



Lake County Open Space Initiative Ecosystem Management Plan 2019 Revision

Prepared for:

Lake County Open Space Initiative

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Preface

The Lake County Open Space Initiative (LCOSI) was initially formed in the fall of 1997 in response to the simultaneous real estate listing of approximately 7,000 acres of historic ranch lands in Lake County, Colorado. Community concern over the potential development of these lands and the commensurate loss of their natural, scenic, and historic resources led to the formation of the LCOSI stakeholder group, consisting of local, state, federal, and private sector entities and individuals who shared in the vision of protection and stewardship of land and water resources in Lake County for open space, wildlife, historic preservation, sustainable growth, public education, and outdoor recreation. The mission of the Initiative focused on securing conservation ownership of critical habitats and the development of a consensus-based framework to help guide future planning decisions and management direction of the Initiative's stakeholders.

The *Lake County Open Space Initiative: Ecosystem Management Plan* was completed in September of 2006, following extensive stakeholder and public input. The document was collaboratively developed to provide consistent management direction for the lands identified under the Initiative, in a manner that recognizes the landmass as a part of a natural ecosystem, rather than a matrix of discrete political subdivisions.

The Management Plan is not a decision document, but rather, provides a common data base to inform decision making by the stakeholders who share in the commitment to the vision. The 2006 Plan anticipated a 10-year planning horizon. Funding was secured to revise the document in 2016, and scoping and compilation commenced in April of 2017.

The purpose of this document is to update and revise the 2006 Plan in order to document significant accomplishments toward achievement of the Initiative's goals and objectives, adjust planning to reflect the dynamic social, economic, physical, and environmental changes that have occurred since preparation of the original plan, and to revise the management direction to reflect the anticipated challenges and opportunities of the next decade.

The Revised Plan has been funded in part by a Planning Grant from the Great Outdoors Colorado Trust, with matching financial contributions from Lake County, City of Aurora, Pueblo Board of Water Works, Upper Arkansas River Restoration Team, Cloud City Wheelers, Central Colorado Conservancy, and Conlin Associates Resource Planners, as well as in-kind support from participating members.

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Executive Summary

The Lake County Open Space Initiative (LCOSI or Initiative) Ecosystem Management Plan (Plan) is divided into five Sections, described as follows:

Section I The Plan

Section I provides the planning hierarchy of the Ecosystem Management Plan:

Section I - Chapter 1: LCOSI Formation

- Introduction

Section I – Chapter 2: LCOSI Structure:

- Organization
- Vision and Mission Statements
- Guiding Principles
- Goals and Objectives

Section I – Chapter 3: The Plan

- Statements of Purpose and Need
- The Planning Process
- Glossary of Terms

Section I – Chapter 4: Accomplishments

- Selected Accomplishments
- Peer Recognition

Section II The Existing Condition

Section II provides a snapshot of the physical, environmental, and socioeconomic setting in the Upper Arkansas River Basin (Basin) as it existed at the time that this document was written. The Existing Condition description provides a baseline set of conditions against which to: compare, contrast, and monitor changes over time; document accomplishments to date; and set management objectives for the future. Chapters include:

Section II - Chapter 1: The Physical Setting

The **Physical Setting** Chapter of the Existing Condition Analysis describes and illustrates the general location of Lake County and the Upper Arkansas River Basin, its population centers, life zones and climate, geomorphology, hydrology, geology, soils and vegetation.

Section II - Chapter 2: Wildlife Habitat

The **Wildlife Habitat** Chapter describes the supporting habitat elements of the Basin's identified Indicator Species and Species of State and Local Interest and illustrates the land matrix that supports overall wildlife range, seasonal concentration areas, winter range, migration corridors, production areas, foraging areas, nesting sites, and areas of potential wildlife/human conflict.

Section II - Chapter 3: The Built Environment

The **Built Environment** Chapter provides the historic context of man's presence on the land and describes the man-built elements that have altered the natural setting of the Basin, including human influences starting with the Paleo-Indian presence, through discovery of vast mineral wealth, to the advancement of ranching and water development to support the needs of the growing population.

Activities and infrastructure development discussed and illustrated in this Chapter include transportation systems, water development infrastructure, recreational facilities, power and water conveyance utilities.

Section II - Chapter 4: Land Management

The **Land Management** Chapter describes and illustrates open space lands in the Basin that: are commonly open to public access; conserve or enhance natural or scenic resources; protect streams and water supply, soils and wetlands; enhance recreational opportunities; and protect historic sites and visual quality.

Chapter 4 inventories and illustrates:

- Federal lands under the jurisdiction of the USDA Forest Service, USDI Bureau of Land Management, and the USDI Fish and Wildlife Service;
- Rare II Wilderness Areas;
- State Lands under the jurisdiction of the State Land Board, Colorado Department of Transportation, Colorado Parks and Wildlife, and the Arkansas Headwaters Recreation Area;
- Municipal lands under ownership of the City of Aurora and Lake County;
- Conservation Easements administered by the Central Colorado Conservancy;
- Lands owned by local institutions;
- Parcels of land targeted for future conservation acquisition or management, and:
- Relationship to Agency Land Use Administration.

Section II - Chapter 5: Socioeconomic Profile

The **Socioeconomic Profile** Chapter provides a chronological view of the defining social and economic events in Lake County's history, starting with the discovery of vast mineral wealth, through the classic boom and bust cycles of the mining economy, and leading to economic diversification efforts and resurgence of mining as leading economic drivers that support community sustainability today.

The Chapter also demonstrates demographic trends and statistics that are shaping future population estimates, job growth, and real estate values that will place additional demands on open space, recreation, water supply and the competition for funding to support open space land acquisitions.

Section III Anticipated Change

Significant changes have occurred since the preparation of the 2006 LCOSI Ecosystem Management Plan, leading to the description of the Existing Condition as previously depicted in Section II of this Plan. The challenge of strategic planning is to understand the existing condition and how that condition came about, and to anticipate changes that can be reasonably foreseen within the next planning horizon in order to establish consensus-based management direction.

Section III of the Plan explores and illustrates reasonably anticipated changes that are likely to occur during the next planning horizon, including:

Section III - Chapter 1: Physical Environment

Anticipated changes to the **Physical Environment** will include the effects of climate change on water availability, wildfire, recreation, agriculture, aquatic and terrestrial invasive species, and changing habitat values, requiring changes in forest, land, water, and aquatic health management.

Section III - Chapter 2: Wildlife Habitat

Wildlife habitat quality and capacity can be expected to come under additional stress due to increased development pressure and habitat loss or conversion.

Section III - Chapter 3: Land Management

Land Management patterns will change. Some changes will benefit wildlife and watershed health as additional open space is acquired, while others may further fragment habitat and displace wildlife, tarnish viewsheds, and reduce public access to recreational opportunities.

Section III - Chapter 4: The Built Environment

The **Built Environment** will continue to change the natural landscape, supporting community sustainability and economic growth while competing for finite wildlife habitat and open space.

Section III - Chapter 5: Socioeconomic Setting

Socioeconomic and Demographic changes will place increasing pressure to develop vacant lands while increasing land costs and the difficulty of securing sufficient funding for open space acquisition. The eventual closure of the Climax Mine as reserves are depleted will trigger the next paradigm shift in the community socioeconomic profile and present additional challenges to community sustainability. Life of Mine calculations place the closure of the mine outside of the current planning horizon of this document.

Section IV Management Strategies

The over-arching goal of the *Lake County Open Space Initiative: Ecosystem Management Plan*, is to establish consensus based management strategies that: provide cohesive management direction within the Open Space, regardless of jurisdictional ownership; protect and conserve the area's natural and manmade resources; mitigate negative impacts and natural resource damages; protect and improve watershed health; and provide sustainable benefits for future generations of human and wild inhabitants.

Section IV of the Plan establishes Management Strategies to accomplish the goals and objectives of the Initiative, based on the data provided in Sections I through III.

The planning format takes the following form:

Section IV – Chapter 1: Format and Definitions

Management Objectives:

What the Management strategy is intended to accomplish.

Underlying Principles:

Why the strategy is being proposed.

Proposed Management Action:

How the strategy will be implemented.

Management Emphasis Areas

Where management actions can or should take place.

Management Emphasis Categories:

- Protection and enhancement of wildlife winter range;
- Protection and enhancement of wildlife habitat for indicator species;
- Provision and enhancement of recreational opportunities;
- Development of a sustainable water supply;
- Protection and enhancement of agricultural lands; and,
- Preservation and conservation of scenic and historic resources.

Section IV – Chapter 2: Management Strategies

Management Strategies analyzed under the format include strategies for land management, wildlife, recreation, historic preservation, vegetation, transportation and utilities, extractive industry, scenic conservation, water resources, wetlands, riparian areas, and river restoration.

Section V Public Input

Section V describes the protocol for gathering input, references source materials, credits entities who contributed to generation of the Plan, and provides responses to written comments received following public distribution of the Plan.

Section V – Chapter 1: Input Protocol

The **Input Protocol** Chapter delineates the process and sequence of actions that were followed to solicit LCOSI and public input.

Section V – Chapter 2: Contributing Entities

The **Contributing Entities** Chapter provides a listing of the LCOSI partners and participating entities who, by involvement in planning workshops or through written comment, provided input, contributed data, reviewed or edited draft sections of the document, or participated in the consensus decisions to accept the Sections as written.

Section V – Chapter 3: Reference Material

Chapter 3, **Reference Materials**, provides a listing of documents referenced or used as background information in the preparation of the Plan.

Section V – Chapter 4: Solicitation and Response to Public Input

Chapter 4, **Solicitation and Response to Public Input** describes the process by which public input was solicited and documents LCOSI responses to public comments.



Lake County Open Space Initiative Ecosystem Management Plan

Section I The Plan

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Section I

Table of Contents

1.0 The Plan

Chapter 1: LCOSI Formation

1.1	LCOSI Formation	1
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Chapter 2 LCOSI Structure

1.2	LCOSI Structure	2
1.2.1	LCOSI Organization	
1.2.2	Vision Statement	3
1.2.3	Mission Statement	
1.2.4	Guiding Principles	4
1.2.5	Goals and Objectives	5
1.2.5.1	Wildlife	
1.2.5.2	Recreation	
1.2.5.3	Historic/Cultural	6
1.2.5.4	Vegetation	
1.2.5.5	Scenic	
1.2.5.6	Transportation/Utilities	
1.2.5.7	Extractive Industry	7
1.2.5.8	River Restoration	
1.2.5.9	Water Resources	
1.2.5.10	Education	
1.2.5.11	Economic Development	8

Chapter 3 Plan Hierarchy 9

1.3 The Plan

1.3.1	Purpose
1.3.2	Need

Table of Contents (Continued)

	1.3.3 The Planning Process	10
	1) The Plan	
	2) Existing Condition	
	3) Anticipated Change	
	4) Management Strategies	
	5) Public Participation	11
Chapter 4	Glossary of Terms	
	1. 4 Glossary of Terms	12
Chapter 5	Accomplishments	
	1. 5 Selected Accomplishments	17
	A) Existing Condition: 1997	
	B) Current Condition: 2019	18
	C) Recognition	20

Section I The Plan

1.1 Chapter 1 LCOSI Formation

The Lake County Open Space Initiative (LCOSI) was formed in the winter of 1997 in response to simultaneous real estate offerings of over 7000 acres of historic ranchlands along the Arkansas River corridor in Lake County, Colorado. The subject lands represented:

- Important foreground and middle ground view sheds framing Colorado's highest peaks, as viewed from the Top of the Rockies National Scenic and Historic Byway;
- Important wetland, riverine, and low-land riparian habitats;
- Prime big game transitional, calving, and winter ranges;
- Crucial landscape linkages between the Sawatch and Mosquito mountain range's;
- Traditional wildlife migration routes, spawning grounds, and waterfowl flyways;
- Unique recreational opportunities along the headwaters of one of the Nation's most significant waterways, and;
- Tangible links to the rich mining and ranching heritage of the State and Region.

The Open Space Initiative (Initiative) was formed at the invitation of the Lake County Board of County Commissioners and represents a diverse and varied stakeholders' group with the shared interest in preserving the intrinsic, natural, recreational, and cultural resources of the Upper Arkansas River Basin.

The partnership has evolved over the intervening years in response to dynamic change, and represents a broad cross section of stakeholders, including; local, state, and federal agencies; private entities and individuals; and governmental and quasi-governmental bodies, working collaboratively to generate and implement an over-arching Ecosystem Management Plan to guide consensus-based decision making on future land use, management, and planning.

An Ecosystem Management Plan views the Open Space in much the same way as wildlife does, as an interwoven matrix of forage, water, travel routes and cover, rather than as a jigsaw puzzle of hand drawn political or jurisdictional property lines, and seeks to manage the landmass and its resources to their highest and best use, regardless of man-imposed boundaries. The plan recognizes man as an integral part of the ecosystem and acknowledges the need to seek balance between human and wildlife resource needs.

1.2 Chapter 2 LCOSI Structure

1.2.1 LCOSI Organization

The Lake County Open Space Initiative is organized as a Cooperative Stakeholder Partnership (CSP), bound by a voluntary partner agreement to protect and enhance watershed health and sustainability in the Upper Arkansas River Basin. The purpose of the CSP is to accomplish the following objectives:

- To revise and update the 2006 LCOSI Ecosystem Management Plan to reflect interim accomplishments and changes in land ownership, environmental, and socio-economic conditions that have occurred since publication of the 2006 Plan.
- To perpetuate the LCOSI goal of protection and stewardship of Lake County's land and water resources for open space, wildlife, historic preservation, sustainable growth, education and outdoor recreation as outlined in the LCOSI Goals and Objectives.
- To implement the strategies developed in the Ecosystem Management Plan for the protection, enhancement, and long-term management of watershed health and economic sustainability in Lake County.
- To provide a forum for information sharing, outreach, and public education in support of informed decision making.
- To facilitate and encourage collaborative, multi-jurisdictional planning and decision making.
- To provide a structure for perpetuation and administration of the LCOSI partnership.
- To retain and encourage the voluntary nature of the LCOSI Partnership.
- To retain the autonomous decision-making authority of LCOSI.
- To perpetuate the LCOSI goals of sustainable growth and economic diversification.
- To establish protocols and guidelines for consensus-based decision making.

1.2.2 LCOSI Vision Statement

The Vision of the Lake County Open Space Initiative is:

The protection and stewardship of land and water resources in Lake County by a partnership of federal, state and local agencies and organizations for the purpose of: protecting and enhancing wildlife habitat; conserving open space; restoring impacted habitats; securing public access; increasing recreational opportunities; preserving cultural, agricultural, scenic and historic resources; increasing public awareness and education; and enhancing sustainable growth and development opportunities in Lake County.

1.2.3 LCOSI Mission Statement

The mission of the Lake County Open Space Initiative is to prepare and periodically update a collaborative planning document that, where possible and appropriate:

- Regards the project area as an ecosystem, regardless of man-made boundaries or political sub-divisions.
- Identifies the existing condition of the intrinsic resources, anticipates changes that will occur with adjustments in land ownership and socioeconomic conditions, and recommends management strategies and action plans for long term resource protection, public safety, access, maintenance, enhancement, restoration, and interpretation of identified resources.
- Balances protection and enhancement of watershed health with sustainable growth and economic resiliency within Lake County.

1.2.4 LCOSI Guiding Principles

The Cooperative Stakeholder Partnership Agreement operates under the following guiding principles:

- **Participating Partners**

Signatories to the CSP deemed to be Participating Partners and are eligible to engage in consensus-based decision making.

- **Voluntary**

Participation is not mandatory; the decision to participate is at the sole discretion of the Participating Partner.

- **Non-Binding**

Consensus based decisions are not binding on the individual Participating Partners nor do they supersede the implementing legislation or governing rules and regulations of partnering entities.

- **Autonomous**

LCOSI shall be an independent entity. No single Partner may assert authority or veto power over Participating Partners. All Participating Partners are treated as equals.

- **Consensus based**

Decisions will be made by consensus of the Participating Partners rather than by majority rule.

- **Self-supporting**

LCOSI shall be funded through voluntary contributions of Participating Partners, grant funds, or other contributions. The CSPA is a non-funding obligating instrument for all signatories. There will be no mandatory dues obligation.

- **Transparent**

LCOSI meetings will be open to and encourage the participation of the public.

- **Land Tenure**

LCOSI shall not act as a land trust or hold title to real property but will cooperate and coordinate with conservation partners on land acquisitions and the establishment of conservation easements.

1.2.5 LCOSI Goals and Objectives

Where appropriate and possible, LCOSI Partners will collaborate to achieve the following goals and objectives:

1.2.5.1 Wildlife Goals and Objectives

- Protect Threatened, Endangered and Sensitive Species and their habitats.
- Enhance, restore, and protect wetland and riparian habitats.
- Maintain wildlife habitat.
- Enhance open space for big game forage.
- Enhance habitat for migratory birds and waterfowl.
- Enhance vegetative diversity.
- Provide watchable wildlife opportunities.
- Restore degraded habitats.
- Maximize acreage available for hunting and fishing.

1.2.5.2 Recreation Goals and Objectives

- Identify and provide for a wide spectrum of recreational opportunities.
- Recommend recreational uses based on ecosystem values.
- Maintain existing legal motorized use.
- Allow mechanized use on designated trails only.
- Support quiet use recreational activities in appropriate settings.
- Support monitoring of recreational use.

1.2.5.3 Historic/Cultural Goals and Objectives

- Support appropriate historic preservation efforts within the Lake County Open Space including, but not limited to: recordation; stabilization; rehabilitation; restoration; and reconstruction.
- Support historic preservation planning.
- Promote interpretation and public education.
- Support the preservation of our agricultural heritage.
- Support appropriate preservation of archaeological resources.

1.2.5.4 Vegetation Goals and Objectives

- Maintain healthy, diverse vegetative communities.
- Maintain land health.
- Strive to maintain an agricultural presence to support healthy plant communities to the benefit of wildlife, cultural, scenic, and historic resources.

1.2.5.5 Scenic Goals and Objectives

- Maintain or Improve existing scenic vistas.
- Maintain or Improve visitor safety.
- Coordinate and cooperate with the Top of the Rockies Byway Committee to interpret and sign the byway through the open space.

1.2.5.6 Transportation/Utilities Goals and Objectives

- Identify and map the existing system of roads/trails, utility systems, structural development and natural features.
- Sign open and closed roads and trails.
- Coordinate activities with adjacent landowners and existing uses.
- Close non-system or non-designated routes created by the public that are damaging the environment.

1.2.5.7 Extractive Industry Goals and Objectives

- Work with extractive industries to sustainably utilize natural resources while achieving management goals.
- Explore opportunities for post mining land use.

1.2.5.8 River Restoration Goals and Objectives

- Coordinate and cooperate with restoration efforts on the main stem of the Arkansas River and its tributaries.
- Minimize new impacts to the river.
- Allow for the opportunity to enhance or create new wetlands.

1.2.5.9 Water Resources Goals and Objectives

- Respect and maintain water rights, operations, and beneficial use of associated water rights.
- Increase water storage capacity for wildlife, recreation, and economic development purposes.
- Cooperate and coordinate with water owners to ensure favorable flows for fisheries and recreation.
- Maintain or improve water quality.
- Allow for the opportunity to enhance or create new wetlands.

1.2.5.10 Education Goals and Objectives

- Work with Educational Institutions within the Upper Arkansas River Basin to identify opportunities for the sharing of knowledge and collaboration where possible and appropriate among staff, students, and LCOSI Partners.
- Involve students where possible and appropriate in hands on learning and knowledge sharing opportunities in the environmental education of LCOSI Partner projects.
- Encourage the sharing of the history, impacts, and environmental remediation efforts at grade level appropriate intervals.

1.2.5.11 Economic Development Goals and Objectives

- Educate the public and elected officials on the economic benefits of land conservation, habitat protection, and open space.
- Seek conservation partnerships that support multiple uses of protected properties and allow for economically beneficial and environmentally sustainable activities.
- Encourage open space, conservation, and remediation efforts as a part of the branding for Lake County to encourage investment from supportive partners, residents, and businesses.

1.3 Chapter 3 Plan Hierarchy

1.3.1 Purpose

The Lake County Open Space Initiative Project Area (Project Area) represents a complex ownership matrix of federal, state, local, and private lands, all administered under different implementing legislation and jurisdictional regulations. For the LCOSI Project Area to function together as an integral component of the overall environment of the Upper Arkansas River Valley, it was mutually agreed that a single, unifying, Ecosystem Management Plan was needed to provide guidance and direction for future jurisdictional management plans and inter-jurisdictional planning decisions.

An Ecosystem Management Plan considers the lands within the Project Area as an integral part of an overall ecosystem, rather than a collection of discrete jurisdictional parcels, circumscribed by man-made property lines. It is in their unification that the lands of the LCOSI form the crucial landscape linkage connecting the Sawatch and Mosquito Ranges, protect the viewshed's of Colorado's highest peaks, preserve critical wildlife habitats and migration routes, conserve the Valley's rich cultural heritage, and secure the legacy of open space for future generations.

It is the intended purpose of The Ecosystem Management Plan to create the common thread that binds future decision making to the shared goals of its stakeholders and the benefit of the ecosystem of the Upper Arkansas River Basin as a whole. By mutual consent, Participating Partners to the LCOSI CSPA agree to participate in the preparation of the Plan, and to use the consensus recommendations contained therein to help guide future planning decisions on Project Area lands under their jurisdiction where possible and appropriate.

1.3.2 Need:

The First edition of the Lake County Open Space Initiative Ecosystem Management Plan (Plan) was completed in 2006, with an anticipated planning horizon of 10 years. Significant changes in demographics, stakeholder representation, and land ownership have occurred in the intervening years, requiring Plan updates and revisions to reflect evolving challenges and opportunities, as well as the completion of many of the specific goals and objectives established in the 2006 Plan.

1.3.3 Planning Process

The Revised LCOSI Ecosystem Management Plan (EMP) is divided into five sections, briefly described as follows:

1) Section 1 - The Plan

Section 1 provides a basic background on the formation, vision, mission goals and objectives of LCOSI, its organizational foundation, and selected accomplishments. It also presents a Purpose and Need statement for the preparation of the Plan, a description of the planning process, and a glossary of terms that may be found within the context of the document.

2) Section 2 – Existing Condition

Section 2 provides a profile and inventory of the natural resources and manmade infrastructure within the Project Area, as they existed at the time of the Plan's revision. A knowledge of the existing condition is a necessary element in: understanding the resource base and its significance, constraints and opportunities; predicting changes that will occur as a result of anticipated actions; developing strategies for managing and enhancing resource values, overcoming constraints, and mitigating impacts; and monitoring change over time.

3) Section 3 – Anticipated Change

Section 3 explores the conditions that are likely to change as a result of adjustments to ownership, regulations, operations, management, or maintenance of the lands within the Project Area as a result of LCOSI actions.

4) Section 4 – Management Strategies

Section 4 establishes proposed strategies for management, mitigation, or enhancement of natural resources and manmade infrastructure that are constrained, impacted, or altered as a result of LCOSI actions, within the overall context of meeting LCOSI's goals and objectives. Management Emphasis Areas describe *where* actions may occur, Management Objectives describe *what* the management Strategy is intended to do, Underlying Principals describe *why* the action is being taken, and Proposed Management Actions describe *how* the strategy will be implemented.

5) Section 5 - Public Participation

The Revised EMP will be reviewed internally by the LCOSI partnership for accuracy, completeness, and compliance with LCOSI's stated goals and objectives prior to release to the public.

Following revisions to the Internal Review document, a Public Review Plan will be released to participating agencies and to the public for review and comment. Newspaper articles will provide a synopsis of the plan and provide information as to where it can be reviewed, how to provide input, and the timeframe for participating in the review process. Hard copies of the Draft Plan will be made available for on-premises review at local libraries and the offices of the Lake County Board of County Commissioners, for a period of 30 days, with a request for written comments. The Plan will also be available for review and comment on the LCOSI web site (www.lcosi.com).

Following the Public Comment Period, responses will be documented and evaluated, and revisions or corrections will be incorporated into the Final EMP document, as deemed appropriate by the LCOSI partnership.

The final document will be reproduced in hard copy for distribution to the local libraries, in CD-ROM format for participating agencies and LCOSI Partners, and will be linked to the LCOSI web site.

Chapter 4 Glossary of Terms

1.4 Ecosystem Management Plan: Glossary of Terms

Terms that may be used or referenced within the context of this document may include:

Acre-foot – The amount of water needed to cover one acre to a depth of one foot, 43,560 cubic feet, or 325,851 gallons.

ADA - Americans With Disabilities Act of 1990, as amended, PL 101-336.

Aliquot Parts – Divisions and subdivisions of a section of land described in relation to the four points of the compass. Sections are divided into halves (320-acres) and quarters (160-acres). Divisions can be further subdivided (e.g. NW 1/4 of the NE ¼) until the position and size of the parcel are defined.

Alluvium – Unconsolidated rock or soil material deposited by running water, including gravel, silt, clay and various mixtures of these.

Areal – A specified area of land or water defined by square feet or acres.

Avoidance – A partial or complete redesign or relocation of a proposed land use to prevent a potential adverse effect from occurring.

Basin – A region drained by a single river system: e.g., the Arkansas River Basin.

Biodiversity – A variety of life forms, the genetic diversity contained, and the ecological functions performed.

BLM – United States Department of the Interior, Bureau of Land Management.

BOR – United States Department of the Interior, Bureau of Reclamation.

Canopy – The continuous cover of branches and foliage formed collectively by the crowns of adjacent trees and other woody growth.

CCC – Central Colorado Conservancy, a certified Land Trust and LCOSI Partner.

CCCC – Cloud City Conservation Center.

Cfs – Cubic feet per second, a measure of water flow equal to 449 gallons per minute, or 646,317 gallons (1.983 acre-feet) per day.

Clean Air Act - National Clean Air Act of 1970, as amended, PL 101-549.

Clean Water Act - National Clean Water Act of 1977, as amended, 33 USC 1251-1387, PL 95-217.

Critical Winter Range – Lands identified as critical to big game during the winter months.

CPW – Colorado Parks and Wildlife.

CSP – Cooperative Stakeholder Partnership.

CSPA – Cooperative Stakeholder Partnership Agreement.

Cultural Resources – Fragile and non-renewable remains of human activity reflected in districts, sites, structures, buildings, objects, artifacts, ruins, works of art, architecture, and natural features that were of importance in human events.

EA – Environmental Analysis.

Ecosystem – Collectively, all populations in a community, plus the associated environmental factors.

Effluent – Treated wastewater.

EIS – Environmental Impact Statement.

EMP –Lake County Open Space Initiative Ecosystem Management Plan.

Endangered Species – Any species in danger of extinction throughout all or a significant portion of its range.

Ephemeral Stream – A stream that flows occasionally because of surface runoff but is not influenced by permanent groundwater.

Erosion – The process by which soil particles are detached and moved.

ESA - Endangered Species Act of 1973, as amended, 7 USC 136, 16 USC 460 et seq.

FLPMA - Section 307{a} and {b} of the Federal Land Policy and Management Act of 1976.

Flyway – An established air route of migratory birds.

Forb – A non-woody herbaceous plant.

Game Species – Those species legally harvested for sport.

Groundwater – Water beneath the earth’s surface, often between saturated soil and rock, that supplies wells and springs.

Habitat – A specific set of physical conditions that surrounds the single species, a group of species, or a large community. In wildlife management, the major components of habitat are considered to be food, water, cover, and living space.

Hazardous Materials (Haz-Mat) – Substances that may be encountered that would be potentially harmful to users.

Historic Preservation Act - National Historic Preservation Act of 1966, as amended, 16 USC 470, PL 89-665.

Intermittent Stream – A stream that does not flow year-round but has some association with groundwater for surface or subsurface flow.

LCOSI – Lake County Open Space Initiative, the partnership and the project.

Mineral Estate – The ownership of the right to all or certain minerals in the land, or the reservation of fractional interest in all or certain minerals in perpetuity or for a specified period of time.

MOU – Memorandum of Understanding, the document that binds the partnering entities to the common goals and objectives of LCOSI.

National Register – National Register of Historic Places, the official list, established by the National Historic Preservation Act of 1966, of the nation’s cultural resources worthy of preservation.

Native Water – Water located in the original basin or drainage.

NEPA - National Environmental Policy Act of 1969 (NEPA)– 40 CFR 1500, PL91-190, 42 USC 4321– 4347.

Non-potable water – Water that is not drinkable because it has not been treated.

Nongame Species – Those species not commonly harvested for sport.

NRCS – United States Department of Agriculture, Natural Resource Conservation Service.

OHV – Off-Highway Vehicle, includes any vehicle capable of, or designed for, travel on or immediately over land, water, or other natural terrain.

Perennial Stream – A stream that has year-round flows.

Plan – Within the context of this document, referring to the Lake County Open Space Initiative Ecosystem Management Plan.

Project Area – The area encompassing the individual properties administered by the LCOSI partners, as well as external references such as surrounding land ownership patterns, water bodies, roadways etc.

Riparian Area – An area of land directly influenced by permanent water, which has visible vegetation or physical characteristics reflective of this permanent water influence.

Riverine – Pertaining to or resembling a river. Located on or inhabiting the banks of a river.

Section – A land description used in defining a unit of land and its relative horizontal and vertical coordinates within a grid referred to as a Township. A Section of land contains approximately 640 acres, and measures approximately 1 mile on each side. 36 Sections make up a Township.

Sediment – Solid fragments if inorganic or organic material that come from the weathering of rock and are carried and deposited by wind, water, or ice.

Soil Association – A mapping unit used on general soil maps in which two or more defined taxonomic units occurring together in a characteristic pattern are combined because of the scale of the map or the purpose for which it is being made does not require delineation of the individual soils.

Solitude – The state of being alone or remote from habitations or human influences.

Subject Lands - Within the context of this Plan, the term Subject Lands refers to parcels of real property that have been secured by partners of the Lake County Open Space Initiative through land tenure agreements including, but not limited to: fee simple ownership; conservation easements; stewardship trust agreements; recreational access agreements; or cooperative management agreements, under which jurisdiction over surface activities has been conveyed.

Sustained Yield – The achievement or maintenance, in perpetuity, of a high level of annual or regular periodic output of renewable resources consistent with multiple use.

Threatened Species – Any species that is likely to become endangered within the foreseeable future throughout all or a significant portion of its range.

Township and Range – The terms Township and Range are used to describe the horizontal and vertical coordinates of a Township unit. Townships are north and south of a baseline; Ranges are east and west of a meridian line. A Township consists of 36

numbered sections, encompassing approximately 36 square miles.

Transmountain water – Water that is brought by pipeline, ditch, or tunnel from one side of the Continental Divide to the other.

T.U. – Trout Unlimited.

Used to Extinction – Using water until it is all used up.

USFS – U.S. Department of Agriculture, Forest Service.

Viewshed – The combination of foreground, middle ground and background elements that make up an aesthetically pleasing panorama.

Visual Resource – The land, water, vegetation, animal and other features that are visible on all lands.

VQO – Visual Quality Objectives, standards for evaluating and preserving scenic resources.

Watershed – The region draining into a river, river system, or other body of water.

Wetland – Permanently wet or intermittently flooded areas where the water table is at, near, or above the soil surface for extended intervals, where hydric wet soil conditions are normally exhibited and where water depths generally do not exceed two meters.

Wilderness – Wild lands federally designated as Wilderness Areas through the RAREII process.

Chapter 5 Accomplishments

1.5 Selected Accomplishments

Collaborative and cooperative efforts of the LCOSI Partnership have effected significant change in the Upper Arkansas River Basin since its inception in 1997. Selected examples include:

A) Existing Condition: 1997

- The Arkansas River was referred to as an “industrial sewer” as a result of acid mine drainage and heavy metals contamination in its floodplain and on its irrigated meadows, the result of 19th century mining practices in the Leadville Mining District;
- Although the mountains surrounding Lake County are the headwaters of the Arkansas River, and the County is the northern most reach of the State designated Arkansas Headwaters Recreation Area, there were almost no public recreational access portals or developed services along the river corridor;
- In the absence of active cultural and historic resource stewardship, the iconic Hayden and Derry Ranches, located along the Top of the Rockies National Scenic and Historic Byway, were literally falling into the ground;
- For all the water physically available in the snowpack, lakes, rivers, and streams of Lake County, the County had no legal water or storage rights to support sustainable growth outside the Parkville Water District;
- Single pasture livestock grazing on the Hayden Ranch left little forage to support winter wildlife range;
- There was virtually no dedicated Open Space in Lake County;
- There was no plan in place to promote land tenure adjustments to secure conservation ownership, protection, restoration, or management of critical lowland riparian habitats, wetlands, tributary streams, or floodplains along the Arkansas River corridor;
- There was no conservation advocacy group supporting public outreach and education on issues related to watershed health as an integral component of community sustainability;
- Lake County’s Historic ranches were ripe for low density rural development that typically costs more in community services than they generate in property taxes, obscure iconic viewsheds, and disrupt wildlife movement.

B) Current Condition: 2019

- The Arkansas River through the Open Space, and its adjacent floodplain, have been remediated and its fishery habitat enhanced to the point where it is now classified as “Gold Medal Waters”, and is one of the State’s most popular fisheries;
- Meadows within the Open Space, once contaminated by heavy metals historically carried onto the land by irrigation water, have been remediated and returned to productive use for livestock grazing and wildlife winter range;
- Approximately 10-miles of the Arkansas River in Lake County has now been opened to public recreational access for fishing, hunting, wildlife viewing, hiking and other non-motorized uses;
- Management of the Arkansas Headwaters Recreation Area now extends into Lake County;
- Developed recreation sites now include over 5-miles of ADA accessible bicycle/pedestrian trails, CXT restrooms, trailhead parking, and informational/interpretive signage providing services and public river access at portals to the Open Space;
- LCOSI partners secured grant funding for a Historic Ranch Survey and Engineering Analysis on the Hayden Ranch, placed it under a Historic Conservation Easement, submitted a successful application to designate it as a National Historic Landmark District, supported its conversion to an off-campus lab for Colorado Mountain College, selected it as the site for construction of the Rocky Mountain Fen Research Project, and provided match funding and support for over \$700,00.00 in stabilization work to preserve its iconic “place” in Lake County’s history;
- The Historic Ranch Survey and Engineering Analysis determined that the Derry Ranch had deteriorated beyond a point that would justify its stabilization or rehabilitation. The Derry Mining Camp was successfully listed on the State and National Registry of Historic Places, and an Historic American Building Survey (HABS) was initiated to preserve the archival images, scaled architectural drawings, and historic context narrative of the site in the Library of Congress;
- Rotational grazing and active range management now leave approximately 65% of the forage in place following the grazing season to support wildlife winter range, and wildlife use has increased;
- Working with its Partners, LCOSI co-sponsored the Water Aware series to educate the public on issues including water law, ownership, distribution, and the necessity of securing County water and storage rights to support sustainable growth;

- LCOSI Partners planned, raised the funding, constructed, and donated the Hayden Meadows Reservoir and Recreation Area to Lake County to provide a 50-acre-foot storage vessel to support current and future community water needs;
- Working collaboratively with LCOSI Partners, Lake County now has decreed water and storage rights (98CW173 and 11CW86 Decrees), a blanket water augmentation plan, and a water enterprise allowing for the acquisition, storage, and distribution of water to support current and future community needs;
- There are now almost 10,000 acres of dedicated Open Space in Lake County, managed by various local, state, and federal entities under the consensus-based management direction provided in the Lake County Open Space Initiative Ecosystem Management Plan;
- The Ecosystem Management Plan identifies and prioritizes the acquisition and protection of lowland riparian habitats, exhibiting higher natural resource than development values, to help balance watershed health and community development opportunities.
- In 2009 LCOSI was successful in securing \$1.8 million funding from the Upper Arkansas River Natural Resource Damage Assessment and Restoration Trustees, to support the public process of identifying, prioritizing and securing fee simple acquisitions and conservation easements on an additional 550+ acres of critical habitat along the East Fork and main stem of the Arkansas River.
- LCOSI has provided public outreach, education programs, and field trips to identify and address conservation issues ranging from invasive aquatic and terrestrial species, to river restoration techniques, ranching heritage, water conservation and management, fen wetland restoration, and in-situ treatment of acid mine drainage at damaged sites.
- Ranch lands secured for dedication as open space are: generating more in PILT payments to the County than they previously contributed in property taxes, with less demand for services; provide a location for the production of the state's food supply; are used to generate alternative energy and promote recycling; provide for structural and wildfire protection services; and add significantly to the outdoor recreation and historic tourism portfolio of the community.

C) Recognition

The collaborative efforts of LCOSI, its contributing partners and individual members have been recognized through the presentation of state, regional, and national awards, including, but not limited to:

- State of Colorado
 - § *2017 Governor’s Award for 20 Years of Saving Place in Lake County;*
- History Colorado
 - § *Stephen H. Hart Award for “Historic Preservation, 2017;*
- The U.S. Forest Service
 - § *Regional Forester’s Honor Award;*
- The U.S. EPA
 - § *Region 8 Excellence in Site Reuse Award;*
- Arkansas Basin Watershed Forum
 - § *Bob Appel: Friend of the Arkansas Award;*
- Colorado Parks and Wildlife
 - § *Partner of the Year Award, Southeast Region;*
 - § *Certificate of Appreciation, 2014;*
- Colorado Mountain College
 - § *Excellence in Education Award;*
 - § *Friend of Colorado Mountain College Award;*
- The Land Trust of the Upper Arkansas (Central Colorado Conservancy)
 - § *Conservation Award;*
 - § *Certificate of Appreciation*
- The Trust for Public Lands
 - § *Certificate of Appreciation.*

LCOSI honors individuals and organizations for exemplary leadership in conservation through presentation of its *Innovative Leadership*, and *River Warrior’s Awards*, and the annual *Doc Smith, Leaders in Conservation Award*.