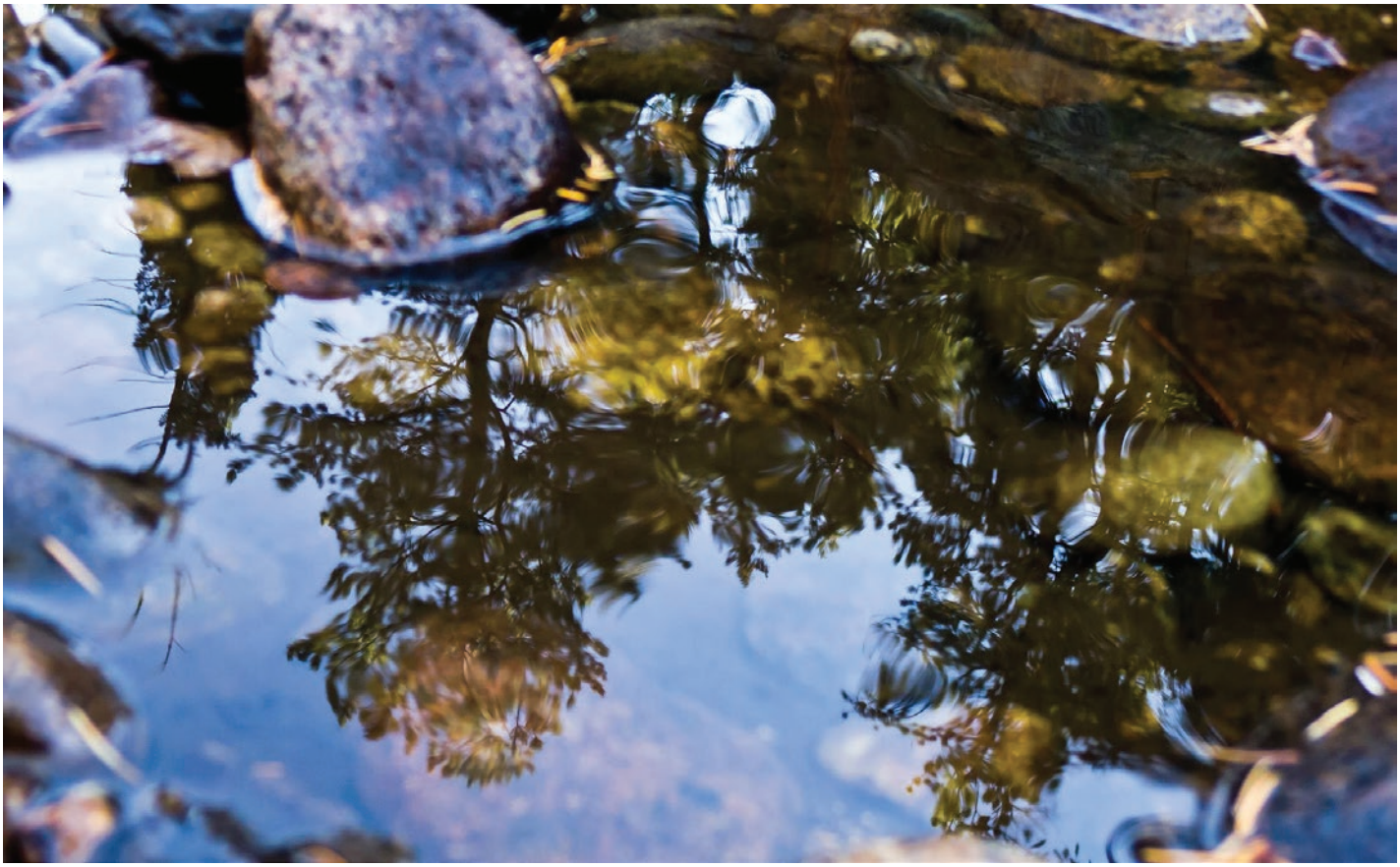


SUSTAINABLE RIVER CORRIDOR ACTION PLAN

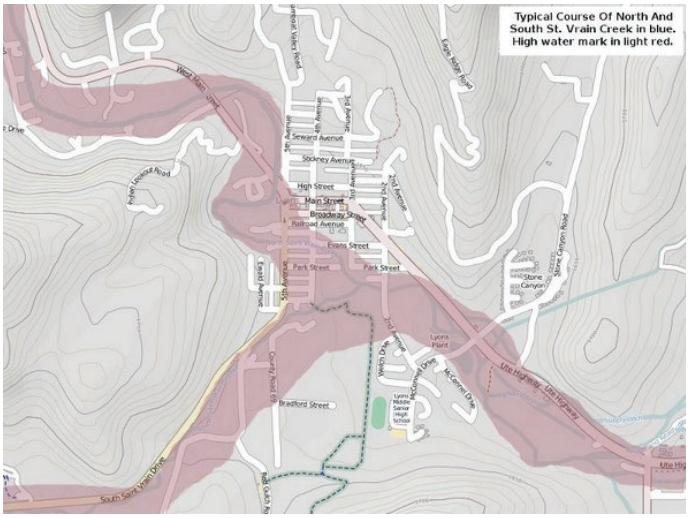
For the Town of Lyons, Colorado

Prepared by the Town of Lyons Ecology Board 2014

Contents

BACKGROUND

The Town of Lyons recognizes the vitality of the St. Vrain River and its benefits for citizens and natural wildlife and vegetation communities. The river is an important feature of the town with many intrinsic values and natural functions. St. Vrain River provides natural storm mitigation and flood control as well as vegetation to support aquatic and terrestrial biodiversity, water filtration, and sediment control. The St. Vrain River also serves as the water supply for local agriculture and has become a defining natural resource valued by our residents and visitors who gather at its shore to play. Activities including kayaking, fishing, jogging, walking, birding, tubing, paddle-boarding, and simple relaxation; all popular pastimes that bring important revenue from visitors and improve the quality of life for residents.



"It is our vision to not simply return the St. Vrain River to its pre-flood state, but to also enhance the functionality of the river and riparian areas to maximize the recreational, ecological, and economic values."

It is our vision to not simply return the St. Vrain River to its pre-flood state, but to also enhance the functionality of the river and riparian areas to maximize the recreational, ecological, and economic values. This is a long-term plan based on sustainability principals to provide an adaptable and resilient river corridor.

Lyons economy is directly linked to the St. Vrain River. Most notably it is an attraction, bringing in day-trip tourists and supporting regional events, like the Lyon's Outdoor Games. This outside revenue is critical for local businesses and for maintaining the parks. Although not easy to quantify, the river also makes Lyons a desirable place to live by providing a number of non-market values, including wildlife habitat, quiet space, connections with nature, and other quality of life amenities.

Cities most prepared for the impacts of climate change are those cities that are strategically assessing and implementing sustainability principals. Prudent preparation for patterns of greater weather variability should not only include the norms of snow, rain, wind, and drought, but should also consider adaptive strategies for 100-year and 500-year floods as extreme weather events are generally predicted to increase.

The 2013 flood provided Lyons a firsthand account of the damages that will persist as a threat to our town unless we seize this disaster and transform it into an opportunity for smart growth. As humans, our coping skills enable us to forget pain quickly. With the ache of loss so fresh, and a recent dose of the damage natural river processes can take, Lyons is in a position to consider alterations to our existing development structure so that we may save future generations from this level of catastrophic damage and heartache.

The Sustainable River Corridor Action Plan provides a vision for sustainably rebuilding the Lyons river corridor. The Action Plan incorporates the Guiding Principles and the Sustainable Design and Development Principals documented in the Town of Lyons Comprehensive Plan (2010). While this Action Plan is in reaction to the floods, it also serves as a proactive foundation for developing a St. Vrain River Corridor Master Plan as called for in the Comprehensive Plan. Under Economic Development Strategy 2.2.4, a master plan for the river corridor should be devised to "make the river more visible and connected to key local and regional destinations and leverage development opportunities along the river; improve recreational opportunities; maintain the health of the riparian corridor and enhance wildlife habitat; and achieve sustainability goals."

In developing this document, the Lyons Ecology Board has engaged with multiple stakeholders and user groups including engineers, the fishing community, the kayaking community, river edge residents, engineers, biologists, Parks & Recreation, volunteer mobilizers, community groups, and local government representatives. It has become clearer than ever that the value of the St. Vrain River to our community extends into the very definition of our culture and identity and is an important factor in determining our quality of life and pursuit of happiness.

GOAL 1

Enhance the flood mitigation potential of the North and South Fork of the St. Vrain River and riparian areas in Lyons.

Over time, the St. Vrain River has been channelized from its original windy character to a more narrow and straight course. While these changes have simplified development, the loss of natural channelization allows the St. Vrain River to hold less water. The St. Vrain River also naturally floods during times of large rain events and during the spring snow melt. This variable flow regime has enabled homes and other buildings to encroach in the natural flood plain area. In densely populated areas, rivers sometimes become deeply channeled and lined with cement void of natural wildlife, swimming areas, and beauty. Luckily, more natural methods of river restoration and "green" environmental engineering techniques have been proven successful in enhancing the flood mitigation potential of rivers while also encouraging ecological health. Adaptive strategies to enhance the flood mitigation potential of the St. Vrain will need to provide for storm events beyond what we regularly experience and should account for a minimum amount of water equal to the 500 year flood. There is no denying that protecting homes and businesses from future flood damage is a high priority issue for the Town of Lyons. The structure of the river corridor greatly impacts this potential and the following objectives and strategies can help balance the many values of the St. Vrain.

Objective 1: Minimize channelization of river.

STRATEGY 1A Minimize slope of river banks. Steep slopes are prone to erosion and therefore pose a threat to all nearby land users, increase sedimentation harming the ecology of the river (in particular fish), and decrease water quality, directly impacting farmers and downstream communities.

STRATEGY 1B Maintain post-flood course where possible and allow for a natural winding channel.

STRATEGY 1C Maintain post-flood sandbars where possible and encourage revegetation of sandbar species*.

STRATEGY 1D Refrain from using concrete enforced slopes and dredging the river to unnatural depths.

Objective 2: Designate areas for permanent and temporary (ephemeral) wetlands.

STRATEGY 2A Promote permanent or temporary (ephemeral) wetlands to provide for additional flood water storage and include floral species that are tolerant to such fluctuation.

STRATEGY 2B Though no longer existent, the Lyons Valley Parkway ponds at the intersection of 36 and McConnell Drive have been selected as a potential site for wetland development.

STRATEGY 2C Wetland areas can serve as an additional resource as an educational outdoor lab for local schools and should include interpretive signs to attract and educate visitors.

STRATEGY 2D Wetlands generally provide habitat for a high diversity of species and can be managed to encourage local populations of birds, amphibians, fish, reptiles, and small mammals.

Objective 3: Re-establish intentional flood plain area to allow for overflow from river channel during flood events.

STRATEGY 3A Rebuild riverside multi-use pathways and trails to intentionally accept flood overflow from St. Vrain River.

STRATEGY 3B Extend and maximize naturalized buffers on all sides of St. Vrain River. The pre-flood buffer is inadequate to protect structures from regularly occurring floods.

STRATEGY 3C While recreational areas and trail systems can and should exist within this buffer, all residential and commercial building should be excluded.

STRATEGY 3D Naturalized buffer should include a heterogeneous mixture of native riparian species with

areas of dense vegetation.

STRATEGY 3E All buffer areas should be under the management of the city of Lyons which may require conservation easements or other land agreements.

Objective 4: Coordinate restoration efforts with private landowners and upstream and downstream communities.

STRATEGY 4A The intensity of floodwaters in a flood is impacted by the state of the river upstream.

STRATEGY 4B The Town of Lyons should encourage upstream and downstream communities to consider sustainable river infrastructure and greenscaping methods to decrease the total load of floodwaters encountered in Lyons

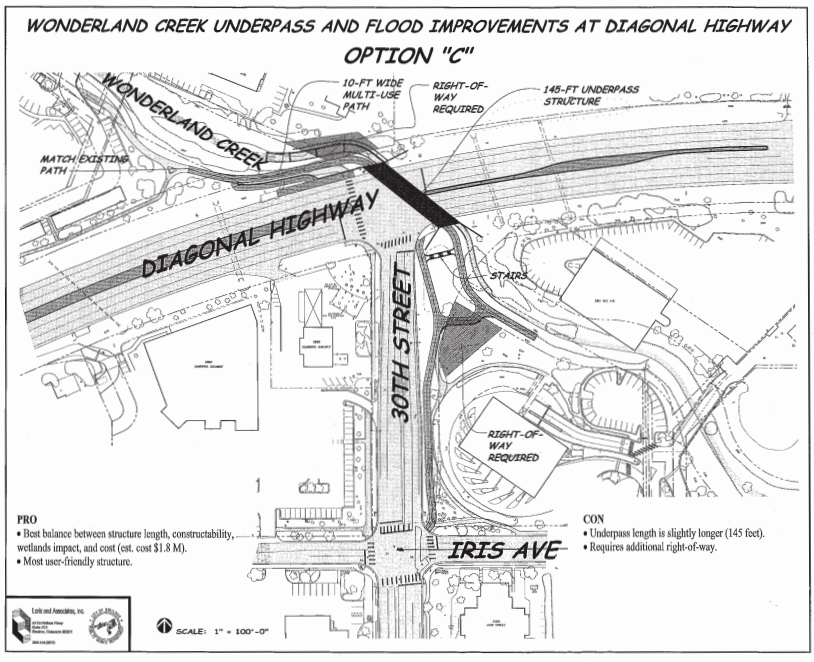
CASE STUDY

City of Boulder - Boulder Creek Riverside Bike Paths

Preliminary assessment of the paved bike path within the City of Boulder limits indicated that approximately 15 percent or 9 miles of the 60 miles of path was damaged during the September 2013 flood. Debbie Ritter (Transportation Project Manager) and Annie Noble (Flood and Greenways Engineering Coordinator), both of whom work for the City of Boulder, were contacted to determine the success of their flood mitigation measures along with the extent of damage.

For the past 20 years, the City of Boulder has been implementing flood mitigation measures along Boulder Creek. Policy guidelines promoted the use of non-structural mitigation methods so as not to turn Boulder Creek into a concrete channel, but to keep the creek as natural as possible. Some drop structures and bank stabilization work had been carried out though over the years. The City had been working towards purchasing properties along the creek and tributaries in high hazard zones (zones where water velocities during a 100-year flood would sweep you off your feet), and encouraging appropriate development, including parks and paths. Urbanization along the flood plain of Boulder Creek was seen as the major impediment to flood mitigation. Additionally, flood mapping accounted for effects of debris and potential hydraulic blockages that could arise from narrow culverts and pipes, and in many places these were eliminated.

Improvement works at street crossings involved replacing smaller bridges with larger, wider ones that incorporated bike underpasses that could cope with the excess flood waters. These proved very successful during the September 2013 flood and allowed the floodwaters to spread out as they passed through, which reduced the velocity of channeled flow and scouring that would occur on natural river banks. A lot of debris was left behind but clean-up was relatively simple, with little or no repair required. The four or five sections of the bike way that were damaged were mainly around creek bends that experienced scouring, undermining or resulting in complete failure of the bike path. With the addition of riprap under the concrete, and some bank stabilization work, these areas have now all been repaired and all of the paved bike paths have now reopened.



GOAL 2

Preserve and improve access to the St. Vrain rivers to provide equal enjoyment by all.

The St. Vrain River is a treasured resource for citizens and visitors alike. It provides water to our agriculture community, a white-water attraction for kayaking and tubing, a leisurely swimming area for children and adults, picnicking areas, camping, habitat for local flora and fauna, fishing, and prime enjoyment for leisurely activities such as birding, jogging, photography and inspiration. Part of this value comes from the river's accessibility to all who seek its tranquility. The river passes no judgment and creates no exclusive opportunities. Instead it opens itself to all those who take the time to visit its shores, tube through its waters, or peek into its pools. The vibrancy of the St. Vrain River can be even further expanded by increasing its accessibility at all points and developing pathways for continuous movement of people to partake in its splendor.

Objective 1: Re-create a multi-use continuous community trail along the St. Vrain River that encourages ecological health.

STRATEGY 1A Include provisions for walking, jogging, and cycling.

STRATEGY 1B Provide adequate lighting, directional signage, and designated lanes for two-directional traffic.

STRATEGY 1C Naturalize the trail to include native plant species and build thorough buffers to shield trail users from traffic, private residences, and businesses.

STRATEGY 1D Build a permeable trail surface that accepts high water during flood events.

STRATEGY 1E Connect the river trail with common access points to the Town of Lyons, including restaurants, parks, and transportation hubs such as bus stops and parking areas.

STRATEGY 1F Build artistic, awe-inspiring expansive pedestrian bridges spanning the widest braided gravel bars.

STRATEGY 1G Design one side of the river with natural habitat for wildlife access to the river.

STRATEGY 1H Partner with river edge landowners and the Town of Lyons to ensure continuity of trail throughout town.

STRATEGY 1I Develop incentivizes for private landowner cooperation with above strategies.

Objective 2: Create new ways for the community to engage with the St. Vrain River to improve awareness of the multi-functionality of the river.

STRATEGY 2A Build sand bars for children to play on.

STRATEGY 2B No Kentucky Blue Grass to river's edge.

STRATEGY 2C Collaborate with IGAs for contiguous pedestrian pathways between municipalities.

STRATEGY 2D Enhance community experience through a natural river system.

Objective 3: Develop a community monitoring program for species of interest and restoration.

STRATEGY 3A Build bird watching shelters, perches and additional habitat for foraging and nesting.

STRATEGY 3B Support community in continuing ongoing project to create a native botanical garden which will provide plant stock when rebuilding.

STRATEGY 3C Coordinate building of water storage capturing ponds to allow for sale of stored water.

STRATEGY 3D Design systems for free public street vegetative watering infrastructure to promote tree lined roads.

CASE STUDY

Yampa River Management Plan, Steamboat Colorado

In 2003, the Community of Steamboat Springs, Colorado enacted a comprehensive river management plan. The Yampa River flows through rural areas before flowing directly through the town. Through town the pressure and demands on the river are very similar to those that we place on the St. Vrain through Lyons. Over ten years since enacting their managemant plan, the Yampa river maintains a vital, vibrant riparian corridor through Steamboat, with ample access for many interestes and stakeholders while preserving the ecological integrity of the river.

We believe this management plan touches on many of the things the Lyons Ecology Board would like to see for our own river corridor.

Their vision for the plan is simply stated: "The Yampa River will always be a flourishing, vibrant, bio-diverse natural river corridor that is enjoyed, respected, protected, and supported by its community with commitment, education, and sensible regulation". We believe this a good example of what can be done in Lyons.

Following are the top points of their objectives. The full document is available at:

http://yampavalley.info/centers/community_resources/pages/yampa_river_management_plan

Objective 1 : Conserve and enhance the natural habitat along the river.

STRATEGY 1A Improve water quality in the river

STRATEGY 1B Conserve and restore important aquatic and wildlife habitats

STRATEGY 1C Manage fish populations and control exotic fish species in the river as per CDOW guidance

STRATEGY 1D Preserve, promote and improve the diversity of vegetation, and encourage the reestablishment of natural plant communities through the control of exotic plant species

STRATEGY 1E Preserve and enhance the water quality and quantity of tributaries and other flows into the

Objective 2 : Provide an enjoyable and safe experience for all river users.

STRATEGY 2A Establish appropriate levels and distribution of public and commercial use

STRATEGY 2B Improve access points along the river

STRATEGY 2C Educate river users about appropriate use and safety

STRATEGY 2D Provide opportunities for a variety of recreational experiences

Objective 3 :Establish a monitoring program to continuously evaluate the health of the river corridor.

STRATEGY 3A Establish indicators and standards to monitor the condition and quality of terrestrial and aquatic habitats

STRATEGY 3B Maintain water quality testing of the river on a regular basis

STRATEGY 3C Monitor levels and types of recreational use to protect against over-utilization

Objective 4 : Ensure that all development and improvements are constructed in an environmentally sensitive manner, consistent with a long-term plan for the river.

STRATEGY 4A Prepare guidelines for trail design, construction, and management

STRATEGY 4B Prepare guidelines for construction of habitat and recreational improvements to the river

STRATEGY 4C Prepare land use guidelines for development along the river

Objective 5 : Establish sustainable, long-term management strategies for the river.

STRATEGY 5A Establish sensible regulations for management of the river corridor

STRATEGY 5B Establish zones (reaches) for management of the river

STRATEGY 5C Support economic activities that are compatible with protection of environmental resources

GOAL 3

Improve opportunities for recreation and ecotourism for both residents and visitors that help drive the Lyons economy.

As the "Double Gateway" slogan suggests, Lyons has a strong economic tie not only to the Rocky Mountain National Park but to other tourism attractions that provide necessary monetary flow into the community. In order to maintain and expand our ability to bring in tourism dollars, the Town of Lyons needs to position itself as a leading destination with unique and untarnished opportunities to enjoy nature. The St. Vrain River is the primary natural resource in Lyons and our noteworthy festivals and artist community attract visitors from around the world. Hasty decision making that does not ensure that the ecology of the river corridor is protected will have negative long-term effects, while proper planning and restoration will bring prosperity for years to come.

Objective 1: Rebuild existing recreational attractions including kayak course, tubing, fishing, field sports, swimming holes, and festivals.

STRATEGY 1A Improve walking and parking access for recreational activities.

STRATEGY 1B Maintain space for camping and promote additional park and ride opportunities for event parking.

STRATEGY 1C Rebuild existing ball fields, tennis courts, basketball courts and soccer fields.

STRATEGY 1D Re-develop proper spawning areas for existing fish species, install fish ladders at all locations of impasse.

STRATEGY 1E Support local fishing businesses to grow fishing tourism.

STRATEGY 1F Determine and enforce appropriate fishing licenses to reflect the decline in fish populations from recent flooding.

Objective 2: Promote new ecotourism opportunities that draw people to the river.

STRATEGY 2A Encourage recreational rental equipment business to open storefronts for residents and visitors.

STRATEGY 2B Promote Lyons as location competitive events for new and existing recreational attractions.

STRATEGY 2C Engage with any and all recreational groups with interest in developing opportunities in Lyons.

STRATEGY 2D Encourage passive recreational opportunities such as birding, photography and botanic gardens.

Objective 3: Develop opportunities for residents and visitors to memorialize epic flood of 2013.

STRATEGY 3A Add durable interpretive signs to include historical images and stories from the flood in parks and along the river.

STRATEGY 3B Attract disaster tourism by preserving some devastation artifacts with educational signage regarding hydrologic force during flood.

STRATEGY 3C Consider convergence area of North and South St. Vrain Rivers for a flood memorial site.

STRATEGY 3D Develop a town-promoted "River Day" that celebrates the river and its values (Sep 12th) with cleanup and other activities.

ILLUSTRATION

Lyons Colorado- A Place to Live and Play

GOAL 4

Encourage ecologically responsible restoration and development within the riparian zone

Lyons sits in a narrow and ecologically important transition zone between the mountains and plains, resulting in a rich mix of vegetation and wildlife. This is pronounced nowhere more than along the river and riparian areas. It is also a proven fact that poorly executed development near waterways increases water pollution and sedimentation and reduces vegetation, wildlife habitat, scenic qualities, and property values.Because of this, ecologically responsible development along the St. Vrain River is essential to the sustainability of the town and will improve residents' quality of life and provide a healthy and functional riparian area.

Objective 1: Improve water quality through increased filtration.

STRATEGY 1A Install bioswales to reduce sediment runoff from road pollution loads.

STRATEGY 1B Advocate for native vegetation use in the river corridor.

STRATEGY 1C Expand natural buffer area on either side of the river.

STRATEGY 1D Encourage areas of dense vegetation between pollution sources or runoff and the river.

STRATEGY 1E Promote use of permeable land coverings.

Objective 2: Pass integrated pest management protocol to minimize pesticide/herbicide use.

STRATEGY 2A Develop protocol in collaboration with Parks and Recreation and other town officials.

STRATEGY 2B Recommend training for integrated pesticide application licensing.

STRATEGY 2C Educate and collaborate with residential owners to ensure compliance.

Objective 3: Maintain connectivity of open space.

STRATEGY 3A Determine long-term goals for the amount of open space to be protected in perpetuity.

STRATEGY 3B Allocate lands for development to ensure connectivity of open space parcels.

Objective 4: Encourage use of natural materials in restoring the river channel.

STRATEGY 4A Collaborate with in-stream recreational groups to ensure safe navigation around in-stream habitat features.

STRATEGY 4B Place downed trees and use root balls to anchor the banks while providing fish habitat.

Objective 5: Promote the predominant use of native species and xeriscape techniques for all sites in flood zone.

STRATEGY 5A Develop informational pamphlets to highlight aesthetically pleasing and water resilient species.

STRATEGY 5B Coordinate with the Botanic garden to hold a spring native plant sale for residents.

STRATEGY 5C Make flood rock debris/rubble available to residents for landscape use.

STRATEGY 5D Hold resident training programs hosted by landscape designers specializing in such techniques.

STRATEGY 5E Develop botanic garden as an educational garden featuring native species, and to provide plant stock for the community.

Objective 6: Promote healthy aquatic habitat in river restoration.

STRATEGY 6A Support establishment of tertiary waste water treatment at facility.

STRATEGY 6B Restore geomorphology of river to include natural pool riffle sequence.

STRATEGY 6C Actively seek out guidance from state biologists and experts

STRATEGY 6D All instream structures should not compromise fish vitality.

STRATEGY 6E Ensure embankment plantings provide shade over aquatic areas.

STRATEGY 6F Maintain low flow standards.

STRATEGY 6E Support all restoration efforts that encourage a healthy native fishery because a healthy fishery is an indicator of overall environmental health of the river system.

ACTION

Putting the action In "action plan".

It is the intent of the Lyons Ecology Board to participate in the implementation of this document and the sustainability strategies listed within. Putting this plan into action necessitates funding, community involvement, and additional stakeholder engagement.

To date, the Ecology Board has dedicated over 200 hours to this document to ensure that it properly reflects the ecologic priorities of the town in balance with additional values of the St. Vrain River, including flood mitigation, and economic and recreational enjoyment. It is our hope that this document can help guide the Town of Lyons and their recovery efforts so that funding priorities can be easily identified for the river corridor and surround lands. This is a working document that can and should evolve as the town's needs transform over the next several years.

The Lyons Ecology Board identified the following stakeholder groups that should have a role in refining and implementing the action plan.

Arapaho Roosevelt National Forest

Army Core of Engineers (FEMA Rep)

Biohabitats

Boulder Climbing Community

Boulder County

Boulder County Parks and Open Space

Boulder Mountainbike Alliance

City of Boulder Open Space and Mountain Parks

City of Lafayette

City of Lafayette Open Space

City of Longmont Natural Resources

City of Longmont Parks, Open Space & Forestry

Colorado Department of Transportation

Colorado Mountain Club

Colorado Parks and Wildlife

Colorado State Parks

Colorado State Trails Program

Colorado State University Geology Department

Colorado Water Conservation Board

Colorado Water Trust

Community Foundation Serving Boulder County

Contour Logic

Cottonwood Institute

Deputy State Engineer with the Colorado Division of Water Resources

Eldorado Canyon State Park

Elevations Credit Union

EMPSi Environmental Management and Planning Solutions, Inc.

Engineering Department of Longmont

FEMA Public Assistance Expert

Gates Family Foundation

GoLite and Active Boulder

Great Outdoors Colorado

Greenplay

Heads up the Stream Team

Longmont Public Works and Natural Resources

National Park Service Water Resources Division

Natural Resource Services, Inc.

Natural Resources Conservation Service

Redstone Review

REI

S2O Design

Saint Vrain Anglers chapter of Trout Unlimited

Senator Udall's Office

Sol Bites

St. Vrain and Left Hand Water Conservancy District

Town of Lyons

Town of Lyons Board of Trustees

Town of Lyons Parks and Recreation

Town of Lyons Sustainable Futures Commission

Town Of Lyons Utilities and Engineering Board (UEB)

USDA Natural Resources Conservation Services

Volunteers for Outdoor Colorado

Wildlands Restoration Volunteers

GLOSSARY

BIOSWALE Like drainage ditches, bioswales are shallow trough-like depressions that carry water during rainstorms or snow-melts. Bioswales act as a biofilter that removes silt and polluted runoff from urbanized areas, such as roads or parking lots, before the runoff enters a river or creek. Vegetation, compost, and/or riprap (rock or rubble placed alongside a watercourse to limit scour or erosion) is set into a wide, shallow ditch designed to maximize the time water spends in the swale, which also aids in the trapping of pollutants and silt.

BRAIDED RIVER / BRAIDED BARS A braided river has a number of small channels separated by small and often temporary islands called braided bars. Braiding is most commonly found in rivers with high slopes and/or large sediment loads.

CONSERVATION EASEMENT A conservation easement is a land use agreement established between a private landowner and government body that restricts the use of that land to achieve specific conservation goals. The land remains under the private ownership, and easements are on-going even if the land is sold.

ECOTOURISM More than just the concept of visiting natural areas, ecotourism focuses on low-impact, socially responsible travel that minimizes the negative impacts upon the environment that large-scale more commercial tourism may have. Ecotourism promotes the principles of sustainability, including recycling, energy efficiency, and water conservation, and creates economic opportunities for local communities.

FLOOD MITIGATION Through the development of flood risk maps, areas of known flood risk can be identified. Flood mitigation is the management and control of flood water movement, such as redirecting flood run-off or allowing for undeveloped flood

zones, that can aid in reducing potential damage. The costs of protection against flood risk rise as more people and property are protected, and the most sustainable way of reducing risk is to prevent further development in those known flood risk areas.

FUNCTIONS Ecological functions provide biophysical benefits, such as nutrient cycling, groundwater recharge, flood control, sediment stabilization, nutrient removal, temperature control, and aquatic and wildlife habitat.

INTRINSIC VALUE The value placed upon an item, such as the St Vrain River, for its existence. No monetary value can be placed upon the item, and values change depending upon the individual.

RIPARIAN ZONE OR BUFFER Riparian areas are the transitional between terrestrial and aquatic systems and are distinguished by gradients in biophysical conditions, ecological processes, and biota. They are areas through which surface andsubsurface hydrology connect waterbodies with their adjacent uplands. A riparian buffer zone is an area comprising of vegetation (grassland, woodland or even wetlands), between water and urbanized land. Riparian zones play a role in soil conservation by stabilizing river banks against erosion. They provide a biofilter to capture surface run-off from roads and provide shelter and food for wildlife diversity.

RIVER CHANNELIZATION Channelization involves substituting straight, often deep, cuts for a winding river course. This can cause streams to flow more rapidly and remove excess water quickly; however, this may then lead to downstream flooding where the channelization ends. Increased flow may also increase soil erosion, and river currents also tend to erode banks and form sinuous channels again so channelized river banks may be concreted. Habitat loss, especially loss of wetlands, is also caused by channelization.

SUSTAINABLE RIVER CORRIDOR ACTION PLAN A sustainable river corridor action plan allows for the living conditions and resource-uses along the St Vrain River to meet human needs without undermining natural systems and the environment, so that future generations may also share the same benefits from the river that we experience now.

VALUES Ecological values provide anthropomorphic benefits, such as recreation, bird watching, fishing, hunting, boating municipal waste treatment, and scenic and quality of life attributes.

XERISCAPING Xeriscaping is landscaping and gardening in ways that reduce or eliminate the need for additional water from irrigation.

APPENDIX A

Aerial Images Pre- and Post-Flood


Pre-flood
June 6, 2013
Extent 3
Maps courtesy of:
EMPS
ASTRIUM
SPATIAL


Post-flood
September 21, 2013
Extent 3
0
400
800
Feet


Pre-flood
June 6, 2013
Extent 4


Post-flood
September 21, 2013
Extent 4


Pre-flood
June 6, 2013
Extent 5


Post-flood
September 21, 2013
Extent 5


Pre-flood
June 6, 2013
Extent 7


Post-flood
September 21, 2013
Extent 7


Pre-flood
June 6, 2013
Extent 8


Post-flood
September 21, 2013
Extent 8

APPENDIX B

The Lyons Ecology Board Members

David Batts, Ewald Neighborhood / Ecology Board 2013

David has been a Lyons resident for 16 years as a founding principal of Environmental Management and Planning Solutions, Inc. (EMPSi), a national environmental consulting firm. For over 20 years he has worked in natural resource planning and environmental compliance, with extensive experience in river restoration, ecological inventorying, permitting, and public outreach. Mr. Batts has served as manager and technical expert for over 200 river restoration plans, wetland delineations, threatened and endangered species surveys, habitat assessments, natural resource management plans, and environmental impact statements in Colorado and throughout the U.S. He has worked on nationally recognized aquatic restoration projects, including the CALFED Bay-Delta Restoration Program, the Salton Sea Restoration Project, and numerous river restoration projects for the US Army Corps of Engineers. In partnership with the World Wildlife Funds, he co-authored a report providing a vision to govern restoration of the entire Rio Grande system. David is certified to conduct jurisdictional wetland delineations and proper functioning condition assessments for riparian areas. He is an instructor with the National Training Center and serves on the National Roster of Environmental Dispute Resolution and Consensus Building Professionals.

Caitlyn Bolton, Lyons Valley Neighborhood / Ecology Board 2013

A Midwestern native and CU Graduate, Caitlyn returned to Colorado after completing a Master's Degree in Environmental Management and Sustainability at Harvard University. Caitlyn has a background in water policy, technical trail building, riparian restoration, and strategic stakeholder engagement and applies these skills to her career in corporate collaborative sustainability. Caitlyn can be found frequenting the Mercantile for local art, sifting through antiques, on hand-and-knee in the back yard, or walking her English Pointer Gus with her partner Nick at the Lyons Dog Park.

Mollie Fager, River North Neighborhood / Lyons Ecology Board 2013

Although originally from Tennessee, Ms. Fager attended high school, college and graduate school in Colorado. She received her undergraduate degree from the University of Colorado in 1993, followed by a Master's in Business Administration in 1999. Part of Mollie's college experience included a year and a half at the University of Dar es Salaam in Tanzania--- a life experience that left her forever longing for the landscapes of Africa. From 1999-2004 she worked for the Colorado Chapter of The Nature Conservancy as their Director of Operations. She had an intermission for 3 ½ years when she served as the executive director for The Dairy Center for the Arts, a multi-disciplinary arts center in Boulder, Colorado. Mollie was called back to The Nature Conservancy six years ago exclusively to raise money for the organization and continue her commitment to conservation. She became the Director of Philanthropy for Africa in November 2009.

Garima Fairfax (Vice Chair), Neighborhood: Red Gulch / Ecology Board 2009

Garima studied botany and ecology at UC Santa Barbara, and is a Colorado State Master Gardener. She worked as a botanist for the US Forest Service, completing a study on rare and endangered plants in California. Garima has experience in greenhouse management, trail building, and growing native plants. She is the author of Kitchen Botany, an educational botany book disguised as a cookbook and serves as the director of Rocky Mountain Botanic Gardens, the future botanic garden in Lyons featuring native plants.

Eben Grace, Neighborhood: River North / Ecology Board 2011

Education includes a BA from Colorado College. As a Colorado native, Eben spent his formative years exploring the mountains and rivers of the state and the West. This has led to a lifelong passion for fly fishing, back-country travel and a personal commitment to helping preserve our wild heritage. Eben is a active board member of the local chapter of Trout Unlimited. Eben's and his wife Annie have lived in Lyons for 10 years, in a house on the north St. Vrain. Living along side the river drives him to help protect and preserve this vital natural resource for our town.

Fay Marshall, Neighborhood: St. Vrain Road / Ecology Board 2013

Fay earned a Bachelor of Science in England, before moving to Australia where she studied for her Masters in Environmental Management at the University of Queensland. After graduating, she worked for the City of Brisbane in the area of pollution control (erosion and sediment runoff), and also has experience with environmental assessment and auditing. Fay lived with her family in Wyoming for many years before finally settling in Colorado during the summer of 2010. They live off the St Vrain Road, about 3 miles along Hwy 36 towards Boulder and her children attend the Lyons Elementary School.

Steve Simms (Chair), Neighborhood: Upper 5th / Ecology Board 1998

Education includes an MS in Ecology specializing in gravel pond restoration – University of Colorado (CU), Boulder 1992. Prior education includes a BA in Computer Science and Artificial Intelligence (Distributed Studies), CU Boulder, 1985. As a native of Colorado, Steve migrated north from Boulder with his wife in 1995 and this was the start of being hooked into the amazing Lyon's community. With his wife, Debbie as a Lyons elementary school teacher, they started On-Site Computer and Network Services, Inc. That I.T. consulting business is still very active today with their two teenagers helping at times. As a survivor of the massive Santa Cruz, CA earthquake in 1989, Steve gained important planning and collaborative skills while volunteering for the Red Cross.