



INFORMATION ITEM MEMORANDUM

To: Mayor and Members of Council

From: Nuria Rivera-Vandermyde, City Manager
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Date: April 6, 2023

Subject: Information Item: Update on Open Space & Mountain Parks e-biking evaluation

EXECUTIVE SUMMARY

The purpose of this Information Item is to provide background information and a high-level overview regarding the current evaluation of e-biking activity on city open space lands to help support an upcoming City Council discussion and consideration related to this matter.

Current city regulations prohibit e-biking on open space trails but allow e-biking on multi-use paths that are managed by other city departments. Disposal of open space is required to allow e-biking on Open Space and Mountain Parks (OSMP) managed trails. City Council is scheduled to consider whether to amend the policy later this spring.

OSMP is reviewing the prohibition of e-bikes on open space in response to policy changes by partner agencies that treat e-bikes as bicycles and allow them on certain open space trails, and in response to requests from community members to consider e-bike use on city open space trails. A primary objective is to improve access for more ages and abilities of visitors and provide a consistent experience across a network of multi-use paths and trails managed by different public agencies. The scope is to evaluate the use of Class 1 and Class 2 e-bikes as an appropriate passive recreational activity and consider management alternatives for which trails, if any, are appropriate for e-biking.

Biking is allowed on approximately 54 miles of designated OSMP trails, about 35% of the total trail system. OSMP identified management alternatives to evaluate which trails that allow biking might be appropriate to allow e-biking activity as well.

BACKGROUND AND OVERVIEW

E-bike definition and regulations

An e-bike is a bicycle with an integrated electric motor to help riders achieve or maintain cadence with less effort. E-biking is an activity where participants are propelled by human power and low-powered electric-assist power. In 2017, amendments to the state law changed the definition of e-bikes to no longer classify them as motor vehicles. The amendments to the state law (CRS § 42-1-102(58)) also allowed class 1 and class 2 e-bike use on all multi-use paths and trails unless not allowed by local regulation. Previously, e-bikes were prohibited unless allowed by local regulation.

The state law regulation change did not impact the City of Boulder because the city went through a designation process in 2013 to allow e-bikes on certain hard-surface multi-use paths and prohibit them on city open space lands by local ordinance. Following the adoption of the 2013 local ordinance, OSMP staff, the Open Space Board of Trustees (OSBT), and City Council considered and authorized the disposal of several noncontiguous hard surface multi-use path segments on OSMP lands integral to and interspersed throughout the greenway network. The disposal transferred management responsibilities to the City Transportation Department and greenways program and authorized the city to allow e-biking use on these paths. However, there are still hard surface multi-use paths on OSMP lands where e-bike use is prohibited that are interconnected with the city greenways network and regional trail system where e-bike use is allowed. There are also several regional trail feasibility studies underway led by our neighboring agency partners who allow e-bike use. The inconsistency of e-bike regulations between City OSMP and these other agencies present planning challenges regarding e-bike use on trails that propose crossing jurisdictional boundaries.

Evaluation need

The 2017 state law regulation change prompted neighboring land management agencies and partners who did not have local regulations pertaining to e-bikes to conduct evaluations. As a result, the following regulation changes to allow e-bikes on neighboring open space trails were made.

- In 2019, Boulder County approved allowing class 1 and class 2 e-bikes on Parks and Open Space (BCPOS) Plains trails where regular bikes are allowed, except trails with joint ownership interest by OSMP where e-bike use is prohibited, such as the Boulder Canyon Trail, Coalton Trail and Mayhoffer-Singletree Trail.
- The U. S. Fish and Wildlife Service allows class 1 e-bikes on trails and class 1 and class 2 e-bikes on roads within the Rocky Mountain National Wildlife Refuge (RFNWR). The future Rocky Mountain Greenway and Colorado Front Range Trail are envisioned to connect with Boulder County and interconnect with OSMP trails after passing through RFNWR.
- Jefferson County Open Space allows class 1 e-bikes on all trails and class 2 e-bikes on paved trails in parks.

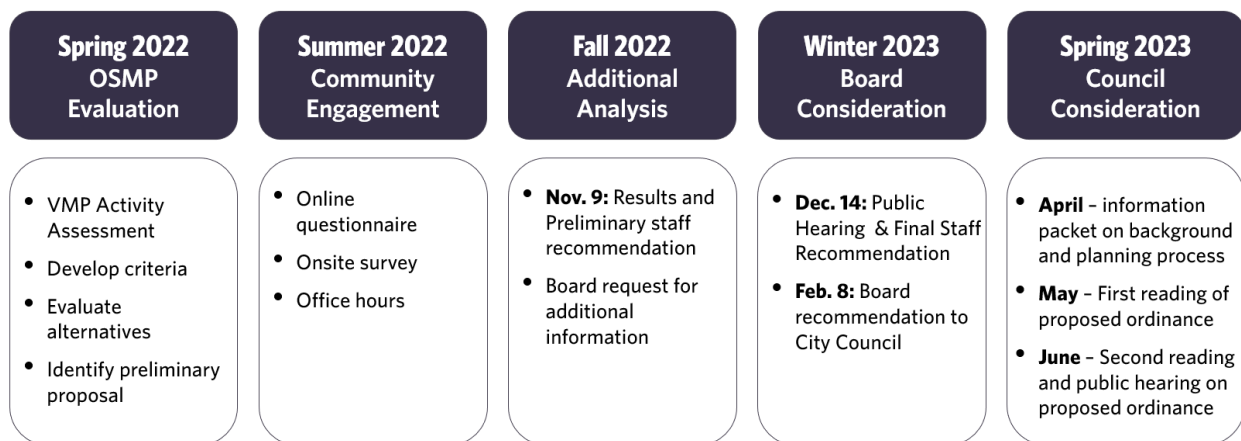
In addition to connecting into the city greenways multi-use paths, OSMP lands are naturally linked with these adjacent agency's lands, coming together to form an interconnected open space system. OSMP rangers have observed increased e-bike use on city open space trails that connect with BCPOS and City of Boulder greenway trails and acknowledge that e-bikes are becoming harder to detect as they are designed to function more like a recreational mountain bike, which

raises enforcement complications. Community inquiries requesting a review of e-bike use on OSMP lands also increased. Many of the community inquiries are more generally related to the increasing popularity of e-biking for recreational purposes by an aging population of visitors interested in continued access to open space trails.

Evaluation Planning Process overview

Staff began the evaluation of e-biking using the OSMP Visitor Master Plan (VMP) Activity Assessment process which was developed to guide decisions on what recreational activities will be considered passive recreation and allowed. OSMP staff determined that e-biking does not differ from biking in relation to the VMP criteria and the department could manage e-biking similarly to biking, which is to allow them on certain designated trails. Next, OSMP identified and evaluated three potential management alternatives (i.e. alternatives for where/which trails to allow e-bikes) and identified one as a preliminary proposal. These alternatives, the preliminary proposal and a status quo / existing conditions option were shared for community input over summer 2022.

In fall 2022, staff presented the community engagement results, staff analysis, and additional information requested by the OSBT. In Winter 2023, the OSBT considered a staff recommendation to allow e-biking as a passive recreational activity on open space trails where designated, and a staff preferred alternative of designating e-bike use on OSMP Plains trails east of Broadway that already allow biking, and the Boulder Canyon Trail. More information on each step of the process and the evaluations are provided below in this memo.



OSMP provided updates to the OSBT at key milestones during the evaluation of e-biking. The following materials are available for reference.

- The [May 2022 OSBT meeting packet](#) presented a written information item to inform the OSBT about the assessment and planning process.
- A [presentation](#) given at the July 2022 OSBT meeting that shared the staff analysis of e-biking alternatives under consideration and that the community engagement window was underway to gather public feedback.
- The [Nov. 2022 OSBT meeting packet](#) and [Dec. 2022 OSBT meeting packet](#) provided background information, including the community input results and the staff analysis used to develop the staff recommendation and additional information requested by the OSBT.

- The [Feb. 2023 OSBT meeting packet](#) provides additional information requested by the OSBT.

Existing Policy on Passive Recreation – Boulder City Charter, OSMP Visitor Master Plan

Boulder City Charter and Boulder Revised Code

Charter [Section 176](#) (c) states that open space land shall be used only for certain purposes, and one of these purposes is passive recreation.

Sec. 176. - Open space purposes-open space land.

Open space land shall be acquired, maintained, preserved, retained, and used only for the following purposes:

(c) Preservation of land for passive recreational use, such as hiking, photography or nature studies, and, if specifically designated, bicycling, horseback riding, or fishing;

The Charter requires disposal of open space land if it is intended to be used for any other purpose than those outlined as open space purposes. *See*, Charter [section 177](#) and [section 8-8-11](#), “Transfer of Open Space Lands, B.R.C. 1981. The Charter does not mention or allow for exceptions to those uses nor does it define passive recreation. The Charter also does not delegate the function of defining passive recreation. Charter [Section 2](#)(h) provides that all non-delegated functions of the Charter reside with City Council.

B.R.C, **7-5-25 No Electric Assisted Bicycles on Open Space** requires disposal of open space to allow e-biking on OSMP managed trails by transferring the trail to another city department. Disposal through Charter [section 177](#) can also be used to transfer a trail to another land management agency such as BCPOS.

2005 Visitor Master Plan

Passive recreation is defined in the Visitor Master Plan (VMP) as non-motorized activities that achieve the following set of criteria:

- Offer constructive, restorative, and pleasurable human benefits that foster an appreciation and understanding of Open Space [and Mountain Parks] and its purposes.
- Do not significantly impact natural, cultural, scientific, or agricultural values.
- Occur in an Open Space and Mountain Parks setting, which is an integral part of the experience.
- Require only minimal facilities and services directly related to safety and minimizing passive recreational impacts.
- Are compatible with other passive recreational activities.

The VMP framework is intended to consider changing circumstances, create opportunities to incorporate new information and evaluate new activities unanticipated at the time the VMP was adopted in 2005. The VMP includes an activity assessment process to guide decisions on what activities are appropriate on open space land, and what conditions should be placed on these activities to minimize their impacts to manage visitor use and natural resources. The activity assessment identifies the following set of considerations: 1) compatibility with other recreational

activities, 2) compatibility with resource protection, 3) compatibility with existing facilities and services, and 4) their relationship to the natural setting.

The activity assessment of e-biking conducted by staff determined that there are no significant differences between how the department would manage or maintain facilities/trails for e-bikes verses traditional bikes, or that e-biking differs from biking in relation to the VMP criteria for passive recreation. While the “non-motorized” component of the passive recreation definition could be interpreted more narrowly to prohibit gas-powered recreational activities such as ATVs and motorcycles others may interpret it more broadly. In order to address this component of the VMP definition staff outlined an approach City Council could take through ordinance amendments and a legislative finding that e-biking is considered passive recreation. More details on this potential approach will be included in the City Council’s first reading memo, where the various approaches, motions, and ordinances considered will be presented.

Management Alternatives Evaluation

OSMP identified three alternatives to consider which trails the department could manage for e-biking activity if the status quo/existing conditions where changed.

[Alternative A](#) All trails that allow biking

[Alternative B](#) Plains trails east of Broadway that allow biking, and the Boulder Canyon Trail

[Alternative C](#) Inter-Connected multi-use trails that allow biking

Staff identified relevant criteria to evaluate the alternatives and the status quo/existing conditions against one another. The [E-biking Alternatives Evaluation](#) is a matrix detailing the criteria and considerations and ratings for each alternative. The following is a list of the criteria:

- | | |
|---|---|
| • Community support | • Safety / Conflict |
| • Equitable access to open space lands | • Aligned with city climate initiatives |
| • Consistency with other inter-connected trails | • Protection of natural resources |
| • Disposal of open space | • Visitor displacement |
| • Effectiveness of regulations | • Trail maintenance |
| | • Visitation |

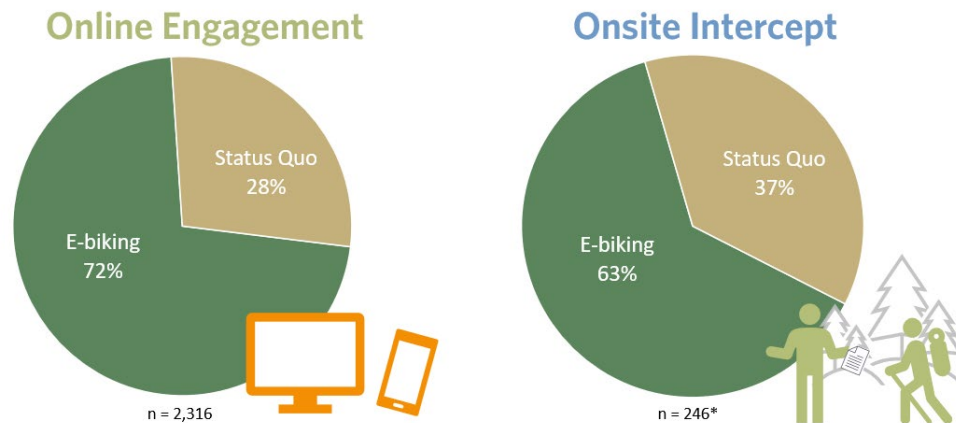
While OSMP’s evaluation indicated there were similar benefits between Alternative A and B, staff identified Alternative B as the preliminary staff proposal to gather feedback on during the engagement window last summer. It was selected because this alternative would provide for a consistent visitor experience and consistent regulations which are easy to understand, comply with and enforce on OSMP trails that interconnect with other agency/ department trails where e-bike use is allowed. It also increases opportunities for visitors of more ages and abilities to access and enjoy city open space and may contribute to climate city goals with minimal impacts to natural resources, visitor experiences, visitor safety, and the trail system.

Community Input

During summer 2022, OSMP gathered community input on whether and where to allow e-biking on open space trails. A Be Heard Boulder online engagement questionnaire provided community members with an open participation opportunity to give feedback. Over 2,330 responses to the online engagement questionnaire were submitted, making it the most popular online engagement questionnaire to date on the city’s Be Heard Boulder site.

Additionally, OSMP staff conducted an onsite intercept survey at a subset of open space trails to gather a representative sample of current OSMP visitor attitudes, preferences, and concerns regarding allowing e-bikes on open space. A total of 431 visitors completed an on-site intercept survey at OSMP locations.

The public input indicates there is majority support for allowing e-biking on open space trails.



About the Data: Distinctions and Results of the Online and Onsite Community Input

An objective of both the online engagement questionnaire and onsite intercept survey was to gather opinions and preferences regarding allowing e-biking on open space trails. The two survey instruments and their modes of administration (online and onsite) were designed to support complimentary, though not identical, datasets to help understand community sentiment toward e-bikes. Distinctions between the two survey tools and the results gathered from each are provided in **Attachment A**.

Community Input Conclusions

- There is support for allowing e-biking on some open space trails by a majority of respondents from both the online engagement questionnaire (72%) and onsite intercept survey (63%).
- For the online engagement questionnaire, most respondents who supported an e-bike alternative indicated support for Alternative B.
- From the onsite intercept survey, many respondents who supported an e-bike alternative indicated support across all three alternatives.
- E-biker speed and concern for user conflict among activities emerged as themes across both surveys to consider in developing an approach for managing trails for e-biking use if it is allowed.
- For the onsite survey, potential negative impacts to trail conditions emerged as the second issue of highest concern, after speed.

Attachment B provides a summary of [Community Input Comparison and Key Findings](#). A [Compendium of Comments](#) is posted on the project web page.

Office Hours

OSMP staff also held two opportunities for community members to meet one-on-one with OSMP staff to have their answer questions and get assistance with completing the online questionnaire. These “Office Hours” sessions were held on Wed. July 20 from Noon to 2 p.m. and Tues. July 26 from 4 to 6 p.m.

OSMP Experience with Biking

Biking is an approved passive recreation activity and is currently allowed on approximately 54 miles of designated OSMP trails, about 35% of the total trail system. Bikers have consistently ranged between 9-11% of visitors for close to two decades. By Trail Study Area, trails that allow bikers represented 29% for the East, 26% for the South, 9% in the North and 5% in the West.

OSMP trails that allow bikes are overall in better condition than trails that do not allow bikes. Trails that allow bikes have an average condition index of 71. Trails that prohibit bikes have an average condition index of 53. The trail condition index is updated systemwide every 5 years on a 100-point scale, 100 meaning the trail is in perfect condition.

OSMP is currently collecting updated conflict and other visitor experience data through the 2021-2023 public survey. Data gathered from the OSMP 2016-2017 Visitor Survey indicated:

- For trails that allow bikes, about 20% of respondents identified biking as their primary activity.
- Approximately 86% of all bikers came from within Boulder County, the median age of cyclists was 48 years old and three-fourths of cyclists identified as men.
- A 95% majority of encounters between bikers and other users on open space trails are positive (69%) or neutral (26%).
- Only 1% of visitors reported displacement due to biking and 99% did not.

Peer Agency Experience

Staff contacted City of Boulder Transportation & Mobility Department as well as several peer agencies in communities that allow e-biking including Boulder County Parks and Open Space (BCPOS), Jefferson County Open Space (JCOS), United States Fish and Wildlife Service (USFWS), and the City and County of Denver Mountain Parks. Overall, the response regarding their experience is that e-biking has not resulted in a change in conflicts or concerns beyond what is typical for trails that allow biking. Most shared antidotal information based on their observations as they have not conducted formal studies or data collection efforts related to e-biking. Based on their observations thus far, these agencies have not prioritized a need for more formal studies or data collection.

Proposed Management Approach

OSMP staff would recommend a holistic approach to manage e-biking, like biking, as a passive recreational activity on open space trails. Management of use would include the following strategies, which are described in greater detail in **Attachment C**:

- **Trail Design and Maintenance** – employ trail design best practices to mitigate speed and conflict potential on multi-use trails.
- **Education and Outreach** – Raise awareness and support visitors through a combination of signage and programming focused on courtesy and rules for sharing multi-use trails among recreational activity groups.

- **Ranger Patrol and Enforcement** – continue to focus on highly visited areas, prioritize weekend time on patrols, and introduce targeted patrols where e-biking would be allowed.
- **Monitoring** – Add e-biking activity in visitor surveys to track trends and changes in public sentiment over time.

Additional Information requested by the Open Space Board of Trustees

In Fall 2022, staff presented the department's work to evaluate e-biking in developing a preliminary staff recommendation regarding e-biking on open space trails. It included a summary of the community input results and additional staff analysis for board input. The OSBT requested additional information to help guide their consideration of an action item regarding e-biking on open space trails. A list of the information gathered follows:

- Map of interconnected trail connections between OSMP trails and city and county trails
- Comprehensive Demographics: OSMP Surveys and Boulder Census Data
- Rationale for combining Resident Survey content into on-site Visitor Surveys
- Additional crosstabulations for onsite intercept survey results
- Locations selected for onsite intercept survey
- Weighting the onsite intercept survey results
- List of current fines related to e-biking on OSMP
- Quantitative data on how many summonses issued by violation
- Approach to enforce speed for a management alternative that allows e-biking
- Can anything be done about bikers riding with ear buds?
- OSMP and accessibility
- E-bike Battery Management System (BMS) and potential as an ignition source
- List of unique ideas from the online engagement questionnaire question
Are there any additional comments about e-bikes you would like to share?
- Distribution of the responses for primary activities on open space by OSMP survey
- Map depicting OSMP trails widths that allow biking
- Comparison of visitation between trails managed by OSMP and agency partners
- Visitor displacement on trails due to presence of biking
- Trustee Kuntz submitted questions with staff responses

The [additional information requested by OSBT](#) is available on the project web page.

Open Space Board of Trustees Consideration

There were multiple inputs guiding the staff recommendation presented for the OSBT consideration regarding e-biking on open space trails.



On Feb. 8, 2023, staff requested the OSBT make a motion to:

- 1) Recommend the Boulder City Council allow class 1 and class 2 e-biking as a passive recreational activity permissible on open space on trails where designated by the City Manager, and
- 2) Recommend the OSMP department proceed with the staff preferred alternative to implement this policy by designating and managing the trail in Alternative B – Plains trail located east of Broadway that allow biking, and the Boulder Canyon Trail for e-biking.

While several motions were considered, the OSBT did not pass a motion in support of the staff recommendation. Instead, the OSBT supported a more narrow approach to not allow e-bikes except to enable connectivity and contiguity where a multijurisdictional regional trail requires access to a segment of city open space trail. More detailed information on the OSBT motions, discussion, and recommendation will be included in the meeting materials being prepared for council consideration.

NEXT STEPS

City Council is scheduled to consider a proposed ordinance to amend the policy for e-biking on open space trails in late spring. The item is scheduled on the consent agenda for May 4. A public hearing is tentatively scheduled for June 1. OSMP is reviewing the recommendation from the OSBT in making a final staff recommendation for Council consideration. The May memo will include more detailed information on the OSBT motions, discussion and recommendations as well as more detailed analysis on the approach(s) for allowing e-biking on OSMP trails.

ATTACHMENTS:

- **Attachment A** – About the Data: Distinctions and Results of the Online and Onsite Community Input
- **Attachment B** – Community Input Comparison and Key Findings
- **Attachment C** – Management Approach for Supporting E-biking as an Open Space Activity

About the Data: Online Engagement Questionnaire and Onsite Intercept Survey distinctions and results

An objective of both the online engagement questionnaire and onsite intercept survey was to gather opinions and preferences regarding allowing e-biking on open space trails. The two survey instruments and their modes of administration (online and on-site) were designed to support complimentary, though not identical, datasets to help understand community sentiment toward e-bikes.

The online engagement questionnaire was administered via the Be Heard Boulder platform. Be Heard Boulder provides an open participation option for any community member who chooses to participate to share their input regarding city projects. This feedback is collated and used to inform the development of strategies, programs and activities, or to gain an insight into community views and opinions. Feedback provided online is intended to be considered in conjunction with other information and data sources when departments consider project recommendations and decisions.

Since the Be Heard Boulder platform allows respondents to self-elect to leave feedback, there is a chance that those who chose to submit a questionnaire feel strongly about the issue of e-biking on open space trails. This method of collecting community feedback is helpful for understanding the range and intensity of e-biking opinions that may exist in the community. Open participation questionnaires may also facilitate higher overall response rates (compared to randomized on-site sampling), particularly when the topic is of strong interest among community members, as e-bikes appears to have been. However, the lack of randomization among participants means that the results cannot be interpreted as directly representative or generalizable to the distribution of sentiment among the broader population of Boulder or to OSMP visitors.

In comparison, the onsite intercept survey was designed to collect a representative and generalizable sample of current OSMP visitor attitudes, preferences, and concerns regarding allowing e-bikes on open space. The on-site survey followed similar design and sampling methods as OSMP's formal visitor survey, where respondents were intercepted on OSMP trails as the end of their visit. In contrast to the online questionnaire where participants self-elected to participate specifically to provide feedback regarding e-bikes, respondents to the on-site survey were intercepted based on their visitation to selected open space trails and not on any predisposition toward e-biking.

The randomized sampling approach of the on-site survey means that this dataset provides a statistically representative assessment of current visitor attitudes toward e-bikes, despite having a lower overall sample size than the online engagement questionnaire. The on-site survey was specifically designed to facilitate the cross-filtering of responses to evaluate how subgroups may differentiate in their attitudes, preferences, and concerns regarding e-bikes. Finally, the on-site survey was purposefully implemented using a sampling design that can be replicated in the future should OSMP wish to conduct any follow-up monitoring regarding e-bike allowance on open space trails.

About the Data: Online Engagement Questionnaire and Onsite Intercept Survey distinctions and results

Online Engagement Questionnaire

OSMP posted the online questionnaire on the City of Boulder Be Heard Boulder online engagement web page. It provided the opportunity for community members to share their input on whether to allow e-biking on open space trails and three management alternatives under consideration if the status quo were changed. The questionnaire opened on July 11 and closed on Aug. 8. It generated a robust community response. Over 2,330 responses were submitted, making it the most popular online engagement questionnaire to date on BeHeardBoulder.com.

Gathering information on community preferences to guide decisions about the planning and potential management of e-biking on open space was a primary objective of the questionnaire. Staff identified a preliminary proposal of Alternative B, which would allow e-biking on Plains Trails and the Boulder Canyon Trail. Respondents were asked whether they support the preliminary staff proposal and if not whether they support one of the other two alternatives or the status quo of not allowing e-biking on open space trails. The questionnaire next asked respondents to select the top three reasons in support of their response from among a list of potential reasons. The questionnaire also asked participants about their open space visitation history, familiarity with e-bikes, and demographics including age, residence, race and gender. A summary of the [Online Engagement Questionnaire Results](#) is posted on the project web page.

Online Engagement Questionnaire Key Findings

- The majority of respondents (72%) supported one of the alternatives allowing e-bikes on open space over the status quo (No-Change).
- About 47% of respondents indicated hiking and 36% indicated biking as their primary activity.
- Approximately 44% own an e-bike and 63% have ridden an e-bike in the last 12 months.
- Familiarity with e-bikes was a strong indicator of support for e-biking, with 95% of those who own an e-bike and 85% who have ridden an e-bike selecting an alternative over the status quo. That said, just over half (53%) of respondents who don't own an e-bike and 48% who have not ridden an e-bike also supported an e-biking alternative.
- Of the 72% of respondents who expressed support for e-bikes, 52% of them indicated a preference for Alternative B.
- Respondents who supported Alternative B selected that it increases access for people with different abilities (62%), and for an aging population (59%) as their top two reasons why.
- Approximately 28% of respondents indicated a preference for the status quo of not allowing e-biking on open space trails. Of the respondents who shared why, 74% expressed e-biker travel speed was the top reason. The second ranked response was "I do not agree that electric-assist is non-motorized" and selected by 49% of those who shared why they chose the status quo.
- Around 58% of respondents thought that they might change their visitation behaviors if e-bikes were allowed on trails. About 54% of these respondents thought they would visit trails more often if e-bikes were allowed.
- The majority of respondents were from Boulder County, with about 60% of all respondents being from the City of Boulder.

About the Data: Online Engagement Questionnaire and Onsite Intercept Survey distinctions and results

Onsite Intercept Survey

The OSMP Human Dimensions team conducted an onsite e-bike intercept survey at select trailheads and access points to engage with open space visitors and obtain their opinions and preferences regarding the potential to allow e-bikes on some trails. Questions were focused on alternative ratings, ownership and use of e-bikes, perceived e-bike concerns and benefits, reasons for alternative rating selections, and the most preferred management alternative, including an option for the status quo (no e-biking on OSMP). Respondents were also asked a series of typical demographic questions.

A total of 431 visitors completed the survey during a 9-week period in summer 2022 at 12 OSMP locations during various daylight hours. The results are presented in an interactive report that allows results to be explored dynamically.

For the on-site survey, respondents were presented with a separate page for each of the three alternatives (A, B, & C). Each page included a written description of the alternative, a map, and a rating scale for respondents to indicate their level of opposition or support for the alternative.

After survey respondents evaluated each of the individual alternatives, they were asked a series of questions about their general disposition across the three alternatives. Questions asked respondents to evaluate the likelihood that allowing e-bikes on open space trail would result in either positive or negative outcomes, the degree to which they were concerned about certain possible impacts, and the degree to which they agreed or disagreed with several statements about e-bike use on open space. After answering questions about the various reasons for their support or opposition to allowing e-bikes on open space, respondents were asked to select their overall most preferred management option, which included each alternative plus an option for the status quo (i.e. No Change).

Next, respondents were asked a series of questions about their visitation patterns including their visitation history, their primary activity and primary mode of arrival to open space. Additionally, respondents were asked if their visitation patterns might change if e-bikes are allowed on select OSMP multi-use trails, that currently allow bikes. If the respondent answered yes, they were then asked how they thought their visitation frequency might change, as well as whether they would be likely to ride an e-bike on trails if allowed.

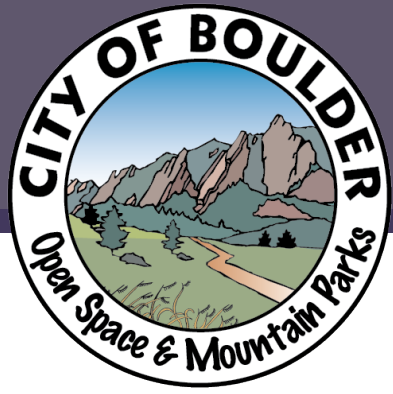
Finally, respondents were asked a series of typical demographic questions. These included age, residence, race, and Hispanic, Latino, or Spanish origin. Results can be compared to other OSMP survey efforts, to discern any demographic differences and similarities between the onsite e-bike intercept survey and other onsite visitor survey respondents. More broadly, results can be compared with Boulder County census data.

A digital Report of the [Onsite E-Bike Intercept Survey](#) is available on the project web page.

About the Data: Online Engagement Questionnaire and Onsite Intercept Survey distinctions and results

Onsite Intercept Survey Key Findings

- The majority of respondents (63%) selected one of the alternatives over the status quo (No-Change) as their overall "most preferred option".
- Respondents who overall preferred Alternative A (26%) also supported Alternatives B and C. Many respondents supported all three Alternatives, even if they preferred one specific alternative.
- Approximately 52% of respondents indicated hiking as their primary activity.
- Respondents across all alternatives expressed a range of opinions about the likelihood of different outcomes or concerns about the potential impacts of e-bikes.
 - In general, concerns were lower among those who preferred Alternative A (most permissive for allowing E-Bikes) and highest among those who preferred No-Change.
 - The same pattern was generally observed for the likelihood of outcomes, where those who preferred Alternative A indicated that on average they believed the likelihood of positive outcomes was higher and the likelihood of negative outcomes was lower. This pattern reversed for those respondents who preferred No-Change.
- Around 28% of respondents, or just over one quarter, thought that they might change their visitation behaviors if E-Bikes were allowed on trails.
 - Of the 28% who thought their visitation behaviors might change, most thought they would visit trails that allow e-bikes less often if e-bikes were allowed.
- The majority of respondents were from Boulder County, with just over 50% of all respondents being from the City of Boulder.



Evaluation of E-biking on Open Space Community Input Comparison and Key Findings



Online Engagement and Onsite Intercept Results

About the datasets

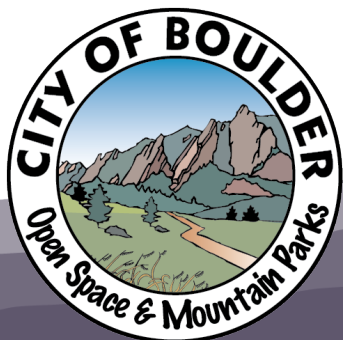
Online Engagement Questionnaire

- 2,331 responses were submitted between July 11 to Aug. 8.
- 1,543 participants provided open ended comments.
- Open participation opportunity to provide input through Be Heard Boulder platform

Onsite Intercept Survey

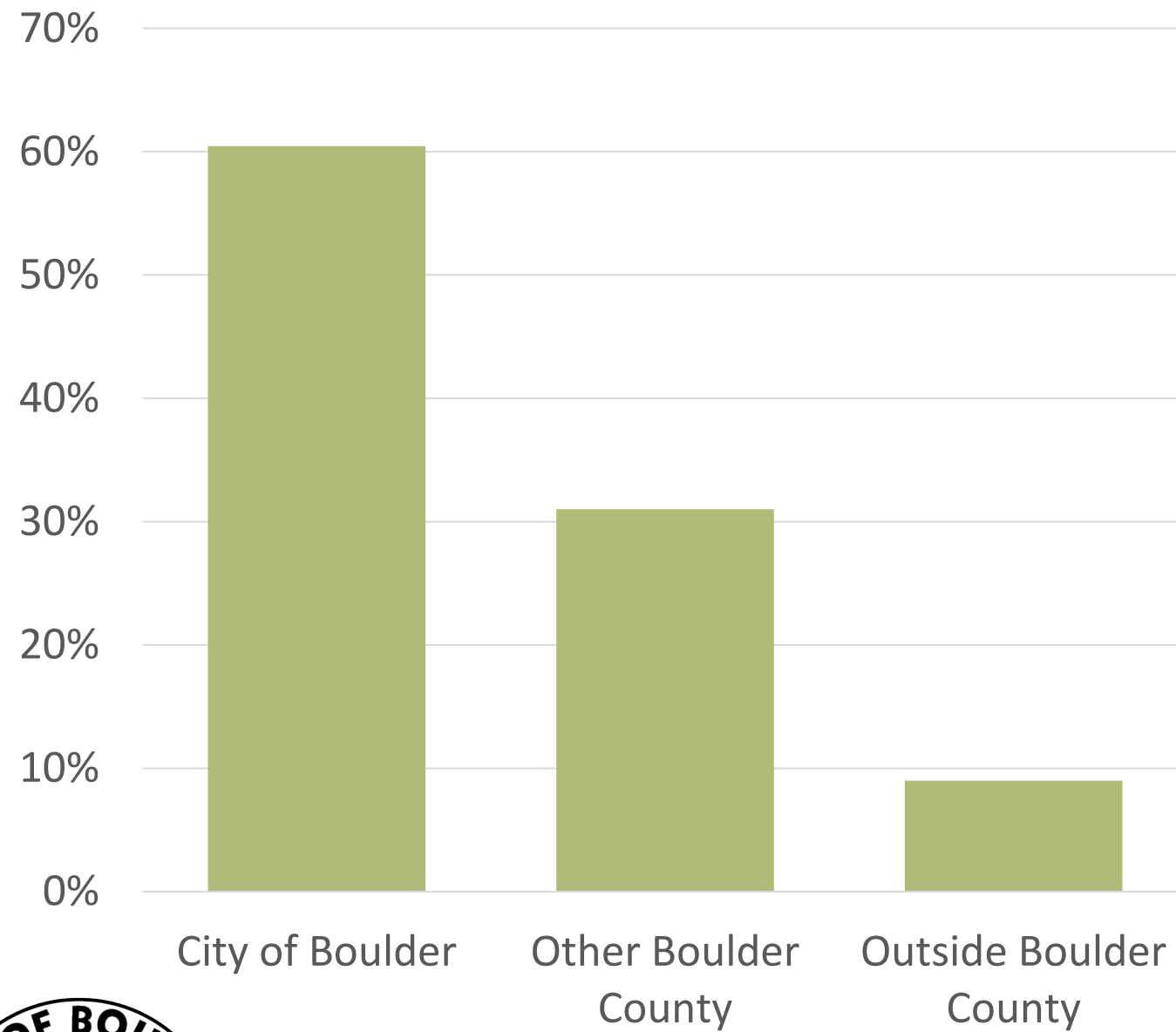
- 431 survey responses were gathered across 9 weeks between July 2nd and August 26th
- 12 OSMP access points/trailheads were surveyed, including 8 multi-use and 4 pedestrian only trails
- Randomized sample size with response rates between 70% and 82% (quite high for intercept surveys)

Consideration	Online Engagement	Onsite Intercept
Generalizable	✗	✓
Bias	↑	↓
Trend Analysis	✗	✓
Informs decision-making	👍	👍

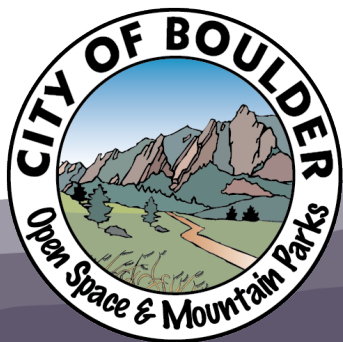
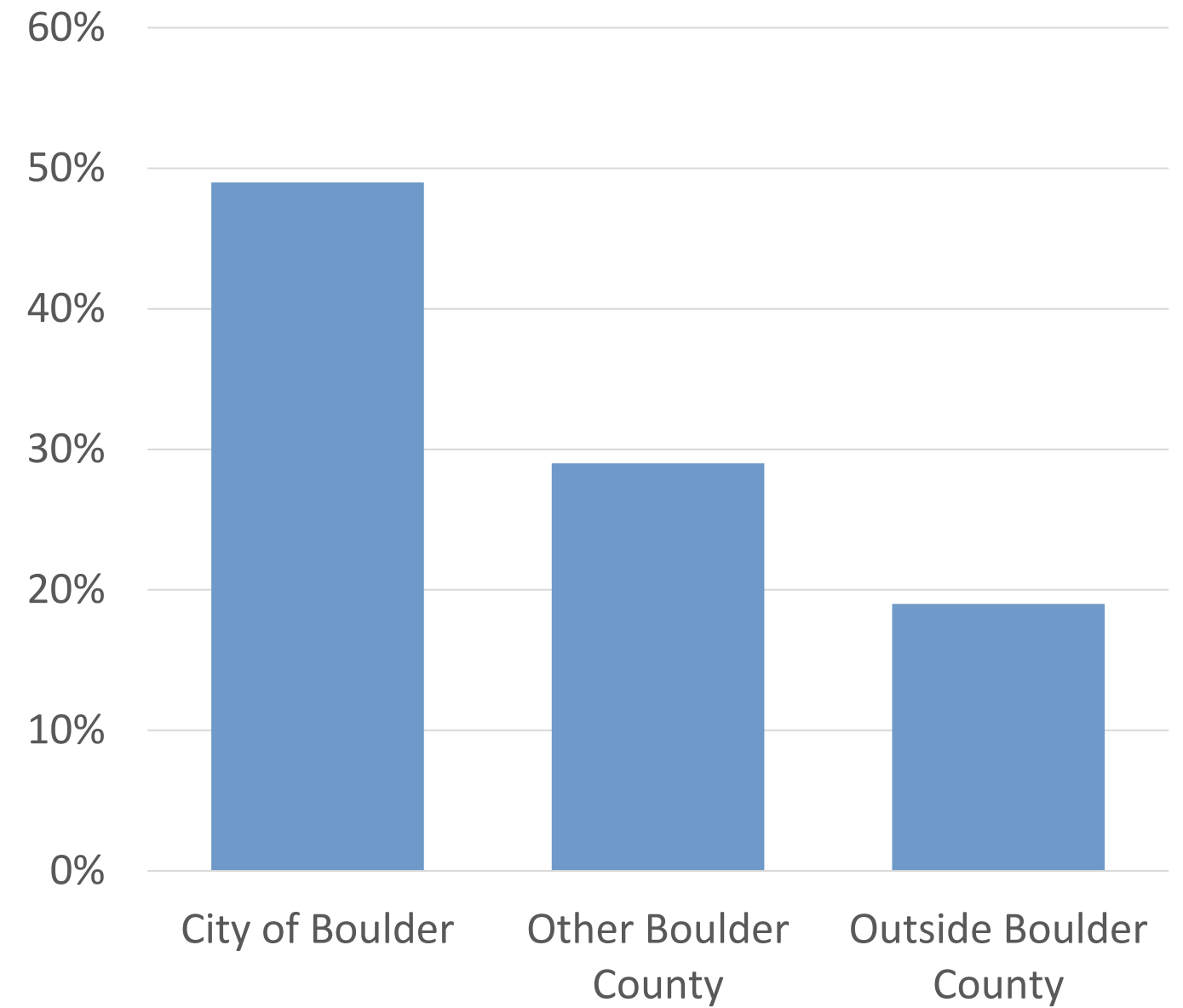


Residence

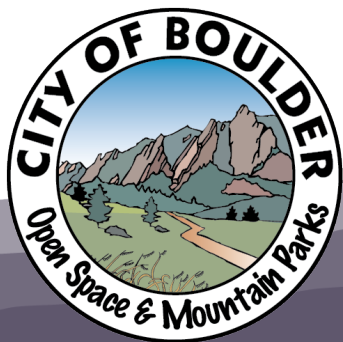
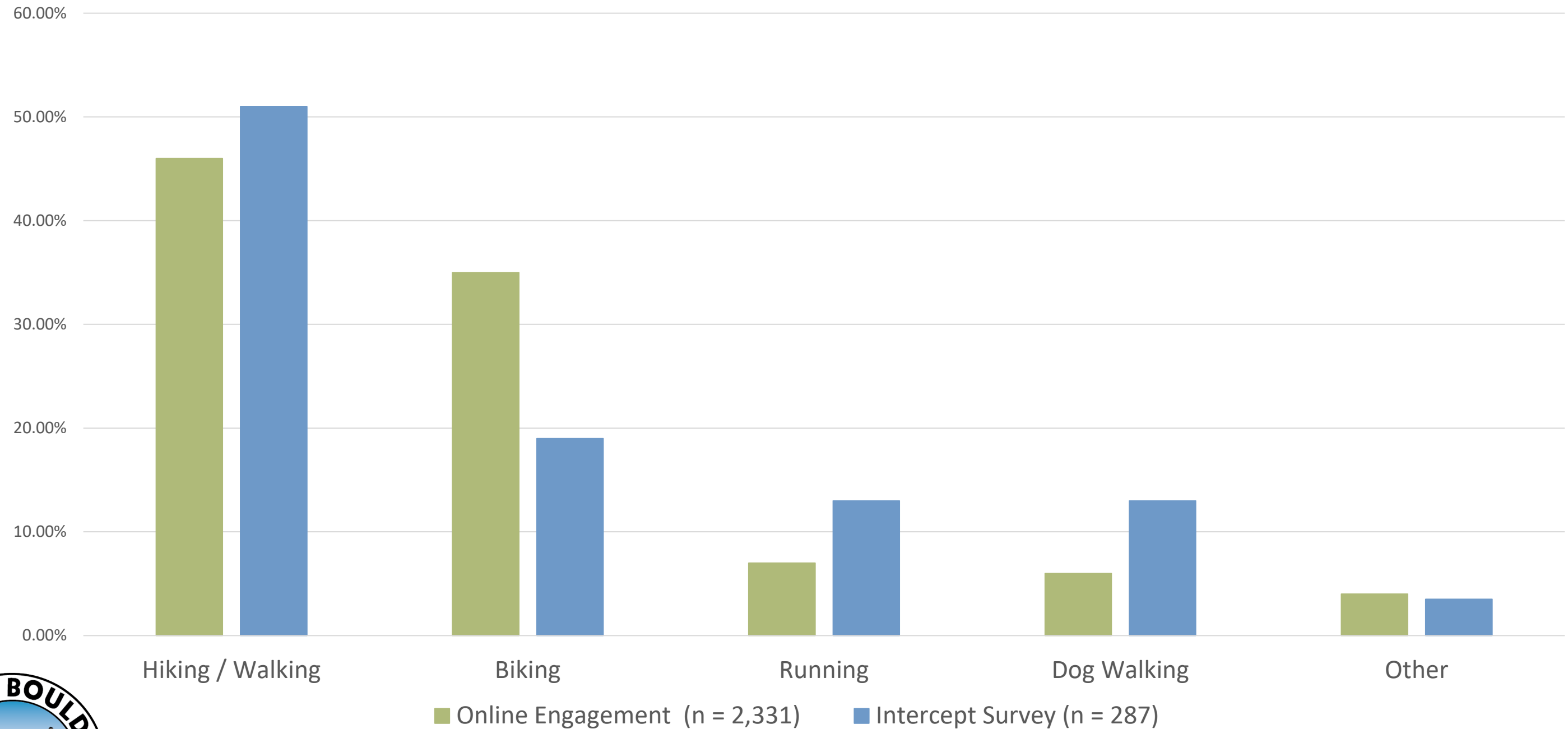
Online Engagement



Onsite Intercept

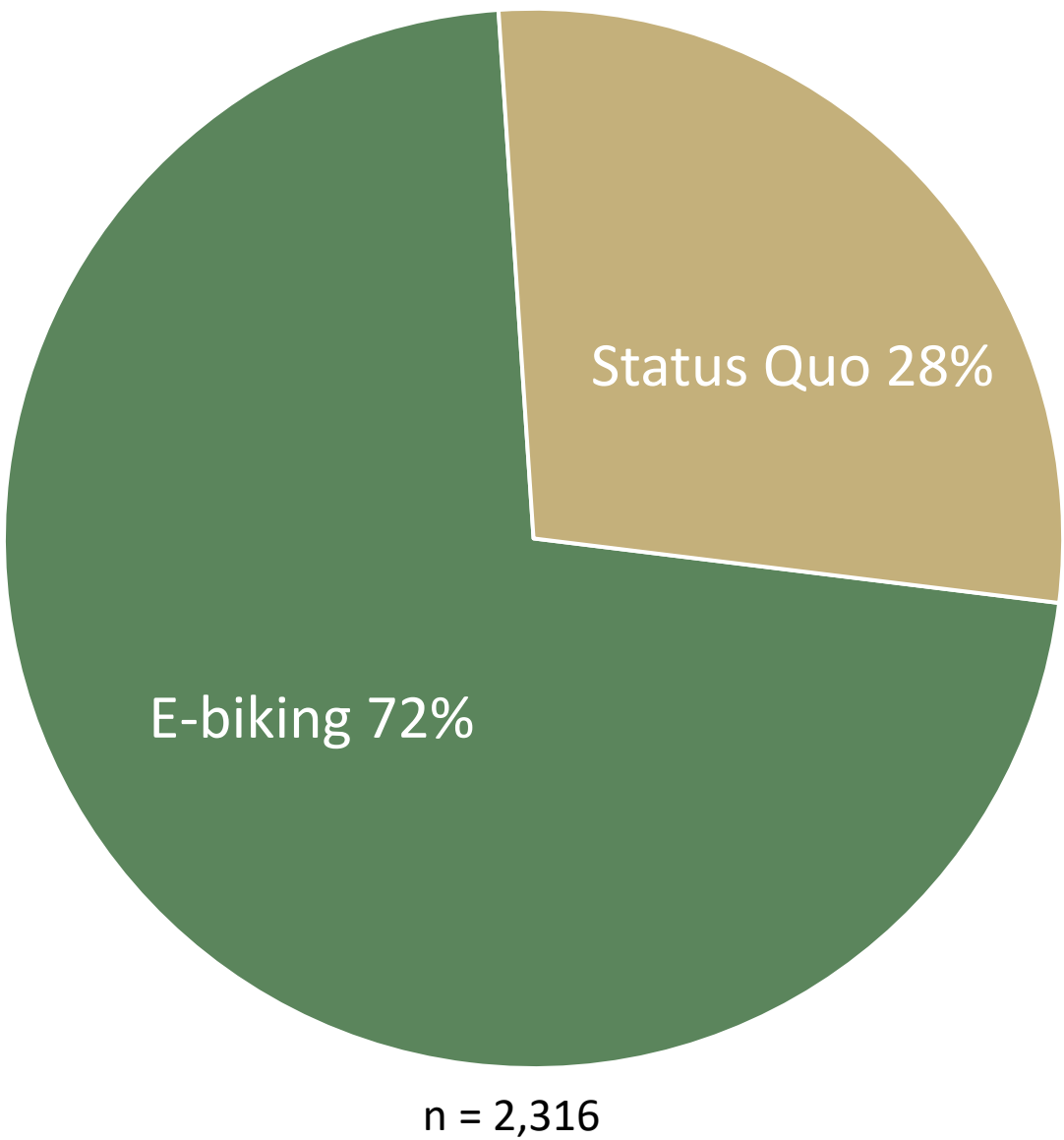


Primary Open Space Activity

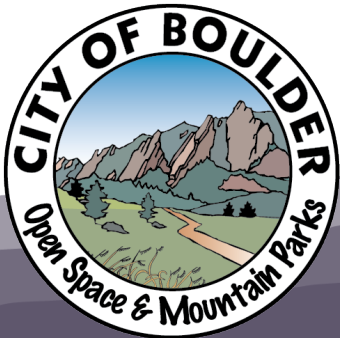
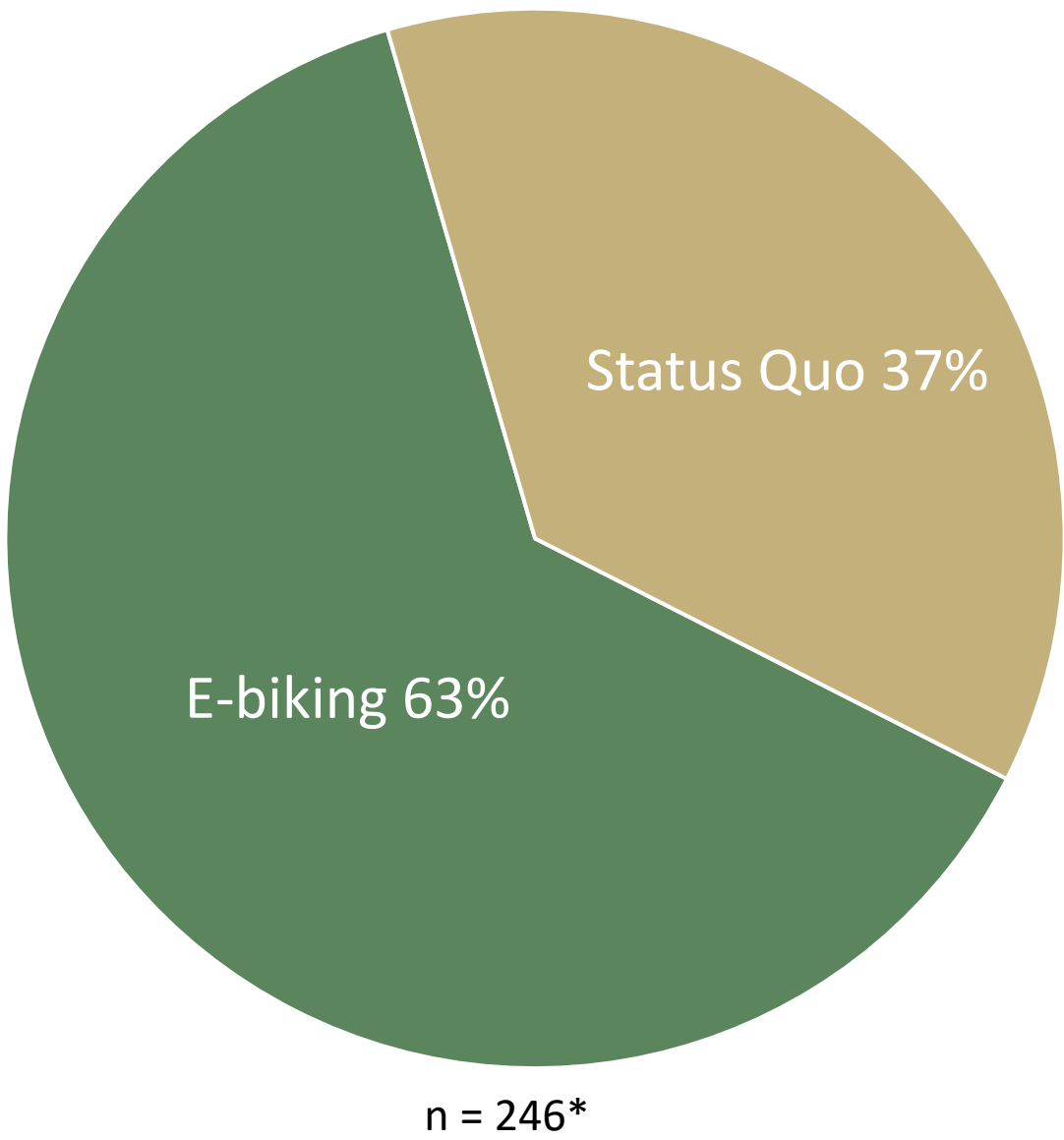


Support for E-bikes on Open Space

Online Engagement



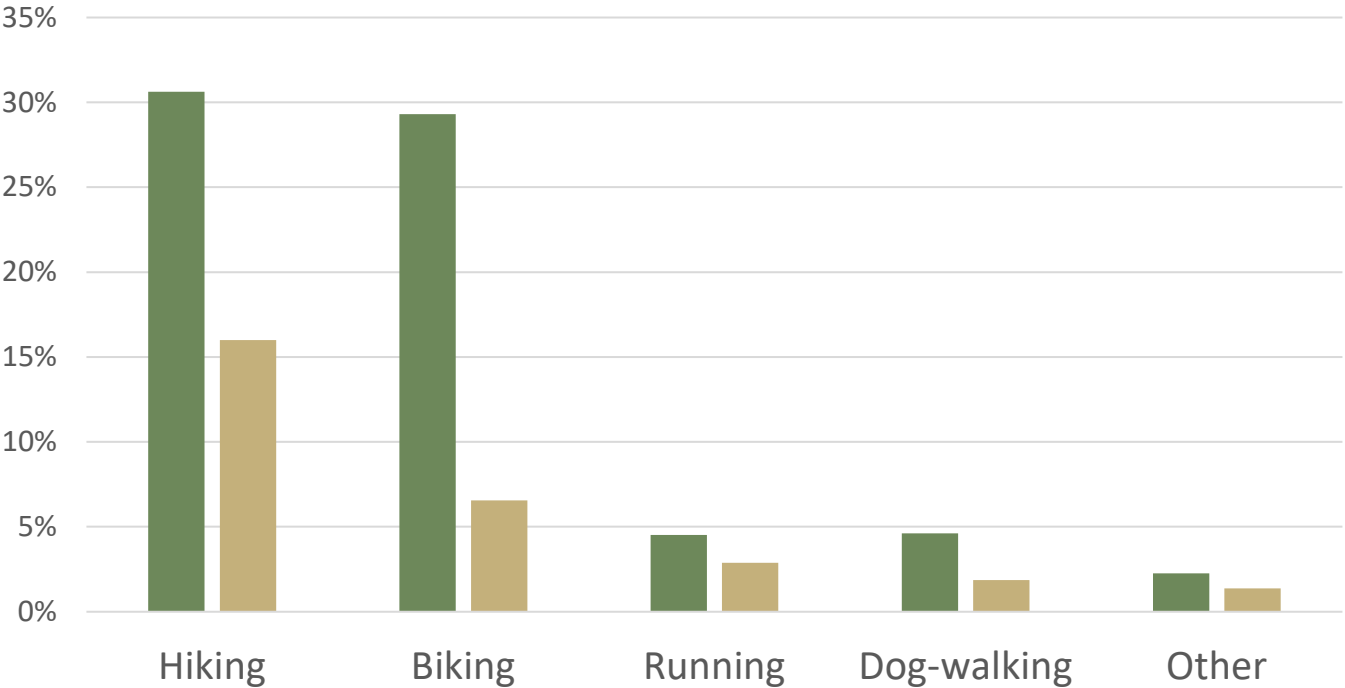
Onsite Intercept



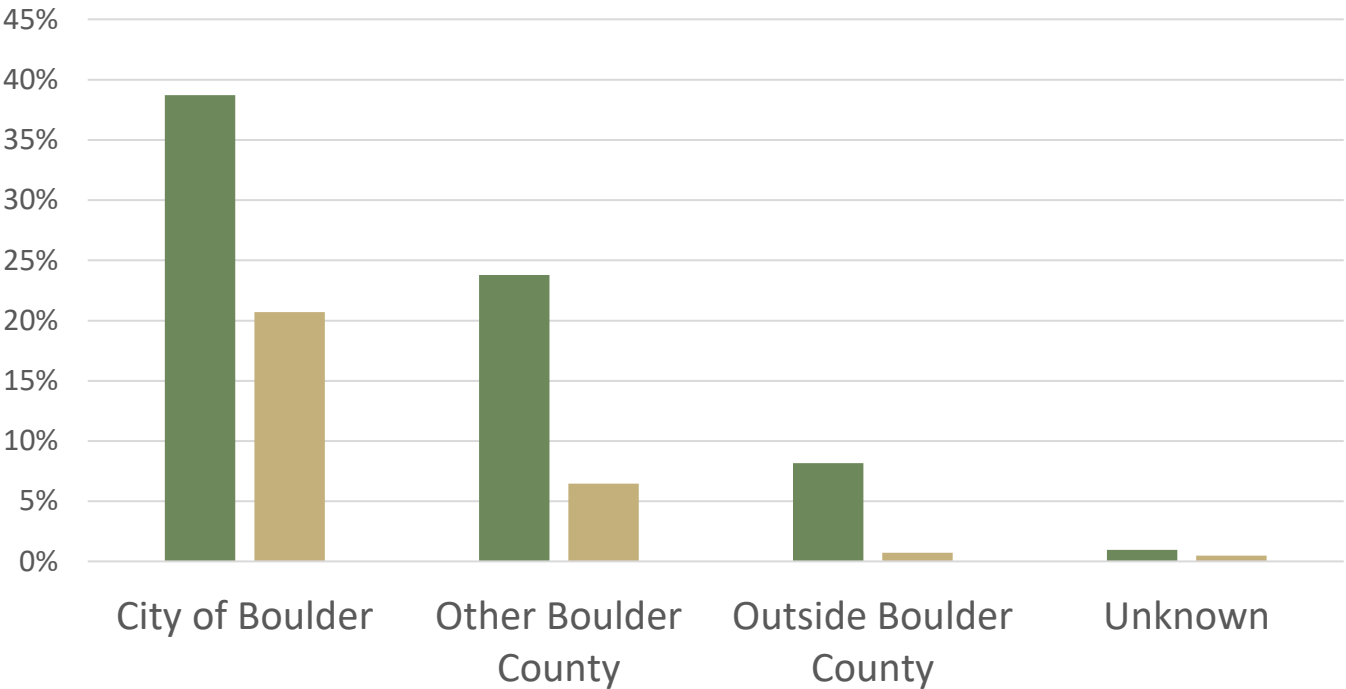
*These percentages come from a question that was added starting in week 4 of the 9-week survey that specifically asked respondents to indicate which option they “most prefer”.

Online Engagement

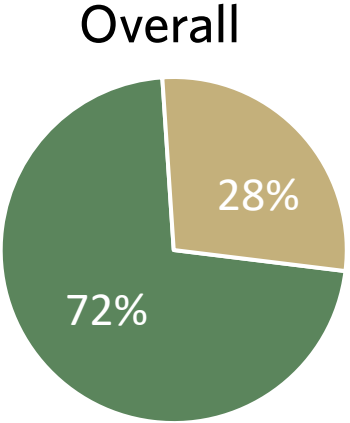
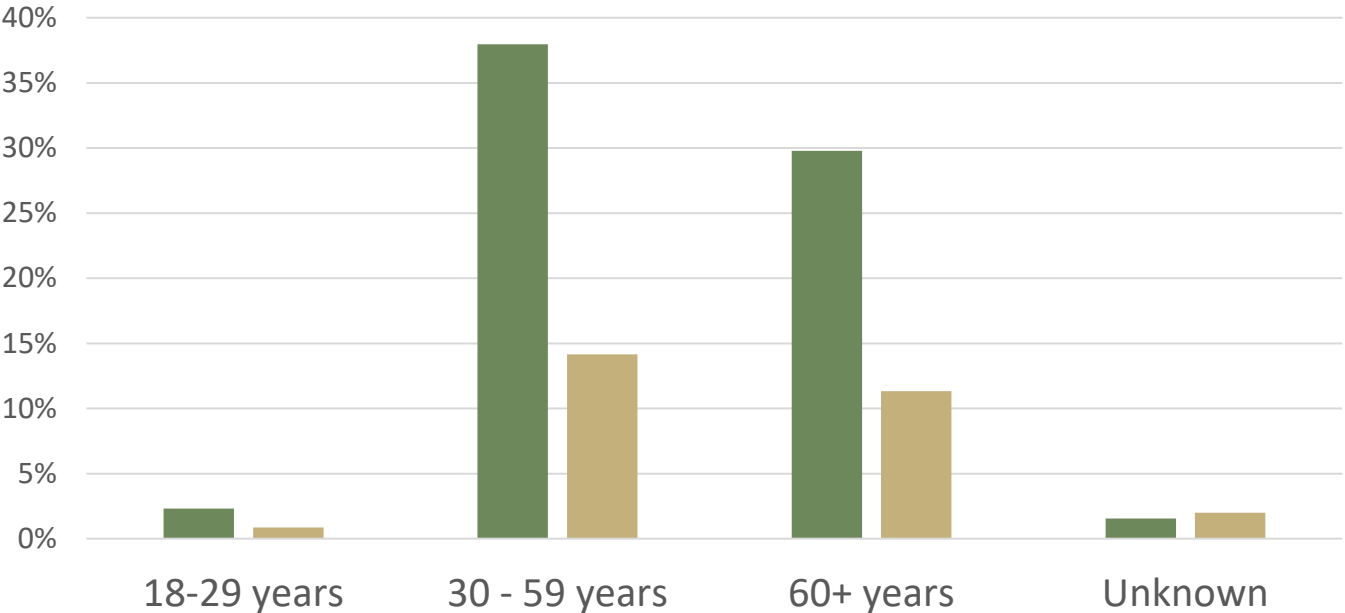
Primary Activity



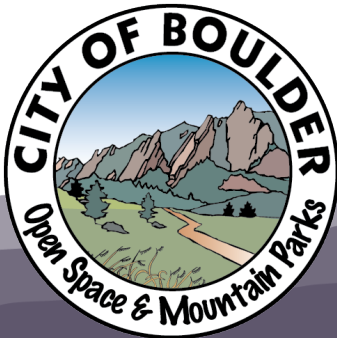
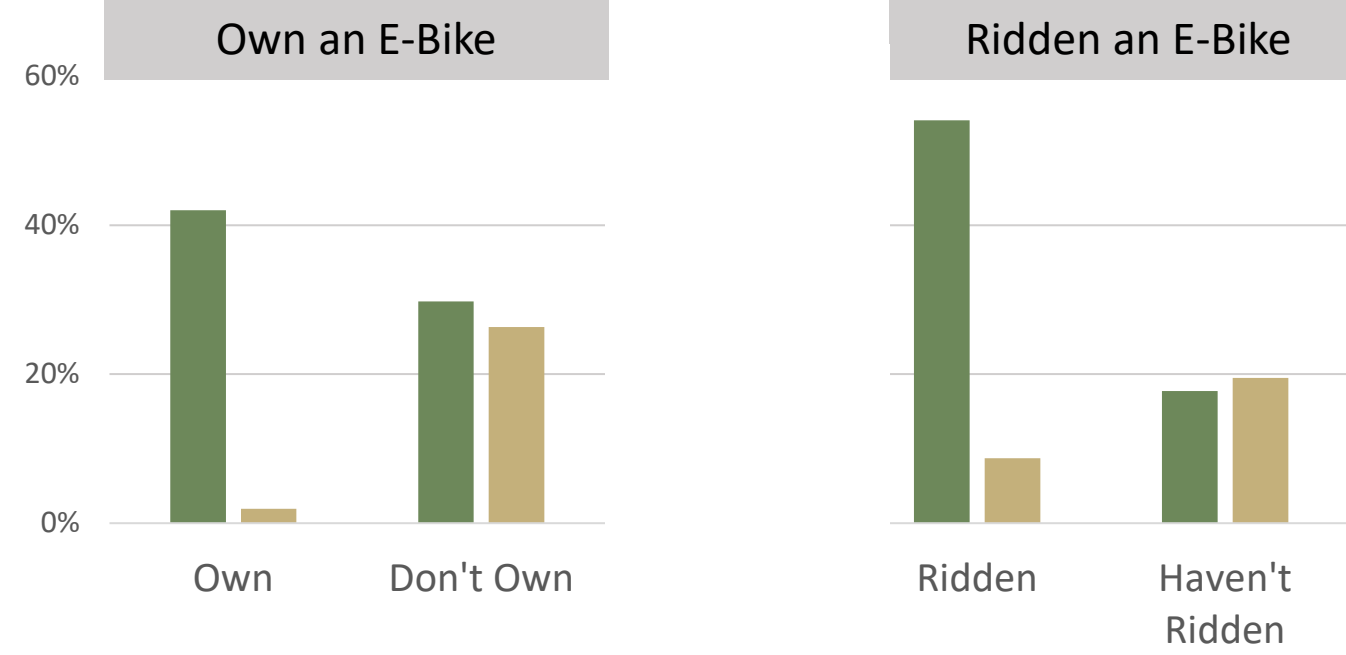
Residence



Age Group



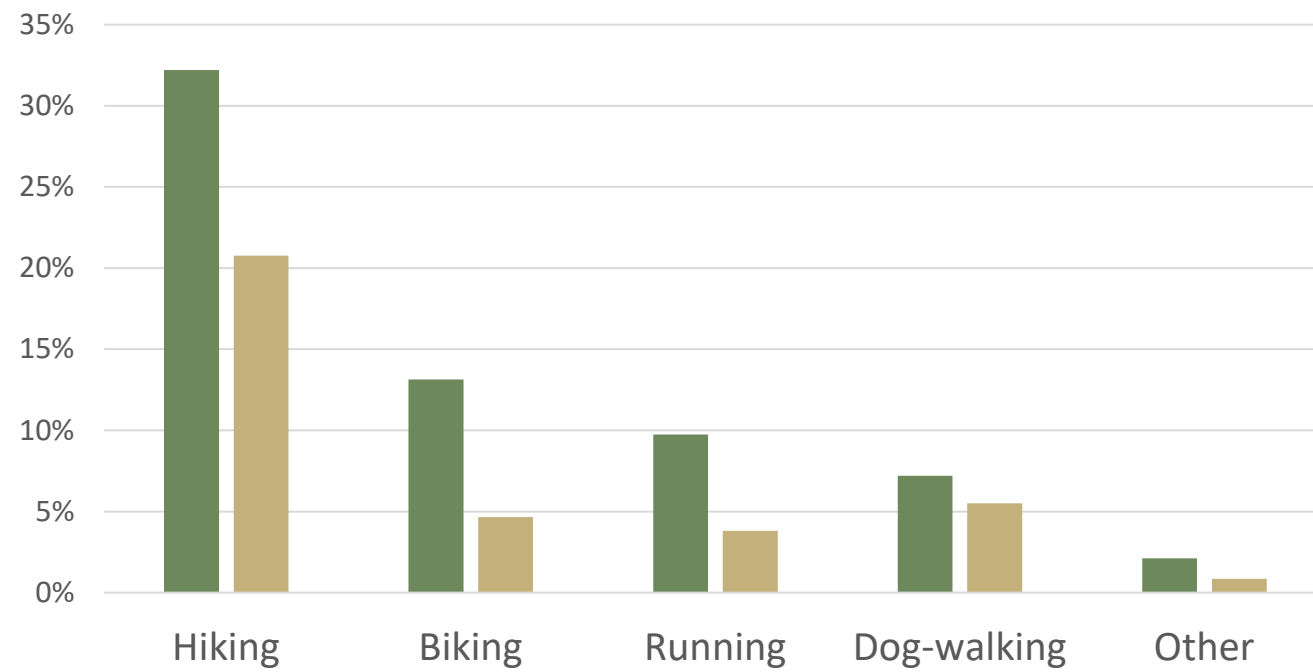
Familiarity with e-bikes



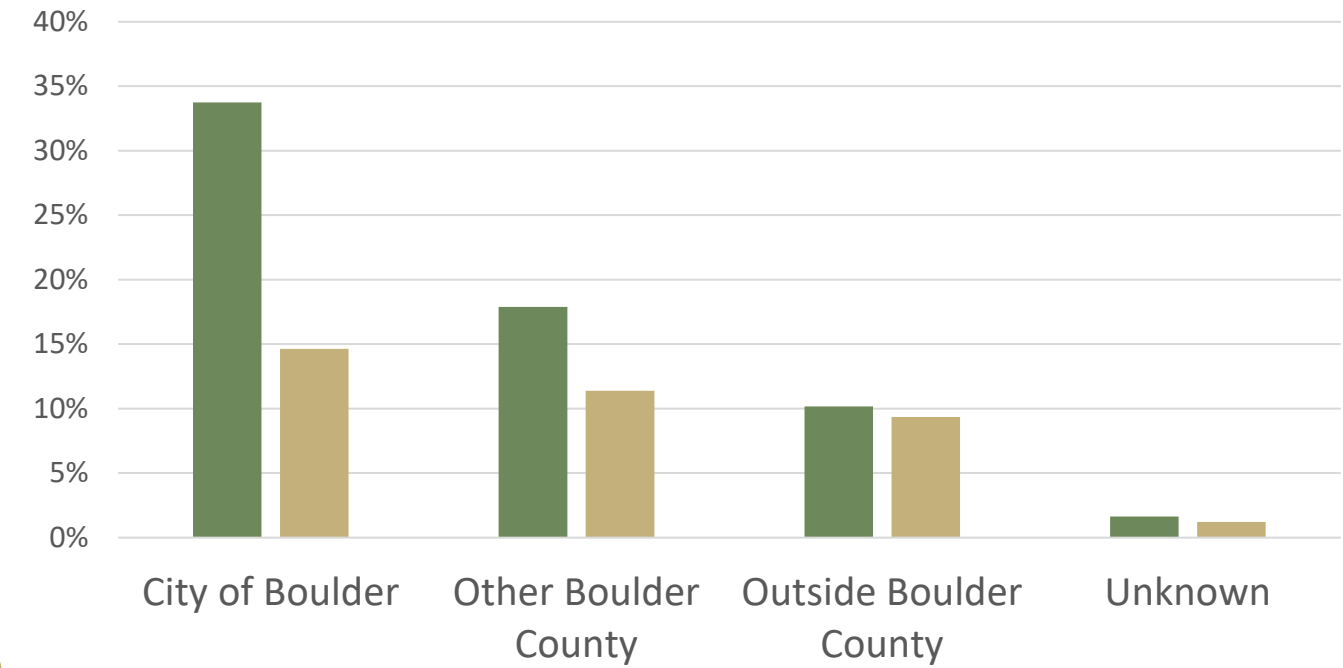
■ E-biking ■ Status Quo

Onsite Intercept

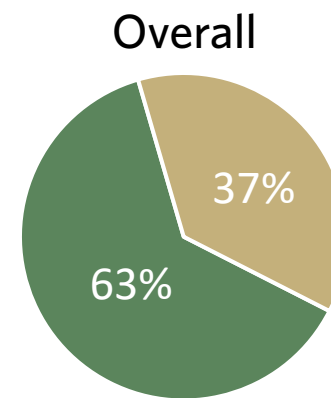
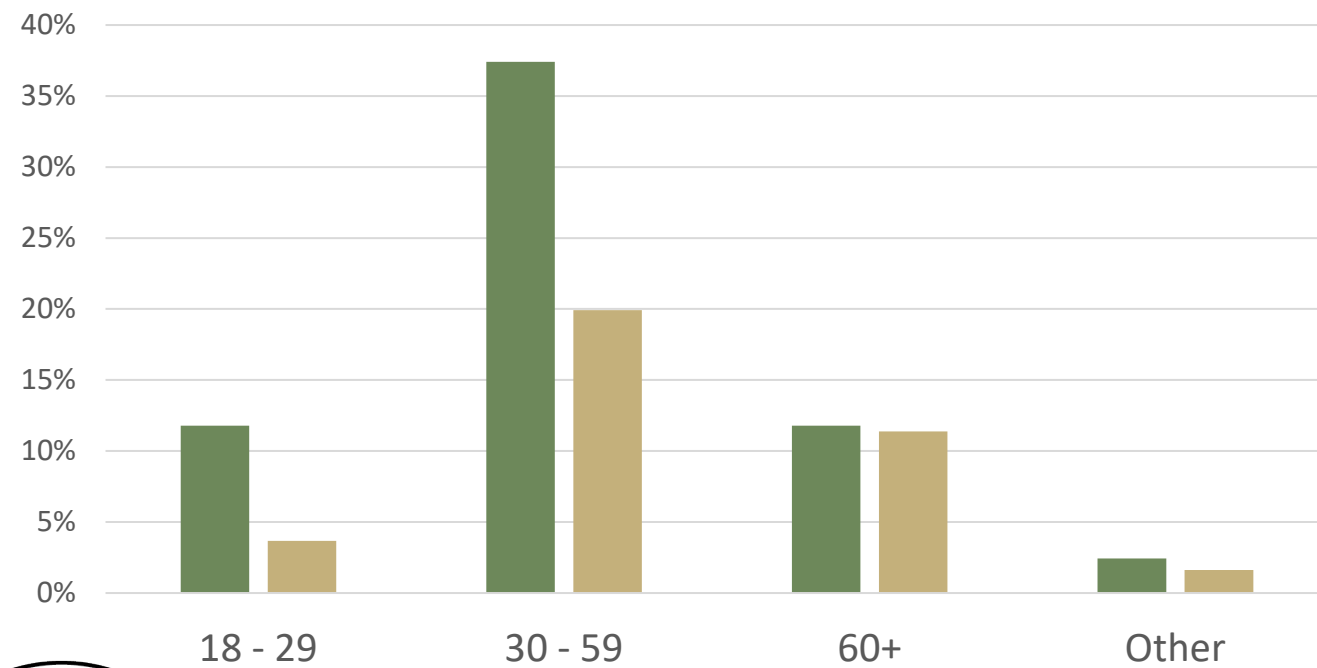
Primary Activity



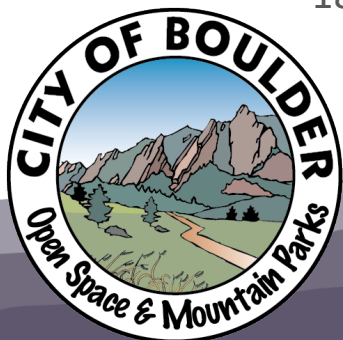
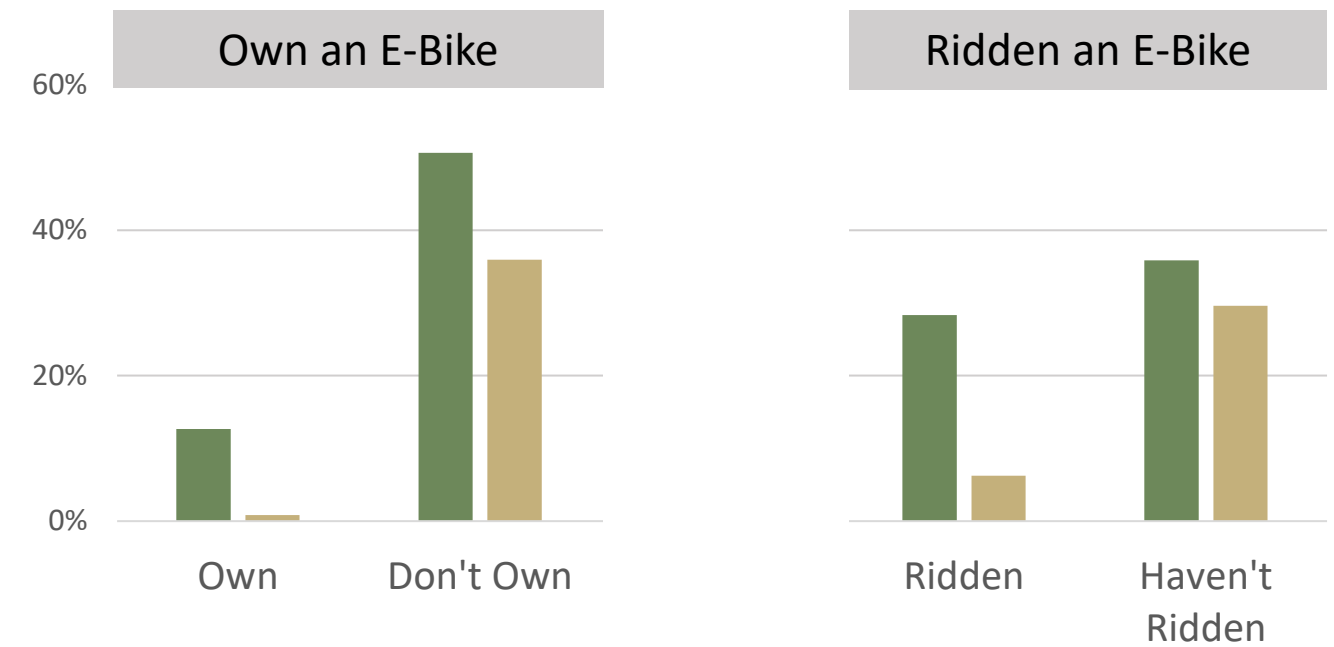
Residence



Age Group



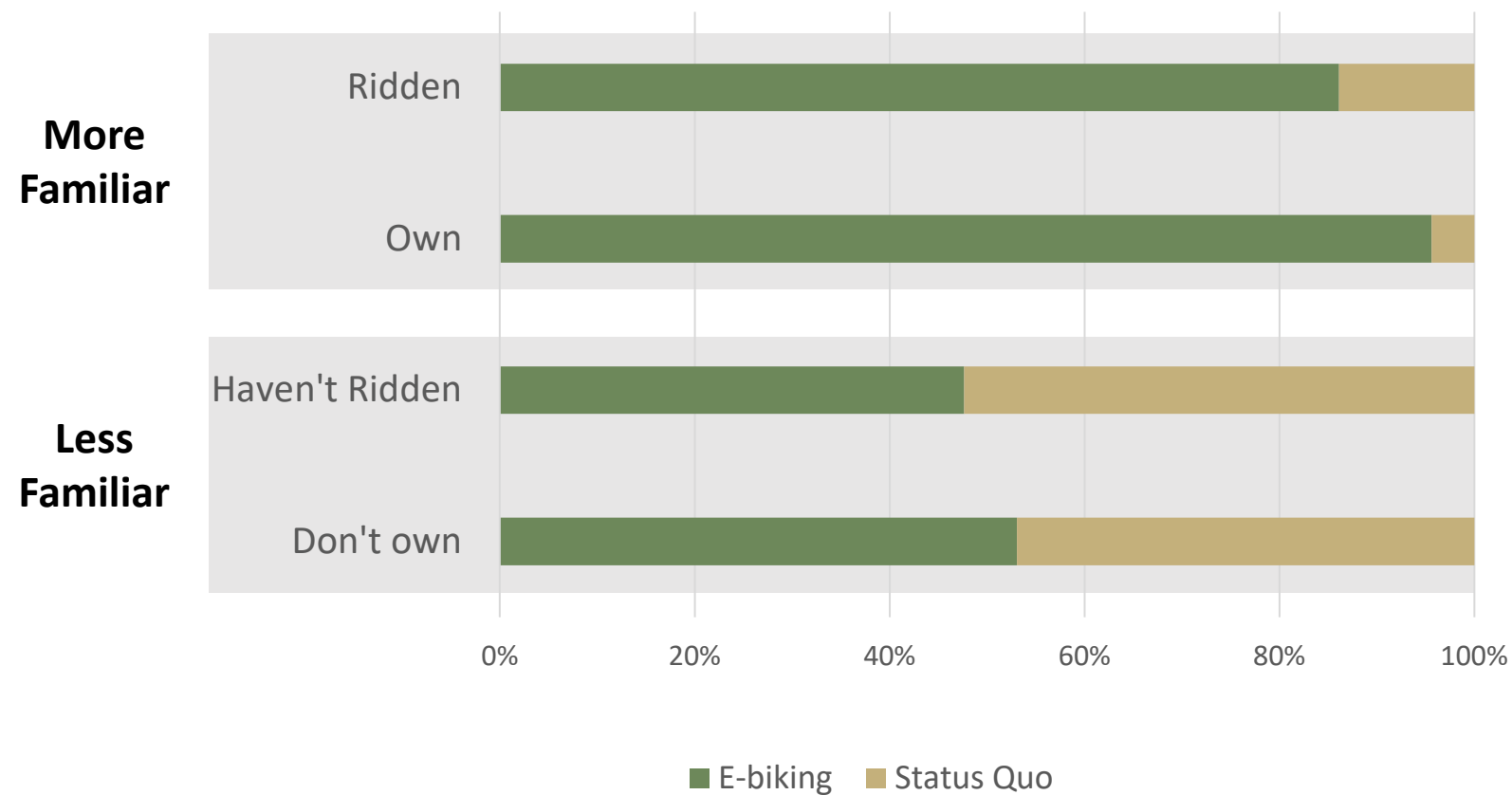
Familiarity with e-bikes



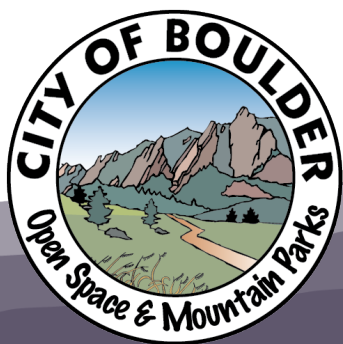
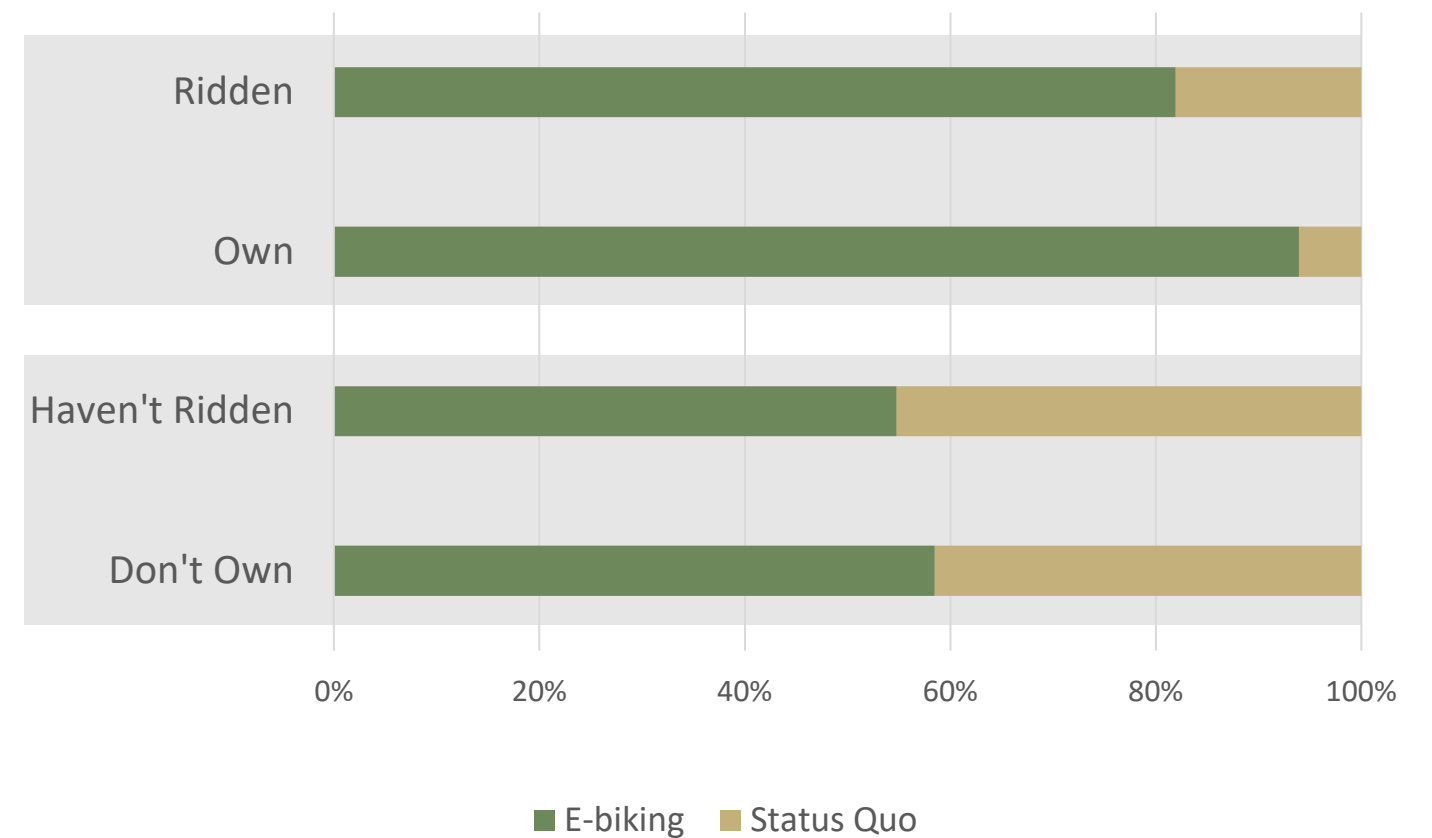
■ E-biking ■ Status Quo

Familiarity of E-Bikes

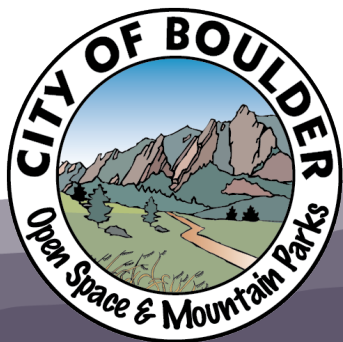
Online Engagement



Onsite Intercept

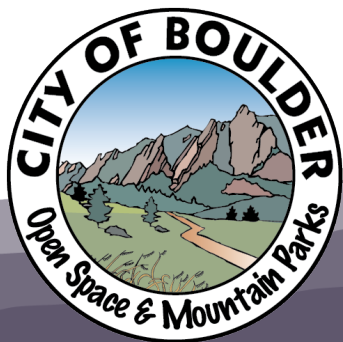


Support by Alternative



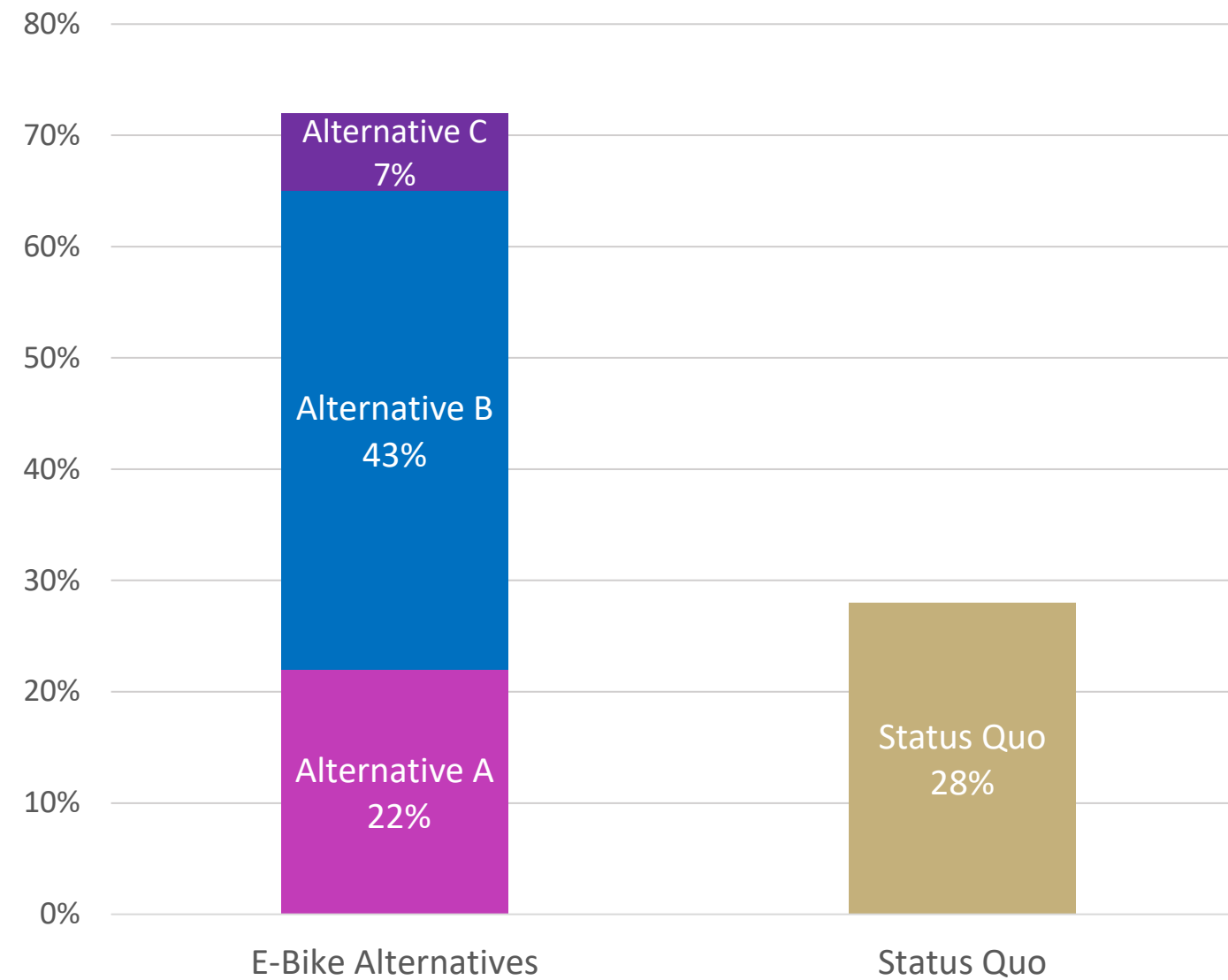
Alternatives to the Status Quo

- A. All Trails that allow bikes
- B. Plains trails located east of Broadway, and the Boulder Canyon Trail
- C. Inter-Connected Trails that allow bicycling and are part of the regional trail.

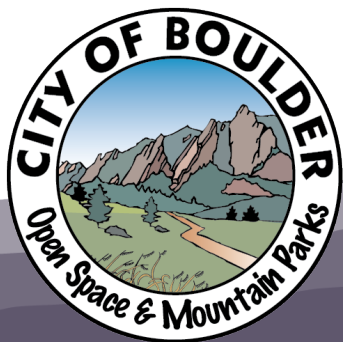


Online Engagement

Support for alternatives or the status quo



n = 2,316

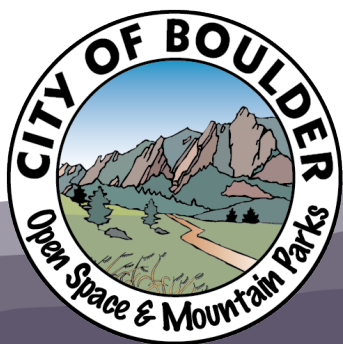
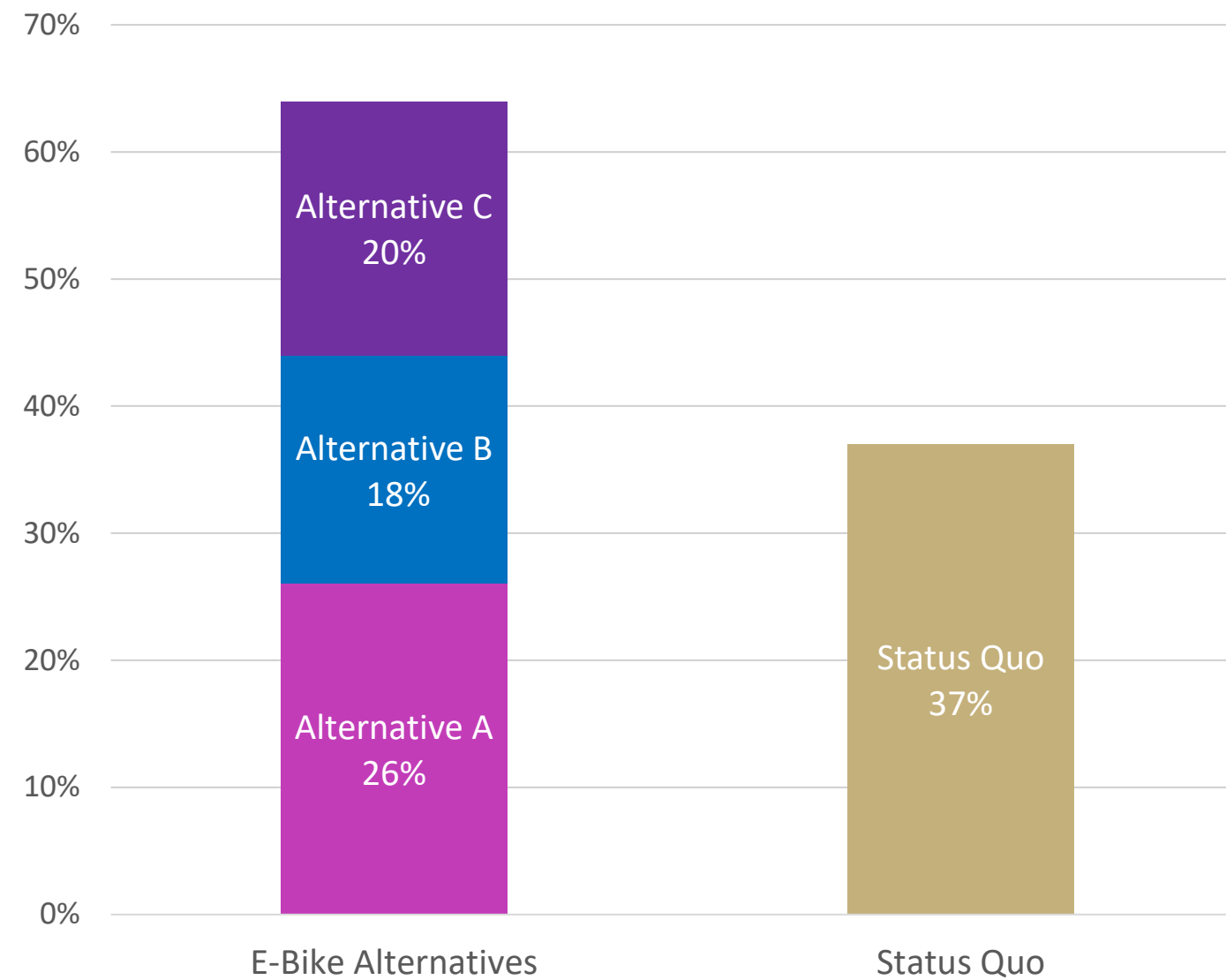


Onsite Intercept

Management alternatives responses

Preference

Overall, which option do you most prefer?



n = 246

Overall Conclusions from datasets

Overall

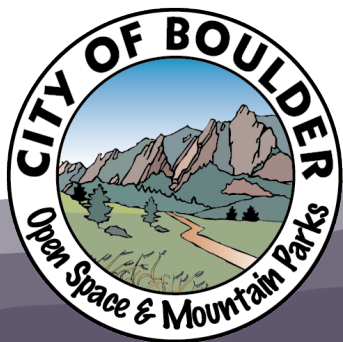
- Majority support for e-biking on some trails

Preferences

- Alternative B supported by most online engagement respondents
- Support across all three alternatives by many onsite intercept respondents

Management Considerations

- E-biker speed
- concern for conflict
- Potential impacts to trail conditions



Management Approach for E-biking as an Open Space Activity

OSMP staff recommends a holistic approach to manage e-biking, like biking, as a passive recreational activity on open space trails. Management of use would include the following strategies:

Trail design and maintenance

There is significant guidance in trail design standards and maintenance that can support speed and conflict mitigation on multi-use trails. Design that incorporates sustainable trail elements of grade reversals tends to have lower and variable grades, helping to minimize speed more effectively than steeper grades. Ensuring open sight lines enables visitors to see one another early and prepare for respectful passing. Other purposeful design and construction techniques are texturized stone paving (rough stone tread), and trail-side anchors, or gateways (stone strategically placed on the side of the trail to create a visual obstacle). These features can support slowing visitors, especially less skilled bikers.

Trail sections that have a higher potential for conflict due to design challenges may also align with maintenance backlog issues. OSMP staff cross-reference concerns with backlogged projects to support strategic prioritization of repairs and subtle trail enhancements that may mitigate conflict and speed concerns. Trail condition monitoring and annual inspection data can also help identify early trail condition concerns that may relate to conflict, aiding in how work is prioritized and the design approach. OSMP visitor surveys will support monitoring conflict rates, which can also guide trail management approaches.

Education and outreach

OSMP uses a sliding scale of education and enforcement levels, from signage and educational interactions to citations, to have the most success at changing visitor behavior. OSMP's Community Connections and Partnerships (CC&P) staff includes POST-certified Rangers, Temporary Rangers (limited commission), Education and Outreach Staff (including Outreach Rangers), Volunteer Services staff, and a variety of volunteers. All staff and volunteers are trained using the "Authority of the Resource" as a guiding principle, but they may also reference a regulation when necessary. They are also trained in natural history, de-escalation skills and more. All Outreach and Volunteer staff are supported by Rangers who help manage enforcement issues and work in concert to apply the appropriate intervention.

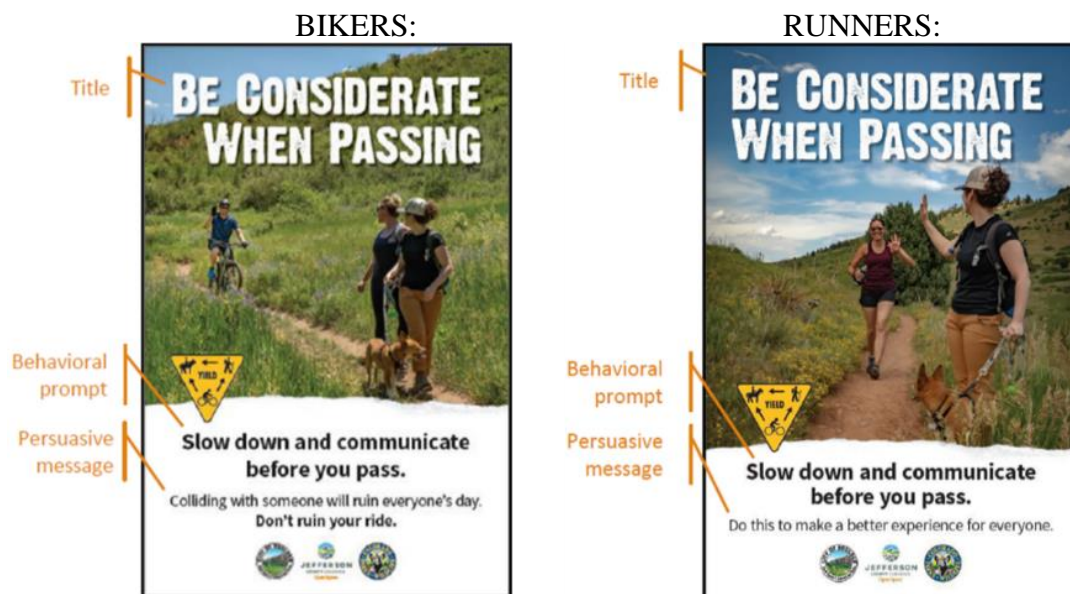
Raising awareness and supporting visitors to know the rules is an effective management strategy OSMP would continue and enhance if e-biking is allowed on some multi-use trails. OSMP Education and Outreach (E&O) staff provide a variety of engaging and informative programs, events, and experiences for a diversity of audiences. The primary goal of the E&O group is to welcome visitors at trailheads and on trails throughout the OSMP system. Outreach staff and public facing volunteers contacted an additional 142,348 visitors through trail and trailhead outreach in 2021. Common topics included resource protection, responsible recreation, and visitor safety. To support visitors with knowing which trails are designated for e-biking use and how to share these trails, messaging targeted to e-bikers would be incorporated into existing biker etiquette outreach materials and events. OSMP E&O efforts would focus on staffing a table/booth to share information for pre-ride interactions at trailhead locations with the most bike and e-bike use.

Management Approach for E-biking as an Open Space Activity

E&O would continue outreach focused on courtesy and rules for sharing multi-use trails among recreational activity groups. Educational materials would be adapted for programming offered for guided mountain biking, etiquette and safety, adaptive mountain biking, and bike repair. In addition to raising public awareness of trails designated for e-biking, OSMP would continue to communicate with the broader population at community events such as the Boulder Farmer's Market and Bike to Work Day rest stations, and Ranger Cottage at Chautauqua. OSMP's continued partnerships with volunteers and the Mountain Bike Patrol would augment staff programming regarding e-biking etiquette and rules on open space.

In partnership with Eldorado Canyon State Park and JCOS, OSMP completed a messaging study around trail courtesy (2022). The objective of the study was to evaluate the effectiveness of trailside signs designed to persuade mountain bikers and trail runners to slow down and announce themselves when approaching hikers on multi-use trails.

The agencies found that mountain bikers passing hikers from behind were three times more likely to slow and announce than when passing hikers head-on. 72% of mountain bikers strongly agreed that they intended to slow down and announce their presence every time when approaching hikers. Approximately 40% of bikers were likely to complete the desired behavior, which is slowing down and communicating before passing somebody else on the trail. (That was an increase from 24% when this sign was not present.) Running behavior however was not influenced by the sign and runners could not recall the persuasive statement. This demonstrated that the intent to do the right thing is present, but more than signs are needed to promote the correct behavior that is required of users.



OSMP intends to integrate lessons learned from this study to inform the creation of our own trailside signs and off-trail outreach materials that includes a behavioral prompt and belief-based message. The aim would be to increase awareness and compliance of the existing yielding requirement through future education and outreach efforts.

Management Approach for E-biking as an Open Space Activity

Ranger patrol and enforcement

If e-biking is allowed on some open space trails, rangers will continue to focus on highly visited areas and prioritize weekend time on patrols, as outlined in the Ranger Strategic Plan. Targeted patrols are a tool that can be used to address visitor safety concerns or complaints where e-biking would be allowed. Rangers will continue engaging with their respective communities to better understand their unique experiences, concerns, needs and opportunities.

Rangers also address areas of concern when they are personally observed or when they receive calls for service from Boulder Police Dispatch, OSMP staff or volunteers. Penalties for a violation of a regulation can range from an educational opportunity to a citation, depending on the totality of the circumstances. The following behaviors related to biking and e-biking that can be regulatorily addressed are:

- Areas where an activity is currently prohibited, for example E-bikes.
- Failure to yield
- Damaging public property
- Bikers are required to remain on trail
- Protection of trees and plants

OSMP also anticipates that some changes to local regulations are needed. OSMP staff is reviewing the B.R.C. to identify and recommend amendments as appropriate to support the management of e-bikes and related enforcement efforts.

Speed of e-bikers, related to increased conflict, was a commonly expressed concern in public input gathered during the engagement window OSMP conducted this summer. Speed differential currently occurs across many existing user types including equestrians, bikes, runners, and hikers. Drawing from the experience of peer agencies and our own experience with biking as an open space activity, OSMP staff do not anticipate that e-biking will require unique enforcement strategies such as establishing and enforcing a speed limit. OSMP staff does however anticipate that someone on an e-bike may travel uphill slightly faster than someone on a regular bike, in which case that user will be required to yield, communicate and pass safely as required by regulation. If and when an injury occurs related to speed, Rangers will respond immediately to provide medical assistance and enforcement, if appropriate.

Monitoring

Establishing a balance between visitor enjoyment and stewardship of resources is critical. OMSP collects visitation related data on a regular basis to develop a quantitative understanding of system-wide recreation visits to city-managed open space. This data is used to support the department and the public in making informed decisions relating to visitation. The onsite intercept survey conducted as part of this project gathered visitor opinions and preferences regarding e-biking on open space lands. It can be used as a baseline for future visitor studies to track trends and changes in public sentiment over time. Automated trail counters are used to estimate the total number of recreation visits to city-managed open space, evaluate annual, seasonal, monthly, daily, and hourly patterns of visitation, and determine how visitation levels are distributed across sample locations.

Management Approach for E-biking as an Open Space Activity

If e-biking is allowed on some open space trails, several on-going visitor monitoring studies can be used in the future to inform recreation management discussions and actions. E-biking would be added as a new activity category in future visitor surveys, alongside all other allowed activities, to quantify and detect any change in activity distributions over time as part of systemwide monitoring efforts. This would allow staff to report out changes, if any, that may be related to e-biking. On-site visitor surveys would be used to evaluate visitor encounter and conflict rates, displacement, perceived crowding, and positive experiences with other visitors. Change can be measured and reported on for trails that allow e-biking and those that do not. Visitor surveys also would measure the demographics and transportation mode choice used for getting to open space for those visitors that report e-biking activity. On-going automated trail counters will be used to measure visitation levels on trails that allow e-biking and those that do not.

Results from on-going visitor monitoring studies can inform conversations related to the adaptive management of e-biking as an allowed activity on open space trails. Using the monitoring studies highlighted above, we can quantitatively compare concerns brought forth during the engagement process such as fear of increasing conflict, displacement, perceived crowding, and visitation levels with how those concerns bear out over time. Future results can also be used to quantitatively speak to perceived benefits of e-biking, such as supporting mental health and access for visitors of varied abilities and ages. Collectively, these visitor monitoring studies can speak to any change associated with the addition of e-biking as an allowed activity on open space trails, create a shared understanding of on-the-ground conditions, and objectively inform future adaptive management discussions and decisions.