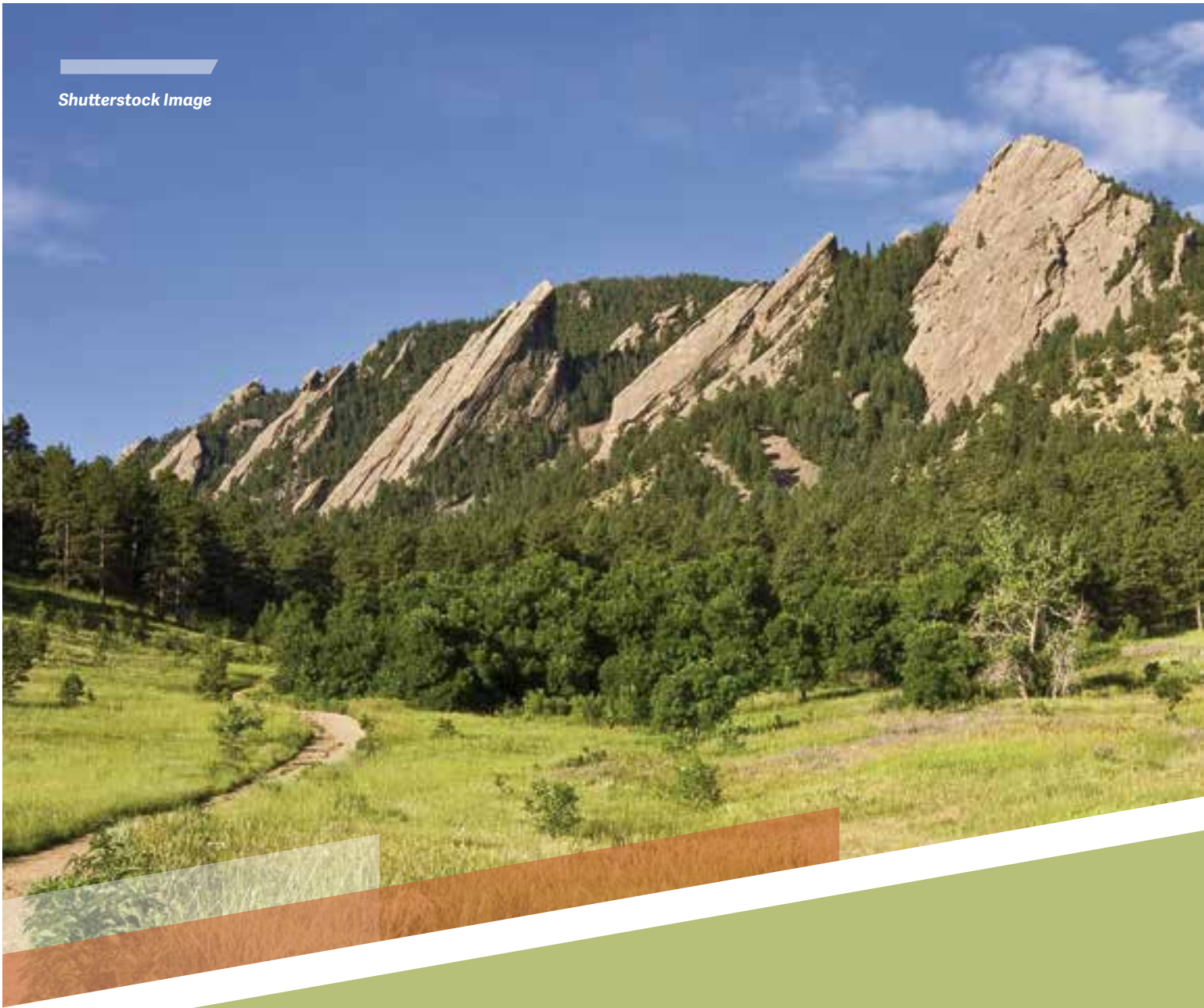
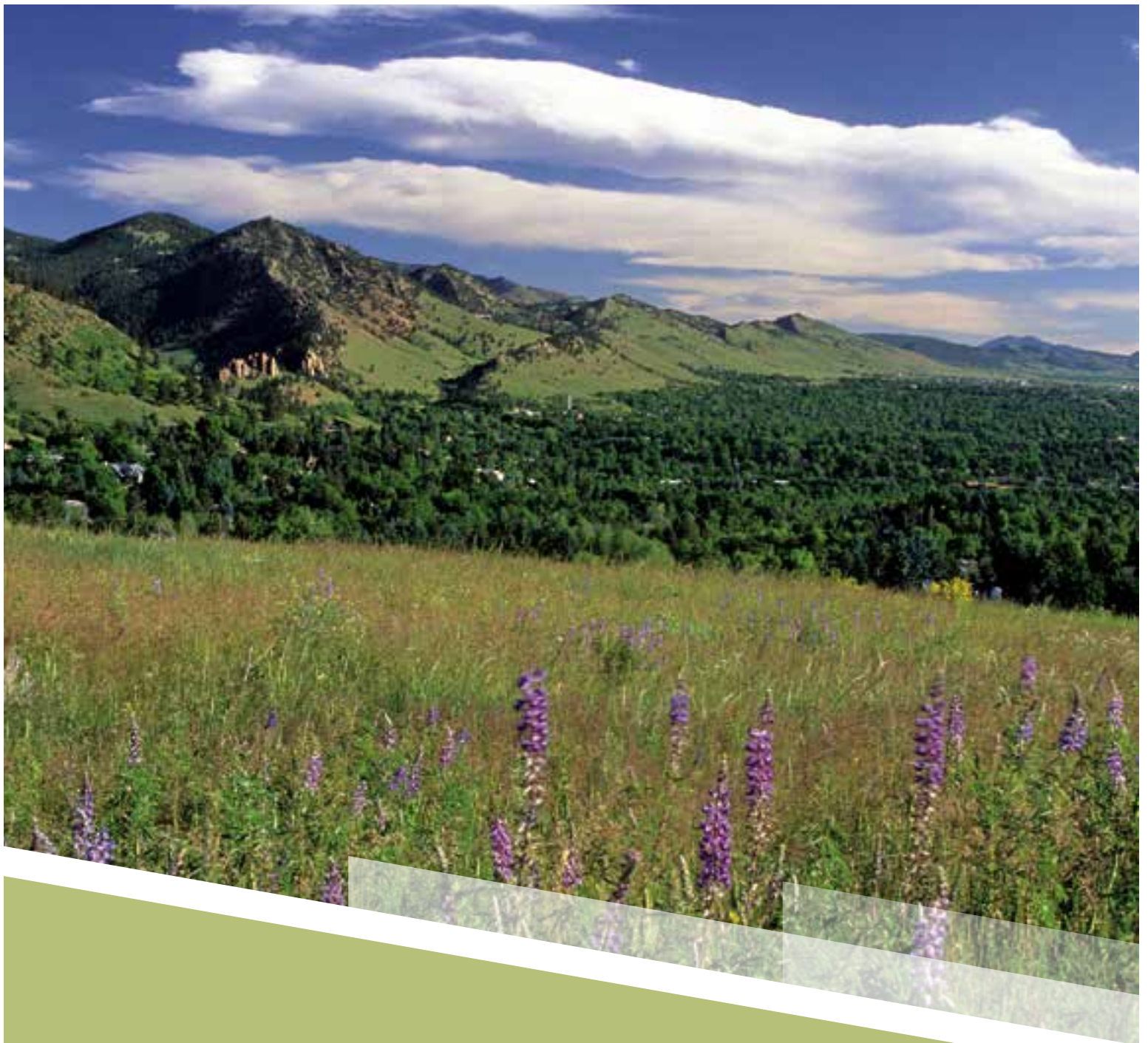


Shutterstock Image



EXECUTIVE SUMMARY

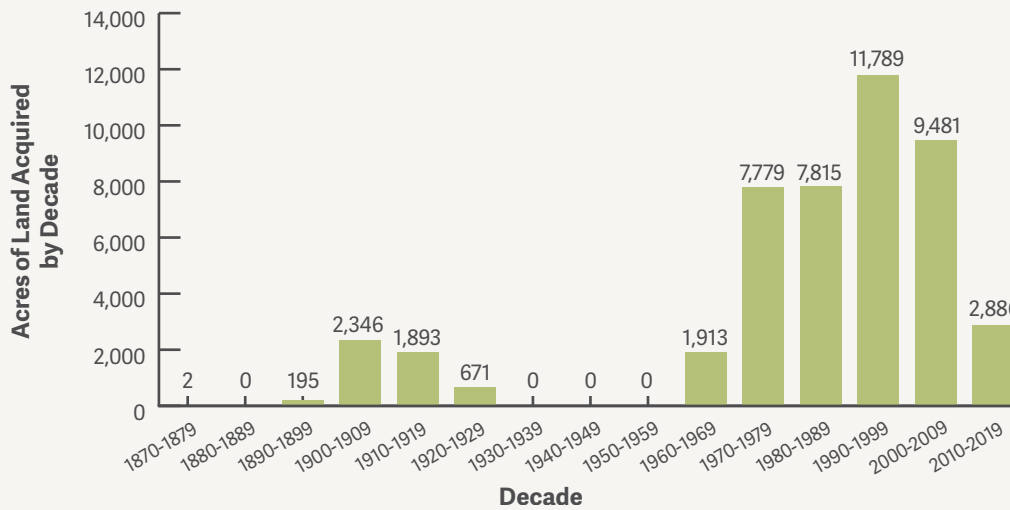
CITY OF BOULDER OPEN SPACE AND MOUNTAIN PARKS MASTER PLAN



EXECUTIVE SUMMARY

Over 120 years ago, the City of Boulder's open space program began with the purchase of Chautauqua in 1898. Soon thereafter, Frederick Law Olmsted, Jr. – a renowned landscape architect and advocate for nature preservation – called on the community to preserve the mountain backdrop and areas along major waterways. In 1967, Boulder also became the first city in the United States to implement a tax to purchase and care for its natural lands – increasing our capacity to protect the land around Boulder through acquisitions (Figure 0.1).

Figure 0.1: Open Space Acquisitions Over Time by Decade



These legacy initiatives – of community-driven conservation and stewardship – have helped the City of Boulder preserve ecologically rich and iconic landscapes that are highly valued by residents and visitors alike. As described in our 2018 [System Overview Report](#), the city’s Open Space and Mountain Parks (OSMP) department now manages over 46,000 acres of public land – almost three times as much land as the city itself.

From dramatic cliffs in the mountain parks to the plains where rare tallgrass prairies, creeks, wetlands, farms and ranches intermingle, OSMP lands are diverse, dramatic and awe-inspiring. They provide habitat for 741 native plant species, 303 native bird species, 138 native butterfly species, 61 native mammal species, 21 native reptile and amphibian species and 18 native fish species. These lands also host some of the highest-quality cliff-nesting raptor habitats in the western United States.

Over the decades, professional staff working hand in hand with community volunteers have demonstrated the kind of persistent, diligent work it takes to keep our healthy lands resilient. Regional partnerships with adjacent landowners, vegetation management, educational and volunteer programs, and an adaptive management approach have all helped keep important habitat areas in good condition. Deteriorated areas have also come back to life, like once-plowed grasslands where prairie grasses and songbirds now thrive. Forests have been sustainably managed to help nature thrive and reduce fire risk to nearby homes.

In a unique partnership, one-third of OSMP lands – or about 15,000 acres – are leased to ranchers and farmers, who save OSMP more than \$1 million in labor and material costs annually. These ranchers and farmers also preserve Boulder’s agricultural legacy, creating stunning views of working landscapes against the mountain backdrop. Focused on producing food, feed and fiber, OSMP’s agricultural program also conducts research and integrated restoration projects to maintain healthy soils and habitat, encourage integrated, non-chemical pest management, promote water conservation and increase resilience to environmental change.

Residents’ long-term investment in natural landscapes also pays dividends today in the form of physical, mental and even spiritual wellness. *National Geographic* recently recognized Boulder as the “happiest city in the United States” for the benefits nature affords residents, and *Backpacker Magazine* called it “the best place to raise an outdoor kid.” Our extensive network of trails, facilities and education programs allows youth, families and people of all ages and abilities to explore nature. Our efforts help forge connections that inspire a life-long love of the land, inspiring current and future generations to understand, value and protect open space lands.

For thousands of years, generations of American Indian Tribes lived in and traversed the Boulder Valley – enriching countless oral and tribal traditions that shaped a special connection to the land. However, with Euro-American settlement in the Boulder area, that special connection was severed as treaties were broken and tribes were forcibly removed. For thousands of indigenous peoples who live in reservations outside of Colorado, and for those who live in Boulder today, histories and traditions passed down over the generations still connect them with Boulder’s special lands. With this Master Plan, Open Space and Mountain Parks seeks to not only preserve and protect these lands for future generations but to also acknowledge the past and collaborate with federally recognized American Indian Tribes and indigenous peoples to understand and honor their history, culture and long-standing relationships with the Boulder landscape.

For more information, see Section 2.4 or [Chapter 10 of the System Overview Report](#).

Top: Photo by
Frank Beck

Bottom Left:
Photo by
Ann G. Duncan

Bottom Right:
Photo by
Phillip Yates





Our Shared Values and Focus Areas

Boulder's system of Open Space and Mountain Parks is a powerful and enduring reflection of Boulder's values. The Boulder community has spent decades protecting natural lands, and in 1986, voters approved an amendment to the City Charter to define open space purposes and guide management. The City Charter states that open space shall be acquired, maintained, preserved, retained, and used only for the following purposes:

- a) natural areas with features or species of special value;
- b) water, landscapes and ecosystems;
- c) passive recreation;
- d) agriculture;
- e) limiting sprawl;
- f) urban shaping;
- g) floodplain protection; and
- h) aesthetics and quality of life.

Through the OSMP Master Plan process, community members confirmed the lasting value of these charter purposes, demonstrating that preservation and protection of the natural environment is an enduring, core community value. As detailed in Appendix A, in total:

- » Members of the public submitted more than 10,000 comments;
- » OSMP staff hosted seven community events and two drop-in listening sessions with a combined total of more than 900 attendees;
- » Staff engaged over 1,400 people who are not typically heard from during OSMP engagement processes, including members of the Latinx community, people experiencing disabilities and youth; and
- » More than 1,300 individuals completed and returned a mailed statistically valid survey in spring 2019.

Through this collaborative process, a set of open space values we all share was developed and affirmed, with a corresponding focus area or management theme to guide staff over the next decade and beyond. The five focus areas below can be understood through those value statements, which merged these community voices with those of OSMP staff, the Open Space Board of Trustees (OSBT) and City Council. These values inspire us to work together to ensure our landscapes remain healthy and enjoyed long into the future.

Top: Photo by Phillip Yates

Bottom: Photo by Dave Sutherland

OUR SHARED VALUES AND FOCUS AREAS



Ecosystem Health and Resilience

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

Agriculture Today and Tomorrow

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

Responsible Recreation, Stewardship and Enjoyment

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

Community Connection, Education and Inclusion

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

Financial Sustainability

We steward public funding to fulfill the City Charter purposes for open space.



ECOSYSTEM HEALTH AND RESILIENCE: HELPING NATURE THRIVE IN A CLIMATE CRISIS

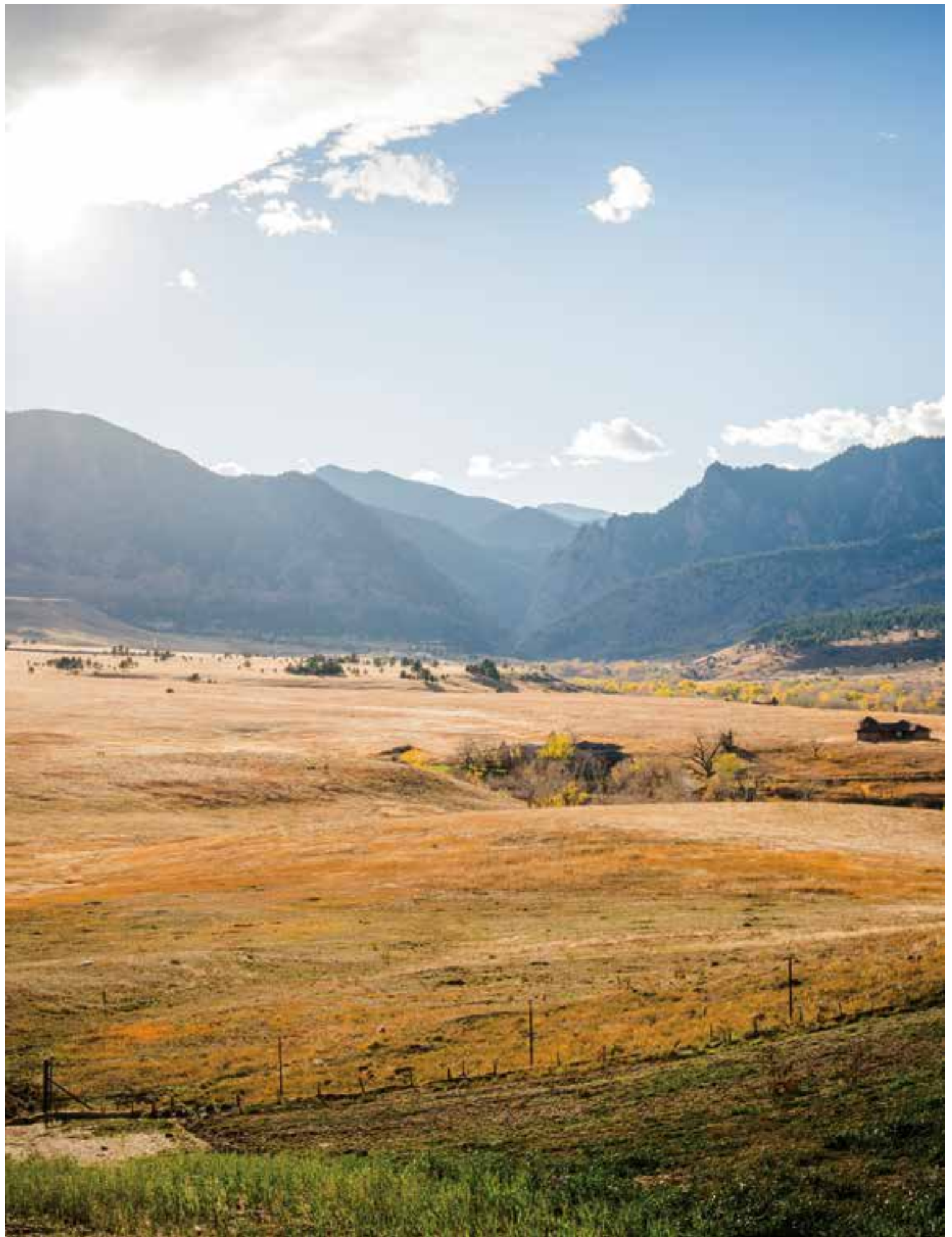
Using the best available science, we protect healthy ecosystems and mend those we have impaired.

We support and preserve healthy ecosystems, without which Boulder would not be Boulder. According to the 2019 OSMP Master Plan Survey of Boulder Valley residents, 79 percent of respondents felt **Ecosystem Health and Resilience** is one of the most important themes to guide OSMP management in the future as can be seen in Appendix B. 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. This collective approach to stewardship has preserved and restored thousands of acres across the system.

Still today, our two major ecosystems – grasslands and forests – need our help now more than ever. Ecological monitoring tells us these ecosystems on OSMP lands are, on average, only in fair condition (see [Chapter 5 in the System Overview Report](#)). Non-native species and disturbances to riparian areas remain important management challenges to address. Ongoing monitoring to understand conditions over time will improve our understanding and result in updated policy, programs and projects to improve ecosystem health and increase resilience in the face of a global climate change crisis.

Above: Photo by Jeff Regier



Left: Photo by Phillip Yates

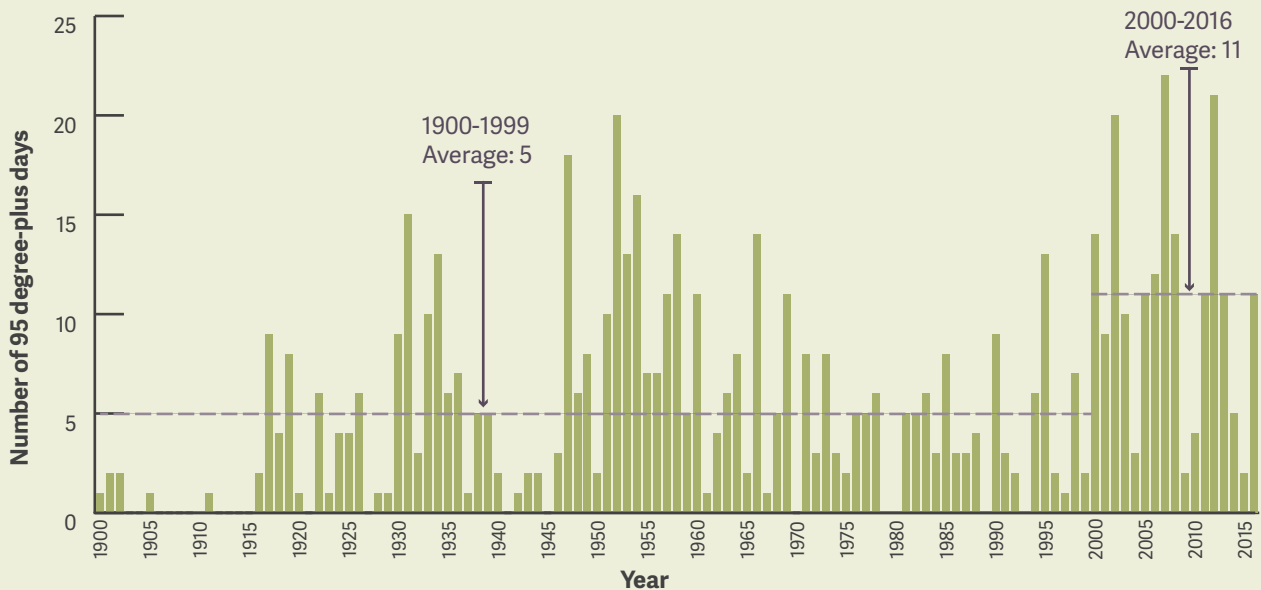
WHAT DOES THE GLOBAL CLIMATE CRISIS MEAN FOR US AND OUR OPEN SPACE LANDS?


The climate crisis is a serious global challenge that already has many local impacts. In Boulder today, it is significantly drier and hotter than it was 50 years ago (**Figure 0.3**), and an even drier future likely awaits (Boulder’s Climate Commitment, 2017). This is important because Boulder lies in a semi-arid climate zone where water is already at a premium. Invasive, non-native plant species – which tend to out-compete native species in altered environments – are making it hard for native plants to survive, affecting the animals that depend on them, the waterways we all depend on, and the overall health of even our largest habitat blocks.

With these changes, we might expect:

- » increased spread of invasive species and pests;
- » loss of plant populations in hot microsites;
- » reduced habitat for wetland and aquatic species;
- » more frequent and extreme natural disasters;
- » significant damage to our natural environment from increased severity and frequency of floods and fires; and
- » higher costs associated with preventing and recovering from dramatic change.

Figure 0.3: Boulder’s Extreme Weather History (Replotted with Rocky Mountain Climate and NCDC.NOAA.gov data)





Our agricultural legacy is also facing disruption to the way we have traditionally worked the land for the last century. While more carbon dioxide may lead to more crop yields, these gains will likely be offset by higher temperatures, lower water availability and increased winter survival of pests. The timing and availability of forage for cattle also will likely become less certain, making ranching operations more difficult. And with a portfolio of \$60-\$70 million* in water rights plus extensive infrastructure like ditches and farm buildings, a more arid future will compound maintenance and management issues for agriculture. (*OSMP is in the process of updating this figure to better understand the true value.)

Increased temperatures may also affect visitation patterns and visitor safety. More hot days may cause some visitors to come earlier or stay later, affecting transportation patterns and infrastructure needs. For example, we may see visitors gravitate to shady trails, affecting overall use patterns across the system. It may also compromise wellbeing as the risk of heat-related syndromes increases and the increased severity and frequency of floods and fires threatens human life and property.

WHAT CAN WE DO TO ADDRESS THE PROBLEM?

Conservation and restoration of our most important habitats – from the smallest areas that support rare orchids to the largest habitat blocks that support wildlife movement – will become even more critical in the face of rapid environmental change. OSMP staff are already working to increase the resilience of our natural systems through prescribed burns, forest thinning, and stream, riparian and floodplain restoration. For example, as of 2017, OSMP staff had improved forest ecosystems and reduced the risk of catastrophic wildfire by thinning trees in 1,500+ acres of overly dense forests (System Overview, 2018). We also acquire habitat and floodplains to prevent urban development, preserve ecosystem function, and support in-stream flows and natural floodplains. Through environmental education, staff is also preparing and engaging the next generation who will have to deal directly with the impacts of the climate crisis.



**Right: Photo
by Heather
Sherman**



More broadly, addressing the global climate crisis requires a holistic approach to understanding direct impacts to OSMP lands and the role they play in future solutions for the region and planet. Among a host of other integrated efforts, our work over the next decade will include:

- » controlling invasive species;
- » carbon farming to slow the effects of greenhouse gas emissions;
- » improving the resilience of trails and visitor infrastructure;
- » environmental literacy and volunteer programs that inspire climate action; and
- » continued acquisitions that enhance our ability to protect native plant and animal species.

Collaboration is vital to achieving effective conservation. At the heart of our future successes will be community stewardship and partnerships with the U.S. Fish and Wildlife Service, Colorado Parks and Wildlife, the Colorado Natural Heritage Program, neighboring land management agencies, community organizations and nonprofits. By setting our collective sights on a healthy future for nature, we ourselves will thrive. Master Plan guidance in the **Ecosystem Health and Resilience (EHR)** focus area will inspire that shared sense of stewardship and a commitment to preserve and restore ecological health in an uncertain future.

AGRICULTURE TODAY AND TOMORROW: ENSURING A RESILIENT FUTURE FOR AGRICULTURE

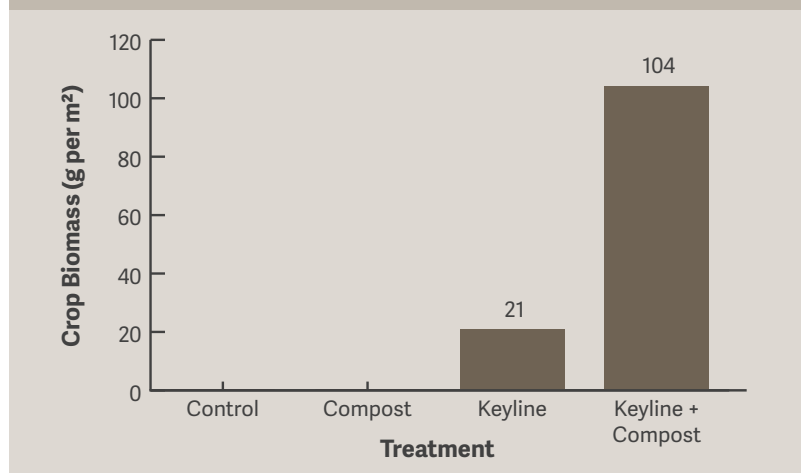
Our legacy and future are based on working landscapes that are in harmony with nature.

One-third of Boulder’s open space lands are leased to agricultural producers, resulting in strong partnerships and a shared land ethic (see [Chapter 7 in the System Overview Report](#)). We aim to preserve agricultural uses of the land that are both ecologically healthy and beneficial for agricultural production. However, many farmers and ranchers are aging, and they hold the institutional knowledge of how to manage OSMP’s agricultural lands. High costs, the lack of affordable housing, wind and soil erosion, as well as conflicts with prairie dog colonies, also impede the success of our farmers and ranchers.

While OSMP farmers currently grow diversified vegetables on 30 acres of land and an additional 250 acres are suitable for more, available labor and infrastructure costs also inhibit progress toward a more robust, local agricultural economy. With no local processing facility for beef, ranchers are challenged in expanding beef production. As described above, the climate crisis will exacerbate these conditions.

Some promise lies in early research and experimentation on soil regeneration and storing atmospheric carbon in degraded

Figure 0.4: Effect of Compost and Keyline Plowing on Mean Cover Crop Biomass



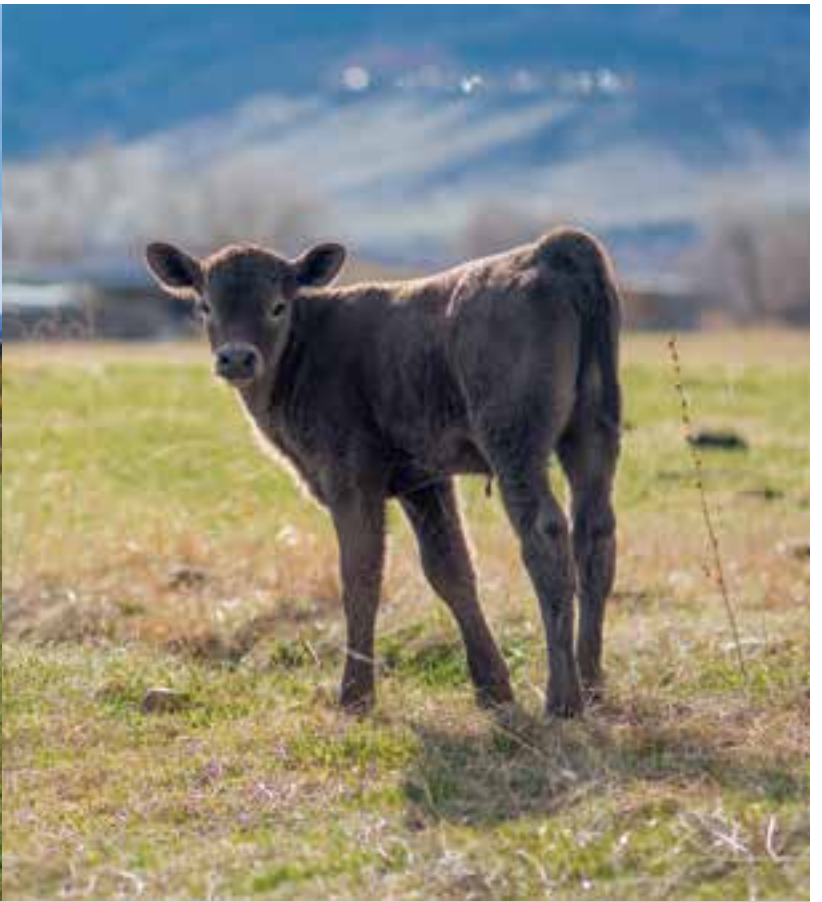
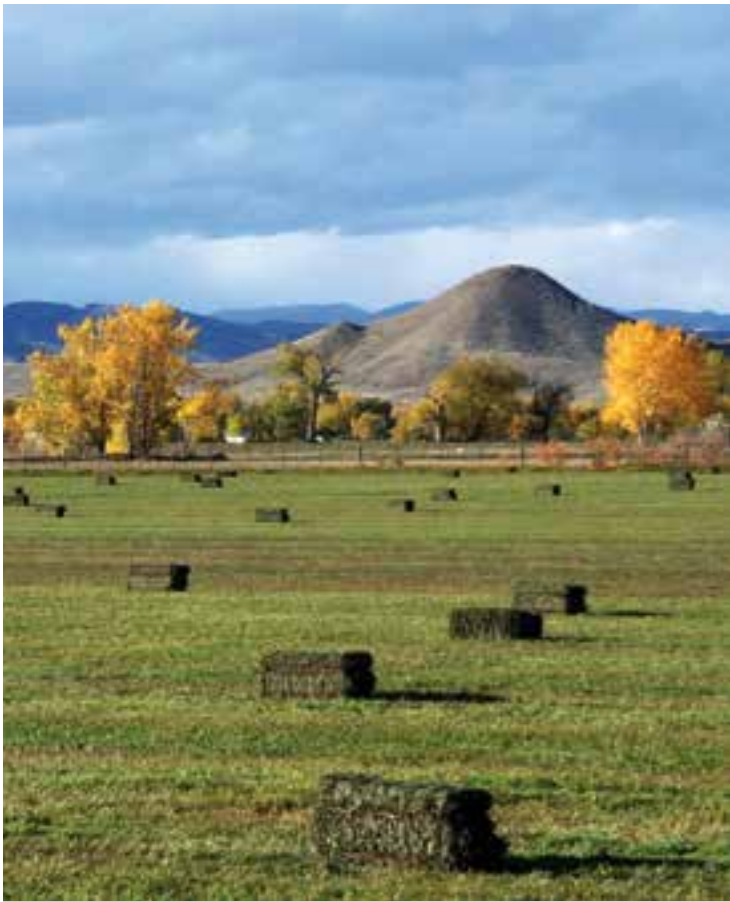
agricultural soils. Initial results from piloting this practice – called carbon farming – highlight the importance of an integrated approach to responsible agricultural practices, land restoration, weed management and grassland health. For example, **Figure 0.4** demonstrates how compost application, when combined with keyline plowing (a subsoil plowing technique), could be used as management intervention to increase soil health in degraded agricultural fields, in turn sequestering more carbon in agricultural soils. Staff are also developing a soil health program using national best practices such as cover cropping and crop rotation to maintain soil health. Supportive monitoring efforts will track soil organic matter and soil health over time to help ensure the sustainability of agricultural land. Thus, by studying and encouraging regenerative practices on farms and ranches, OSMP is developing and integrating ways to respond to the climate crisis.

The full management approach described in the **Agriculture Today and Tomorrow (ATT)** focus area aligns with and builds on the recent [Agricultural Resources Management Plan](#). It also works closely with guidance in the **Ecosystem Health and Resilience** focus area and the [Grassland Ecosystem Management Plan](#).

Top Left:
Photo by Dave Sutherland

Top Right:
Photo by Phillip Yates

Bottom: Photo by Phillip Yates





Top: Photo by Dave Sutherland

Bottom: Photo by Ann G. Duncan

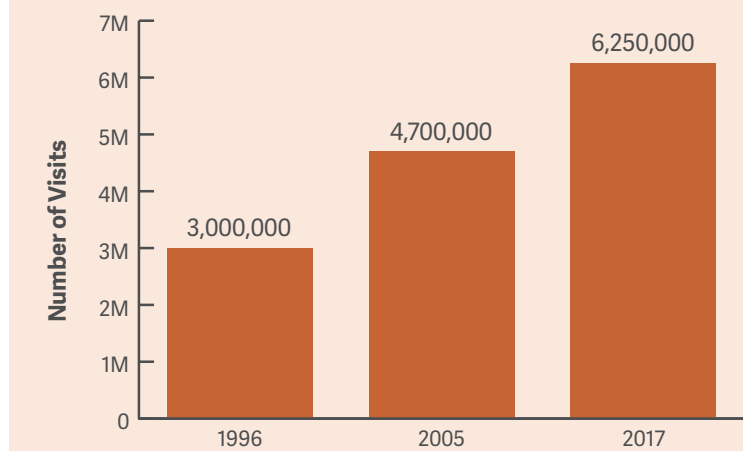
RESPONSIBLE RECREATION, STEWARDSHIP AND ENJOYMENT: INSPIRING QUALITY OF LIFE

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

As the Front Range population has grown over time, so has interest in outdoor recreation across Colorado. As described in [Chapter 2 of the System Overview Report](#), OSMP lands supported roughly 6.25 million visits in 2017, up 34 percent from 4.7 million in 2005 (**Figure 0.5**). Staff estimate that City of Boulder residents account for roughly 60 to 80 percent of all visits systemwide, but these numbers vary site by site. For example, trails in the northern part of the system are predominantly visited by residents, while places like Chautauqua tend to attract more visitors from outside the city, county and state (2016-2017 OSMP Visitation Study).


Rising visitation stresses a system originally designed to accommodate far fewer residents and visitors. Our history of professionally designed trails and visitor facilities on OSMP began in the 1930s with many of the iconic trails, shelters, roads, gathering areas and viewpoints in the Mountain Parks designed for the City of Boulder by the National Park Service (NPS). Today, these facilities define the physical and cultural identity of our open space

Figure 0.5: Increasing OSMP Visitation Over Time



system and our community. However, the city's population is 10 times what it was when they were originally designed, and their maintenance is often challenging and expensive. In addition, soils, drainage and muddy conditions throughout the system present trail design and maintenance challenges that compound issues associated with high levels of use.

Outcomes and strategies in the **Responsible Recreation, Stewardship and Enjoyment (RRSE)** focus area will focus staff work on the most important needs and opportunities to ensure visitors continue to enjoy themselves and develop a relationship with the land amid these changing conditions. Especially as demographics and desires shift over time, an inclusive approach to supporting high quality experiences for all ages, backgrounds and abilities will grow in importance. For more information, see [Chapter 8 of the System Overview Report](#).



An integrated implementation approach will also incorporate guidance from other focus areas, including **Ecosystem Health and Resilience**. For example, while maintenance needs throughout the system continue to expand, increased trail use on and off managed trail corridors has unintended impacts on certain wildlife and plants, facilitating the movement of weeds and pests and causing erosion, all of which reduce the system's resilience in the face of climate change. OSMP staff are making efforts to update our design and construction practices and address facilities reaching the end of their life cycle. We are also exploring ways to adapt to more frequent and intense flooding, high levels of use, erosion and the proliferation of undesigned trails. In addition, strategies for inspiring community stewardship under **Community Connection, Education and Inclusion** will also inform how staff encourage responsible recreation and lasting connections with the land.

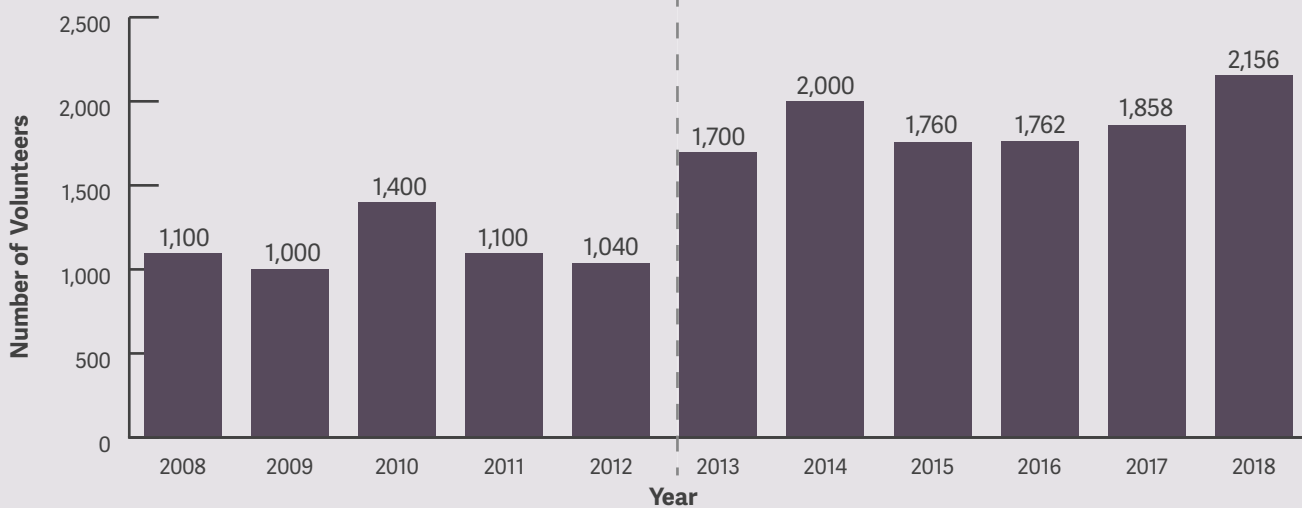
COMMUNITY CONNECTION, EDUCATION AND INCLUSION: BUILDING A COMMUNITY OF STEWARDS

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

Like many communities along the Front Range, Boulder's demographic profile is shifting, which will affect who visits and stewards open space in the future. For example, since 2000, the number of people of Hispanic origin has increased more than 8 percent in Boulder, while across the nation, the Hispanic population increased by 43 percent (City of Boulder, 2017). Moreover, according to 2018 U.S. Census data, more than 4,700 Boulder residents under the age of 65 experience a disability. National trends suggest young people are also spending less and less time outdoors.

Work needs to be done to understand what these data mean for engagement with OSMP lands. For example, while the benefits of time outdoors include cognitive development, higher academic performance, and improved physical and mental health (Klepeis, 2001), Boulder residents report lack of time as the most common reason they do not visit OSMP more often. Not feeling welcome or safe is another barrier for some (2019 OSMP Master Plan Survey).

Figure 0.6: Increased Volunteering Over Time. Vertical Line Represents the Increased Volunteer Effort after the Flood of 2013.



In addition, the future of Boulder’s human and natural communities is inextricably linked to the emerging climate crisis. Environmental education in the last 50 years has bespoke the importance of protecting nature. Inducing wonder and awe of nature in youth ultimately leads to understanding, appreciation and its protection. These major tenets of environmental literacy need to be retained, yet with the pending climate crisis, communities of all ages will need to take greater responsibility in the coming decade. Environmental education is a powerful way to teach and inspire positive environmental behaviors, including inspiring action that builds resilience (Ardoin, 2019). Therefore, it is more important than ever that environmental education include opportunities to work side by side with youth as we think about humanity’s response to the climate crisis, begin to take action, and possibly fix what recent generations including ourselves have created.

Over the years, staff has seen a growing interest and participation in volunteering as a form of recreation, in which community members enjoy taking care of their open space lands (**Figure 0.6**). In 2018, more than 2,100 volunteers provided nearly 19,000 hours of their time to help their public lands – contributing service valued at more than \$500,000.

Outcomes and strategies within the **Community Connection, Education and Inclusion (CCEI)** focus area build on our community’s love of open space and our past successes at engaging with them. Our collective future depends on deep connections with nature, agriculture, and the sense of community they both engender. We all benefit from a shared, long-term commitment to open space, especially as financial conditions may change in the future.

FINANCIAL SUSTAINABILITY: FUNDING AN UNCERTAIN FUTURE

We steward public funding to fulfill the City Charter purposes for open space.

For five years, we have prepared for an annual \$10 million budget reduction starting in 2020. We paid down outstanding obligations for past acquisitions, maintained reserve funds and found efficiencies by improving internal processes. We reduced capital investments and ongoing operating spending and expired vacant positions where appropriate. Looking forward, further reductions in overall spending will be necessary without additional revenues.

As stewards of public funding, we seek to build trust and lasting value for the community. To that end, the Master Plan further advances our readiness for a range of potential futures. At any funding level, we will spend our time and money in ways that advance our shared values, focus areas, outcomes and strategies to fulfill the Master Plan vision.

We also recognize that reduced funding will mean difficult decisions. With fewer dollars to spread across all OSMP services, even high priority Master Plan strategies may not be fully funded. As capital spending and staffing levels decline, so too does our ability to undertake significant ecosystem projects or make progress against ongoing trail maintenance needs. Therefore, conditions in parts of the overall system may deteriorate over time despite our best attempts to maintain what we currently have.

The Master Plan lays out a realistic, responsible and optimistic approach to funding and implementing the Master Plan vision for the next decade by:

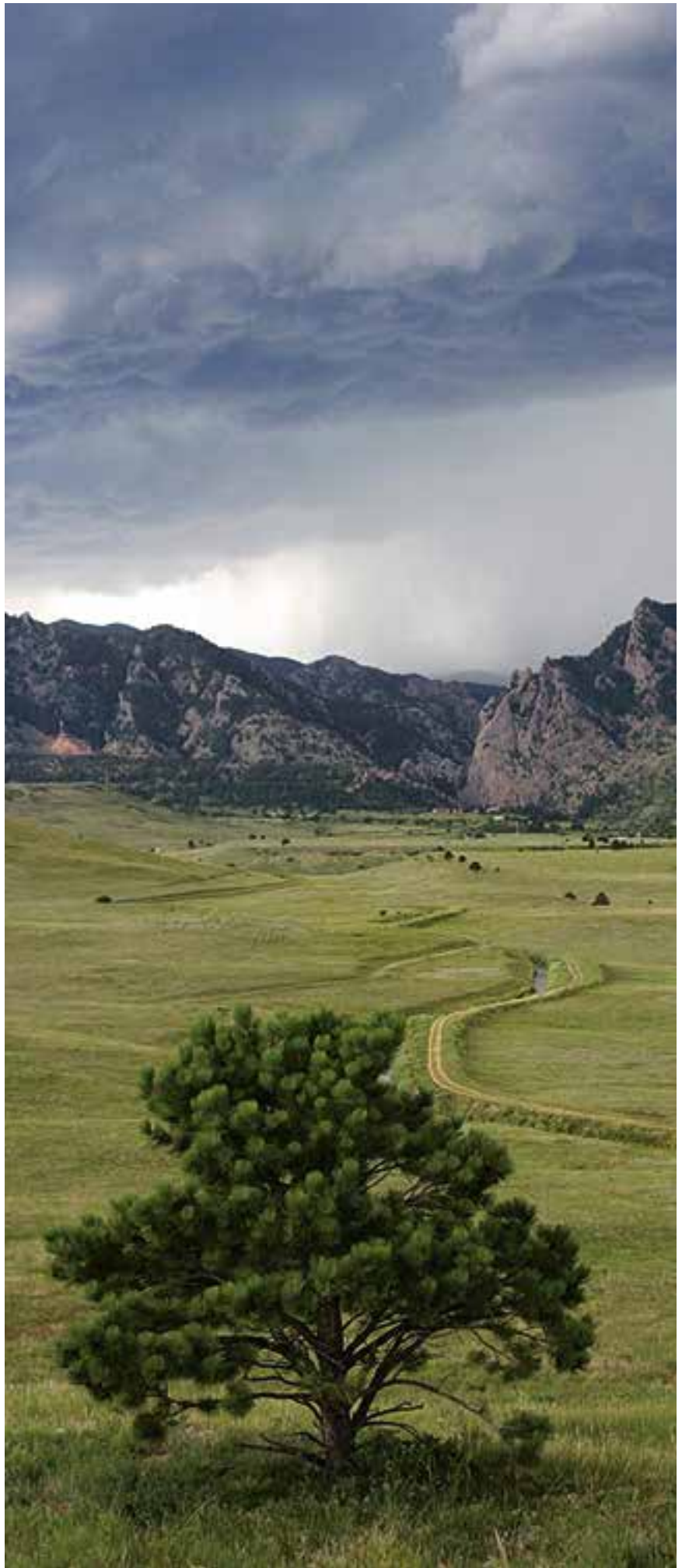
- » Defining the comparative importance of each focus area to align funding with community values;
- » Describing three potential funding levels that may be available to support implementation of the Master Plan vision;
- » Laying out the comparative importance of strategies to clarify expectations and inform achievable work plans for staff that align with community priorities; and
- » Describing how we will get to work on action planning for implementation of the Master Plan.

Acknowledging our current conditions and future challenges for maintaining fiscal health, the above approach sets up a creative, efficient approach to **Financial Sustainability (FS)**.

Right: OSMP image

Overview of Outcomes and Strategies

As an integrated whole, the Master Plan describes our vision for the next decade. Specifically, outcomes are aspirational goals for OSMP that describe the overall desired future conditions for each focus area. Strategies describe management approaches for achieving desired outcomes. Both outcomes and strategies were developed with staff and public input and refined with guidance from the Open Space Board of Trustees and City Council. The following pages provide an overview of the outcomes and strategies, as well as how strategies have been prioritized to guide staff work plans in alignment with community priorities.



FOCUS AREA

Ecosystem Health and Resilience (EHR)

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

EHR OUTCOMES

EHR.A) HIGH DIVERSITY OF NATIVE PLANTS AND ANIMALS

OSMP lands support a high diversity of native plants and animals, expansive natural areas and some of the most critical wildlife habitat along the Front Range.

EHR.B) RESTORED, RESILIENT HABITAT

Degraded habitat with high potential to support native or extirpated (i.e., locally extinct) native species is restored and made more resilient to stressors like invasive species or direct and indirect human impacts.

EHR.C) CLIMATE ACTION

OSMP is a leader in helping native ecosystems withstand and adapt to the effects of the climate crisis.

EHR.D) INFORMED, SHARED STEWARDSHIP

OSMP and the community work side by side to develop a greater understanding of the land and to safeguard our natural heritage.

EHR STRATEGIES

① EHR.1) PRESERVE AND RESTORE IMPORTANT HABITAT BLOCKS AND CORRIDORS

Sustain, enhance, connect and restore habitat blocks with high ecological value and potential through conservation practices.

① EHR.2) UPDATE AND CONTINUE IMPLEMENTING SYSTEM PLANS GUIDING ECOSYSTEM MANAGEMENT

Update the Grassland and Forest Ecosystem Management Plans and continue managing entire ecosystems by considering all elements and processes of natural systems rather than focusing on one species or attribute at a time.

① EHR.3) ADDRESS THE GLOBAL CLIMATE CRISIS HERE AND NOW

For the benefit of natural ecosystems and future generations, exhibit environmental leadership by taking immediate, targeted and unified action in response to ecosystem changes that the global climate crisis will bring about.

EHR STRATEGIES (Continued)

② EHR.4) REDUCE UNDESIGNATED TRAILS

Guided by best practices or area-specific plans, mitigate resource impacts by restoring, designating, re-routing or recategorizing undesignated trails, especially in sensitive habitat areas, while considering appropriate routes to serve desired destinations for visitors.

② EHR.5) EXTEND ON-TRAIL REQUIREMENTS

Through future area planning, reduce off-trail travel in targeted locations, especially in sensitive habitat areas.

② EHR.6) CONTROL INVASIVE SPECIES

Prioritize management and control of species that have severe and/or widespread impacts, particularly those that are non-native and most likely to be controlled.

③ EHR.7) DEVELOP A LEARNING LABORATORY APPROACH TO CONSERVATION

Conduct, support, apply and widely distribute the findings of longterm scientific research to inspire and engage community stewardship.

③ EHR.8) REDUCE IMPACTS FROM NOISE, LIGHT AND NEARBY LAND USES

Mitigate impacts to wildlife, sensitive habitat areas, scenic character or natural soundscapes from noise pollution, light pollution and adjacent land uses.

③ EHR.9) REDUCE AND OFFSET OSMP GREENHOUSE GAS EMISSIONS

Support the citywide climate commitment by reducing and offsetting greenhouse gas emissions related to departmental operations.

KEY	(See Sections 3 and 4 for details on Priorities and Implementation)
①	Tier 1 Strategy: Most important, will be accelerated and emphasized with more staff time and funding, especially in the first few years of Master Plan implementation
②	Tier 2 Strategy: Next most important, will receive incremental funding and effort as capacity allows
③	Tier 3 Strategy: Third most important, will receive incremental funding and effort as capacity allows

FOCUS AREA

Agriculture Today and Tomorrow (ATT)

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

ATT OUTCOMES

ATT.A) VIABLE AGRICULTURAL LIVELIHOODS

The city's ranchers and farmers are valued and supported in their contributions to the stewardship of Boulder's agricultural heritage.

ATT.B) SUSTAINABLE, PRODUCTIVE AGRICULTURE

OSMP's agricultural lands and infrastructure remain productive and sustainable long into the future.

ATT.C) DIVERSE AGRICULTURAL PRODUCTS FOR LOCAL MARKETS

A diversity of food and agricultural products is grown on suitable open space properties to better meet the changing demands of the local agricultural economy and the needs of ranchers, farmers and city residents.

ATT.D) HIGH-VALUE HABITAT ON RANCHES AND FARMS

City agricultural lands provide high-value habitat for rare and native species, integrating both agricultural and ecosystem objectives.

ATT.E) SOIL HEALTH AND RESILIENCE

Appropriate agricultural practices protect high-quality soils from erosion, improve productivity, maintain soil health and increase resilience in a changing climate.

ATT.F) RESILIENT AND EFFICIENT WATER SUPPLY

OSMP emerges as a leader in the acquisition and preservation of water assets and the application of innovative irrigation practices that anticipate environmental change.

ATT.G) APPRECIATION FOR WORKING LANDSCAPES

Community members experience and better understand working landscapes, contributing to the preservation of Boulder's agricultural lands and heritage.

ATT STRATEGIES

① ATT.1) REDUCE MAINTENANCE BACKLOG FOR AGRICULTURE AND WATER INFRASTRUCTURE

Focus investments on maintaining and improving existing agricultural infrastructure to standards – both water-related and structural.

② ATT.2) INCREASE SOIL HEALTH AND RESILIENCE

Manage agricultural activities in tilled lands and native grasslands to prevent soil erosion, maintain and/or improve soil health, sequester carbon and protect ecosystem function.

② ATT.3) ADDRESS CONFLICTS BETWEEN AGRICULTURE AND PRAIRIE DOGS

Maintain the viability of agricultural operations by reducing impacts from prairie dogs on irrigated lands, while supporting ecologically sustainable prairie dog populations across the larger landscape.

② ATT.4) PROTECT WATER RESOURCES IN A WARMER FUTURE

Develop and implement a water resources management plan that balances sustainable agriculture, ecosystem stewardship, protection of water rights, efficiency of water use and resilience in a more variable climate.

③ ATT.5) ENCOURAGE DIVERSE AND INNOVATIVE AGRICULTURAL OPERATIONS

Partner with open space ranchers and farmers to analyze and where appropriate expand the variety of agricultural operations on OSMP lands, focusing on the infrastructure and technical assistance needed to support local food systems, including diversified vegetable farming, pastured livestock, micro dairies and taking products to market.

③ ATT.6) SUPPORT THE SUCCESS OF RANCHERS AND FARMERS

Where appropriate, evaluate and pilot cost-sharing, partnerships and other mechanisms to encourage both responsible land stewardship and economic viability for a diverse range of current and future farmers and ranchers on OSMP lands.

③ ATT.7) INTEGRATE NATIVE ECOSYSTEMS AND AGRICULTURE

While maintaining the viability of agricultural operations, evaluate and increase the potential for improving the quality of habitat on agricultural lands through staff-led programs and partnerships with ranchers and farmers.

③ ATT.8) FURTHER REDUCE OR ELIMINATE PESTICIDE USE

Reduce or eliminate the use of pesticides wherever possible. When reduction or elimination of pesticides is not possible, use the least toxic and least persistent pesticide that is effective.

③ ATT.9) ENHANCE ENJOYMENT AND PROTECTION OF WORKING LANDSCAPES

Partner with community members, farmers and ranchers to maintain and enhance the condition of working landscapes, viewsheds and historic structures.

FOCUS AREA

Responsible Recreation, Stewardship and Enjoyment (RRSE)

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

RRSE OUTCOMES

RRSE.A) DIVERSE RANGE OF RECREATIONAL EXPERIENCES

A fun and diverse range of passive recreational experiences inspire stewardship and contribute to our physical and mental well-being.

RRSE.B) ENJOYABLE, RESPONSIBLE RECREATION

Amid changing visitor use levels and patterns, ecosystem health is sustained, and visitor experiences remain positive.

RRSE.C) WELCOMING, ACCESSIBLE TRAILHEADS

Welcoming trailheads and supporting recreational facilities provide access to and highlight Boulder’s scenic, natural and cultural landscape.

RRSE.D) GREAT EXPERIENCES FOR ALL

Visitors respect and care for each other and for the land, so all can enjoy themselves for generations to come.

RRSE.E) HIGH-QUALITY TRAIL NETWORK

Visitors can enjoy OSMP lands and reach a range of recreational destinations through a well-maintained, connected network of local and regional trails that is welcoming and accessible to all.

RRSE STRATEGIES

① RRSE.1) ASSESS AND MANAGE INCREASING VISITATION

Continue implementing measures from approved plans to mitigate impacts of increasing visitation in specific locations, while also updating the systemwide visitor use management plan to generate and implement ideas for understanding and addressing visitation growth throughout the system and to nurture stewardship and enjoyable visitor experiences.

① RRSE.2) REDUCE TRAIL MAINTENANCE BACKLOG

Using a prioritized, life-cycle approach to improving the condition of OSMP’s diverse portfolio of historic and modern trails, develop and implement a maintenance approach to fix immediate needs and identify what is needed to manage the trail network long-term.

RRSE STRATEGIES (Continued)

② RRSE.3) UPDATE GUIDELINES AND STANDARDS FOR QUALITY TRAIL DESIGN AND CONSTRUCTION

Design and construct quality trails that facilitate a range of experiences through a variety of landscape types, using design guidelines and construction standards that elevate the quality, sustainability and accessibility of trails and encourage the use of native materials that blend with natural surroundings.

② RRSE.4) ENCOURAGE MULTIMODAL ACCESS TO TRAILHEADS

Explore and partner on a range of coordinated transportation and design solutions to reduce parking congestion, reduce greenhouse gas emissions from visitor travel and promote active living, ecosystem health and public transportation.

② RRSE.5) MANAGE PASSIVE RECREATION ACTIVITIES REQUIRING AN OSMP PERMIT

Support enjoyable and compatible recreation experiences by periodically evaluating and refining management practices for use permits, off-leash dog visits and other related regulations to minimize resource impacts and ensure programs are easy-to-understand for visitors, manageable for staff and responsive to changing conditions.

③ RRSE.6) SUPPORT A RANGE OF PASSIVE RECREATION EXPERIENCES

Continue to honor a diverse range of passive recreation opportunities that respect the unique character and history of the Boulder community and its surrounding open space lands, providing fun and memorable experiences.

③ RRSE.7) BUILD NEW TRAILS AS GUIDED BY PAST AND FUTURE PLANS

Implement past and future plans by constructing new local and regional trail segments where lands offer high recreation potential, especially when opportunities for citywide and regional partnerships leverage OSMP funding.

③ RRSE.8) PROVIDE WELCOMING AND INSPIRING VISITOR FACILITIES AND SERVICES

For a range of visitor demographics, continue to provide and improve welcoming, sustainable and accessible trailheads and facilities that lay lightly on the land and inspire understanding of the surrounding landscape, such as the Ranger Cottage, Flagstaff Nature Center, Panorama Point, and other gathering areas or viewpoints.

③ RRSE.9) DEVELOP A LEARNING LABORATORY APPROACH TO RECREATION

Combine community engagement results with scientific research and comprehensive data analysis to understand trends, develop and assess practical initiatives, and design management approaches that seek to improve community well-being, enjoyment, understanding and stewardship.

FOCUS AREA

Community Connection, Education and Inclusion (CCEI)

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

CCEI OUTCOMES

CCEI.A) INSPIRING ENVIRONMENTAL EDUCATION

Visitors participate in education programs and other forums that deepen their sense of place and appreciation for Boulder’s natural, cultural and scenic heritage and broaden their understanding of OSMP land and its management.

CCEI.B) FULFILLING COMMUNITY INVOLVEMENT

Community volunteerism, partnerships and neighborhood involvement serve an increasingly vital role in OSMP’s fulfillment of the City Charter purposes for open space.

CCEI.C) LIFETIME CONNECTIONS WITH NATURE

Long-term connections with OSMP lands are strengthened and deepened over the course of our lives and across generations, in part to inspire response to the climate crisis.

CCEI.D) PHYSICAL AND MENTAL WELL-BEING

Increase awareness of the benefits of nature and the ways visiting OSMP lands can reduce stress and increase physical and mental well-being.

CCEI.E) ENGAGED YOUTH INSPIRED BY NATURE

OSMP is an emerging leader in promoting an increase in the time that youth spend outdoors and caring for their open space system.

CCEI.F) PROMOTING EQUITY AND INCLUSION

We are all part of an inclusive community, where all people feel welcome, safe and able to enjoy the benefits of open space.

CCEI.G) CONNECTIONS TO BOULDER’S PAST

Cultural landscapes and historic resources on OSMP lands are preserved so that people can enjoy and understand the places and stories of Boulder’s past.

CCEI STRATEGIES

① CCEI.1) WELCOME DIVERSE BACKGROUNDS AND ABILITIES

Improve understanding, services and facilities for underserved communities through outreach, collaborative partnerships, listening sessions, culturally-relevant programming, language translations, visual signs and materials, staffing and other creative means of empowering and engaging underserved members of our community.

CCEI STRATEGIES (Continued)**① CCEI.2) ENHANCE COMMUNICATION WITH VISITORS**

Foster discovery, enjoyment and stewardship through a coordinated effort to enhance signs, communications and media that incorporate effective design, messaging and languages for a range of audiences as well as increasing ranger and volunteer presence on the system to welcome and inform visitors.

② CCEI.3) CONNECT YOUTH TO THE OUTDOORS

Ensure youth get outside more by offering a continuum of educational and service-learning opportunities that fosters youth interest, competence and confidence in enjoying and conserving nature.

② CCEI.4) SUPPORT CITYWIDE ENGAGEMENT WITH FEDERALLY RECOGNIZED AMERICAN INDIAN TRIBES AND INDIGENOUS PEOPLES

Support citywide efforts to work in partnership with federally recognized American Indian Tribes and other city departments through formal government-to-government consultations to support American Indian Tribes and Indigenous Peoples' connections to their ancestral homelands.

③ CCEI.5) FOSTER WELLNESS THROUGH IMMERSION IN THE OUTDOORS

Working with schools and organizations, raise awareness of how open space improves physical and mental well-being.

③ CCEI.6) INSPIRE ENVIRONMENTAL LITERACY AND NEW INVOLVEMENT IN OSMP

Build the capacity of environmental education to inspire collective stewardship and climate action through comprehensive, collaborative programming across the system.

② CCEI.7) CULTIVATE LEADERS IN STEWARDSHIP

Advance skill-building and training for volunteers and stewards through expanded mentorship and leadership opportunities that increase OSMP's capacity to address needs and support career development in open space management.

③ CCEI.8) HEIGHTEN COMMUNITY UNDERSTANDING OF LAND MANAGEMENT EFFORTS

Heighten community and neighborhood understanding and involvement in OSMP management and planning efforts through targeted education, outreach and in-person engagements in support of on-the-ground action.

③ CCEI.9) PRESERVE AND PROTECT BOULDER'S CULTURAL HERITAGE

Complete and maintain a cultural resource inventory and management plan to improve the protection of cultural resources and landscapes and to connect all people with Boulder's past.

FOCUS AREA

Financial Sustainability (FS)

Value statement: We steward public funding to fulfill the City Charter purposes for open space.

FS OUTCOMES

FS.A) LASTING VALUE FOR THE COMMUNITY

OSMP effectively and efficiently manages city taxpayer dollars to build both trust and lasting open space value.

FS.B) RESILIENCE TO CHANGE

Financial management strengthens adaptability and resilience to local, national and global market forces and environmental change.

FS.C) PROTECTED INVESTMENTS

The community's long-term investment in open space is protected or enhanced by prioritizing maintenance of OSMP properties and assets.

FS.D) PRIORITIZED ACQUISITIONS

Strategic acquisition of land, mineral and water interests continue to play an important role in preserving, enhancing and managing Boulder's legacy of preservation, agriculture and passive recreation.

FS.E) EFFECTIVE COMMUNICATION

Financial information is proactively and clearly communicated to promote accountability, increase community understanding of OSMP financial management, and ensure alignment of spending with community priorities.

FS STRATEGIES

FS.1) STABILIZE FUNDING

Steadily generate funds through sales and use tax collections while strategically leveraging other revenue streams and local dollars to support OSMP's capacity to deliver open space services.

FS.2) BUDGET FOR FUTURE UNCERTAINTY

Create, optimize, and manage budgets that anticipate major change drivers such as extreme weather events and fluctuations in revenue and spending.

FS STRATEGIES (Continued)

FS.3) UNDERSTAND TOTAL COST OF SYSTEM MANAGEMENT

Adopt or create models to understand the total value and cost of managing the OSMP system and its many diverse assets, including impact and investment tracking for upfront and ongoing costs regarding land management, agriculture, trails and other infrastructure.

FS.4) TAKE CARE OF WHAT WE HAVE

Focus capital investments on retaining the health of ecosystems on OSMP properties, as well as maintenance of existing trails, amenities and agricultural infrastructure.

③ FS.5) PRIORITIZE ACQUISITIONS IN BOULDER VALLEY'S RURAL PRESERVATION AREA

Prioritize opportunities to acquire land, mineral and water interests in the Area III - Rural Preservation Area – of the Boulder Valley Comprehensive Plan to advance its goals, OSMP Master Plan focus areas and City Charter purposes for open space.

③ FS.6) PARTNER TO PROTECT LANDS BEYOND THE PRIORITY AREA

Consider acquisition of land, mineral and water interests outside the Boulder Valley Comprehensive Plan boundary where partnership opportunities help leverage costs and advance OSMP Master Plan focus areas and City Charter purposes for open space.

③ FS.7) PARTICIPATE IN OTHER ACQUISITION OPPORTUNITIES

Consider acquisition of land, water and mineral interests within Area I and II of the Boulder Valley Comprehensive Plan only when coupled with planning, development or annexation projects or where citywide priorities or partnership opportunities emerge.

FS.8) EVALUATE EXISTING REAL ESTATE ASSETS ON OSMP LANDS

To improve the protection of, and align with, open space purposes in the City Charter, assess real estate assets and explore alternative preservation and stewardship options to better enable staff to steward and manage for those purposes.

FS.9) INVEST IN WORKFORCE DEVELOPMENT AND OPERATIONAL NEEDS

To provide effective management of the OSMP system over time, maintain a team-oriented workforce that benefits from experience and ongoing training and is equipped with adequate resources to meet the expectations of the community.

FS.10) UPDATE PLANNING FRAMEWORK

Refine OSMP planning methods and products to better inform and prioritize the efficient use of limited funding.

Implementation Priorities and Funding

All the above 46 strategies across the five focus areas are important, and they are all designed to guide our work over the next decade. However, limits to our funding and time require a realistic view of what is achievable to develop a shared understanding about what to expect and when.

To that end, we asked residents how we should prioritize spending on Master Plan implementation. Ecosystem health and resilience came out as most important to fund, with opportunities to enjoy and protect nature closely following. We also heard strong guidance to protect the substantial investment our community has made in open space and to prioritize conservation and maintenance of our existing system. Other input from the community is reflected in the prioritization of the strategies including:

- » preparing for extreme weather events;
- » engaging youth and underserved communities, including the Latinx community and those experiencing disabilities; and
- » addressing impacts to visitors' experiences and the natural environment in light of increased visitation trends.

This feedback helped us prioritize Master Plan strategies, leading to three tiers of priorities to guide funding for implementing the Master Plan vision. For example, depending on available funding, Tier 1 strategies would generally be prioritized above other implementation efforts and would be funded closer to the full need. Even as lower tier strategies, strategies in Tier 2 or 3 (shown in **Table 0.1** on page 36) are still important and critical for the management of Open Space. We will still put incremental funding and effort toward these, but with respectively less emphasis and depending on opportunities as they arise over the next 10 years. As we scale Master Plan implementation to available funding levels, additional funding for Master Plan implementation would provide more capacity to:

- » pursue conservation and restoration projects;
- » make additional progress toward reducing the trail maintenance backlog; and
- » incorporate more forward-thinking approaches to climate change, soil health, youth engagement, inclusion and volunteering.

Photo by Dave Sutherland

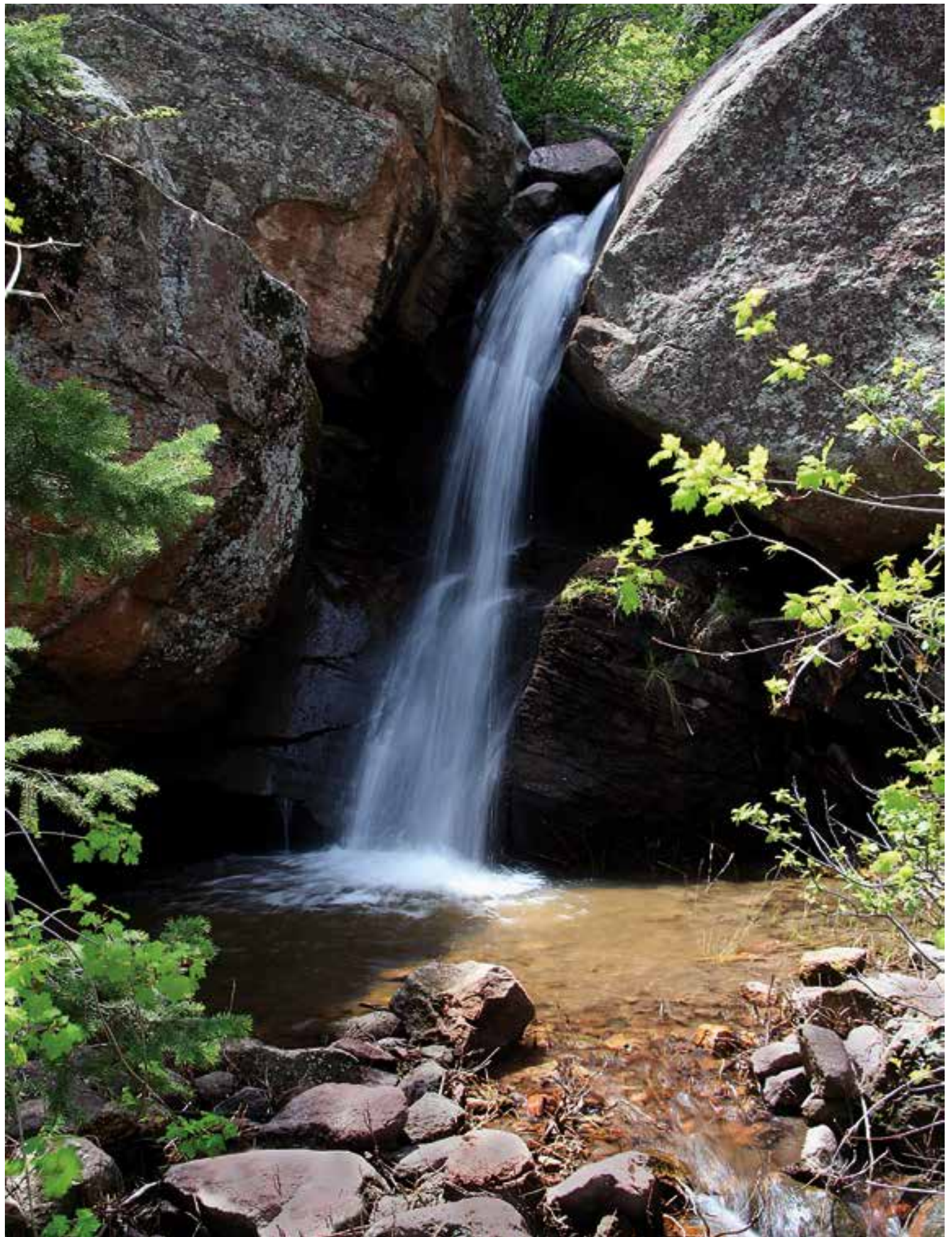




Figure 0.7: Rendering of pre- (top) and post-restoration (bottom) conditions along a stretch of creek. (Modified with permission from Left Hand Watershed Center, www.watershed.center)

For example, with additional funds we could restore more miles of lower Boulder Creek to transform formerly mined gravel pits into more natural habitat for native fish and amphibians. **Figure 0.7** illustrates before and after conditions for a typical creek restoration project. We could improve our Junior Ranger program to increase the number of high school students, who would, in turn, contribute substantially to our trails maintenance program. They may also help us close and restore undesignated trails. However, even in the best financial circumstances, we face realistic limitations or ongoing management challenges – like invasive weeds or trail maintenance needs – that staff will likely continue addressing well beyond the 10-year Master Plan vision.

A vital next step after the Master Plan is adopted is to develop a full understanding of the condition and total cost of the system by advancing an internal asset management approach. An asset management system will improve our ability to more accurately understand needs and estimate the cost of managing all aspects of open space including trails, volunteer programs, facilities and green assets. Nevertheless, the general cost ranges shown for each strategy in **Table 0.1** (on following page) reflect what it would take to fully implement the Master Plan’s 10-year vision for each strategy using the best figures we have to date. The cost range estimates can be understood as what we can reasonably anticipate as the cost of fully implementing the Master Plan vision over the next decade.

Table 0.1: Master Plan Strategies with Tier and Funding Needs*

TIER	STRATEGY	TEN-YEAR FUNDING NEEDS TO FULFILL MASTER PLAN VISION*
1	EHR. 1) Preserve and restore important habitat blocks and corridors	\$\$\$\$\$
1	EHR. 2) Update and continue implementing system plans guiding ecosystem management	\$
1	EHR. 3) Address the global climate crisis here and now	\$\$
1	ATT. 1) Reduce maintenance backlog for agriculture and water infrastructure	\$\$
1	ATT. 2) Increase soil health and resilience	\$\$\$\$
1	ATT. 3) Address conflicts between agriculture and prairie dogs	\$\$\$
1	RRSE. 1) Assess and manage increasing visitation	\$\$
1	RRSE. 2) Reduce trail maintenance backlog	\$\$\$\$\$
1	CCEI. 1) Welcome diverse backgrounds and abilities	\$\$
1	CCEI. 2) Enhance communication with visitors	\$\$
2	EHR. 4) Reduce undesignated trails	\$\$
2	EHR. 5) Extend on-trail requirements	\$\$
2	EHR. 6) Control invasive species	\$\$\$
2	EHR. 7) Develop a learning laboratory approach to conservation	\$\$\$
2	ATT. 4) Protect water resources in a warmer future	\$
2	ATT. 5) Encourage diverse and innovative agricultural operations	\$\$\$
2	RRSE. 3) Update guidelines and standards for quality trail design and construction	\$
2	RRSE. 4) Encourage multimodal access to trailheads	\$\$\$
2	RRSE. 5) Manage passive recreation activities requiring an OSMP permit	\$
2	CCEI. 3) Connect youth to the outdoors	\$\$\$\$
2	CCEI. 4) Support citywide engagement with federally recognized American Indian Tribes and Indigenous Peoples	\$

TIER	STRATEGY	TEN-YEAR FUNDING NEEDS TO FULFILL MASTER PLAN VISION*
3	EHR. 8) Reduce impacts from noise, light and nearby land uses	\$\$
3	EHR. 9) Reduce and offset OSMP greenhouse gas emissions	\$\$\$\$\$
3	ATT. 6) Support the success of ranchers and farmers	\$\$\$
3	ATT. 7) Integrate native ecosystems and agriculture	\$\$
3	ATT. 8) Further reduce or eliminate pesticide use	\$\$
3	ATT. 9) Enhance enjoyment and protection of working landscapes	\$\$\$
3	RRSE. 6) Support a range of passive recreation experiences	\$\$
3	RRSE. 7) Build new trails as guided by past and future plans	\$\$\$\$
3	RRSE. 8) Provide welcoming and inspiring visitor facilities and services	\$\$\$\$\$
3	RRSE. 9) Develop a learning laboratory approach to recreation	\$\$
3	CCEI. 5) Foster wellness through immersion in the outdoors	\$\$
3	CCEI. 6) Inspire environmental literacy and new involvement in OSMP	\$\$\$
3	CCEI. 7) Cultivate leaders in stewardship	\$\$
3	CCEI. 8) Heighten community understanding of land management efforts	\$\$
3	CCEI. 9) Preserve and protect Boulder’s cultural heritage	\$\$\$
3	Acquisitions (FS.5, FS.6, FS.7)	\$\$\$\$\$

KEY*	
\$	\$0 to 500,000
\$\$	\$500,000 to 2,000,000
\$\$\$	\$2,000,000 to 5,000,000
\$\$\$\$	\$5,000,000 to 10,000,000
\$\$\$\$\$	\$10,000,000 to \$40,000,000

*The key defines dollar ranges for 10-year funding needs according to the highest potential funding level we might expect for Master Plan implementation. As such, they align with our full funding scenario as seen in Section 3 of the Master Plan.

Our Shared Future

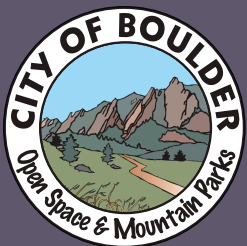
Seen as a complete and complex system, the Master Plan describes an integrated, collaborative, and realistic vision for the next decade of OSMP management. It inspires working with partners, volunteers and community members to bring this vision to life. As the voice of the people, the Master Plan also reflects the deep appreciation we all have for the land, and the profound sense of place it engenders. It establishes a framework of mutual support, in which we can find and enhance relationships among the focus areas, values, outcomes and strategies to implement our vision efficiently and together.

None of us is alone in the shared responsibility of protecting critical habitat, or of sharing what we know about nature to inspire its careful stewardship. We can all enjoy connections with nature and unite around a central purpose of caring for it, both for its inherent values and for the benefit of current and future generations. We can bring success to many parts of our open space system if we continue to put our minds, energies and resources toward it.

The OSMP Master Plan continues our shared legacy. It sets our course for the next decade and rallies all of us to protect and enjoy these open spaces long into the future. Over the next year, staff will start down that path by developing work plans that align with and advance the community's vision. Emerging in 2020, this enhanced implementation process will define the programs and projects that achieve Master Plan outcomes for each focus area and how we will deliver on the plan's strategic guidance. We will also lay out the types of planning efforts required to manage the system thoughtfully, so we continue to look forward together.

**Right: Photo by
Thorne Nature
Experience**





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