

MEMORANDUM

TO: Open Space Board of Trustees

FROM: Dan Burke, Director, Open Space and Mountain Parks
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DATE: April 14, 2021

SUBJECT: Master Plan Annual Report

About this Report

To honor the importance of the desired outcomes, focus areas and policy direction in the Open Space and Mountain Parks (OSMP) Master Plan, OSMP staff will rely on a variety of tools and communication approaches to report on implementation progress. One important tool staff will use to help describe progress made is this annual “progress report” which includes a brief description of the Master Plan context, reviews the 2020/2021 budget, describes major progress made in two areas in 2020, and contains a listing of over 100 major OSMP specific accomplishments from last year and planned activities for this year (**Attachment A**). The progress report is a high-level, brief synopsis of accomplishments and will be complemented by a host of other communications and ways to summarize progress, including several upcoming resources and events such as:

- A community virtual “open house” webpage rolling out the week of April 19.
- A new webpage on Master Plan implementation progress.
- A planned summer publication with a community focus that will feature more in-depth stories.
- Upcoming Operating and Capital Improvement Program (CIP) Budget discussions.
- OSBT meeting agenda topics that will focus on projects and programs energizing master plan outcomes and strategies as well as OSBT retreats and field trips.
- More detailed progress reports, including metrics and measurements, to be delivered as part of the 5-year Master Plan “check in” and the 10-year Master Plan update.

2020: A Year to Remember

- **Ecosystem Health and Resilience:** Responded to the CalWood Fire and used lessons learned to accelerate OSMP forest health and fuel treatments.
- **Agriculture Today and Tomorrow:** Received guidance to reduce conflict of prairie dogs on irrigated agricultural fields.
- **Responsible Recreation Stewardship and Enjoyment:** Completed several trail reroutes.

- **Community Connection, Education and Inclusion:** Made over 92,000 visitor contacts with COVID-19 and natural resource protection messaging.
- **Financial Sustainability:** Maintained staff and community safety, department operations, and financial solvency during the COVID-19 pandemic.

Master Plan Context

Our Shared Values and Focus Areas

In September 2019, City Council unanimously accepted and adopted Open Space and Mountain Park's first Master Plan. The Master Plan set the course for achieving a vision for integrated and responsible land management over the next decade and beyond. Inputs into the Master Plan included the [City Charter's purposes for Open Space](#), already established community-wide goals and plans, such as the Boulder Valley Comprehensive Plan, citywide guidance and past OSMP plans, and an intensive [community engagement process](#) that included over 10,000 comments and more than 1,300 completed statistically valid surveys.

The Master Plan framework consists of focus areas, desired outcomes, and prioritized strategies (i.e., Tier 1, Tier 2, Tier 3), which together organize the policy direction and implementation priorities for OSMP. The five focus areas can be best understood through value statements, which were formed by merging community voices with those of OSMP staff, OSBT and City Council (Fig. 1).

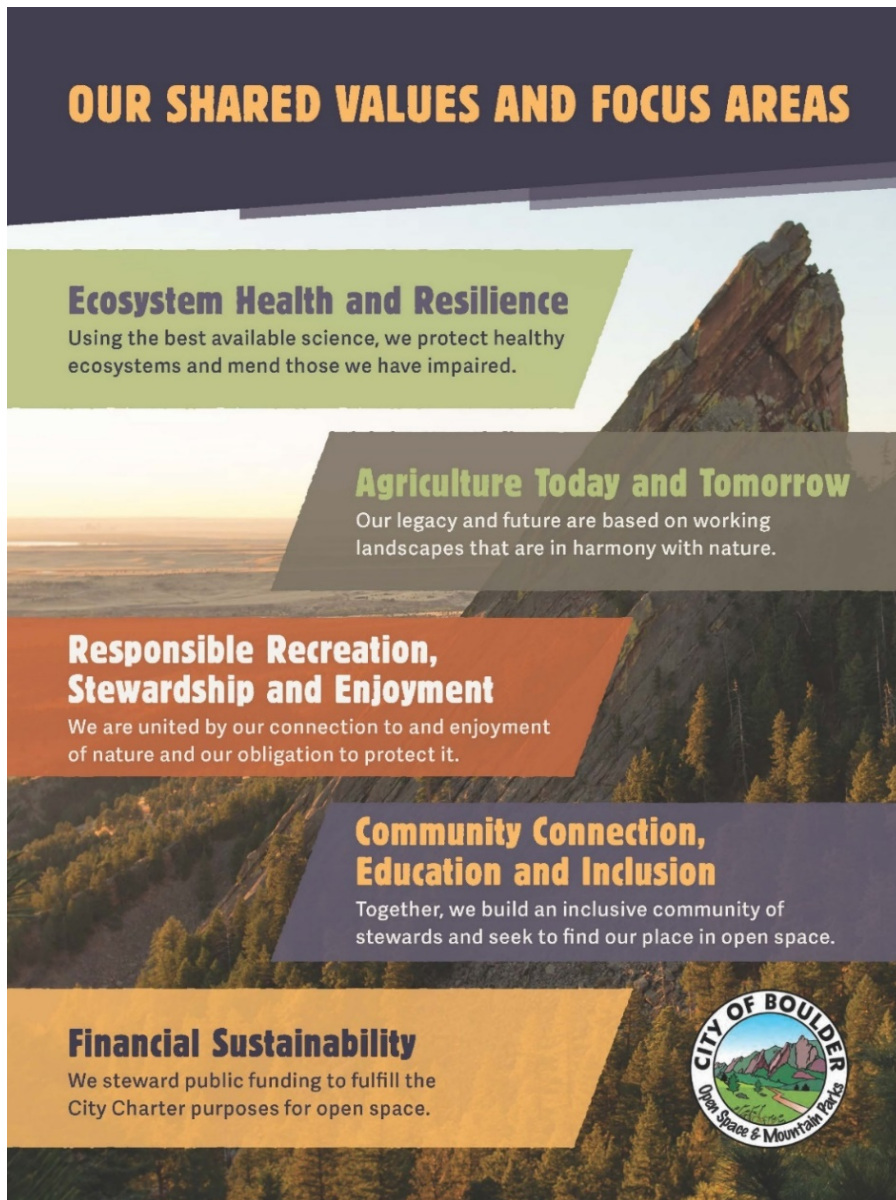


Fig. 1. OSMP Master Plan focus areas and their value statements.

MP Implementation Prioritization and Funding

Workplan Process and Prioritization

The Master Plan implementation process begins with staff developing prioritized, multi-year workplans and funding needs that align with and advance the community’s vision, as described in the Master Plan, other OSMP plans, and interrelated citywide initiatives. The department’s workplan informs the annual budget approval process with the OSBT and City Council as well as periodic updates and engagements with both groups. While all the Master Plan strategies are important, work planning efforts were initially focused on accelerating and emphasizing programs and projects that advance one or more Tier 1 strategies. For example, restoring

degraded agricultural soils advances Tier 1 strategies in both the Agriculture Today and Tomorrow focus area and the Ecosystem Health and Resilience focus area. The department will also continue to advance important Tier 2 and 3 strategies over the next decade as they all fulfil City Charter purposes for OSMP; the capacity and opportunity to advance them is balanced in parallel with the priority Tier 1 strategies. Many implementation initiatives have existing plan and policy guidance necessary to support immediate action across all three tiers, while other new initiatives may be more complex requiring collaborative decision-making through additional public engagement and consultation with the community, OSBT, and possibly City Council.

Funding

The Master Plan laid out three funding scenarios for its implementation: constrained funding, restored funding, and full funding. OSMP's 2020 budget was developed under the fiscally constrained funding scenario of the Master Plan, recognizing that revenues from the sales tax extension would not be realized until 2021. Sales tax increments currently funding OSMP include (1) a 0.40 percent sales tax which has no sunset; (2) a 0.33 percent sales tax which was reduced to 0.22 percent on Jan. 1, 2019, and will be further reduced to 0.10 percent on Jan. 1, 2035, and then exist in perpetuity; and (3) a 0.15 percent sales tax which expires on Dec. 31, 2039.

The impacts of COVID-19 resulted in reduced revenues, and the OSMP department joined all city departments in reducing its 2020 approved budget by 10 percent. As described below, work continued across OSMP functions and services in 2020 despite significant challenges. OSMP's CIP remained well-aligned with the prioritization of the Master Plan (2020 CIP investment by Tier: Tier 1, 76.3%; Tier 2, 19.5%; Tier 3, 4.1%).

Beginning in 2021, the department will be able to program dollars from the sales tax extension to support department priorities. The 2021 budget remains conservative considering the likely multi-year impacts of COVID-19 and continues to be aligned with the fiscally constrained funding scenario in the Master Plan. However, even within a fiscally constrained scenario, the department was able to make key funding increases to the 2021 CIP, shift two fixed-term positions supporting soil health and prairie dog management from the General Fund to the Open Space Fund, convert the Trails Research Coordinator from temporary to standard, and maintain sufficient operating budget to carry out needed work across the system in 2021.

Progress in 2020

Resilience and Responsiveness to Change

In 2020, the department demonstrated a high degree of resilience and being responsive to change. Despite the upheaval of 2020 due to the COVID-19 pandemic, the Master Plan not only remained relevant, but benefited staff by affirming and strengthening the foundational guidance and community connections needed to respond to a rapidly changing environment.

Below, you will find a high-level overview of 2020 accomplishments related the department's resilience and how it responded over the past year. See **Attachment A** for even more project highlights.

Resilience and Responsiveness to COVID-19

The COVID-19 pandemic reached Colorado in March of 2020, impacting human health and the Boulder economy. From an outdoor recreation perspective, there was an initial surge in visitors to publicly managed land after the Colorado statewide emergency closure order was announced on March 13 (Fig. 2).

Visitation changes pre/post COVID-19 public health closures

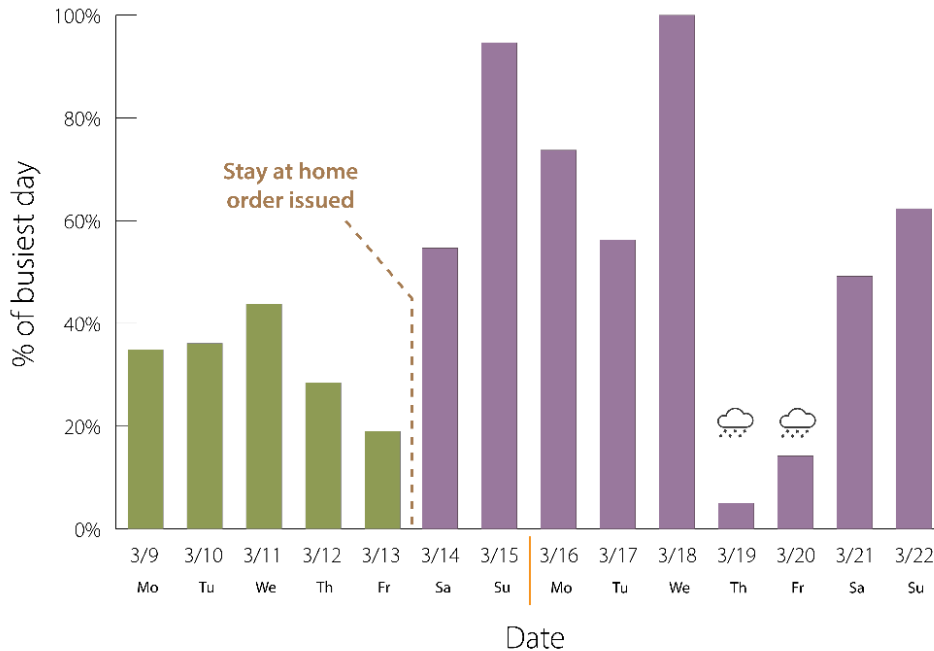


Fig. 2. Visitation before and after the emergency closure order of March 13, 2020. Visitation data based on aggregated counts from 11 trail counters, sourced from the [Visitation Data Explorer](#)

OSMP staff completed over fifty actions in response to high visitation and COVID-19 compliance from March to December. For example, staff:

- Installed variable messaging signs and opened the Flagstaff Summit to parking to manage congestion and illegal parking on Flagstaff Road.
- Closed picnic areas, shelters at Flagstaff, and the Boulder Star area to limit large group gatherings.
- Increased trash service, dog waste compost service, and outhouse service to seven days per week.
- Added hand sanitizer dispensers and step-n-pulls to all outhouses and added portable outhouses where needed.
- Conducted rapid inspections of visitor reports of trail condition deterioration.
- Installed signage encouraging one-way travel on suggested loops at several sites.
- Added new information to the website on where to find wider and less busy trails.

- Monitored visitor social distancing and face covering compliance.
- Created a COVID Outreach staff team who made 92,576 visitor contacts and handed out 1,730 free face coverings.

COVID-19 also reduced OSMP revenues, as described above, and, in turn, impacted staff project and program delivery. OSMP staff were fortunate to have robust work planning and financial processes in place that helped it proactively respond to COVID-19 revenue shortfalls. Starting in March and into the spring months, field staff operations were limited to essential operations and all group, permit, and volunteer activities were cancelled. Budget reductions meant a delayed start for seasonal staff, a hiring freeze, staff furloughs, the cancellation of the Junior Ranger program, and the suspension of volunteer programs. Spending was further reduced through project adjustments. For example, the department:

- Delayed the schedule on integrated site planning at North Foothills, Wonderland Lake, and Gunbarrel Hill.
- Deferred regional trail connections work due to partnership scheduling decisions (Rocky Mountain Greenway, Eldorado Visitor Use Management Planning) and enhancement projects (Four Mile Creek crossing).
- Shifted the design of trail projects to in-house instead of hiring consultants.
- Deferred farm site improvements at some locations.
- Reduced vegetation management and ecological restoration activities.
- Deferred education programs to meet COVID Outreach needs.
- Deferred the installation of visitation counters in the eastern part of the system.

In July, the field season finally commenced in earnest, and major progress was made, despite reduced capacity. Maintenance and repairs were completed on Red Rocks, Mesa / Fern / Shanahan junction, 1st/2nd Flatirons, Community Ditch, White Rocks, and South Boulder Creek Trails. Designated and undesignated trail condition monitoring was completed for 1/5 of the system to identify trail maintenance and restoration priorities. Large trees, non-native shrubs, and invasive weeds were removed in Boulder Creek, South Boulder Creek, Skunk Canyon, and Bluebell Canyon and cattails were removed from several ponds. Education staff developed on-line programs and volunteer programs were realigned to support COVID-19 Outreach efforts. Rangers continued at full staffing levels with focused patrols in response to COVID-19 and responded to a 30% increase in the number of emergency calls, compared to the previous year. Over 75% of the projects planned per the Forest Ecosystem Management Plan were completed. A more complete list of accomplishments are described in **Attachment A**.

Resilience and Responsiveness to the Calwood Fire

The CalWood Fire started seven miles north-northwest of the city on Oct. 17, 2020, and burned over 10,000 acres, representing the biggest fire in Boulder County history. This fire reflected the current upward trend in fire frequency, fire season length, and fire severity, resulting in part from climate change and a legacy of fire suppression. The fire, spreading at a rate of 1,000 acres per hour at times, occurred across U.S. Forest Service, Boulder County Parks and Open Space, and privately owned lands, and threatened but did not reach OSMP land. However, OSMP staff played a large role in the fire response. Twenty-one red-carded staff from several workgroups joined a county crew for five days to contain the fire on the north side by digging handline on

steep and dangerous slopes. OSMP staff also supported the Boulder Emergency Operations Center and closed Joder and Buckingham Park.

The CalWood fire prompted OSMP staff to make some changes in 2021 to continue to better prepare for a possible wildfire on OSMP property. In 2021, OSMP staff will accelerate fuel mitigation efforts, adding more temporary staff and completing additional fuel reduction treatments. In addition, the department joined with Boulder County Parks and Open Space and Jefferson County Open Space to fund a new research study entitled “Fuels treatments and their impact on carbon stocks and fire severity in Boulder and Jefferson Counties and the City of Boulder” as part of the annual [Funded Research Program](#), and signed onto the [Memorandum of Understanding for Collaboration and Coordination to Improve Forest Health and Reduce Wildfire Risk in Boulder County, Colorado](#) with more than 10 land management agencies.

An Integrated Approach to Climate Action

A Tier 1 strategy of the Master Plan is to address the global climate crisis here and now. OSMP staff have been doing this for many years already through a range of land management actions that have had the co-benefit of preparing us for climate change. Some examples include:

Management Action	Climate Impact
Acquire large habitat blocks, install wildlife-friendly fencing, remove undesigantated trails.	Facilitate the ability of wildlife to respond well to shifting climate conditions and to flee wildfire.
Acquire, maintain, and restore wetlands and riparian areas.	Spread out, slow down, and store water on the landscape.
Thin forests and conduct prescribed burns.	Reduce the severity of wildfires.
Restore irrigated agricultural lands.	Rebuild soils, drawn down atmospheric carbon, decrease the impacts of drought.
Increase climate literacy through education programming.	Inspire visitors to climate action through greater understanding of the profound challenge facing natural ecosystems and humanity.

Moving forward, staff are continuously looking for opportunities to adjust and accelerate actions like these, while also optimizing OSMP operations to minimize greenhouse gas emissions. Adjustments to the department's fleet and its buildings continue to be the biggest opportunity areas for direct climate action. OSMP staff is also developing strong community research partnerships to continue studying climate change and potential responses. In 2021, the department has funded four research investigations into climate-related questions.

Resilience and Responsiveness to Prairie Dog Conflicts with Irrigated Agriculture

City Council and the Open Space Board of Trustees reviewed the impacts of prairie dogs on the city's irrigated agricultural fields. Concerns were raised that prairie dog occupancy lowered the viability of open space agricultural operations, contributed to soil degradation and loss, and limited the implementation of soil carbon farming and climate-mitigation practices. In September 2020, after completing a public engagement process, City Council approved an adjusted approach for the management of OSMP irrigated agricultural fields occupied by prairie dogs. The complete set of actions, which include prairie dog removals through both relocations and lethal control and extensive land and soil restoration, can be read [here](#). You can learn about the

steps that staff have taken to implement the actions on our [Prairie Dog Conservation and Management webpage](#).

Taking Care of What We Have

In 2020, OSMP continued to dedicate significant resources and capacity towards taking care of the natural areas and other assets on city open space. For the OSMP system, everything begins with land conservation. The department supports and preserves healthy ecosystems, without which Boulder would not be Boulder. Generations of Boulder residents have long worked to preserve and protect important natural areas, modeling this core community value for children and youth to emulate.

The 2019 OSMP Master Plan survey of Boulder Valley residents confirmed that *Taking Care of What We Have* is a major theme to guide stewardship for the next decade: 79% of respondents thought Ecosystem Health and Resilience was the most important focus area; 69% of respondents thought the department should improve ecosystem health on existing OSMP lands over acquiring new land; and 67% of respondents thought the department should focus more on improving maintenance and design of existing trails over building new trails. With the completion of the Master Plan, staff incorporated guidance into funding decisions and project planning, ensuring a continued and in some cases accelerated emphasis of taking care of what we have.

Below, you will find a high-level overview of 2020 accomplishments related to this area. See **Attachment A** for more project highlights.

Ecosystem Health and Resilience

OSMP strives to both preserve and restore a network of healthy and resilient ecosystems for native plants and animals and ecosystem services like clean air and water. In 2020, staff removed large trees, non-native shrubs and invasive weeds at Boulder Creek, South Boulder Creek, Skunk Canyon, and Bluebell Canyon and removed cattails from several ponds. The department also completed extensive fencing infrastructure in the Shanahan Ridge area to allow for prescriptive cattle grazing to address the aggressive spread of tall oatgrass.

When undesignated trails (pathways that visitors create by going off trail) form, they fragment natural habitat for native plants, animals and biological communities, sometimes displacing wildlife or damaging rare plants. In 2020, OSMP staff closed undesignated trails at Anemone and NCAR, restored 1,760 linear feet of them overall, and installed 557 linear feet of fencing to reduce off trail travel. Staff also monitored one-fifth of the 45,000 acre system for new or eliminated undesignated trails in 2020.

The Master Plan recognized the goal to continue managing entire ecosystems by considering all elements and processes of natural systems rather than focusing on one species or attribute at a time. By 2020, OSMP staff had completed 75% of the projects outlined in the Forest Ecosystem Management Plan (FEMP). FEMP monitoring data was compiled and showed positive responses to management for native species cover and composition. Staff also completed routine vegetation monitoring, continued vegetation mapping efforts, and completed an inventory of grassland soil quality to further the implementation of the Grassland Ecosystem Management Plan.



OSMP staff take a learning laboratory approach to conservation and recreation. In 2020, staff undertook more than 20 monitoring projects, sponsored 10 research grants, and issued 25 research permits. There continued to be considerable community interest in applied science and citizen science programs, and a new [Science at OSMP](#) website was developed. It includes the announcement of 11 new scientific publications in the last two years stemming from the combined efforts of independent researchers and OSMP staff.

Agriculture Today and Tomorrow

Agricultural programs at OSMP are about taking care of several interrelated components: agricultural productivity and soil health, high value habitats and rare species associated with ranches and farms, irrigation water assets, and the city's ranchers and farmers.

Agriculture and water infrastructure require ongoing maintenance and staff is managing a backlog of needs. Community engagement during the Master Plan process revealed that infrastructure and agricultural assets and the resource opportunities they support were highly valued. In 2020 staff completed >25,000 linear feet of irrigation ditch maintenance and installed six culverts and other various pipe repairs and trenching. They also fixed and maintained irrigation infrastructure and agricultural fencing on multiple unleased agricultural fields.

In the Boulder Valley, agricultural lands represent one of the biggest opportunities for accelerating carbon sequestration using innovative farming practices to build organic soil matter. In 2020, staff applied compost on 156 acres of irrigated farmland, seeded annual cover crops or perennial species on 140 acres of farmland, and irrigated 151 acres of degraded, unleased agricultural fields promoting planting with a goal of sequestering carbon on agricultural fields. Staff also sampled over 100 irrigated agricultural sites for soil health (e.g., organic C, bulk density, water holding capacity) and began designing a soil health assessment for prairie dog removal sights.

Responsible Recreation, Stewardship and Enjoyment

The Responsible Recreation, Stewardship and Enjoyment focus area is about taking care of accessible trailheads, our high-quality trail network, and our visitors, while sustaining a healthy ecosystem. Taking care of visitors also means allowing for a fun and diverse range of passive recreational experiences.

Deferred maintenance is a common reality when managing a complex and aging trail system such as the one on OSMP lands, where some of the trails are over 120 years old. The Master Plan calls for staff to use a prioritized, life-cycle approach to improving the condition of OSMP's diverse portfolio of historic and modern trails. Despite furloughs of seasonal staff related to COVID-19, staff made a significant reduction in the trail maintenance backlog by completing projects at Red Rocks, Mesa/Fern/Shanahan junction, 1st/2nd Flatirons, Community Ditch, White Rocks, and South Boulder Creek trail areas.

OSMP lands supported roughly 6.25 million visits in 2017. The Master Plan calls for the continuation of implementing measures from approved plans to mitigate impacts of increasing visitation in specific locations and to also update the systemwide visitor use management plan to generate and implement ideas for addressing visitation growth. In 2020, OSMP staff took many actions to respond to the increase in visitation related to COVID-19, as described above and in **Attachment A**.



For OSMP lands, the steady rise in use results in added wear and tear on an aging system of trails and amenities which affect some visitors' ability to have the experiences they seek on open space. In 2020, communications staff partnered with neighboring agencies to deliver outdoor health guidelines and responsible recreation messaging to area residents. "Stay on trail," "walk through muddy spots," and "leave no trace" messages were included in this broader reach. This partnership set the foundation for regional open space communication collaboration for the future.

Community Connections, Education and Inclusion

The Master Plan has a goal for OSMP staff to continue to provide inspiring environmental education and physical and mental well-being programming. The department also focuses on

promoting equity and inclusion so people feel safe and are able to enjoy the benefits of Open Space and on engaging youth to be inspired by nature, while making connections to Boulder’s past.

In a report on Master Plan focus group findings, authors from the Spanish-speaking community described how visitors felt while visiting Open Space lands: “not having language access to the written materials in the parks, not being able to understand the information already there, as well as not understanding the “unwritten” cultural rules when one goes to the outdoors” [can be challenging].” In 2020, OSMP staff launched the Signs Equity Pilot Project with El Centro AMISTAD. Focus groups offered feedback on Spanish-language signs. The project culminated with newly installed Spanish-language signs at Sawhill Ponds, including revamped rules and regulations signs and a trailhead map. The department also followed COVID-19 protocol to provide 26 bilingual hikes, programs and events reaching 410 people.

Signs and a range of other interpretive media are used to share important information, tell essential stories about Boulder’s natural and cultural history, and support learning. Sometimes they also seek to guide or change behaviors by including rules and regulations. During the onset of the COVID-19 outbreak, signs were one of the best ways to communicate with Open Space visitors on how to safely use the system. The department installed over 200 COVID-19-related signs across the system with important public health guidelines.



Research shows that in order for youth to connect to, care about, and therefore become stewards of the land, they need repeated access to it. In 2020, OSMP staff offered 124 COVID-19-safe youth and family programs and partnered with other city departments on the Boulder Youth Nature Initiative to deliver nature programs to youth. OSMP also partnered with others around Boulder County in the E Movement, which promotes youth to become stewards of the land.

Conclusion and Next Steps

The Board and community will continue to hear ways the department is progressing on projects that align with Master Plan implementation throughout the year through a community virtual “open house” website in the spring, a new webpage, a summer publication with a community focus that will feature more in-depth stories, upcoming operating budget and the Capital Improvement Program (CIP) discussions, and other OSBT meeting agenda topics as well as OSBT retreats and field trips.

OSMP welcomes you to learn more about department progress, including a description of 79 accomplishments from 2020 and over 50 upcoming projects to watch for in 2021 and beyond, in **Attachment A**.

Attachments:

- **Attachment A:** 2020 Highlights and 2021 Planned Work by Focus Area

Attachment A

2020 Highlights and 2021 Planned Work by Focus Area

This attachment summarizes work completed and planned from across the department and its many programs by categorizing it into the focus areas in the Master Plan. The work described below is not intended to be an exhaustive list of all projects, actions and initiatives completed or contemplated by Open Space and Mountain Parks (OSMP) but rather is intended to provide the reader with a few highlights associated with each focus area. Each item bulleted below is coded to its related Master Plan strategy. For example, “(EHR1, 3)” means that the project is related to both the Ecosystem Health and Resilience (EHR) strategies EHR1 (preserve and restore important habitat blocks and corridors) and EHR3 (address the global climate crisis here and now). The reader can reference the full list of 46 Master Plan strategies and more context in the [Master Plan](#) itself.

Ecosystem Health and Resilience

Using the best available science, we protect healthy ecosystems and mend those we have impaired.

What Happened (2020 Highlights)

- Removed large non-native trees, non-native shrubs, and invasive plants along Boulder Creek, South Boulder Creek, Skunk Canyon, and Bluebell Canyon; removed cattails from several ponds. Restoration projects like these and others hopefully make native ecosystems more resilient and better adapted to future climate change (EHR1, 3).
- Continued to maintain and expand a native plant materials program (EHR1).
- Completed over 75% of the projects outlined in the Forest Ecosystem Management Plan (EHR2).
- Compiled and analyzed Forest Ecosystem Management Plan monitoring data, showing positive responses to management for native species cover and composition (EHR2, 3, 7).
- Continued work to update and improve the OSMP Vegetation Mapping (EHR2).
- Assisted with CalWood Fire emergency response (EHR3).
- Closed and restored undesignated trails at Anemone and NCAR areas; restored 1760 linear feet of undesignated trails across the system; and installed 557 linear feet of fencing to reduce off trail travel (EHR4).
- Monitored 1/5th of the 45,000-acre system for emergent undesignated trails and successful restoration of undesignated trails (EHR4).
- Enacted a temporary access closure and deployed signs along South Boulder Creek, between South Boulder Road and Marshall Road, to decrease the chances of spreading invasive New Zealand mudsnails into quality habitats (EHR6).
- Mapped over 500 acres of priority OSMP areas for invasive plant occurrences (EHR6).

- Collaborated with a half dozen volunteer groups for a total of 1,600 hours of invasive plant management work (EHR6).
- Completed extensive fencing infrastructure in the Shanahan Ridge area to address the aggressive spread of tall oatgrass, and installed a “don’t tote the oat” interpretive sign and foot-cleaning station (EHR6).
- Completed more than 20 monitoring projects, sponsored 10 research grants, and issued 25 research permits (EHR7).
- Conducted soil and plant reclamation activities on multiple degraded irrigated agricultural fields that are dominated by noxious and invasive plant species (EHR6).
- Surveyed for and treated dozens of wetlands on agricultural properties for state “List A” noxious weed species (EHR6).
- Created a new [Science at OSMP](#) website, celebrating 11 new publications over two years from the combined efforts of independent researchers and OSMP staff (EHR7).
- Evaluated and updated facilities to reduce the use of natural gas (EHR9).

What’s Next (2021 Planned Work)

- Continue systemwide vegetation mapping updates to provide fundamental vegetation information for conservation and management planning (EHR1).
- Conduct rare plant species surveys ahead of planned projects, guiding trail alignment and repair design (EHR1, 7).
- Implement forest health and fire mitigation projects using over \$80,000 in grant funds awarded for 2021 (EHR2, 3)
- Expand forest crew staffing and complete more than 200 acres of forest thinning (EHR 2, 3).
- Complete a Bear Canyon Trail reroute to better protect Preble's meadow jumping mouse habitat (EHR4).
- Continue undesignated trail management including restoration (EHR4).
- Close, restore or designate undesignated trails at Gunbarrel, Anemone, Saddle Rock, and Flagstaff areas (EHR4).
- Install signs at undesignated trails so that visitors are aware they are leaving the managed trail system (EHR4).
- Expand cattle grazing in the Shanahan Ridge area by several hundred acres to address the spread of invasive tall oatgrass (EHR6).
- Continue to alert visitors to the presence of invasive New Zealand mudsnails and what visitors and neighbors can do to protect the creeks and preserve a healthy ecosystem (EHR6).
- Data collection and the management of 18 State-mandated noxious weed species on approximately 7,000 acres of the system (EHR6)
- Award small grants as part of the 2021 cycle of the [Funded Research Program](#) and publish a [story map](#) on OSMP’s “learning lab” (EHR7).
- Work with the National Park Service Night Skies and Natural Sounds division to pilot a soundscapes study to learn more about noise impacts on OSMP lands (EHR8).
- Install a vehicle and equipment tracking system to evaluate vehicle use and conversion to alternate fuels (EHR9).

Agriculture Today and Tomorrow

Our legacy and future are based on working landscapes that are in harmony with nature.

What Happened (2020 Highlights)

- Completed >25,000 linear feet of irrigation ditch maintenance, including approximately 90 percent hand removal of debris and 10 percent machine excavation (ATT1).
- Fixed and maintained irrigation infrastructure and agricultural fencing on multiple unleased agricultural fields (ATT1).
- Conducted multiple soil health improvements with the goal of sequestering carbon in agricultural fields. Applied compost on 156 acres of irrigated farmland; seeded annual cover crops and perennial species on 140 acres of farmland; and irrigated 151 acres of degraded unleased agricultural fields promoting plant growth (ATT2).
- Sampled over 100 irrigated agricultural sites for soil health (e.g., organic C, bulk density, water holding capacity).
- Relocated prairie dogs from three agricultural properties to the southern grasslands and erected barriers to reduce re-establishment (ATT3).
- Completed rehabilitation of the historic Hartnagle house to make it available to agricultural tenants (ATT5).
- Completed planned grazing to suppress the spread of tall oatgrass (ATT7).
- Continued to decrease the use of herbicides on agricultural lands and adjacent natural areas (ATT8).
- Increased signage to let visitors know they were leaving trails and entering farmland (ATT9).
- Completed improvements to the Lewis milk barn processing room (ATT6).
- Repaired the loafing shed at Hunter Kolb property (ATT6).
- Continued refining the agricultural land use assignment guidelines with input from tenants, OSBT, and the general public (ATT6).

What's Next (2021 Planned Work)

- Remove prairie dogs from approximately 140 acres of agricultural properties (ATT3).
- Focus soil health assessment on prairie dog removal sights (ATT3).
- Erect additional prairie dog exclusion barriers to reduce chances for ongoing conflict and recolonization (ATT3).
- Clean more ditches, make repairs, install fencing and culverts (ATT1).
- Complete the rehabilitation of the Ertl farmhouse and deconstruct structures no longer needed (ATT5).
- Start the Lewis farmhouse rehabilitation and Lousberg barn improvements (ATT6).
- Restore soil health and plant communities on the Minnetrista II and Canino properties (ATT7).
- Provided tenants with information to help them prepare for possible drought conditions in summer 2021 (ATT4).

Responsible Recreation, Stewardship and Enjoyment

We are united by our connection to and enjoyment of nature and our obligation to protect it.

What Happened (2020 Highlights)

- Made 92,576 visitor contacts to share messaging about how to stay safe during COVID times; handed out 1,730 face coverings (RRSE1).
- In response to the pandemic installed roadway variable messaging signs and opened the Flagstaff Summit to parking to manage congestion and illegal parking on Flagstaff Road; closed picnic areas and shelters at Flagstaff and the Boulder Star area to limit large group gatherings (RRSE1).
- Increased trash service, dog waste compost service, and outhouse service to seven days per week, added hand sanitizer dispensers and step-n-pulls to all outhouses, and added portable outhouses where needed (RRSE1).
- Conducted rapid inspections of visitor reports of trail widening, finding that trail widening was also being caused by muddy trail conditions, and the trampling observed was similar to a normal spring season (RRSE1, 2).
- Increased social distancing on trails (RRSE1):
 - Installed signage encouraging one-way travel along several trails,
 - Added signage for suggested loops, and
 - Added new information to the OSMP website on where to find wider and less busy trails.
- Conducted a study on visitor social distancing. Compliance with social distancing hovered between 40-70%; for example, from June 8-21, visitor compliance with social distance was highest at Sanitas (71%) and lowest at Chautauqua (44%) (RRSE1, 9)
- Conducted a study on visitor face covering. Face covering compliance was low at Chautauqua, averaging between 10-35% of visitors having a face covering with them during the period studied (RRSE1, 9).
- Inventoried trailhead parking lot capacity (RRSE1, 9).
- Completed designated and undesignated trail condition monitoring for 1/5 of the 45,000 acre system to evaluate changes based on baseline condition surveys (completed every 5 years) and identify trail maintenance and restoration priorities (RRSE1, 9).
- Completed two site plans supported by the OSBT aimed at reducing undesignated trails at Gunbarrel and Gebhard properties (RRSE1).
- Addressed maintenance and repairs on the following trail areas or trail segments: Red Rocks, Mesa / Fern / Shanahan junction, 1/2 Trail, Community Ditch, White Rocks, South Boulder Creek (RRSE2). Season totals:
 - 8,772 linear feet of tread constructed, maintained or repaired to reduce deferred maintenance issues.
 - 134 staff hours on bridge repairs

- 98 stone steps repaired or installed to reduce trail erosion
- Over 400 square feet of retaining walls maintained or built
- 1,200 ft of puncheon constructed
- 9 aging cattleguards replaced
- Worked on trail specifications and standards (RRSE3).
- Completed the 2018 Voice and Sight Tag Program monitoring report and presented results to OSBT (RRSE5).
- Offered 10 recreation programs, with 176 participants (RRSE6).
- Installed signs to alert visitors of icy conditions and to suggest traction devices (RRSE6).
- Added a native pollinator garden at Flatirons Vista Trailhead (RRSE8).
- Ranger Jasmine Sims received Service Award from Boulder County Sheriff's Office for her efforts in a difficult search (RRSE 8).
- Implemented a new schedule of rotating weekly trailhead closures for more consistent maintenance throughout the system (RRSE8).
- Moved Ranger Cottage operations outdoors to both trails and trailheads across the system, including visitor contacts with appropriate messaging on masks and social distancing, safety considerations, management priorities, and resource information, and hands-off interpretive tables (RRSE8).
- Replaced multiple older wood sign kiosks with a newer model (RRSE8).
- Developed multiple education signs. Some examples include "Don't Tote The Oat," New Zealand Mudsnails, Climbing Access, Trail Courtesy, Farming, and Ground Nesting Birds (RRSE8).

What's Next (2021 Planned Work)

- Launch of a comprehensive public opinion and visitor experience survey to inform recreational planning and adaptive management (RRSE1).
- System-wide trail maintenance and repairs, as well as undesignated trail management (RRSE1).
- Develop preliminary plans for a remodeling of the Chautauqua Ranger Cottage (RRSE1).
- Complete a second phase study of trailhead parking dynamics and congestion (RRSE1, 9)
- Install seven new visitation monitoring systems to reach 18 total locations driving the [visitation data explorer](#) (RRSE1, 9)
- Welcome back the Junior Rangers and five Youth Corps crews to work on trail projects for the 2021 field season (RRSE2).
- Continue to integrate volunteers into trails projects, with effective safety protocols, and with an anticipated return to volunteerism levels common pre-COVID (RRSE2).
- Conduct a robust season of trail maintenance (RRSE2); at the height of the season the trails group will potentially be leading over 100 people on a given day working on trail maintenance backlog projects. Priority project sites include continued work on the 1-2 trail, Tenderfoot, Royal Arch, Mt. Sanitas, Cragmoor, Red Rocks, Cottontail, Bear Canyon, Flatirons Loop, and Bluebell Baird.

- Complete preliminary trails cost estimating project (RRSE3)
- Complete trails specifications and standards project (RRSE3).
- Make continuous improvements to the V&S Tag Program including efforts to increase compliance in areas like the seasonal leash trails (RRSE5).
- Collaborate with the Boulder Police Department and Parks and Recreation to implement a no alcohol regulation (RRSE6).
- Update raptor closure regulations (RRSE6).
- Implement past and future plans by moving towards construction of new local trails in 2021, including continued planning and logistics for the North Sky Trail, construction of the Gunbarrel Loop, and the completion of several miles of trail at Anemone (RRSE7).
- Add 2-3 pollinator gardens within trailhead footprints throughout the system (RRSE8).
- Plan and contract design for a major upgrade to the Chapman Drive Trailhead which will connect it to the new Boulder Canyon Trail (RRSE8).
- Continue to install a new self-closing gate hinge that was custom designed for OSMP (RRSE8).

Community Connection, Education and Inclusion

Together, we build an inclusive community of stewards and seek to find our place in open space.

What Happened (2020 Highlights)

- Partnered with El Centro AMISTAD to launch a pilot equity signs project and installed Spanish language signs at Sawhill Ponds; including revamped rules & regulations signs, trailhead map, bilingual regulations and graphics (CCEI1).
- Provided 26 bilingual hikes, programs and events reaching 410 people (CCEI1).
- Named “Employer of the Year” by Bridge House for their Ready to Work program, which directly assists people who are experiencing homelessness by transforming lives through the power of work (CCEI 1, 7).
- Made over 80,000 contacts by COVID-19 outreach team and volunteer visitor ambassadors on the ground (CCEI2).
- Received 393 hours from Visitor Ambassador volunteers stationed at Chautauqua, making 10,626 contacts (CCEI2).
- Installed over 200 COVID-related signs across the system with important health guidelines (CCEI2).
- Partnered with neighboring agencies to deliver COVID-19 outdoor health guidelines and responsible recreation messaging to Denver metro-area residents. This partnership set the foundation for regional open space communication collaboration in 2021 and beyond (CCEI2).
- Finalized Education and Outreach Framework as a tool to standardize and guide E&O levels of education service for different sites (CCEI3,6, 7).
- Translated into Spanish: signs, website, COVID-19 messaging. (CCEI1).
- Continued accessible programming safely during COVID (CCEI1).
- Created new wayfinding graphic standards (CCEI2).

- Coordinated 165 volunteers on 20 trail and restoration projects totaling 1,051 hours of service for an estimated value of \$28,587 (CCEI2, 6, 8).
- Offered 124 youth and family programs, partnered with other city departments on the Boulder Youth Nature Initiative to deliver nature programs to youth, and partnered with others around Boulder County in the E Movement aimed at helping youth become stewards of the environment (CCEI3, 6, 7).
- Focused wellness programs, like forest bathing, to reduce stress and anxiety caused by the pandemic (CCEI5).
- Conducted historical research and performed a cultural resources survey in support of renaming the Settlers Park area (CCEI4, 9).
- Coordinated volunteers for trailhead/trash clean ups and trail volunteer projects: Fern-Mesa/Shanahan Junction, Community Ditch reroute, undesignated trail fencing and restoration at NCAR (CCEI2, 6, 8).
- Launched text alerts to inform community members of trail closures and prescribed burns (CCEI2).
- Partnered with city communications to coordinate COVID-19 outdoor recreation messaging (CCEI2).

What's Next (2021 Planned Work)

- Hire a new Bilingual Educator and Program Assistant position (CCEI1, 2).
- Continue producing bilingual signs and use creative graphics that can be understood by visitors regardless of their native language (CCEI1, 2).
- Offer youth volunteer projects (CCEI2, 3).
- Run the Junior Rangers program in 2021 at 2019 levels and plan how to increase the program in 2022 (CCEI3,7).
- Support consultation efforts to develop a citywide indigenous land acknowledgment, along with the development of new agreements with Federally Recognized Tribal nations and to support the renaming of Settlers Park (CCEI4).
- Rollout a new city website, with a page for each trail including photos of the trail (CCEI2).
- Build upon the success of the suggested routes pilot project to keep visitors distanced from one another during COVID-19 while also providing visitors with trail lengths, grade and difficulty information (CCEI2).
- Coordinate volunteer litter collections throughout the system and larger litter collection days on the weekends (CCEI2, 8).
- Partner with four Youth Corps for five crews to perform trail maintenance and undesignated trail restoration (CCEI 3, 6, 7, 8).
- Increase the number and variety of trails volunteer projects (CCEI 2, 6, 8).
- Develop more educational signs (CCEI6).

Financial Sustainability

We steward public funding to fulfill the City Charter purposes for Open Space.

What Happened (2020 Highlights)

- Completed acquisition of the 179-acre Shanahan Ranch (FS5).
- Completed Phase I of the residential facilities assessment (FS8)
- Installed mobile hotspots for emergency response and to collect parking fees (FS4).
- Partnered with Boulder County to create a Boulder area trails app (FS4).
- Completed annual conservation easement monitoring (FS4).
- Continued to shift to multi-year work planning to get a 2-3 year outlook and integrated the Master Plan into the work planning process (FS3).
- Deployed Beehive software to track trails and built structures, undesignated trails and structures, bridges, trailheads, monitoring locations, fences and gates, and natural area restoration (FS3).
- Collected first year revenues from the 0.15 percent sales tax increment extension to support the purchase of the conservation easement at Long's Gardens, a 25-acre urban farm (FS1).
- Continued partnership with BOSC, the Boulder Open Space Conservancy, and received a \$5,000 donation for soil health (FS1).
- Received a \$5,000 donation from Ruettgers Family Charitable Foundation recognizing the work of Dave Sutherland upon his retirement to be used to support education programs created by Dave during his career (FS1).
- Awarded an \$80,000 Colorado State Forest Service grant supporting targeted efforts by OSMP forestry crews to continue forest thinning to improve forest health and protect the community from wildfires (FS1).
- Received \$54,000 federal reimbursement for OSMP staff deployed on wildfires (FS1).
- Received \$1.725 million from the sale of the Coleman and Suits houses (FS1).
- Awarded \$49,000 in CARES Act dollars to support OSMP COVID response (FS1).
- Approved (OSBT) the Janson trail donation (FS7).
- Reduced the 2020 and 2021 budgets by 10 percent due to revenue impacts of COVID, while accomplishing work across the system reflected throughout this document (FS1).

What's Next (2021 Planned Work)

- Acquire a conservation easement at Long's Gardens based on actual revenue collected from the 0.15 percent sales tax increment extension in 2020 in accordance with the 2019 ballot measure (FS1, 7).
- With the 0.15 percent increment available for use beginning in 2021, stabilize funding and direct program dollars to highest priority needs as identified by the Master Plan (FS1)
- Through the 2022 budget process, taking place in 2021, operationalize the pilot funding for soil health and prairie dog management (FS1).
- Strategically leverage other revenue streams across functions and services, for example receiving OSMP's 50% of the \$1M GOCO grant to support the Lippincott property (FS1).
- Negotiate a possible trail easement with Raytheon to potentially enhance implementation of the North Trail Study Area Plan (FS5).

- Incorporate Master Plan guidance into funding decisions, ensuring the operating and CIP dollars prioritize taking care of what we have (FS4).
- Participate in citywide “Design the Future” efforts around data management, data architecture and data warehousing to ensure information technology alignment between OSMP and other departments (FS3).
- Develop Beehive for remaining asset classes with a focus on agriculture, water infrastructure, facilities, and trails data sets, before progressing to signs, properties, wildlife, and vegetation management data sets (FS3).
- Continue to invest in baseline assessments and perform cyclic updates to data sets to ensure data accuracy (FS3).

Master Plan Strategies

EHR. 1) Preserve and restore important habitat blocks and corridors

EHR. 2) Update and continue implementing system plans guiding ecosystem management

EHR. 3) Address the global climate crisis here and now

EHR. 4) Reduce undesignated trails

EHR. 5) Extend on-trail requirements

EHR. 6) Control invasive species

EHR. 7) Develop a learning laboratory approach to conservation

EHR. 8) Reduce impacts from noise, light and nearby land uses

EHR. 9) Reduce and offset OSMP greenhouse gas emissions

ATT. 1) Reduce maintenance backlog for agriculture and water infrastructure

ATT. 2) Increase soil health and resilience

ATT. 3) Address conflicts between agriculture and prairie dogs

ATT. 4) Protect water resources in a warmer future

ATT. 5) Encourage diverse and innovative agricultural operations

ATT. 6) Support the success of ranchers and farmers

ATT. 7) Integrate native ecosystems and agriculture

ATT. 8) Further reduce or eliminate pesticide use

ATT. 9) Enhance enjoyment and protection of working landscapes

RRSE. 1) Assess and manage increasing visitation

RRSE. 2) Reduce trail maintenance backlog

RRSE. 3) Update guidelines and standards for quality trail design and construction

RRSE. 4) Encourage multimodal access to trailheads

RRSE. 5) Manage passive recreation activities requiring an OSMP permit

RRSE. 6) Support a range of passive recreation experiences

RRSE. 7) Build new trails as guided by past and future plans

RRSE. 8) Provide welcoming and inspiring visitor facilities and services

RRSE. 9) Develop a learning laboratory approach to recreation

CCEI. 1) Welcome diverse backgrounds and abilities

CCEI. 2) Enhance communication with visitors

- CCEI. 3) Connect youth to the outdoors
- CCEI. 4) Support citywide engagement with federally recognized American Indian Tribes and Indigenous Peoples
- CCEI. 5) Foster wellness through immersion in the outdoors
- CCEI. 6) Inspire environmental literacy and new involvement in OSMP
- CCEI. 7) Cultivate leaders in stewardship
- CCEI. 8) Heighten community understanding of land management efforts
- CCEI. 9) Preserve and protect Boulder's cultural heritage

- FS. 1) Stabilize funding
- FS. 2) Budget for future uncertainty
- FS. 3) Understand total cost of system management
- FS. 4) Take care of what we have
- FS. 5) Prioritize acquisitions in Boulder Valley's rural preservation area
- FS. 6) Partner to protect lands beyond the priority area
- FS. 7) Participate in other acquisition opportunities
- FS. 8) Evaluate existing real estate assets on OSMP lands
- FS. 9) Invest in workforce development and operational needs
- FS. 10) Update planning framework