

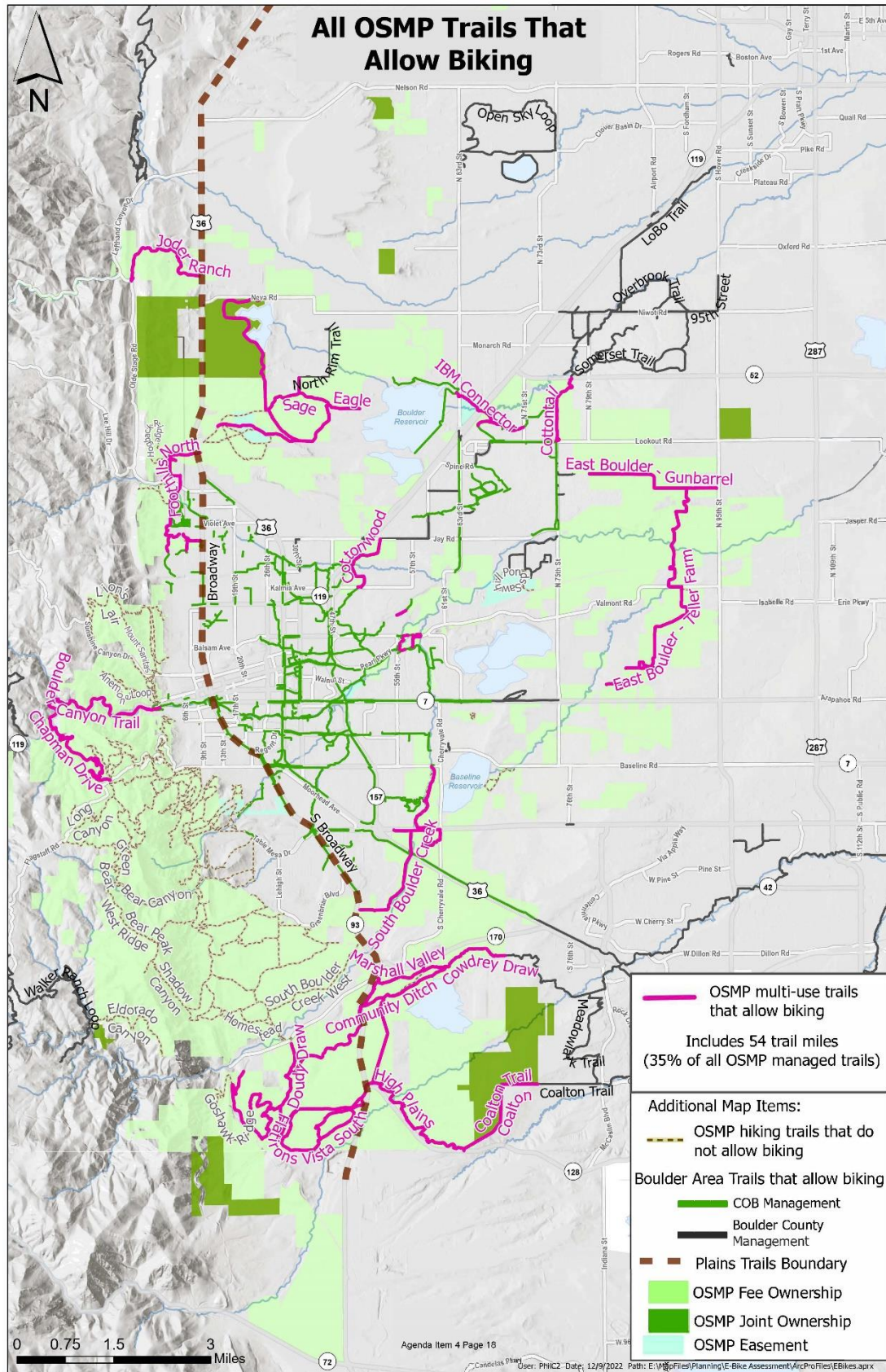
## E-bike evaluation

### 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. The OSBT requested additional information to help guide their consideration of an action item regarding e-biking on open space trails. Below is a list of the information requested and compiled in this document.

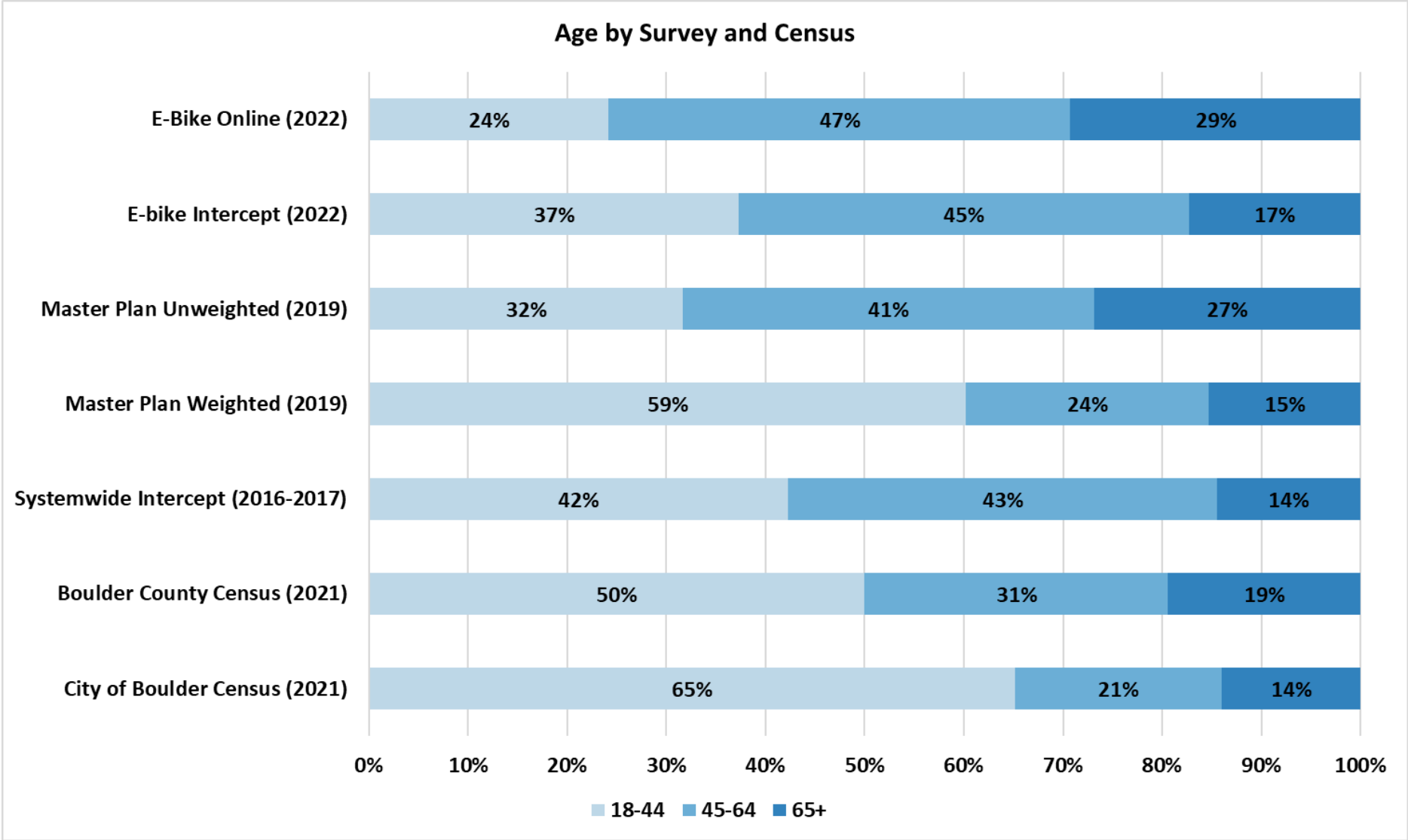
1. [Map of interconnected trail connections](#) between OSMP trails and city and county trails
2. [Comprehensive Demographics](#): OSMP Surveys and Boulder Census Data
3. [Rationale](#) for combining Resident Survey content into on-site Visitor Surveys
4. [Additional crosstabulations](#) for onsite intercept survey results
5. [Locations](#) selected for onsite intercept survey
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7. [List of current fines](#) related to e-biking on OSMP
8. Quantitative data on how many [summonses issued by violation](#).
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10. Can anything be done about [bikers riding with ear buds](#)?
11. OSMP and [accessibility](#)
12. [E-bike Battery Management System \(BMS\)](#) and potential as an ignition source
13. [List of unique ideas from the online engagement questionnaire question](#)  
*Are there any additional comments about e-bikes you would like to share?*
14. Distribution of responses for [primary activities on open space by OSMP Survey](#)
15. [Map OSMP trails widths](#) that allow biking
16. [Comparison of visitation](#) between trails managed by OSMP and agency partners
17. [Visitor displacement on trails](#) due to presence of biking
18. [Trustee Kuntz questions](#) with staff responses

# 1. Map of interconnected trail connections between OSMP trails and city and county trails

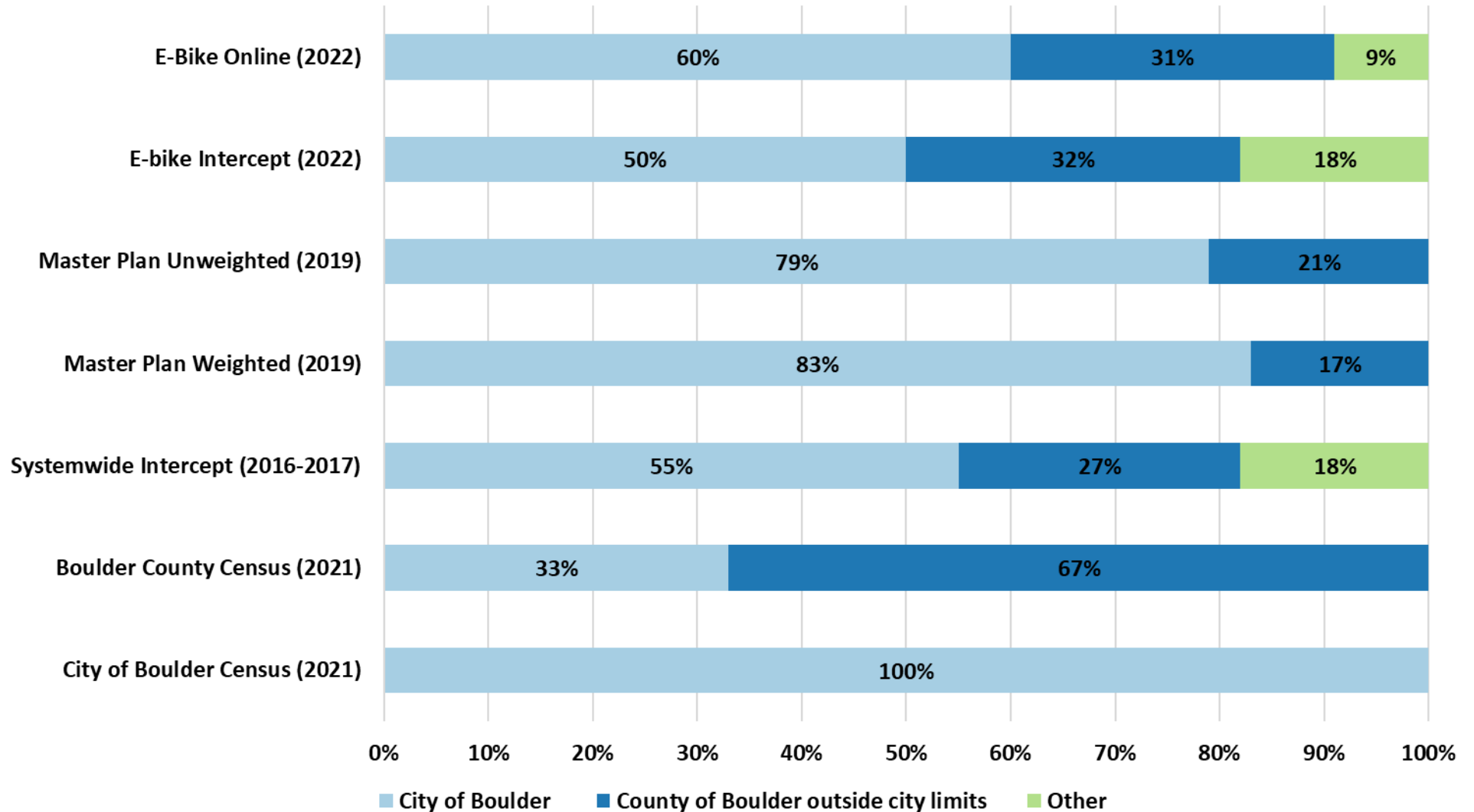


2. Comprehensive Demographics: OSMP Surveys and City and County of Boulder Census Data

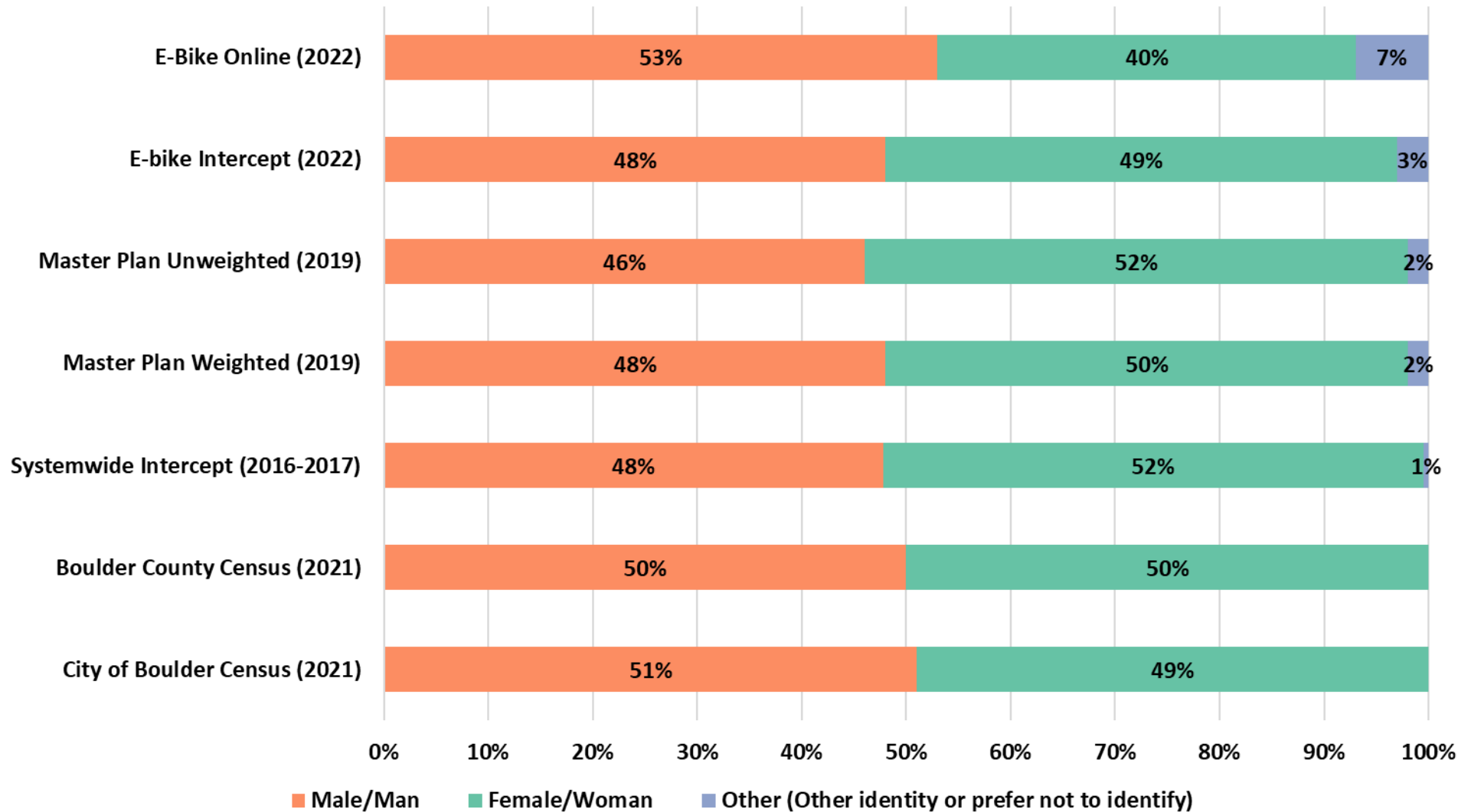
This document contains demographic data from several sources including the City of Boulder and County of Boulder 2021 American Community Survey (Census), 2016-2017 Intercept Survey, 2019 weighted and unweighted mailer Master Plan Survey, 2022 Intercept E-bike Survey, and 2022 Online E-bike Survey. Unweighted Master Plan Survey results represent original respondents, prior to weighting by census parameters. Some results may not add to 100% due to categorical rounding.



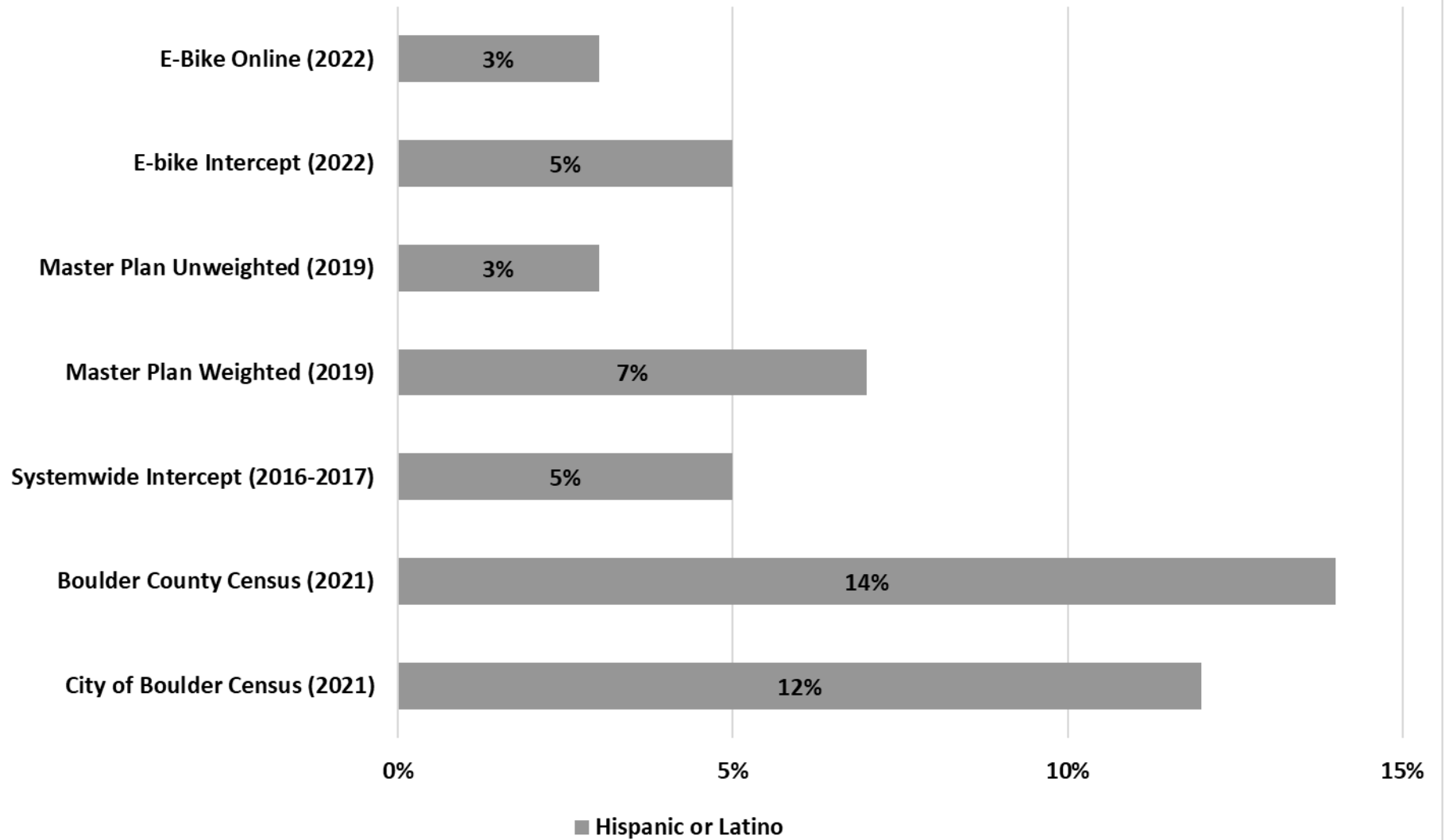
### Residency by Survey and Census



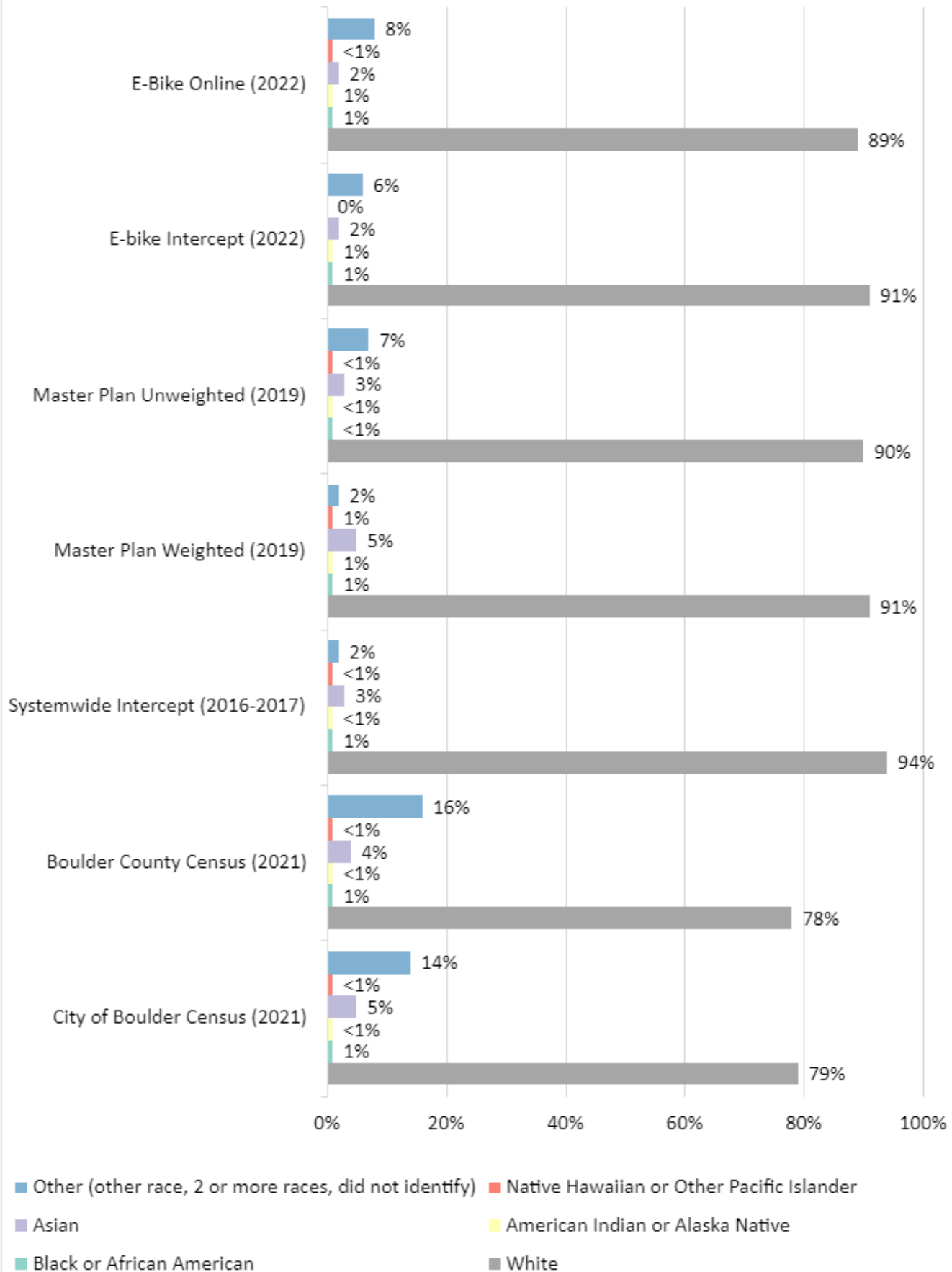
### Sex/Gender by Survey and Census



### Hispanic or Latino by Survey and Census



Race by Survey and Census



## References

Census data: U.S. Census Bureau (2021). One-year estimates. Retrieved from:

<https://censusreporter.org/profiles/05000US08013-boulder-county-co/>

<https://censusreporter.org/profiles/16000US0807850-boulder-co/>

[2016-2017 Visitor Survey](#)

[2019 Master Plan Survey](#)

[2022 Intercept E-bike Survey](#)

[2022 Online E-bike Survey](#)



### 3. Rationale for combining Resident Survey content into on-site Visitor Surveys

## 2021-2023 Public Opinion and Visitor Experience Survey Briefing

### Overview

The Human Dimensions team is in month 15 of a 24-month sampling period for the *2021-2023 Public Opinion and Visitor Experience Survey* (POVES). This survey includes some strategic enhancements to how we, as a department, have historically collected and managed our major public surveys. We have compiled this document to provide a brief background on 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 has 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.

As with any field of scientific inquiry, best practices evolve as methodological advances are made, new technology becomes available, and understanding target populations deepens. In this frame of reference, the Human Dimensions team has been restructuring how we administer our scientific public inquiries to enhance statistical representativeness, increase spatial and temporal coverage, and improve operational efficiency for things such as cost per response, data management, analysis, and reporting.

The *2021-2023 Public Opinion and Visitor Experience Survey* combines content from what we previously administered (or planned to) as three separate survey efforts into a single survey effort. The first two integrated surveys are 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 1**). The third survey integrated into POVES was initially planned as a discreet project (Recreation Opportunity Survey), and included a series of questions regarding people's motivations, desired recreation settings, and actualized experiences on OSMP lands.

### Rationale for combining Resident Survey content into on-site Visitor Surveys

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 representative 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. 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 BVCP areas I/II/III, and residents with only a P.O. box).

*Table 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 ~3,800
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

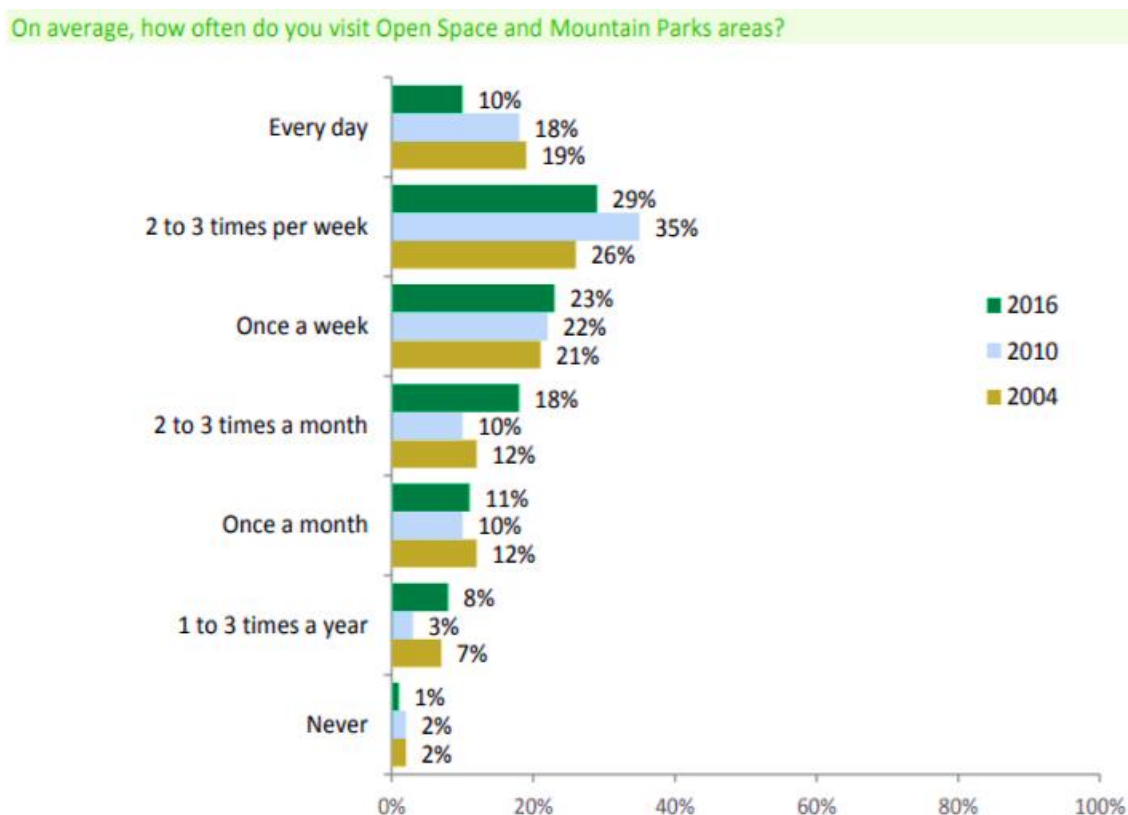
The Visitor Survey captures adult visitors on OSMP coming from the city and county of Boulder, as well as from outside the county. ***On-site surveys are designed such that sub-setting to specific groups, such as only city***

**residents, is supported, scientifically defensible, and includes statistically representative results.** On-site intercept surveys are administered to visitors at the end of their trip, just before leaving OSMP lands. In this manner, all respondents to these surveys are inherently visitors to OSMP lands, including city and county residents, and this 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.

The Resident Survey has historically been conducted as a telephone survey of city of Boulder active voters and administered most recently in 2016 as a mailer to households within the Boulder Valley Comprehensive Plan areas I/II/III (city and county of Boulder residents). It included more broad questions about hot topics and potential management strategies typically not included in the Visitor 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 1). We are not dismissing the value of inquiring with populations who do not actively visit OSMP lands. However, we affirm that the Resident Survey is unsuccessful at eliciting responses from this portion of the city and county population.

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 a separate project.

Figure 1 Visitation frequency from the 2016 Resident Survey Report



## 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 for any one person too long.

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 three separate surveys into a single survey effort, we have significantly reduced the overall cost when compared to implementing three 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 site-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.

## Inability to directly compare Visitor and Resident Survey results

One further discussion topic can help explain why we no longer conduct Resident Surveys. 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.

## 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

## Online References

[2005 Visitor Master Plan](#)

[2016 Resident Survey](#)

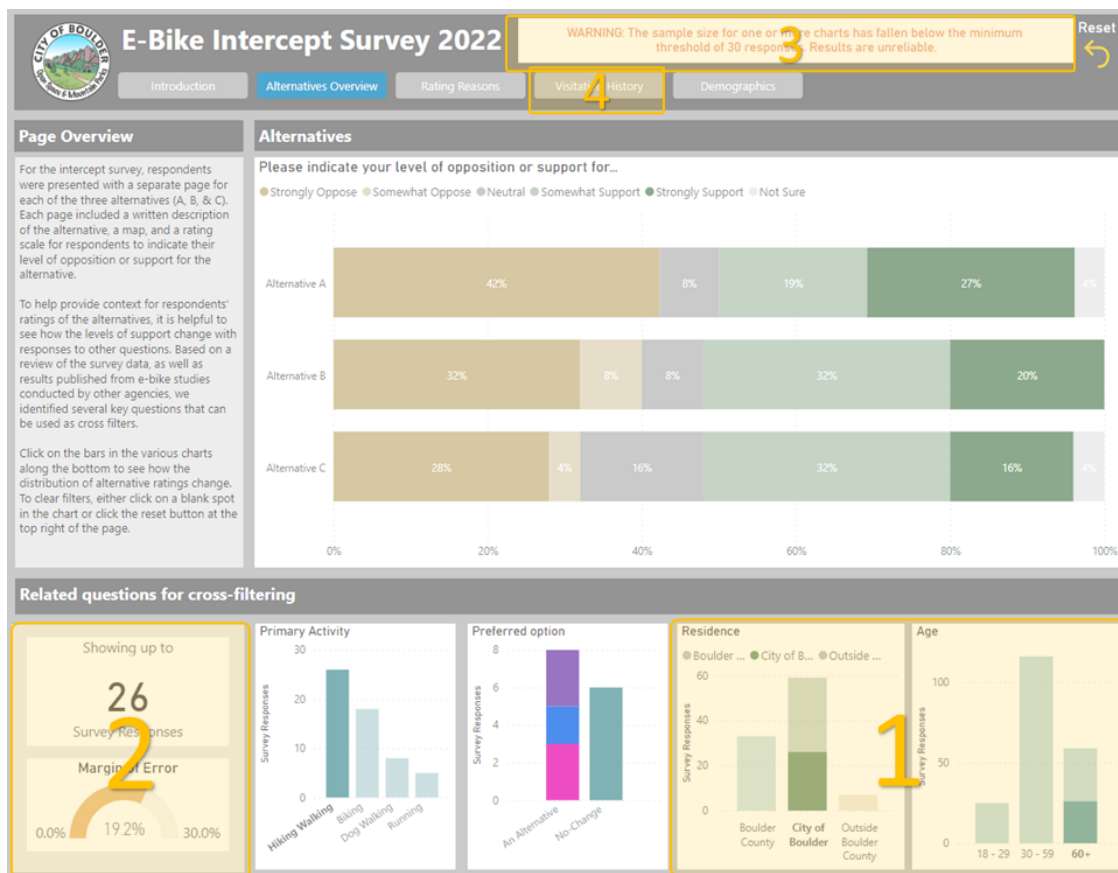
[2016-2017 Visitor Survey](#)

## 4. Additional onsite intercept survey crosstabulations

OSMP updated the interactive digital report for the onsite intercept survey to include filtering capabilities on the Alternative Overview and Rating Reasons pages that provides interactive results for e-biking alternatives by residence and age categories. An explanation of these updates and static crosstabulations are presented below.

### Digital Report Updates

1. Added age and Residence cross-filters to the Alternatives Overview and Rating Reasons pages
2. Added sample size and Margin of Error indicators to the Alternatives Overview and Rating Reasons pages
3. Added a warning to the Alternatives Overview page that appears when the sample size for one or more graphs goes below 30
4. Moved E-Bike ownership and ridership to Visitation History page



### Using the Digital Report

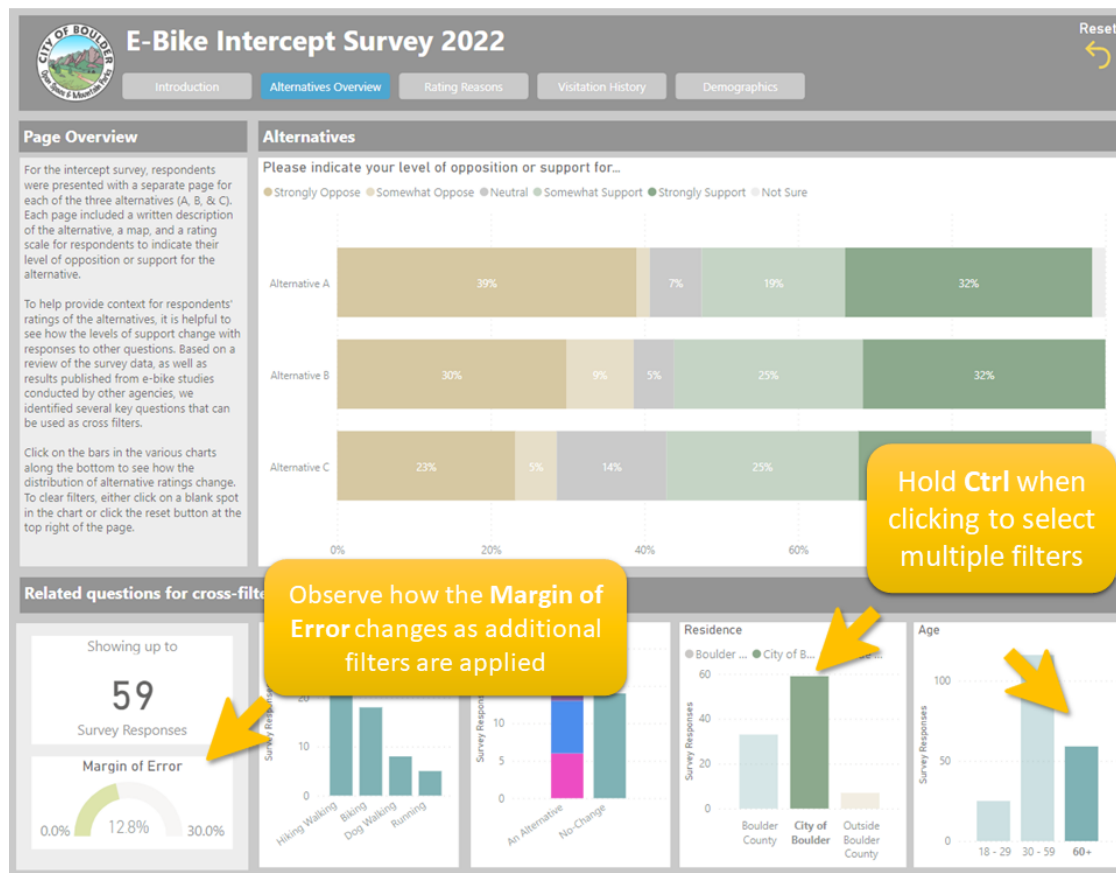
One of the key benefits of the digital reporting platform is the ability to interactively filter visuals on a page by selecting different categories using one or more of the other visuals on the page. For the Alternatives Overview page in particular, Primary Activity, Preferred Option, Residence, and Age charts have been added as available options for interactively filtering results.

To filter the results to a specific subset, click on the bar or axis label to select that category. To Select multiple categories from either a single chart or multiple charts, select the first category/filter you want to apply and then hold **Ctrl** when clicking to select additional filters.

When selecting multiple filters, it is important to keep track of the number of survey responses and the associated Margin of Error. There are many filters available on the Alternatives Overview page and it is easy to subset the data to a point where the sample size will be too small to generate reliable statistics/results. As an additional cue, a warning message will pop up at the top of the screen when the sample size for one or more charts drops below 30.

In general, we recommend applying no more than two filters at a time to maintain a sufficient sample size to minimize the Margin of Error. To clear filters, you can either click the Reset button at the top right hand corner of the page or you can simply click in a blank spot in any of the charts on the page.

The image below shows an example of how to filter the data on the Alternatives Overview page to show responses from city of Boulder residents who are 60+ years of age.



### Alternative Preference by Age and Residence

*Table 1 Alternative Preference by Age and Residence. Percentages sum to 100% by row to show distribution of preference by residence and age sub-groups. Combined preference distribution for all age groups within a Residence are displayed at the top of the group in bold.*

Residence and Age	<u>E-Bike Alternative</u>		<u>No Change / Status Quo</u>	
	Survey Responses	Percent	Survey Responses	Percent
<b>Boulder City</b>	<b>81</b>	<b>70%</b>	<b>35</b>	<b>30%</b>
18 to 29	14	82%	3	18%
30 to 59	47	72%	18	28%
60+	20	59%	14	41%
<b>Boulder County</b>	<b>43</b>	<b>61%</b>	<b>27</b>	<b>39%</b>
18 to 29	4	67%	2	33%
30 to 59	31	67%	15	33%
60+	8	44%	10	56%
<b>Outside Boulder County</b>	<b>24</b>	<b>51%</b>	<b>23</b>	<b>49%</b>
18 to 29	11	79%	3	21%
30 to 59	12	43%	16	57%
60+	1	20%	4	80%
<b>Grand Total</b>	<b>148</b>	<b>64%</b>	<b>85</b>	<b>36%</b>

### Alternative Preference by Activity

*Table 2 Alternative Preference by Primary Activity. Percentages sum to 100% by row to show distribution of preference by the primary activity.*

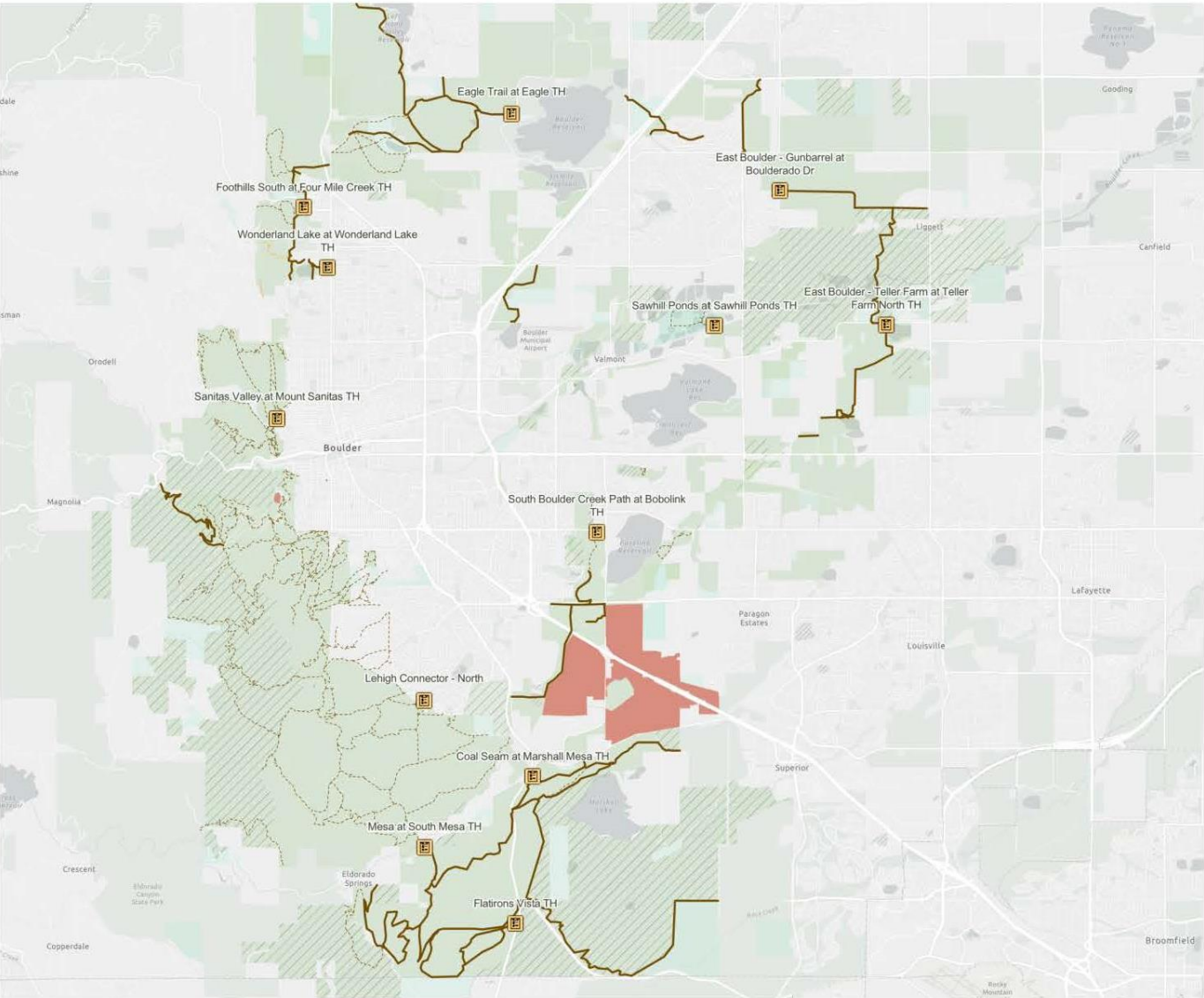
Activity	<u>E-Bike Alternative</u>		<u>No Change / Status Quo</u>	
	Survey Response	Percent	Survey Responses	Percent
Hiking Walking	76	61%	49	39%
Biking	31	74%	11	26%
Dog Walking	17	57%	13	43%
Running	23	72%	9	28%
Other	5	71%	2	29%
<b>Grand Total</b>	<b>152</b>	<b>64%</b>	<b>84</b>	<b>36%</b>



5. Locations selected for onsite intercept survey

2022 E-Bike Onsite Intercept Survey Map of Locations

	Location	# Surveys
Pedestrian	Lehigh Connector - North	67
	Mesa at South Mesa TH	45
	Sanitas Valley at Mount Sanitas TH	39
	Sawhill Ponds at Sawhill Ponds TH	4
Multi-Use	Coal Seam at Marshall Mesa TH	14
	Eagle Trail at Eagle TH	22
	East Boulder - Gunbarrel at Boulderado Dr	43
	East Boulder - Teller Farm at Teller Farm North TH	26
	Flatirons Vista TH	25
	Foothills South at Four Mile Creek TH	60
	South Boulder Creek Path at Bobolink TH	60
	Wonderland Lake at Wonderland Lake TH	26
	Grand Total	431





## 6. Weighting the onsite intercept survey results

Weighting survey data and the associated advantages/disadvantages of the methods used is a complex topic. Providing the flexibility to filter and compare results by sub-groups provides a more direct and clearer insight into potential differences in attitudes, preferences, and opinions by different sub-groups. At this time, staff recommends filtering results, such as by individual activity, to see how those individual subgroups responded to questions, rather than weighting the data. To support this, staff has re-designed the interactive report to allow for the examining of e-bike and alternative support by specific sub-groups including primary activity, residence, and age in order to see how responses differ across these groups.

## 7. List of current fines related to e-biking on OSMP

Below is a list of Boulder Revised Codes that could apply to e-bike use if authorized on some trails.

CODE	TITLE	FINE AMOUNT
7-5-25	No Electric Assisted Bicycles on Open Space	\$100
8-3-3. G (08)	Trail Yielding Regulation	up to \$2,650
5-4-2	Damaging Public Property	up to \$2,650
8-3-6	Vehicle Regulation (On-trail travel by a nonmotorized vehicle required)	up to \$2,650
6-6-6	Protection of Trees and Plants	\$100
7-2-34	Use of Earphones Prohibited	Up to \$500
7-4-58	Speeding (15 mph speed limit)	Up to \$500
7-4-59	Driving too fast for conditions prohibited	Up to \$500
7-4-42	Certain Vehicles Not to Ride More Than Two Abreast (No person shall drive a motorcycle, moped, electric assisted bicycle, bicycle, human powered vehicles, or lightweight electric vehicle adjacent to more than one other such vehicle within the same lane.)	Up to \$500

## 8. Quantitative data on how many summonses issued by violation.

Rangers are responsible for balancing and responding to calls for service for law enforcement, code enforcement, medical, search and rescue and fire calls with proactive patrol to address violations, safety concerns, provide visitor information or natural resource education. OSMP rangers have observed e-bike use on various city open space trails, although rangers are finding it increasingly difficult to differentiate e-bikes from a regular bike and anticipate this only getting more difficult over time. Rangers use discretion based on the totality of the circumstances to address the violation. Below is a summary of summons issued by year.

CODE	TITLE	PAY AND CLOSE	FINE AMOUNT	YEAR	SUMMONS TOTALS	WARNINGS
7-5-25	No Electric Assisted Bicycles on Open Space	Y	\$100	2022	0 to date (11/17)	9 to date (11/17)
				2021	2	11
				2020	1	n/a*

\*Rangers began collecting formal Ranger warning data on 7/1/21.

The outcome can range from a verbal warning to a citation. The person receiving a citation for this violation has the option to pay the fine online and is not required to appear in court.

## 9. Approach to enforce speed for a management alternative that allows e-biking

It is often the case that it is not the vehicle itself that is the cause of the problem, but the person behind the wheel, or in this case, behind the handlebars. If e-bikes are allowed, rangers will focus enforcement on violations that have a negative impact on other visitors, pose an increased visitor safety risk, or damage the resource. For e-biking, some examples of this would be failing to yield, recklessly causing injury to another and riding off trail.

OSMP rangers recognize the concern around increased speed and speed differential from a visitor safety and conflict lens. Based on OSMP experience of managing biking, and from that of neighboring agencies who allow e-bike use, OSMP does not anticipate an increase rate of injury or accidents due to the presence of e-bike use on OSMP trails.

## 10. Can anything be done about bikers riding with ear buds?

The Boulder Revised Code 7-2-34 currently prohibits a person driving any type of vehicle while wearing earphones.

## 11. OSMP and accessibility

### Accessible Trail Design Standards

OSMP Accessible design standards are based on federal guidelines, specifically, the Architectural Barriers Act Accessibility Standards (ABAAS) and the Outdoor Developed Area Accessibility Guidelines (ODAAG), developed by the Architectural and Transportation Barriers Compliance Board (U.S. Access Board). The US Forest service developed manuals of these federal guidelines that OSMP has also adopted. More information on the (Forest Service Trail Accessibility Guidelines (FSTAG) and Forest Service Outdoor Recreation Accessibility Guidelines (FSORAG) is available here: [Accessibility Resources | US Forest Service \(usda.gov\)](https://www.usda.gov/forestservice/accessible-trail-design-standards).

### New technologies

Advancements in technology are allowing a diversity of ages and people experiencing disability to have equal access to the outdoors. Batteries, electric motors, and suspension are the most prevalent. As weight diminishes, performance improves, and as price lowers in this machinery, more and more people have the opportunity to access it. This has been a gamechanger for many.

A group of riders with disabilities (including OSMP staff Topher Downham) recently completed the White Rim Loop, a ride that just a few years ago was nearly impossible for them. [Adaptive athletes ride the White Rim in Canyonlands | News | telluridenews.com](#) Nature everywhere that was once closed off to elderly people and people experiencing disability is now open to them. Technology is creating this equity.

### **OPDMDs and E-bikes**

As detailed in the OSMP Master Plan, the US Department of Justice defines an OPDMD – or other power-driven mobility device as “any mobility device powered by batteries, fuel or other engines that is used by individuals with mobility disabilities for the purpose of locomotion, whether or not it was designed primarily for use by individuals with mobility devices” (US Department of Justice, 2014). The consideration of OPDMDs and other needs regarding people with disabilities on public lands is paramount for OSMP’s inclusive future. E-bikes are one such device that can be used as an OPDMD.

E-bikes used as OPDMDs by people experiencing a disability are currently allowed on all OSMP trails under the US Department of Justice revised final regulations implementing the Americans with Disabilities Act (ADA) for title II (State and local government services) and title III (public accommodations and commercial facilities), effective since March 2011.

The ADA rules also outline criteria for an assessment process that once completed allows land managers to determine where and what types of OPDMDs can be accommodated.

In deciding whether a particular type of OPDMD can be accommodated in a particular facility, the following factors must be considered:

- the type, size, weight, dimensions, and speed of the device;
- the facility’s volume of pedestrian traffic (which may vary at different times of the day, week, month, or year);
- the facility’s design and operational characteristics (e.g., whether its business is conducted indoors or outdoors, its square footage, the density and placement of furniture and other stationary devices, and the availability of storage for the OPDMD if needed and requested by the user);
- whether legitimate safety requirements (such as limiting speed to the pace of pedestrian traffic or prohibiting use on escalators) can be established to permit the safe operation of the OPDMD in the specific facility; and
- whether the use of the OPDMD creates a substantial risk of serious harm to the immediate environment or natural or cultural resources or poses a conflict with Federal land management laws and regulations.

Source: [ADA Requirements - Wheelchairs, Mobility Aids, and Other Power-Driven Mobility Devices | ADA.gov](#)

This assessment is in progress and the updated OPDMD policy and associated visitor access information is planned for 2023 after the conclusion of the separate e-bike process.

[\(https://www.ada.gov/resources/opdmds/\)](https://www.ada.gov/resources/opdmds/)

## **12. E-bike Battery Management System (BMS) and potential as an ignition source**

According to [Bestelectricbikes.com](#), the Battery Management System (BMS) manages the battery used to power an e-bike, which is comprised of many individual battery cells. The BMS manages the individual performance of each battery cell to ensure that they act the same as all

other cells throughout the battery and provide consistent performance.

(<https://www.bestelectricbikes.com/bms-battery-management-system-on-electric-bikes/>)

UL 2849 is an approved standard that covers electrical systems for e-bikes, provided that these e-bikes operate using rechargeable lithium-based batteries. UL 2849, the Standard for Electrical Systems for e-Bikes, provides fire safety certification by examining the electrical drive train, battery, and charger system combinations in e-bikes. While UL-grade batteries are generally manufactured for recreational e-bikes, there is no requirement that e-bikes be tested or compliant with applicable UL standards ([https://www.compliancegate.com/e-bikes-safety-standards-united-states/#UL\\_Standards](https://www.compliancegate.com/e-bikes-safety-standards-united-states/#UL_Standards)).

NYC has experienced an increase in e-bike battery related fires in recent years. Research by OSMP staff suggests that the cause of most of these involve e-bike batteries owned by commercial delivery service operators that leave a battery charging too long and/or using batteries that are not UL Certified (<https://www.npr.org/2022/10/30/1130239008/fires-from-exploding-e-bike-batteries-multiply-in-nyc-sometimes-fatally>), and occur while the battery is charging not while an e-bike is being ridden. A [Consumer Reports](#) article suggests that fires involving recreational e-bikes are either not occurring or far less common. “The e-bikes people are buying now are probably a lot newer and better technology than some of the older stuff that delivery riders in the city have been using and abusing for years,” says Adam Vale Da Serra, manager of Cutting Edge bike shop in Berlin, Conn. “I’ve heard nothing locally about e-bike fires among mountain bikes and road bikes.” The article also publicizes fire prevention tips. Other news articles have shared similar tips. “Avoid aftermarket and off-brand or bargain batteries for your bike, first of all. Stick to the manufacturer’s specifications and recommendations. Furthermore, e-bike batteries that are charging should never be left unattended. If you’re charging your e-bike in the garage, set a timer to remind yourself to unplug it when it’s done, and if you’re leaving the house, unplug it and finish charging it when you return” – [Bicycling Magazine](#).

The Sunnyside Post article [Where and Why E-Bikes Catch Fire in NYC — And What Can Be Done About It](#) suggests the following:

- Do not leave devices unattended when they’re charging, and don’t leave them charging overnight.
- Buy devices that have been tested by a reputable laboratory, like UL Solutions.
- Use only the manufacturer’s power chargers and batteries made specifically for your e-bike.
- Keep batteries at room temperature and away from any flammable objects.
- Store your bike away from doors and windows that block exits.

13. List of unique ideas from the online engagement questionnaire question <i>Are there any additional comments about e-bikes you would like to share?</i>	Count	Percent
Concern for <b>safety / etiquette behavior / user conflict / crowding</b>	413	18%
Post/enforce <b>speed limit / concerned about speed</b> of e-bikes or bikers in general	292	13%
<b>Allow</b> Class 1 & 2 e-bikes on <b>all trails where bikes are allowed</b>	208	9%
E-bikes increase access for people with <b>disabilities/increases accessibility</b>	197	8%
Increases access for <b>older</b> populations	180	8%
<b>Don't allow e-bikes</b> at all	123	5%
All <b>commuting</b> routes should allow e-bikes or e-bikes are appropriate for <b>commuting / micromobility / transportation</b>	121	5%
<b>Informed, courteous</b> riders are good trail users or bike type doesn't implicate <b>behavior or safety</b> .	110	5%
<b>Specific trails</b> mentioned in comment	100	4%
E-bikes are not bikes/ <b>are motorized</b>	84	4%
<b>Must actually enforce</b> the trails for e-bikes / <b>there are currently violations</b>	76	3%
E-bikes are <b>harmful to environment, wildlife or trail</b> , or introduces <b>noise</b>	63	3%
I use my/desire an e-bike for recreational <b>exercise</b> and to <b>reduce car trips</b>	60	3%
E-bikes have <b>improved quality of life, physical or mental health, and/or community</b>	60	3%
I see <b>little to no difference between e-bike and traditional bike</b>	58	2%
<b>E-bikers unfamiliar or inexperienced with bikes/e-bikes</b> are a concern for me	52	2%
E-bikes are <b>not harmful to the environment or trails</b> , or the <b>noise is not disruptive</b>	50	2%
E-bikes are <b>safer on flatter/wider trails</b> or e-bikes on <b>narrow or singletrack trails is concerning for me</b>	50	2%
Allow <b>Class 1/pedal assist e-bikes on all trails where bikes are allowed</b>	43	2%
Pedal assist/ <b>Class 1 e-bikes only</b>	43	2%
The opportunity to ride e-bikes on OSMP <b>increases enjoyment</b> of open space	42	2%
People on <b>traditional bikes can ride faster</b> than e-bikes	41	2%
Allowing e-bikes will <b>decrease/degrade the experience</b> on open space	41	2%
E-bikes are <b>motorized and are not "passive" recreation</b> / against City <b>Charter</b> /would require Charter change / are not in spirit or appropriate for OSMP	35	2%
Consider enforcing <b>bike weight</b> limits/I'm concerned about <b>e-bike weight or size</b>	35	2%
<b>Law enforcement and rangers are too understaffed</b> to enforce regulations like speed limits or e-bikes allowed or <b>e-bikes are difficult/expensive to regulate/enforce</b>	32	1%
Concern for <b>pet</b> safety	29	1%
E-bikes support <b>climate action</b>	27	1%
E-biking on paths and trails <b>increase safety than on the roads</b> / <b>e-bikes enhance safety</b>	26	1%
OSMP needs to be <b>progressive and respond to trends</b> /prepare for the <b>future</b>	26	1%

<i>List of unique ideas from the online engagement questionnaire question Are there any additional comments about e-bikes you would like to share?</i>	Count	Percent
Not permitting e-bikes is <b>discrimination or "wrong" against those with differing abilities and all ages or gatekeeping or exclusivity</b>	25	1%
I see little to no difference between <b>Class 1</b> /pedal assist e-bike and regular bike	22	1%
<b>Do not allow Class 2/throttle</b> e-bikes	20	1%
<b>20 mph</b> speed of e-bikes is too fast / e-bikers go too fast	19	1%
Increase and improve <b>signage, ie regarding riding etiquette, personal liability for harm to others</b> and/or designate <b>directional trails</b>	19	1%
<b>Paved paths</b> should allow e-bikes or only on "greenway" trails	18	1%
Require mandatory e-bike cycling <b>safety education course</b> or <b>permit process</b> prior to allowing individual e-bike riders on OSMP / increase education / influence cultural change toward safety	18	1%
<b>Connecting trails is important</b> for e-bike use, attraction and convenience / <b>restricting e-bike use on specific paths is inconvenient for trail connections</b>	16	1%
Current regulations are <b>too complex/confusing</b> and/or limit exploration	15	1%
E-bikes will <b>displace pedestrians or other users</b> /pedestrians get displaced by dangerous bike encounters	14	1%
User conflict with <b>horses/equestrians</b> or don't allow bikes on trails that allow horses	14	1%
Comments [for or against] regarding e-bikes <b>pulling trailers</b> or for <b>cargo / transporting small kids</b>	14	1%
Allowing on <b>some trails but not others</b> will lead to <b>confusion and/or self-policing / allowing on all trails provides clarity</b>	13	1%
Consider <b>minimum allowed age for e-bike use</b> or I have concerns about <b>younger riders</b>	10	0%
must give audible alert when passing/enforcement of having and using <b>bell/audible</b> alert	9	0%
Allow <b>Class 3</b> e-bikes	8	0%
Start with a protective approach and <b>evaluate level of use</b> before increasing trail access	7	0%
Consider only allowing e-bikes on trails with <b>high visibility</b> / visibility is a concern	7	0%
I have a <b>disability/mobility issues or am a senior</b> and e-bikes on the trails make me feel <b>endangered / reduce my use</b> of trails	6	0%
Don't let the minority of e-bikers who <b>inappropriately use them ruin opportunities</b> for everyone else.	6	0%
<b>Boulder Canyon</b> is appropriate for e-bikes	6	0%
E-biking <b>is not cycling/exercise</b> or e-biking is <b>not working hard to ride</b> / if you can't self-propel, you shouldn't be allowed into these areas	6	0%
E-bike riders have also <b>paid</b> for the trails and/or contributed to the community	5	0%
Designate <b>no bike/no e-bike days on trails</b>	5	0%
E-bikes pose a <b>fire risk</b>	5	0%
All e-bikes should be <b>required to have a visual/ license plate</b>	5	0%
Older people and people with disabilities should be able to get a training and/or permit to ride e-bikes anywhere other bikes are allowed	5	0%



<i>List of unique ideas from the online engagement questionnaire question Are there any additional comments about e-bikes you would like to share?</i>	Count	Percent
People with <b>disabilities</b> are <b>vulnerable to verbal abuse</b> when currently using e-bikes legally on trail	4	0%
Add <b>Chapman</b> to Alternative B	4	0%
Allow e-bikes but <b>anticipate issues/adaptively manage</b>	4	0%
Support <b>allowing e-bikes over disposing of OSMP lands</b> ; change the charter	3	0%
Add protective <b>bike lanes or commuter trails adjacent to roads</b> instead of increasing use on multi-use paths	3	0%
Determine which e-bikes allowed by <b>motor wattage</b> / power limit	3	0%
Consider creating <b>bike-only trails</b> or <b>e-bike only trails</b>	3	0%
Increase safety-related trail improvements like center/boundary lines, warnings at curves, right-of-way etc.	3	0%
E-bikes should be reclassified / reclassified to identify electric-assist only vs able to be self-propelled	3	0%
If the primary reason to allow ebikes on trails is to increase access for people with different abilities and an aging population, it seems best to <b>reserve more technical trails for non-ebikes</b> to avoid having folks get in over their heads and be injured / increase emergency operations to access those who may have accidents further in	3	0%
Do not support e-bikes nor <b>disposal</b> of OSMP lands for e-bike future use/ I have concerns with disposal	2	0%
Stop <b>wasting staff time</b> and money on this issue	2	0%
Supports <b>Alternative C</b> because trails already see heavy use	2	0%
Please wait on this proposal until e-bike riders get more experience	2	0%
Increase <b>secure bike parking/bike racks at trailheads</b>	2	0%
Only permit e-bikes on trails with <b>clear separation between bikes &amp; pedestrians</b>	2	0%
I'm more concerned about types of e-bikes allowed and where they're used than where	2	0%
Add a pamphlet to each e-bike sold about trail etiquette, rules & regs	2	0%
E-bikes + all complying light electric vehicles (ie: one-wheels, e-skateboards) should be allowed	2	0%
Allow on all trails but prohibit throttle e-bikes on singletrack	2	0%
Only allow on paved, commuter paths; okay with disposal to allow e-bikes specifically on these paths or on a case-by-case basis	2	0%
E-bikes are only for the wealthy	2	0%
There is a problem now with d-bikes being left [by bikers]	2	0%
<b>Pedal assist</b> used to/from trailhead, not on trails	2	0%
Only allow e-bikes <b>on one trail</b>	1	0%
regular bikes should have right of way over e-bikes	1	0%
E-bikes are <b>too heavy/large/expensive</b> to help people with disabilities	1	0%
Define <b>commuting vs recreational</b> use	1	0%
E-bikes are against the <b>natural rhythm of all other trail users</b>	1	0%
Adjust trails and <b>infrastructure</b> to support e-bikes	1	0%
E-bikes should be allowed on all bike trails <b>only when motor is off</b>	1	0%
Only allow Class 1 & 2 e-bikes <b>with the sticker required by Colorado law</b>	1	0%
Only allow e-bikes (and bikes) <b>on trails within EMT access</b>	1	0%

<i>List of unique ideas from the online engagement questionnaire question Are there any additional comments about e-bikes you would like to share?</i>	Count	Percent
E-bike access is a constitutional right	1	0%
Establish <b>GPS controls to limit e-bike speeds</b> while on trails	1	0%
Allowing e-bikes on <b>trails that are not maintained for people with disabilities or older populations</b> is a flawed approach	1	0%
Support e-bikes <b>if safety precautions are effective</b>	1	0%
Limit group sizes for e-bike groups	1	0%
Please provide more trash cans if you allow e-bikes on the Creek Trail (esp. before it goes up the canyon)	1	0%
like any regulation with vague nuances, people will mistakenly break rules. enforcement of these rules will <b>disproportionately fall on people of color who also happen to be the most likely to be reliant on bikes as a form of transportation.</b>	1	0%
Develop rule that establishes minimum 2' distance between pedestrian and passing cyclist	1	0%
Consider a rebate program for purchase of e-bikes, especialy for lower income residents	1	0%
Don't allow B-cycles	1	0%
Introduce speed limit signs with radar to educate on current speeds	1	0%
Ebike users are usually wealthy white people. What is osmp doing to improve access for the BIPOC community?	1	0%
Creating a survey that only allows weighing in on a staff recommendation is bad form and cultivates distrust of staff	1	0%
E-bikers are less likely to hear or see other users due to speed and general age of rider, plus their reaction time is significantly slower	1	0%
Lack of ability to ride an e-bike in my community will either make me give up mountain biking or move	1	0%
I get the sense that Alt B is a foregone conclusion regardless of what folks comment	1	0%
I haven't ridden any, so I don't know whether they will add conflicts or noise or other problems to the trails. I'd like to know more about the results of any pilot programs that have been put in place.	1	0%
Neither your status quo nor the proposed plans address how current or future conditions affect people who currently are protected by the ADA. You avoid using technical disability language. This makes evaluation of all alternatives harder.	1	0%
Alternative A is a very minimal expansion and only opens 33% of Boulders trail network	1	0%
Respect for preserved land is often developed when access to preserved land is limited, making it non-ordinary.	1	0%
Encourage good behavior	1	0%
Concern for running out of battery power	1	0%
commuter connections should be a separate project for biking between cities	1	0%



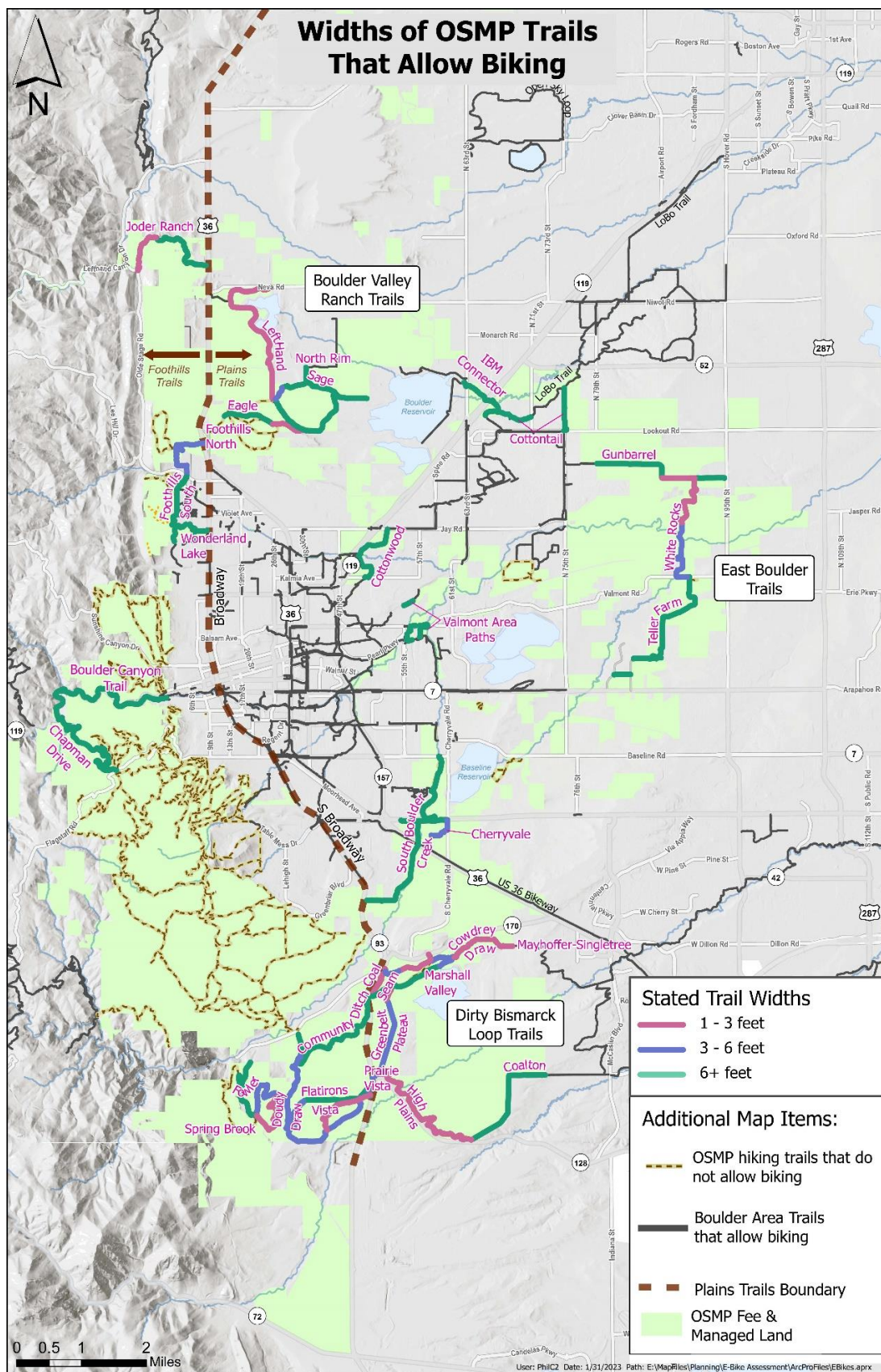
#### 14. Distribution of responses for Primary Activity by OSMP Survey

<b>Primary Activity (N= 1,283)</b>	<b>Systemwide Intercept (2016-2017)</b>	<b>Master Plan Plan (2019)*</b>	<b>E-bike Intercept (2022)</b>	<b>E-bike Online (2022)</b>
<b>Hiking/walking</b>	42%	37%	52%	47%
<b>Dog walking</b>	22%	11%	13%	6%
<b>Running</b>	16%	12%	13%	7%
<b>Biking</b>	10%	11%	19%	36%
<b>Climbing/bouldering</b>	2%	4%	1%	1%
<b>Fishing</b>	1%	1%	1%	<1%
<b>Horseback riding</b>	<1%	<1%	<1%	1%
<b>Other</b>	7%**	24%**	1%	1%
<b>Total</b>	232%	100%	100%	100%

\*2019 Master Plan Survey asked respondents their TWO most frequent activities on OSMP. These results were re-analyzed and shown here as the proportion of total responses received.

\*\*2016-2017 System-wide and 2019 Master Plan Surveys had several additional activities included in the choice response list. These have been collapsed into "Other" here for purposes of comparing to the other surveys.

## 15. Map of OSMP trail widths that allow biking



## 16. Comparison of visitation between trails managed by OSMP and agency partners

### Key Highlights

- OSMP and BCPOS share overlapping average daily visitation ranges for areas that allow bikes, with BCPOS being slightly busier on average.
- For OSMP multi-use trails with permanent trail counter counters, preliminary 2022 data show
  - annual average daily visits range from 79 (East Boulder - White Rocks) to 237 (Foothills South).
  - the proportion of bike visits range from 13 to 31 percent.
  - peak visitation days ranged from 247 (Boulder Valley Ranch) to 574 (Foothills South) visits
- For BCPOS properties that allow bikes
  - annual average daily visits range from 45 (Mud Lake) to 470 (Pella Crossing)
  - the proportion of bike visits range from 5 to 62 percent
  - peak visitation days ranged from 146 (Bald Mountain Scenic Area) to 989 (Carolyn Holmberg Preserve) visits

### Introduction

This examination of visitation data is for select multi-use trails that allow biking within the context of mixed pedestrian and bicycle use to provide context for comparing visitation patterns for OSMP and Boulder County Parks & Open Space (BCPOS).

Currently, there are 54 miles of multi-use trails that allow biking on OSMP lands which are primarily located in the south, north, and east portions of our trail system. The most recent data for examining bike and pedestrian proportions for multi-use trails comes from 2022 trail counter data.

BCPOS divides their trails into two different categories. The first category is Parks, which are primarily made up of distinct geographic units that are serviced by one or a few trailheads, but which are otherwise self-contained units. BCPOS collects both visitation counts and visitor surveys for their Parks. There are 12 park units that allow bikes and have recently available visitation data. The second category is Regional and Neighborhood trails, which serve as regional routes between communities and often connect to trails managed by adjacent partner agencies. For most BCPOS regional trails, only visitor surveys are collected, not counts (Boulder Canyon Trail being the exception). BCPOS collected visitation data for Parks in 2021 and for Regional and Neighborhood Trails in 2022.

The geographic layouts of open space properties and trail systems for two agencies differ, which makes it difficult to objectively compare one specific property or region from one agency to a specific property or region at the other agency. Since a one-for-one comparison cannot be made, we compiled the most recent data across the range of properties and trails from each agency to provide insight into the characteristics of bike and pedestrian visitation volumes and patterns across the two agencies.

### Seasonal Visitation patterns

#### 2022 OSMP visitation data

For OSMP properties, there are currently 9 permanent trail counters installed on multi-use trails. Five of these locations (Boulder Valley Ranch, Doudy Draw, Eagle, Flatirons Vista, and Foothills South) have inductive sensor loops that detect and classify bikes separately from pedestrians.

As shown in Figure 1, each location exhibits a slightly different seasonal pattern. For example, Foothills South shows a pronounced peak visitation in June and East Boulder – Gunbarrel shows relatively little variation across the year. However, for all locations with bike classification capabilities, biking visits tend to be low during the winter months of November, December, January, and February.

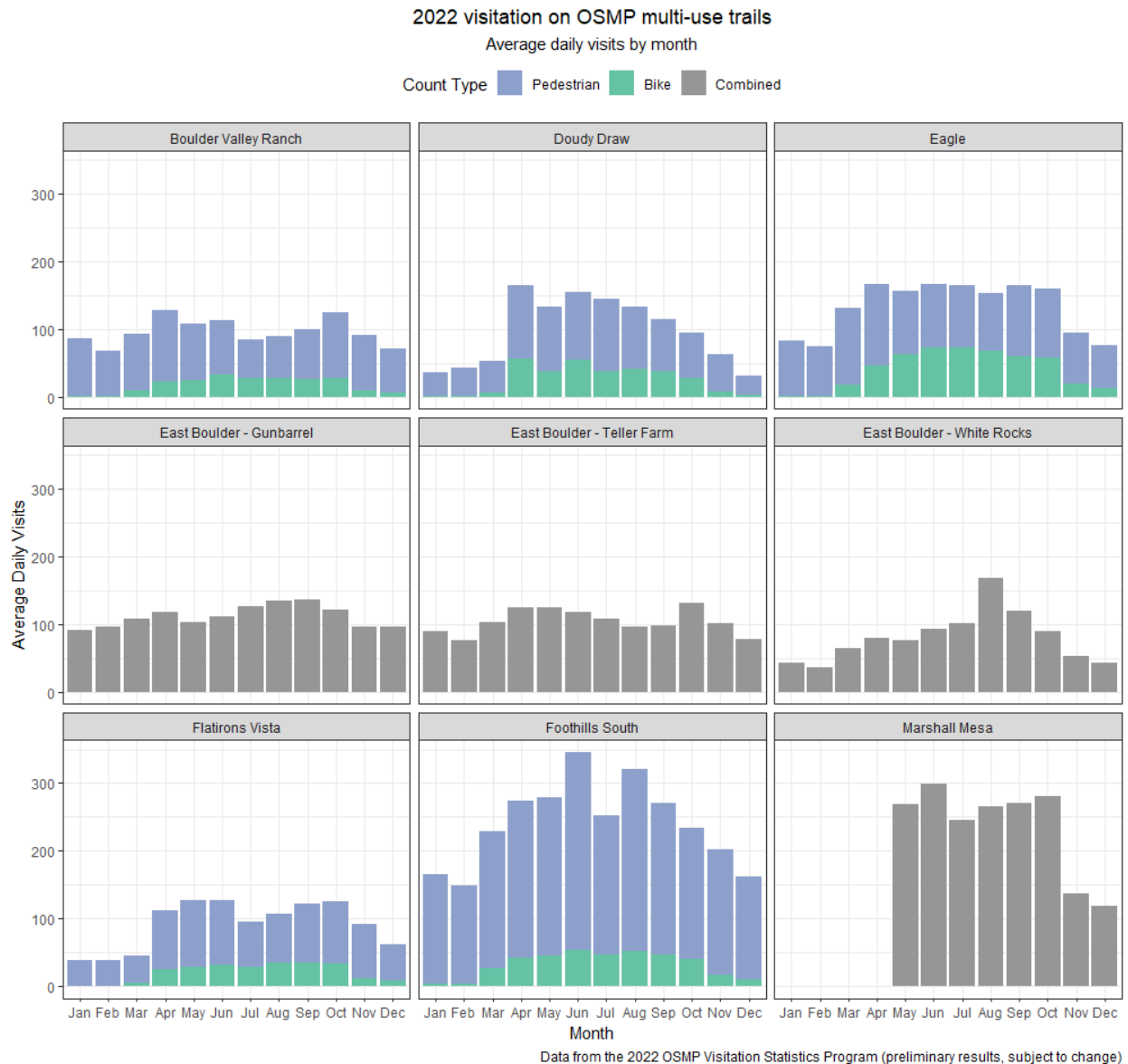


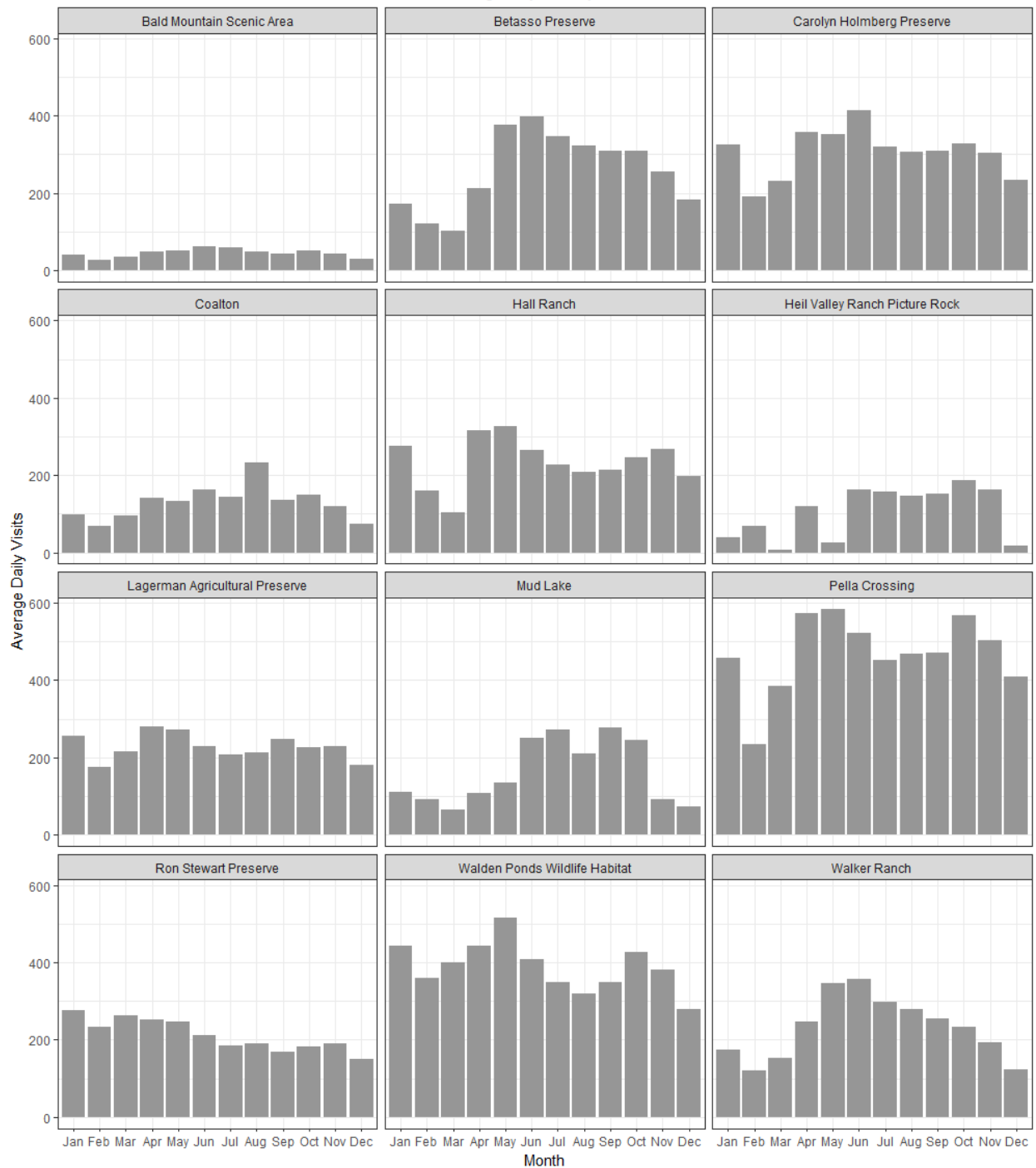
Figure 1 Average daily visits by month for 2022 permanent monitoring locations on OSMP multi-use trails.

## 2021 BCPOS visitation data

BCPOS collects visitation counts via automated trail and vehicle counters at trailheads. These units do not distinguish by activity type or classify bikes and pedestrians directly. BCPOS collects activity percentages via intercept/visitation surveys and other site collection methods which is presented in the next section. The current comparison of seasonal distribution presents visitation in aggregate rather than by activity types.

## 2021 visitation on BCPOS properties that allow bikes

Average daily visits by month



Data from the 2021 Boulder County Parks Visitation Annual Report

Figure 2 Average daily visits by month for 2021 monitored BCPOS properties that allow bikes. (Marotti, 2021)

## Peak Visitation and Proportion of bikes

In response to a request from OSBT at the Nov. meeting, a comparison of peak visitation day and proportion of bikes between OSMP and BCPOS trails is provided. For this analysis, peak visitation is defined as the highest visitation day observed for a location in the given year. Data for the highest/ busiest day is readily available by both agencies.

The analysis used the most recently available data for peak visitation and bike proportions from each agency. For BCPOS, this is 2021 data. OSMP compiled preliminary data from 2022. Since OSMP data are preliminary and have not yet gone through a full data review cycle, these figures may be updated slightly in subsequent visitation reports.

### 2022 OSMP visitation data

The following table shows 2022 visitation for the five multi-use trail counter locations. Visitation data have been summarized into annual figures to show the average number of daily visits for bikes, pedestrians, and combined, along with the proportion of visits that originate from bikes (as classified by the trail counters). The table also includes the peak visitation day recorded in 2022.

These data indicate that the average bike proportion on monitored multi-use trails ranges from around 13% (Foothills South) to 31% (Eagle Trailhead) with an overall bike proportion of 21%. Since these are annual averages, the actual proportion of bikes on any given month may be slightly higher (summer months) or slightly lower (winter months) as shown in the charts in Figure 1. Peak visitation ranged between 247 (Boulder Valley Ranch) to 574 (Foothills South) visits and occurred between March 20<sup>th</sup> (Eagle) and October 30<sup>th</sup> (Marshall Mesa).

*Table 1 Average daily visits and bike proportions for multi-use monitoring locations on OSMP lands, summarized as an annual average.*

Location	Average Daily Visits			Proportion Bikes	Peak Day (2022)	
	Bike	Pedestrian	Total	Counter	Visits	Date
Boulder Valley Ranch	19	78	97	19%	247	Apr 2
Doudy Draw	27	72	99	27%	386	Jul 3
Eagle	42	91	133	31%	365	Mar 20
East Boulder - Gunbarrel	-	-	111	-	236	Aug 24
East Boulder - Teller Farm	-	-	103	-	250	Jul 12
East Boulder - White Rocks	-	-	79	-	266	Aug 8
Flatirons Vista	21	72	94	23%	306	May 8
Foothills South	31	206	237	13%	574	Jun 19
Marshall Mesa	-	-	236	-	548	Oct 30



## 2021 BCPOS Parks visitation data

BCPOS collected visitation data for park properties in 2021, including field observations to estimate the distribution of activities for each property. In contrast to the counters highlighted above for OSMP multi-use trails, BCPOS counting equipment does not classify bikes directly. BCPOS conducts summer observations and collects visitor surveys, which they use to estimate the percentage of activities at each property. The percentages reported below in

Table 2 come from survey data as reported in the most recent Five-Year Visitor Study completed by BCPOS in 2021 (Marotti & Guesman, 2021).

BCPOS estimates of daily visits come from year-round monitoring and therefore share a similar methodology with OSMP data collection methods (Marotti, 2021).

Table 2 shows that BCPOS properties that allow bikes share an overlapping average daily visits range with OSMP monitored multi-use trails presented in Table 1. However, BCPOS properties in

Table 2 are on average slightly busier than OSMP multi-use trails, with eight locations exceeding 200 average daily visits.

Bike proportions for BCPOS properties range from 4% to 60%, with an overall bike proportion of 21% (personal communication with BCPOS)<sup>1</sup>. Peak visitation days ranged from 146 (Bald Mountain Scenic Area) to 989 (Carolyn Holmberg Preserve) visits and occurred between February 8<sup>th</sup> (Walden Ponds Wildlife Habitat) and November 7<sup>th</sup> (Betasso Preserve).

Table 2 Average daily visits and bike proportions for BCPOS properties that allow bikes, summarized as an annual average.

Location	Average Daily Visits			Proportion Bikes	Peak Day (2021)	
	Bike	Pedestrian	Total	Survey	Visits	Date
Bald Mountain Scenic Area	-	-	45	-	146	Jun 20
Betasso Preserve*	135	125	260	52%	691	Nov 7
Carolyn Holmberg Preserve*	126	181	68	41%	989	Apr 25
Coalton	64	66	307	49%	789	Aug 21
Hall Ranch*	117	117	234	50%	789	Apr 3
Heil Valley Ranch Picture Rock	62	42	104	60%	541	Apr 10
Lagerman Agricultural Preserve*	23	205	228	10%	584	Apr 25
Mud Lake	13	148	161	8%	955	Oct 3
Pella Crossing	19	452	470	4%	985	Apr 18
Ron Stewart Preserve	8	204	212	4%	756	Mar 7
Walden Ponds Wildlife Habitat*	-	-	390	-	803	Feb 8
Walker Ranch*	30	202	232	13%	914	Apr 25

\*These properties include multiple count locations

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<sup>1</sup> Bald Mountain Scenic Area and Walden Ponds Wildlife Habitat both allow bikes, but no surveys were completed by bikers during the sampling time frame.

## 2022 BCPOS Regional and Neighborhood trails visitation data

BCPOS conducted a Regional and Neighborhood Trails Visitor Study in spring and summer 2022, which is designed to complement Five Year Visitor Studies (5YS) conducted at BCPOS park properties. Since these trails are largely part of an interconnected network of regional routes between communities, BCPOS does not estimate visitation numbers on most of these trails. They conduct surveys that include questions about primary activity, which provide insight into bike proportions for some of the properties/trails that connect directly to OSMP trails.

*Table 3 Bike proportions from BCPOS Neighborhood and Regional trails 2022 visitor survey that connect to OSMP trails.*

Property/Trail	Average Daily Visits	Proportion Bikes
Boulder Canyon Trail	193	41%
Longmont-to-Boulder (LoBo) Trail	Not monitored	62%

## References

Marotti, M. (2021) Parks Visitation, 2021 Annual Report, Boulder County Parks & Open Space

Marotti, M. Guesman, T. (2021) Five Year Visitor Study, Boulder County Parks & Open Space



## 17. Visitor displacement on trails due to presence of biking

### Overview

OSMP has 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. An objective for survey data is to use the information for informed decision making and plan implementation by gathering public opinions of OSMP services and facilities, experiences with others, perceptions regarding OSMP management, and level of visitor satisfaction among other topics of interest.

### Spring Brook Loop Area Visitor Conditions Before and After Designation and Opening

In 2008, OSMP completed trail improvements to designate and open newly constructed multi-use trails in the Spring Brook Loop Area (SBL). Both the SBL-North and SBL-South trails allow hikers, bikers, and horses. Dogs are only allowed on SBL-North. Prior to 2008, the SBL area was not managed as designated trail infrastructure. At the time, all trails in the area were undesignated (unplanned) and not managed for sustainable recreation travel.

Before designation of the SBL trails, visitation levels and distribution of visitors by activity type were not measured. Additionally, biking was prohibited as this activity is only allowed on designated trails. SBL annual visitation year one after opening (2008-2009) was ~28,000 visits and year two after opening (2009-2010) was ~31,000 visits.

#### Visitor Conflict and Activity Distribution

During summer 2009, OSMP conducted an on-site visitor conflict survey along the Spring Brook Loop Trail (SBL). Visitors were engaged at two locations as they were exiting. A total of 766 respondents were surveyed, which resulted in a 91% response rate. They were asked to complete a self-administered written questionnaire. *The SBL survey did not measure visitor displacement from the SBL area because it was an on-site survey and displaced visitors would not have been there to participate.* OSMP most recently assessed displacement in a system-wide on-site survey conducted in 2016-2017. Zero respondents reported being displaced from the SBL area. During a previous system-wide on-site survey effort conducted in 2010-2011, nine (9) out of 2,552 respondents reported being displaced from the SBL area. This suggests minimal displacement did occur shortly after the SBL opened but was no longer detected in 2016-2017.

During Summer 2009, the average daily conflict rate along SBL was 6%. Cyclists and dogs were the number one and two top sources of conflict respectively. Hikers were more likely than any other activity group to report a conflict. Primary activity distribution was bikers (68%), hikers (18%), runners (13%), and horseback riders (<1%). Three percent of respondents had one or more dogs with them on the day of the survey (City of Boulder, 2010).

#### Eldorado-Mountain Habitat Conservation Area Pre/Post Designation Visitation Monitoring

In 2009, OSMP formally designated the Eldorado-Mountain Habitat Conservation Area (EM-HCA), as well as designated and opened the Goshawk Ridge Trail (GRT), which allows hiking/pedestrians and horses. OSMP conducted visitation monitoring within the EM-HCA for three years including one year prior, and for two years after designation of the HCA (2008-2011). As a pedestrian only trail system directly adjacent to Spring Brook Loop, this visitation data serves as a reasonable proxy for interpreting

hiking activity in the area during the period before and after the opening of Spring Brook Loop.

Annual visits to the EM-HCA were 4,125 in the year prior to HCA activation and GRT construction and designation (2008-2009). Year one annual visits post HCA activation and GRT opening (2009-2010) were 10,970 and year two annual visits were 12,170. Annual visitation to the EM-HCA increased by 166% during the first-year post designation of the HCA and opening of the newly constructed GRT, and by 11% the following year. As bikes are not allowed on the GRT, we can assume these visits can be largely attributed to pedestrians (hikers and runners) along with a small number of equestrians.

## **System-wide OSMF Visitor Displacement Summary**

Displacement can be defined as people deciding to change where, when, or how frequently they visit a recreation location to avoid unwanted conditions caused by changes in the character or attributes of the area. Crowding and conflict are often cited as drivers of displacement. However, crowding is a subjective evaluation of on-site conditions experienced, can occur across a range of visitation levels, and is not necessarily directly associated with increased visitation or heavily visited areas.

The most recently completed on-site survey effort that assessed displacement was conducted in 2016-2017 in which **14% of respondents** indicated that there is an OSMF area they no longer visit (276 out of 1,964 respondents) (VanderWoude & Kellogg, 2018).

### ***Of the 14% of respondents who indicated they no longer visit an OSMF area in 2016-2017:***

- Chautauqua and Sanitas were mentioned most frequently accounting for 23% and 22% of responses, respectively. This was followed by Marshall Mesa which accounted for 6% of responses.
- Dog walkers most frequently indicated there is an area they no longer visit (17%), followed by hikers (16%), bikers (13%), and runners (10%).
- The most common reason listed for no longer visiting a place was crowding, representing about a third (32%) of responses. This was followed by parking, dog restrictions (e.g., dogs not allowed, dogs not allowed off-leash), and dog presence (e.g., too many dogs, too much dog waste), each representing 12% of responses.
- Reference to bikers/bikes accounted for 9% of the responses for not visiting.

A previous on-site survey was conducted in 2010-2011 in which **9% of respondents** indicated they visited *less often* or stopped visiting entirely (Giolitto, 2012).

### ***Of the 9% of respondents who indicated they modified their visit to an OSMF area in 2010-2011:***

- The most frequently listed places were Sanitas (21%), Doudy Draw (9%), and Marshall Mesa (7%).
- Dogs were the most common reason cited for Sanitas.
- Bikes were the most common for Doudy Draw and Marshall Mesa.

The 14% who reported they no longer visit an OSMF area from the 2016-2017 on-site survey is fairly consistent with past resident surveys at 13% in 2016 (National Research Center Inc, 2017) and 14% who visited *less often* or stopped using entirely in 2010 (National Research Center Inc., 2010). Chautauqua and Sanitas were the two most frequently listed locations in both resident surveys. Crowding and dogs were the most common reasons listed in 2016; crowding and parking were the most common in 2010.

Comparisons of trend data should be made cautiously as sample sizes for individual locations and reasons are relatively small, and over time there were variations in question wording and open-ended response coding procedures.

## **System-wide OSMP Visitor Conflict Summary**

OSMP has conducted three system-wide on-site visitor intercept surveys – in 2004-2005, 2010-2011, and 2016-2017. Each iteration asked respondents to share their perceptions of visitor conflict experienced on the day they completed the survey. OSMP uses the Jacob and Schreyer interpersonal model of visitor conflict which defines conflict as “goal interference attributed to the behavior of others” (Jacob and Schreyer, 1980). This means a visitor that reported conflict on the day of the survey was interrupted in what they wanted to do on a given visit because another visitor’s behavior caused a negative encounter. Respondents represented visitors participating in all open space activity types including for example hikers, runners, dog-walkers, bikers, horseback riders, and climbers.

The Analysis Section of the Nov. 2022 memo provided a summary of overall average daily conflict between visitors on OSMP trails, which is included below for reference.

Overall average daily conflict between visitors on OSMP trails has ranged between 5-7% for close to two decades (2016-2017 Visitor Survey). Of all respondents to the 2016-2017 survey, 6% (on average) reported conflict with other users on the day of the survey, with a third of these indicating conflict was with a biker. This means, on average, 2% of visitors reported conflict with a biker and 98% did not on the day of the survey. There is very little difference in average daily conflict between trails that allow cycling and trails that do not. Multi-use trails that allow cycling are designed to a standard that minimizes impacts on soils, plants, and water quality. Off-trail bicycling activity is not allowed on OSMP lands. Observations indicate that bikers generally stay on trail, which tends to minimize possible negative effects on natural resources.

A 95% majority of encounters between bikers and other users on open space trails are positive (69%) or neutral (26%) (2016-2017 Visitor Survey). During the 2016-2017 Visitor Survey, 14% of respondents reported being displaced. Of those 14%, ten percent reported biking as a reason why they no longer visit an area. This means 1% of visitors reported displacement due to biking and 99% did not. The two primary areas no longer visited were Marshall Mesa and Doudy Draw. Of the 14% of respondents that reported displacement, the two most frequently mentioned OSMP areas that respondents no longer visit are Chautauqua (22%) and Sanitas (22%), due to perceived crowding, dogs, and parking issues (not bikes).

Comparisons of trend data should be made cautiously as over time there were variations in question wording and open-ended response coding procedures.

## **Summary**

Most OSMP visitors do not experience visitor displacement or visitor conflict. When displacement does occur, the top reported causes are crowding, parking problems, and dog restrictions/ dog presence followed by bikers. When conflict is reported, the top two reported sources of conflicts are: 1) dogs and dog walkers, and 2) bikers.

- Activity distribution and the visitation level were not measured in the Spring Brook Loop area prior to the designation and opening of the newly constructed trail in late 2008
- Average daily visitor conflict along Spring Brook Loop was 6% in summer 2009

- Visitation along Spring Brook Loop was ~28,000 annual visits year one post opening and ~31,000 annual visits year two post opening
- Activity distribution along Spring Brook Loop in summer 2009 was bikers (68%), hikers (18%), runners (13%), and horseback riders (<1%)
- Visitation to the Spring Brook Loop adjacent Eldorado-Mountain HCA (bikes not allowed) increased 166% during year one and another 11% during year two post designation of the HCA and construction and opening of the Goshawk Ridge Trail
- Average system-wide daily visitor conflict rates have ranged between 5-7% between 2004 and 2017
- Average system-wide visitor displacement rates have ranged between 9-14% between 2010 and 2017

Additional data regarding visitor perceptions and experiences are currently being collected through the on-site Public Opinion and Visitor Experience Survey (POVES), which will continue through August 2023. Results from the first year of this effort are expected to be shared with OSBT in the coming months.

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## 18. Trustee Kuntz questions with staff responses

**Note:** The topics, questions and comments are presented in **bold text** as submitted by Trustee Kuntz followed by the staff response.

### CLARIFYING QUESTIONS – EBIKES ON OSMP

#### General Impressions

#### Rush to Judgment

#### Sea Change

#### Major Shift

#### 1.) STAFF DETERMINATION AND LEGISLATIVE FINDING PROCESS

**What was the process staff used to determine ebikes were an appropriate use of OSMP?**

**Why was 55 years of precedent discarded in that process and replaced by bureaucratic fiat?**

**What is the LEGISLATIVE FINDING PROCESS that Council uses to declare ebike use is passive recreation? Passive recreation has always been defined as non-motorized activity.**

#### Staff response:

As described in the Analysis Sections of the Nov. 2022 and Dec. 2022 OSBT e-bikes memos, staff used the VMP Activity Assessment process. The activity assessment process uses the following set of considerations, which are based on the VMP definition of passive recreation, to guide decisions on what recreational activities will be considered passive and allowed, and what conditions should be placed on activities to minimize their impacts. 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 determined that e-biking does not differ from biking in relation to these considerations or the VMP criteria for passive recreation.

The VMP defines passive recreation 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

Staff recognizes there is debate on whether it meets the non-motorized component. In support of the staff determination that e-biking meets the other criteria included in the VMP for passive recreational activities, council could make a legislative finding that e-biking, whether or not one considers it to be motorized, is authorized as a passive recreational activity allowed on open space trails. As detailed in the Dec. 2022 memo, OSMP's recommendation is for City Council to make a legislative finding that e-biking is a passive recreational use, and therefore an open space purpose outlined in the Charter. The legislative finding would be adopted by City Council as part of the ordinance that also would make changes to the Boulder Revised Code (B.R.C.) to 1) repeal the existing regulation in section [7-5-25](#) "No Electric Assisted Bicycles on Open Space," B.R.C. 1981 which requires disposal of open space to allow e-biking 2) add new language in Chapter [8-8](#) "Management of Open Space Lands" B.R.C. 1981 to allow class 1 and class 2 electric assist bicycles on open space trails where designated and posted for this use, 3) enact

rulemaking authority by the City Manager to identify which trails would be designated for e-biking activity, and 4) make definitional code changes that to regulate e-biking on open space by amending sections 1-2-1, and 7-1-1, "Definitions," B.R.C. 1981.

The intention of the legislative finding and ordinance is (1) for council to specifically find e-biking is a passive recreational use of open space; and (2) enact regulations for e-biking on open space. The Charter only allows certain purposes. Charter section [176](#) says "Open space land shall be acquired, maintained, preserved, retained, and used only for the following purposes:" One such purpose is preservation of land for passive recreational use, such as, if specifically designated, bicycling, horseback riding, or fishing. The Charter does not mention or allow for exceptions to those uses when appropriate and necessary.

The ordinance changes alone can allow e-biking without a legislative finding. The benefit of the legislative finding is that it draws the connection between allowing e-biking and the definition of passive recreation in the Visitor Master Plan.

All ordinances require at least two readings because the city charter requires ten days' advance publication of an ordinance in final form before its passage. Within five days after such final passage, it shall be again published once in a daily newspaper, and shall not take effect until thirty days after final passage.

## **2.) CITY MANAGER RULE DESIGNATING TRAILS**

**What is the purpose of revising and using the City Manager Rule ordinance in the BRC 1981 to have the city manager designate trails when the usual and longstanding process has been staff recommendation and OSBT review and approval and recommendation to Council? Removes one of the actions by the OSBT – What is the role of the OSBT in trail decisions?**

### Staff response:

One clarification around the process is that revising the ordinance and using a city manager rule are two separate but correlated actions. The intent of the first, revising the ordinance, is to allow and regulate e-biking on open space. In other words, the purpose of revising the ordinance is to amend the **policy** that currently prohibits e-biking and requires disposal, and instead create a **policy** to allow e-biking as a passive recreational activity. The second action of using the city manager rule is how OSMP would implement the policy of allowing e-bikes on open space trails by designating where e-bikes (which trails) would be allowed.

The purpose of this approach is to better distinguish between decision-making processes on policy that require council approval from that of on the ground management actions that do not. Guidance on policy decisions is generally more static in nature while implementing the policy, in this case the trails designated for e-biking, is often more dynamic and might benefit from an ability to more easily adaptively manage. An example is adaptively managing to allow e-bikes on segments of regional trails as they are constructed or designated, such as segments along the Andrus to Airport or LOBO trails, and to do so without having to go back to council.

Another recent example of where the department intentionally separated the policy actions from the on the ground management actions or specific locations is the management of prairie dogs on OSMP-managed irrigated agricultural lands. The OSBT recommended policy guidance approved by council on acceptable management strategies while the decision of what specific properties these strategies would be implemented are determined by the OSMP department based on current conditions. This intentional decoupling is the result of some lessons learned over time where management actions that wouldn't

normally rise to the level of council interest are imbedded in a council approved plan creating complexities around processes to adjust management related elements.

In the rulemaking process outlined in chapter [1-4](#), “Rulemaking,” B.R.C. 1981, OSMP staff identifies trails appropriate for e-biking, or for prohibiting e-biking, based on the VMP Activity Assessment. Staff proposes the rule to the City Manager. If the City Manager supports OSMP staff’s designation, the manager adopts a rule that designates open space trails for e-biking. The Rulemaking process provides assurances of transparency through the requirement to publish the proposed rule and consider public comments before the rule or amendments become final. However, it is not necessary to enact rule-making authority of the City Manager. These duties are delegated to the OSMP department in Charter section [171](#) “Functions of the department.” (a) and (b).

In response to comments regarding the decision-making process for trail use designations, there has been variation in the planning processes to finalize these plans. Trail Study Areas (TSAs) or Integrated Site Plans (ISPs) are examples of planning efforts that also focus on where activities are allowed as well as changes to the trail system itself. On some occasions, these plans included a board recommendation to council. At other times, the OSBT made recommendations to staff to proceed with implementation. While these plans do not require council action to approve or accept them, there have been instances when council interest was anticipated, such as planning processes with heightened community interest or that proposed more controversial or a multitude of management decisions. On those occasions, the department requested the OSBT make a recommendation to council to formally adopt or accept the plan. For example, council consideration and adoption was sought for the West and North TSAs while the OSBT made a recommendation to *staff* to proceed with implementation on other TSAs and the recently finalized Gunbarrel and Gebhard ISPs because the policy guidance on these management decisions already have council approval (e.g. VMP, Master Plan).

There is a long-standing departmental practice of seeking board input on trail decisions, and OSMP intends to continue this practice by requesting a board recommendation to staff prior to implementing and change in trail use designation. OSMP would continue to engage the Board and community, get guidance on a potential future change to the trails managed for e-biking activity, and consider this input.

In terms of the board’s role per the Charter:

The Open Space Board of Trustees was created by Charter section [172](#) to make recommendations to the City Council and staff on certain matters concerning open space land. The role of the OSBT in trail decisions is outlined in Charter section [175](#) (c) (which arguably only applies to the acquisition of open space land) and (j) below, which states that the open space board

(c) Shall make recommendations to the council concerning any land that is to be placed under the direction, supervision, or control of the department of open space, including, without limitation, recommendations concerning use policies on, planned uses of, and restrictions on uses of, open space land;

(j) May prepare and submit to the council, the city manager, or the open space department recommendations on any other matter relating to the open space program, and may request and obtain from the open space department and the city manager information relating thereto.

### **3.) CRITERIA USED TO ADD USES ON MULTI-USE TRAILS**

**What criteria are needed and used to add more uses on multi-use trails where hikers, runners, bird watchers, horses, bicycles are already allowed?**



Staff response:

The VMP includes criteria for assessing new and emerging activities on open space lands. The criteria were developed to evaluate future recreational activities. The criteria are:

- 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

In addition to the VMP criteria staff identified additional and finer scale criteria to evaluate three alternatives and the status quo for which trails, if any, to consider allowing e-biking on. The criteria used was:

- Community Support
- Equitable access to open space land
- Consistency with Boulder County and other City inter-connected trails
- (alternative to) Disposal of open space
- Effectiveness of regulations
- Safety/Conflict
- Alignment with City climate initiatives
- Protection of natural resources
- Visitor Displacement
- Trail maintenance
- Visitation

The [E-biking Alternatives Evaluation](#) shared at the July OSBT meeting is a matrix detailing the criteria, considerations and ratings for each alternative.

**4.) DISPOSAL OPTION AND ORDINANCE CHANGE**

**Why is disposal of OSMP lands the only option noted if an ordinance change is not done to allow ebikes? Charter clearly authorizes certain passive recreation uses where designated and allows for exceptions to those uses when appropriate and necessary. An ordinance change is not required for exceptions. Council must be informed and approve exceptions.**

Staff response:

Section [7-5-25](#), “No Electric Assisted Bicycles on Open Space, B.R.C. 1981 requires disposal of open space if the purpose is to allow e-biking. This ordinance must be amended or repealed by City Council to authorize e-biking on open space land.

Charter section [176](#) says “Open space land shall be acquired, maintained, preserved, retained, and used only for the following purposes:” One such purpose is preservation of land for passive recreational use, such as, if specifically designated, bicycling, horseback riding, or fishing. The Charter does not mention or allow for exceptions to those uses when appropriate and necessary.

The ordinance could be changed to prohibit e-biking except where designated similar to the regulation for biking (section [8-3-6](#) (a) (6), fishing (section [8-8-5](#)) or sledding (section [8-3-11](#)). However, these activities meet the VMP definition of passive recreation while it can be debated that e-biking does not. Thus, staff supports the approach to have council make a legislative finding that e-biking is a passive recreational use.



## **5.) PHASED ROLLOUT AND PILOT APPROACH**

**Why aren't we proposing a pilot approach an phased rollout to determine effects and impacts of new use rather than a sweeping "everything on the eastern plains?"**

Staff response:

OSMP staff contacted several peer agencies that allow e-biking including Boulder County Parks and Open Space (BCPOS), Jefferson County Open Space (JCOS), USFWS, the City and County of Denver Mountain Parks, and City of Boulder Transportation & Mobility Department. As part of their planning processes, BCPOS and JCOS conducted a pilot project to gather data and community input on e-biking and level of support. Key findings from each pilot project are described in the [Nov. 2022 OSBT meeting packet](#) memo under the Peer Agency Review section. The information gathered from peer agency partners indicated that e-biking did not result in a change in user conflicts or concerns beyond what is typical for trails that allow biking.

The Nov. 2022 memo also described OSMP's experience with biking. Overall average daily conflict between visitors on OSMP trails has ranged between 5-7% for close to two decades (2016-2017 Visitor Survey). Of all respondents to the 2016-2017 survey, 6% (on average) reported conflict with other users on the day of the survey, with a third of these indicating conflict was with a biker. This means, on average, 2% of visitors reported conflict with a biker and 98% did not on the day of the survey. There is very little difference in average daily conflict between trails that allow cycling and trails that do not.

OSMP collects visitation-related data on a regular basis to develop a quantitative understanding of system-wide recreation visits to city-managed open space. 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. Enacting rule-making authority would provide flexibility and discretion to the OSMP department for more nimble decision-making and include a transparent public process.

Given the findings of pilot projects conducted by other agencies and OSMP's experience with biking, OSMP does not think a pilot program would provide additional benefit nor be an efficient use of staff or community time. A secondary consideration is the challenge of collaborating on regional trail feasibility studies underway/in the near future by our agency partners regarding e-bike use on trails crossing jurisdictional boundaries. These include the Boulder to Erie Regional Trail (BERT), Colorado Front Range Trail (CFRT), and US 36/North Foothills Bikeway. The planning challenges are primarily associated with not knowing the future status of e-bikes on OSMP lands and therefore not being able to assess impacts and next steps, for example, determining if disposals would be required. It is time consuming to work through these challenges at the project level and presents a level of uncertainty around these collaborative projects. Knowing the future status of e-bikes on OSMP lands will ensure efficient and effective use of staff time and help staff, the board and council, and community better assess the implications.

## **6.) OMISSION OF ANTICIPATED ADMINISTRATION AND ENFORCEMENT SPECIFICS**

**Why were administrative and enforcement specifics and costs omitted from the analysis?  
City license requirement, bike evaluation – general statement factored into existing budget**

Staff response:

The budget impacts associated with allowing e-biking as a passive recreational activity are supported by and within the existing OSMP funding in the city's budget. The department's annual operating budget accounts for visitor services provided by OSMP. These include environmental education, public outreach, law enforcement, emergency response, and trails and facilities. Services are designed to enhance the visitor experience, provide visitor safety, and protect the natural environment. Implementation costs are limited to minor infrastructure improvements such as updating regulatory and educational signs. The activities associated with e-biking will be accommodated through the approved annual budget for operations and maintenance.

In terms of enforcement specifics, the Analysis section of the Nov. 2022 memo provided the proposed approach for enforcement and ranger patrol, which is included again below.

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.

**7.) CLIMATE FRIENDLY EBIKES**

**Why are ebikes considered totally non-polluting and climate friendly? Have any examination of environmental impacts from mining, manufacturing and disposing of ebike batteries?**

Staff response:

In terms of climate friendliness, e-bikes may help to meet the city's Climate Commitment goal by reducing the number of vehicle miles traveled to reach local trails, in turn helping to preserve the ecosystems and habitats that make up OSMP. There also is potential to greenhouse gas emissions. Some e-bike recreationalists who participated in e-bike surveys indicated that they currently drive to open space lands managed by agency partners such as Jefferson County or Boulder County that allow e-biking.

With respect to environmental impacts, lithium-ion batteries are widely used in other e-vehicles and electronic devices including, for example, mobile phones, laptop computers, digital cameras, and health care devices. There are some environmental benefits and impacts associated with the battery supply chain. The extraction process to mine minerals used in lithium-ion batteries can be intensive, recycling lithium-ion batteries requires they be professionally dismantled, and there are few guidelines are currently in place to keep lithium-ion batteries out of landfills. According to an [article](#) published by AZO Cleantech, researchers are working on eco-friendly alternatives to lithium-ion batteries. However, the manufacturing process of e-bikes is not a relevant criterion for evaluating whether to allow e-biking activity on open space lands.

**8.) WILDLIFE IMPACTS FROM LIGHTS**

**Why aren't impacts of ebike lights shining at least 500-600 feet at night on wildlife accounted for? We should be bending over backwards trying to reduce and minimize impacts from powerful lights on OSMP at night when many wildlife are most active.**

Staff response:

Currently, there are approximately 52 miles of city open space managed trails that allow biking after sunset and before dawn. Section 7-5-11, "Lights and Reflectors Required," B.R.C. 1981, requires sufficient light and reflectivity mounted on a bicycle or e-bike. The purpose is for the biker to be visible by other trail users from a distance and reduce the potential for conflict between trail users.

**9.) WILDFIRE RISKS**

**Why haven't risks of wildfire from ebike use been adequately evaluated? Most data from developed urban areas and battery charging. Some ebike batteries spark, although anecdotally noted as uncommon, and when ridden in natural areas result can be catastrophic, only takes once.**

The e-biking Alternatives Evaluation criterion for Safety/Conflict included an evaluation of lightweight lithium-ion batteries, which have become the norm for e-bikes. The evaluation is based on best information available. As indicated, there is little data on the frequency or risk of the battery catching on fire.

In response to the request from the OSBT at the Nov. 2022 meeting, staff provided additional information on the e-bike Battery Management System (BMS) and potential as an ignition source in the Dec. 2022 e-bike memo. While a potential hazard is leaving the battery too long on the charger, research conducted by OSMP staff did not find a correlation or account of e-bike batteries being attributed to the cause of a wildfire. Several articles were cited and referenced in Dec. memo including a [Consumer Reports](#) article that suggests fires involving recreational e-bikes are either not occurring or far less common. "The e-bikes people are buying now are probably a lot newer and better technology than some of the older stuff that delivery riders in the city have been using and abusing for years," says Adam Vale Da Serra, manager of Cutting Edge bike shop in Berlin, Conn. "I've heard nothing locally about e-bike fires among mountain bikes and road bikes." The article also publicizes fire prevention tips. Other news articles have shared similar tips."

**10.) ADJACENT AGENCY MANAGEMENT**

**Why is OSMP management driven by adjacent agencies' management rather than vice versa?**

Staff response:

OSMP has a collaborative relationship with adjacent partner agencies. In Nov. 2019, the Board of County Commissioners (BOCC) approved allowing class 1 and class 2 e-bikes on Boulder County open space trails on the plains where regular bikes are allowed, including regional trails and trails on open space parks *with certain exceptions*, which were in response to the request of OSMP. Specifically, Boulder County agreed to continue prohibiting e-bikes on select BCPOS plains trails that cross jurisdictional boundary with City of Boulder Open Space managed trails until OSMP re-evaluates its e-bike policy. These trails include the Coalton, Mayhoffer-Singletree, and Boulder Canyon trails. A few years after the city of Boulder first allowed e-bikes on certain hard surface multi-use trails in 2013 (to be managed by city Transportation Department), which prohibited e-biking on city of Boulder open space trails, OSMP committed to a re-evaluation of the policy prohibiting e-biking on city open space in response to the evolution of issues around e-bikes and increased community interest in e-biking on natural surface trails. OSMP collaboration with BCPOS allows for both the continuation of the status quo as well as a change to allow e-biking in an effort to provide a more consistent visitor experience across the local region.

**11.) DRAFT ORDINANCE LANGUAGE**

**Why the references to "recreational paths or trails"? Should be changed to "OSMP designated paths or trails." (Recreation paths or trails is not an official name and not how OSMP trails are identified.) Why the reference to "park patrol officer" in conjunction with**

**OSMP? Reference should be “Open Space and Mountain Parks ranger”. (Rangers are not identified as park patrol officers.)**

Staff response:

The section 8-8-12, “Electric Assisted Bicycles on Open Space,” proposed language can be changed to “OSMP designated paths” if desired.

The phrase “recreational path or trail” is language that was adopted by city council in section 7-5-25 as detailed below.

**7-5-25. No Electric Assisted Bicycles on Open Space.**

No person shall activate the motor of an electric assisted bicycle on any recreational path or trail on open space land as defined in the City Charter Section 170 except where the path or trail has been transferred to a city department pursuant to Charter Section 177, "Disposal of Open Space Land" or section 8-8-11 "Transfer of Open Space Lands," B.R.C. 1981.  
Ordinance Nos. 7941 (2013); 7965 (2014); 8007 (2014); 8447 (2021)

There are 24 references to “trails” in the Boulder Revised Code. The City Attorney’s Office has no objection to changing the reference in the proposed ordinance from “recreational paths or trails” to “trails” or “mountain park trails”.

It is important that the Boulder Revised Code and charter use consistent language. Because the OSMP rangers are classified and commissioned as “park patrol officers,” the proposed amendment uses that terminology.

OSMP rangers are park patrol officers. There is no reference in the Boulder Revised Code or the charter to “Open Space and Mountain Parks ranger”. Conversely, there are 4 references in the B.R.C. and charter to “park patrol officer.” In 2008 the city was successful in requesting the Peace Officer Standards and Training (“P.O.S.T.”) Board of the State of Colorado Department of Law to recognize rangers as “peace officers” so they could continue the practice of carrying firearms, conduct arrests, and enforce the laws of the City of Boulder. A basis for this recognition is B.R.C. section 1-2-1, “Definitions,” which includes in its definition of “police officer” “Any city park patrol officer commissioned by the city manager”. Rangers are certified by the city manager as “park patrol officers.”

Section 8-3-12, “Authority of Park Patrol Officers,” B.R.C. 1981 sets forth the authority of “park patrol officers,” and is drafted to identify officers who enforce the law on open space as “park patrol officers”:

**8-3-12. Authority of Park Patrol Officers.**

- (a) Park patrol officers are authorized to enforce all provisions of this code, other ordinances of the city, and rules issued thereunder regulating conduct in any city park, parkway, recreation area, or open space and to perform other duties delegated to them by the city manager.
- (b) After satisfactorily completing a training course approved by the Colorado Law Enforcement Training Academy, park patrol officers shall be commissioned with authority to enforce such laws and rules, protect park patrons and property, and carry firearms.
- (c) A park patrol officer may stop any person who the officer reasonably suspects is committing, has committed, or is about to commit in a city park, parkway, recreation area, or open space a violation of this code, other ordinance of the city, or regulation issued thereunder. The officer may require that person to give his or her name and address and an explanation of his or her actions.
- (d) When an officer has so detained a person and reasonably suspects that the officer's personal safety requires it, the officer may conduct a pat-down search of that person for weapons.