

Chapter 5

Environmental Sustainability

Salida's identity can be characterized by the incredible natural landscape and the outdoor recreational opportunities that surround the city. It is bordered on all sides by majestic mountain ranges and the historic downtown is situated on the banks of the Arkansas River. The South Arkansas River runs parallel to Highway 50 on the south end of Salida until its confluence with the main stem of the Arkansas River just east of the city.

Waters from these rivers irrigate ranch lands that dot the landscape throughout the region. These lands help maintain the gorgeous views that lead into the city from all directions and are an integral part of the economy in Chaffee County. The Arkansas River is also a destination for white water enthusiasts and fisherman alike.

The views from the city are dominated by incredible mountain ranges that are used by locals and tourists for all forms of recreation including skiing, biking, hiking, fishing, hunting and much more. Much of the land in these mountain ranges is publicly owned and



Mt. Shavano. Photo Courtesy of Alan Robinson

therefore has been used to the benefit of the public since Salida's early days. However, the valley foreground is generally privately owned.

The climate in Salida is temperate, often dubbed as the "banana belt," this area receives over 300 days of sunshine a year and receives approximately 10 inches of precipitation annually.¹

The identity and sense of community derived from the use and enjoyment of these resources will be the focus of this chapter. As growth in the region puts pressure on resources such as water, clean air and wildlife habitat, it will be important to focus efforts toward identifying such resources and creating solutions for maintaining them for this generation as well as those yet to come.

Regional Context

Salida is situated in the upper Arkansas River basin, on the east side of the Continental Divide, which drains large volumes of winter snow melt from the surrounding mountain ranges. This water drains to the east and south where it eventually flows into Kansas. The headwaters of the Arkansas River are near Leadville, north of Salida by approximately 60 miles. The Arkansas River is spatially the largest river basin in Colorado, covering 27 percent of the surface area and draining approximately one-quarter of the state.²

Much of the land surrounding Salida is either state or federal land which represents approximately 80 percent of the land ownership in Chaffee County. The surrounding mountain ranges are largely managed by the federal government, particularly by the Forest Service with smaller pockets under the jurisdiction of the Bureau of Land Management (BLM). The State of Colorado owns and manages several in-holdings of State Trust land throughout the county.

1. Watts, K.R., 2005, Hydrogeology and quality of ground water in the upper Arkansas River Basin from Buena Vista to Salida, Colorado, 2000-2003: U.S. Geological Survey Scientific Investigations Report 2005-5179, p. 2

2. Colorado Water Conservation Board, 2006, Statewide Water Supply Initiative Fact Sheet: accessed April 23, 2009, at URL <http://cwcbweblink.state.co.us>

The Sawatch Range, to the northwest of the city is best characterized by its 14,000 foot peaks. There are 15 of these “14ers” in the Sawatch Range. South of the city is the Sangre de Cristo Range. Salida is at the northern reach of the Sangre de Cristo’s which extend south from here into New Mexico. These mountains, like the Sawatch, can also be characterized by their tall snow capped peaks, reaching heights of 14,000 feet. North of the city is the Mosquito Range which is not as tall as the other two ranges but offers great recreation opportunities and interesting visual character to the Arkansas Valley.

Several wilderness areas are contained within the surrounding ranges and are under the management of the National Forest Service. Some of these include the Sangre de Cristo Wilderness, Collegiate Peaks Wilderness and Buffalo Peaks Wilderness.



Fishing on the Arkansas River.
Photo Courtesy of Alan Robinson

Several regional trail systems exist within the surrounding mountains including the Salida Mountain Trails, Rainbow Trail, Colorado Trail and Continental Divide Trail. These trails can be accessed easily from Salida and in some cases via local trail networks.



Night skies in Salida

Visual Resources

As described in the previous section, the mountains surrounding Salida are a significant part of the visual resources in the area. The views of Methodist Mountain, Tenderfoot Mountain and Mt. Shavano are among the most recognizable local features. In addition, the Arkansas River corridor and adjacent irrigated pasture lands form world class views all along the Arkansas River valley. The thin dry air in the valley punctuates these views with great clarity making them even more dramatic.

The nighttime skies in and around the city have been reasonably well preserved by local lighting restrictions and the undeveloped open spaces. It will be important to work with other local jurisdictions to align these values to maintain the integrity of the nighttime sky as growth occurs.

Climate

Salida’s climate is mild and temperate, with summertime highs ranging from about 77 to 84° F and winter highs ranging from 40 to 52° F, with lows in the teens. There is little humidity in this semiarid region, resulting in very comfortable conditions throughout much of the year. Salida receives only about 10 inches of precipitation annually while the surrounding mountains may receive up to 30 – 40 inches of precipitation annually, mostly in the form of snow.³

3. Watts, K.R., 2005, Hydrogeology and quality of ground water in the upper Arkansas River Basin from Buena Vista to Salida, Colorado, 2000-2003: U.S. Geological Survey Scientific Investigations Report 2005-5179, p. 2

The dry conditions in the city allow locals to hike and bike most of the winter and ski in fresh, deep snow just a short ride away at Monarch Mountain Ski Resort. It is not out of the ordinary for people to do any combination of snow sports and dry land sport activities in the same day.

These conditions may be changing however as research shows that the climate in Colorado has increased approximately 2° F since 1977. Climate models project that this trend will continue and warming in the state will increase another 2.5° F by 2025 and 4° F by 2050. The models also indicate that summers will warm more than winters but the winter snow pack will continue to decline, most notably below 8,200 feet in elevation. The snow pack above this elevation (8,200 feet) is expected to decline 10 – 20 % by 2050.⁴

The implications for these weather changes will have far reaching affects for the residents of Salida. These could include economic, environmental and social effects. Examples include increased water requirements for agriculture, increasing frequency of forest fires, forest devastation from pine beetle disease, complications in the administration of water rights due to earlier runoff, degraded water quality, shifting of mountain habitat toward higher elevation, changes to riparian habitats and fisheries, affects to water and snow based recreation and groundwater availability.⁵

It is not too late to get involved in a solution, several of which have been suggested, that can be actively promoted by the community as well as local governments. Some of these could include adopting regulations to promote and build infrastructure for alternate modes of transportation and encouraging new development to be compact, accessible to the alternative transportation infrastructure and within close proximity to city services.

4. Colorado Water Conservation Board, 2006, Climate Change in Colorado: accessed April 27, 2009, at URL <http://cwcbweblink.state.co.us>

5. Colorado Water Conservation Board, 2006, Climate Change in Colorado: accessed April 27, 2009, at URL <http://cwcbweblink.state.co.us>

Water

Water resources in the Arkansas River valley are highly sought after and have been the subject of controversy for well over a century. While it may seem there is plenty of water flowing in the Arkansas and South Arkansas Rivers to support all the municipal, recreational and agricultural demands, every last drop is owned and has a destination. Water rights in Colorado and much of the arid west are based on a system known as Prior Appropriation which is often described as “first in time, first in right.” This system of allocation sets controls on who uses how much water, the types of uses allowed and when that water can be used. An appropriation is made when a person physically takes water from a water source like a river or aquifer and uses a quantity of that water for beneficial use. The first person to appropriate the water and use it for a beneficial use has the first (senior) right. Those that come after and appropriate water, hold rights that are junior to their predecessor but senior to their successors.⁶

Salida has secured several water rights in its portfolio that come from the South Arkansas River, Pasquale Springs and the South Arkansas Gallery System (Galleries). Some of the water resources are still in agricultural uses and would need a decree from water court for municipal use. This can be a costly and lengthy process which should be done well in advance of the city’s need to use the water.

In 2004, Chaffee County was successful in getting a decreed water right, called a recreational in-channel diversion (“RICD”), which is a court decreed water right to maintain water levels in the Arkansas River in specific locations for boating and related recreational uses. Salida has two diversion structures adjacent to its downtown in the Arkansas River that are the subject of the RICD. This guarantees a certain amount of water to be delivered to those diversion structures during certain times of year.⁷ Salida’s is set up to coincide with its big summer whitewater event, FIBArk.

6. Watts, K.R., 2005, Hydrogeology and quality of ground water in the upper Arkansas River Basin from Buena Vista to Salida, Colorado, 2000-2003: U.S. Geological Survey Scientific Investigations Report 2005-5179, p. 4

7. Colorado Water Conservation Board, 2006, Decreed RICD Applications: accessed April 27, 2009, at URL <http://cwcb.state.co.us>

This event is an important economic and social event for the community and this water right will ensure that water is available each year to hold this event.

Water quality for water delivered to Salida residents is routinely tested in accordance with state standards. There is some concern with a few of the city's water sources that contamination could become a problem. Likely sources of contamination include up gradient development as well as agricultural runoff (non-point source) that would affect the Harrington ditch.⁸ This could limit the water resources available to the City if contaminant levels exceeded their ability to safely treat and deliver the water to City residents.

Air

The air quality in the city is generally excellent with some affects from wood burning, car and truck traffic and construction activities. The State of Colorado did not have any information on air quality for this area, which generally speaks to their lack of concern for air quality issues.

The Arkansas valley does experience cold air inversions in the winter months where colder air will move along the Arkansas River corridor and carry pollutants which can degrade the air quality. Other effects to the air quality may come from distant sources such as forest fires or dust storms but these events are typically gone within a few days.

Noise

Noise effects from Harriet Alexander Field (airport), construction activities, Highway traffic, freight transportation and industrial uses are currently moderate within the city. As growth continues within the city and at its borders, this will become more of a concern. There are several strategies that can be put into place by the city to help avoid degrading the quiet enjoyment of one's property. One such strategy is the separation of residential uses from industrial uses. Another is the physical buffering of residential uses from commercial and industrial uses. Also limiting the hours of operation for industrial uses and or construction activities will reduce noise impacts.

8. City of Salida, 2009, City of Salida Water Conservation Plan: accessed April 28, 2009, at URL [http:// www.cityofsalida.com/pdfs/WCPdraftvpubliccomment.pdf](http://www.cityofsalida.com/pdfs/WCPdraftvpubliccomment.pdf)

Greater noise impacts may be noticeable if airport traffic increases. Further, as development occurs closer to the airport or along established flight paths this will also increase the impacts from noise to those properties. It will be important to include specific plat notes that identify these impacts if developments do encroach in the airport influence areas.

Vegetation

The Arkansas valley can be described as a semiarid environment. This type of environment will produce vegetation that requires low amounts of precipitation to survive. The riparian areas along the Arkansas and South Arkansas Rivers will host plant species that are more water dependent. It is typically along these riparian areas that the irrigated crop lands exist.

The general region around Salida has a varied vegetative regime because of the elevation differences. In general, the area is dominated by piñon and juniper and ponderosa pine but aspen, lodgepole pine, spruces and firs are also present at higher elevations. Many grasses, forbs and shrubs are can also be found. Grasses include Arizona fescue, mountain muhly, needle and thread, junegrass, blue grama and sand dropseed, western wheat, Indian rice grass and hairy grama. Forbs include lupine, pingue, hymenopappus, scarlet globe mallow, allium and annual forbs. Shrubs include mountain mahogany, oakbrush, winterfat, rabbitbrush, saltbrush, green sage and fringed sage.



Aspens on Monarch Pass Photo Courtesy of Kevin Hoffman

Invasive species have become a concern, especially in disturbed areas where new development is occurring. These invasive plants are carried into the disturbed areas by vehicles, wildlife and natural conditions such as wind. Proper management can prevent many of these species from becoming established. Reseeding areas that have been disturbed with native grasses can help eliminate the spread of these species.

Salida has made efforts to enhance the urban forest by mandating landscape plans for new development. Trees were planted in the historic downtown and in other public spaces which have developed into an impressive inventory which greatly enhances the urban forest. Efforts should continue so when the older trees die they are replaced by new trees. These will provide shade and help absorb carbon dioxide.⁹ The shade will also help prevent the absorption of heat into the paved surfaces, keeping the city cooler during the summer months.

Fish and Wildlife

The Arkansas River is increasingly an important fishery in the state. It is a destination for many anglers trying their luck on its swift waters to land a prize fish. The sport fish present in the river are brown and rainbow trout and the occasional Snake River cutthroat. The native greenback cutthroat is federally listed as threatened and according to local fishing experts, is not present in the waters of the Arkansas River near Salida.

Terrestrial wildlife species are valued resources for maintaining the ecological stability and diversity of both the watershed and adjacent uplands. These species range from amphibians and reptiles to birds and mammals. The riparian habitat contains the most species diversity and is the most significant to their survival. Degradation of this habitat from encroaching development is the biggest threat to wildlife in the area.¹⁰

9. Colorado State Parks, 2008, Arkansas River Recreation Management Plan: accessed April 29, 2009, at URL [http:// www.parks.state.co.us](http://www.parks.state.co.us)

10. Colorado State Parks, 2008, Arkansas River Recreation Management Plan: accessed April 29, 2009, at URL [http:// www.parks.state.co.us](http://www.parks.state.co.us)

Some examples of species that can be found are big horn sheep, mountain lion, rattlesnakes, mule deer, bear, coyote, migratory birds, water fowl and raptors.



Bighorn Sheep. Photo Courtesy of Kevin Hoffman

Sensitive Lands

Floodplains, wetlands and riparian corridors are rare and valuable resources in the Arkansas River valley. Salida is fortunate to have such a unique asset in the Arkansas and South Arkansas Rivers and their associated habitats. These resources have been greatly modified however, starting with the settlement of the valley in the mid to late 19th Century to today with urbanization encroaching into these desirable environments. Effects from road, railway, dam construction, irrigation, conversion of land to agriculture and urban development have all contributed to the depletion of these resources. According to the Arkansas River Recreation Management Plan, much of the alteration has occurred as a result of the following:

- Vegetation Manipulation - land uses such as grazing, introduction/invasion of exotic vegetation and OHV traffic change the vegetation present.
- Watershed Alteration - road construction, logging and grazing affect infiltration rates changing runoff, sediment supply and water quality.
- Direct Modification - channelization of streams, draining or filling of wetlands and conver-

sion of land to other uses reduces wetland areas.

- Hydrologic Alteration - water diversions, water importations and dam construction have changed the seasonal pattern and quantities available to wetland areas.

The riparian and wetland resources in the vicinity of Salida are confined naturally by the rock formations that create the relatively narrow river channel. This channelization has been exaggerated by the roadway, residential/commercial development and railroad construction that exist at the banks of the rivers. Despite these encroachments, several riparian species are well established along the corridors. These include grasses, sedges, rushes, willows, alders, birch and cottonwood.¹¹

The riparian vegetation along the Arkansas River is typically limited with respect to acres per mile as compared to other river systems.¹² Some of this is due to the channelized nature of the river and the tendency at higher flows to scour sediment deposits and vegetation that would normally establish a more predominant riparian and wetland substrate.

City Government

Local governments have an opportunity to lead by example and create regulations that will have long term positive effects on the environment. Several initiatives exist that would set the city in a direction of becoming more environmentally sustainable. One example is the US Mayors Climate Protection Agreement. Other examples could include Built Green or LEED certified construction for new government buildings or incentives for private industry to build to these standards.

In May, 2010 Salida adopted “[energynow](#) - Chaffee County’s Energy Efficiency and Conservation Strategy”. All of the municipalities and the County government have adopted this strategic plan. With support

from the Governor’s Energy Office, Chaffee County has hired a coordinator to assist with implementation of the plan.

11. Colorado State Parks, 2008, Arkansas River Recreation Management Plan: accessed April 29, 2009, at URL [http:// www.parks.state.co.us](http://www.parks.state.co.us)

12. Colorado State Parks, 2008, Arkansas River Recreation Management Plan: accessed April 29, 2009, at URL <http:// www.parks.state.co.us>

Principles/Policies/Action Items

Principle ES-I. Visual Resources

Identify, preserve and enhance existing visual resources that are of value to the community.

Policy ES-I. 1 – Development and/or expansion of existing development should not encroach on important visual resources.

Action ES-I. 1.a. – Engage the public to develop a visual resources map.

Action ES-I. 1.b. – Work with Chaffee County to develop an intergovernmental agreement to prevent hillside development in areas adjacent to the city that would detract from identified visual resources.

Action ES-I. 1.c. – Amend Salida’s Land Use Code to locate construction or development activities to avoid detracting from valued visual corridors and resources as seen from the public right-of-way.

Action ES-I. 1.d. – Obtain private in holdings adjacent to the railroad corridor northeast of the Arkansas River.



Rural lands around Salida.
Photo Courtesy of Kevin Hoffman

Policy ES-I. 2 – Protect the ability to view the night sky through limiting light pollution, glare and light trespass.

Action ES-I.2.a – Continue to promote and enforce Dark Sky standards for new construction projects.

Principle ES-II. Climate

Identify and promote measures to reduce emissions of climate changing greenhouse gases.

Policy ES-II. 1 – Climate change prevention measures will be identified and implemented through amendments to existing building and land use codes.

Action ES-II. 1.a. – Sign and actively support the U.S. Mayors Climate Protection Agreement.

Action ES-II. 1.b. – Educate the public through public meetings, school seminars and city website on the local effects of global warming and ways to help reduce global warming pollution.

Action ES-II. 1.c. – Lead by example through city policies for fuel efficient fleet vehicles, building to LEED or Built Green standards on all new construction and renovations, purchase only Energy Star equipment for city use.

Action ES-II. 1.d. – Join state or regional groups that focus on what smaller communities can do to

slow global warming. The Rocky Mountain Climate Organization has set up the Colorado Climate Network that will help with solutions such as grant opportunities and education for communities.

Action ES-II. 1.e. – Adopt and enforce land-use policies that promote compact communities with access to services and alternate transportation networks. This should include amendments to the building code to improve energy efficiency.

Action ES-II. 1.f. – Evaluate land-use policies and make amendments where limitations exist that prevent alternative energy resources.

Action ES-II.1.e – Implement the adopted energynow plan.

Principle ES-III. Water

Preserve and enhance Salida’s water quality and supply.

Policy ES-III. 1 – Continue to actively protect and preserve groundwater and surface water resources.



Mirkwood Bowl. Photo Courtesy of Kevin Hoffman

Action ES-III. 1.a. – Require drainage/grading plans for new or expanded development to reduce non point and point source pollution. Also encourage use of natural run-off filtration such as bio-swales, pervious pavement, etc. for on-site retention.

Action ES-III. 1.b. – Enforce the watershed protection district that would regulate ISDS systems in upstream development and locate development to avoid contamination of surface and ground water. Also educate people of the effects of recreation and other uses that could be detrimental to the watershed.

Action ES-III. 1.c. – Increase drainage design requirement from 25-year to 100-year storm event.

Policy ES-III. 2 – Promote and enhance water conservation methods.

Action ES-III. 2.a. – Educate the public on water conservation strategies and effects of excessive water consumption in an arid environment.

Principle ES-IV. Air

Maintain and enhance the air quality in the City by providing ways for residents, the construction industry and city departments to make adjustments to their transportation, construction methods and heating needs.

Policy ES-IV. 1 – Cooperate with local groups and governments to implement strategies for reducing greenhouse gas emissions.

Action ES-IV.1.a – Require the installation of alternatives to wood burning stoves and create requirements that wood burning devices be high-efficiency and low emissions.

Action ES-IV.1.b. – Actively monitor possible violations of air quality permits issued through the Colorado Department of Public Health and Environment for construction and industrial activities.

Action ES-IV.1.c. – Incentivize use of alternative transportation by easing parking requirements for commercial uses in exchange for installation of bike racks or connections to alternative transportation network. Alternatively, a fund could be set up to pay a cash-in-lieu fee for parking space reduction that would be used for alternative transportation network.

Principle ES-V. Noise

Preserve, enhance and promote quiet noise levels in and adjacent to the city to allow for quiet enjoyment of property and community places.

Policy ES-V.1 – Enforceable and measurable noise standards should be implemented in cooperation with local and regional government agencies.

Action ES-V.1.a. – Amend land use requirements to mandate the installation of physical buffering such as berming, fencing, planting or a combination thereof between residential and commercial/industrial uses.

Action ES-V.1.b. – Encourage new construction to implement site design strategies that will reduce noise from adjacent uses by installing landscaping and buffers that will also enhance the quality of the design.

Action ES-V.1.c. – Work with Chaffee County and CDOT to mandate installation of noise buffering on all highway improvements and non-residential developments adjacent to the city’s residential areas.

Action ES-V.1.d. – Enforce current noise ordinance and amend, if needed, to prohibit use of engine (“jake”) brake for heavy trucks within the city limits.

Principle ES-VI. Vegetation

Protect and enhance native vegetation and the urban forest while working to prevent the spread of non-native invasive plant species.

Policy ES-VI.1 – Implement management strategies for non-native invasive plant species and protect existing landscaping and native species.

Action ES-VI.1.a. – Manage city right of ways and work with other public agencies to do the same to prevent seeding of invasive plants.

Action ES-VI.1.b. – Mandate reseeding with native grasses and plants of disturbed areas as part of a landscaping plan or condition of building permit.

Action ES-VI.1.c. – Educate city staff and residents on ways to recognize and prevent the spread of invasive species.

Policy ES-VI.2 – Encourage expansion of the urban forest.

Action ES-VI.2.a. – Maintain the adopt-a-tree program on city rights of way adjacent to existing resi-

dential and commercial uses with a condition that the trees be maintained by the property owner.

Action ES-VI.2.b. – Actively prune and replace dead or diseased trees in public right of way and in city parks and public spaces.

Action Item ES-VI.2.c. – Promote the use of xeric plantings for mandatory landscape plans associated with new development.



Swans near Frantz Lake.
Photo Courtesy of Alan Robinson

Action Item ES-VI.2.d. – Manage the urban forest with a permit system that mandates proper pruning techniques and replacement (one for one) of trees when removal is necessary.

Action ES-VI.2.e. – Amend the land use code so new development shall be required to replace all trees removed during preparation of land in addition to required street trees.

Principle ES-VII. Fish & Wildlife

Maintain and improve habitat for fish and wildlife species.

Policy ES-VII.1 – Work with local, state and federal agencies to provide strategies for minimizing negative affects to critical wildlife habitat.

Principle ES-VIII. Sensitive Lands

Protect, maintain and enhance sensitive lands for the enjoyment of the community and to benefit the environment while providing an opportunity for educating the public on the importance of habitat preservation.

Policy ES-VIII.1 – The Arkansas and South Arkansas Rivers should be viewed as an asset and opportunity to demonstrate techniques for sustainable building practices in a sensitive environment.

Action ES-VIII.1.a. – City will actively seek access rights along river corridors and create trails and maintain habitat.

Policy ES-VIII.2 – Sensitive lands within the municipal planning area should be protected.

Action ES-VIII.2.a. – Work with FEMA to update floodplain mapping.

Action ES-VIII.2.b – Work with the county to align strategies for development near sensitive lands in the 3 mile planning area.

Action ES-VIII.2.c. – Amend land use requirements to include a mandatory setback from identified sensitive lands including river corridors and prohibit most building and fill in flood plains.

Principle ES-IX. City Government

The city will be a leader in employing sustainable building practices, improved energy efficiency and other strategies for reducing greenhouse gas emissions and improving environmental quality.

Policy ES-IX.1 – Provide strategies for reducing vehicle emissions, energy efficient building practices, reducing water consumption, improving water quality, improving air quality and improving recycling programs.

Action ES-IX.1.a. – Plant xeric landscaping in public places, where appropriate.

Action ES-IX.1.b. – Explore possibility of gray water system or non-treated supplies for irrigation of public spaces.

Action ES-IX.1.c. – Replace lighting in city owned buildings with energy efficient bulbs.

Action ES-IX.1.d. – Look at strategies for improving energy efficiency with treatment and delivery of water and wastewater.

Action ES-IX.1.e. – Use Built Green or LEED certified building practices for renovations and new construction of government owned buildings.

Action ES-IX.1.f. – Promote recycling through provision of bins in downtown and public parks.

Action ES-IX.1.g. – Reduce waste generation and encourage landfill diversion practices such as composting and recycling.

Action ES-IX.1.h. – Promote Dark Sky standards by installing and/or retrofitting lighting in the downtown to have fully cut off lighting.

Action ES-IX.1.i- Review internal practices with the goal of reducing environmental impact of government operations such as paper reduction, recycling, reuse, etc.