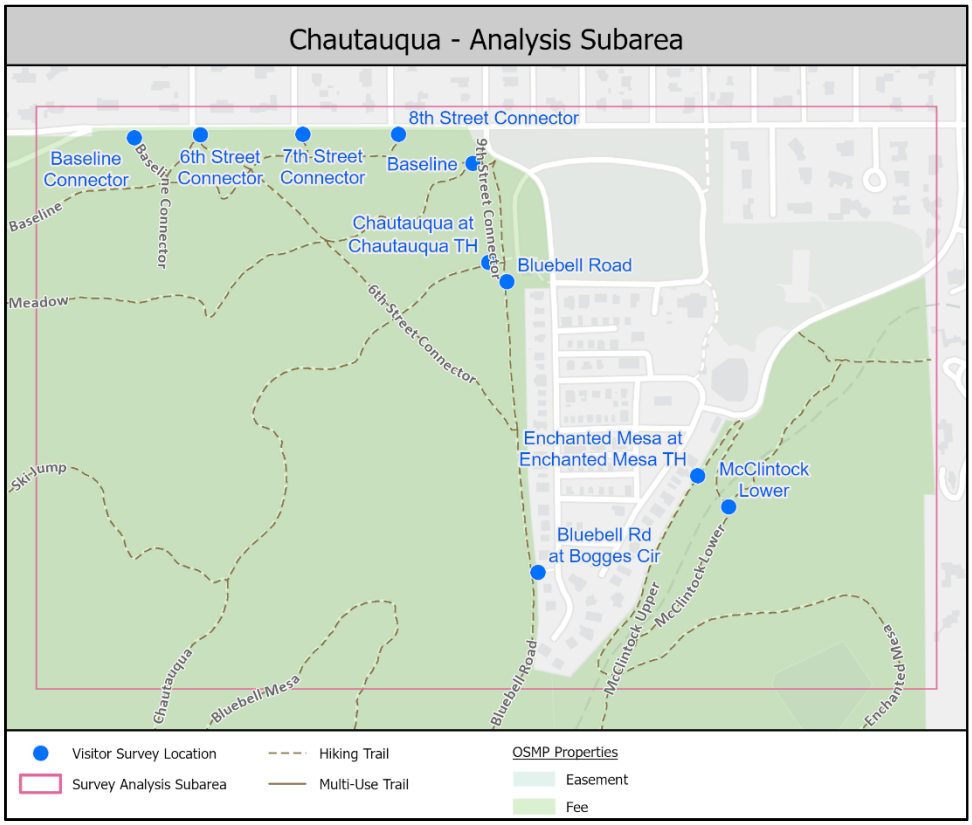
2021 – 2023 Public Opinion and Visitor Experiences Survey (POVES)

2017 – 2021 5-Year American Community Survey (ACS)

APPENDIX F: AREA SPECIFIC HIGHLIGHTS

WEST TSA

Chautauqua area sites included:

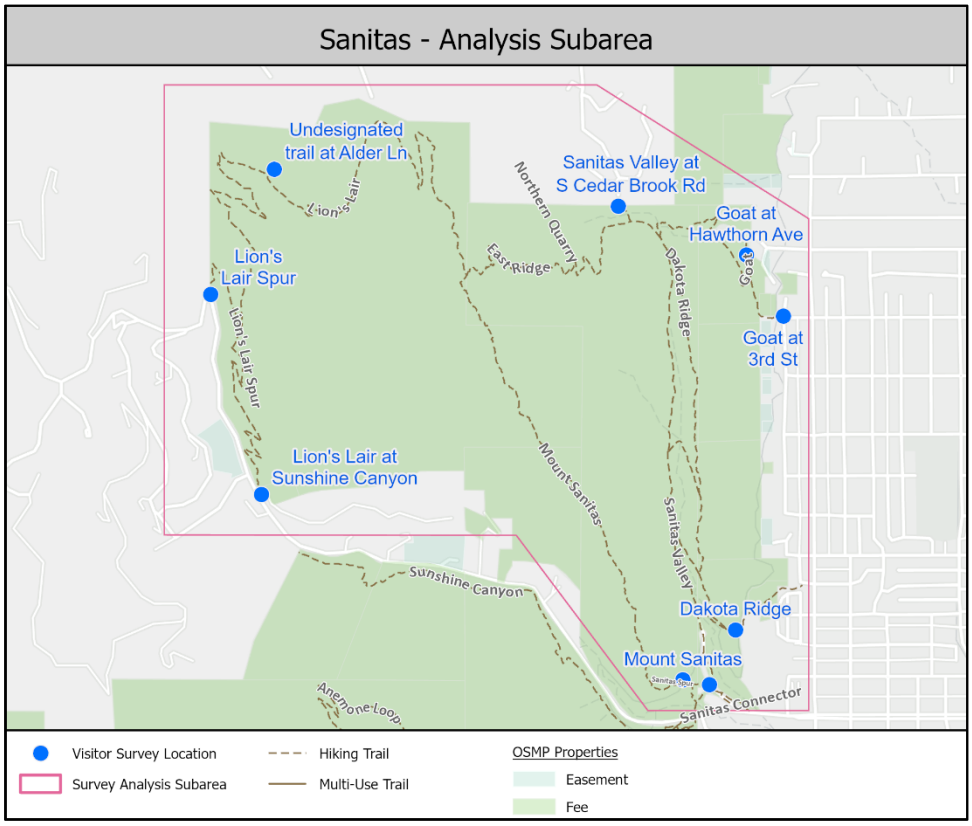


The Chautauqua area includes several hiking trails, access to the Flatirons, a parking lot, the Ranger Cottage, and the Chautauqua Trail, which is the busiest single trail on the OSMP system with over 300,000 annual visits.

Chautauqua area visitors were most likely hiking/walking (76%) and half reside within city of Boulder limits. The Chautauqua area receives proportionately more climbers/boulderers (6%), visitors from outside Boulder County (39%), and visitors aged 20-29 years old (37%) than any other sub-area included in this appendix. Conversely, the Chautauqua area receives proportionately less visitors dog walking as a primary activity (9%), visitors from Boulder County outside city limits (11%), and visitors aged 40 years or older (36%), when compared to most other sub-areas.

Visitors in the Chautauqua sub-area reported a lower average daily conflict rate (5%) than the system-wide average (7%), even though this sub-area receives more visitation than any other OSMP area. Scenery/viewpoints (70%), and close by access (53%) most contributed to visitor experience quality here and the top two primary motivations for visiting this sub-area were enjoying nature (30%) and physical fitness (25%).

Sanitas area sites included:

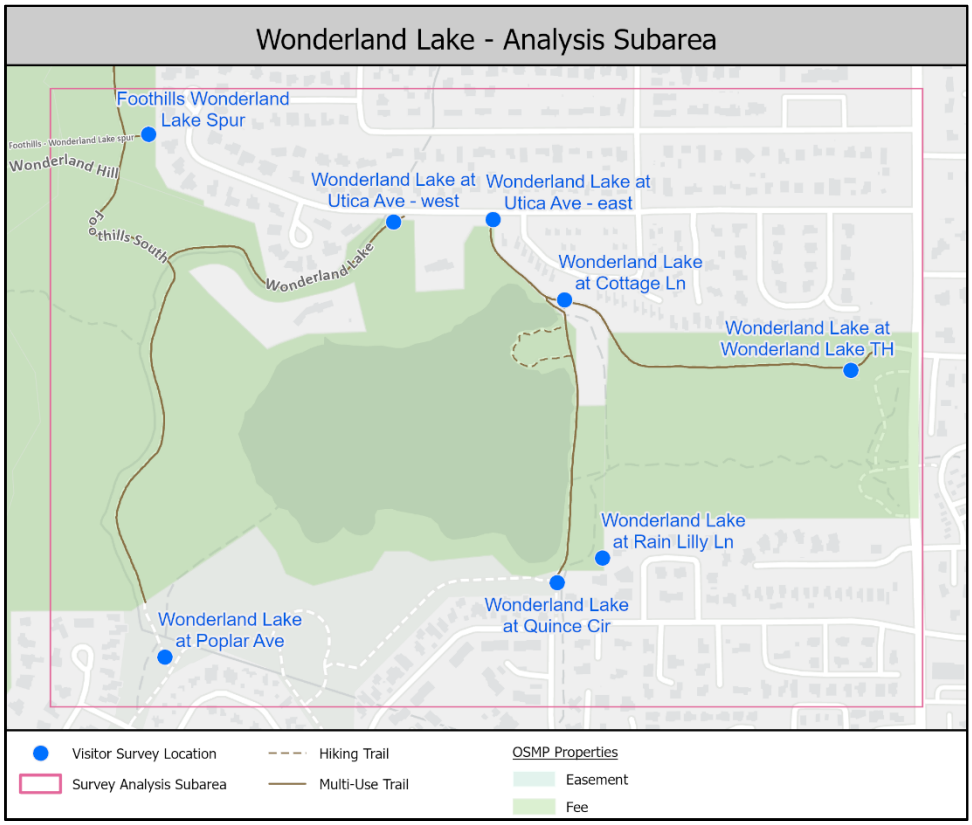


The Sanitas area includes several hiking trails, access to Mt. Sanitas, a parking lot, and a covered picnic area.

Sanitas area visitors were most likely hiking/walking (73%) and most (69%) reside within city of Boulder limits. About half of visitors here are aged 40-49 (22%) or 50-59 years old (27%) and less than 5% are 70 or more years old. Visitors here are most likely to arrive by vehicle (52%) or by walking (39%) to the area. Average daily conflict rates here are the same as the system-wide average (7%). Close by access (74%) and scenery/viewpoints (63%) most contributed to visitor experience quality here and the top two primary motivations for visiting this sub-area were physical fitness (35%) and enjoying nature (18%).

NORTH TSA

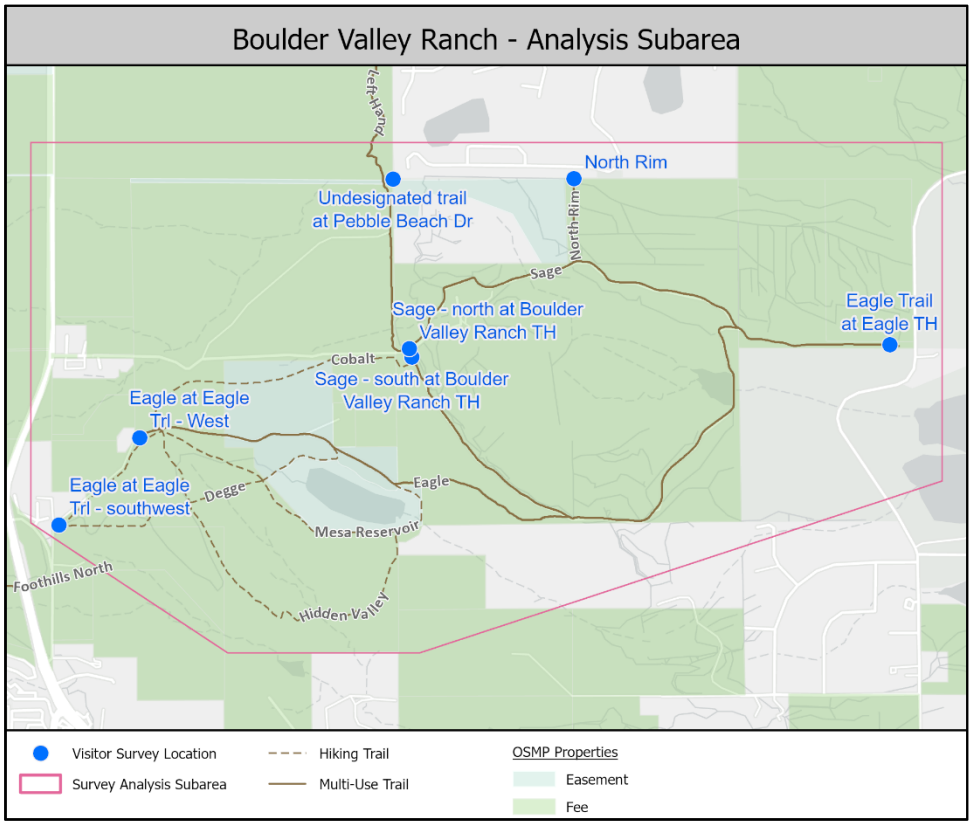
Wonderland Lake area sites included:



The Wonderland Lake area includes both hiking and multi-use trails, access to Wonderland Lake, a parking lot, and the Foothills Nature Center.

Wonderland Lake area visitors are most likely hiking/walking (54%), dog walking (25%), or running (14%), and 1% reported fishing as their primary activity. This area has more city of Boulder resident visitors (83%) than any other sub-area included in this appendix. This area also has more visitors aged 60 years and older (40%) and the least aged 29 years old or younger (9%). Most visitors here arrive by walking (58%) or by vehicle (25%) and most reported scenery/viewpoints (69%) and close by access (63%) contributing to quality experiences.

Boulder Valley Ranch area sites included:

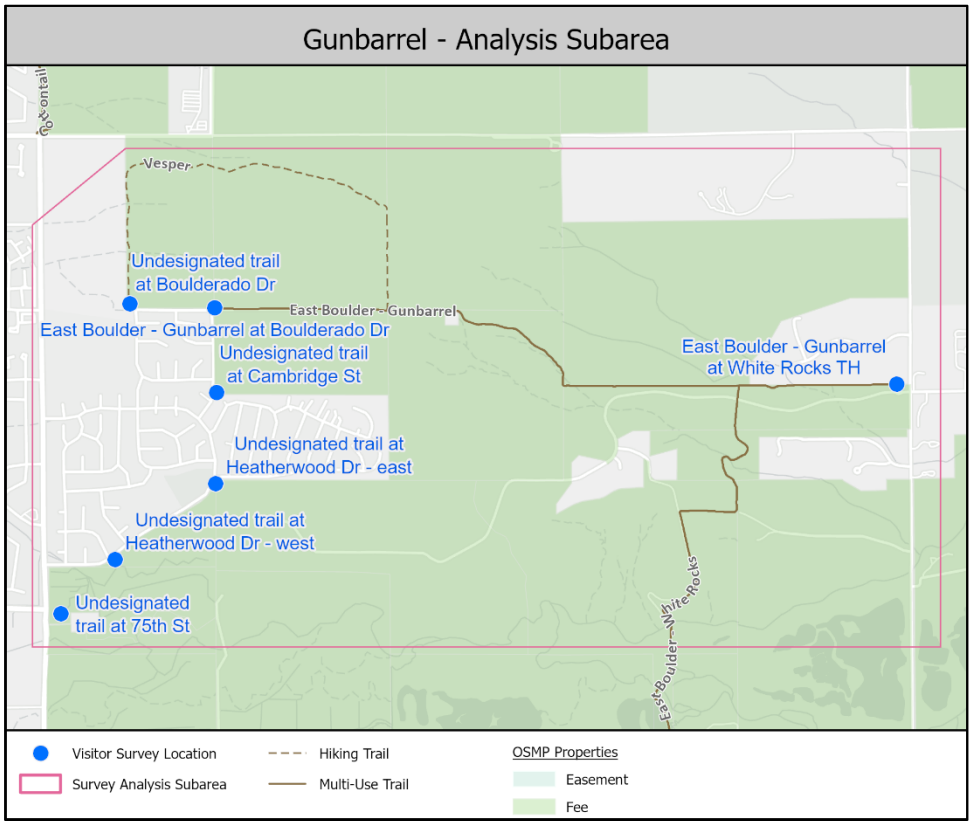


The Boulder Valley Ranch area includes both hiking and multi-use trails, access to Mesa Reservoir, and two parking lots.

Boulder Valley Ranch visitors are most likely hiking/walking (39%), running (24%), biking (19%), or dog walking (18%) as their primary activity. About two-thirds of visitors here reside in the city of Boulder (68%), and another 27% come from Boulder County outside city limits. Very few (5%) visitors in this area reside outside of Boulder County. Close to three-fourths of visitors here are aged 30-39 (24%), 40-49 (23%), or 50-59 (23%) years old. Most visitors here arrive by vehicle (72%) or bike (17%) and about half (51%) report physical fitness as their motivation for visiting. Close by access (63%) and scenery/viewpoints (60%) most contribute to quality visitor experiences in the Boulder Valley Ranch area.

EAST TSA

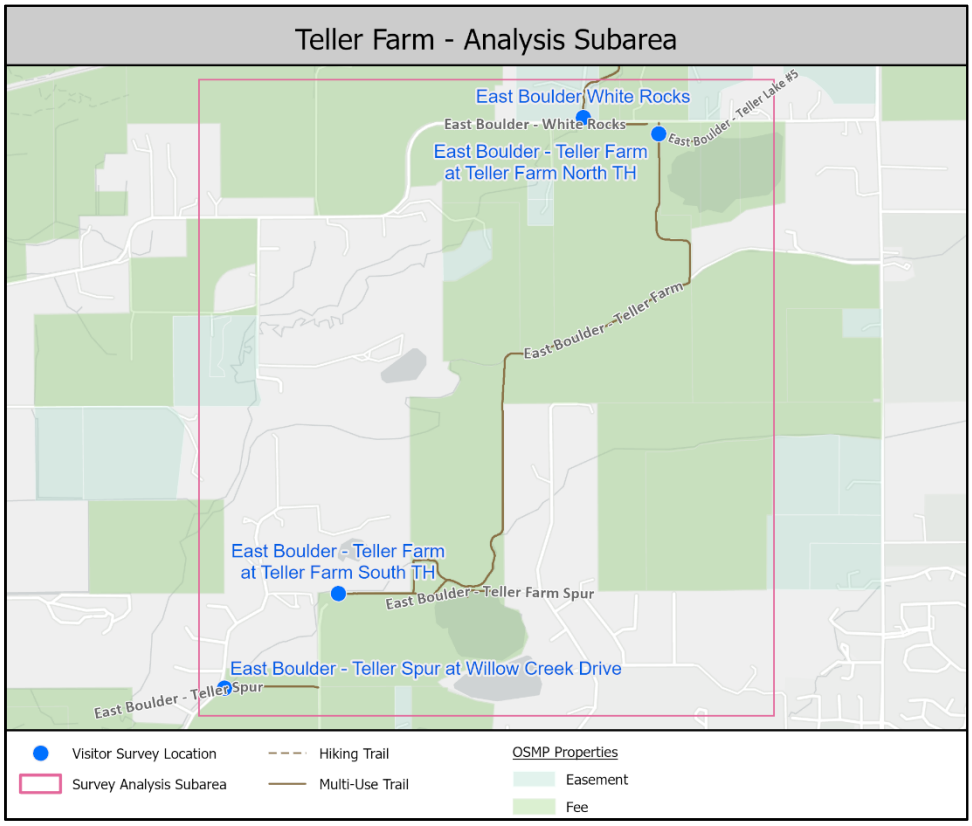
Gunbarrel area sites included:



The Gunbarrel area includes multi-use trails and a parking lot.

The Gunbarrel area has proportionately more dog walkers (42%) as a primary activity and visitors residing in Boulder County outside city limits (76%) than any other sub-area covered in this appendix. Visitors here are also hiking/walking (39%), running (14%), or biking (6%) and a quarter (24%) reside in the city of Boulder. Zero visitors here reported residing outside of Boulder County (every other sub-area had visitors from outside the county). About a third (34%) of visitors here are aged 60 years or older. The Gunbarrel area along with the Wonderland Lake area have the proportionately least visitors aged 39 years old or younger, with 24% and 25% respectively. This area has proportionately more walking arrivals (65%) than any other sub-area, and given the several currently undesignated neighborhood access points, suggests a majority of visitors here are coming from adjacent neighborhoods. Close by access (68%) and scenery/viewpoints (65%) most contribute to quality visitor experiences.

Teller Farms area sites included:

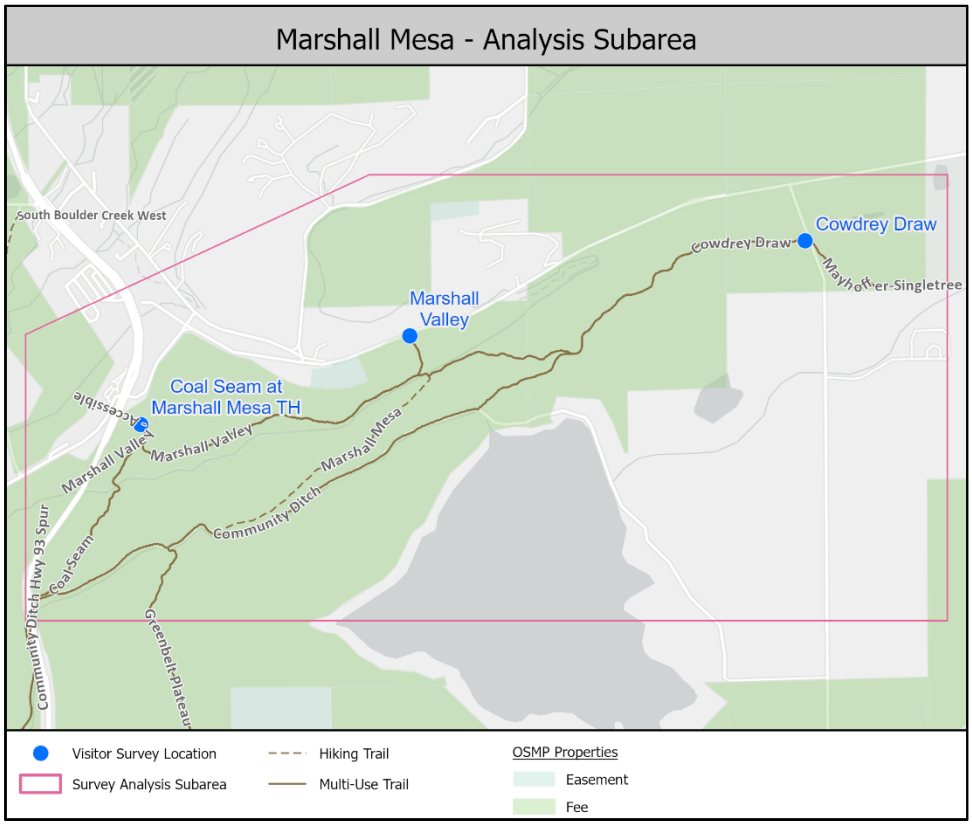


The Teller Farms area includes multi-use trails, access to Teller Lake, and two parking lots.

Visitors to the Teller Farms area are hiking/walking (37%), dog walking (23%), biking (19%), or running (14%) as their primary activities (two people also reported birding as their primary activity). Over half of visitors here reside in Boulder County outside city limits (57%) and almost a third (31%) reside in the city of Boulder. Visitors are fairly evenly distributed by each 10-year age group between 20 and 69 years old. Three-fourths of visitors here arrive by vehicle (76%), 14% by bike, 10% walking in, and one person reported arriving by horse. Zero people reported experiencing conflict here and scenery/viewpoints (72%) and close by access (61%) most contributed to quality visitor experiences. The Teller Farm along with the Gunbarrel areas, both in the East TSA, were the only two sub-areas with visitors reporting being with my dog(s) as the top primary motivation for visiting OSMP, with 32% and 44% respectively.

SOUTH TSA

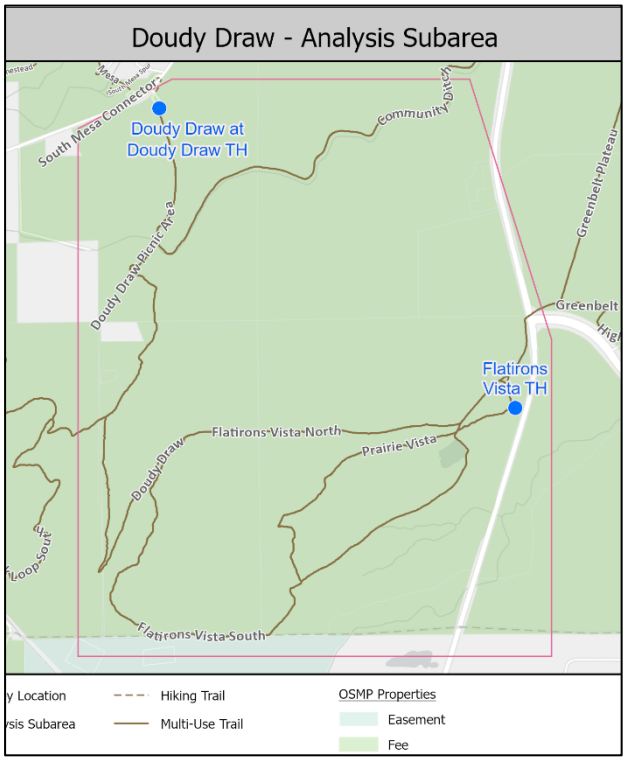
Marshall Mesa area sites included:



The Marshall Mesa area includes both hiking and multi-use trails and a parking lot.

Close to three quarters (74%) of Marshall Mesa area visitors reported biking as their primary activity. About a third (32%) of visitors reside in Boulder city limits, 44% in Boulder County outside city limits, and 24% from outside Boulder County. Half (50%) of visitors are aged 30-49. More visitors arrive by bike here (47%) than any other sub-area in this appendix, and another 47% arrive by vehicle. Close to half (48%) are motivated by physical fitness when visiting this area.

Doudy Draw area sites included:



The Doudy Draw area includes multi-use trails and two parking lots. Almost all visitors to the Doudy Draw area arrived by vehicle (92%). Most were hiking/walking (48%), running (19%), biking (18%), or dog walking (12%). Less than a fifth come from within Boulder city limits (19%) and most reside outside Boulder County (56%).

PRIMARY ACTIVITY BY SUBAREA

Table F- 1. Primary activity by site specific subarea.

Site Specific Subarea	Trail Study Area	Hiking/ Walking	Dog Walking	Running	Biking	Climbing/ Bouldering	Horseback Riding	Fishing	Other*
Chautauqua area (n=315)	West	76%	9%	8%	0.3%	6%	0%	0%	2%
Sanitas area (n=258)	West	73%	12%	14%	0.4%	0.4%	0%	0%	0%
Wonderland Lake area (n=188)	North	54%	25%	14%	6%	0%	0%	1%	1%
Boulder Valley Ranch area (n=104)	North	39%	18%	24%	19%	0%	0%	0%	0%
Gunbarrel area (n=88)	East	39%	42%	14%	6%	0%	0%	0%	0%
Teller Farms area (n=73)	East	37%	23%	14%	19%	0%	3%	0%	4%
Marshall Mesa area (n=93)	South	15%	1%	9%	74%	1%	0%	0%	0%
Doudy Draw area (n=77)	South	48%	12%	19%	18%	0%	0%	0%	3%

*Other activities included activities such as painting, birding, and photography.

PRIMARY RESIDENCY BY SUBAREA

Table F- 2. Primary residency by site specific subarea.

Site Specific Subarea	Trail Study Area	In Boulder city limits	In Boulder County outside city limits	Outside Boulder County
Chautauqua area (n=300)	West	50%	11%	39%
Sanitas area (n=243)	West	69%	16%	16%
Wonderland Lake area (n=181)	North	83%	8%	8%
Boulder Valley Ranch area (n=101)	North	68%	27%	5%
Gunbarrel area (n=83)	East	24%	76%	0%
Teller Farms area (n=72)	East	31%	57%	13%
Marshall Mesa area (n=91)	South	32%	44%	24%
Doudy Draw area (n=75)	South	19%	25%	56%

AGE BY SUBAREA

Table F- 3. Age group by site specific subarea.

Site Specific Subarea	Trail Study Area	18-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99
Chautauqua area (n=237)	West	2%	37%	25%	10%	14%	9%	3%	0.8%	0%
Sanitas area (n=191)	West	1%	13%	18%	22%	27%	15%	4%	0.5%	0%
Wonderland Lake area (n=138)	North	0%	9%	16%	15%	20%	26%	12%	0.7%	0.7%
Boulder Valley Ranch area (n=70)	North	0%	10%	24%	23%	23%	16%	4%	0%	0%
Gunbarrel area (n=64)	East	0%	11%	13%	20%	22%	23%	9%	2%	0%
Teller Farms area (n=53)	East	0%	21%	23%	17%	17%	17%	6%	0%	0%
Marshall Mesa area (n=71)	South	0%	21%	23%	27%	20%	10%	0%	0%	0%
Doudy Draw area (n=62)	South	0%	27%	24%	21%	19%	6%	2%	0%	0%

TRANSPORTATION BY SUBAREA

Table F- 4. Primary mode of transport by site specific subarea.

Site Specific Subarea	Trail Study Area	Vehicle	Walk	Bike	Run	Bus	Other*
Chautauqua area (n=317)	West	71%	23%	3%	2%	0.3%	0.6%
Sanitas area (n=258)	West	52%	39%	1%	9%	0%	0%
Wonderland Lake area (n=189)	North	25%	58%	9%	7%	0%	1%
Boulder Valley Ranch area (n=104)	North	72%	8%	17%	3%	0%	0%
Gunbarrel area (n=88)	East	21%	65%	5%	10%	0%	0%
Teller Farms area (n=74)	East	76%	10%	14%	0%	0%	1%
Marshall Mesa area (n=93)	South	47%	2%	47%	3%	0%	0%
Doudy Draw area (n=77)	South	92%	4%	4%	0%	0%	0%

*Other modes included cab, Lyft, and horse.

DAILY CONFLICT RATE BY SUBAREA

Table F- 5. Daily conflict rate by site specific subarea.

Site Specific Subarea	Trail Study Area	No	Yes
Chautauqua area (n=92)	West	95%	5%
Sanitas area (n=123)	West	93%	7%
Wonderland Lake area (n=87)	North	92%	8%
Boulder Valley Ranch area (n=52)	North	94%	6%
Gunbarrel area (n=37)	East	97%	3%
Teller Farms area (n=36)	East	100%	0%
Marshall Mesa area (n=24)*	South	92%	8%
Doudy Draw area (n=29)*	South	93%	7%

*Small sample size and not suitable for generalization.

SITE CHARACTERISTICS BY SUBAREA – TOP THREE

Table F- 6. Top categorical site characteristics contributing to quality experiences by site specific subarea.

Site Specific Subarea	Trail Study Area	First Characteristic	Second Characteristic	Third Characteristic
Chautauqua area (n=135)	West	Scenery/Viewpoints	Close by access	Access to hilly/steep terrain
Sanitas area (n=116)	West	Close by access	Scenery/Viewpoints	Access to hilly/steep terrain
Wonderland Lake area (n=91)	North	Scenery/Viewpoints	Close by access	Dogs are allowed
Boulder Valley Ranch area (n=52)	North	Close by access	Scenery/Viewpoints	Dogs are allowed
Gunbarrel area (n=37)	East	Close by access	Scenery/Viewpoints	Dogs are allowed
Teller Farms area (n=36)	East	Scenery/Viewpoints	Close by access	Dogs are allowed and Able to find parking
Marshall Mesa area (n=22)*	South	Close by access	Cycling is allowed	Scenery/Viewpoints and Access to narrow trails
Doudy Draw area (n=28)*	South	Scenery/Viewpoints	Close by access	Loop options

*Small sample size and not suitable for generalization.

PRIMARY MOTIVATION BY SUBAREA – TOP THREE

Table F- 7. Top categorical motivations by site specific subarea.

Site Specific Subarea	Trail Study Area	First Motivation	Second Motivation	Third Motivation
Chautauqua area (n=132)	West	Enjoying nature	Physical fitness (exercise)	Being with my dog(s)
Sanitas area (n=121)	West	Physical fitness (exercise)	Enjoying nature	Being with my dog(s)
Wonderland Lake area (n=94)	North	Physical fitness (exercise)	Enjoying nature	Being with my dog(s)
Boulder Valley Ranch area (n=49)	North	Physical fitness (exercise)	Being with my dog(s)	Enjoying nature
Gunbarrel area (n=36)	East	Being with my dog(s)	Physical fitness (exercise)	Enjoying nature and Finding Solitude
Teller Farms area (n=37)	East	Being with my dog(s)	Physical fitness (exercise)	Spending time with family/friends
Marshall Mesa area (n=23)*	South	Physical fitness (exercise)	*Not ordered due to small sample size and many ties.* Things mentioned were enjoying nature, challenging myself, having fun, and psychological (mental) health.	
Doudy Draw area (n=26)*	South	Physical fitness (exercise)	*Not ordered due to small sample size and tie* between being with my dog(s) and spending time with family/friends.	

*Small sample size and not suitable for generalization.