



Springerville Master Plan

The Tejido Group
Spring 2007
University of Arizona
School of Landscape Architecture
CALA

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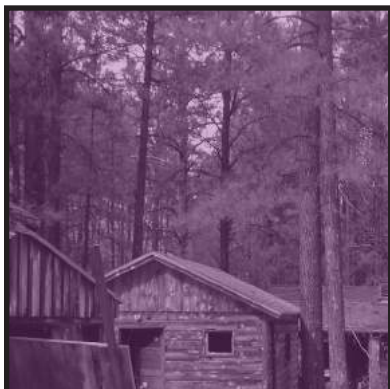
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Acknowledgements

Several months ago, when we first visited Springerville, we were immediately struck by the charm and potential of its main street area and surrounding rural atmosphere. Springerville seemed to have somehow survived the fate of many of its sister communities throughout Arizona and the U.S. The ravages of uncontrolled growth associated with the corresponding loss of natural and socio-cultural amenities had yet to spoil its sense of place and community.

We were also impressed by the graciousness and foresight of its community leaders in their attempt to anticipate growth and prepare. They were sincerely interested in directing future growth rather than merely reacting to it. Their optimism and proactive attitude provided our graduate student team with an exceptional professional and personal set of experiences.

In this master planning study, we have focused our efforts on several key issues: 1) main street revitalization; 2) the designation of areas suitable for infill development; 3) the designation of areas to be preserved as community and natural open space; 4) strategies for the physical and socio-cultural integration of Springerville and Eagar; and the development of clearer definitions for “limits of growth” for Springerville.

We have been inspired by the graciousness of your citizens and the unfettered charm of the town. We sincerely hope that this document will prove itself a valuable partner in visioning the future of Springerville.

Special thanks go to those who gave their time in helping us develop our ideas: the residents and business owners of Springerville, the city staff & council members and especially Larisa Bogardus whose energy and insight were indispensable to our work.

Dr. Mark Frederickson
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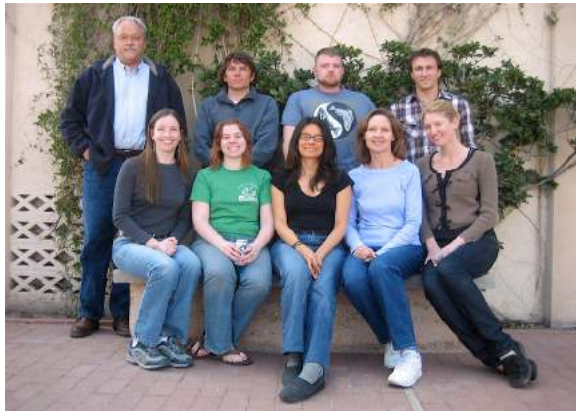
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POST OFFICE

CHAPTER 1

INTRODUCTION

INTRODUCTION TO TEJIDO SPRING 2007

WHO WE ARE



Spring 2007 Tejido group members: (top row), Director of Tejido Dr. Mark Frederickson; Jason Kopke; Zach Babb; Jeff Rhody; (bottom row) Ariel Fisher; Susan Mehler; Patricia Rojas; Helen Walthier; Christy Fisher.

This year's students have a diversity of backgrounds including undergraduate and advanced degrees in the fields of horticulture, geography, economics, architecture, law, fine arts, religious studies, and nursing. The diversity of backgrounds provides a breadth of insight, understanding and analysis which benefits the client.

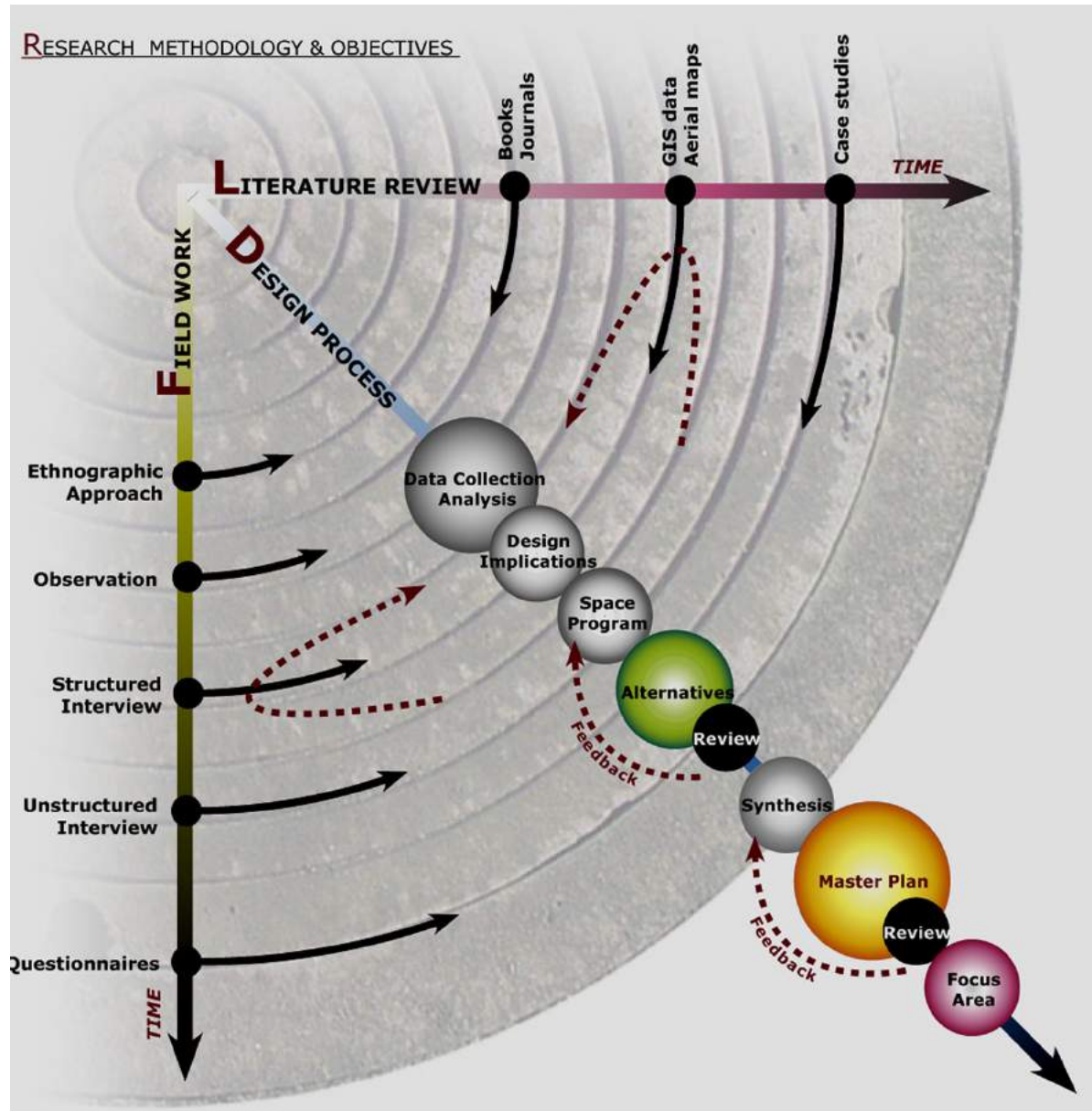
ABOUT TEJIDO

Tejido Group is a part of the curriculum for the graduate program in the College of Architecture and Landscape Architecture at the University of Arizona. It is a second year, fourth semester design studio for Masters students in the Landscape Architecture program. Tejido is led by professor Mark Frederickson, a professor of Landscape Architecture in the program. For the past sixteen years the Tejido Group has developed an interdisciplinary and collaborative applied research program in which faculty and professionals in Landscape Architecture, Planning and Architecture work side by side in an apprenticeship-style professional/learning environment.

Tejido has collaborated on projects throughout the United States, the Caribbean, Mexico, and Central America. Projects have included: small town revitalization master plans for several rural areas in Arizona, Sonora and Sinaloa Mexico including: Clarkdale, Jerome, Show Low, Pinetop- Lakeside, and Winslow, Arizona; a resort master plan for the Cuisinart Corp. in Anguilla, British West Indies; master planning for Arizona towns; harbor revitalization and waterfront development in Panama; the development of coastal planning and design guidelines for the State of Sonora, Mexico; Tourism and resort planning for the Panamanian Canal Zone and Panamanian Government.

Tejido selects projects in which it wishes to participate based on several criteria: 1) project uniqueness and pedagogic value for students; 2) client need; 3) the project's potential impact on society and the environment. We concentrate our efforts on developing innovative concepts through the application of research initiative. An essential part of our design and planning processes occurs during pre- design research. Critical sociocultural, economic, environmental, functional and aesthetic issues are examined in depth. From this analysis we distill relevant design implications which are incorporated into comprehensive design concepts. Design concepts are presented to our clients for editorial comments which are integrated into optimum solutions with development in graphic, digital, and literary form. Through the years we have developed one of the largest digital libraries of design and planning case studies in the Southwest.

Tejido is essentially a non- profit organization dedicated to the education of our students and the needs of our clients. We offer affordable comprehensive and conceptual design and planning services which assist our clients when soliciting Federal, State and private funds. When obtained these funds can be used to hire professional firms to execute our design concepts.



The diagram to the left depicts the Tejido review process along a two time-line continuum.

Along the horizontal axis is the literature review portion of the process. This axis involves research from books and journals; data gathering and analysis including reviewing GIS information, aerial maps, photographs, and the history of the area. Case studies of similar communities are reviewed to identify successful and failed efforts at problem solving.

Along the second axis is the field work portion of the analysis process. Techniques used may include surveys and interviews, site visits, questionnaires, walking the area, and other forms of direct observation.

At this stage the two types of research methods come together in the design process, depicted by the diagonal axis of the diagram. As a result of the analysis process three to four alternative solutions will be generated. Feedback from the town

Tejido Ordering Systems Review

The Ordering Systems provide an organized method for evaluating the likely success or failure of potential design ideas. The potential for a design precept to meet the needs of several ordering systems increases its usefulness as a concept. As usefulness increases so does the likelihood that the solution will be

incorporated into the final master plan.

The five ordering systems consider the following aspects of design: functional, aesthetic, economic, environmental, and socio-cultural. Each of these five ordering systems are described below, and then analyzed in detail as they relate to the issues presented by the Springerville, Arizona project.



Thompson cabin, Springerville, Arizona

INTRODUCTION



Historical building, Springerville, Arizona of Springerville is collected through the town meeting format and other forms of communication with the community.

Finally, a synthesized master plan recommendation is generated which incorporates the most successful design recommendations and those which scored the highest on the Tejido Ordering Systems review. This master plan is presented to the town through a final presentation and the Tejido Master Plan for Springerville, Arizona.

AESTHETIC EVALUATION

The Aesthetic Evaluation consists of a variety of factors which affect the sensory experience of the site. These factors include an assessment of:



Casa Malpais, Springerville, Arizona

The sensory appeal and/or concerns of town amenities including the visual, auditory, tactile, and odors influence on the experience of place. Examples may include large vistas or intimate spaces with visual appeal, sources of car exhaust or debris, and attractive historical locations

A thorough evaluation of the aesthetic factors includes assessing the existing architecture, approaches to town, open spaces in and surrounding town, and anything which captures a sense of place.

The goal of the aesthetic evaluation is to identify any amenities



Wastewater treatment ponds, Springerville, Arizona



Airport, Springerville, Arizona



Little Colorado River, Springerville, Arizona which will augment the existing community identity.

Socio- Cultural Evaluation

Our socio- cultural evaluation consists of exploring opportunities to encourage social interactions, allowing people to gather and celebrate a sense of community and meaningful interactions. In order to achieve this goal we will seek information about the history, diversity, and shared experiences, which create the town fabric.

Factors may include: festivals, events, historical celebrations, fine art displays, etc. Each community will have a unique constellation of



Open Space, Springerville, Arizona

identifying forms of gathering which can be enhanced with planning efforts.

Functional Evaluation

Functional considerations are critical to the success of a master plan and will ultimately determine whether a concept can be implemented. The functional evaluation of a town includes assessment of street grid, utilities, well water use, waste water treatment, parking, pedestrian and traffic circulation. These elements greatly influence the master plan solutions which are appropriate to a particular location.



Main street Springerville, Arizona

Environmental Evaluation

Environmental considerations are an important aspect for directing the growth plans of Springerville. They are key in assuring that resources are preserved and protected, and



Escudilla Mountain and large open spaces located in the area surrounding Springerville are important environmental and economic assets.

INTRODUCTION

that the water, air, wildlife and other assets remain available for future use throughout the years. A comprehensive environmental evaluation identifies assets and concerns as well as the health of key environmental features in the town and surrounding areas. Local and regional open spaces, wildlife attractions, alternative energy sources, clean air, and water will all be reviewed.

Economic Evaluation

An economic evaluation requires an understanding of the current, planned, and as yet unplanned economic opportunities and liabilities which affect life in the town of Springerville. This evaluation includes local business, industry, economic growth opportunities, poverty rate, and the desired style and rate of growth. With an awareness of the economic forces affecting the town we can provide options which promote the desired growth. In addition, growth “packages” can be developed which will be implemented as the needs arise and opportunities present themselves. These development packages can be implemented independently, as the economic climate is appropriate.



CHAPTER 2

ANALYSIS

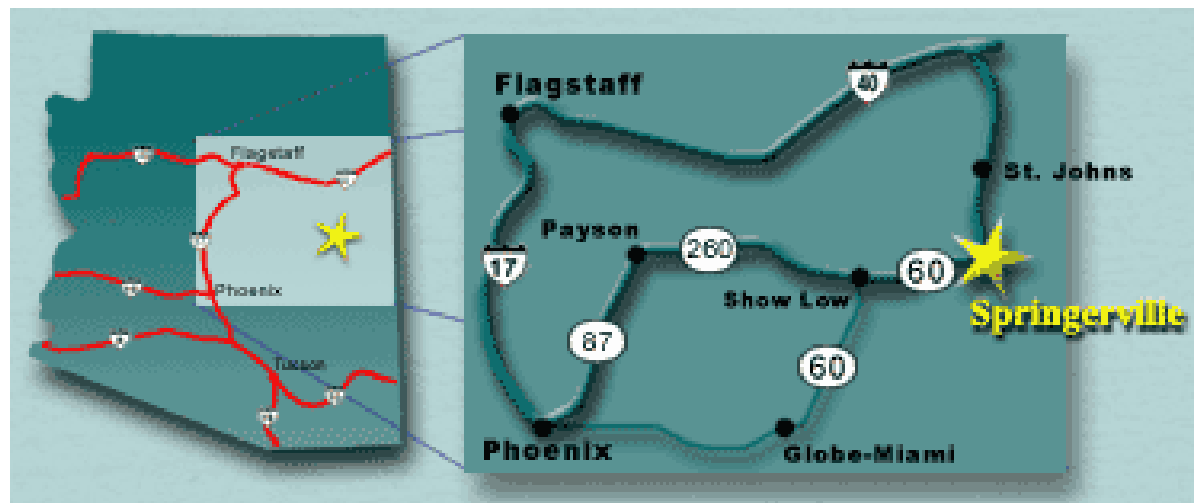
LOCATION

Located in Northeastern Arizona, the Town of Springerville is at the heart of the growing southwest. Originally established in 1879, Springerville sits at an elevation of 6,968 feet. Growing around Henry Springer's trading post, the town was incorporated in 1948. Along with its neighbor Eagar, both communities reside in The Round Valley. Springerville's location at the junction of US 60 and State Highways 180 and 191, combined with nearby airport facilities, make it easily accessible. Combined with a mild climate and proximity to a wealth of outdoor recreation Springerville is a haven for recreational enthusiasts in Arizona and New Mexico.

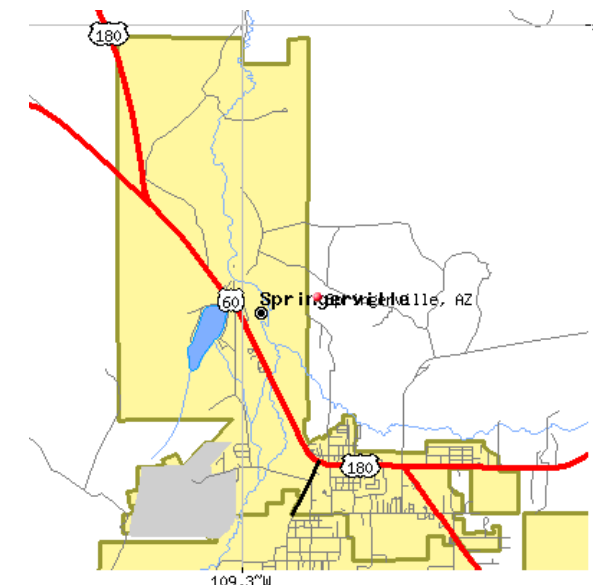
- Location: 34°8, 11N & 109°16, 45W
- Area: 11.5 square miles
- Population: 2,000 people
- Elevation: 6,968 feet
- County: Apache
- Founded: 1879
- Incorporation: 1948
- Nearby highways: HWYS US 60; US 180; US 191; SR 260
- Distance to major cities: Phoenix 220 miles, Tucson: 239 miles



Map of Arizona showing Springerville



Springerville and its proximity to major traffic routes.



Springerville town limits

SPRINGERVILLE: CONTEXT

The town of Springerville, Arizona is a rural community located in Northeastern Arizona. It is a “sister city” with Eagar, Arizona. The two towns share many amenities and a common central border which runs in a generally east/west direct. The population of Springerville is about 2000, while the population of Eagar is about 5000.



The “Dome”

Springerville is located on the Colorado Plateau and is surrounded by extensive forest lands. Many of these forest lands are owned by governmental agencies including federal and state agencies. The valley surrounding Springerville is known as the “Round Valley” for the large circular shape of the surrounding mountains. Ridges to the north consist of large volcanic rock walls which contain vertical clefts.



Ice forms on the Little Colorado River



Juniper Berries

Springerville’s climate is temperate, providing four seasons in a high grassland environment. Visitors and locals alike utilize the outdoors for a wide variety of recreational activities. Skiing is available at the nearby facilities of Sunrise Ski Resort. Biking and hiking are very popular activities. Two stream beds traverse the Springerville region: the Little Colorado River and Nutrioso Creek.



Grazing Lands of the Round Valley

Springerville provides the regional airport, as well as numerous local businesses, eating establishments, and a local hospital. It shares a school system with the neighboring town of Eagar. There are many forest related businesses, and two nearby power plants.

Communities in the surrounding area have experienced a period of prolonged growth which is beginning to extend to the Round Valley area. Because of Springerville’s location at the confluence of several small highways there is a hub of crossroads traffic between the metropolitan areas of Phoenix, Arizona and Albuquerque, New Mexico. The area is on the verge of expanding growth and is anxious to plan accordingly.



Trees in Bloom

There are numerous significant remnants from Native American communities in the area surrounding Springerville. The closest of these sites is Casa Malpais. This is located slightly north of the town limits. Other similar sites within a days drive include Canyon de Chelly, Montezuma’s Castle and Well, and Chaco Canyon.



Ruins at Casa Mal Pais

SPRINGERVILLE: HISTORY

Springerville has a rich, diverse historical and cultural heritage. The rolling plains at the base of the White Mountains have been inhabited for hundreds of years by a variety of cultures and people. Remains from the earliest indigenous peoples who lived here provide a backdrop for the current town inhabitants.

The earliest inhabitants of the Casa Malpais ruins are thought to have lived there in approximately 1250 AD. It is thought that the site might have been used prior to that time by the same peoples on a semi-nomadic basis. Today the sun circles on the site continue to function as they did in their original context.



Historical home

Early settlers arrived in the area in the mid 1800's. The town is named for Mr. Springer who opened trading posts throughout the state. While he did not live in Springerville it became known as the town of Mr. Springer's store. The name 'Springerville' followed. The town was officially established in 1879.



Casa Malpais, square Kiva

Some of the earliest settlers in the area were the Mormons. In the 1880's the Slaughter family moved into the area with the first Longhorn cattle. They became a very prominent family in the region, and their family burial site still exists near the large town cemetery.



Slaughter family cemetery

The town of Springerville, Arizona is a blend of people with a strong connection to their ranching, farming, and pioneering past. John Wayne was a resident in the area and his legacy is commemorated. There is a cultural blend of indigenous peoples, hispanics, Catholics, Protestants and Mormons. This creates a diverse heritage and sense of place.



Scene at historic park

Natural

Springerville is alive with natural character. Surrounded by mountains, meadows and bluffs, the town has a great deal to offer outdoor enthusiasts. The natural features of the site are also important to the development of Springerville. These features draw tourists and outdoor hobbyists. They also increase the aesthetic appeal of the town. It is beneficial to emphasize these features throughout the development of the town.

Other important destinations for wildlife enthusiasts and hikers are the Wenima and Sipe Wildlife areas. These areas provide hiking trails and wildlife viewing.

To the northwest of town is Becker Lake. This lake was created by damming the Little Colorado River. The lake provides residents and guests a chance to enjoy small boats and fishing.

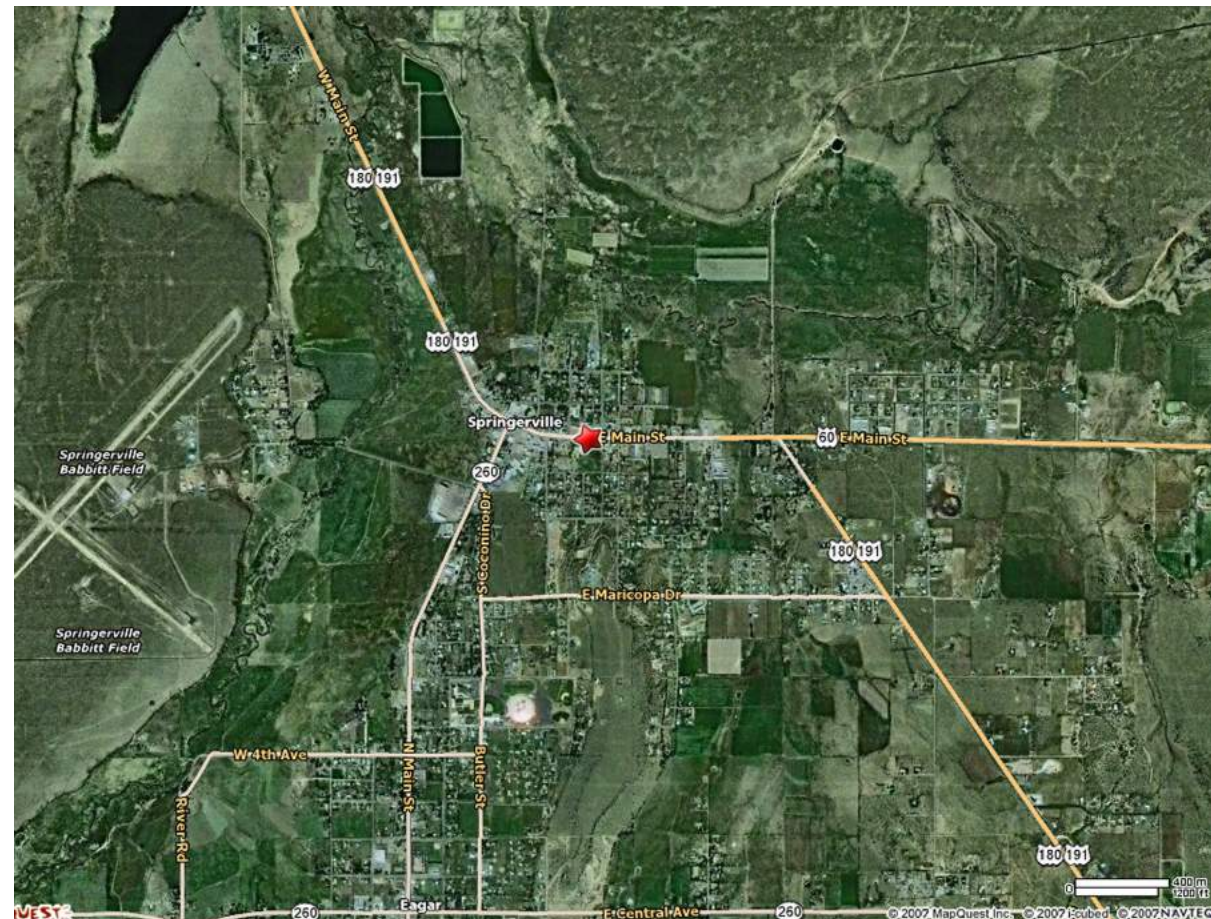
The town of Springerville is in close proximity to skiing, hiking, fishing, boating, hunting, horseback riding, birding, golfing, and camping.



Sipe Wildlife Area



Wenima Wildlife Area from the parking lot



The Little Colorado from Wenima



Becker Lake

Climate

The town of Springerville has a very desirable climate. Due to its regional and elevational location, the town experiences four seasons with both summer and winter being very mild. The average high temperature for the month of July is 83 degrees. The average low temperature for the month of January is 14.6. Similar to the rest of Arizona, Springerville receives a lot of sunshine and very little rain fall. The yearly average is approximately 11.94 inches. Despite this low average rainfall the forests outside of Springerville are reported to be “the wettest in the SouthWest.”

Springerville’s mild climate makes it a great location for residents of Tucson and Phoenix to vacation. Low summer temperatures and a relatively short winter make Springerville a very marketable community.

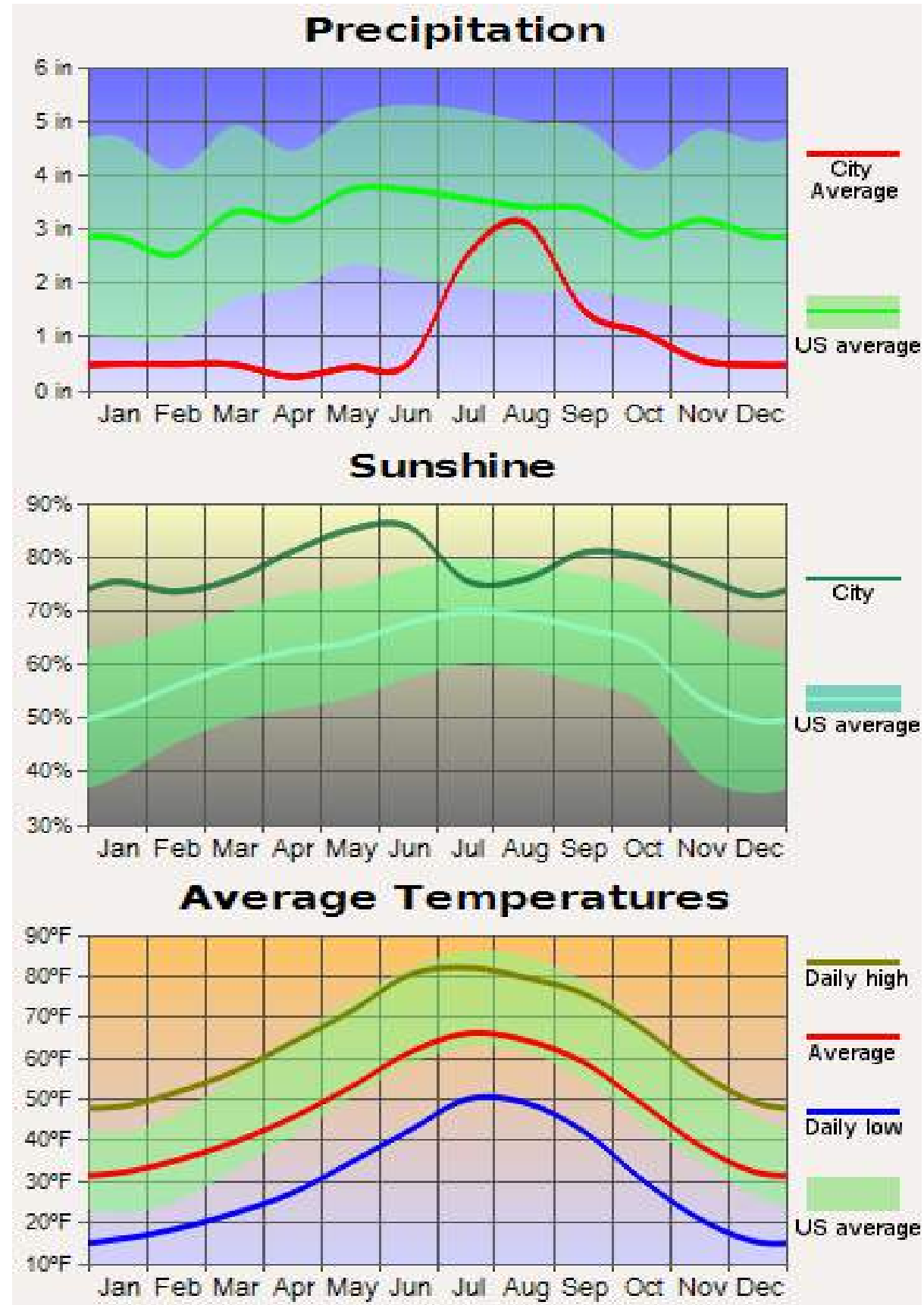
Springerville’s averages:

Average Maximum: 65.50

Average Minimum: 31.20

Average total Precipitation: 11.94”

Average Total Snow Fall: 19.30”



Economic Condition

Springerville has a small employment base that centers around government employment and agriculture. The Tucson Electric Power plant and White Mountain Regional Medical Center are other large sources of jobs for the region. Sources of economic activity for the area include tourism, agriculture, construction, forest service, hunting, fishing, small diameter lumber, and retail sales. The Town of Springerville Municipal Airport has the second longest municipal runway in the state.

The economic data below has been compiled from multiple government and commercial sources.

Median Income: \$30,769

Median Age: 37

Median House Value: \$80,200

Growth Indicators:

1990 – 7 New building permits, 31.4 Million in taxable sales

2000 – 23 New building permits, 44.7 Million in taxable sales

There is great potential for economic growth in Springerville. The most promising are main street/historic rehabilitation and preservation. In conjunction with this, sustainable tourism can bring in substantial extra revenue for the town. The Springerville Municipal Airport is another asset the town can harness to bring in more tourists and generate economic activity.

Historic Preservation

Historic preservation and rehabilitation contributes to economic development in a number of ways, especially in small towns. Historic preservation can attract tourists and visitors that would otherwise visit neighboring towns. It provides space for small business to flourish, and enhances a quality of life that attracts and retains residents. Rehabilitation also generates economic benefits for local communities in the region. This happens through the expenditures for materials, services, and labor. These expenditures commonly go back into the community through the use of local businesses.



Post Office 2007

One key step is to get the Town of Springerville registered on the National Registry of Historic Places. This alone will bring more tourism to the area.

In research done by The Main Street Center, the average main street revitalization effort produces positive growth. The research also shows that for every dollar that a community reinvests into its main street, there is an average of \$28 returned to that community.



Historic downtown features

Post office: The building was built on 1937, and it has had postmasters since 1893.



Post Office 1955

Madonna of the Trail

The Madonna's were the creation of Harry Truman and the Daughters of the American Revolution who wanted to honor pioneer woman while also commemorating the National Old Trails Road.



Madonna location until 1987

They commissioned twelve identical monuments to be placed at historically significant points: Maryland, Pennsylvania, West Virginia, Ohio, Indiana, Illinois, Missouri, Kansas, Colorado, New Mexico, Arizona and California. September 28, 1928; the Madonna was moved from its original post office location on 1987 and was rededicated in 1998.

Becker Motor Company:
The building was built in 1911 and opened by the Becker family. The building has a sandstone façade and adobe walls to house the garage. In 1915, the garage was named Becker's Transcontinental Garage, and that year a total of 1367 cars passed through Springerville. In 1927- 1928 Becker motors expanded to the east constructing an addition faced with Gallup Brick. The building has an extensive history from a car garage, gas- merchandise store to a Ford dealership. Today the building houses a Chevrolet dealership. The building has been well cared for and stands as an example for historic preservation in the town of Springerville.



Becker Motor Company

Springerville School

The old Springerville school building has stylistic influences from Spanish Colonial Revival and the Prairie school. The school was functional from 1884 to 1983. The first building was dedicated in 1884 as a simple structure made of adobe with pitched roof and a tower. In 1927 two wings (east- west) were added to the original structure and in 1950, the pitched roof and tower were removed. A cafeteria was added in the south side of the building in 1950. The building has been nominated in the past to the National Register of Historic Places. The trees located in the front yard of the existing school were planted as an Arbor Day activity. At the time of this study building was undergoing renovations.



Springerville School

Historic Park

The historic park contains a number of interesting buildings that could be used along a historic trail. The structures (see below) depict a variety of homes and cabins built throughout Springerville's rich history.





School 1927

Sustainable Tourism

Sustainable tourism is a design and planning method that considers cultural, economic, functional, environmental, social, and aesthetic impacts on the local population and ecology. This method of design and planning contributes to the conservation of natural and cultural heritage. Springerville's location and history make it a prime location to implement sustainable tourism.

The tourism industry generates substantial economic benefits to host states, counties, and towns, especially in developing areas. One of the primary motivations for a region to promote itself as a tourism destination is the expected economic improvement. A significant economic benefit can be experienced by communities successful in marketing its tourism industry.

The United States National Park Service estimates that 273 million visits to American national parks in 1993 generated direct and indirect expenditures of \$10 billion and 200,000 jobs. When you consider visits to state, local, and privately managed parks, the number climbs to \$22 billion. This is an annual boost to the US economy.

These expenditures also generate significant tax revenues for the local governments. Springerville stands to benefit from its proximity to parks.

Spending category	Day	OVN-NF	OVN
Lodging	\$ 0.00	\$ 25.30	\$ 64.85
Restaurant	13.60	25.26	58.91
Groceries	7.61	38.55	31.28
Gas & oil	15.99	37.28	35.79
Other transp.	0.98	3.00	7.54
Activities	3.87	8.04	15.49
Admissions/fees	5.24	10.23	9.02
<u>Souvenirs/other</u>	<u>4.31</u>	<u>15.59</u>	<u>22.37</u>
Total	51.60	161.25	245.25

The chart above shows the national average for visitor spending when visiting the National Forests (per party per trip). The highlighted portion represents the amount spent when a party visits the National Forests but spends the night outside of the forest boundaries.

Tourism can be a significant part of the local economy. Because the environment is a basic component of the tourism industry's assets, tourism revenues are often used to measure the economic value of protected areas. For example, Dorrigo National Park in New South Wales, Australia, has been estimated to contribute 7% of gross regional output and 8.4% of the

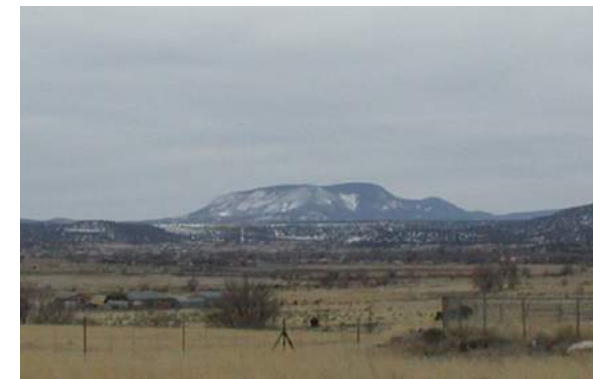
regional employment to the area. The importance of tourism to local economies can also be illustrated through the impacts when it is disrupted: the catastrophic 1997 floods that closed Yosemite National Park in California cause severe economic losses to the areas surrounding the park.



Wenima Wildlife Area

One important natural feature that may be overlooked is the grassland surrounding Springerville. This open space lends a pastoral feeling to the town and enhances its frontier image. The quantity of open space on the approach to Springerville is a striking experience, and the presence of open space and views into pasture lands is unique.

To the east of Springerville is Escudilla Mountain. This is the third highest mountain in the state, and a historic as well as outdoor attraction. Sype wildlife area lies to the south of Springerville and Eagar. This area is the base of annual hummingbird banding events and lies at the end of the Coronado trail. The Sype wildlife area also provides scenic



Escudilla Mountain

ANALYSIS

views into the round valley from the south. Sype wildlife area is a great example of one of Springerville's tourist attractions.



(above and below)
Examples of Springerville's Many grasslands

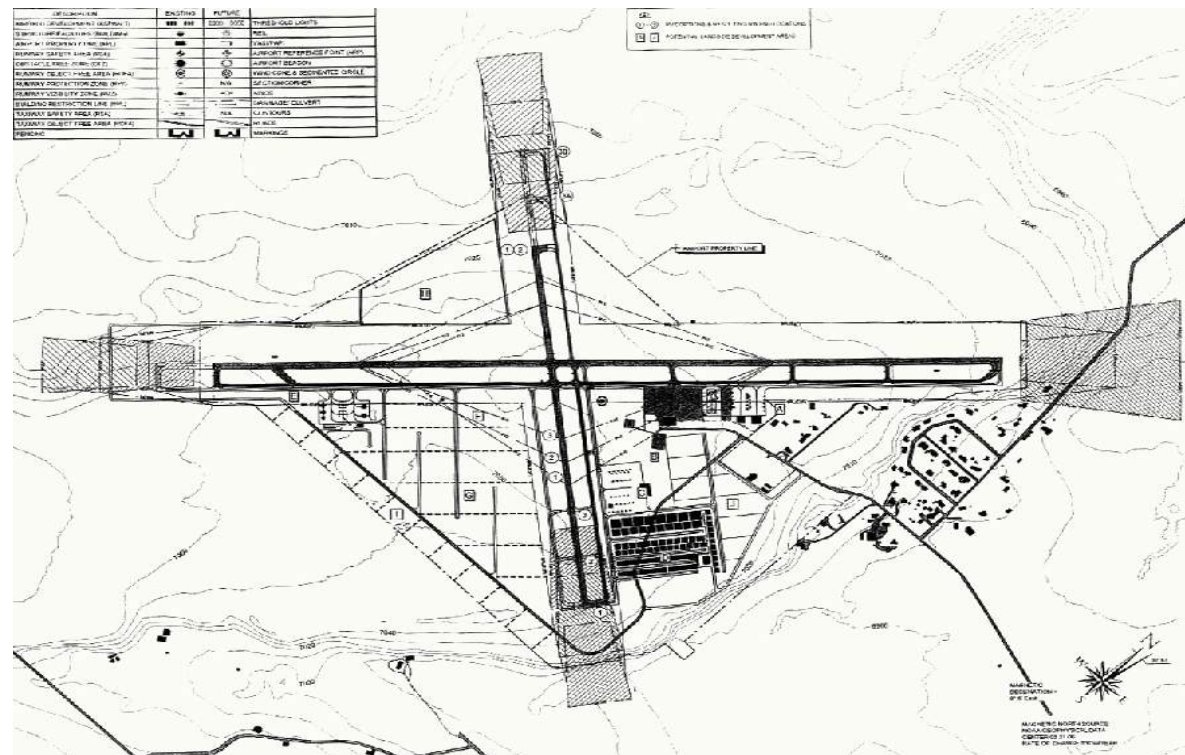


Town of Springerville Municipal Airport

The Town of Springerville Municipal Airport is located 1 mile west of Springerville. The airport is a full service general aviation facility, servicing the public since the early 1940's. The airport also serves as a seasonal base for the U.S. Forest Service Smoke jumpers (an elite band of forest firefighters) and Guardian Air Ambulance.

Current infrastructure:

- 556 Acres (airport/business park)
- 10,000SF Hanger
- 4,000SF Terminal/FBO (Fixed Base Operator)
- Ramp #1 400' x 500' (public)
- Ramp #2 50' x 400' (leased to Forest Service)
- Runway 3- 21 8,425' x 75' with Parallel Taxiway
- Runway 11- 29 4,589' x 60' with Parallel Taxiway
- PAPI Lighting (Precision Approach Path Indicator)
- Airport Well
- 8,900LF of Paved Perimeter Road
- 14,000LF Perimeter Fencing
- 7,051' Elevation
- Average of 10 Operations Per Day
 - 57.6% - 71% Transient General
 - 20.0% - 22% Local General Aviation
 - 4% - 20.0% Air Taxi
 - 2% - 2.4% Military
 - 17 - 26 Aircraft Based At Airport



Springerville Airport

TOP RIGHT: Panoramas of the intersection of Main Street and Mountain Avenue



BOTTOM RIGHT: Panorama of retail businesses on Main Street



TOP: Map of Springerville

BOTTOM: Orthographic photograph of Springerville's Main Street

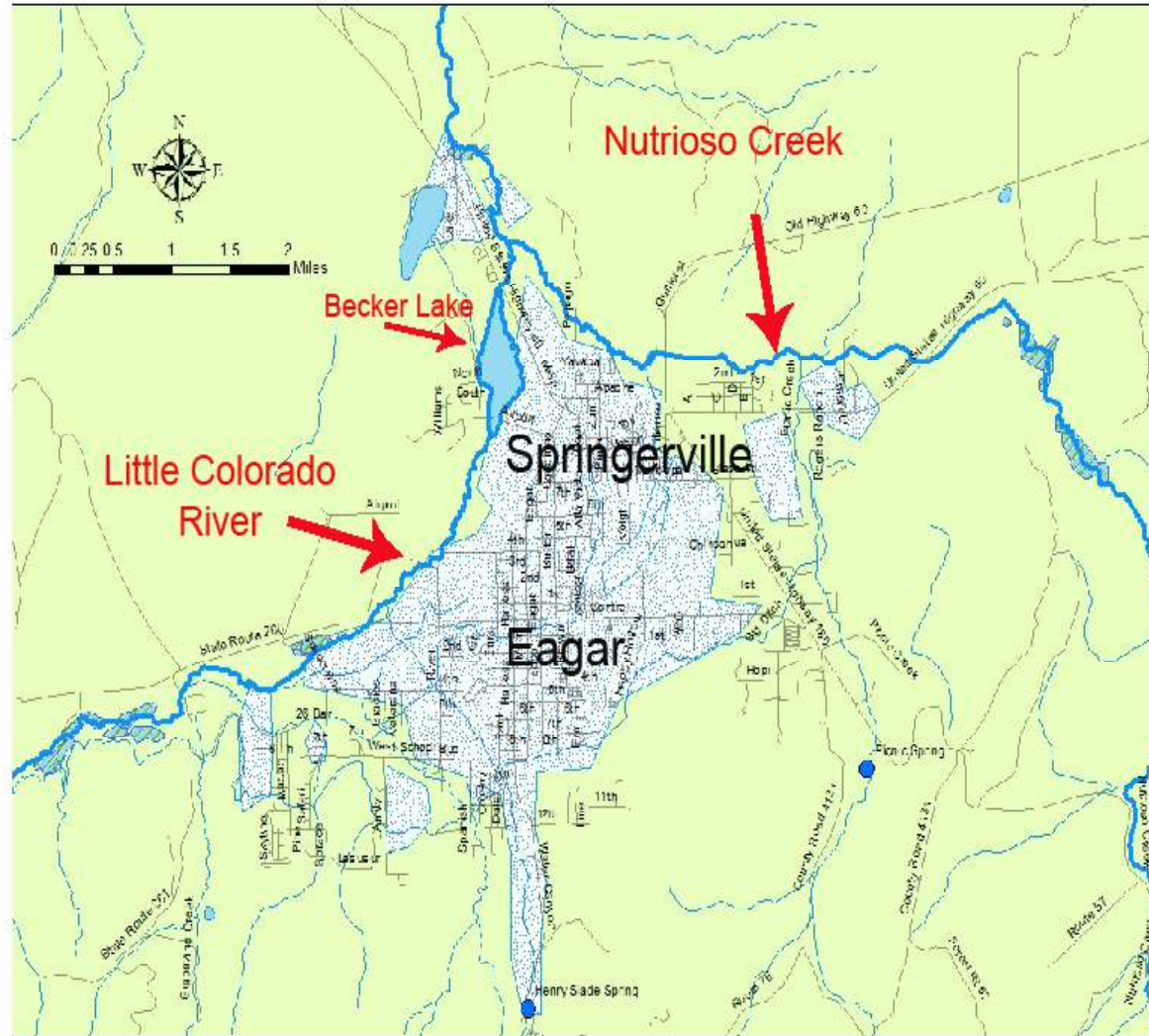
Vehicular and Pedestrian Circulation in Springerville

As the map to the left illustrates, US highway 60 becomes Main Street when it hits the downtown commercial area. A large amount of traffic, including traffic to and from New Mexico and freight trucks pass through regularly. Currently, the 4 foot wide sidewalks along Main Street do not encourage pedestrian circulation. Several locally-owned commercial businesses are located on Main Street, which vary from specialized boutiques to auto repair shops. Revitalization of the downtown through the use of vegetation, historic building maintenance, signage, and mixed use development will encourage passers- through to stop in Springerville.

Mountain Avenue transects Main

Street where the historic Post Office is located. This space presents several options for a central historic town node. This node would provide a sense of arrival for traffic coming north on Mountain. There is another commercial district south of Main Street on Mountain Avenue. A Safeway and other chain stores line the strip mall. This location is convenient for both Springerville and Eagar, yet it pulls business away from the historic Main Street.

The intersection of Main Street and Highway 191 is less busy than Main and Mountain, yet it serves as an alternative route to neighborhoods in Springerville and Eagar. Arterial roads connect Main Street north to Nutrioso Creek, and south to neighborhoods and Cemetery Hill.



Little Colorado River

Two significant water courses travel through the town of Springerville. They are the Little Colorado River and Nutrioso Creek. The Little Colorado River is a tributary of the Colorado River, which originates from springs atop Mount Baldy, and travels 350 miles before entering the Colorado River in The Grand Canyon National Park. Traveling through Springerville the Little Colorado can be found in the meadow west of town. The Little Colorado River is an asset to the

towns of Springerville and Eagar where water rights allow ranchers and land owners to extract from the river in order to irrigate fields and cattle. Outside of its agricultural uses, the river is a source of identity for the communities. The founding site of Springerville is located along the Little Colorado River. The river offers the community a place for fishing, boating, and swimming. Becker Lake east of town was created by damming the Little Colorado River. In the past, the river has experienced poor management practices. Cattle and elk have

been allowed to trample and eat the riparian vegetation, causing an increase in erosion and water turbidity. This abuse appears to be



Grazing effects on the range

changing as the value of the river is realized, and new and improved management practices are being incorporated. At the time of this publication, there are many people contributing to restoration projects along the rivers' banks and the condition of the river is developing in a positive direction.

Nutrioso Creek

Nutrioso Creek is fed by springs located near the Alpine divide, on the west side of Escudilla Mountain. The creek passes through public and local property before it empties into the Little Colorado River near the town of Springerville. Although the creek runs on a near constant basis along its head waters, the creek is mainly dry below the Nelson reservoir (up stream from the town of Springerville). Local water rights allow public and private entities to divert water from the creek for such uses as crops and cattle irrigation.

The creek is widely used and relied upon. Unfortunately it is listed by the Department of Game and Fish as an impaired water way. Decades of use have resulted in the loss of riparian vegetation necessary for maintaining the integrity of the fragile ecosystem. Plants such as willows, which help to stabilize the streams banks and dissipate the waters energy, have been decimated.



Animals that rely on the creek have been negatively effected as well. The Nutrioso Creek is home to the Little Colorado Spindace (*Lepidomeda vittata*). This species is currently listed by the US Fish and Wildlife as endangered.

Recently state departments and private residents have begun to restore sections of the creek. Jim Crosswhite, owner of the E C Ranch has received a lot of press regarding his success in restoring approximately 2.5 miles of the riparian zone. Crosswhite has changed range management practices and has been actively seeking grant money to protect the riparian corridor, help restore the stream, and implement Best Management Practices (BMPs).

With recharge and repair efforts displaying success along upper portions of Nutrioso Creek, there is evidence that the same is possible along portions of the creek in Springerville. The development of

Springerville's new water recharge plant gives hope that Nutrioso Creek will once again see regular flows beyond the Nelson Reservoir. By recharging treated water from the Springerville plant into the creek, and replacing lost riparian vegetation, the creek could possibly be restored and revitalized.

Hydrology

The Little Colorado River basin contains large quantities of water. There are several different aquifers in the Little Colorado River Basin plateau. Three are designated as regional and two are designated local. The local aquifers are



Revegetated Willows at EC Bar Ranch

vitaly important in providing the domestic water supplies while the regional aquifers are too deep to be economically reached. In the white mountains of Arizona, the locally named White Mountain and Springerville aquifers are composed of undifferentiated sandstone found west of Showlow and along the Mogollon Rim. Water quality varies greatly in these alluvial aquifers.

The regional aquifers are known in descending order as the D, N,

and C aquifers. Being far larger than the local aquifers, the regional aquifers extend beyond Apache County into areas of Southern Utah, Colorado, and New Mexico. Each of the regional aquifers has a large areal extent, and with the exception of the D and N aquifers, there is very little vertical hydrologic connection



Topo of the Little Colorado River Basin

between them.

The regional aquifers are the main water supply for industrial uses such as electrical generation and a pulp mill.

The D aquifer is one of the main aquifers in the Little Colorado River Valley. The D aquifer covers approximately 3,125 square miles. This aquifer provides the domestic water supply to large portions of northeastern Apache county where the C and D aquifers are either too deep, or of questionable quality.

The N aquifer has an area extent of 6,250 miles and occurs north of

the Little Colorado River. The main source of recharge for the N aquifer is precipitation falling on exposed aquifer units. Water in the N aquifer is of acceptable quality for most uses and it serves as the primary water supply on the Hopi and Navajo reservations.

The C aquifer is the largest aquifer in the Little Colorado River basin extending over 21,000 miles. The aquifer is utilized by communities such as Flagstaff, Heber, Showlow, and Snowflake. North of the Little Colorado River the aquifer is of little use due to high salinity.

Springerville's Water

Springerville uses eight wells to provide the domestic water supply. In recent years many wells in the Round Valley community have begun to dry up or drop to lower levels. These problems are due to extended drought conditions that have plagued the American Southwest. Drought effects can be seen throughout the lakes and rivers of Apache County in low water levels. Many of these water bodies are directly attached to the White Mountain aquifer and therefore indicate problems underground. The water used for Springerville's domestic water source repeatedly tests high in quality. The town regularly tests its water supply for a variety of contaminants, such as coliform, nitrates, mercury, cadmium, and radium. Many of these tests are above and beyond those required by the Food and Drug Administration and the Environmental Protection Agency.

100 Year Flooding

There are two areas in Springerville where flooding occurs. These areas are the meadow west of town and a small area of The Nutrioso Creek north of Springerville. While these areas are designated as 100 year flood zones, flooding occurs quite often. Designation as a one hundred year flood zone, does not mean an area floods every one hundred years. It refers to an area with a 1 percent chance of flooding yearly.



Map of flood zones

Design Implications

- Areas around the Little Colorado River and Nutrioso Creek should be preserved. These areas represent vital natural resources, community icons, and priceless natural amenities. Design features sited in the riparian zones could include recreational and educational attractions, which should be built in conjunction with preservation strategies.
- Range management tactics should focus on utilizing “Best Management Practices” in an effort to conserve precious resources such as the waterways, grasslands, and forests.
- Digging of new wells should be coordinated with the greater community and the Arizona Department of Natural Resources in an effort to cooperate with well users throughout the state.
- Building in and around the flood zones and rivers should be prevented. Aside from flooding, the meadow to the west of town is a community icon and the Nutrioso Creek is listed as an impaired waterway.
- Recharging treated community waste water into the aquifer and Nutrioso Creek should be further researched. If feasible, recharging should begin ASAP.

ANALYSIS

- Economic

“We need to continue to encourage tourism.”

“I would like to see clean industry or a family clothing store in Springerville. No big box store. No Wal-Mart.”

“I would love to see a Wal-Mart and a bowling alley.”

- Functional

“There is a lack of transportation around town.”

“The infrastructure needs to be maintained and upgraded.”

- Aesthetic

“This place could sure use some fixing up. This could be a really cute place if they would clean and fix it up.”

“I would like to see the area renovated but still maintain the original architectural integrity.”

“Downtown is just a place for the traffic to pass through on US60.”

- Socio-cultural

“It would be great if our high school graduates, who do not attend a university, could obtain gainful employment.”

“There is presently little to keep our youth entertained.”

Interviews

Meetings and personal interviews were conducted with a wide range of Springerville residents, business owners, and town leaders. The Tejido Group prepared set of interview questions before our first visit. We used the structured questions to guide the interviews. These questions may be found in the appendices.

Town Meetings

The Tejido Group held three meetings with the community regarding the Master Plan for Springerville. The first was an analysis presentation consisting of site analysis, organized by the five ordering systems. Participants at the meeting offered valuable comments and suggestions following the presentation. At the next meeting, the Tejido Group presented alternative design concepts to the town. Springerville residents, town leaders, and business owners gave us feedback on the various concepts after the presentation. We presented a synthesis of design concepts at the third meeting, and we received feedback on our ideas for the final design.

Likert Scale Survey Results

The column to the right displays results from the Likert Scale portion of the survey. The complete results are available in the appendix.



CHAPTER 3

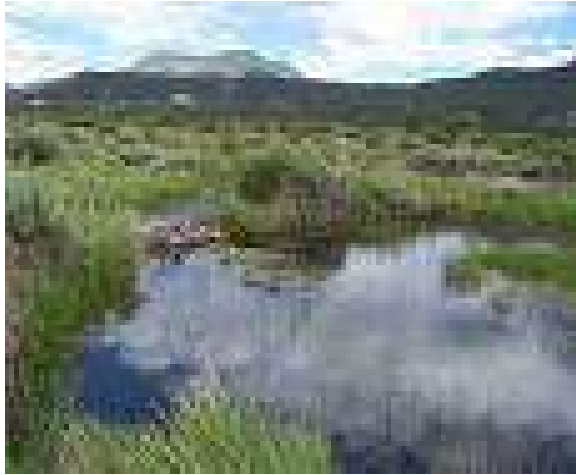
CASE STUDIES

Case Study Evaluation

Case study analysis is an integral component of Tejido's design process. Thorough design and planning reviews of similar projects allows us to avoid the mistakes and build upon the successes of precedent projects. Our assessment of these case studies is guided by a series of design and planning ordering systems: functional, socio-cultural, aesthetic, economic, and environmental. Our case study analysis includes the distillation of design implications, and the assimilation of these into design precepts and eventually fledgling concepts.

This portion of our process is also absolutely critical to effective communication with our clients. Our case study analysis is exhaustive and dedicated to the generation of design implications resulting from our review of other projects relevant to our own. As our clients witness the successes and failures of other relevant projects around the world they gain confidence in feasibility of their own project and in their designer. We have assembled a very large digital library of design and planning case studies, and continue to develop new ones with each project.

E C Bar Ranch



Revigitated Creek Banks

The E C Bar Ranch is a working cattle ranch located along the Coronado Trail Scenic byway in the White Mountains of Arizona. In recent years the ranch has set an example of how ranchers can implement conservation and restoration practices while improving ranch economics, water quality and wildlife habitats. Management goals on the ranch include riparian restoration, water quality protection and enhancement, sediment reduction, range improvement for domestic and wild ungulates, habitat protection for sensitive fish and wildlife species, public education and conservation outreach.

The E C Bar Ranch has received extensive credit and publicity for efforts leading to a restored riparian waterway along sections of the Nutrioso Creek. By working with agencies like Arizona Game and Fish, The National Forest Service, The Nature Conservancy, and The Natural Resource Conservation Service, the ranch has restored over

2.5 miles of the Nutrioso Creek.

Financial help in restoring the creek has come from the Department of Environmental Quality, much of it in the form of grants. The ranch has used the grants to restore patches of riparian vegetation, reduce turbidity, and prevent large animals such as elk and cattle from entering the stream banks.



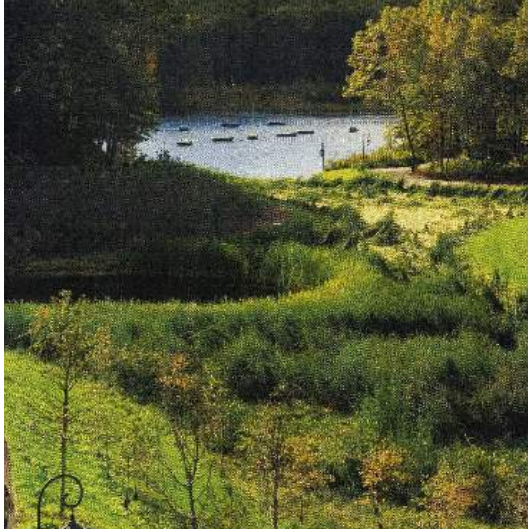
Willow Wattle Revegetation

The Best Management Practices recommended for the E C Bar Ranch sections of the river include (a) limiting cattle grazing to winter use (dormant season), (b) fencing to control cattle and elk use, (c) installation of off- channel water wells and drinkers for livestock and wildlife, (d) installing stream grade stabilization structures, (e) revegetation with willow planting and herbaceous species, (f) improved irrigation to increase plant cover, (g) Rabbitbrush control, (h) buffer and filter strips, (i) installing stream bank erosion control measures, (j) planting exposed stream banks, and other practices. Many BMP's have already been implemented such as installation of riparian pastures, development of a piped sprinkler

irrigation system, off- channel water wells and drinkers, increased control of elk access and use, some stream grade control structures, and Rabbitbrush control.

Design Implications

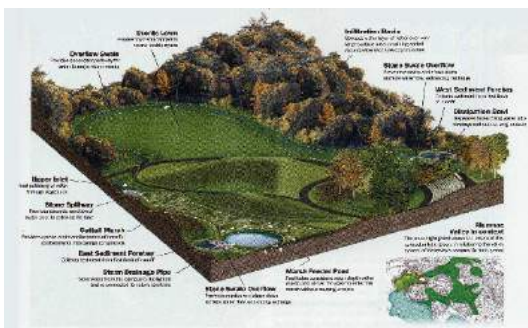
- The E C Bar ranch lies on a portion of the Nutrioso Creek, the same creek that runs along the northern edge of Springerville. Springerville stands to benefit from restoration of the creek, currently listed by Game and Fish as “impaired”. Having successfully implemented a number of BMPs, the E C Bar Ranch is a great example for the town of Springerville in its efforts to restore portions of Nutrioso Creek. Information available through the ranch and its experience includes the names of consultants and agencies familiar with creek restoration, agencies with programs that contribute funding towards restoration projects, as well as lists of appropriate revegetation species and best management practices. The ranch also provides instructions and diagrams to aid in the implementation of recommended practices.



Wellesley College Wetlands

The Wellesley College Wetlands are part of a comprehensive masterplan design created by Van Valkenburgh Associates in 1998. The wetlands are located in alumnae valley, an area which acted as a parking lot for the college until 2003.

One of the challenges that Van Valkenberg faced was how to treat land that had been contaminated by fuel and oil from parked cars and service vehicles. While some contaminated soil needed to be removed, it is expected that



the high biomass in the wetlands area will treat the rest of the contamination.

The wetlands area covers 13.5 acres and is filled with different types of grasses as well as walking paths and



a small recreational field. The result is a rich, beautiful wetlands area which has attracted avian wildlife back into the center of campus and provides a peaceful retreat for Wellesley students.

Sweetwater Wetlands

The Sweetwater Wetlands demonstrates how wastewater retention ponds can be converted into a successful ecosystem and habitat. It is located in Tucson between I-10 and the Santa Cruz River near Prince road. Constructed in 1996, the wetlands are designed to treat the secondary effluent and backwash from the nearby

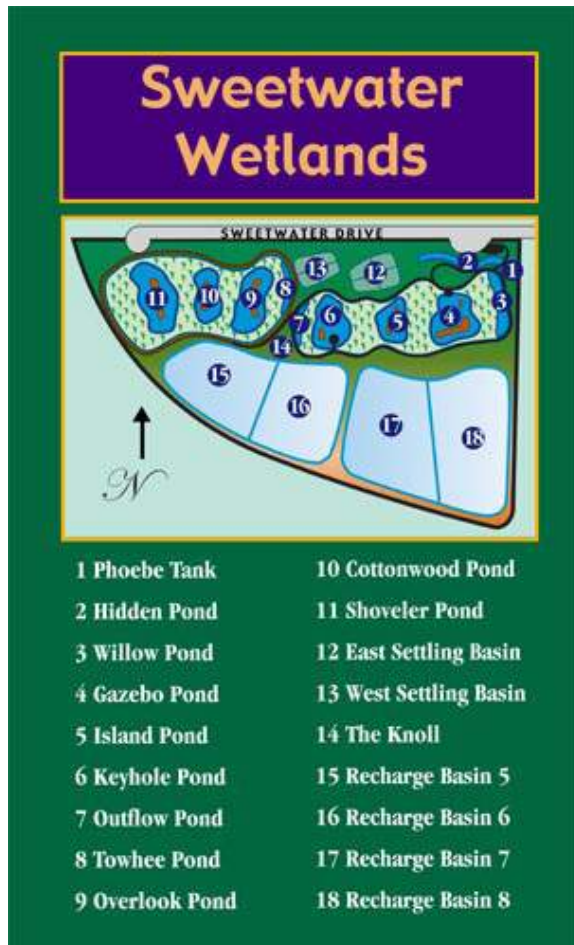


CASE STUDIES



wastewater treatment plant. There is a series of ponds which progressively filter waste water until it is usable for irrigation of Tucson's city parks and golf courses.

The wetlands area is composed of a number of smaller ponds as well as



larger detention basins. Paved and unpaved paths circulate between all the ponds and provide a view of the detention basins.

Sweetwater is unique because it acts as an environmental education facility while providing habitat for a variety of wildlife species. Animals seen include the Least Grebe, Chestnut-Sided Warbler, and a family of Harris Hawks. The vegetation at the wetlands consists primarily of cattails, willows, cottonwoods, and saltbush. Ducks are commonly seen on the ponds while blackbirds frequent the cattail area. Smaller birds such as Sparrows, Abert's Towhees, and other species can also be seen.

Relevance

One area of high potential for the town of Springerville is the wastewater wetlands area. Currently this space is underutilized but with increased development it could become a major attraction for the town.

Wetlands areas are often popular due to their lushness and diversity of plant life. They also provide habitat for many species of animals and birds, making them an attraction for nature enthusiasts and birdwatchers.

Two examples of successful wetlands are Alumnae Valley at Wellesley College, Massachusetts and the Sweetwater Wetlands in Tucson, Arizona.

Design Implications

- Wastewater wetlands attract a diverse population of wildlife.
- Wastewater wetlands can act as an educational facility about ecology and the environment.
- The wetlands area can be turned into a park and act as a gathering place for the people of the town.
- The treatment ponds can be planted densely and turned into a beautiful landscape.
- Water treated through these ponds can be used on the golf course and other municipal parks.
- Birders and other wildlife enthusiasts will be attracted to this wetland due to its high diversity of avian species.

Flagstaff Arizona

Flagstaff, Arizona is located at the intersection of Interstate 17 and Interstate 40, and is the largest city in Northern Arizona. The city is also the regional center and county seat for Coconino County, the second largest county in the 48 contiguous states. The City of Flagstaff became a town in 1894, incorporated as a city in 1928, and is currently comprised of just over 64 square miles. Flagstaff is nestled at the base of the San Francisco Peaks and is surrounded by one of the largest pine forests on earth. Flagstaff drew its name from a very tall pine tree made into a flagpole in 1876 to celebrate our nations centennial. At nearly 7,000 feet, Flagstaff is also one of the highest elevation cities in the United States. The city is a year round mecca for visitors and many Arizonans maintain second homes there.

Five business and industrial parks are situated in Flagstaff with excellent access to the Interstates. One additional site resides within 15 miles of the City limits. Major manufacturers include W.L. Gore & Associates (of Gortex renown), manufacturer of medical equipment; Nestle Purina Petcare Products, manufacturer of pet food; SCA Tissue, manufacturer of tissue paper; and Joy Cone, manufacturer of ice cream cones.

Similar in climate to Springerville, Flagstaff relies heavily on tourism, attracting skiers in the winter, and vacationers in the summer. Non-



city residents provided an estimated 50% of the sales tax revenue. Flagstaff citizens realize that the quality of life enjoyed in this mountain community is intricately related to the preservation of the environment. The City has dedicated considerable resources to a variety of environmental issues and local conservation efforts.

The city of Flagstaff has an urban trail system (FUTS). It was designed to interconnect residential areas to commercial centers, cultural centers, schools (including Northern Arizona University), recreational areas, public lands, and other points of interest within and beyond the city limits. FUTS allows access to the cross state Arizona Trail, the extensive trail system that spans Arizona, and the Flagstaff Bikeways Network. The “backbone” of the system consists of 20 miles of trails. Equestrians using the system are asked to use the natural surfacing adjacent to the trails. The extensive trail system ensures that no resident of Flagstaff is very far from a trail that can serve as a training ground or car-free way

to get around Flagstaff. The City has completed approximately 32.8 miles to date. About 100 additional miles are planned with new trail sections added each year. FUTS is most successful when the community is informed and involved in its creation, planning, implementation, and management.

Design Implications

- Trail systems throughout Springerville can successfully interconnect parts of the community as they have in Flagstaff.
- Springerville will benefit by preserving its environmental amenities similarly to the benefits Flagstaff has experienced.
- Arizona has a booming second home market just waiting to be tapped into. With great weather, cheap housing, and an abundance of natural beauty Springerville is poised to tap this market.

Silver City: The Main Street Project

Silver City is located in the Southwestern corner of the state of New Mexico, and is often called the gateway to the Gila Wilderness. It lies at an elevation of 5,931 feet. Similar to Springerville, Silver City offers its visitors a mild climate and an abundance of outdoor activities. Silver City has a rich multicultural history including Mimbres Indian Culture, Hispanic influences, and Victorian-era architecture.

In 1985, Silver City established its main street revitalization and historic preservation program. Through partnerships with individuals, business support, corporate donors, The Town of Silver City, and state agencies, the program for Main Street has become an integral part of developing the local economy. There are now over 200 retail and service businesses, nonprofit organizations, art studios, churches and government services in the historic downtown district. Springerville could create the same network of people in an effort to help its downtown develop. Through the proper networking, Springerville could restore its historic buildings, improve its economic outlook, and improve how people view the downtown district.

The Silver City Main Street Project has developed a four point approach to seeking support and improving businesses and development in historic downtown:

1. Organization:
Through volunteer programs and a full time manager.

2. Promotion:
Marketing and sponsoring yearly events in the historic downtown commercial district.

3. Design:
Providing programs of free professional design assistance for businesses in the historic district and securing funds for and coordinating major downtown infrastructure improvements.

5.. Economic development:
Helping existing downtown businesses, recruiting new businesses to the historic downtown commercial district, encouraging stakeholder involvement and implementing the following economic programs:

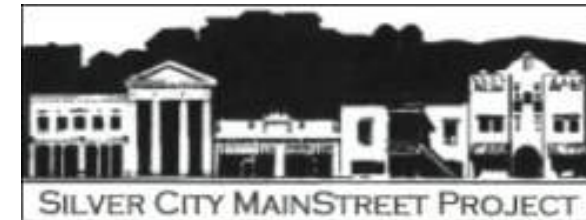
The downtown Gift Certificates Program:
100 participating businesses brought over \$ 30,000 dollars to downtown.

The historic Downtown Guide and Business Directory:
Promotes downtown by including listings and map for residents and visitors.

Business retention and recruitment activities:
Helps existing and new business grow and get started.

The main street program has received \$ 400,000 from the town of Silver City and helped on

different projects around town. The program has completed \$4.6 million of infrastructure improvement projects.



Design Implications

- Like Silver City, Springerville could implement a historic preservation and main street revitalization program. Springerville could apply to the national registry for funds to preserve and improve the condition of historic structures.
- Develop a network of business owners and concerned citizens willing to take action toward improving main streets appearance and economy.
- Develop a business plan or approach directed at marketing the “new and revitalized Main Street Springerville”.
- Develop a design program through which the main street can be unified and aesthetically improved. This will contribute greatly toward attracting tourism and economic activity.



FREDERICKSBURG, TEXAS

The town of Fredericksburg, TX has a population of just under 10,000 people. The town was very interested in proactive planning efforts to assure it retained its character while taking advantage of the benefits of controlled, planned growth. The town established 3 over-riding goals and a 5 phase implementation plan to achieve their goals for the town.

HISTORY

Established in the hill country of central Texas, the town was first settled by a group of covered wagon settlers in 1846. This group consisted of 120 persons who were part of a settlement society founded to create colonies in Texas. In the early 1900's the town was largely agricultural, then became the commerce center for the area. In the 1990's the town had a population boom of 25% growth.

The first planning efforts occurred in 1967 with a comprehensive plan focused on establishing future land uses, transportation management with major and secondary roads,

and planning for public amenities such as schools, parks and city buildings. The next planning effort occurred in 1985 had a similar focus, but also established "landscaping" ordinances which people believe has helped define the visual sense of the town. A third effort occurred in 1995 and focused on preservation of the historic nature of the town, transportation issues, and land uses.

Finally, the most recent planning document was adopted in 2005. This plan recognizes that the town's natural setting contributes to its "character, its economy and its quality of life". (City of Fredericksburg, Texas Comprehensive Plan, page 1.3) The town is popular with retirees and people who enjoy the outdoors. Most people want to retain its "small town" feel.



Unlike Springerville, Fredericksburg is largely a residential community, primarily with single family residential units. The next major land uses are civic and transportation.

The top three concerns for the town were to maintain its character, to

provide more jobs that pay above minimum wage, and to deal with the increasing cost of housing which was limiting the ability of locals to buy houses in town. The gap between livable wages and housing costs were the main reason locals did not stay in Fredericksburg as adults. Other concerns included water, cluttered yards, cooperation between city and county, infrastructure, and planned/managed growth.

RELEVANCY

Many of the issues facing Fredericksburg, TX are the same concerns faced by Springerville, AZ. Concerns about uncontrolled development, the need for planned growth, sensitive natural amenities valued by the local population, and the need for good paying jobs and affordable housing were priorities. Fredericksburg has several natural areas and parks in the area. Springerville is on the cusp of a similar boom of population and has the opportunity to consider the decisions made in Fredericksburg as an example of how a town can strive successfully toward its goals.





Fredericksburg, Texas Revitalization Plan

Five primary plan elements were identified in the 2005 Comprehensive Plan developed for the town of Fredericksburg, Texas. These elements were: Livability, Land Use, Growth, Transportation, and Parks and Recreation. In order to address these issues the town identified the following areas of focus.

1. Designed natural features were integral to the community and people's daily lives. The town would identify, retain, and incorporate streams, steep slopes, views, and trees into the design of development in the future.

2. The historical culture and the variety of people in the community would be an important element in the town.

3. Arts and Culture would be an emphasis in town development. Schools, museums, galleries, and other cultural institutions were seen as important public or semi-public facilities and adjacent development should be compatible. These facilities were to be incorporated as assets to the economic development of the town, and they would be

asked to partner with the town for future development.

4. City Core was to retain its charm with a conscious balance of goods and services which provide the needs of both locals and tourists. There would be a mix of public, retail, office and other major uses close to each other to encourage a vibrant city core.

5. Destinations are seen as important to the vitality of the town. Parks, schools, shopping, museums would be constantly maintained, refreshed, and/or expanded.

6. Volunteerism was encouraged by all age groups. Housing plans were to include housing for all levels of income.

8. Healthy community solutions included a focus on walkability, exercise for children and adults, clear air and water, and medical facilities.



Fredericksburg hosts the
Renewable Energy Round-up

DESIGN IMPLICATIONS

- Like Fredericksburg, Springerville is a small rural community which is very connected to its cultural roots. Fredericksburg was able to successfully anticipate impending changes and growth and plan for those changes through a series of Town Plans. Springerville should be able to do the same.
- The planning efforts in Springerville should focus on preserving town character, attracting higher paying jobs and creating housing for all income levels, as has been the case in Fredericksburg.
- In order to accomplish its goals Springerville should enhance the town center, focusing on preservation of the town center, attracting clean industry and education centers, and embracing its rural setting. This will make the town attractive to tourists, retirees, and second homeowners who have a sense of pride in the town and will see increased incomes and a rising quality of life as a result of the town's actions. This has been the case in Fredericksburg.



Historic Building in Fredericksburg

Linesville, Pennsylvania USA



Map showing Linesville, Pennsylvania

Linesville is a small rural town located in Northwestern Pennsylvania on Historic U.S. Route 6 in western Crawford County. It lies approximately 30 miles south of Lake Erie, 80 miles east of Cleveland, and 100 miles north of Pittsburgh. Its population in 2000 was 1155, and it is expected to grow. The median income for a family is \$34,038, and the median income for a household is \$30,938.



Historic Photo of Linesville

It is located within a mainly agricultural community, but that is now what draws the majority of tourists to the town.

Linesville lies on Pymatuning Lake, which is more of a wetlands/swamp, that provides habitat for many types of water fowl, forest animals and a healthy fish population. For years this natural amenity has brought hunters, fisherman and nature enthusiasts to the area for recreation. It provides a safe place for families to come, as well as a place for tourists to stop off. The town has two main attractions associated with Pymatuning. One is

the Pymatuning Spillway, and the second is Ducks Unlimited. The Pymatuning Spillway is a small area where large numbers of carp congregate. The numbers are so dense that when people throw bread into the fish, ducks will walk across the backs of the carp to get the bread. What started as a local fascination, has grown more regional, and now there is a small stand that sells T-Shirts (and other souvenirs) displaying a happy duck traipsing across some fishy backs, with the tag line “Pymatuning, Where the Ducks Walk on the Fish”.



CASE STUDIES

Ducks Unlimited is a national organization whose mission is to “have sufficient wetlands to fill the skies with waterfowl today, tomorrow and forever”. Every year they give 80% of their funds to conservation of wetlands. This organization has donated money to Pymatuning in Crawford County for the preservation of its water fowl, and Linesville has benefited from this. Once a year, usually in late spring or early summer, there is a Ducks Unlimited festival held in the town. It stretches from the town and continues into the park. Local organizations get involved as

well. The local Presbyterian Church has a bean soup “cookoff” at the same time, and people from all over the region come to experience the celebration. A lot of the money that is generated goes to conservation. Other portions benefit the community by being used for town beautification. Children that grow up in the area and move away inevitably return with their own children. They return see the local artisans and their wares, watch the retriever dog competitions and to watch the ducks stroll over the fish.



Hound Dog in the Sunset

Design Implications

- Like Linesville, Springerville should take advantage of its small town amenities.
- By publicizing and boasting its unique small town characteristics Springerville will generate greater hometown pride. This goes a long way toward attracting and retaining families and businesses.
- Linesville has taken advantage of surrounding natural amenities. Springerville has many natural amenities to boast and take advantage of.
- Local festivals have proven to be a great regional draw. Springerville has a number of festivals that could generate a lot of tourist activity and revenue.
- Finding organizations (national, state, regional) willing to fund events locally could go a long way in supporting festivals and events. By highlighting nature and the local environment, festivals and events can help to protect sensitive and easily disturbed natural areas



Cordova, Alaska

Cordova, Alaska is located at the southeastern end of Prince William Sound in the Gulf of Alaska. The community was built on Orca Inlet, at the base of Eyak Mountain. The traditional native village of Eyak is located within the municipal boundary. Cordova is the only incorporated government within the watershed. The Merle K. “Mudhole” Smith Airport at mile 13 is State-owned and operated, with a 7,499’ long by 150’ wide asphalt runway and 1,875’ long by 30’ wide gravel crosswind runway. The State-owned and City-operated Cordova Municipal Airport has a 1,800’ long by 60’ wide gravel runway. Daily scheduled jet flights and air taxis are available.

The area has historically been home to the Alutiiq, with the addition of migrating Athabascan and Tlingit natives who called themselves Eyaks. Alaskan Natives of other descents also settled in Cordova. Orca Inlet

was originally named “Puerto Cordova” by Don Salvador Fidalgo in 1790.

Although the area had been the location of traditional Eyak villages for hundreds of years, the town of Cordova was named in 1906 by Michael Heney, builder of the Copper River and Northwestern Railroad, and the City was formed in 1909. One of the first producing oil fields in Alaska was discovered at Katalla, 47 miles southeast of Cordova, in 1902. Cordova became the railroad terminus and ocean shipping port for copper ore from the Kennecott Mine up the Copper River. The first trainload of ore was loaded onto the steamship “Northwestern,” bound for a smelter in Tacoma, Washington, in April 1911. The Bonanza- Kennecott Mines operated until 1938 and yielded over \$200 million in copper, silver and gold. Fishing became the economic base in the early 1940s. Numbering approximately 2000 year round residents, the town



of Cordova is a typical Alaskan community bathed in natural beauty, with a diverse population, and a place where the small town sense of community is crossed with western individuality. The town sits cradled between the ocean and federal lands (mostly in the form of a National Forest) and growth has been reined in by this to a large degree. This makes the town a pedestrian scale, but it has also resulted in a general shortage of private land thus a housing crunch. During the 2000 U.S. Census, there were 1,099 total housing units, and 141 were vacant. 68 of these vacant housing units are used only seasonally. 1,221 residents were employed. The unemployment rate at that time was 6.86%, although 33.75% of all adults were not in the work force. The median household income was \$50,114, per capita income was \$25,256, and 7.52% of residents were living below the poverty level.



CASE STUDIES



Cordova is a relatively isolated community that has experienced economic hardships in recent decades. Not connected by any road system, the town was one of the hardest hit when the Exxon Valdez oil spill occurred in 1989, and recovery options were limited. The spill, which started a mere 60 miles up current from Cordova, obliterated the commercial herring fishery which was one of the strongest fisheries the community relied upon. Nearly half of all households have someone working in commercial harvesting or processing. Copper River red salmon, pink salmon, herring, halibut, bottom fish and other fisheries are harvested. Reduced salmon prices have affected the economy. However, the Copper River salmon fishery is continuing to be a major revenue earner for the community with Lower 48 restaurants snatching up the first runs as soon as they can be brought onto the fishing docks. It should be noted that the demand for Copper River salmon is by and large the creation of a community run marketing campaign. Private individuals rent out any

livable spaces on their properties even dry-docked fishing boats. The seasonal workers are often younger people, and this sort of flexible arrangement works well. Canneries and government employers will often provide worker housing near their operations. Many seasonal residents choose to camp in one of the several public campgrounds that are in or around the town, and many more take advantage of the neighboring public lands. It is assumed by the land managers that this use type is vital to the economic health of Cordova. However, Cordova still needs to work to meet the housing need 100%. Some vacant state owned land has been taken over by seasonal squatters. Hippie Cove, as the parcel is known, swells in the summer months and has been the source of crime in some instances and of environmental issues in others. In the future, Cordova will have to plan to integrate Hippie Cove into the urban fabric or else the town will face further social and environmental issues.

Cordova saw an opportunity to put themselves at an advantage and were able to organize early. They



have thus achieved success. Self employment and the subsistence lifestyle are common in Cordova, but the largest employers are North Pacific Processors, Cordova School District, Cordova Hospital, the City, and the Department of Transportation.

Design Implications

- When faced with an environmental and economic catastrophe, the town banded together and formed a workable plan that has seen positive results.
- With the population nearly tripling in the summer months, Cordova solves the housing problems through cooperation between individual, business, and public means.
- Cordova is an example of the town banding together to support a situation that has potential to benefit the community economically. Through community effort Springerville could support a large and prosperous fat tire festival.

HEAVEN'S LANDING AIRPARK

Over the last 50 years, several hundred aviation communities have sprung up in the United States. They are a very desirable option for retired commercial airline pilots and hobbyists alike. Each community is built around a runway, which can be dirt, turf, or concrete, depending on the aircraft.

Heaven's Landing is located in the Blue Ridge Mountains 100 miles outside Atlanta, Georgia. It is a gated community of 635 acres with 200+ lots. These average 1.5 acres in size, and prices start at \$115,000 for the land, which the buyer can then build a custom home on. There are strict architectural and visual guidelines on all building and landscape plans. Though these insure an overall "look" to the community, they inhibit the vitality generated by creativity.



Heaven's Landing provides residents with a communal hangar. They have found that non-taxiable lots (those with hangar space) are selling at three times the rate of taxable ones (those with a private hangar attached to the home). Taxiable homes are made even larger by the addition of individual hangars. Nearly all aviation communities



are located in rural areas, ranging from approximately 20 to 100 miles away from the nearest major city. Flight time as opposed to driving time makes these distances less significant, which would be a benefit to Springerville. As a luxury lifestyle requiring open space, aviation communities have been successfully paired with equestrian and/or golf communities. Springerville has both of these amenities and a near by airport that could be used to support an airpark community. However, there are also drawbacks to an aviation-based development. The environmental and aesthetic elements of sustainability are called into question with this option. Airplane enthusiasts are not troubled by the increased noise, but it may be off-putting to other humans and to wildlife. The use of fossil fuels and subsequent pollution were something the Town of Springerville would like to avoid. Despite these considerations, the fact remains that many aviation communities are sold out, even on

plots that are yet to be developed in future phasing. This indicates that they are economically sustainable.

Design Implications

- Increased economic activity could aid in supporting the airport and related facilities
- High end housing will bring a premium dollar. This will in turn have positive effects on the property values in Springerville.



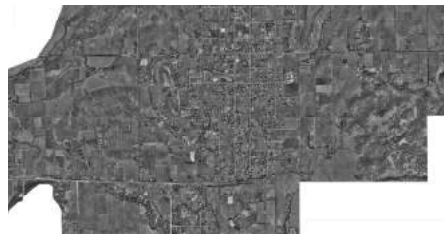
CHAPTER 4

CONCEPTS

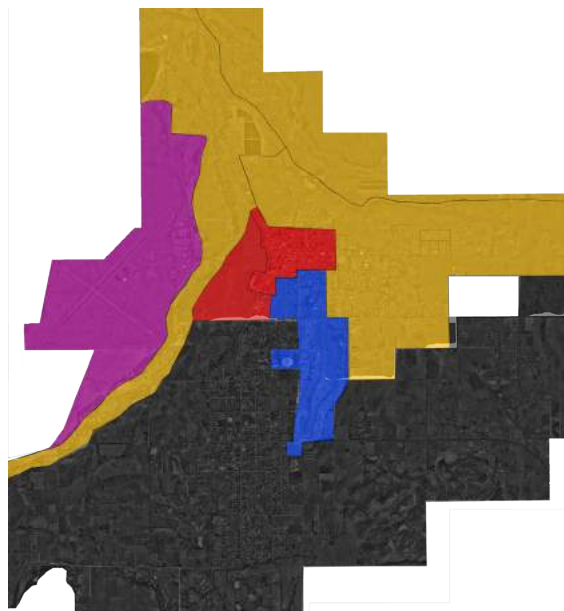
- Areas of Focus
- The Big Picture
- The Big ideas
- Terminology
- Central Park
- Main Street
- The Airport District
- Regional Greenway System
- Why Plan Your Community

Areas Of Focus

These areas of focus were created for multiple reasons. This created an ease of analysis, defined areas that individuals and groups could concentrate. Although these areas are divided they are never thought of as separate. All the ideas



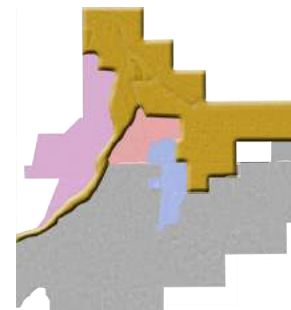
Aerial Base Map Of Springerville and Eagar



Base Map With Overlay of Focus Areas

- Main Street
- Central Park
- Airport District
- Long-Term Strategies
- Eagar

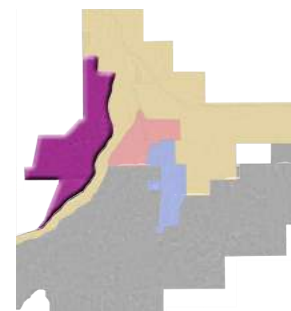
Legend for Overlay of Focus Areas



Long-term Strategies

Creating Greenways will help give neighborhoods

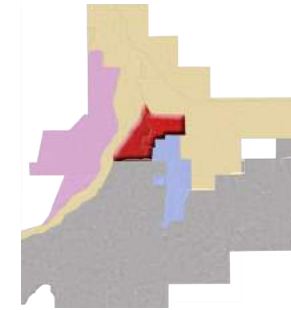
a unifying factor. The Nutrioso Creek provides growth boundary to the north and the Little Colorado defines the west boundary. New areas of growth defined within these growth limits. Nodes of interest unify neighborhoods



Airport District

Connections with the surrounding trail systems. The area presents an

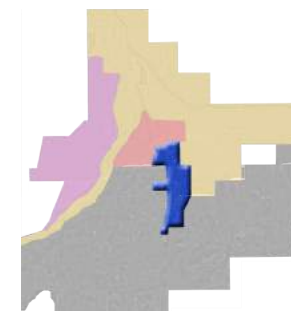
opportunity for a community and possibility for Lodge "Resort" style development. This can generate economic activity for the town and area. This also continues to support sustainable tourism in the region.



Main Street

This commercial district is a prominent employment center for

Springerville. Main street represents a significant portion of the community's sales tax base. Main street is also the historic core of the community. A vital main street reduces sprawl. Meaning that it can focus development inwards instead of out.



Central Park

The park is centered around family amenities. This park would help to organize future

growth development. Creating a clear visible link with Eagar will encourage collaboration between Springerville and Eagar. Increased surrounding area property values would benefit both new and existing residents. The parks also increase commercial opportunities in area by making Springerville more appealing to prospective businesses. Increased walkability for school connections promotes healthy living for both the children and adults.

The Big Picture

The big picture (See page 4) is a map of the round valley with important areas delineated in various colors. The colors have been used to depict various concept types as developed by The Tejido Group.

Areas in green have been placed to indicate proposed preserved open space and create linear parks. The parks will create a network of connections throughout the community giving neighborhoods a greater sense of identity and increasing the value of the land in these neighborhoods.

The areas shown in orange are designated as proposed medium density neighborhoods. Many of these areas are already neighborhoods; however, Tejido recommends increasing the density in an effort to infill the neighborhoods and prevent outward sprawl.

The orange area to the far west of town represents the proposed airport community. This community will serve higher end tourists and residents.

The areas in red represent proposed additional commercial space. The commercial space at the southern end of the map has been proposed in an effort to aid development of the large linear park designed to link Springerville and Eagar. The commercial space proposed east of the linear park has been designed to support the use of the dome as a

civic center and convention hall.

Purple has been used to designate areas proposed for civic and government purposes. The purple space to the west of the linear park was designed as an expansion of the dome and its related facilities. The purple trapezoid to the north of the dome represents expanded hospital and civic facilities designed to serve a larger round valley community with employment and medical care.

The big ideas behind the big picture are economic revitalization, connectivity, neighborhood development, anti sprawl strategies, greenway development, and walkability.

Increased walkability in Springerville will entice more people to leave their vehicles and peruse the streets. This activity will promote tourists and locals alike to window shop, congregate in public spaces, and spend money in local stores. Greater activity in the streets will promote tourists and passers-by to investigate main street. This will in turn bring an increase in revenue to Springerville.

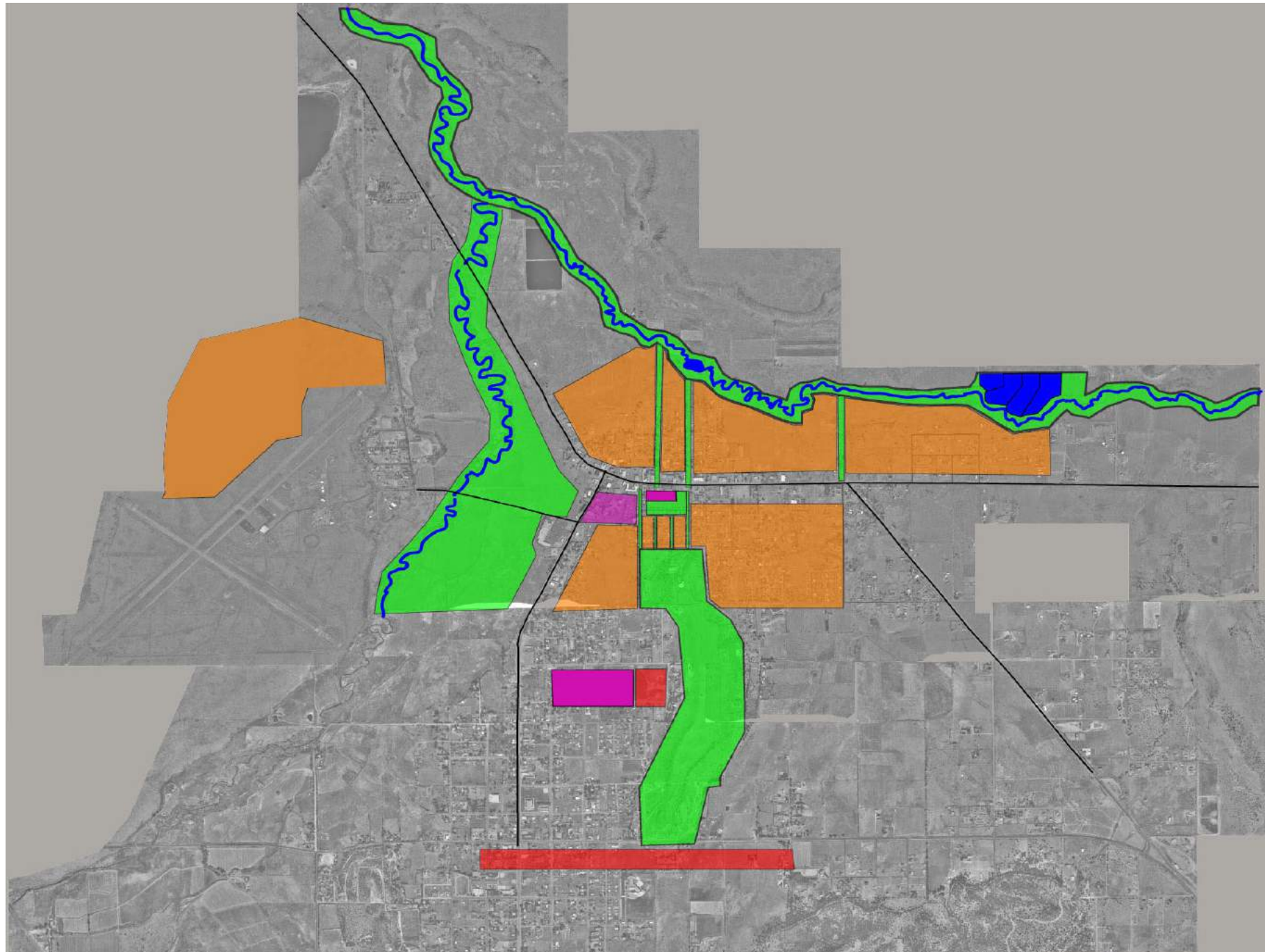
Greenway development in Springerville will aid the community in a variety of ways. Greenways have the potential to make neighborhoods and towns more appealing to younger couples and businesses with community consciousness. As the appeal of the community begins to grow, so will the property values. Increased property values will afford residents

of Springerville the opportunities to make improvements. These improvements will contribute towards the development and improvement of Springerville.



CONCEPTS

The Big Picture

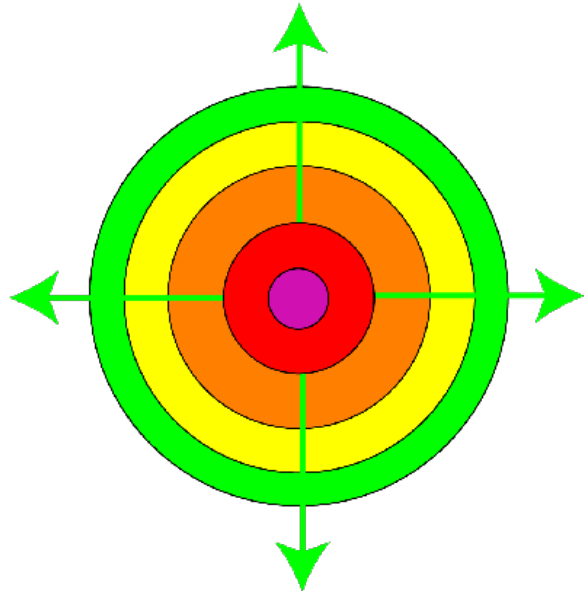


The Big Ideas

- Economic revitalization
- Anti-sprawl strategies

- Connectivity
- Greenway development

- Neighborhood development
- Walkability

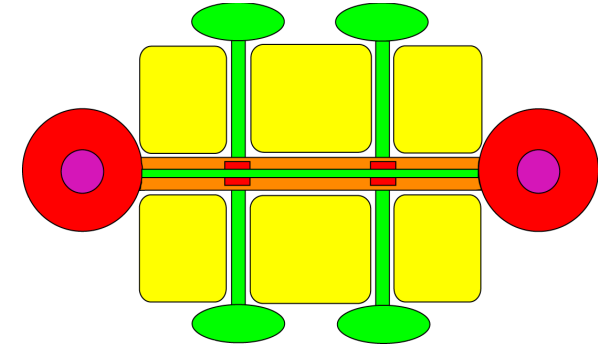


Nodes are centers of activity in the urban fabric, nodes draw people to them and can function as anchors for urban planning. Examples of what could become a node: a campus, commercial center, a museum, a natural feature, a park, a community landmark. Nodes provide people within a community a destination and community focal points. Nodes create interesting destinations and diverse urban spaces. They are, in part, what make cities and towns such interesting places to be.



Limits of Growth are often dictated by environmental constraints such as power or water availability. While these factors create the limits for numerical population growth, it is vital that communities facing spatial expansion set the conditions and limits of this growth. The only other option is to face having outside factors arbitrarily set the limits.

Well-planned communities establish their own criteria to direct growth so it is universally beneficial for all stakeholders. Planned and directed growth can be robust and economically healthy in the short term, and it can be much healthier than unplanned growth in the medium to long term.



Corridors are linear systems that connect nodes to other nodes and also to residential areas. Some examples may include streets, public transit systems, pedestrian paths, and greenways. Greenways are especially effective connector-corridors regarding the creation of a strong sense of place and a healthy, sustainable community. These corridors are important components for the development of walkable, healthy communities.

An effective analogy is the way two major retailers such as Macy's or JC Penney's are located at opposite ends of a mall. Having these retailers act as anchors for the smaller shops in between, they direct the flow of traffic and benefit all mall tenants in the vicinity.

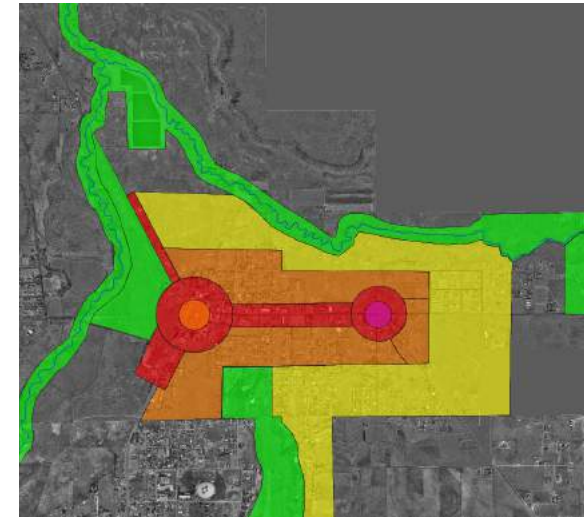


CONCEPTS

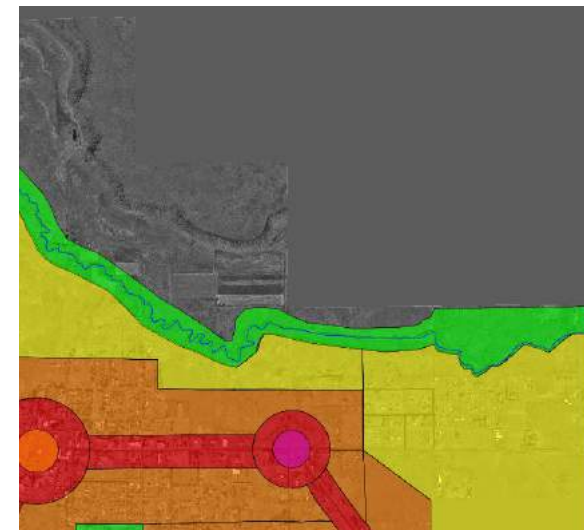
- This is what an unplanned Springerville will look like. Modern development will spring up along urban corridors such as the US 60 as it passes through Springerville, thereby encouraging development along the path of least resistance. In the diagram to the right we can see that commercial activity is concentrated in a narrow strip along the US 60, with all new commercial development leapfrogging out from the downtown core in an attempt to be the first business vehicular traffic encounters. Residential development takes a similar form as individual developers gobble up pasture land and open space looking to leap-frog their development tracts further and further from town. In the end, Springerville will be left with costly infrastructure, a fragmented town center, a total loss of community, and a devastated environment.

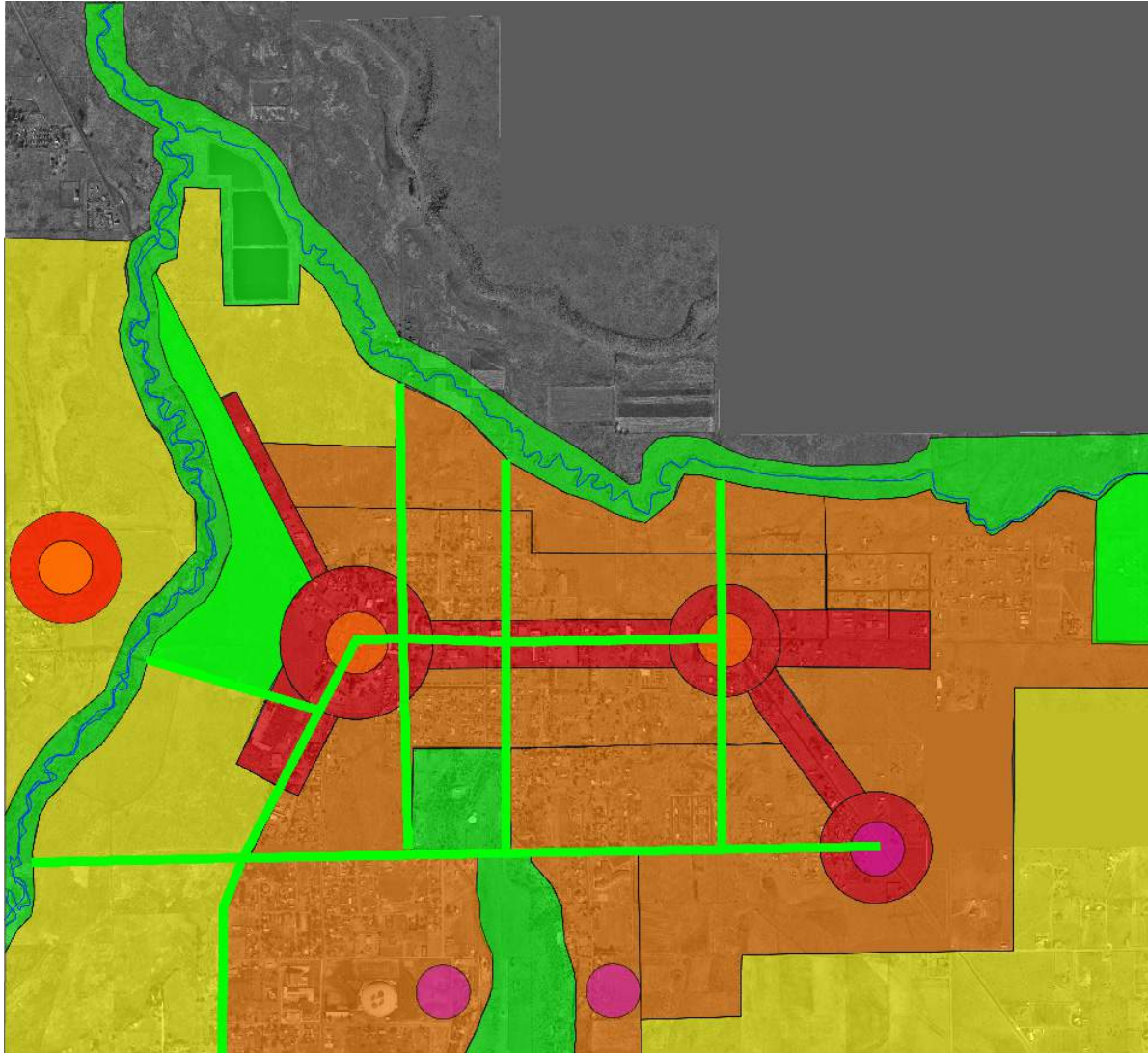


- By adding a second node to the east of the Main Street-Mountain Avenue intersection, Springerville can effectively bookend their historic main street commercial district and create the opportunity to infill the neighborhoods to the immediate north and south. People will have ready access to greenways and green spaces, as well as social and economic opportunities.



- Adding more nodes to the south of the main development strip will add further depth to the urban fabric and create direction for growth to occur. This will increase use in the outer eastern neighborhoods, and pull economic activity north from Eagar. It will also frame all the approaches to Springerville, ensuring a powerful sense of arrival.



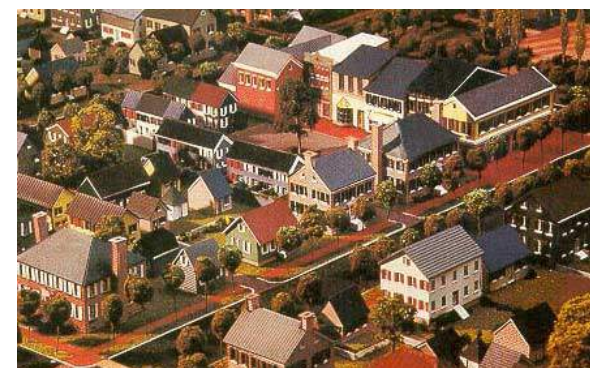


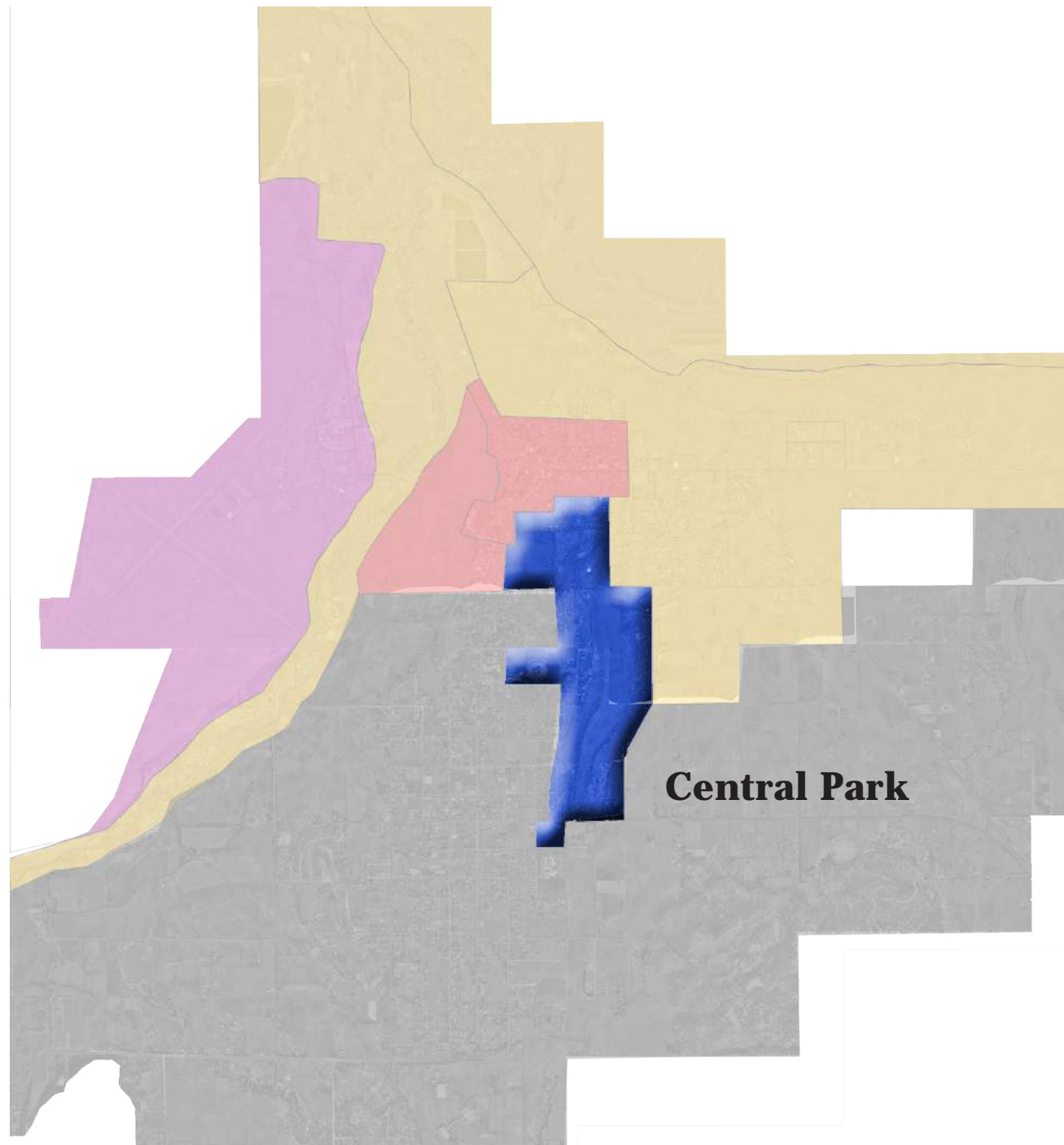
Many years down the road

This diagram shows that having numerous nodes spread throughout the town has pulled development away from the US 60 strip, maintaining the walkability of Main Street, while avoiding the compromise of the river walk growth limits. This urban form is compact, which makes efficient use of existing infrastructure and ensures that pedestrians can use all the spaces.

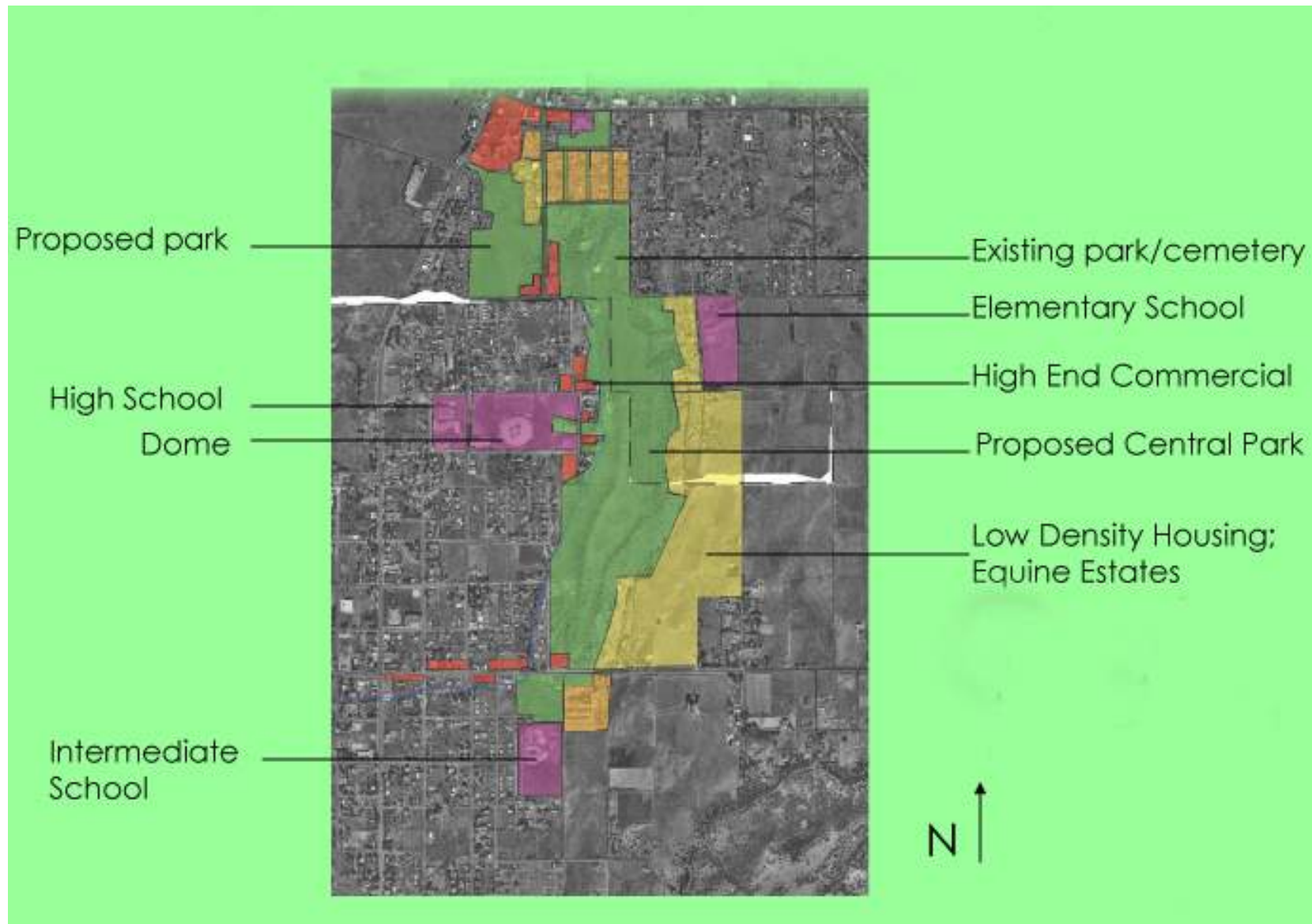
There are defined entry and exit

points along all routes to and from the town center. The different spaces are punctuated with greenways. The greenways protect the watershed and allow wildlife to pass through town. They also help create connections with Eagar, making for a stronger, unified Round Valley community. This plan allows Springerville to preserve its unique open spaces while maximizing its historic urban core.





Central Park



Proposed Greenway / Park Plan for Springerville



view of the park in Round Rock, Texas

Central Park

The proposed large central park includes the highest land feature in the central Round Valley and a refined Amity ditch to provide an aesthetic asset for Springerville. Covered with shade tree nodes, attractive waterside trails, and destination stops along its length, it would create a visual draw for traffic from all three points of entry. The central park would provide a visual focus and cohesion for existing homes and businesses as well as for future development. As in many towns, a refined central park would provide a commercial and social asset for local residents while also creating a draw for out-of-town visitors. Businesses will cluster around, and prosper by, the connection of the entire Round Valley. This strategy will encourage growth in the town center, discourage sprawl, and help to revitalize both main streets. Preservation of park space would additionally provide a buffering

core for the area creating an environmental habitat area for birds, small mammals, and some reptiles. It would encourage the survival of these species in the area.

The children of Springerville would benefit from a central park in a variety of ways. It would create connections between the three valley schools and provide a venue for biking, hiking, and other park activities.



(above) Rendering of the area suggested for the Springerville and Eagar Central Park.. The park reaches from Springerville's town center to that of Eagar.

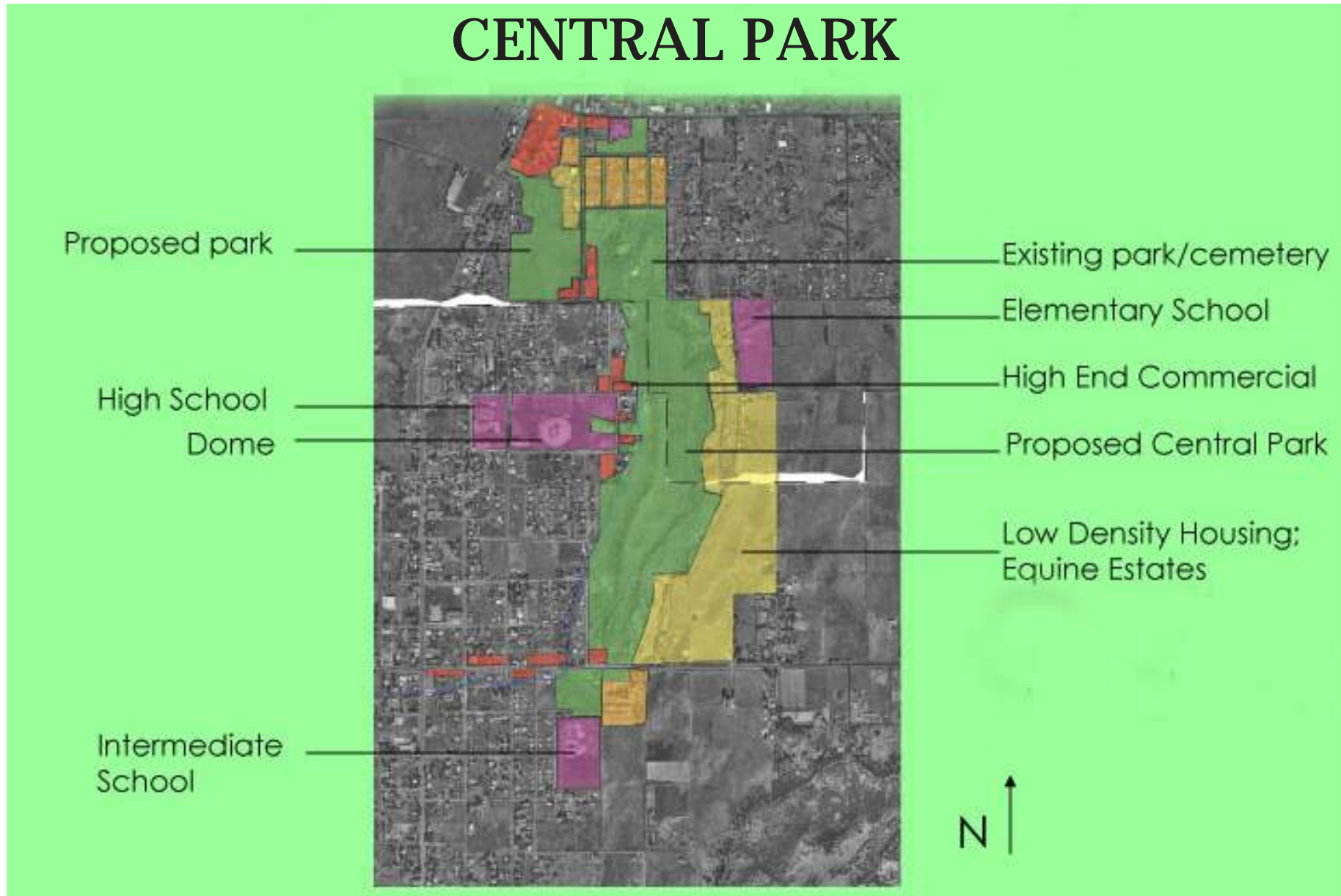


Local Juniper berries.

Young families would be encouraged to live in Springerville to enjoy the amenities and new commercial options attracted to the area. Local events would have a desirable venue and would encourage further collaboration between the two towns. Finally, the park could encourage high end, low density development in the nearby eastern slope and flatland neighborhoods, perhaps with an equestrian connection.



View of Tomahawk Island open spaces



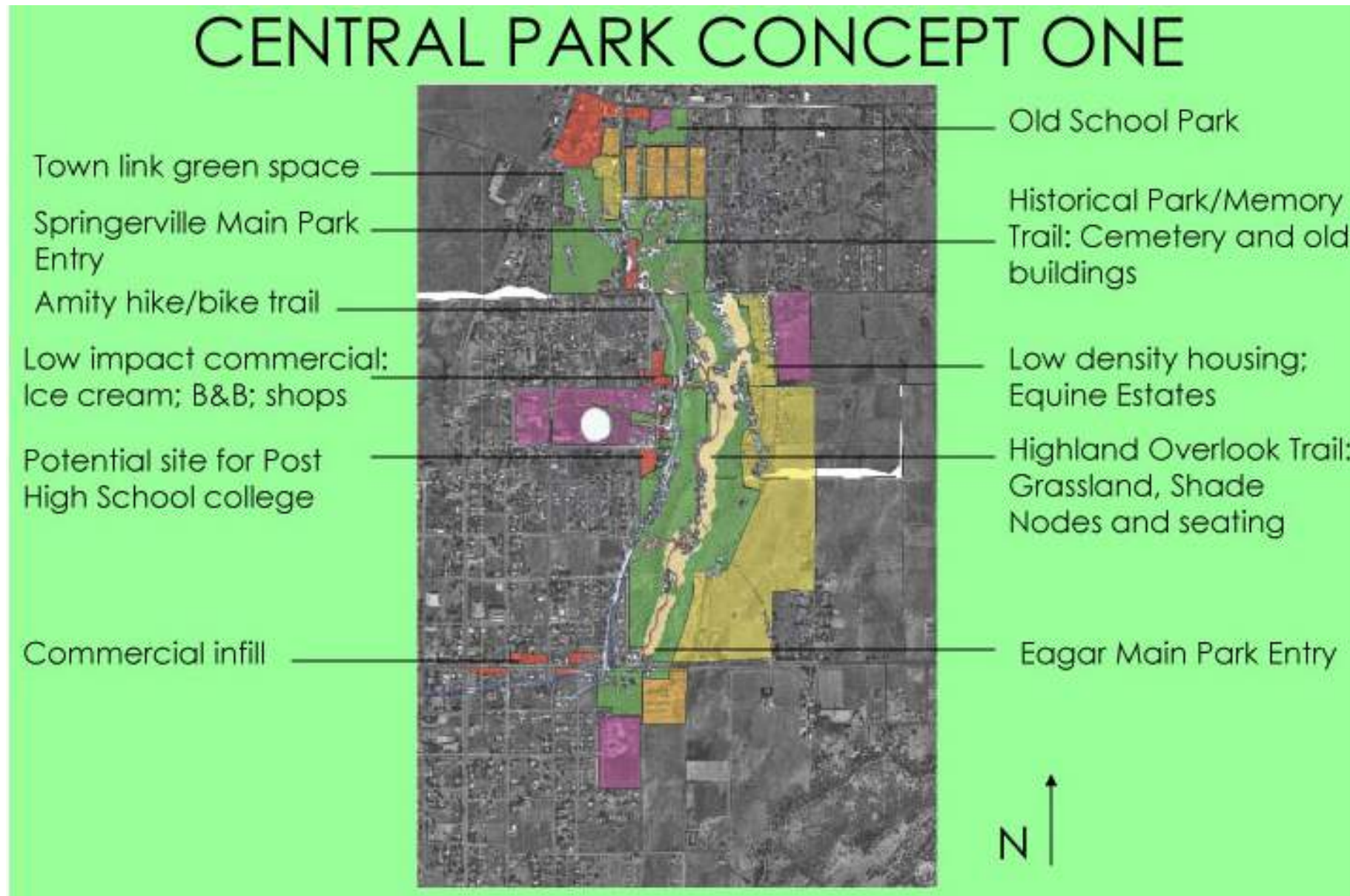
Aerial photo with proposed development zones for Springerville town center and proposed Central Park through Springerville and Eagar.

Central Park

The towns of Springerville and Eagar, share a central district with unique topographical features. Two key physical elements in this area

are a large north to south linear rise and an associated existing water drainage/irrigation channel. Our proposal is to create a linear park through both towns which will emphasize the open space assets of the area, while providing connections from Main Street to Main Street.

Creation of a Central Park provides Springerville with numerous benefits which address all of the ordering systems used to evaluate a viable design concept. There are overwhelming aesthetic, social, economic, functional, and environmental advantages to this solution.



CONCEPT ONE

This concept takes advantage of the existing historical buildings currently on site in the Springerville Park. The buildings are arranged around the cemetery in the existing portion of the park. This concept creates an historical core, entry feature, and destination for the park.

Concept one places the historic buildings along a new tree-lined

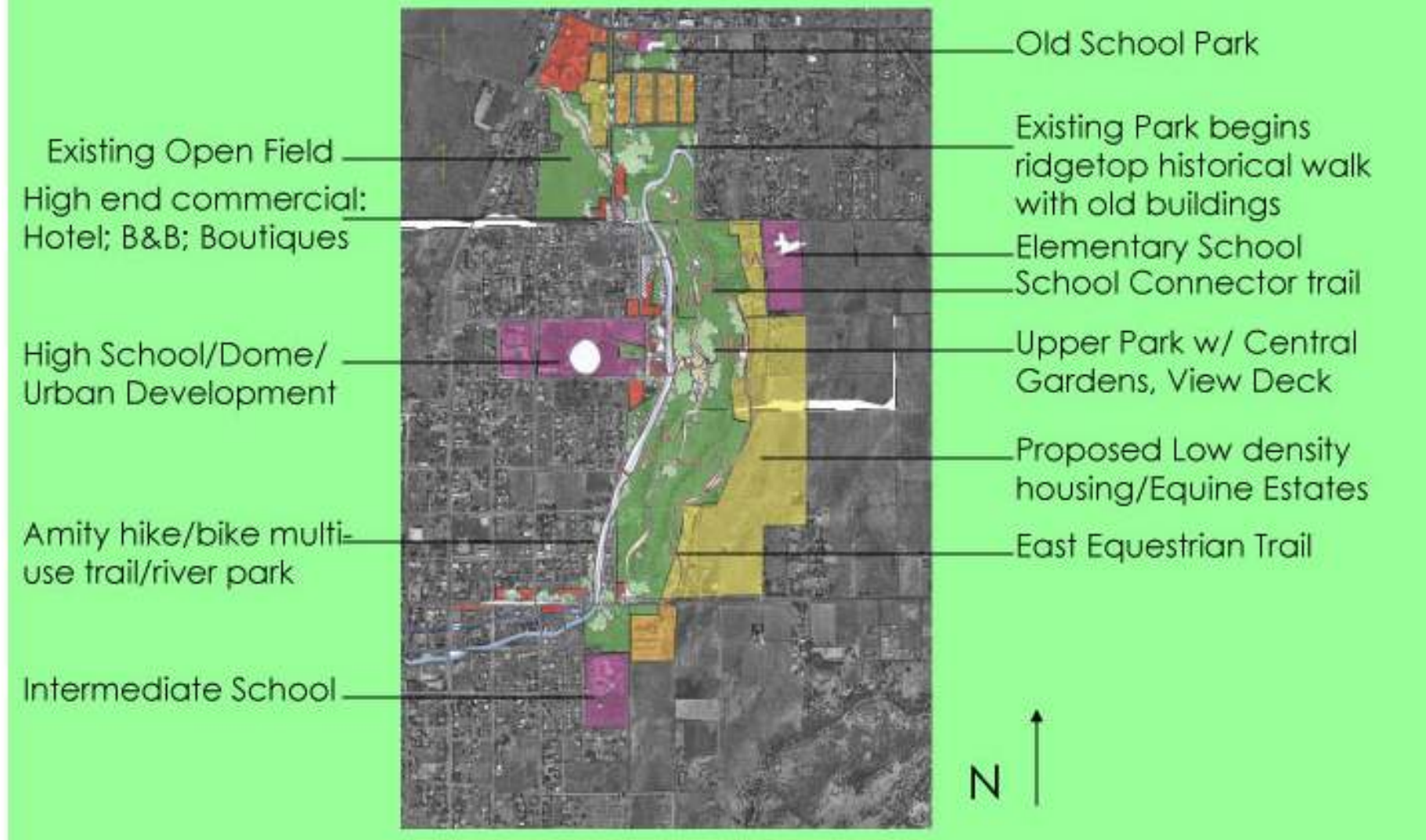
Historical trail creating a sense of arrival, and a discovery trail of history consistent with the town's identity. This setting would maximize the use of the buildings and encourage travel off of Main Street. Events focusing on the area's history could be incorporated into this area.

From the historical entry point visitors could travel the ridge crest for views of the Round Valley, or

they could take a lower trail along a refined Amity ditch. The Amity Trail would be designed for both walking and biking, providing seating and shade trees at regular intervals.

Low density equestrian estate housing would take advantage of the rural eastern exposure.

CENTRAL PARK CONCEPT TWO



CONCEPT TWO

This concept creates a ridge-crest walk using Springerville Park's historical buildings. This amenity would encourage park visitors to explore the entire length of the park and move into the town centers at each end. The walk would be mirrored along the current Amity Ditch, which would be refined. It would become a tree lined waterway

with hiking and biking trails and multiple seating nodes for resting and people watching.

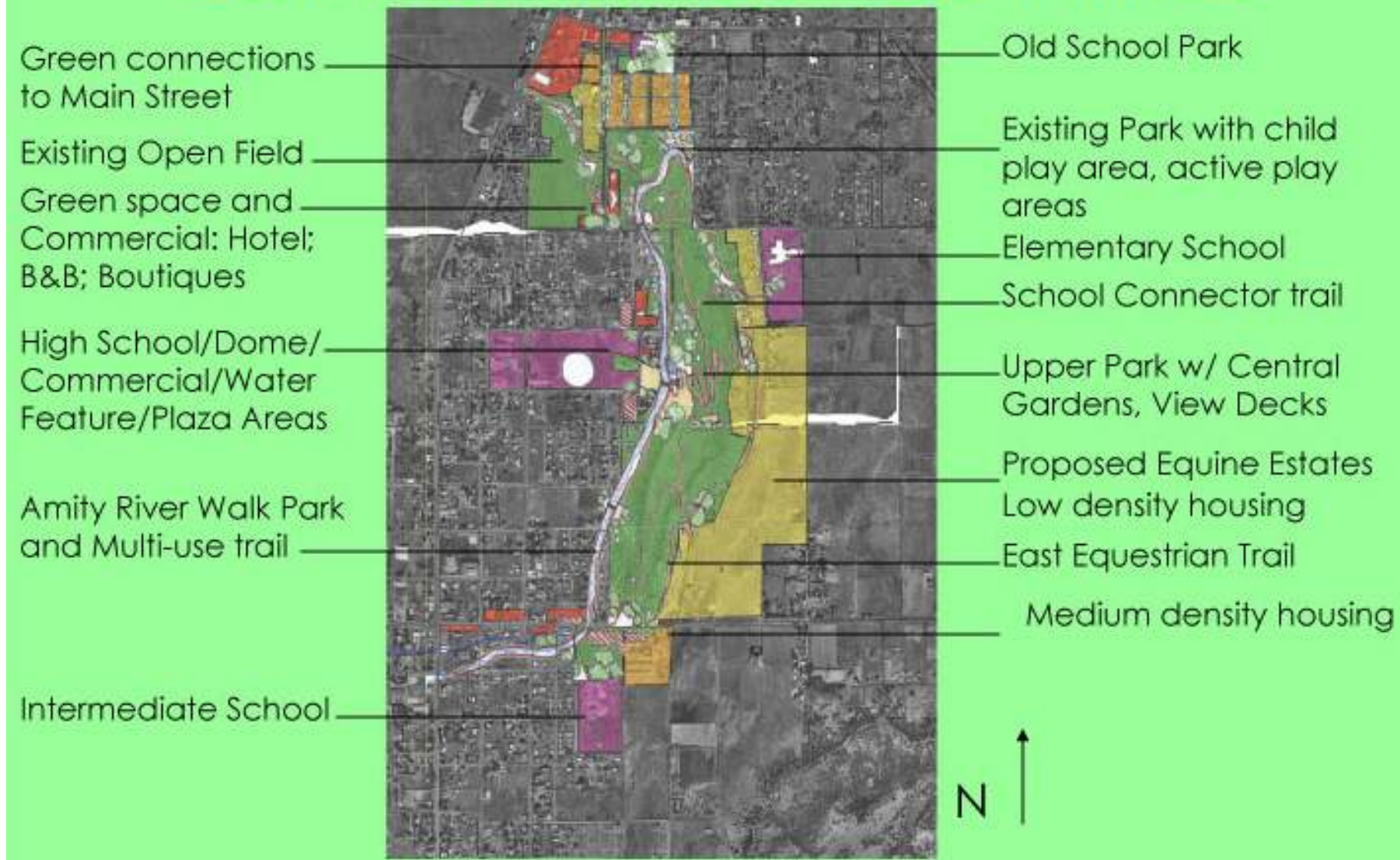
The park would also support a commercial and educational center around the area of the Dome, adding educational opportunities for the Round Valley. It would provide a draw for additional economic gain in the area, and encourage youth to remain here and raise their families.

Economic and social gains would be significant while enhancing educational opportunities.

As before, a trail system would create connections between the two sides of the ridge providing access to all schools in the system.

The equestrian, low density residential development remains on the east side of the park, with higher density on the west.

CENTRAL PARK CONCEPT THREE



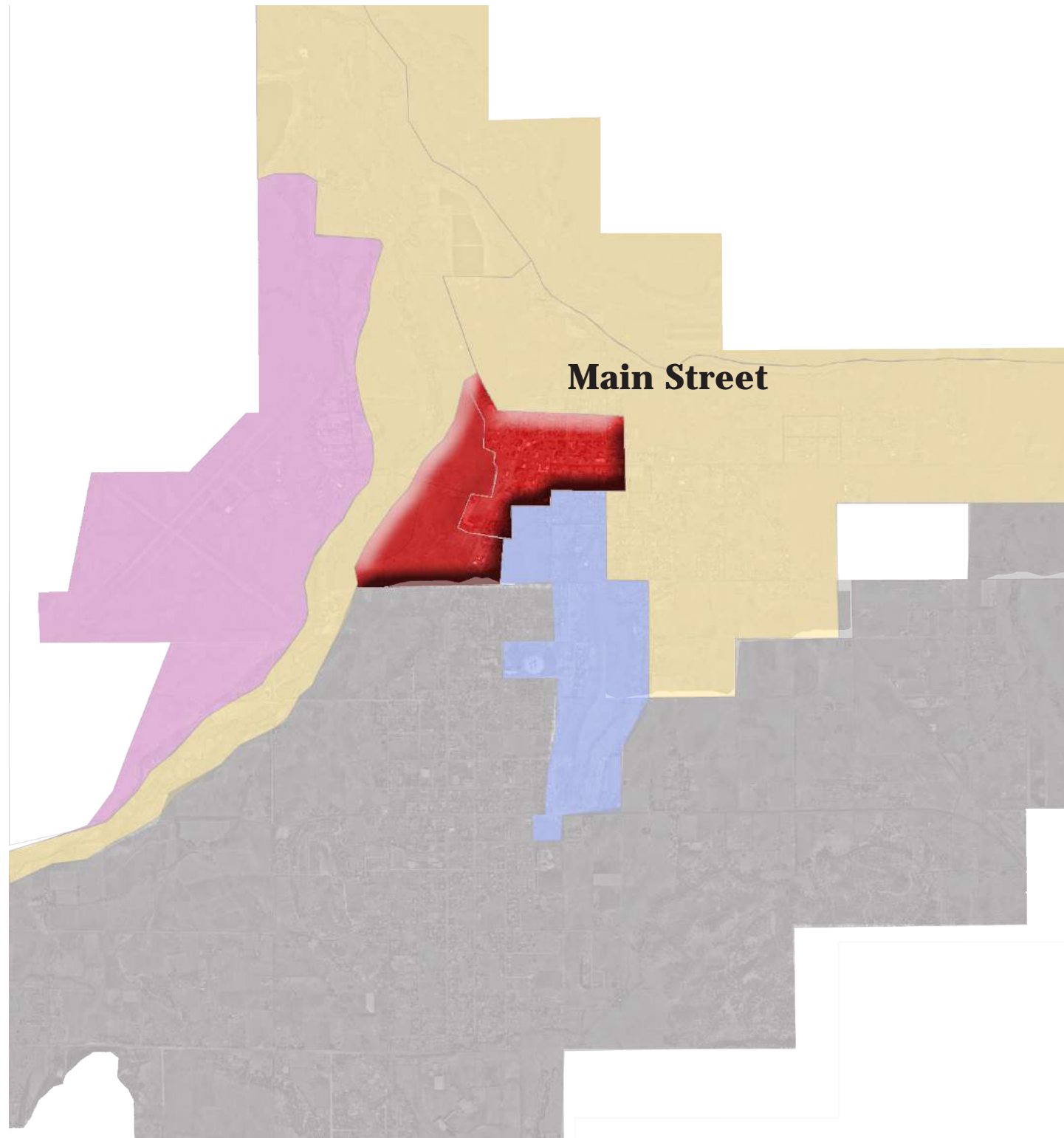
CONCEPT THREE

Concept three creates an active-use park in the existing Springerville park area. This is close to the community elementary school and would create a nearby amenity for that facility. It maintains the school trails connection and a ridge-crest overlook trail. This ridge-top trail would have numerous overlooks, garden stops, and viewing areas.

In addition the Amity Biking and Hiking Trail continues along the western border of the lowland portion of the park. Connecting these two amenities near the Dome area is a series of water features, overlooks, trails and viewing decks. While this concept is the most expensive it is feasible as part of a phasing plan.

Similar to the previous concepts,

the strength of this design lies in its strong aesthetic and functional town core. It also presents numerous ways to improve property values along the park and in surrounding areas. This concept again provides a strong connection between the commercial centers of Springerville and Eagar. This focuses economic and infill growth in a controlled central area while enhancing the economies of both towns.



Main Street

Main Street is a complex area that requires both general and detailed planning. We have organized the area into nodes, major corridors, and neighborhoods.

The graphic on page 17 illustrates two different types of nodes: entry/exit and activity nodes.

Entry/exit nodes serve as a visual identifier of a sense of arrival/departure. The entry/exit nodes (represented in green) are spaces for activity, learning, and where arbitrarily located trees congregate into ordered allés. Visitors to Springerville will know when they have truly arrived, without the aid of formal signage.

The entry/exit node located on the east end of Main Street greets visitors coming from Western Arizona. A park space, perhaps with picnic tables and native vegetation accommodates visitors and locals alike.

The entry/exit node located on Mountain Avenue signals arrival into Main Street and the important intersection of Mountain and Main. A small open space with vegetation and seating also serves Safeway shoppers who may need to rest before walking home.

The node on the east end of Main Street highlights the intersection of Main and highway 191 as well as the entry node for travelers coming from New Mexico. This

node could potentially encourage development along the 191 corridor, as well as serve as a development boundary. Growth will be confined to the eastern and western nodes on Main Street. Doing this enhances the existing development and encourages pedestrian circulation.

Activity nodes (represented in red) are placed at major corridor intersections. The three nodes in the diagram are placed at the junction of Main Street and Mountain Avenue, Papago and Main Streets, and Zuni and Main Streets.

The intersection of Main and Mountain is the most significant intersection. The historic post office, historically significant buildings, and the Madonna statue are all located at and around the intersection. Mountain Avenue leads south into the town of Eagar, and eventually links up to US 260, which leads to Pinetop-Lakeside. A significant amount of vehicular traffic passes through the intersection, with the potential of bike and pedestrian traffic to also utilize the corridors. There are many benefits associated with the high visibility of the intersection.

The intersection of Papago and Main Streets is a vital node that, through arterial roads, connects Main Street to Nutrioso Creek, neighborhoods, and the proposed central park area. Strategic placement of tree allés serve as a visual clue that something special is occurring along the road. The trees also provide shade and are aesthetically-pleasing. The existing

commercial space at these nodes will benefit from increased foot and bicycle traffic. Enhancement of these spaces through vegetated open space will create a meeting place, appropriate for people-watching, meeting friends, or simply resting.

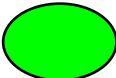
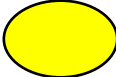
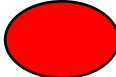
The third intersection, at Zuni and Main Streets connects, through arterial roads, Main Street to Nutrioso Creek. This activity node is separated from the busier part of Main Street, and presents opportunities for a quieter activity space. Again, tree-lined streets signal the pathway to a great destination (Nutrioso Creek.) The open space along Main Street consists of a vegetated area and a small space for serendipitous meetings or counting cars.

In the following pages, we will go into further detail about the three activity nodes, particularly the intersection of Main and Mountain. In addition, we will discuss the neighborhoods surrounding and adjacent to Main Street, and how connecting these spaces creates a community.

We will begin with a discussion of the advantages of infill in the neighborhoods, then move down to the Main and Mountain intersection, and finally present concepts for the primary Main Street corridor, which in turn connect to the neighborhoods and node concepts.



Main Street Nodes Diagram

-  Entry/Exit Nodes
-  Main Street Neighborhoods
-  Activity Nodes

CONCEPTS



The following concept is based on developing areas of infill within existing infrastructure. As Main street becomes the center for the town of Springerville, the revitalization of existing surrounding neighborhoods is important. One way to increase the density of the neighborhoods is to study potential areas of infill. Studies done by the Urban Land Institute have shown that urban “infill sparks urban revitalization”, new residents spur retailing, office development, restaurant openings, and the development of parks and recreation areas. Also, urban infill housing creates neighborhoods that are high in density in comparison

with suburban housing (sprawl). Urban infill infrastructure is also often less destructive to the natural environment than suburban development. Reusing existing properties which are often left over unused space can bring much needed tax dollars to the local government. Also it is important to consider that along with infill housing there should be improvements to the existing streetscape, for example adding a row of trees and a bike lane can improve the walkability of the streets and connectivity with the main core. This will help trigger economic revitalization.



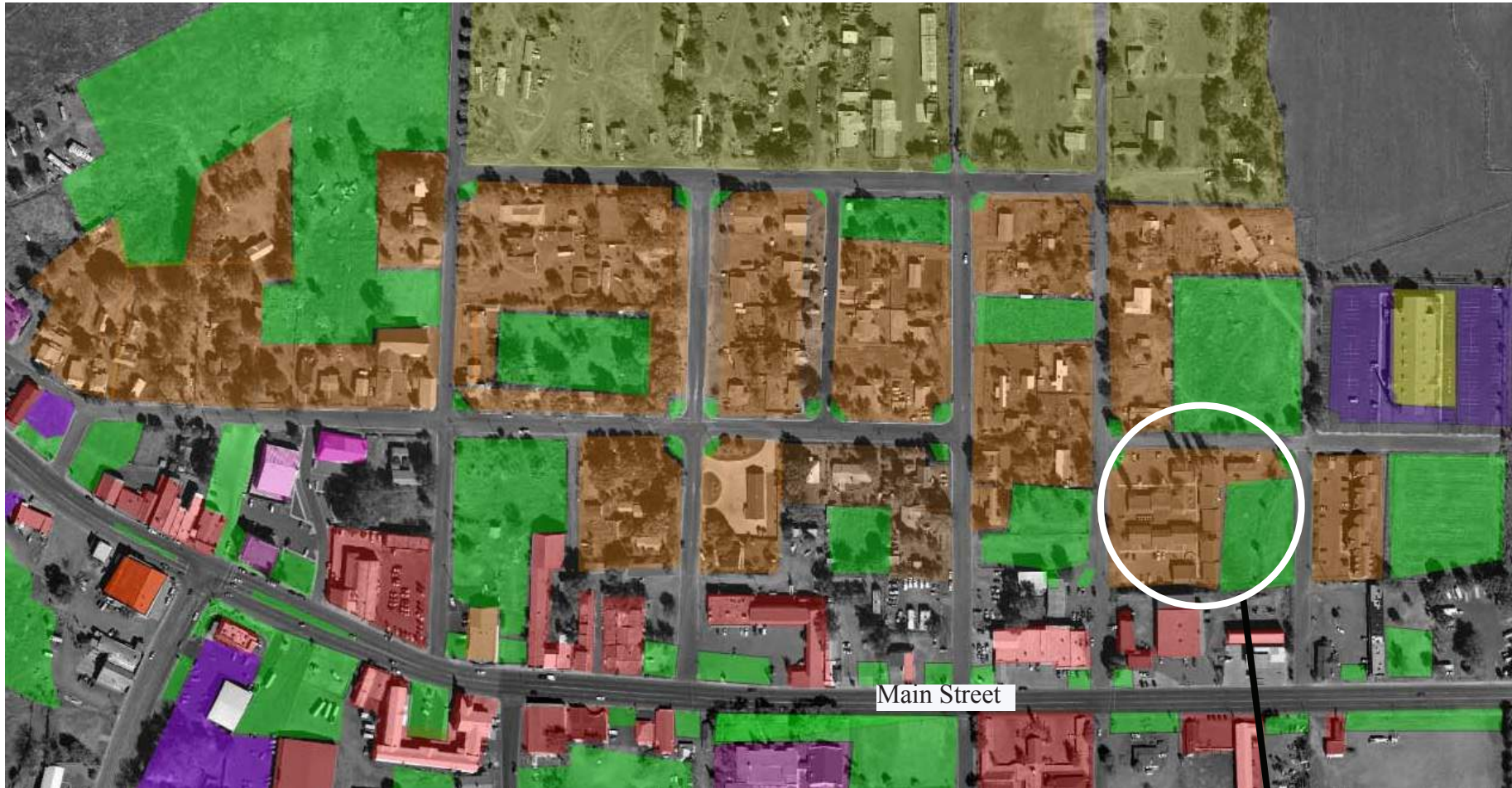
Streetscape



Bikers



Neighborhood park



Main Street

As Main Street evolves into a vibrant center of the town the neighborhoods around it will want to improve their walkability and connection with the town core. Creating a “green infrastructure” that supports and connects the streets and neighborhoods is important. The creation of urban pathways, open spaces and parks can help link the existing neighborhoods and also future development. The open spaces should be viewed as an asset to the city when considering development. Land values increase when a house is adjacent to a park. Improving the streets in the neighborhoods should provide more connection

and improve safety for pedestrians. The streets should be designed to promote mingling and social interaction between neighbors. For example, adding a patch of grass with a bench can be an effective way of providing an outdoor space. This can promote interaction while remaining cost effective. Facilitating walkability with bike lanes, sidewalks and shade will improve the neighborhood land values and the nearby community interactions. In summary, capturing open space is a positive asset for Springerville. Studying the potential for connectivity with Main Street and also future neighborhoods is an important aspect to consider.



Corner Bench



People mingling

CONCEPTS

The goal of this development scenario (see page 21 for picture) is to create a commercial district for the town which promotes economic growth and provides a stimulating area for the youth of the town. The intersection of Main and Mountain has been divided into four areas of interest. The proposed development strategies will unify this area and create a commercial center which is appealing to both tourists and residents.

The Area of Springerville around the intersection of Main and Mountain can be divided into four sections. Section 1, the commercial area to the north of the intersection has much promise as a walkable commercial strip. We propose that addition of a park on the west side of the area with a connecting park replacing the parking lot currently at the terminus of Mountain. A commercial plaza could be created along the back of the existing stores, allowing for access from the back and front.



By creating storefronts on what is currently the back of the strip, the town can provide a space where shoppers can shop at leisure without the noise or danger of passing traffic. The parks at either end of the strip also provide pleasant spaces for outdoor activity. The park at the terminus of Mountain could also act as a welcoming feature for travelers from Eager, and connect to the existing park on the east side of the Post office, thereby enhancing the quality of the space that acts as the central gathering point of the town.

The second area of interest is the southwest corner of the intersection. Currently that space is occupied by an historic moderne style building which houses the buffet, the flower shop, and a number of smaller buildings housing commercial businesses. These buildings currently lack unity, and the space around and between them is full of weeds and trash. We propose to create a commercial plaza within this space. First we propose infill construction along Main and Mountain. This would provide a sense of enclosure for the plaza. Within the plaza we propose another, smaller grouping of stores which would create a commercial courtyard. Beyond the second set of buildings is a small park space overlooking the pastoral scenery of horses grazing with the Little Colorado beyond.

The third focus area is the southeast corner of the intersection of Main and Mountain. The existing corner



is the location of a number of stores of interest, including the General Store. The area surrounding these buildings is either vacant or paved in a number of disorganized parking lots. In order to improve this corner we propose to organize the existing parking lots and intersperse them with green planted areas. These planted areas would beautify the corner and give a sense of place to the structures currently scattered on the corner.

The fourth area we wish to address in this concept is at the corner of Mountain and Airport road. This corner is significant for a number of reasons. First, the Safeway in that shopping plaza is an important commercial resource. Second, it is a major corner on one of the main roads to Eager, and third, it is the outlet of a series of fields and open spaces. All of these factors lead us to believe that connections to this corner would be valuable to that



section of the town. This corner could be another, smaller commercial plaza space. It could act as a terminus for trails north from eager and also be a destination from the proposed commercial center to the north. We propose a mixture of shopping areas and green open spaces on those corners which would provide connections across the streets and into the shopping center.

These proposals, while different for each part of the town, do have important features that apply to all areas. First are traffic calming measures. These would increase awareness of pedestrians for passing motorists. One example of this would be a planted median strip on Main at the intersection with Mountain. This median would also people with decreased mobility to pause while crossing the street. Another pair of medians would be appropriate at the Mountain/Airport Road intersection. Medians would be introduced where a large amount of pedestrian street crossing is expected.

Another feature we recommend is

on street parking. While there is currently on-street parking along Main Street, many visitors are not sure if they are supposed to use it. A set of features formalizing on street parking spaces would encourage people to use this resource. This would encourage visitors to pause and get out of their cars to wander around the shops.

In order to further encourage visitors to pause a number of street beautifications are suggested. First we propose the widening of the sidewalk, and its transformation into a brick walk instead of concrete. Second we propose the addition of trees and planted strips which would unify the diverse appearance of storefronts along main street. A median is recommended at the intersection of Main and Mountain which would assist in the crossing of Main Street.

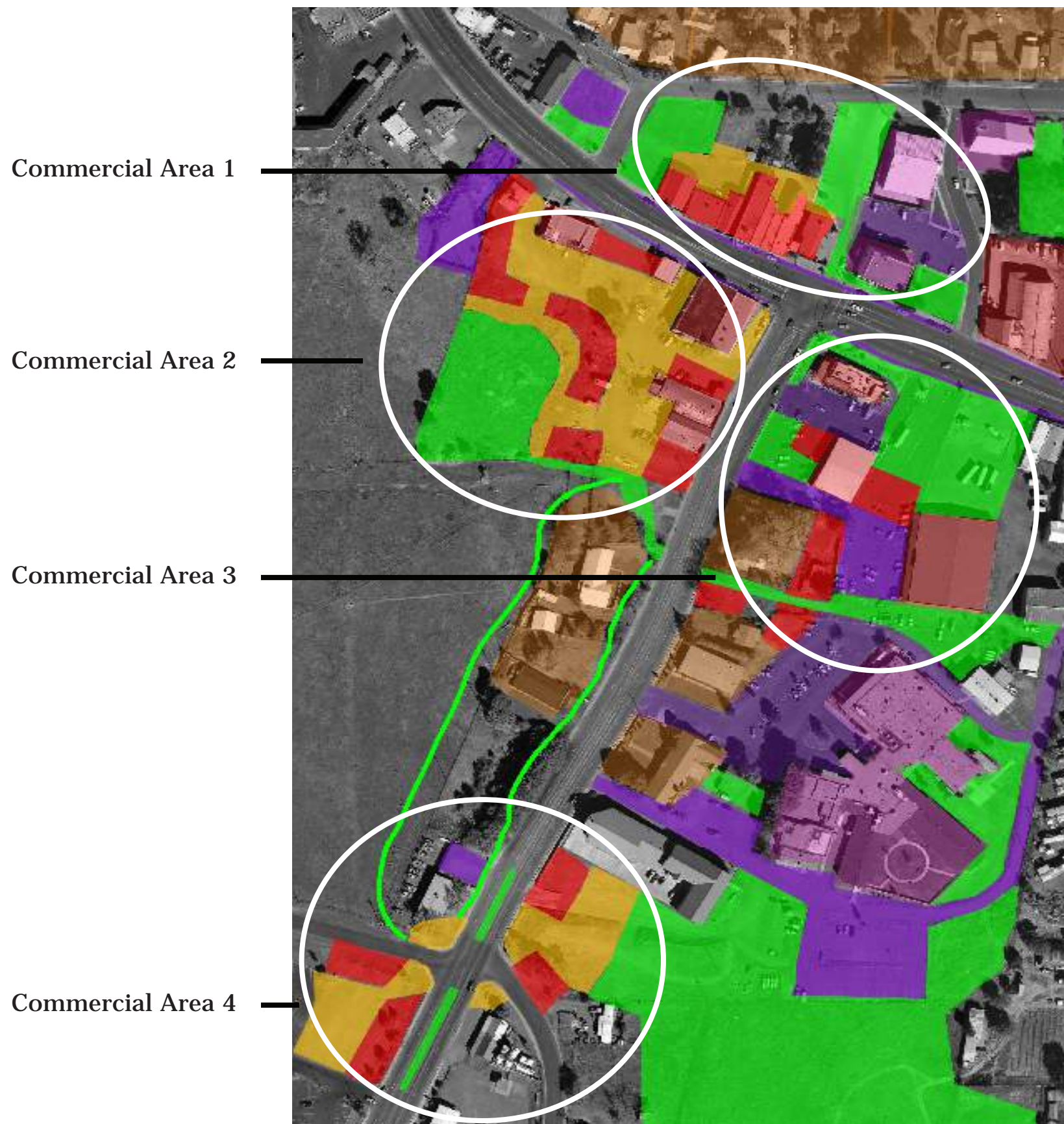


Pearl Street Boulder, Colorado



Church Street Burlington, Vermont

CONCEPTS



Refer to following spread for color key

Central Main Street Concept

The heart of Main Street has many historic buildings and commercial development, yet lacks cohesion. The goal of this concept is to connect neighborhoods, historic structures, commerce, and open space. Doing so creates a walkable, multi-use center for residents and tourists alike.

The historic school house serves as a central icon for the town of Springerville. The historical significance of the building combined with the availability of open space around it, commercial development next door and across the street, and neighborhoods to the north and south, make it a prime location for enhancement. The space could serve as a central meeting space.

The concept on the opposite page highlights the school house, the open space around it, and the space directly opposite the street from it. This space could be improved with the addition of a pedestrian crosswalk to connect the spaces, street trees and vegetation, benches, and making existing commercial spaces accessible from the street and the park.

A pedestrian crosswalk encourages exploration. Connections allow for walks to the central park, to Nutrioso Creek, to functions at the school house, to shops, to the cafe, and to restaurants.



Street trees and vegetation enhance the appearance of Main Street for vehicular traffic as well as provide shade and beauty for pedestrians. Trees also serve as way-finders. An alley of trees that flank the streets that connect to central park and Nutrioso Creek serve as beacons to alert traffic to circulatory connections. Street trees help to block dust and particles from the street. This is especially important for open space and pedestrian walkways

Benches, chairs, tables, generally, places to sit and rest are important, inexpensive, and easy to install along Main Street. Pedestrians and shoppers need to rest. Benches discourage shoppers from immediately returning to their car and going home. Combining seating with food is also a great way to get people moving along Main Street. Providing alternative entrances to commercial spaces, especially cafes and restaurants, maximize usable space, and allow for outdoor cafes, and commercial park spaces. In addition, it increases pedestrian flows and exploration opportunities.



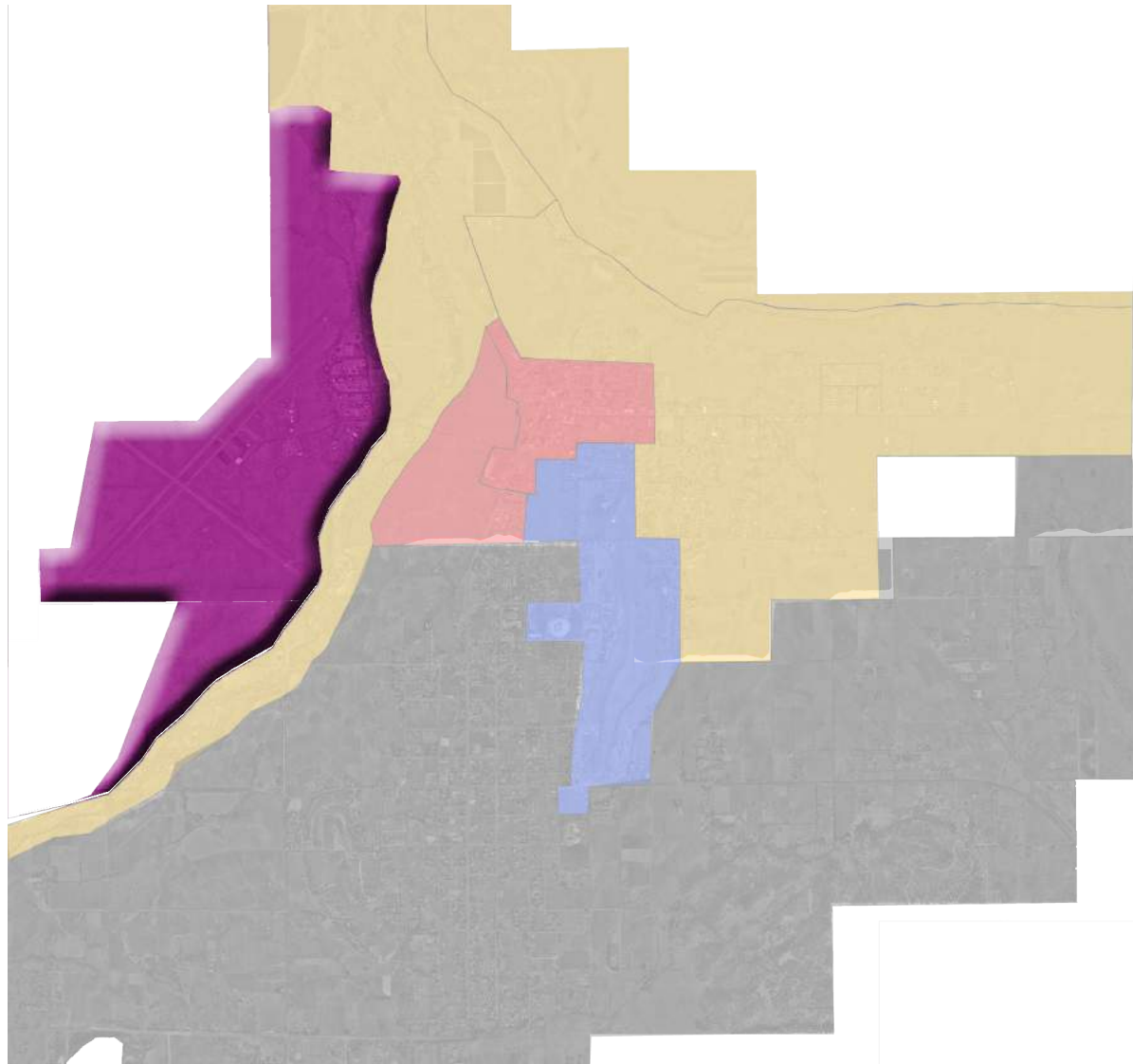
CONCEPTS



- COMMERCIAL
- MIXED- USE/RESIDENTIAL DEVELOPMENT
- LOW DENSITY RESIDENTIAL
- OPEN SPACE
- PARKING
- INSTITUTIONAL

OLD
SCHOOLHOUSE

The diagram above illustrates suggested changes to central Main Street. The area encircled in white encompasses the historic school house, surrounding open space, potential commercial development, and connections to destinations on either side of Main Street. The white arrows indicate main circulation routes on to arterial roads.



Airport District

Located in the western edge of Springerville, this area has little development. Mainly consisting of light industry and residential, the close proximity to the airport and natural amenities like the Becker Lake and the trail along the Little Colorado lends itself to a unique type of development.

Air parks are a growing trend in the U.S. over the past 20 years. An air park is essentially a community that is based around being able to fly

directly to ones house or very near it. More information can be found in the case study section.

How Springerville fits the needs of an Air park community

- Existing Airport
- Need for new housing
- Nearby golf course
- Equestrian accessibility
- Proximity to major cities
- Available property
- National Forest
- Endless outdoor activities



- Communal Hangers
- Air park Community
- Lodge

The Concept

In this concept, development is focused around the airport and nearby natural amenities. Connections with the surrounding trail systems provide access to main street and the National Forest.

The opportunity for a community development would be beneficial for the town. The air park community's ideal location would be both above and below the ridge that surrounds the airport. The ridge provides elevated views from above and also reduces noise pollution to those below. The possibility for Lodge or "Resort" style lodging would generate extra economic activity and support sustainable tourism. Both are prime for seasonal visitors that visit the region, and it may entice some to visit Springerville versus other nearby towns.

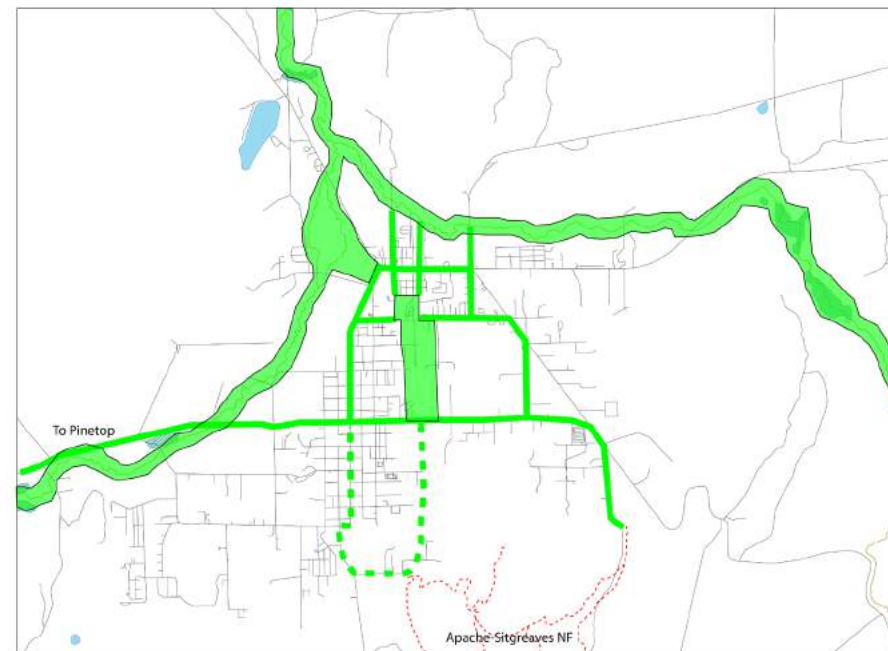
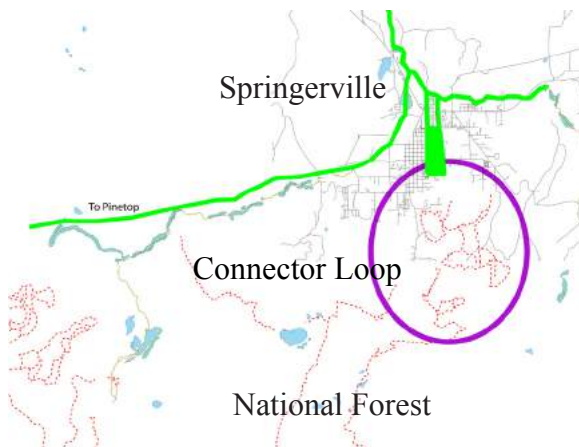
CONCEPTS

Regional Greenway System

A movement is afoot to create a system of greenways that will stretch from Payson to Springerville. The communities of Show Low and Pinetop are leading the way in this process. Springerville will enjoy increased tourism activity and an elevated profile from their association with this proposed effort. The proposed greenway could link up to the current Indian Springs Trail, creating a major connection to Springerville. The greenway system could be used by bicyclists, hikers, walkers, cross country skiers, or horseback riders.



A proposed greenway route from Payson to Springerville



Proposed greenways in the Round Valley



Why plan your community?

Because unplanned growth can often lead to a chaotic urban space where sprawl is the result. **Sprawl** is characterized by low density housing, scattered commercial and service areas, and low quality of life due to lack of a sense of community. The environment often suffers under sprawl as well. With a bit of forethought, communities can avoid falling into the sprawl trap.

Sprawl is expensive. Because it is low density and designed for automobiles instead of people, local governments must pay for miles upon mile of road. Additionally, all the utility infrastructure must cover



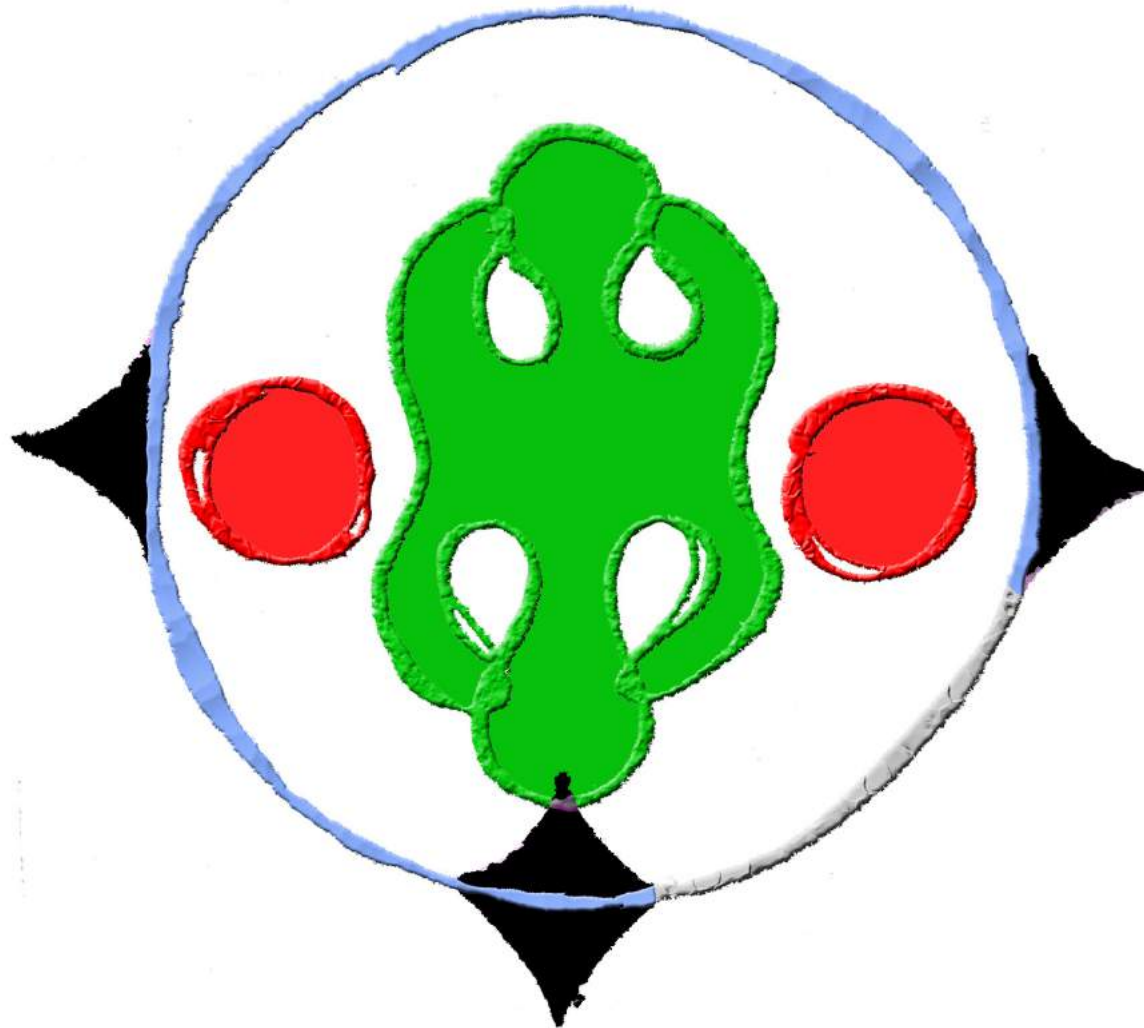
far greater areas. Pipes cost money. Electrical lines cost money. These costs are not borne by the developer, but by the sprawl-laden community. In this respect, the low density that comes with sprawl can conceivably keep tax revenues down as well, creating a double cost catastrophe.

Environmentally, sprawl is one of the most costliest things a community can fall victim to. The massive grading and paving efforts denude the landscape and alter natural drainage patterns. This can threaten watersheds and water resources, plant colonies, fauna, and it can increase the threat from wildfires.

CHAPTER 5

DESIGN





Springerville Master Plan

The town of Springerville presented many unique challenges and opportunities for the Tejido design team.

Some of the opportunities include an ideal location next to two million acres of Apache-Sitgreaves National Forest and surrounded by some of the most beautiful

country in the southwest United States. Uncontrolled commercial development has spared Springerville, preserving a beautiful historic main street. Sustainable tourism activities abound in the form of fishing, hunting, hiking, horseback riding, biking, bird watching, and just relaxing in the crisp mountain air.

Culturally, Springerville embodies

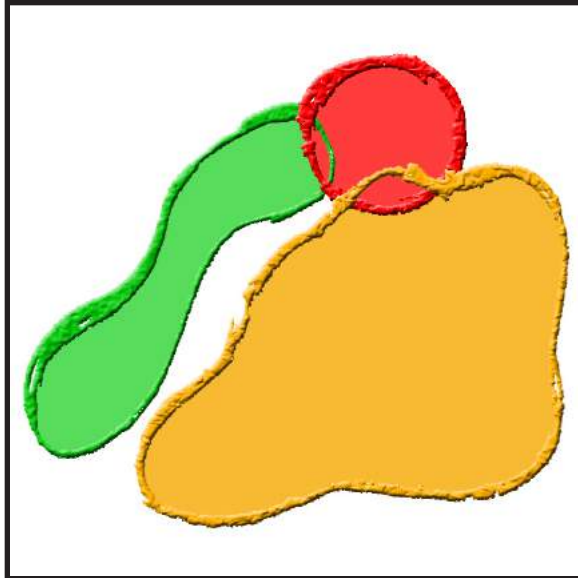
the a true small mountain town of the Southwest; it is what so many mountain towns try to be. Springerville has a powerful sense of place which is something that can't be bought. This town has roots going back to some of the first settlements in the region, such as Casa Malpais.

Some of the challenges to the town are a stunted economic growth, isolation, political fragmentation, loss of jobs, and the inability to retain the youth of the community. These factors have caused the town's most tangible resources to become more difficult to maintain, i.e. the main street area and a strong sense of community.

The goal of this design process was to identify the many positive attributes of this community and find ways to accentuate them and use them to revitalize the town and the surrounding Round Valley economically, socio-culturally, environmentally, aesthetically, and functionally.

The design ideas that best achieve this goal will be presented and discussed in the following chapter. They include the economic revitalization of Main Street Springerville, connecting people by connecting neighborhoods, neighborhood development, anti-sprawl strategies, greenway development and walkability, increased attractiveness to research and development, education, light industry, and ecological sustainability.

Fold Out



Neighborhood Development

By definition, neighborhoods based on traditional neighborhood development (TND) principles will be inviting, friendly, and aesthetically pleasing places. They will be pedestrian friendly, and allow much of the future growth to occur within the proposed growth

boundaries of Springerville. As these neighborhoods fill in, the core of Springerville will strengthen, creating a the type of town anybody would love to call home. Although with higher densities, these neighborhoods will feel less crowded thanks to the clustering of public spaces and the diversity of housing types and streetscapes.

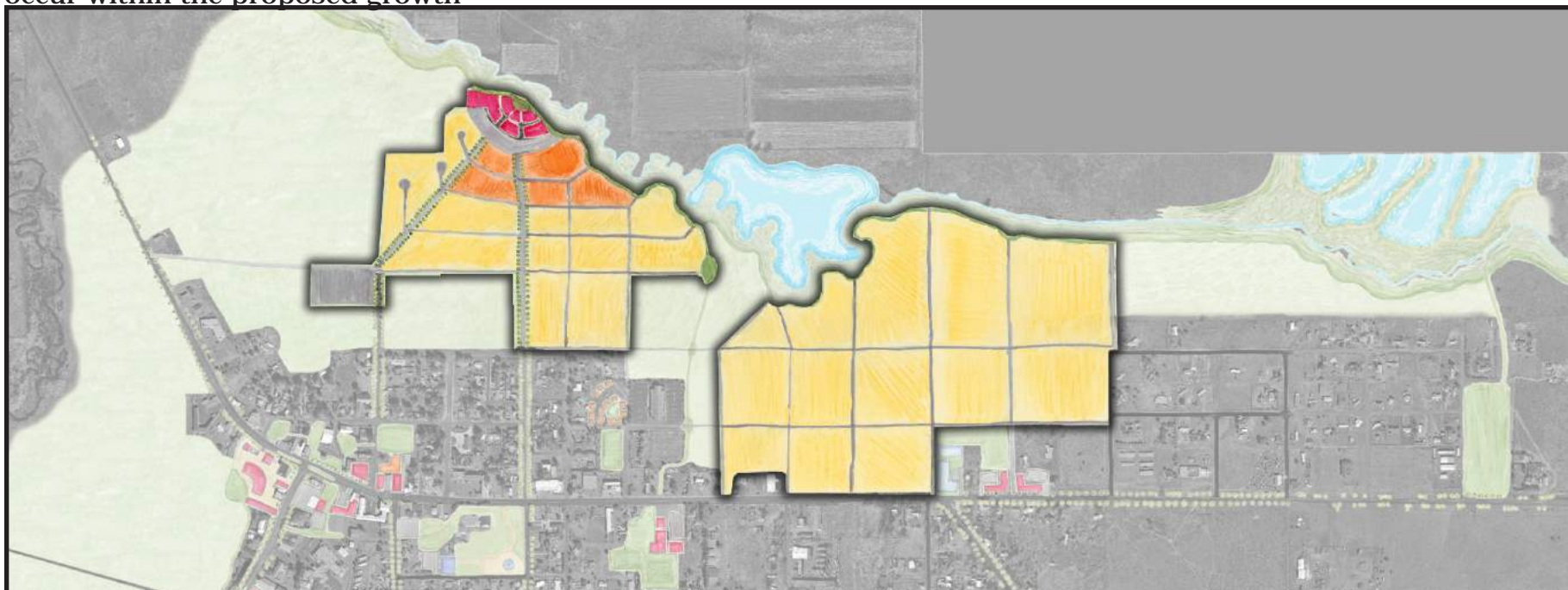
East Side

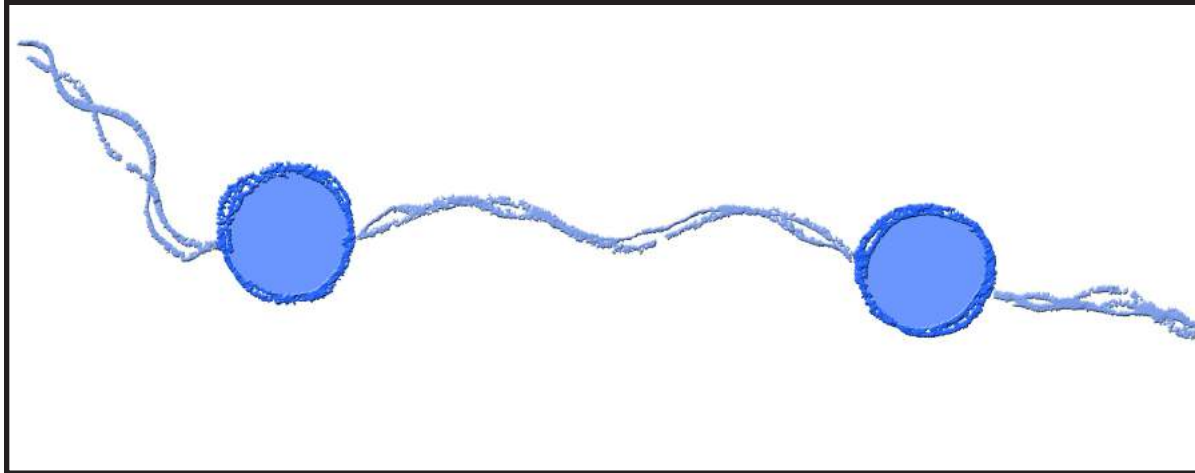
At the eastern entry to Springerville, before the intersection of Interstate 60 and Interstate 191, we recommend a sense of arrival be created through the use large street trees. Beginning in a less formalized manner along the street, they will transition into a formal allee of trees as they approach the town center.

At the intersection of US- 60 and Waste Water Treatment Road a green

space will connect with the existing treatment area. This area is already a draw for wildlife. As increased population provides increased water in the collecting ponds, a wildlife park can be created. By connecting the park to I- 60 a strong green space will define Springerville for visitors.

Moving into town at the intersection of I- 60 and I- 191 a civic and/or cultural center will help define arrival, and the limits of town growth. Additional commercial use will be encouraged to add economic growth along with functional capacities. The allee of street trees will guide visitors into town. A trail system will originate at this civic center and lead to Nutrioso Creek. This ties into the local and regional trail system planned for the area.





Rivers and Creeks

The two primary waterways that surround Springerville, the Little Colorado River and Nutrioso Creek, are ready to be converted into linear parks. These parks will protect the natural beauty and open spaces that Springerville is known for, while creating recreational amenities and connections within the community.





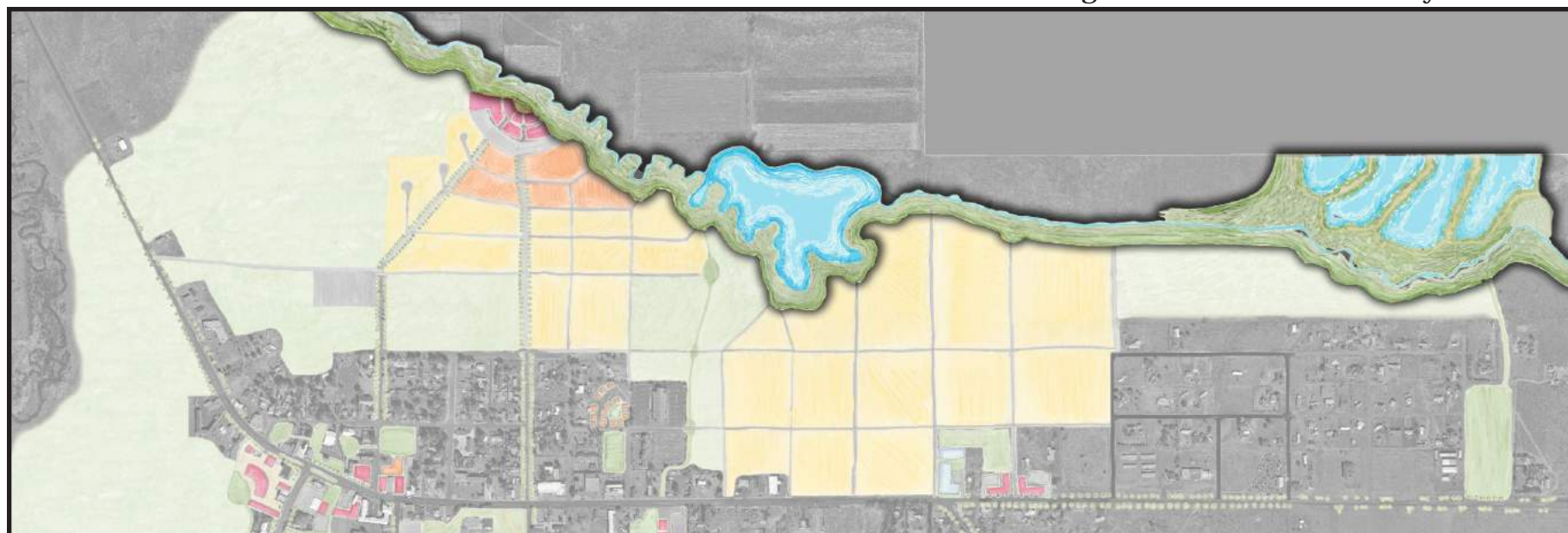
The Nutrioso Creek greenway

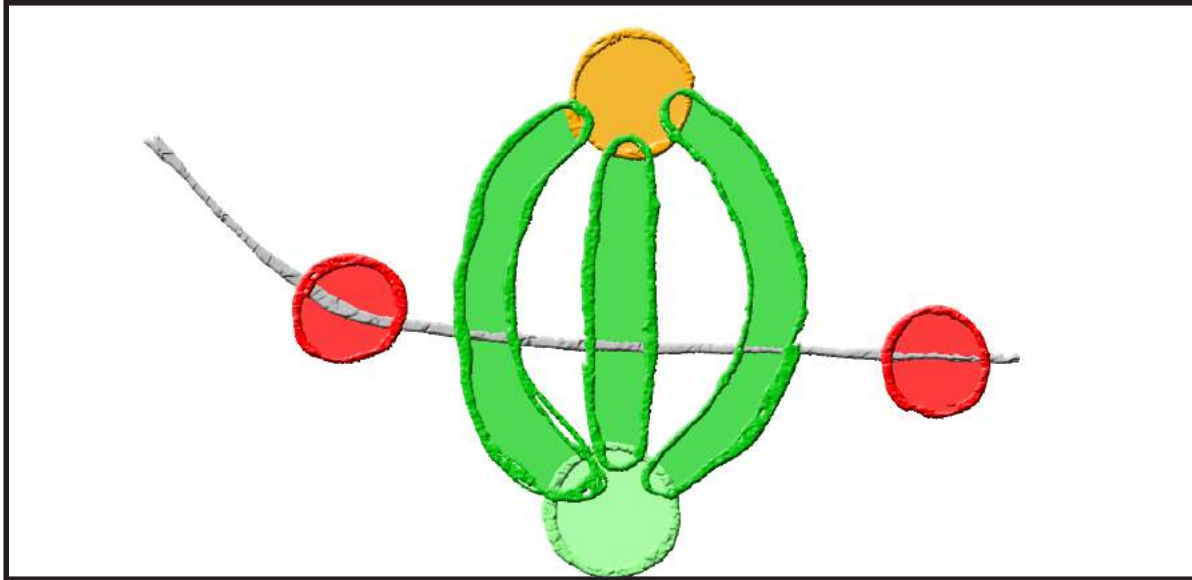
The design recommendations for the waterways include an expansion of the current wastewater wetlands, and in the future the addition of a second wetlands downstream. These wetlands will serve as attractions for the northern end of

Springerville's urban trail network as well as increase the quality of life in Springerville, and make the neighborhoods that border them the most desirable in the area.

Featured above is a section of the New Urbanist neighborhood that

fronts on Nutrioso Creek. The mixed use commercial spaces on the left of the image benefit immensely from the presence of a creekside greenway. This also creates a second destination to the north of Main Street. This is an example of how an ecological asset can generate economic activity when it is





Main Street

Nodes

The entry nodes, in green on the aerial image are key locations in creating a strong sense of arrival, and announce to visitors that they have arrived at an unique destination.

The town of Springerville will appear along the horizon, an oasis in the wilderness, and pull approaching travelers toward it. As visitors near, the open space recedes and is overtaken by formal design elements such as allees of trees, entry features, civic art, and designed orientation areas featuring ornamental plantings.

Beyond the entry and exit nodes along the perimeter of the town, there are several key intersection nodes along Main Street Springerville (highlighted by red dots). These are locations where Springerville can expand into the surrounding areas and begin to create a depth to it's

social, economic, and cultural fabric. These spaces will offer a mix of commercial, residential, civic, and public open space. These nodes will also serve as the entry/exit points for the proposed system of greenways that will weave together the Round Valley community. These nodes will become economic and social focal points that increase the overall value of Main Street Springerville and the surrounding



neighborhoods. Through these design and planning strategies, the town of Springerville will make a strong first impression and begin to create a unique and welcoming sense of place almost immediately.



Above is a visualization of how the new approach will appear as visitors approach Springerville along US 60 or the Coronado National Scenic Highway from the east.

Allees of trees will soften the horizon and frame and highlight some of the most appealing parts of this arrival sequence. Additionally, this landscape arrival strategy will shelter the property owners along this stretch of highway, increasing their sense of privacy and improving their quality of life.

Another recommendation for the eastern US 60 approach includes the placement of a commercial or civic complex, such as an educational facility, which will help define the boundaries of Springerville and create “book end” nodes along Main Street.



Streetscape

Springerville enjoys wide, well maintained streets. Although they are already used by pedestrians and cyclists, they can be greatly improved.

Widening the sidewalk in some areas, adding street trees, and then defining some street side parking



will have several positive effects. Along Main Street, the first is traffic calming; extended sidewalks and street trees have been proven to slow traffic.

Second, the addition of streetscape will improve the pedestrian qualities of Main Street. A pleasant, walkable Main Street with easily accessible street parking will be a draw for motorists to stop and spend time and money in an inviting, historic small town. Revenues will increase, as will property values and Springerville's regional profile.

Third, Aesthetic improvements such as streetscaping are relatively simple, inexpensive, and effective ways to initiate the revitalization process for small town communities.

One of the key design elements in this process will be street trees. They add much needed structure to open spaces, create habitat for wildlife, accent existing structures, calm traffic, and create pleasant, shaded micro-climates in the hot summer months. Further, adding trees to a streetscape is very cost





effective and the benefits are immediate.

Other design recommendations include improvements to the ground plane in the form of attractive paved areas. Improved lighting and seating areas will also begin to invite informal social interactions among shoppers and residents.

Elements such as the ground plane and street trees will offer a visually unifying effect for Springerville, yet continue to feature a variety of existing architectural types.



Main & Mountain Intersection

The intersection at Mountain and Main is an excellent opportunity to mix commercial vitality with public amenities. Based upon a recommendation to create a series of mixed commercial and park spaces around this intersection, the ultimate result will be a denser, more robust (and economically viable) commercial district with places for public gatherings and protected natural spaces.

The approach from Eagar will be accented with green spaces and allees of trees before terminating at a pedestrian-focused shopping center at the intersection. This type of development, centralized and rich with a diversity of activities, is also ideal for mixed use opportunities.

The floodplain to the west of town should be preserved, in part because of seasonal flooding, but also because of the beautiful views across the meadow and the meandering Little Colorado River. This meadow is also a unique quality of Springerville. Any redevelopment near the meadow will be especially popular with professional offices and food and beverage operations.

The current architectural styles already located at this intersection include several multi-story buildings. This node is also the location of several former entertainment establishments and the existing movie theatre.





Fold Out



After



Before



Before



After

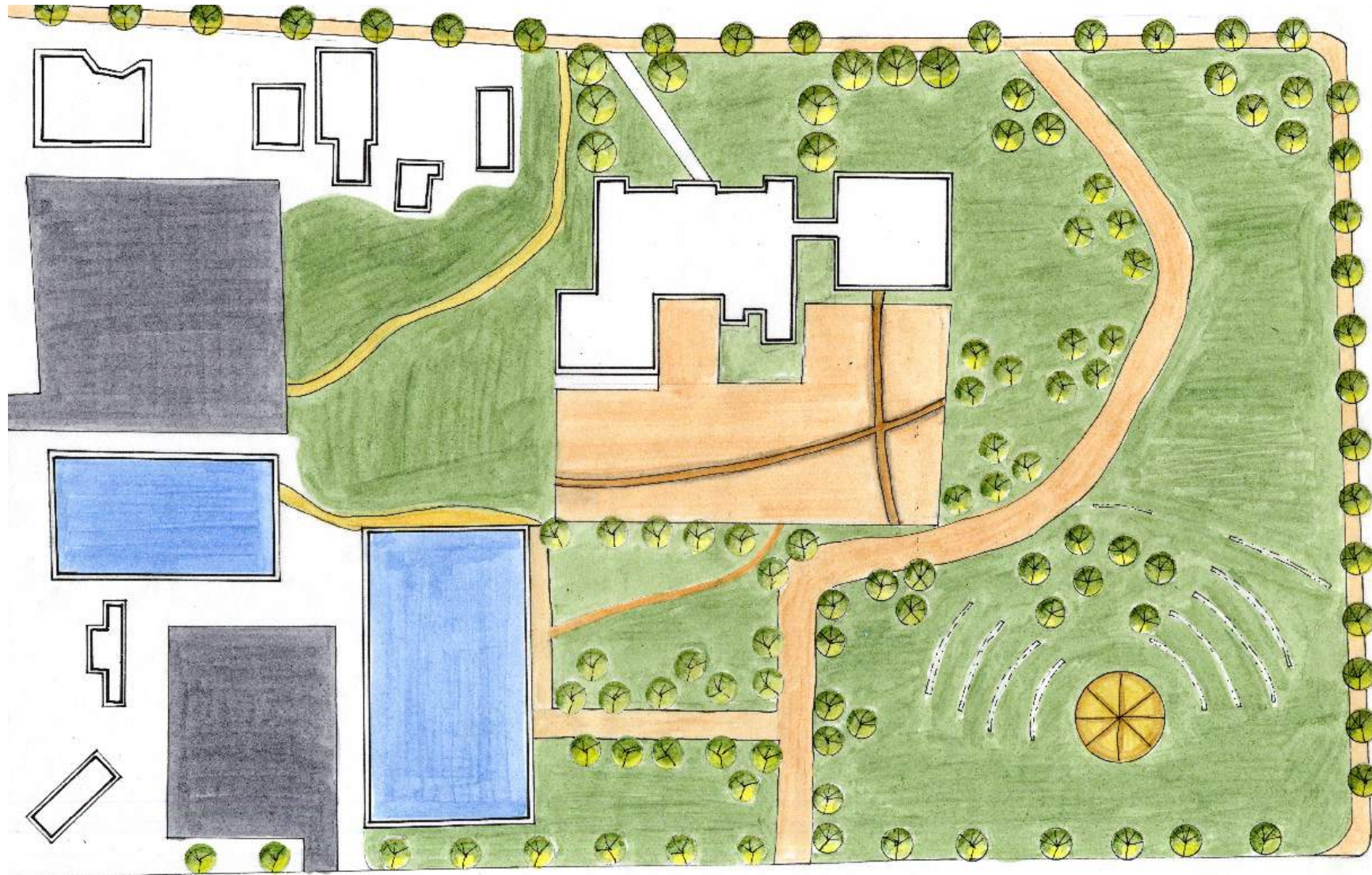


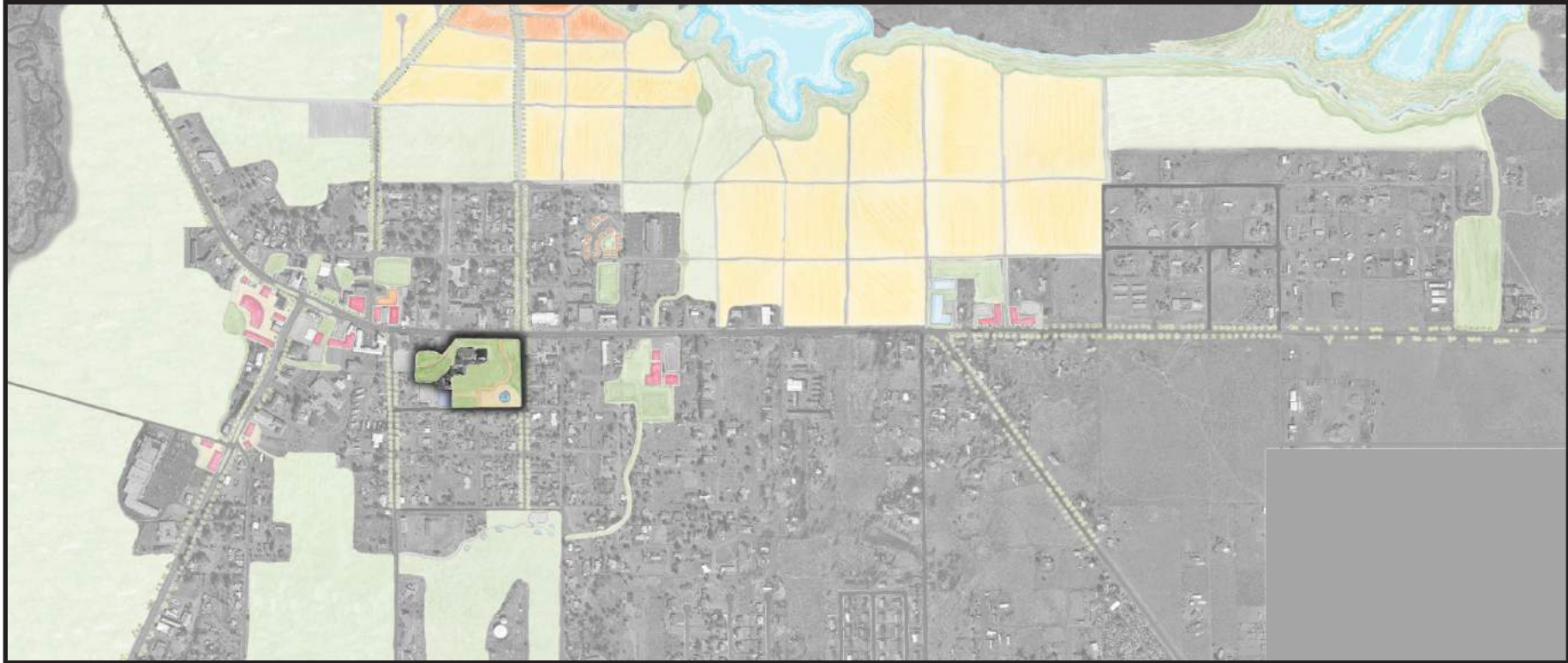
After



Before

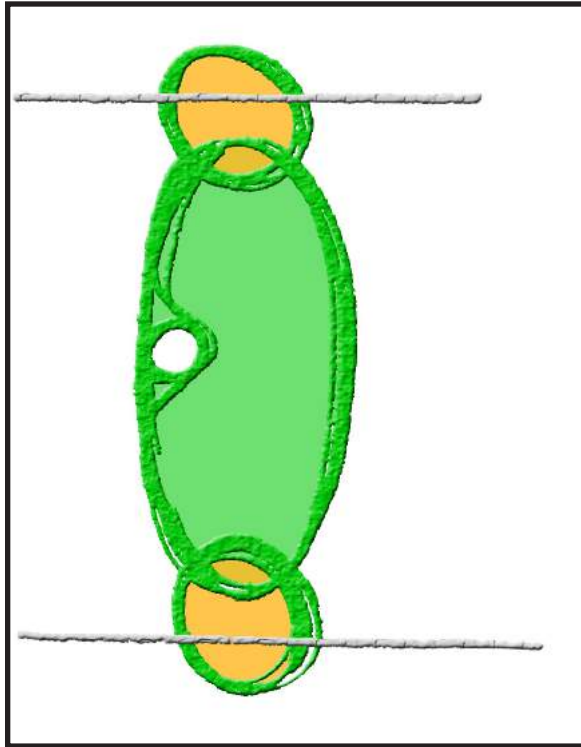
Fold Out





School Park

Located around the old Springerville School House in the center of town the park indicated above could become a popular gathering place for small or large groups. The addition of a pavilion and amphitheater will give extra interest and income for the community. This is the type of civic open space that can become iconic and serve as the cultural heart of a community.



Central Park

Overall Concept

One major component of the master plan for Springerville includes a

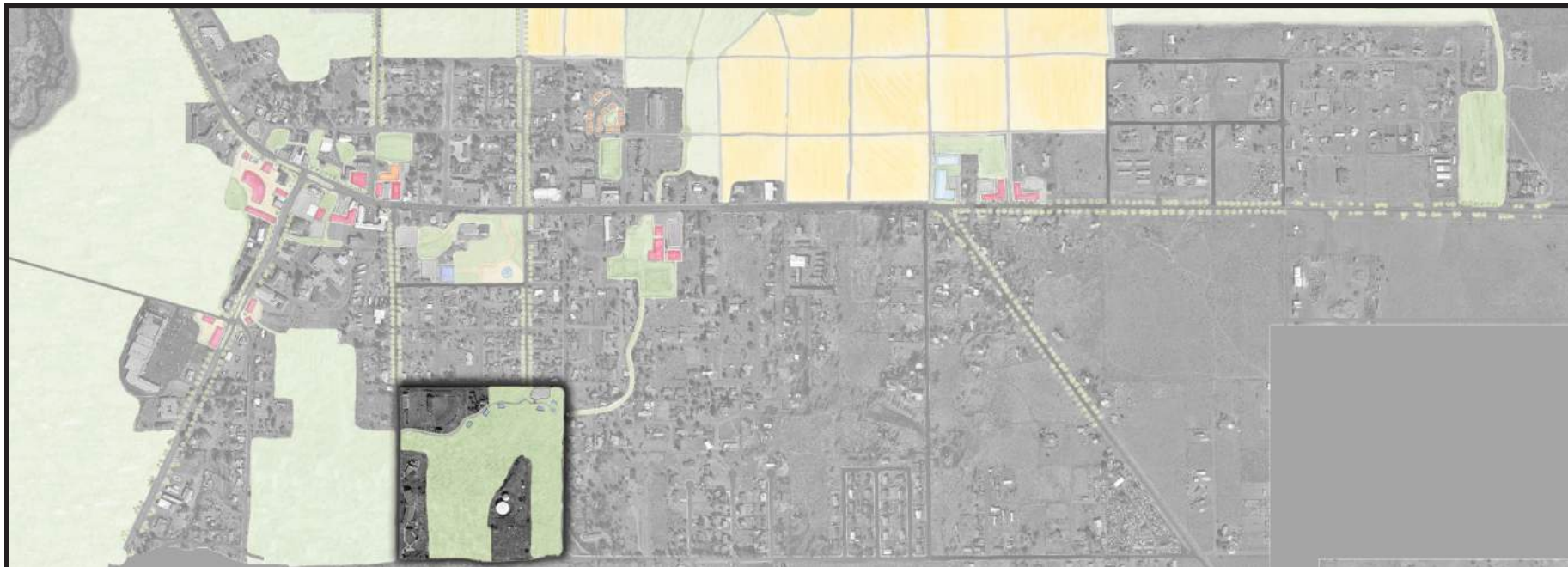
large, unifying central park. Much of the proposed central park is located in the town of Springerville proper. Extension of the park is possible to the south which would incorporate property located in Eagar. This park will create a stunning visual amenity, a social gathering space, a connection between schools within the district, and a potential major economic focal point for the entire Round Valley. One of Springerville's key features is its connection with the surrounding environment and outdoor activities. The large central park celebrates this connection and integrates the outdoors as a place of importance throughout the area. It enhances and protects views from all areas of the town.

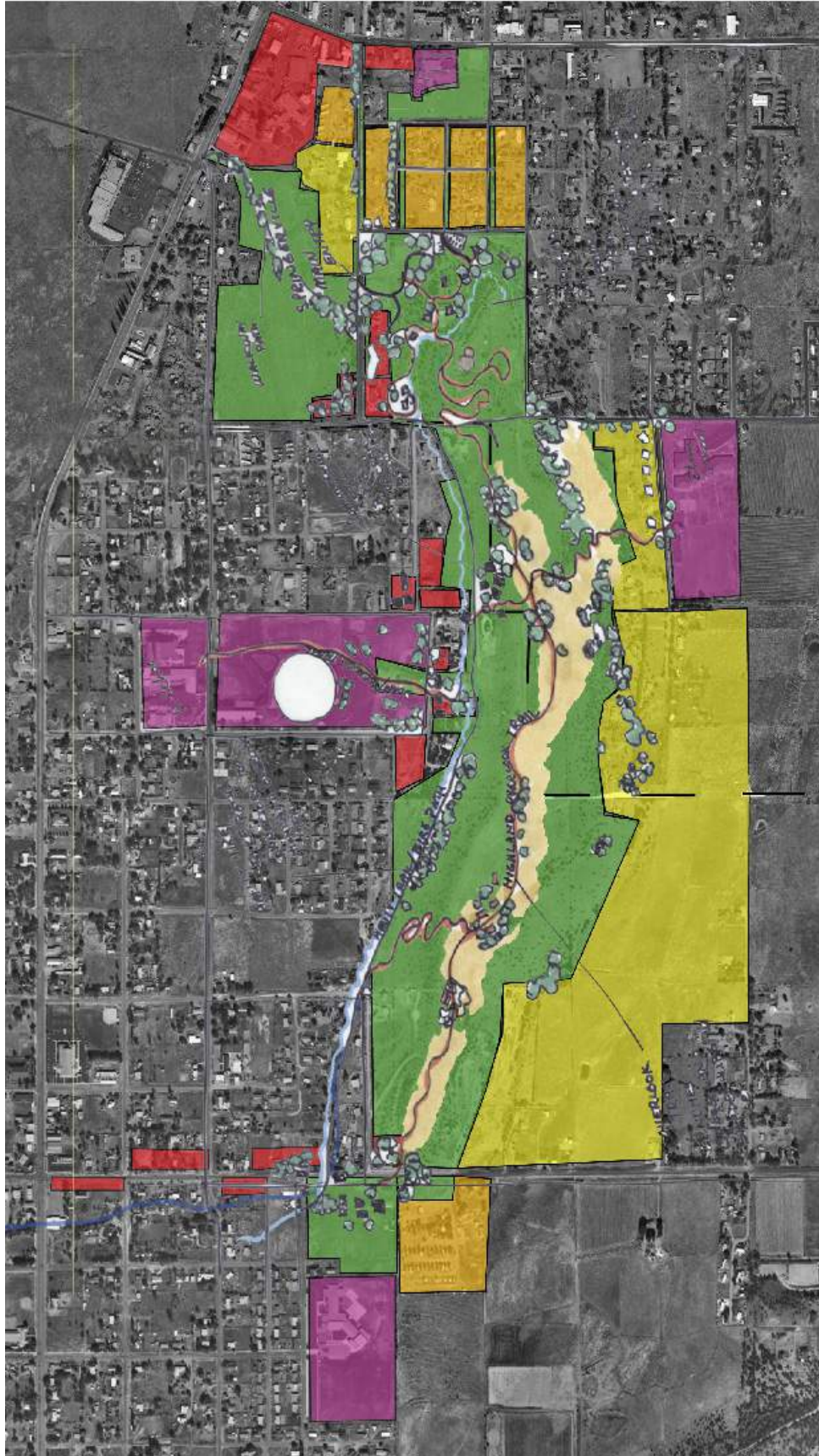
There is an existing park located between Papago and Pima Streets. This existing park contains numerous historic buildings which reflect a series of time periods from the history of the area. In addition,

the Springerville cemetery is located at the north end of a large rise which extends to the south through Eagar. Finally the existing Amity ditch provides a potential water feature which can be enhanced by creation of hiking and biking trails along its edges. This waterway will allow for interesting stopping spots, connect the length of the park, and provide views from its slight elevation above the valley floor.



Springerville cemetery located at the top of the existing park on Papago Drive.





Fold Out

DESIGN

Recommendations for the new park include creation of a strong connection from Main Street Springerville to “Main Street” Eagar. This connection would encourage pedestrian traffic between the two towns and increase economic activity in the area. We would expand use of the existing historic park buildings and expand connections between the area schools by creation of a trail system. We recommend creation of a viewing plaza from the top of the ridge just south of the cemetery, located in Springerville. This plaza is a starting point for the Ridgecrest Trail running from north to south the length of the park. Vistas to all areas of the Round Valley would encourage use of the park for activities, strolling and even night star gazing. The plaza would create a destination point for visitors.

We strongly recommend creation of a hiking and biking trail along the existing Amity ditch. This area can be used as an amenity for exercise, socializing, and as a connector between the schools and



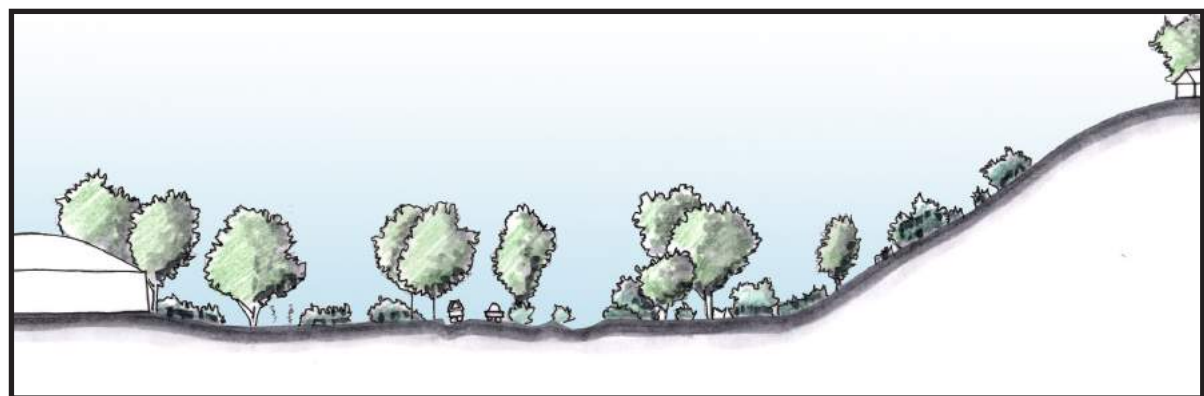
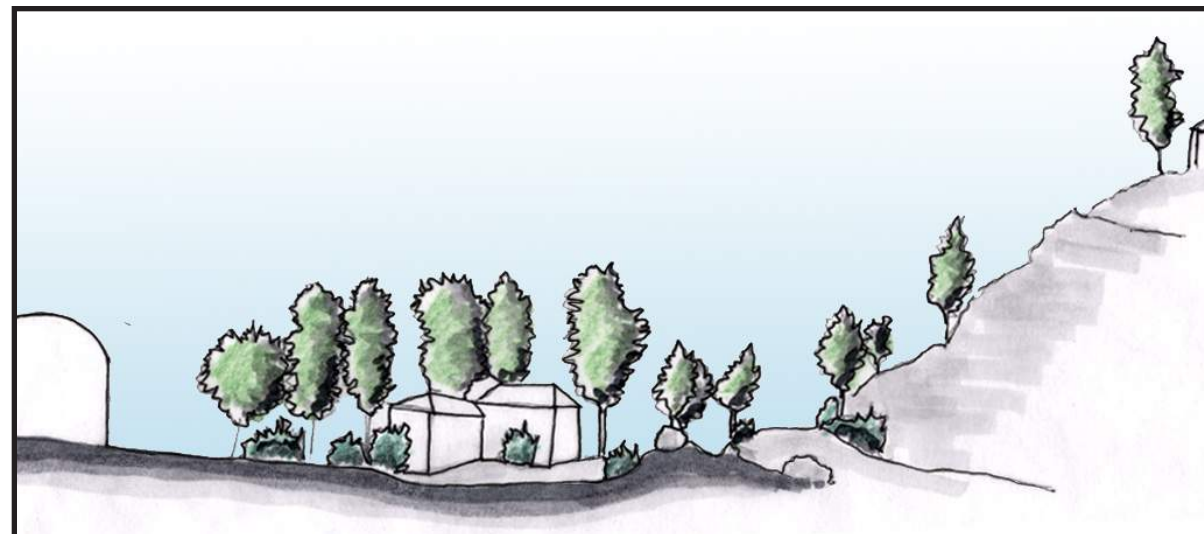
One of several historic buildings to be used at the northern end of Central Park.

towns. It will also function as an environmental corridor for animal species.

Increased usage of the park, which is located in the center of the Round Valley and accessible from both Springerville and Eagar, will encourage economic growth benefitting everyone. Property values are likely to increase most dramatically along the park boundaries, but should increase for all areas. Park topography assures views of the park from throughout town. Equestrian estates and horse



Another of the historic buildings to be arranged in the creation of a History Trail in the northern portion of Central Park, Springerville.



ridge adding to the increased economic gain for the entire Round Valley.

Historic Park

The historic buildings of the existing park are a visual, historical and aesthetic asset to the park system. They could be arranged around a trail system using the entire lower portion of the Springerville entry to the central park. By creating a “history trail” through the lower park a sense of destination and exploration is formed. A story of the Round Valley could be created which will lead the visitor through the area. Each building could be the focus of a portion of the history and make reference to similar sites along the existing Pistols, Plows and Petticoats Historic Driving Trail. Trees, seating areas and even demonstration gardens could be created to take full advantage of the area.



Historic building to become part of the History Trail portion of Springerville Central Park.

From the historic buildings the trail could connect visitors to either the Amity Hiking Trail or up to the



View to the southwest from the top of Central Park, along the north end of the proposed Ridgecrest Trail. Across the center of the photo is the current Amity Ditch which will become a hiking and biking trail.

cemetery and Ridgecrest Trail. Views from either trail would be elevated from the valley floor and allow for exploration of the area.

Ridgecrest Trail

Central Park rises to the top of a large bluff overlooking the entire Round Valley. As mentioned, we recommend a series of trails running the length of the park, and across the ridge at points which connect the schools of the area and take advantage of the stunning views. Across Maricopa Drive, just south of the cemetery, the ridgecrest trail begins. Views

to the north are panoramic across the town of Springerville. Traveling south across grassland studded with juniper trees the visitor encounters views of the surrounding mountains. There is a plaza area with viewing decks, seating, and plantings which will entice visitors to the area.

The park ridge crest will be accessible from all sides of the Round Valley through a series for trails which provide access to its summit. Night time star gazing, picnic areas, views and bird watching can be enjoyed at the summit. Because the crest has a natural wide form it will also

accommodate large gatherings of people. Its adjacency to the Dome and High School make it an added site for large group activities and possible conventions associated with those locations.

Amity Trail

Traversing the hill along the current Amity ditch will be a mixed use, hiking and biking trail. Along the trail there will be resting nodes, places for people watching, sipping a coffee, or resting during a stroll. This system of trails will be a connector between the town centers of Springerville and Eagar, encouraging use of both areas and adding vitality to both towns. The Amity Trail will connect with the other central park trails creating a system of connections between the town centers of Springerville and Eagar. The trails will encourage use of all park area, and can be direct connectors to the regional trail system.

Equestrian Estates

As mentioned, the eastern lowlands adjacent to Central Park would be ideal for development of equestrian oriented housing development. This type of high- end housing is appropriate to the natural surroundings of the park, and a trail system on the western side of the park would be an added attraction. This type of development would increase the property values in the

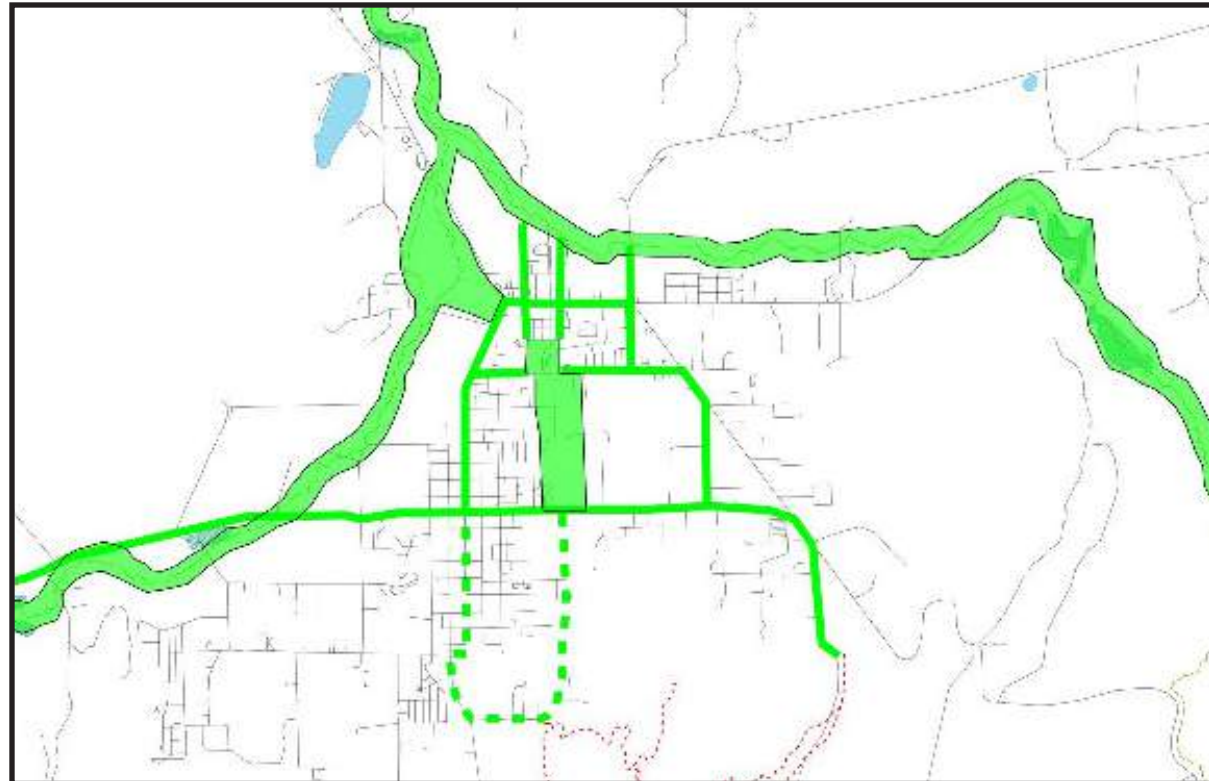


Trail Connectivity

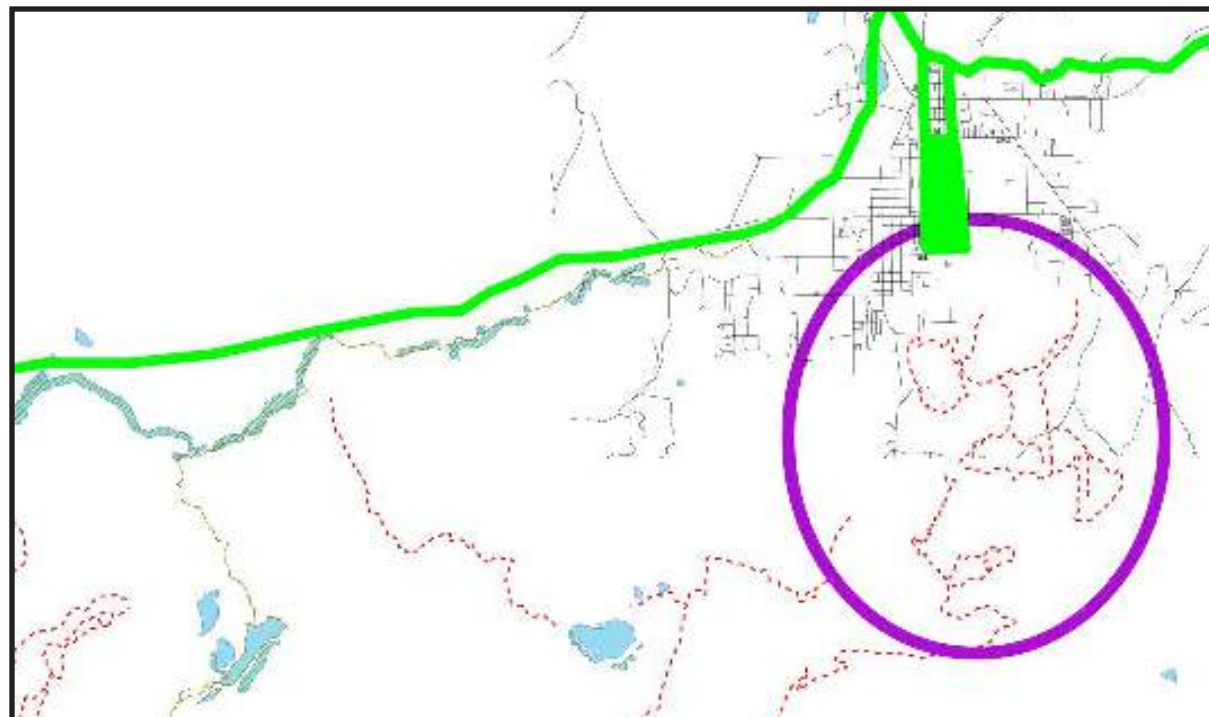
While there are currently minimal trails within the town of Springerville the existing periphery trails in the forest service land can be seen as amenities to utilize when trail development happens in town. The 1999 Urban Trail Study has taken the first step in recognizing this and in our Master Plan section we have adjusted the trail routes to respond to the new development. A master plan was also developed by The Tejido Group for the City of Show Low with trail routes from Show Low Lake to Fool Hollow Lake, to the Pinetop- Lakeside area to Springerville. More connectivity between urban locations and the environment accommodates more users and greater versatility on the trail system.

Greenways and River Walk

What is a greenway? Webster defines it as a corridor of undeveloped land preserved for recreational use or environmental protection. The Greenbelt concept has been around since time of Frederick Law Olmsted and the Garden City movement of the nineteenth century. Olmsted designed Boston's 'Emerald Necklace,' a series of parks and greenways that were part of Boston's original plans from 1878 and 1890. Greenways are open natural spaces that have a linear form (Smith and Hellmund, 1993).



Connective Greenways to Proposed and Existing Trails



Surrounding Trails Within Apache- Sitgreaves National Forest



- Butler Canyon Trail # 98

Regional Trails

The Forest has four National Recreation Trails: Eagle, Blue Ridge, Escudilla, and General George Crook.

The Apache- Sitgreaves National Forests provides a four season recreational experience with settings ranging from low elevation desert to high elevation mixed conifer stands. Additionally, many of the forest trails are part of the White Mountain

The most successful greenway designs are those that provide multiple objectives and are integrated into developed land uses (Randolph, 96). Goals that could be recognized by Greenways include: recreational opportunities, transportation, open space, conservation of wildlife corridors and riparian habitats, stream channel protection and restoration, water quality improvement, flood damage mitigation, neighborhood linkages and education. Greenway planning is a useful mechanism to integrate a broad range of environmental planning objectives and should be a highly participatory process.

A greenway links people to their surroundings via walking or riding a bike with vehicles being considered a secondary user. Not only do greenways link people to areas within town but also encourage them to continue through town and into a larger trail system including

the river and creek trails, (the river and creek trails that follow the Little Colorado and Nutrioso). Springerville also has many trails that lead into the Apache- Sitgreaves National Forest.

Apache- Sitgreaves has almost 1,000 mile of trails. Opportunities abound for horseback riding, mountain biking, and hiking. Trails within the wilderness and primitive areas are designed for hikers and horses. Trails outside these areas can include a broad spectrum of users.

Trails that surround Springerville:

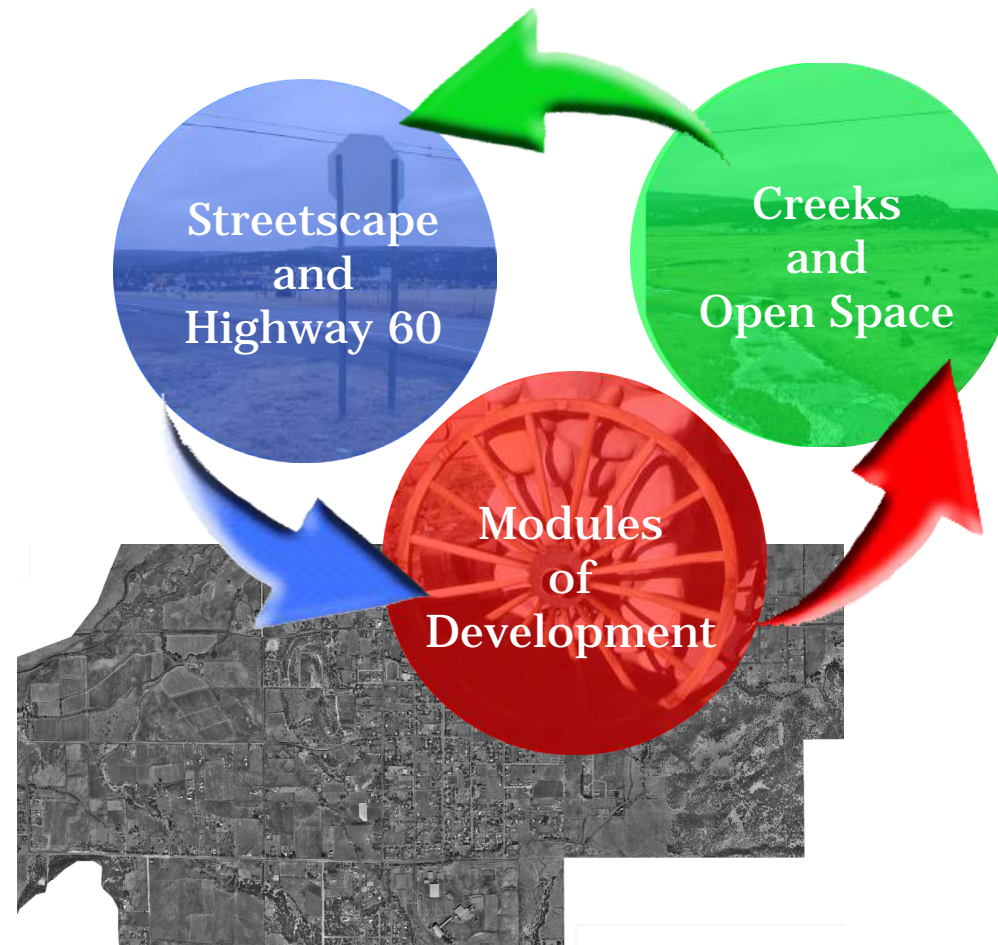
- Big Lake Lookout Trail
- East Baldy Trail # 95
- East Fork Trail # 95
- Indian Springs Trail # 627
- Thompson Trail # 629
- Pole Knoll Recreation Area Trail
- Railroad Grade Trail # 601
- South Fork Trail # 97
- West Baldy Trail # 94
- West Fork Black River Trail # 628
- West Fork Trail # 94

Trail System which is managed in partnership with the Pinetop-Lakeside TRACKS volunteers. The Forest does offer several barrier free trails, including; Mogollon Rim Interpretative Trail and Pintail Lake Wetland.

Again a master plan was also developed by The Tejido Group for the City of Show Low with trail routes from Show Low Lake to Fool Hollow Lake. This connects to new trail systems in Pinetop- Lakeside, also designed by the Tejido Group. All of these trails can be connect to Springerville and Sunrise ski resort. Creating more connectivity between urban locations and the environment, accommodates a large user group and greater versatility on the trail system.

Phasing Strategies

Phasing refers to distinct packages of development within the scope of the Master Plan. As such, it is an essential part of a community's planning and development strategy. Phasing ensures that development occurs in an organized, yet flexible manner, and allows stages of growth to occur when the economic and political environment is appropriate. Through phasing strategies, communities like Springerville can begin to accommodate economic development, protect neighborhoods, preserve open space, link specific land uses, and direct growth into the appropriate areas. Perhaps the greatest outcome of planning and development in phases is the enhancement of the quality of life of a community; in addition, a town can avoid wasting both time and money when it has specific goals outlined to meet the General Plan and the Master Plan. Phasing, however, is sometimes presented in a rigid chronological manner. Too often, development is hindered or halted when phases are not met as originally anticipated. Understanding this, we have examined the Master Plan concept and have organized the phasing strategy into unique 'modules' of development—pieces of the whole that strategically compliment the design goals of the entire Master Plan. It is helpful to view the modules as packages of development that can be implemented as the economic and political atmosphere of the town permits. These modules are not



presented chronologically; each module can be implemented at any time, and it is possible that some modules are ongoing or overlapping, and can occur while other modules are undertaken. Clearly, there may be a logical progression of stages within the modules that can be discussed by the town as those needs and opportunities arise.

Modules of Development

Again, these modules of development are not presented sequentially or in chronological stages. This becomes an advantage to the town as the rigidity of typical phasing strategies is avoided, and instead, the political and economic climates determine when and how the modules of development can occur—thus creating an ideal progression of development for the town.

Streetscape & Highway 60

In conjunction with the acquisition and conservation of open space, and the creation of nodes within town, the streetscaping along Highway 60 should be enhanced to define the character of the town. Streetscaping involves much more than simply adding a few trees and shrubs along the street. Streetscaping includes the landscape, urban trails, bike trails and lanes, lighting, signage, crosswalks, paving materials, parking, medians, and architecture.

The town will need to work closely with the ADOT (Arizona Department of Transportation) and explore options such as buy-backs, which will allow the town to develop strategically placed medians and other beneficial streetscape elements. As these elements work together, they serve as traffic calming devices that increase the safety of the highway and add incentive for residents and visitors to experience the town. The vegetation used in the streetscape enhancements can create entries at areas of interest, and into the adjacent neighborhoods as well. For more specific information regarding planting concepts at key intersections and neighborhoods, refer to the design section of this book. We recommend that when the town budgets funds for streetscaping, please consider the purchase of mature trees as they will achieve the anticipated character of the Master Plan much sooner than small young trees.

Highway 60 & Meadows

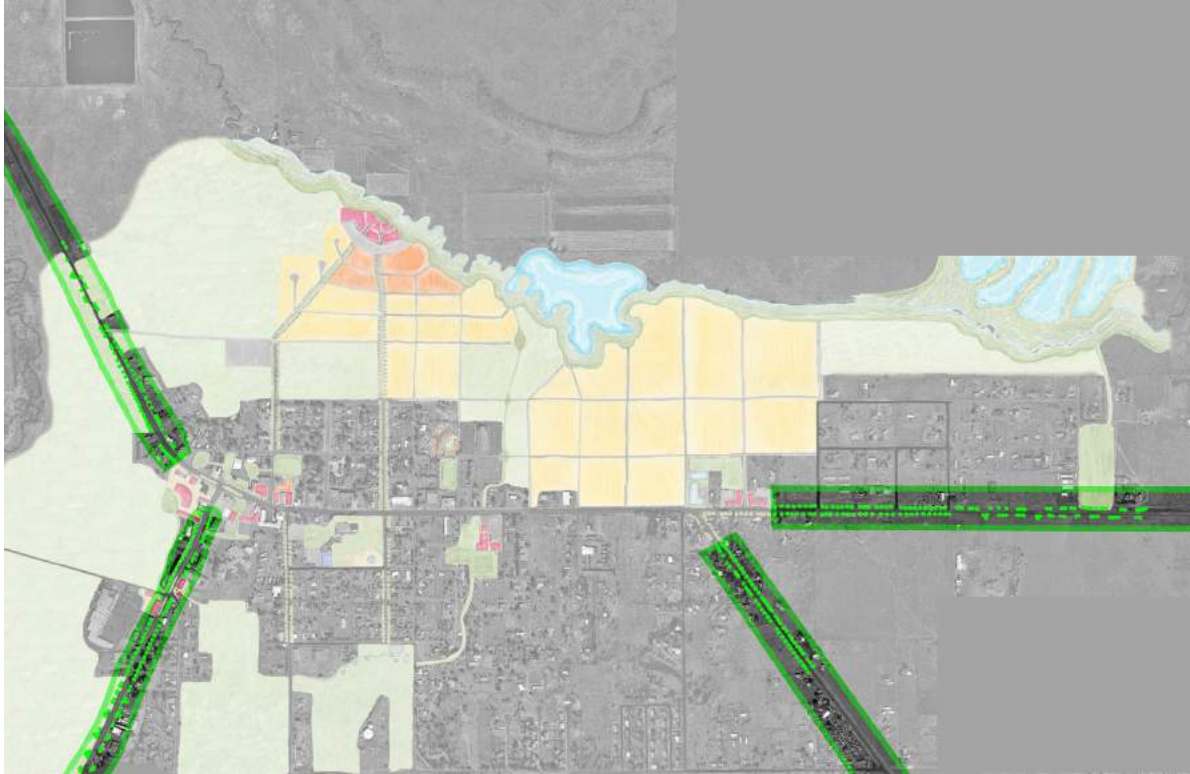
The nodes in town allow the maintenance of certain stretches of native vegetation and meadows along the highway. These spans of Juniper and Pines warmly welcome visitors and residence alike. This also helps to create a strong sense of pride for the community. It would be great to see these areas free of clutter and trash and better suited for showcasing to the residents and visitors. The clean-up could be promoted as a town community service project in which residents, students, business owners, and elected officials work together the better Springerville now and for the future.

Creeks & Open Space

The health of the creeks and meadows within the town is absolutely essential to the success of Springerville. The town finds itself in an incredible situation—located between two remarkable natural water courses that have been sadly neglected. The conservation and showcasing of these creeks along with the establishment of the urban trail system can begin to define the sense of place and identity of a small mountain town. Consideration should also be given to the restoration of specific historic sites that the town can take advantage of for the development of the urban trail system.

As the town moves forward with development within the scope of

the Master Plan, the acquisition and maintenance of the creeks and meadows must be an ongoing endeavor. With special attention given to the acquisition strategies found in the appendix, and the relationship with conservation easements. These tools will prove to be invaluable resource as the town strives to define its character while accommodating future growth and development.



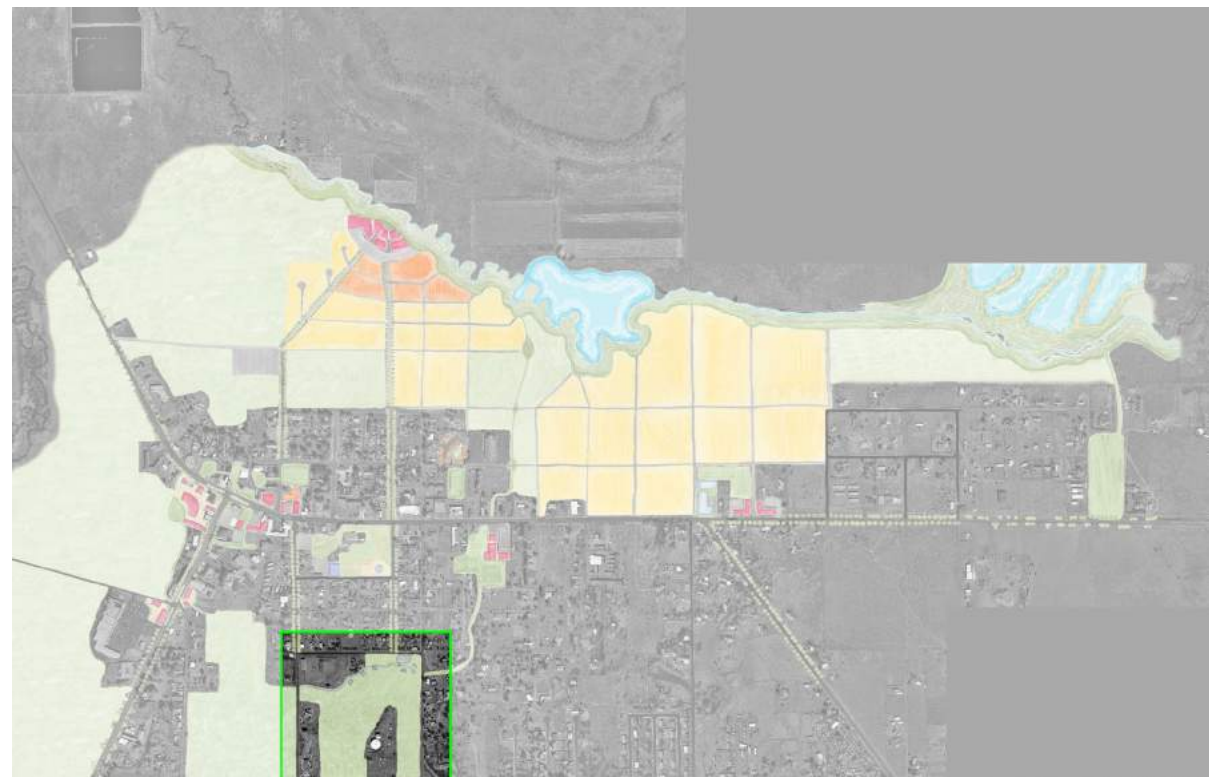
Approaches

Within the Master Plan, we have identified the locations of the entries to the town that if enhanced will announce and celebrate the arrival into Springerville. The entries will also serve as a warm farewell as visitors leave the town boundaries. These entries should be a mix of improved streetscape, enhanced vegetation (perhaps unique to the Round Valley region), and signage announcing the arrival to the town.

This module can be further broken down in to three different mini-modules: signage, street trees, and streetscaping.

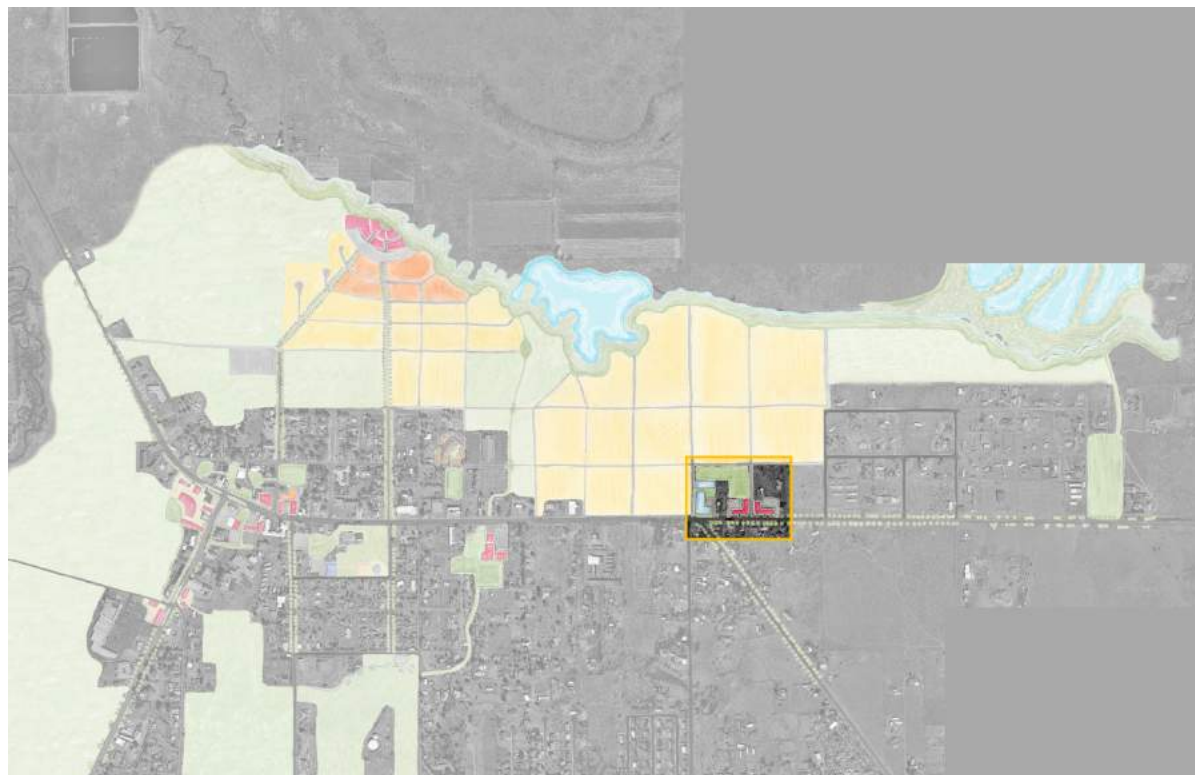
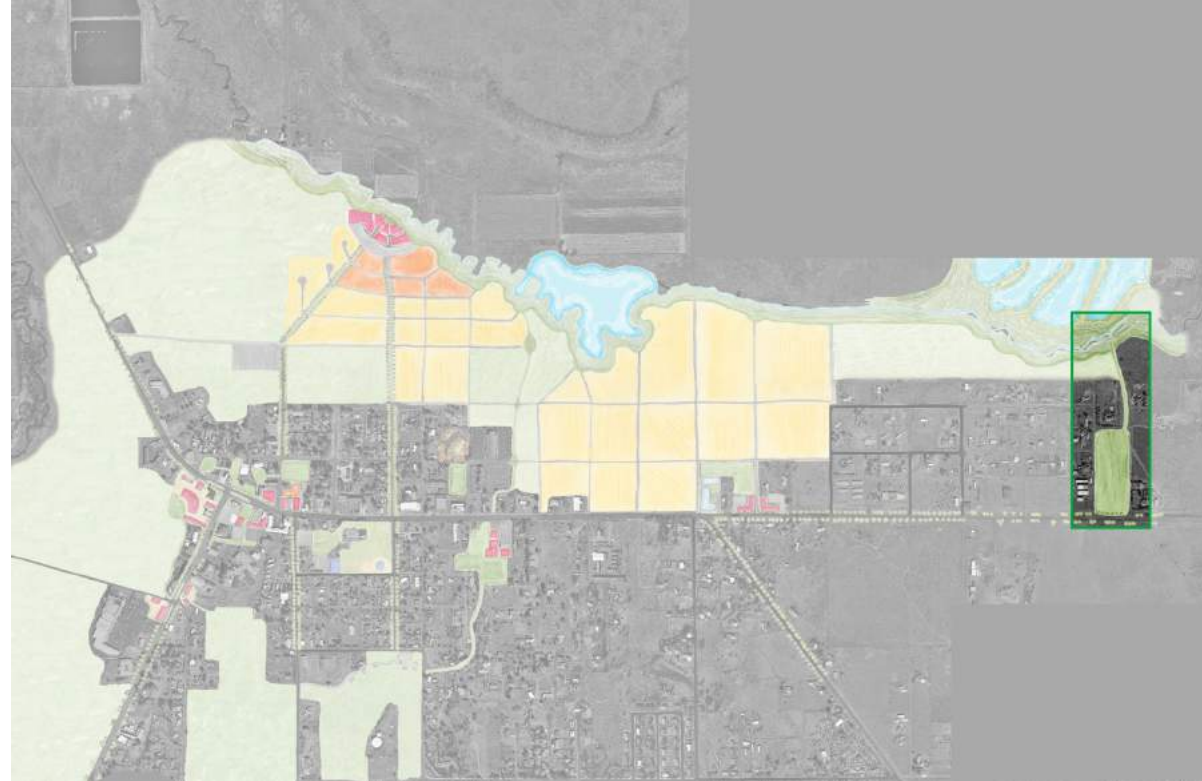
Central Park

This area is already the site of numerous public amenities. This module would have amenities and facilities upgraded and improved, and then expanded to the far southern extent of the site. This module should be completed in conjunction with Eagar, if possible.



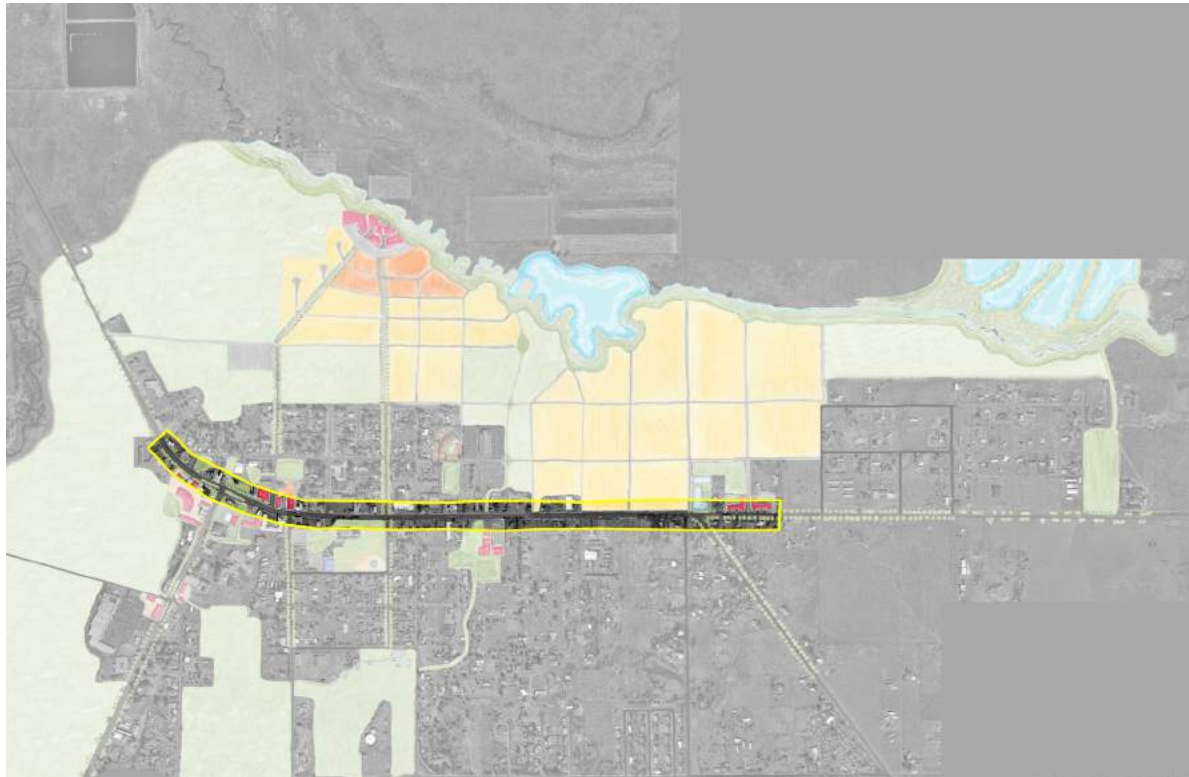
Eastern Park Extension

Public recreational facilities should be added here to create a green growth boundary and to expand the wastewater wetlands park. This is also a possible destination for the creekside greenways. Also, this would be an excellent place for an RV orientated business.



Civic/Institutional Node

With the addition of a major educational facility, a museum, or a government office building, this node will create a bookend for Main Street Springerville. This is also where the historic Coronado Trail ends, so creating a community landmark will add to this historic/cultural experience.



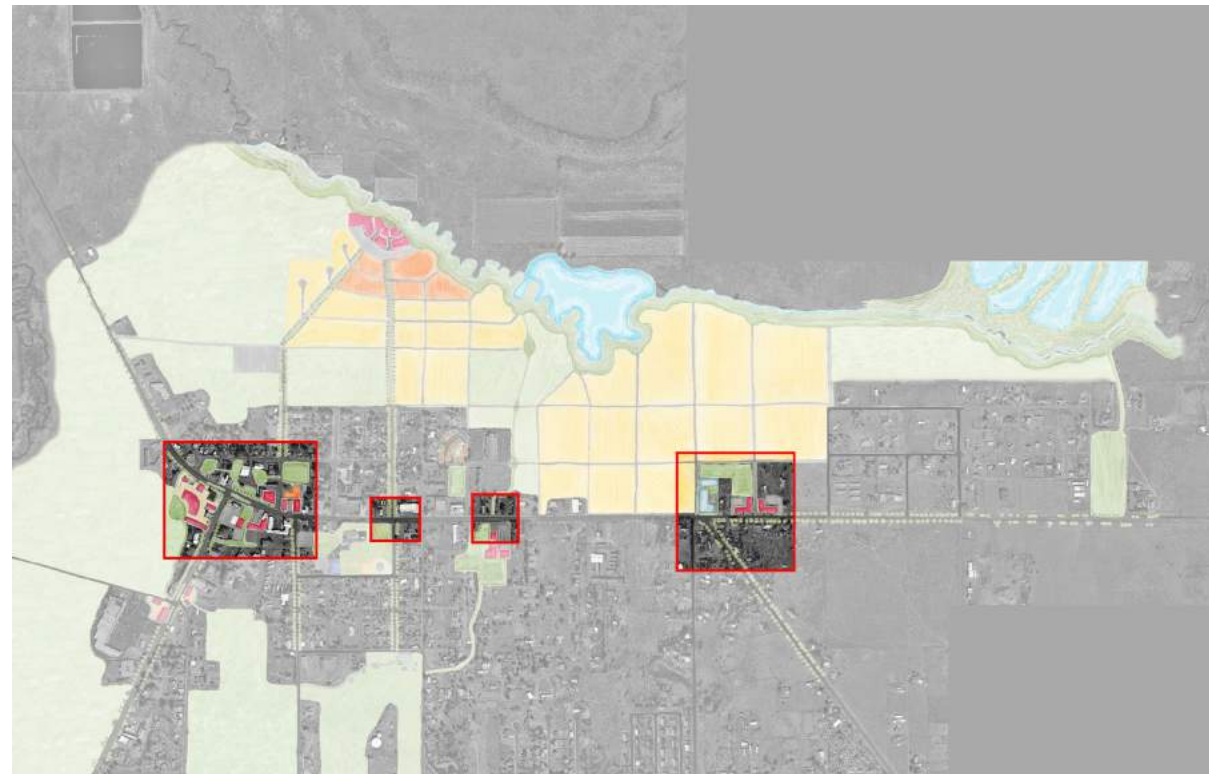
Main Street

Start with expanded sidewalks and defined street parking. Add street trees, social spaces adjacent to businesses, and public art and Springerville will have a Main Street to be proud of.

Done in concert with the development of key nodes, this module will be the most visible and immediate solution for the redevelopment of Springerville's economic core.

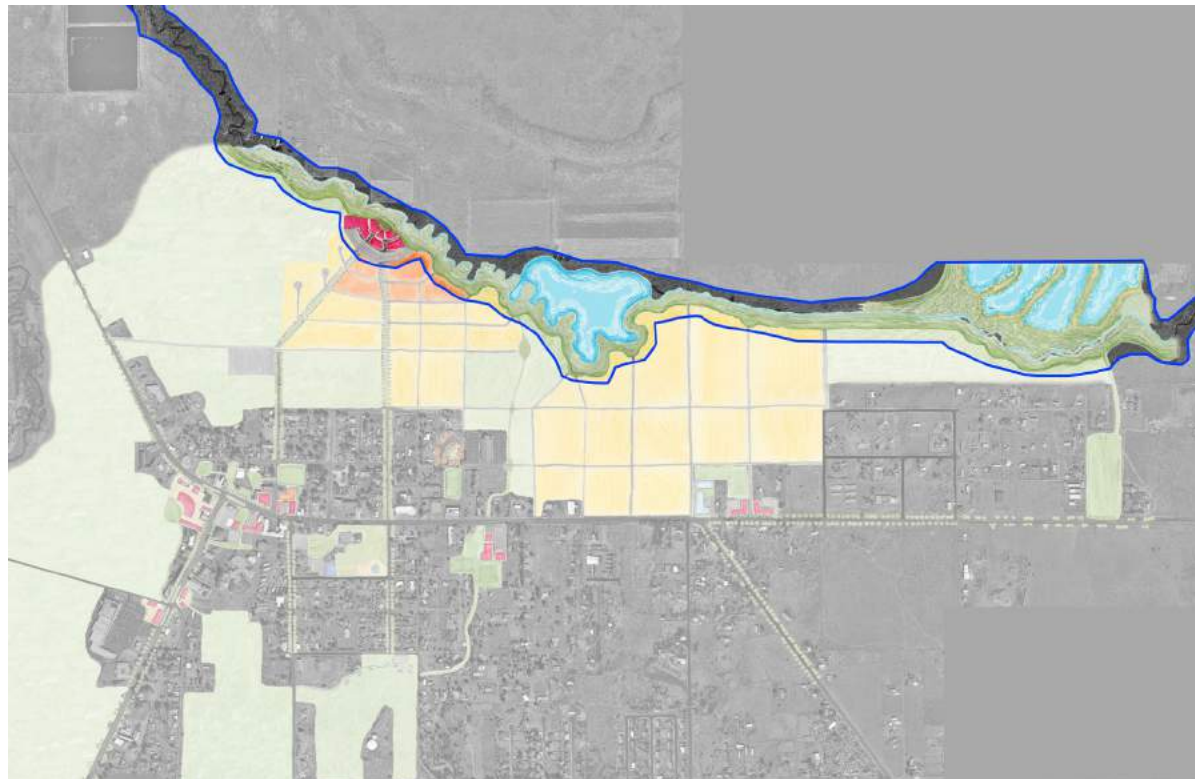
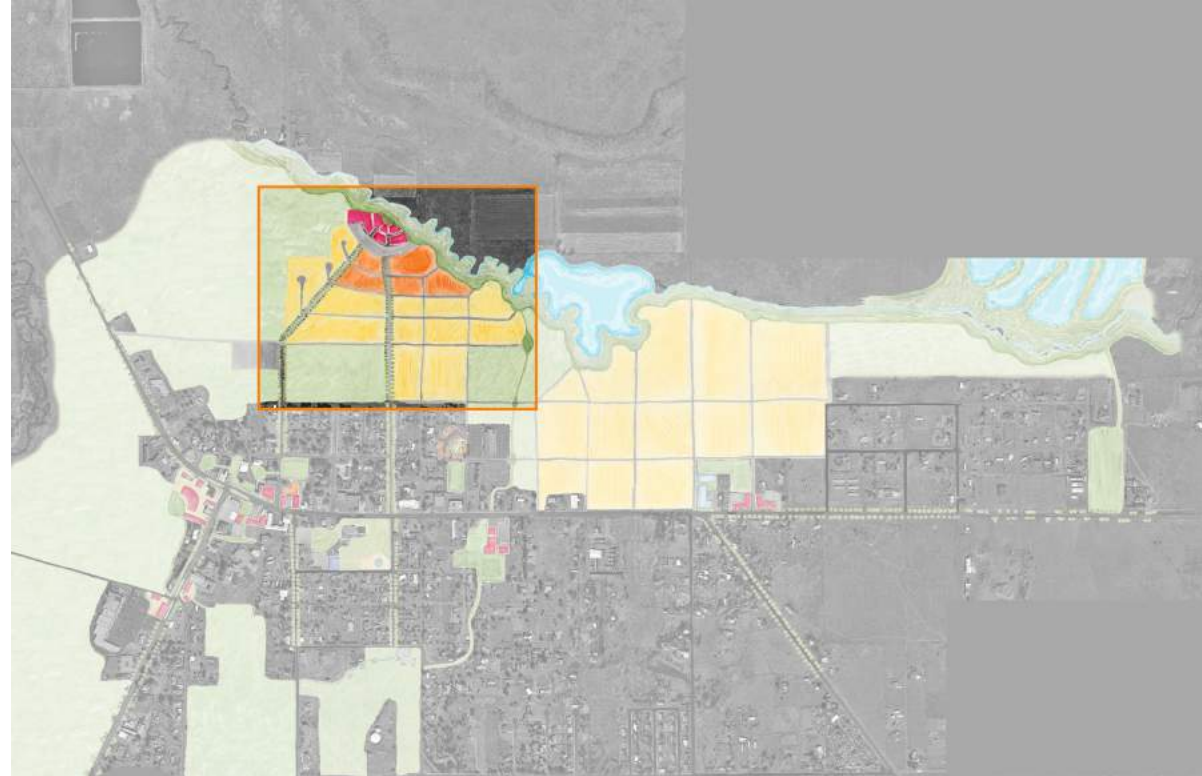
Nodes

The large western node is the most significant (and difficult) to develop. This node can maximize the open space on the western floodplain. It can include mixed commercial and residential and use plazas and park to create a series of inviting spaces while expanding the depth and density of Springerville.



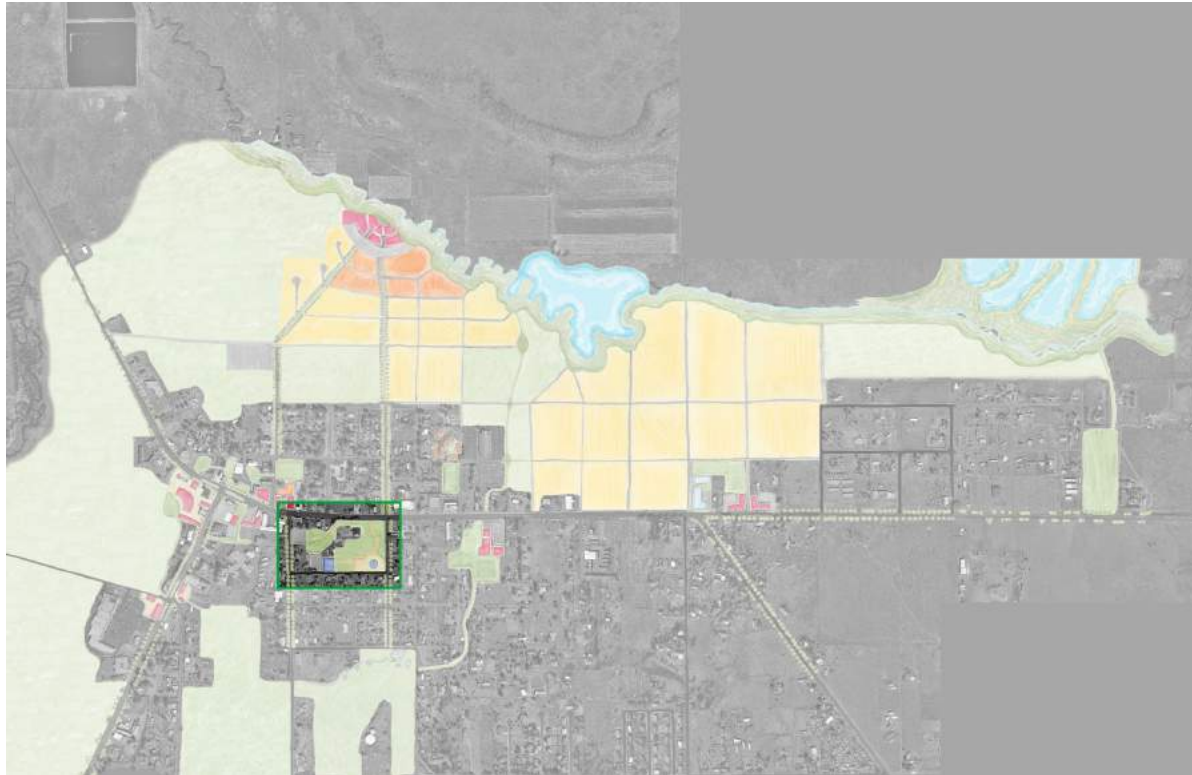
North Neighborhood

With Nutrioso Creek as the northern boundary, this is a New Urbanist styled neighborhood with strong connections to the creek and Main Street. A small commercial cluster at the center can be incorporated into a small park creating a core for residential development to radiate from. The residential areas in this neighborhood could potentially be some of the most desirable in the Round Valley.



Creekside Greenways

In order to protect water resources and increase sustainable tourism and improve quality of life, the town of Springerville needs to work with property owners and state agencies to set up easements along the banks of the Little Colorado River and Nutrioso Creek. These will also serve as to better define the growth limits of the town. These easements can be turned into linear parks that will offer connections and experiences. Also recommended is an expansion of the wastewater ponds, with a second wetlands created a mile downstream. There is considerable grant money available for this module.

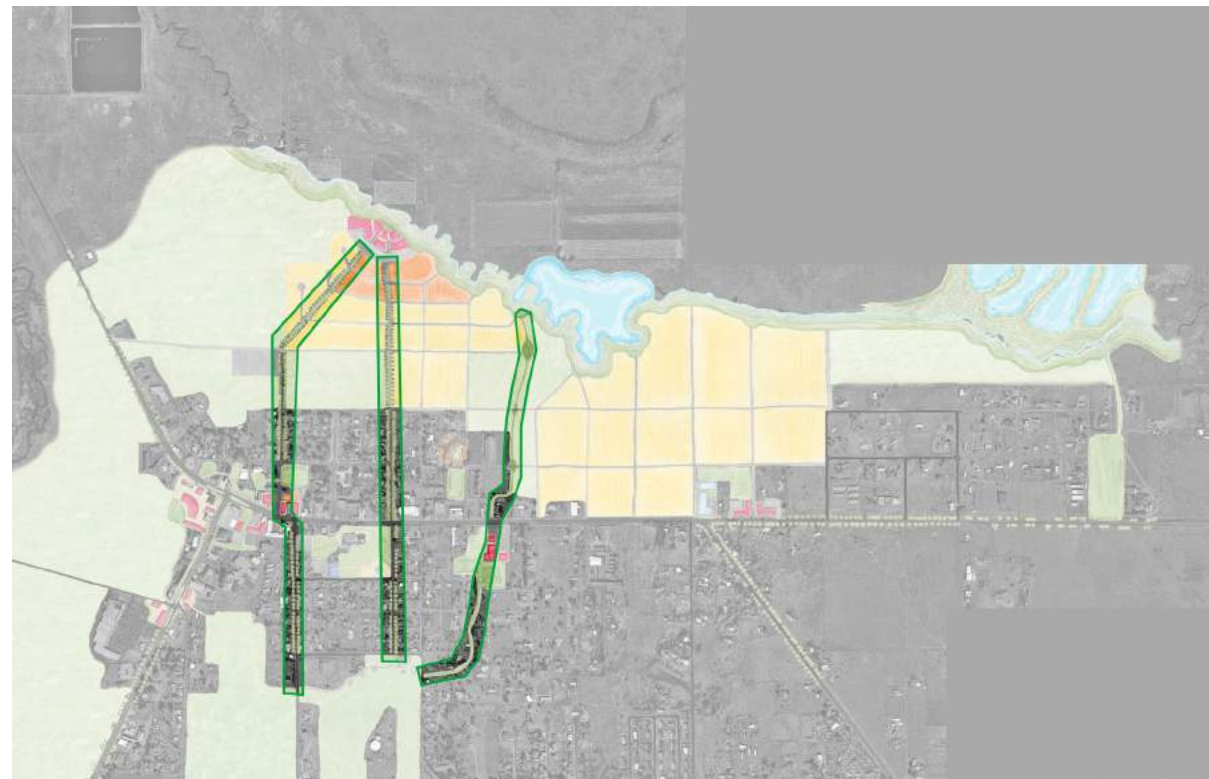


School Park

Capitalize on the presence of community centers at the historic old school and expand the rear of the site into a larger park space. Invite business owners to extend their operations back into this space and make it the heart of Main Street Springerville. This is also a central open space for community events to take place and serve as the town square.

Town Greenways

As part of the effort to improve residential areas and as an alternative to traditional forms of transportation. The streets in Springerville are already wide enough to accommodate a dedicated bike lane. Streetscaping will further add to the appeal of this system. The system is meant to link north and south open spaces to the central commercial strip.



A photograph of a rustic log cabin in a forest, overlaid with a semi-transparent purple text box. The cabin is made of horizontal logs and has a gabled roof. It is surrounded by tall, thin trees. The text box is on the right side of the image.

CHAPTER 6

APPENDIX

The following appendices contain a diverse array of information elaborating previous chapters. The appendices are designed to be referenced when looking for project funding or designing various sections of the master plan. There are photos and descriptions of Springerville's historic structures as well as recommended steps in implementing the Main Street Program. One section includes guidelines to greenways and trail development where details for everything from proper trail design to recommended heights and placements of drinking fountains can be found. Further along in the chapter readers will find land acquisition strategies and ways they might be helpful to Springerville in their attempts at directing future development. There is also a small section on Geographic Information Systems and their ability to aid in community planning. And, finally the structured interviews are displayed with pie charts showing the results of our user surveys.



Post Office



Car Dealership



Moderne Building



Madonna



School



Pioneer Park



Cemetery Hill

The Main Street Program

Springerville's existing structures can be registered in the National Trust for Historic Preservation. The federal Main Street Program was established in 1980 to emphasize the importance of downtown in our towns and cities. Since its creation, public and private investment in Main Street Program communities is over \$11 billion.

The Main Street Program follows a four point approach:

Organization:

The most difficult part of urban revitalization is to create the organizational framework that brings together interest groups and individuals. The Main Street Program's project manager usually attempts to bring the groups together under an umbrella organization that deals directly and exclusively with the concerns of downtown.

Promotion:

Main Street Program needs to show that downtowns need to compete by promoting themselves and presenting an attractive new image. Promotions were considered critical to attracting people downtown. By targeting groups that the downtown should try to attract.

Design:

The design aspect of the Main Street Program is important because it provides evidence of revitalization activity in the course of creating a more desirable environment.

Economic restructuring: Financial support for a revitalization program is the last critical component in the Main Street Program's approach. The Main Street Program demonstrates that property values can be substantially increased with a coordinated revitalization program.

The four- point approach works most effectively when combined with eight principles to be applied when developing revitalization strategies:

Comprehensiveness: a single project can't revitalize a downtown or commercial neighborhood, but a series of projects and initiatives is vital to building community support.

Incrementation: Small projects are important and they make a big difference. They demonstrate to the community that Main Street is alive.

Self- help: Although the National Main Street Center can provide assistance, local leadership is key to the long term success of the revitalization effort.

Public- private partnership: Public and private sectors give the support and expertise needed for Main Street.

Federal Funding Sources for Preservation:

U.S Department of the Interior

- Historic Preservation Fund

- Land and Water Conservation Fund
- Bureau of Land Management

U.S. Department of Commerce

U.S. Department of Housing and Urban Development (HUD)

- Community Development Block Grants (CDBG)
- Low- Income Housing Tax Credit

U.S Department of Transportation

Institute of Museum Services (IMS)

Preservation Organizations:

American Association for State and Local History

American Cultural Resources Association

American Institute of Architects

American Planning Association

Association for Preservation Technology

Campbell Center for Historic Preservation Studies

C.H.I.N. The Canadian Heritage Information Network

International Council of Monuments and Sites

National Alliance of Preservation Commissions

National Center for Preservation Technology and Training, National Park Service

National Council for Preservation Education

National Main Street Center

National Park Service, Department of Interior

National Preservation Institute

National Trust for Historic Preservation

Partners for Sacred Places

Planning and Architecture Internet Resource Center

Tejido views the act of developing a Master Plan as an effective way of identifying stakeholders and critical functional, environmental, socio-cultural, economical and aesthetic issues that need to be considered. Presentation of multiple plans options in a public forum initiates debate and begins the process of coalescing opinion and lends focus to development of a common vision for Springerville's future.

Trails

The following material was taken from Trail Guidelines: Pedestrian and Bicycle Design Guide, published by the City of Flagstaff Coconino County Arizona Department of Transportation, Flagstaff Metropolitan. It gives information about trails in general and some other elements to be considered for inclusion in the Springerville Trail System.

I. Bicycle Paths

Dedicated bicycle paths will not only encourage more bicycle use, but will improve safety conditions by restricting use to specific routes. These routes with increased volume will be more noticeable to drivers. Clearly marked bike routes will also aid in linking trails on one end of town with trails on the other. For bicycle paths there are three primary types: on-street bike lanes, off-street multi-use paths, and bike routes in mixed traffic.

Design implications

- They are always designated by a sign with lines and symbols marked on the pavement.
- It is paved with a cross-slope of 1.5%

- Recommended bike speed: 20mph
- Bike lane width: 4' minimum
- Striping: 6" city, 4" county

In the town of Springerville there are a couple of options:

“Minor collector bike lane” (no on-street parking, curb and gutter)

Design implications

- It is paved with a cross-slope of 1.5%
- Recommended bike speed: 20 mph
- Bike lane: 4.5' min., gutter pan width: 18"
- Striping width 6" city, 4" county.

“Bicycle Route” (a public road or street identified, signed and designated or mapped for use by cyclists). Cyclists share the public street with, and are not separated from, motorized vehicles. Several criteria also should exist before such a route is signed. A traffic engineer should be consulted.

Design implications

- It is paved, usable lane width: 14', gutter pan width: 18"
- Recommended bike speed: 15 mph



Off- street multi- use paths should use the criteria for “rural unpaved” (an unpaved path, physically separated from motor vehicle traffic by an open space or barrier, used by cyclists, pedestrians, and other non-motorized travelers).

Design implications

- It is unpaved with a cross-slope of 1% min., 2% max.
- Recommended bike speed: 15 mph
- Vertical clearance of 10' (more for horses), width: 6-10' (4' ped. use only, 6' ped/ equestrian use, 8' multiple users, 10' primary bike path [must have long sight lines, wide curve radii, drainage features must be unobtrusive and few in number]), shoulders 2'

The following information was taken from Trails for the twenty-First Century, 2nd edition Charles A. Flink, Kristine Olka, Robert M. Searns Island Press, Washington, 2001



II. Equestrian Trails

Trails for horses and riders should be considered as this activity is very popular in many areas. Furthermore, the more types of users designed for, the more users will be attracted to the trail. If the trail has connectivity to the town, this could mean more business for downtown shops and restaurants. Equestrian trails, however, have special design requirements such as the need for soft (unpaved) trail surfaces.

Design implications

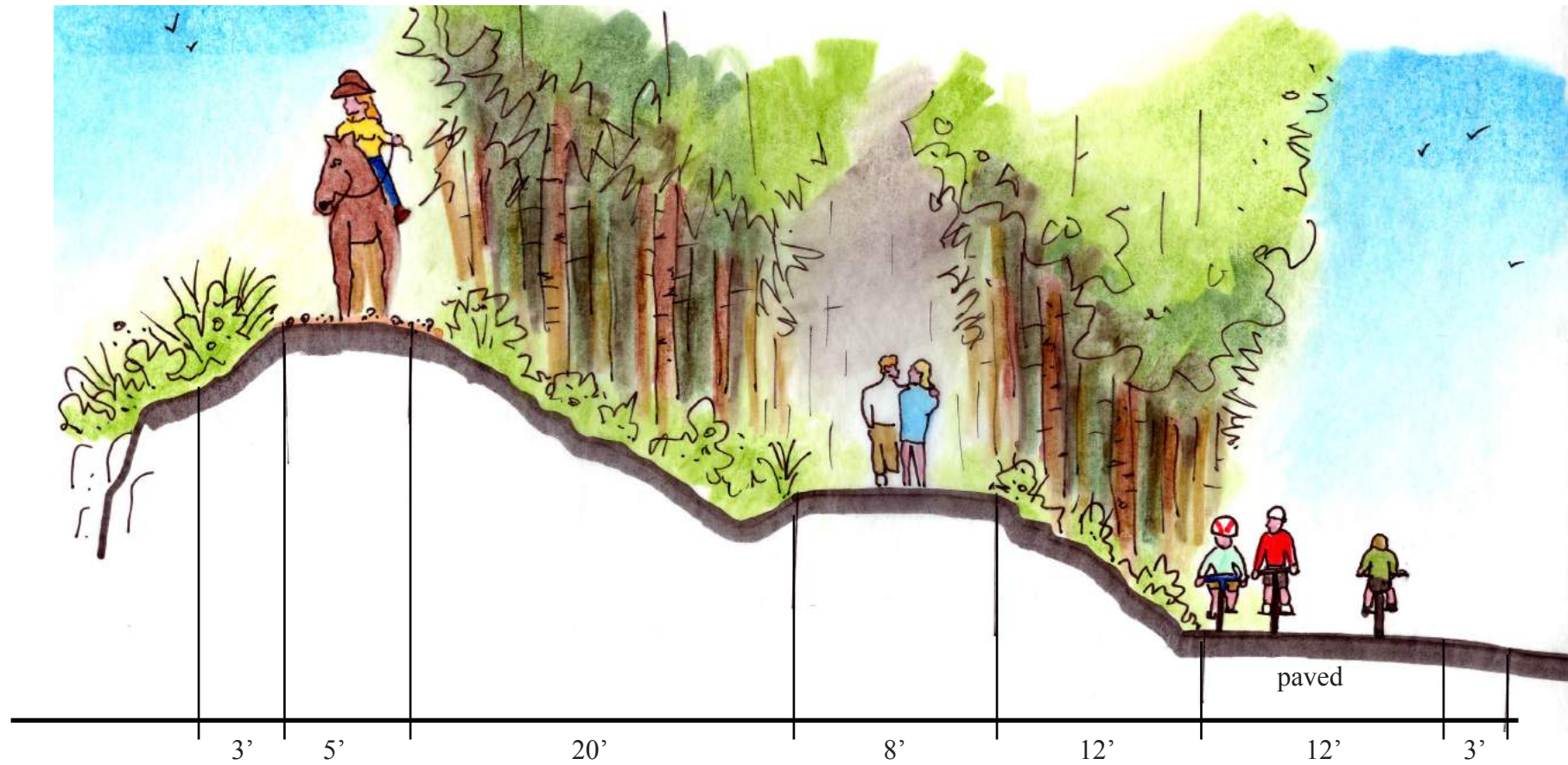
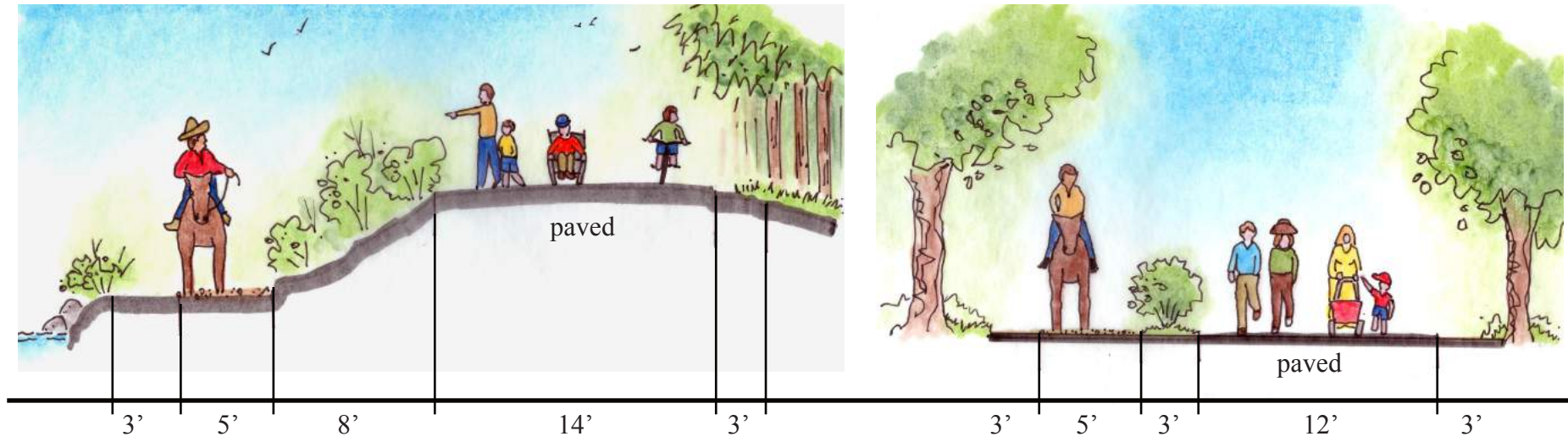
- Surfaces: dirt, stabilized dirt
- Width: include 5' wide dirt track on multi- use trails with harder surfaces
- Vertical distance 10' min., horizontal clearance 5' min. (limbs cut flush)

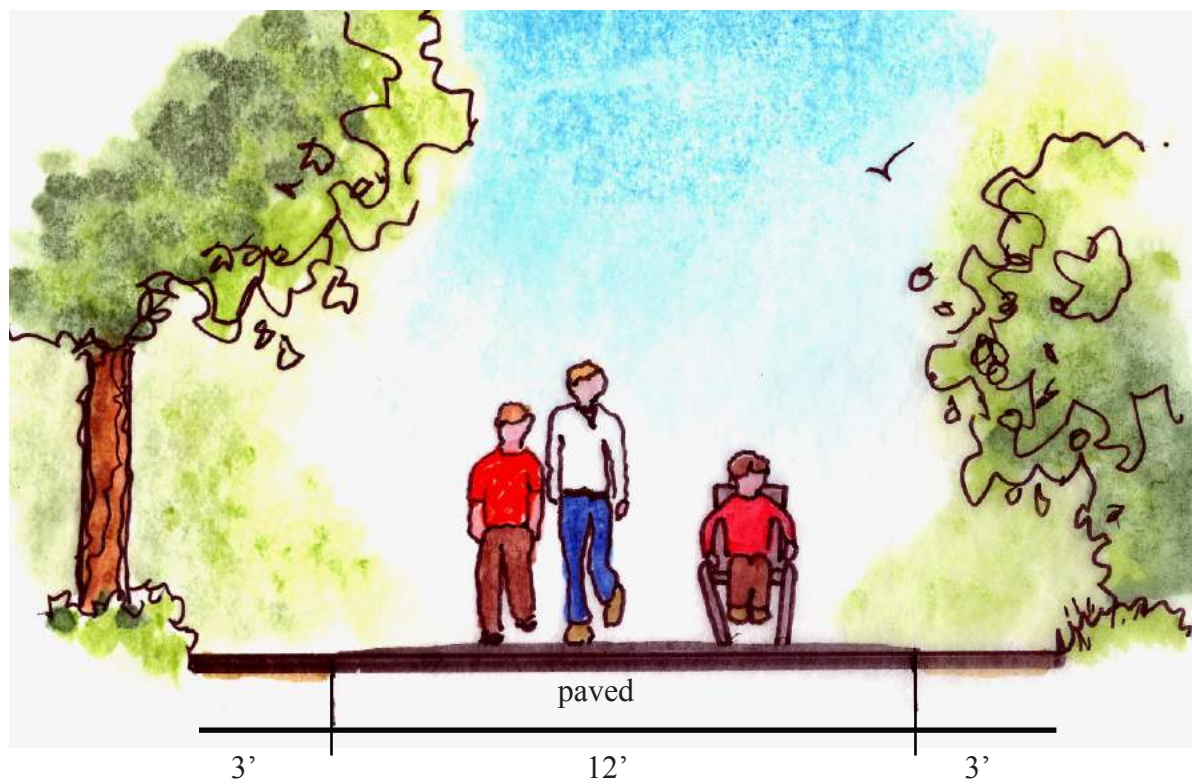
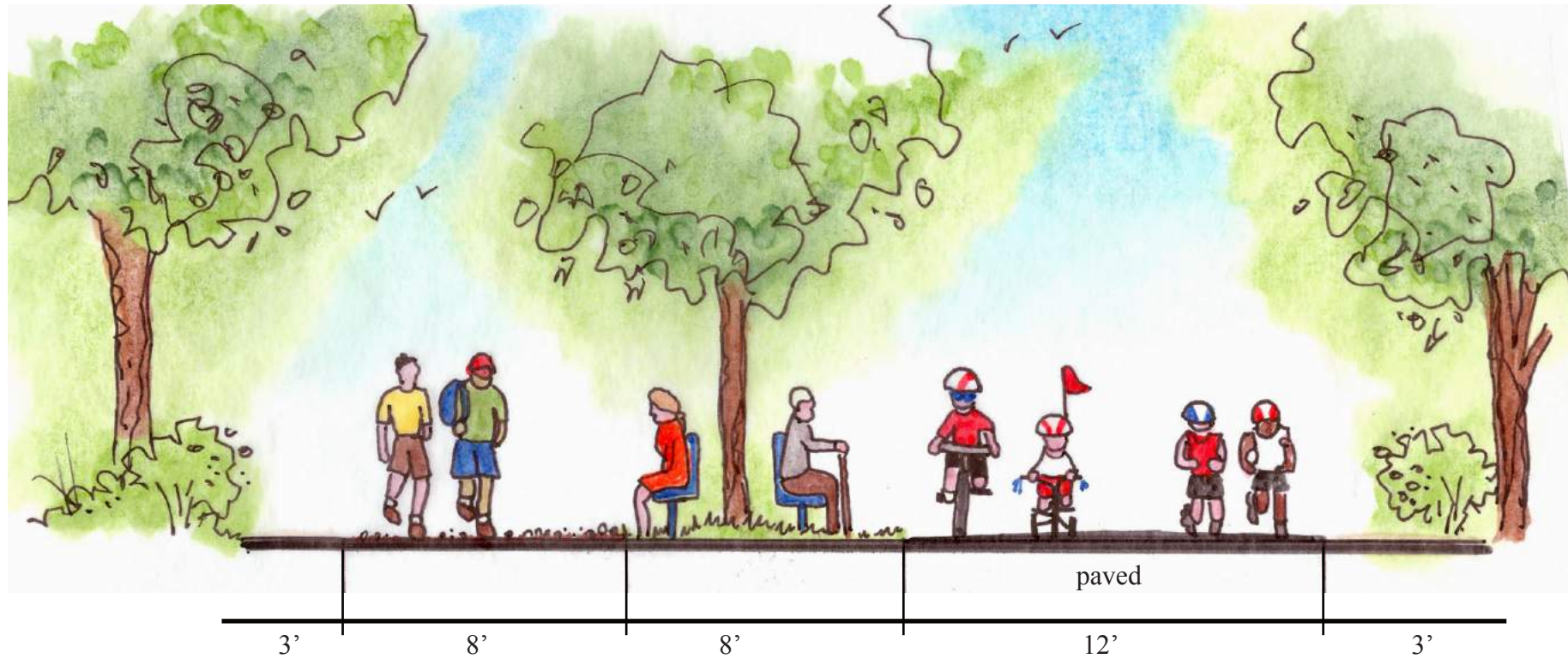


- Sight lines at 100' min.
- Signs stating right-of- way for horses should be posted, and for bikers to give verbal warning before passing; keep bikes separate from horses where possible
- Water crossing preferred to high bridge crossings



APPENDIX





Various possible trail section configurations, from single to multi-use, showing the need to separate equestrians and bicycle users, hard and soft surface types, and the creative use of elevation changes across the trail section.

III. Trail User Slope Requirements (p.63)

User	Speed mph	Longitudinal slope	Cross slope
Pedestrian	3- 7	No restriction	4% max.
Wheelchair	3- 7	3% pref./5% max.	2% max.
Bike	8- 10	3% pref./8% max.	2- 4%
Horses	5- 15	10% max.	4% max
Skier	2- 8	3% pref./5% max.	2% pref.

Design implications

- Trails for all users except equestrians should be kept fairly flat
- Minimal cross slopes will let water drain

IV. Surface Types: (p. 68)

The type of surface to use will depend upon many factors such as budget, preferred user groups and aesthetic (“looks”) considerations. Many types of materials are available: granular stone, asphalt, concrete, soil cement, resin-based stabilized material, wood chips, natural. Materials can be considered hard or soft depending on ability to repel moisture.

Hard surfaces are: soil cement, crushed stone, asphalt, resin-based stabilized material, concrete; soft surfaces are earth and wood chips.

Design implications

- Equestrian trails should only use soft surfaces but do not hold up well over time to multiuse
- Multi- use trails may use hard surfaces as they require less maintenance, but are more expensive.
- Surface types can be used to encourage or discourage use (thereby controlling user groups), where softer surfaces discourage many user groups and harder surfaces encourage different users.
- Wheelchair use requires firm and stable surfaces, not necessarily concrete or asphalt. Some soft, unstable materials can be used if soil stabilizers are added.
- Phasing: trail surfaces can always be upgraded. It is better to open a rails trail with only the ballast material in place (as long as it is stable for intended users), rather than delay use while waiting for funds to pave it with asphalt.



Surface Material (cost per mile) (longevity)	Advantages	Disadvantages
Soil cement, \$60,000-\$100,000, medium	Uses natural materials, more durable than native soils, smoother surface, low cost, multiple use	Surface wears unevenly, not a stable all-weather surface, erodes, difficult to achieve correct mix
Granular stone, \$80,000-\$120,000, medium-long (7-10 yrs.)	Soft but firm surface, natural material, modest cost, multiple-use	Surface can rut or erode with heavy rainfall, regular maintenance needed to keep consistent surface, replenishing stones may be long-term expense, not for areas prone to flooding or steep slope
Asphalt, \$200,000-\$300,000, medium-long (7-15 yrs.)	Hard surface supports most types of use, all-weather, accommodates most users simultaneously, smooth surface to comply with ADA guidelines, low maintenance	High installation cost, costly to repair, not a natural surface, freeze/thaw can crack surface, heavy construction vehicles need access
Concrete, \$300,000-\$500,000, long-term (20 yrs. plus)	Hardest surface, easy to form to site conditions, multiple-use, lowest maintenance, resists freeze/thaw, best cold weather surface, most resistant to flooding	High installation cost, costly to repair, can be slippery when wet
Boardwalk, \$1.5-\$2 million, medium-long	Necessary in wet or ecologically sensitive areas, natural-looking surface, low maintenance, multiple-use	High installation cost, costly to repair, can be slippery when wet
Resin-stabilized, cost varies depending on type of application, medium-long depending on type of application	Aesthetics, and less environmental impact, possible cost savings if soil used, can be applied by volunteers	Need to determine site suitability and durability, may be more costly in some cases
Native soil, \$50,000-\$70,000, short to long depending on local use and conditions	Natural material, lowest cost, low maintenance, can be altered for future improvements, easiest for volunteers to build and maintain	Dusty, ruts when wet, not an all weather surface, can be uneven and bumpy, limited use, possibly not accessible
Wood chips, \$65,000-\$85,000, short-term (1-3 yrs.)	Soft, spongy surface good for walking, moderate cost, natural material	decomposes under high temperature and moisture, requires constant replenishment, not typically accessible, limited availability, not appropriate for flood prone areas



Trail surfaces can be made of nearly anything, but a careful consideration of the potential users and functions must be made. Some rural trails have soft surfaces suitable for most users (above), especially equestrians which require soft surfaces. On the other hand, where equestrians would be restricted, such as on this urban trail (previous page top), asphalt is better suited to pedestrians and wheelchair users. This urban trail (previous page bottom), however, is covered with stone dust, very fine chips of stone, that is perfect for runners and joggers. Trails with viewing decks can be made into boardwalks (previous page middle).

V. Bridges (p. 78- 81)

If bridges currently exist, they should be examined by a structural engineer to determine integrity and by an architect or historian if historical significance is suspected. The refurbishing of historically valuable bridges can greatly add value (in tourist dollars) and interest (educational value) to a rails trail. Information about a bridge's history can also be obtained from the Historic American Engineering Record, available through the National Park Service or the Library of Congress in Washington, D.C.

Bridge decking: The surface of the bridge (decking) acts as a continuation of the trail surface: that is, it should be comfortable to walk or ride on, stable and not slippery when wet. Appropriate decking may need to be installed. Note: Horses prefer a water crossing to a high, hard- surfaced bridge crossing wherever possible.

Design implications

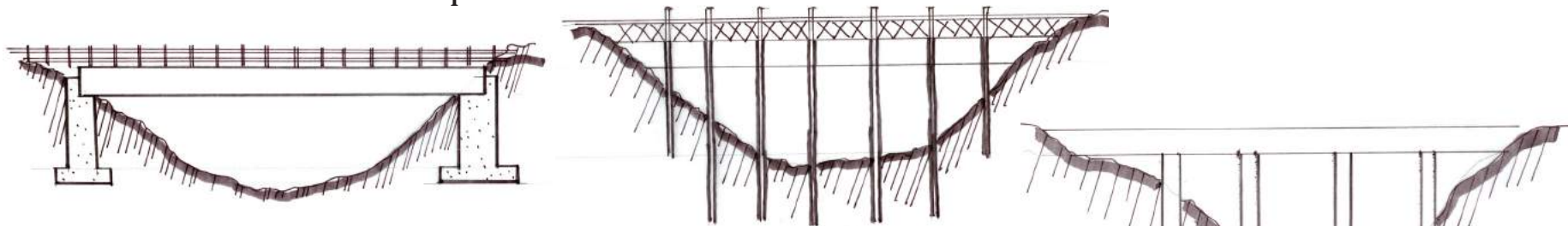
- For bikes, horses, and snow- mobiles: use 4"- thick, pressure- treated planks, laid perpendicular to the bridge beams, or at 45 degrees if the railroad ties are intact.
- Gaps no wider than 1/4 inch will allow drainage without tripping up users.
- Concrete decking (poured over corrugated metal decking) may also be used as it is less slippery, more durable and cost competitive

Bridge railings: Railings provide a safety factor and can be either post and rails or posts and mesh. Posts are vertically attached to the bridge decking or superstructure and placed no than 6 feet apart. Horizontal components (rails or mesh) are attached to the posts. (AASHTO standards should be consulted for weight distribution requirements.)

Railing height depends upon the anticipated user groups.

Design implications

- For pedestrians: top of railing height should be 42 inches above bridge decking.
- For bicyclists, height should be 54 inches.
- For equestrians, post signs encouraging riders to either walk their horses across the bridge or to use a water crossing (ford).
- Railings can be made of wood, metal, wire, concrete steel cable, metal alloys, plastic or rope.
- Minimum standards require three rails: top, middle and bottom, with the middle rail being 33- 36 inches above the deck for pedestrians and bike users, and the underside of the bottom rail no higher than 15 inches.
- The maximum vertical opening between railings should not exceed 15 inches.
- Refer to local, state and federal building codes for child- proofing railings, especially where dangerous drop- offs exist.



The three kinds of bridge structures best suited for rails- to- trails bridges are: spread footings (left), pile- driven support bridges (middle), and pier footings bridges (right).

Bridge approaches: Approaches to bridges should not be overlooked in the design. Approach railings facilitate safe passage onto the bridge and an appropriate trail width mitigates congestion.

Design implications

- Approach railings should be constructed in a similar manner to bridge railings (except that posts are inserted into the ground) and extend to at least 15 feet from the bridge end. Clear sight lines and extra- wide trails at bridge approaches will help to prevent congestion at bridges.
- If railroad margins exist on the original bridge (to allow pedestrians to side- step an on- coming train), these should be retained to allow users to safely pass each other on the bridge.

If bridges no longer exist but the footings, pilings, etc. are intact, have an engineer evaluate their structural integrity (design load should accommodate at least 12,500 pounds), then have the engineer design the superstructure. Bridge superstructure style will depend upon required span, intended weight bearing capacity, site limitations, and aesthetic considerations. Prefabricated bridges can be purchased and installed and have several advantages: low cost, minimal disturbance to the project site, and usually simple installation requiring little expertise. Bridge footings (supports and foundations) are generally not included with prefabricated bridges, but instructions for installation may be included, provided that the footings have been determined by an engineer to be safe. Funding for bridge site preparation and engineering work is available from the Historic Bridge Program within the Federal Highway Administration of the U.S. department of Transportation. Bridge companies that sell new or reasonably priced old bridges may also be found on the internet.

If neither bridges nor footings of an old bridge exist, the feasibility of an alternate crossing should first be investigated. This may involve using an existing road, purchasing new land, or gaining an access agreement with the land owner.

If a new bridge is required, a structural engineer should be consulted to design the footings. Various design styles exist and should be considered based on site requirements, cost and aesthetics. [three kinds of bridge footings: p.81]

VI. Road Crossings (p.84- 87)

For safety and consistency roads and streets have a hierarchical relationship such that the one with the higher volume of traffic has the right- of- way. That said, where trails intersect public and private streets, trail users should yield the right- of- way. However, wherever trails have more traffic than a private street or driveway, the vehicle driver should yield. Signage and construction will help to make this clear.

Determining the kind of trail crossing at grade is the responsibility of a traffic or transportation engineer. Various factors such as gaps in peak traffic times, traffic volumes, sight lines, and the unique features of the intersection itself will help determine if the trail crossing needs a pedestrian activated cross light, a traffic signal or merely painted stop bars on the pavement.

Design implications

- Trails should cross as close as possible to intersections where crosswalks would normally be placed.
- If existing crosswalks are used, make sure all safety features such as painted crosswalk, curb cuts and signage are in place.
- When trails cross streets with curbs, the curb cut should be the same width as the trail.
- For streets wider than three lanes median island "refuges" could be considered for pedestrians and wheel chair users.
- Since volume of trail use will probably increase over time, future means of trail crossing improvements should be considered.

Restricting vehicular traffic to trails

Bollards are the usual means of preventing vehicles from using a trail. Either one bollard placed in the trail center, or three bollards (one in the trail center and one in each of the middle of each trail lane) should be used. Two bollards encourages circulation to flow to the center, thus creating conflicts. Bollards should be as visible at night as possible, so they should be marked with reflective tape and/or reflectors. Bollards should be at least 3 feet tall, placed no closer than 10 feet to the intersection and be spaced 5 feet apart for safe access to bikes and wheel chairs. Bollards should also be designed to be removed or folded down to allow for emergency vehicle access and for snowmobiles access in winter, where such use is possible.



Stopping trail users at intersections

Trail users, especially those on bikes and horses, need to be warned when approaching an at-grade intersection with vehicular traffic. Various techniques can be used, in combination where possible to ensure safe trail usage: trail surface warnings, signage, and safe sight lines.

Design implications

- On asphalt trails an 18" concrete strip should be placed 30 feet from the intersection
- A center line should be painted starting 150 feet from the intersection
- Stop signs should be posted 5 feet from the intersection to warn trail users.
- Sight lines to the intersection should be checked with AASHTO guidelines for safe stopping distances for bike users, especially on downslopes and on curves.

Bridges can take many forms depending upon budget, site characteristics, and aesthetics. This bridge (top) over the trail prevents hiker / vehicle conflict. A simple I-beam bridge (middle) spans the trail gap where the old rail bridge footings still exist. Where very wide river crossings are necessary, elaborate new bridges like this one (bottom) may need to be constructed.



VII. Trail Signage (p. 88- 93)

Types of signs

There are four types of signs for trails: regulatory, warning, informational, and educational.

Regulatory signs are used to inform users about the rules of the trail. Such signs are stop, yield, right-of-way, speed limit, and exclusion signs.

Warning signs are used to alert trail users to potential hazards, usually near intersections, bridges, and severe grade changes. These signs include any that may be found along typical streets and roadways or for indications specific to a trail hazard.



Informational signs are usually used to orient trail users to their location or tell them about facilities and points of interest. These signs may include mile markers, kiosks with trail maps, and information about trail difficulty levels. In addition, public bulletin boards could be placed on trails near towns or trail heads to inform people about civic and cultural events. Such use would encourage people to use trails to come into town.

Educational signs can teach trail users about historic relics, best if left in place along the trail: old bridges, canals, work camp refuse heaps, and building foundations. Local history can also be included in the signage to bring life to an unfamiliar area. Opportunities for interpreting unique features of geology, ecology, and even reminding users of trail etiquette should also not be overlooked.



Use of standard signage

Because trails are transportation corridors, signage familiar to street users should be used for ease of recognition. Signage standards can be found in the U.S. Department of Transportation's Federal Highway Administration's Manual on Uniform Traffic Control Devices (MUTCD).





Signage has many different functions and should be carefully thought out during the trail design phase. Signs can help in wayfinding, trail use guidelines, and warnings. Signage can also help to educate on nature and historical events. Signs can also be purely visual and playful.

Signage materials

Several kinds of materials for signage are available, each with advantages and disadvantages. Cost, maintenance, and aesthetics should all be considered when planning a trail signage system.

Plastics are widely available in a number of forms. Some plastics can fade in sunlight. Many plastics expand and contract with temperature changes.

Fiberglass is durable, impact resistant and can be formed into customized shapes. Graphics can be applied then sealed for color fastness.

Wood can be relatively inexpensive, and has a natural appeal but must be treated for weather resistance. It can also be easily damage by vandals.

Aluminum is widely available and does not rust. However, some aluminums require special surface treatments to protect against pitting.



Steel is also widely available and easy to weld and form. However, it, too, may need special finishes to avoid rust.

Stone is a natural material and extremely durable but difficult to work with. It is also heavy to move to remote trail sites.

Recycled materials can also be used, especially where it is desirable to instruct trail users about ecological behavior.



Making Trails Unique

The use of a recognizable logo can add uniqueness to a trail and help create unity and continuity. Create a logo, simple and recognizable, which represents the community or organization supporting the trail. Place the logo on all signage where possible, especially at orientation and public informational kiosks and trail heads.

By repeating the logo at regular intervals, such as at half-mile trail markers, a sense of continuity is reinforced in trail users' minds. Also, different logos associated with different connecting trails help users

orient themselves, find direction and emphasize the uniqueness of each trail experience. Logos can also be used on all official fund raising and public relations materials such as T-shirts, letterhead, and window decals. Repeated emphasis of a trail organization's logo and its association with a trail builds strong impressions of professionalism, public support and interest that will lead to greater trail use and contributions of volunteer, political, and financial support.



VIII. Trail Support Facilities (p. 93- 102)

A trail system intended to serve many people and last into the future will need trail support facilities: parking areas, rest rooms, drinking fountains, seating, trash receptacles, and picnic areas. These facilities, to be successful, should be planned for, if not immediately built, right from the start. Grouping facilities at access points will help give the trail a level of high visibility as well as serving as a link to the community. Some general design guidelines follow:

Design implications

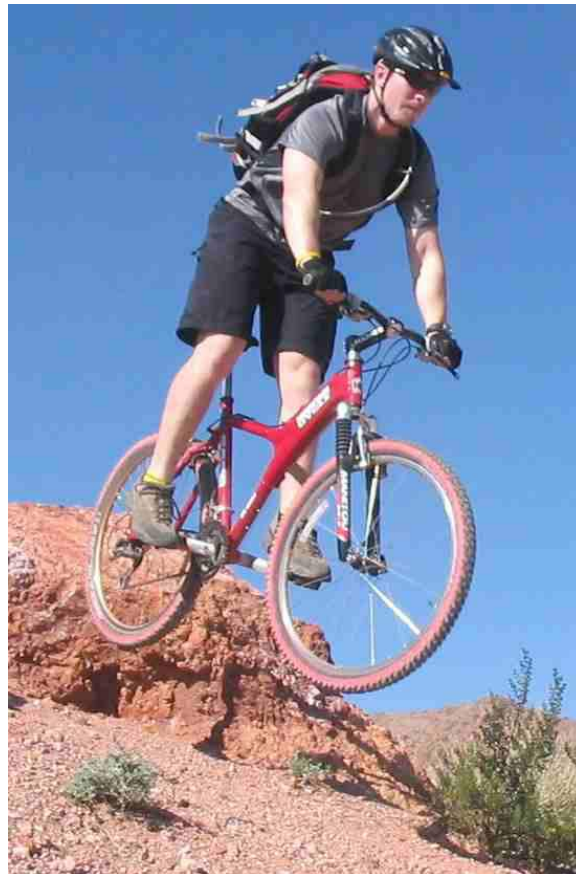
- Clustering different types of facilities together can help distinguish major trailheads from minor trailheads
- Clustering also makes trailheads recognizable
- Access points should link the trail to as many different forms of transportation as possible
- Locating major access points close to developed areas such as shopping and public transportation centers has many benefits for the trail users and business owners
- Minor access points should have different kinds of facilities and be located at parks and residential areas
- Access points with connections to rivers from the trail should also be considered

Parking areas

Parking areas should be kept as simple and easy to use as possible. They should also be harmonized with the surroundings as much as possible. At least one space for disabled accessibility should be designed into every parking lot. If equestrian use is a goal of your trail, special design considerations need to be taken. Room for horse trailers and installation of hitching posts may be desirable. As safety and efficiency are vital in parking lot design, a suitable traffic engineer should be consulted for construction details.

Design implications

- Entrances and exits should be clearly marked and be no less than 50 feet from an intersection
- Parking lots should drain but not exceed 5% slope
- Plan for at least 300 to 350 square feet per car space
- Disabled parking spaces require between 234 and 270 square feet, or 13 foot by 18 foot space
- Equestrian trailers with vehicles require about 45 feet long and 15 feet wide
- Hitching posts, where trees are not available, might be installed to allow horses to be tied



Rest rooms

Along with parking lots, rest rooms can be the most expensive trail side facility. Expense, however, will depend upon number of stalls, whether or not sewage connections will be used or organic composting, and accessibility to maintenance. Local ordinances and construction guidelines should be consulted very early in the facilities design stage.

Design implications

- Toilet facilities should be visually buffered from neighboring residences
- Stalls for the disabled must be properly scaled for wheel chair accessibility: minimum of 5 feet by 10 feet with a sink (consult building guidelines for details)
- Standard single stalls require at least 3 feet by 9 feet 6 inches with a sink (consult building guidelines for details)



Drinking Fountains

Drinking water, whether in fountains, or bottled, or in vending machines must be accessible to all. Locating fountains near rest rooms can make double use of existing water line and drainage utilities. If no water is available, signs should be posted alerting trail users to bring their own.

Design implications

- Adult height spigots should be 42 inches above the ground
- Heights for the disabled should be no more than 36 inches, with 27 inches of space below the basin for wheel chair pull up
- Children should either have steps up to the adult spigot or their own at 30 inches above the ground
- Fountains should be both hand and foot operated where possible.
- Fountains should be located at least 4 feet off the trail, with drainage away from pathways
- Consider the inclusion of special spigots for dogs to use available at manufacturers



Seating

Seating is available in a number of forms: benches, stools (fixed in place), seatwalls, concrete blocks, whimsical sculptural forms, and natural boulders. Choice of style and materials will determine if a rest area is formal or informal, urban or rustic and will determine maintenance issues as well. Seating can be grouped at access points where family picnics might be desirable or it can involve a solitary on-trail rest spot for contemplating a view. Many kinds of prefabricated seating can be purchased from dealers.

Design implications

- Typical benches measure 72 to 90 inches wide with a 15 inch high back and a seat that drains gently to the rear
- Consider aesthetics and maintenance when choosing materials
- Benches should be securely anchored to the ground for safety reasons
- Seating should be set at least 3 feet off any paths
- Seating area should drain away from trail
- A distance of 4 feet between benches and other facilities will allow for disabled circulation



Shelters

Shelters can be an especially welcome facility for long-distance users of the trail as a place to rest out of the elements. Shelters can be located at major access points closely grouped with other facilities, or they can be in more remote areas. In either case they should be placed no closer than 3 feet to the trail edge.

Design implications

- Visibility into and out of shelters should not be obstructed by natural or built features or utilities
- Shelters are best used when located along with rest rooms, pay telephones, and parking lots
- Shelters should be positioned to block prevailing winds; wind screens can be built if needed
- Exterior walls of shelters can be between 10 and 16 feet in length and between 5 and 8 feet wide
- Interior height should be between 7 feet and 8 feet 6 inches

Bicycle racks

Bike racks located at trail entrances and access points near other facilities will allow for safe and tidy securing of bicycles when bikers are using other facilities, going for a hike, or visiting local shops and restaurants.

Design implications

- Racks should be set as close as possible to the trail or other facilities without interfering with traffic
- Locate racks where lighting and visibility are good
- Lockers should be considered for storage where daily bicycle commuting is a priority; they are, however expensive and high on maintenance
- For normal trail use, consider some kind of rack or locking post system; manufacturers can provide many styles and colors
- Allow 2 feet of space between bicycles at racks to allow ease of movement
- Racks should accommodate bike dimensions of 5 feet 6 inches long by 42 inches high

Picnic Areas

Picnic tables and benches located at major trailheads or access points are major incentives to trail use, especially for family and group outings.

Design implications

- Locate picnic areas well back from trails, sidewalks and parking lots
- Tables and benches should be located on flat, hard surface areas with good drainage
- A single table with benches requires about 168 square feet, an area of 12 by 14 feet



- The table and bench should be about 6 by 8 feet with 48 inches on all sides for wheel chair circulation
- Tabletops should be between 30 and 34 inches high with a 29 inch wheel chair clearance on each end
- Many materials are available and prefabricated units can be purchased from manufacturers in many styles and colors



Fitness Courses

Fitness courses added to a multi-use trail system will expand the potential user groups. Fitness courses are usually circular loops with “stations” where equipment for performing specific exercises are located. Some fitness courses are small areas where all the equipment is grouped together, other courses have each station located a regular, widely-spaced intervals to encourage running between stations.

Design implications

- Soft surfaces (wood chips, gravel, sand) should be used around equipment to minimize injury from falling
- Signage at the first station should explain the course, show a map if necessary and provide rules for usage
- Signs at remaining stations should be numbered and illustrate how the equipment should be used
- Manufacturers can provide information on appropriate kinds of equipment for specific multi-use trail types



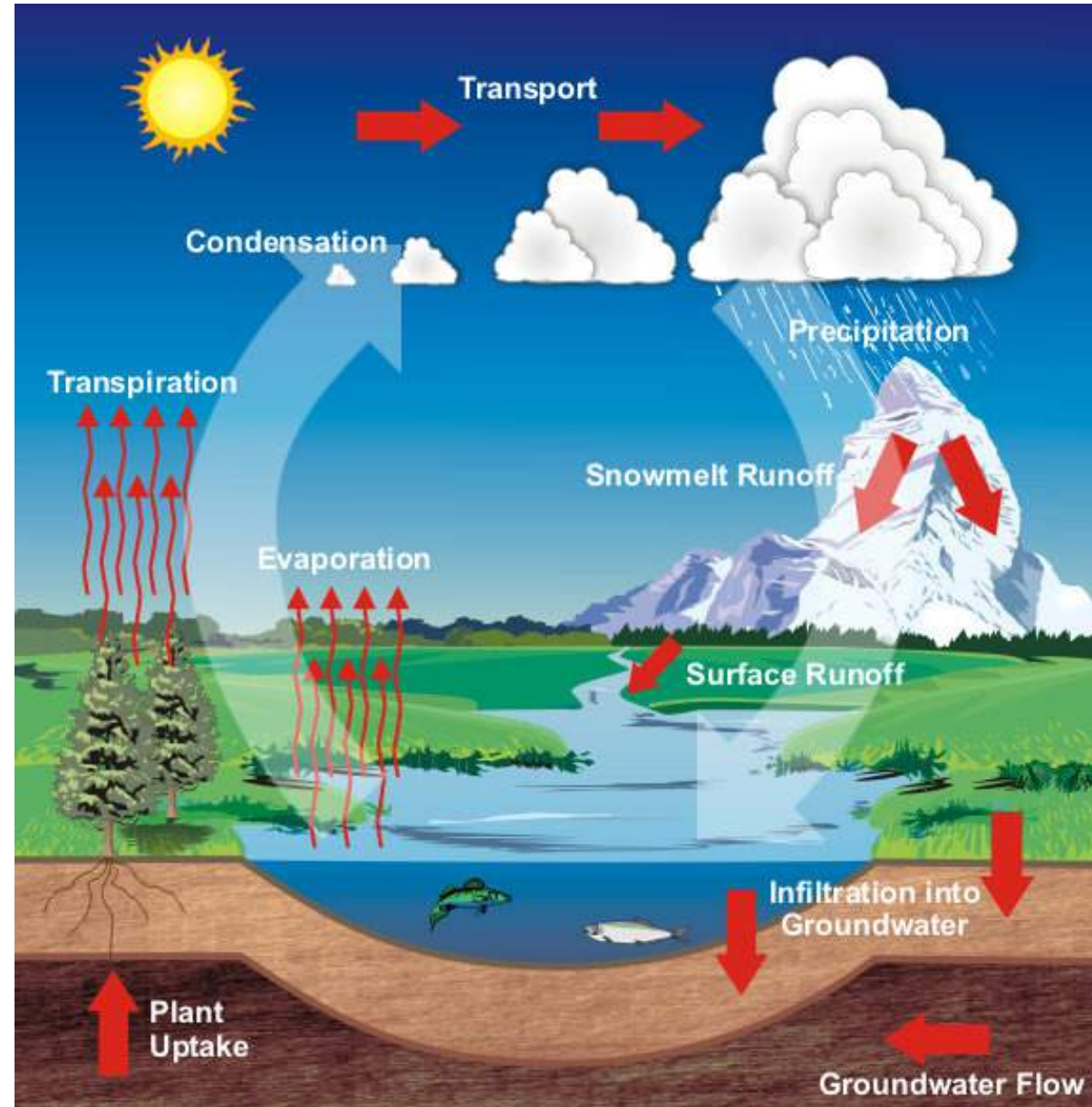
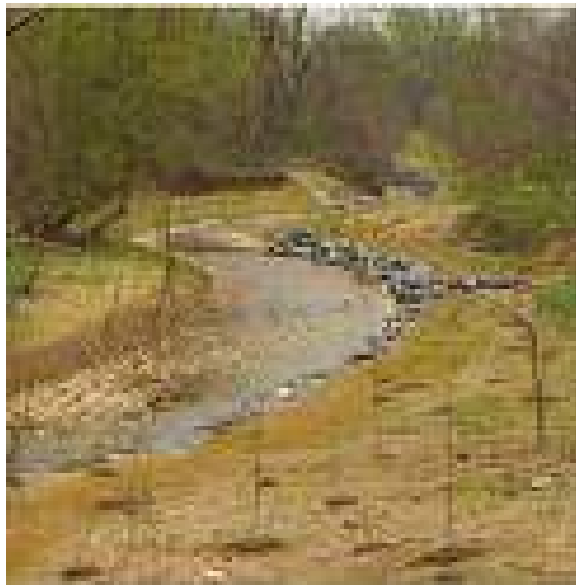
Riparian Areas

Riparian habitat is one of the rarest habitat types found in the southwestern US. In Arizona, due in part to human activities, this habitat type makes up around 1% of total land cover.

Although relatively rare, riparian habitat is responsible for protecting and recharging our ground water aquifers, for offering hundreds of bird and animal species places to live or migrate through, and as ecological caches for our native biodiversity. This habitat is critical to our way of life.

Riparian areas, be they the Sonoita Creek Preserve in southern Arizona or the Grand Canyon to the far north of our state, are some the most spectacular natural treasures and tourism draws to our region.

Below: A Degraded Stream



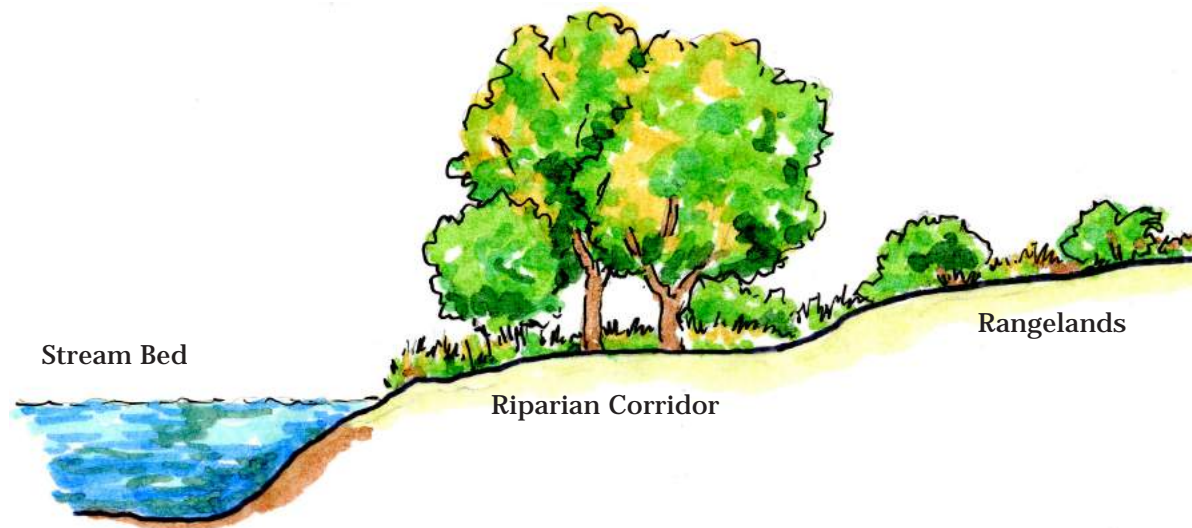
Above: The Hydrologic Cycle

When ecosystems are modified through human activity, their function can be altered significantly. When these modifications, intentional or not, disrupt the natural processes of the ecological systems, there are often negative outcomes.

In the context of the Little Colorado River and Nutrioso Creek, these

negative outcomes include habitat destruction, a damaged watershed and threatened water table, and the ascetic degradation of an entire community. The causes of this damage are many: overgrazing by cattle, stream channel modification, stream side deforestation, and agricultural runoff to name a few.

While the threat of Springerville



Above: A healthy riparian corridor separates a natural stream bed from rangelands, providing a natural buffer that benefits both land use types.

losing these vital water ways is very near, natural systems such as waterways are surprisingly resilient and able to rebound, recover, and rejuvenate themselves quite quickly. The quickest, surest way to get these streams back to their original functioning levels is to aid the process by engaging in ecological restoration.

The Society for Ecological Restoration defines ecological restoration as the active engagement of an ecosystem that has been degraded or destroyed to restore and manage biodiversity, ecological processes and structures, regional and historical context, and sustainable cultural practices. The goal of restoring an ecosystem is not always to return it to its natural state, but to merely ensure that its key functions and roles in the environmental matrix are fulfilled.

A specific type of ecological restoration, watershed restoration, is relevant to the case of Springerville. The Environmental Protection Agency (EPA) has a set of critical guiding principals that must be addressed if a watershed restoration project is to be successful. (source: <http://www.epa.gov/owow/wetlands/restore/principles.html>)

They are:

Preserve and protect aquatic resources. Existing, relatively intact ecosystems are the keystone for conserving biodiversity, and provide the biota and other natural materials needed for the recovery of impaired systems. Stopping any further degradation will increase the likelihood of a successful restoration.

Restore ecological integrity. Restoration should reestablish

insofar as possible the ecological integrity of degraded aquatic ecosystems

Restore natural structure. Many aquatic resources in need of restoration have problems that originated with harmful alteration of channel form or other physical characteristics. Let the watershed follow a more natural course, and many of the problems related to its health will diminish.

Restore natural function. Structure and function are closely linked in river corridors, lakes, wetlands,

Below: Three levels of stream degradation and the effects on riparian habitat.

Properly managed



Moderate use, some overgrazing



Poorly managed



estuaries and other aquatic resources. Reestablishing the appropriate natural structure can bring back beneficial functions

Work within the watershed and broader landscape context.

Restoration requires a design based on the entire watershed, not just the part of the water body that may be the most degraded site.

Understand the natural potential of the watershed.

Establishing restoration goals for a water body requires knowledge of the historical range of conditions that existed on the site prior to degradation and what future conditions might be. This information can then be used in determining appropriate goals for the restoration project.

Address ongoing causes of degradation.

Restoration efforts are likely to fail if the sources of degradation persist. Therefore, it is essential to identify the causes of degradation and eliminate or remediate ongoing stresses wherever possible. While degradation can be caused by one direct impact such as the filling of a wetland, much degradation is caused by the cumulative effect of numerous, indirect impacts.

Develop clear, achievable, and measurable goals.

Restoration teams should evaluate different alternatives to assess which can best accomplish project goals. The chosen goals should be achievable ecologically, given the natural potential of the area,

and socioeconomically, given the available resources and the extent of community support for the project. Also, all parties affected by the restoration should understand each project goal clearly to avoid subsequent misunderstandings.

Focus on feasibility. Particularly in the planning stage, it is critical to focus on whether the proposed restoration activity is feasible, taking into account scientific, financial, social and other considerations.

Use passive restoration, when appropriate. Before actively altering a restoration site, determine whether passive restoration (i.e., simply reducing or eliminating the sources of degradation and allowing recovery time) will be

Below: A healthy stream is an amenity for the community



enough to allow the site to naturally regenerate.

Restore native species and avoid non-native species.

Arizona's natural areas are experiencing significant problems with invasive, non-native (exotic) species, to the great detriment of our native ecosystems. When possible, use native species in restoration projects.

The final key principal of watershed restoration is to **monitor and adapt** your solutions frequently, as conditions require. This adaptability will help ensure success on the current project, and can also be applied to later projects. The Costs of Restoration

The cost of restoring a site or implementing a mitigation measure may actually be substantially less than other land uses or the proposed alternative. Studies conducted for the USGS found that costs of revegetating and monitoring a desert riparian site in the lower Colorado River valley over a 10 year period were about \$10,000/ha. Clearing an equivalent area for agriculture and farming it for 10 years would cost about four to six times that amount.

In another study, on an urban project on a channelized stream in Mecklenburg County, North Carolina, costs of restoring a channel (which included sloping banks, creating meander bends, and some riprapping on highly erosive bends) were \$5- \$7 per



Above: Working together to restore watersheds is an activity that can bring communities together.

foot, compared to more than \$200/foot for traditional channelization (stream straightening and deepening with heavy riprapping).

In addition to the relatively low costs of restoring watersheds and creeks, there is the opportunity to access any number of state or federal grants.

The EPA has one particular program, the Five-Star Restoration Program, that offers modest funds but ample chances for communities to network and draw additional funding from other stakeholders.

The Five Star Restoration Program brings together students,

conservation corps, other youth organizations, citizen groups, corporations, landowners and government agencies to provide environmental education through projects that restore stream banks and wetlands. The program provides challenge grants, technical support, and opportunities for information exchange to enable community-based restoration projects.

EPA's funding levels are modest, averaging about \$10,000 per project. However, when combined with the contributions of partners, projects that make a meaningful contribution to communities become possible.

On average, for each dollar of

sponsor funds, five additional dollars in matching contributions will be provided by restoration partners in funding, labor, materials, equipment or in-kind services. These are resources that will benefit Springerville immediately, with results that will pay benefits for decades to come.

Land Acquisition

As community planners begin the job of evaluating future growth strategies it is likely that they will encounter desirable tracts of land throughout the community. There will be land in areas appropriate for preservation strategies, land that could better serve commercial districts, and land more appropriate for future residential development. Much of this land will lie in the hands of private individuals and government agencies. Thanks to a number of strategies this land can often be acquired in “win - win” scenarios thereby allowing the progression of community plans and

preservation strategies as well as benefitting the former landowner. Springerville has large quantities of land that would be beneficial if acquired. The town of Springerville is in line to experience the growth spurt already seen in neighboring towns and cities. This growth will compromise the future of land like the meadow west of town, the riparian areas along the Little Colorado River, the Nutrioso Creek, and the ridge line connecting Springerville and Eagar. By beginning to acquire land necessary for preservation and community development, Springerville will be preparing itself to welcome and direct future growth opportunities.

Geographis Information Systems & Planning

Proper land acquisition planning begins by evaluating the entire community through a GIS (Geographis Information System) type of data base. A GIS is a computer system capable of capturing, storing, analyzing, and displaying geographically referenced information; that is, data identified according to location. Geographic information system technology can be used for scientific investigations, resource management, asset management, Environmental Impact Assessment, Urban planning, cartography, criminology, history, sales, marketing, and route planning. Once a community has been entered into a GIS data-base planners are better equipt to evaluate and make land acquisition decisions. For Springerville GIS could be used to plan the growth of main street, the development of the next housing tract, the preservation of rivers, and the intercommunity greenway project.

Strategies & Tools

Conservation by Individual Property Owners

Owners of a piece of land with a qualified conservation interest, may opt to maintain full ownership of property and use the land how they see fit. Continuity of the protection is maintained by the beneficiaries of the landowner’s will. Unfortunately, there are numerous examples of



GIS Map displaying rivers of the Round Valley

large privately held ranches and homesteads that have been sold and subdivided in Arizona. Prescott Valley, Phoenix, and Santa Cruz County are sad examples of this fact. However, there are some tools available to protect the land after the owner's death. There are advantages and disadvantages of protecting land yourself.

Pros:

- Landowners have a vested interest in the property.
- Private landowners are generally excellent stewards of the land.
- Landowners are able to use the land how they see fit.

Cons:

- The property is protected only as long as the landowner is alive unless they place a deed restriction on the property.
- Pieces of larger conservable lands can be compromised by the sale of adjacent pieces which eventually leads to loss of the entire resource.
- Increasing property values may compel conservation-minded landowners to sell to buyers who intend to develop it.
- Estate taxes may force heirs to subdivide and/or sell properties. (Estate taxes are currently assessed for the value of an estate in excess of 1.5 million dollars at a rate of 47%, but have been as high as 55% in

the recent past)

Landowner Conservation Tools:

1) Deed Restrictions

- Restrictions may be placed within a deed to control the use of the property. Restrictions travel with the deed, and cannot generally be removed by new owners.

2) Restrictive Covenants

- Restrictive covenants are deed restrictions that apply to all of the homes on subdivided property. They are normally drafted and put in place by the original developer, and are different for every area of homes.

- Often the purpose is to give a development a more standard appearance. Typically, covenants stipulate the minimum size residence allowed, how many homes may be built on one lot, and what type of construction the homes must (or must not) be. They may include numerous other restrictions and are typically enforced by a homeowners association.

3) Right of First Refusal or Option

- When the owner of an important conservation property is not ready to discuss immediate protection, the owner might consider a right of first refusal. This right provides a land trust or government agency with the opportunity to match a purchase offer received by the owner at a future time if and when the owner

elects to sell the property.

- An option agreement is a contract under which the owner offers a buyer a fixed period of time (normally a period of three to twelve months) within which to make a decision to purchase either a conservation easement (discussed below) or the property outright. The buyer is not required to exercise its right to purchase but can, instead, use the option period to develop a conservation plan and seek funding sources to conserve the property.

Conservation by Government Agencies

Government conservation is undertaken by governmental agencies. This may occur on the Federal, State, County, or Local level. Government agencies purchase and protect lands that provide public amenities, such as parks, transportation right of ways, waterways, wildlife refuges, etc. Acquisition of the properties may be through outright purchase, land swaps, or eminent domain. Governments can also provide tax and zoning incentives to encourage private landowners to place conservation easements on their property. There are several advantages and disadvantages of government land conservation.

Pros:

- Lands are typically well protected and maintained in perpetuity.

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- Public access is provided for the amenity.

- Costs of stewardship are paid by the entire community.

Cons:

- Previous landowners give up all property rights in the sale.

- Stewardship becomes subject to the political process.

- Some acquisition processes (eminent domain) may place the perceived need of the community over the needs of the landowner.

Government Conservation Tools:

1) Real Estate Purchase

- The agency may have the funds and ability to purchase the property outright.

2) Land Swaps

- The agency may own property that can be swapped for a property they want protected from development.

3) Tax Increment Financing (TIF)

- Tax increment financing is a way for governments (usually municipal authorities) to help finance new capital projects by taking advantage of expected property tax returns. A city, for example, may designate a plot of land that is planned to be redeveloped as a TIF district. Then



Wenima Wildlife Area was recently acquired using a variety of acquisition strategies

the city can borrow against expected increased tax revenues to build infrastructure such as sewers and transportation services.

4) Transfer of Development Rights (TDR)

- Provisions in a zoning law that allow for the purchase of the right to develop land located in a sending area (priority conservation areas) and the transfer of these rights to land located in a receiving area (priority development areas). Also referred to as transfer of development credits (TDC).

5) Eminent Domain

- The power of the state to expropriate private property without the owner's consent.

- In the United States, the Fifth Amendment to the Constitution requires that just compensation be paid when the power of eminent domain is used, and requires that the property be taken for "public use". Most courts have interpreted "just compensation" to be the fair market value of the condemned property. Over the years the definition of "public use" has expanded to include economic development plans which use eminent domain seizures to

enable commercial development for the purpose of improving the community. Critics contend this perverts the intent of eminent domain law and damages personal property rights. Recently courts have ruled in favor of protecting landowners rights in these cases.

Conservation by Private Land Trusts

Land trusts are non-profit organizations that purchase land and conservation easements in order to provide long term protection and stewardship of important lands. Land trusts operate on national to local scales and may have a broad conservation interest or specialize in community, historic, wildlife, or natural areas. Land trusts typically are managed by an elected board of directors and hold the conservation easements in perpetuity, or pass the easements on to other land trusts in the event that the trust goes



The meadow west of town is open space worthy of an acquisition strategy

bankrupt. An option for Show Low would be for landowners to join together to start their own local land trust.

Pros:

- Conservation lands are protected forever.
- Landowners can continue to inhabit and enjoy income from the property
- Donation of the easement to a land trust creates significant income tax savings for the landowner.
- Donation of the easement may reduce the value of the land enough to avoid paying estate tax.
- Easements increase the property value of adjacent lands.
- Large areas of land may be protected while allowing the

traditional uses to continue.

• Land trusts are non-governmental entities

Cons:

- Landowners give up the right to undertake some activities on their land.
- The sale value of their land is reduced by the value of the conservation easement.
- The conservation easement cannot be removed at a later date without renegotiation of the easement contract. It is rare that a land trust will give up the conservation easement.
- Typically there is some cost to the landowner to process the paperwork of the easement

Land Trust Tools:

1) Conservation Easements

• Easements are the most important tool used by land trusts.

• An easement may cover portions of a property or the entire parcel. Easements are flexible and tailored to meet a landowner's needs. They typically identify specific permitted uses of the property including agriculture, forestry, recreation, and other open space uses. The easement also limits or prohibits certain other activities, including industrial, commercial, and residential development.

- Easements may be either donated by the owner or purchased by the land trust.

- Donating a conservation easement protects the land permanently, yet keeps it in private ownership. The donation of a conservation easement normally qualifies as a charitable contribution, which may entitle the donor to a charitable income tax deduction for the easement's value.

- Land trusts may also have the ability to purchase conservation easements. There is no income tax reduction in this case but the owner will receive income from the sale and may avoid paying estate taxes.

2) Real Estate Transactions

- Sometimes land trusts may either purchase important conservations lands or receive donations of land. Typically land trusts do not have the resources to manage land. Therefore, when land trusts acquire land with conservation value, they place a permanent conservation easement on the property and sell the land. The proceeds are used to protect other conserved lands.

- Donating property has many benefits: It assures the permanent protection of a family property; provides a charitable income tax deduction for the full fair market value of the land; avoids capital gains taxes on appreciated land (which otherwise would be due at the time of a sale); removes the property from the donor's taxable

estate; and releases the donor from the expense and the responsibility of managing the land.

3) Donation of a Remainder Interest

- A landowner can donate land and continue to live on it during his or her lifetime. This is known as a gift of a remainder interest. The final outcome and advantages are similar to that donating the property.

4) Bequest and Living Trust

- Landowners can conserve important lands by donating property or donating a conservation easement through their wills. Both the bequest and the living trust can assure the permanent protection of the land, permit the donor to control the property during his or her lifetime, and may reduce the donor's taxable estate.

5) Bargain- Purchase of Easements and Land

- The landowner sells a conservation property or easement at less than full market value and donates the remaining value. For the landowner, this combines the income- producing aspects of a land sale with the tax benefits of a donation. The difference between the fair market value (as determined by appraisal) and the sale price is treated as a charitable contribution and can significantly reduce any capital gains taxes payable on the sale.

Further Reading:

- The Trust for Public Land: www.tpl.org
- The Land Trust Alliance: www.lta.or
- The Central Arizona Land Trust: www.centralazlandtrust.org
- The White Mountain Land Trust: www.wmlandtrust.org
- The Smart Growth Network: www.smartgrowth.org
- Balancing Nature and Commerce in Gateway Communities by Jim Howe, Island Press

For Additional GIS Information

- http://en.wikipedia.org/wiki/Geographic_information_system
- <http://www.esri.com>.
- <http://www.gis.com/whatisgis/>

Land Acquisition in Springerville

Springerville is not new to land acquisition. Both the Wenima Wildlife Area and the Sipe White Mountain Wildlife Area were recently acquired using land acquisition strategies. Land acquisition could allow Springerville to acquire and restore the Nutrioso Creek, and parts of the Little Colorado River while acquiring other ecologically or community sensitive properties. As a community at the forefront of a development boom land acquisition strategies are something Springerville officials should become well- acquainted with.

FUNDING SOURCES

Introduction

The following pages list non-profit agencies and governmental organizations that fund projects and provide assistance to communities pursuing projects similar to those in Springerville. This is not a comprehensive list, there are many more agencies, grants, and funding opportunities available than those that are listed here. This list suggests only a starting point for those seeking funding for building modules of development in Springerville.

Historic / Building Preservation

Preservation organizations in Springerville can receive pass through grants from the Arizona State Historic Preservation Office (SHPO). Funds are available for a variety of preservation activities including documentation and stabilization. The SHPO can also assist with the nomination of buildings and districts to the National Register of Historic Places.

Arizona State Historic Preservation Office
Arizona State Parks
1300 W. Washington
Phoenix, AZ 85007
602- 542- 4174
FAX 602- 542- 4180
<http://azstateparks.com/partnerships/shpo/shpo.html>

The National Trust for Historic Preservation is a privately funded non-profit organization that provides leadership, education, advocacy, and resources to save America's diverse historic places.

National Trust for Historic Preservation
1785 Massachusetts Ave., NW
Washington, DC 20036- 2117
www.nationaltrust.org

Main Street Revitalization

The National Main Street Center of the National Trust for Historic Preservation works with Main Street Organizations to revitalize communities through a process that involves small business owners and the citizenry.

1785 Massachusetts Avenue, N.W.
Washington, DC 20036
www.mainstreet.org

Arizona Department of Commerce
1700 West Washington, Suite 600
Phoenix, AZ 85007
602- 771- 1134

Land Preservation

Conservation easements are voluntary mutual agreements between a property owner and a qualified organization (e.g., a land trust or government agency) that basically purchases the development rights from the property owners.

Land and Water Conservation Fund, provides money to federal, state,

and local governments to purchase land, water, and wetlands for preservation value.

www.fs.fed.us/land/staff/LWCF

Land Trust Alliance assists with land trusts and conservation easements.

www.lta.org

Trust for Public Land assists with land trusts and conservation easements.

www.tpl.org

White Mountain Land Trust, working to conserve and steward in perpetuity natural areas. Central Arizona Land Trust preserves ranchlands, open space and the scenic and wildlife values of central Arizona.

www.centralazlandtrust.org

The Nature Conservancy, a private organization that is a source for funding and information.

www.nature.org

Bicycle and Pedestrian Pathways

Transportation Equity Act for the 21st Century (TEA- 21)

<http://www.enhancements.org>

The money for this program is budgeted from the Federal Highway Administration, and in

APPENDIX

Arizona, the Arizona Department of Transportation (ADOT) administers the funds they receive. The most popular program for bicycle and pedestrian projects within TEA- 21 is the Transportation Enhancements (TE) Program that appropriated \$3.6 billion for various projects between 1998 and 2003. Most states require TE project sponsors to provide at least 20 percent of the project costs. Contact people for TEA- 21 funding in Arizona are:

FHWA Division TE Coord.
Layne Patton
Federal Highway Admin.
Phoenix, Arizona
Tel: 602- 379- 3645
Email: layne.patton@fhwa.dot.gov

ADOT TE Coord.
Cheryl Banta
ADOT
Phoenix, Arizona
Tel: 602- 712- 6258
Email: Cbanta@dot.state.az.us

The Federal Highway Administration's web site also gives information about what projects are eligible for obtaining federal funding from TEA- 21.

www.fhwa.dot.gov/environment

Community Development Block Grants (CDBG) through Department of Housing and Urban Development (HUD) fund projects such as the "safe routes to school" initiative. For further information see:

<http://www.hud.gov/offices/cpd/>

communitydevelopment/programs/
index.cfm
Bicycle and Ped.Coord.
Michael Sanders
ADOT
Phoenix, Arizona
Tel: 602- 712- 8141
Email:MSanders@azdot.gov

Ecological Restoration

Many granting programs exist for helping communities perform stream restoration measures such as river clean- ups, runoff pollution studies, soil erosion controls, flood protection, and habitat restoration.

Public Funding

Federal Government TEA- 21's
Transportation Enhancements

[www.enhancements.org/12_ activities.asp](http://www.enhancements.org/12_activities.asp)

Watershed Protection and Flood
Prevention Grants:

[www.federalgrantswire.com/
watershed_protection_and_flood_
prevention.html](http://www.federalgrantswire.com/watershed_protection_and_flood_prevention.html)

Clean Water Revolving Fund

[www.epa.gov/owmitnet/cwfinance/
cwsrf](http://www.epa.gov/owmitnet/cwfinance/cwsrf)

State Wetlands Protection Grants

[www.epa.gov/owow/wetlands/
initiative](http://www.epa.gov/owow/wetlands/initiative)

Arizona Water Protection Fund,
administered by the Arizona

Department of Water Resources.

www.awpf.state.az.us

Army Corps of Engineers, Flood
Hazard Mitigation and Riverine
Ecosystem Restoration Program
focuses on identifying sustainable,
nonstructural solutions to flood-
prone areas:

[www.epa.gov/dced/topics/water_
quality_funding.htm](http://www.epa.gov/dced/topics/water_quality_funding.htm)
Private Funding

National Rivers Coalition REI Seed
Grant Program, administered by
the National Rivers Coalition (which
includes The American Canoe
Association, American Rivers, The
River Management Society, Sierra
Club, and The Wilderness Society)

www.americanrivers.org

Trout Unlimited, an organization
that works to "conserve, protect,
and restore North American trout
and salmon fisheries and their
watersheds,"

www.tu.org

Parks and Rec. Recreation Trails

Recreational & multi- use trails can
receive funding through TEA- 21's
Recreational Trails Program (RTP).
For more information, see:

[www.fhwa.dot.gov/tea21/
factsheets/rec-trl.htm](http://www.fhwa.dot.gov/tea21/factsheets/rec-trl.htm)

American Birding Association. Information on the birding trails of North America and birding economics.

www.americanbirding.org/resources/birdingtrails.html

International Mountain Bicycling Association, links to grants and funding sources:

www.imba.com/resources/grants/index.html

The AZ State Parks administers RTP funding. Arizona's contact person is:

Annie McVay
Recreational Trails Coordinator
Arizona State Parks
Phoenix, Arizona
Tel: 662- 542- 7116
Email: amcvay@pr.state.az.us

Recreational trails in Arizona also receive funding through the Trail Heritage Funds. Projects can involve the acquisition or lease of future trail alignments or trail support facilities such as signage, underpasses, and restrooms. An example near Pinetop-Lakeside of a trail built with Heritage Funds is the 6.5 mile Thompson Trail that is located in the White Mountains. This program typically pays up to 50 percent of the project's cost. The contact person for this program is:

Andrea Madonna
Chief of Grants
Arizona State Parks
Tel: 602- 542- 4174

A list of federal, state, local government and private funding for recreational trails is given at:

www.maricopa.gov/trail/pdf/phase_one/appendix_f.pdf

American Trails, working to enhance and protect America's growing network of interconnected trails.

www.americantrails.org/resources/funding/index.html

Brownfields Mitigation

The commercial and residential infill planning in downtown Pinetop-Lakeside may uncover sites that need to be cleaned-up before redevelopment, possibly at the current Navapache Electric Cooperative site. The US Environmental Protection Agency has federal funding programs that could provide assistance; though, sometimes it is difficult to receive funding due to the high cost of environmental clean-up.

Brownfields Assessment Demonstration Pilots

www.epa.gov/swerosps/bf/pilot.htm#assess

Brownfields Cleanup Revolving Loan

www.epa.gov/swerosps/bf/rlflst.htm

Brownfields Showcase Communities

www.epa.gov/swerosps/bf/

[showcase.htm](#)

In Arizona, brownfield projects are administered by the Arizona Department of Environmental Quality.

www.azdeq.gov

General Clearinghouses

Internet searchable databases with multiple grants and funding opportunities. US Government Grants single source access site more than 900 government grant programs on everything from the arts, the environment, transportation and community development.

www.grants.gov

The Foundation Center, founded in 1956, the Center is the nation's leading authority on philanthropy and is dedicated to serving grant seekers, grant makers, researchers, policymakers, the media, and the general public.

www.fdncenter.org

Job Training & Community Service

A national, primarily residential training program, Job Corps' mission is to attract eligible young adults, teach them the skills they need to become employable and independent, and place them in meaningful jobs or further education.

<http://jobcorps.doleta.gov>

AmeriCorps is a network of national service programs that engage more than 50,000 Americans each year in intensive service to meet critical needs in education, public safety, health, and the environment. AmeriCorps members serve through more than 2,100 nonprofits, public agencies, and faith-based organizations. They tutor and mentor youth, build affordable housing, teach computer skills, clean parks and streams, run after-school programs, and help communities respond to disasters.

<http://www.americorps.org>

The Northern Arizona Conservation Corps, the Coconino Rural Environment Corps's young-adult program, is based on the corp's model used successfully throughout the United States for more than 70 years to address critical environment and infrastructure needs. Since 1997, CREC has been providing service and conservation work in collaboration with a variety of land management partners. Based out of Flagstaff, Arizona, crews travel throughout the region to complete many different types of projects. They partner on short and long-term projects and help develop large-scale, ongoing projects.

CREC
2625 N King St
Flagstaff, AZ 86004
928.522.7974
<http://www.naccweb.org>

Financing Strategies

1. Tax Reduction: property tax abatements and other tax deals are well-established mechanisms used by many local governments to attract development. Tax incentives are of questionable longterm effectiveness in securing economic development and jobs. Although they have a significant impact on the local governments that give them, tax breaks are frequently overwhelmed by other more global economic concerns of the corporations that receive them. There are no long term guarantees, and it is easy to find vacated commercial centers and industrial centers that are symbolic of local government tax bets gone wrong. To balance this there are some success stories, however, these successes have led many local governments to assume that their success depends on the tax concessions offered. One of the longterm effects of this is tax competition between municipalities.

One of the key issues confronting smaller communities in the global age has been how to attract what is often referred to as "smart" growth. "Smart" growth is usually typified by low impact, high output industries such as the high tech industries and sustainable tourism. Smart growth generates economic activity without compromising quality of life. In fact, it usually enhances the quality of life in

these communities.

Tax incentives have not often been used in smart growth scenarios, with most of the examples of tax incentives being geared towards large commercial developments in central locations such as malls or office parks. This does not mean that decentralized tax incentive efforts would be unsuccessful. To wit, programs aimed at rejuvenating historic areas can often be successful. In the case of Springerville, a program designed to draw reinvestment to the historic downtown would have a ripple effect throughout the surrounding residential areas. This is especially sustainable, as it often insures that density, and therefore affordability increases.

2. Tax Increment Financing (TIF): tax increment financing is a tool to use future gains in taxes to finance the current improvements that will create those gains. When a public project such as a road, school, or hazardous waste cleanup is carried out, there is an increase in the value of surrounding real estate, and often new investment (new or rehabilitated buildings, for example). This increased site value and investment creates more taxable property, which increases tax revenues. The increased tax revenues are the "tax increment".

Tax Increment Financing dedicates that increased revenue to finance debt issued to pay for the project. TIF is designed to channel funding toward improvements in distressed

or underdeveloped areas where development would not otherwise occur. TIF creates funding for public projects that may otherwise be unaffordable to localities. TIF is often done through a government supported redevelopment agency and target lower income or underdeveloped areas. One negative outcome of TIFs is that when they are successful, they may cause property values to increase too dramatically, thus exposing local property owners the forces of gentrification.

3. Financing Assistance: using a mix of governmental, non-profit, and private entities, communities can offer favorable loan rates to individuals and developers to encourage socially beneficial growth and development. This method offers an ease of application, lower costs and risks, and flexibility.

4. Regulation Concessions: local governments can relax, remove, or reorder development regulations to encourage or discourage specific types of development in specific areas. Things such as setbacks, building heights, or parking can be modified to increase the potential value of the land proposed for development.

5. Eminent Domain: eminent domain is a development tactic where the local government condemns privately held properties so that they may be incorporated into a larger development plan. Eminent domain is a powerful development tool, but it is extremely

APPENDIX

STRUCTURED INTERVIEWS

Last	First	Position	Entity	Date
Bogardus	Larisa	Community Development Director	Town of Springerville	Wed. January 17, 2007
Buttrey	Bruce	Resource Specialist	Apache-Sitgreaves Forest	Thur. January 18, 2007
Dyson	Bob	Public Affairs Officer	Apache-Sitgreaves Forest	Wed. January 17, 2007
Dyson	Kay	Mayor	Town Council	Thur. January 18, 2007
Nedrow	Mary	Council	Town Council	Thur. January 18, 2007
Rivera	Jeff	District Ranger	Apache-Sitgreaves Forest	Wed. January 17, 2007
Romera	Barbara	Recreation/Lands	Apache-Sitgreaves Forest	Thur. January 18, 2007
Silva	Susie	Broker/Owner	Kachina Realty	Thur. January 18, 2007
Wilkins	Phelps	Council	Town Council	Thur. January 18, 2007

INTERVIEW QUESTIONS

Environmental

1. What are the key environmental challenges Springerville faces in the next five years? How do you propose to address these challenges?

Economic

2. What do you think are the economic benefits or liabilities of connecting the town with an urban trail system? What natural or man-made features would you like the trails to connect?

3. Tell me about the pros and cons of Springerville having a tourist-based economy. What would it take to attract businesses to Springerville? What type of businesses would you like to see incorporated here?

4. Do you know of any current or proposed future developments in Springerville? Discuss examples of the best and worst examples of development in the area.

Sociocultural

5. Are there natural, social/cultural areas perceived by the community as the most valuable assets of the area?

6. Do Springerville and Eager work together as a community? If not, what are your feelings about cooperation between the towns to create a cohesive community?

7. Does a significant amount of the youth population stay in Springerville? If not, what actions do you feel are necessary to retain this population? Where do the youth typically move?

Aesthetic

8. Does Springerville have a unique identity? If so, what is it? If not, what sort of identity do you think would be appropriate?

9. What are some popular events and activities that the community participates in? What space does the community currently use for these events/activities? What activities and events would you like to see in the future? Do you think it's necessary to

create a cultural center specifically for events/activities?

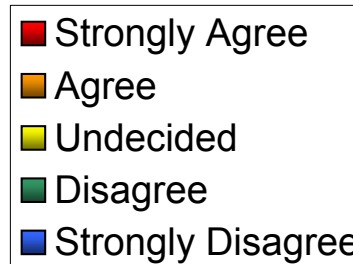
10. How do the visitors of Springerville interact with the locals and vice versa? If there are problems, how do you foresee solving them?

Functional

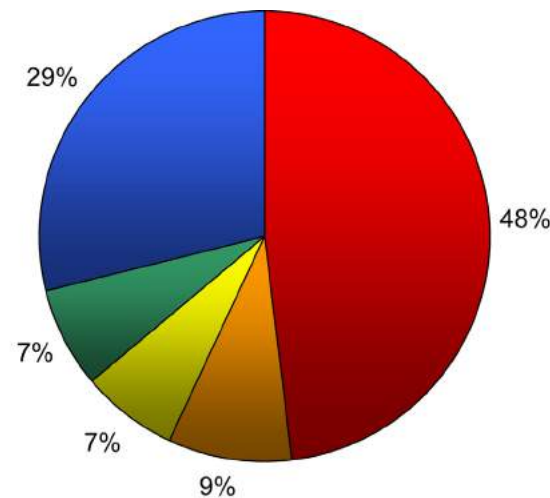
11. Are there long-term strategies to deal with future development, specifically concerning wastewater management and power facilities? Does Springerville currently use alternative energy? What do you think are the economic benefits of alternative energy?

User Surveys

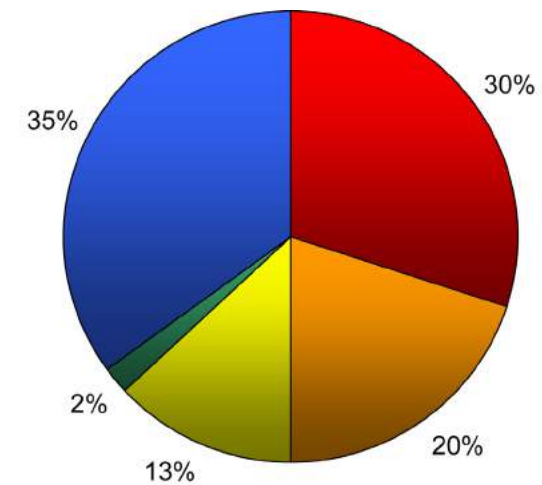
Surveys were distributed to the citizens of Springerville in order to generate as much user feedback as possible. The surveys were intended to generate ideas based upon what the public wanted and expected, using questions that were answered by a likert scale answer system of Strongly Agree, Agree, Undecided, Disagree and Strongly Disagree answer choice. A second part of the survey included an open ended question section that allowed survey takers to answer freely on a range of topics concerning their town. The first section of the survey was turned into a series of pie charts to more clearly illustrate their results. These pie charts are displayed on the following pages, and are organized into five ordering systems for consideration: Environmental, Aesthetic, Functional, Economic, and Socio- Cultural



Parks and green spaces benefit businesses within the community.

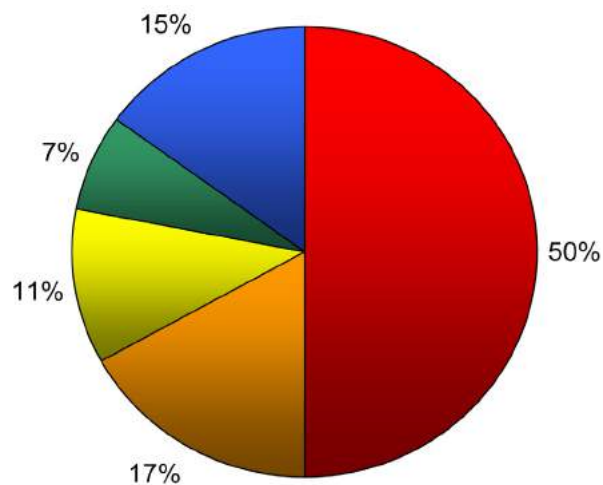


Native vegetation is preferred over non-native vegetation in planted areas.

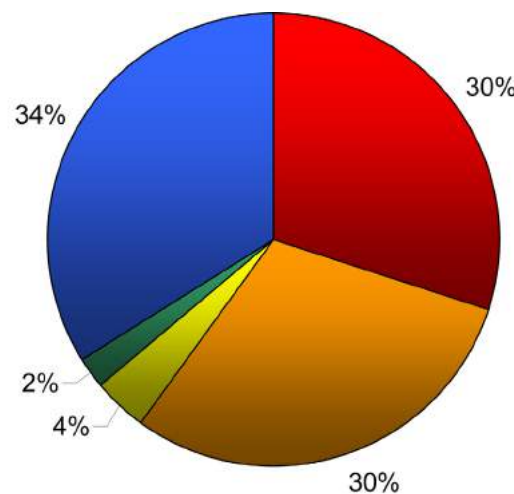


Environmental

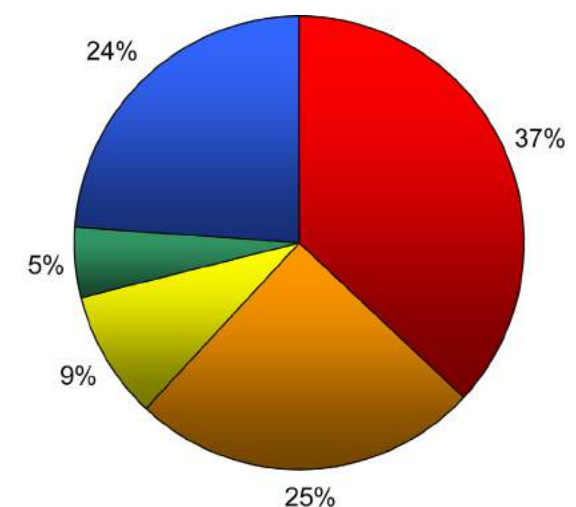
Tourists are mainly attracted to Springerville for its natural amenities.



Preservation of natural spaces surrounding Springerville would benefit the community.

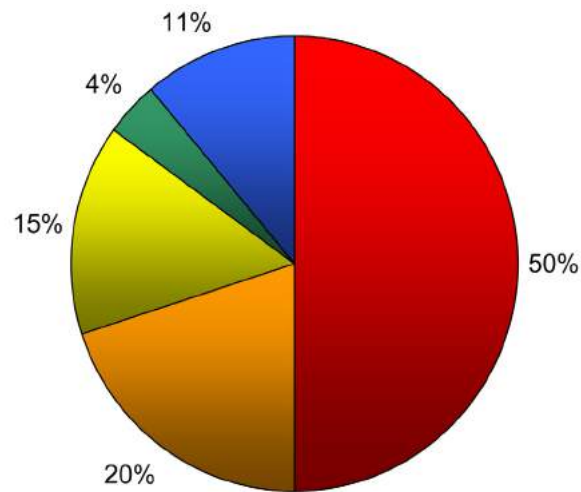


A trail system within the town would benefit business.

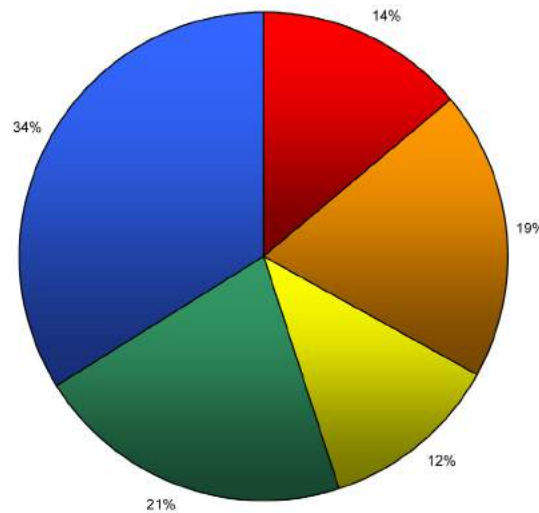


Aesthetic

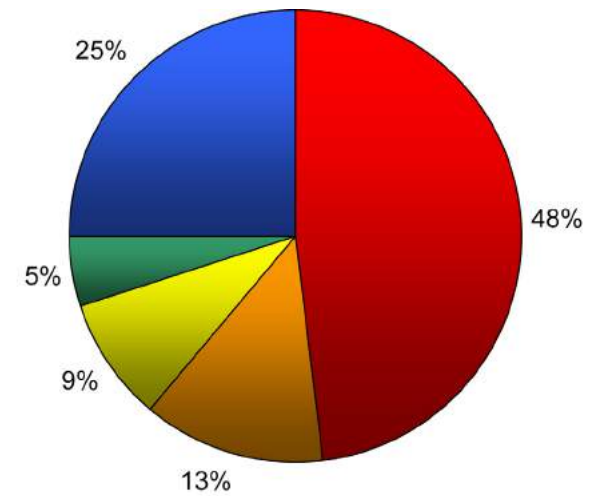
The town of Springerville has a unique identity.



The introduction of large retail corporations would detract from the aesthetic identity of Springerville.

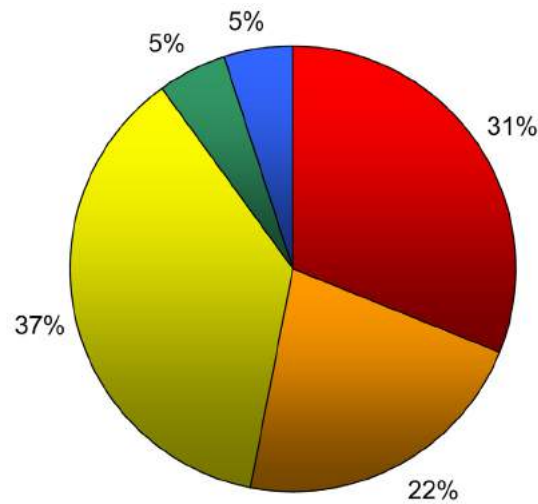


It is safe and easy to walk and drive around town.

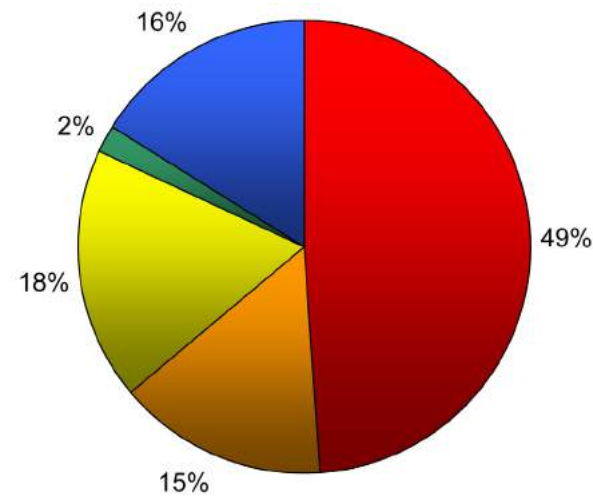


Functional

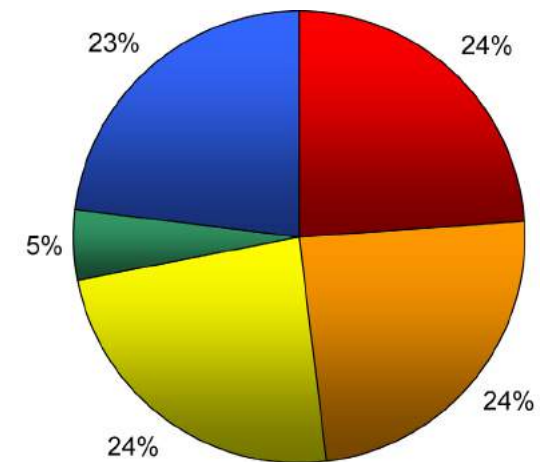
Main city streets present a pleasing image for residents and visitors.



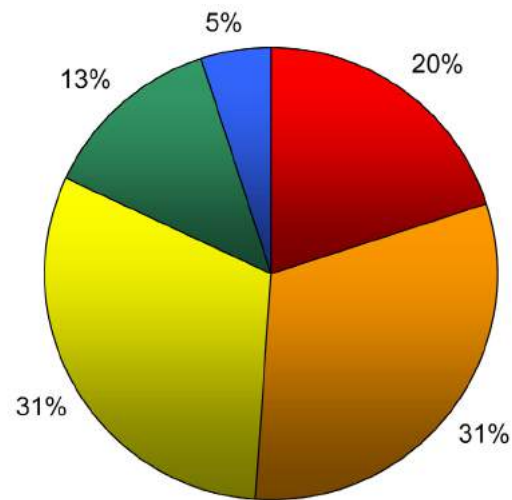
I enjoy walking around town.



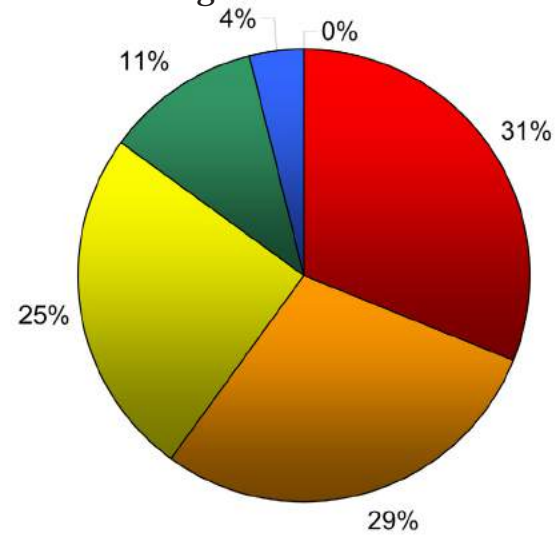
Parking is an issue for Springerville..



There is adequate space for indoor meetings in Springerville.

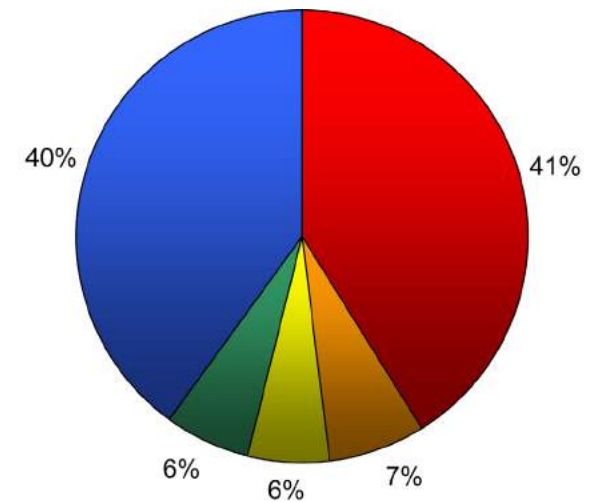


It is important to have a mix of residential and commercial uses in the same neighborhood

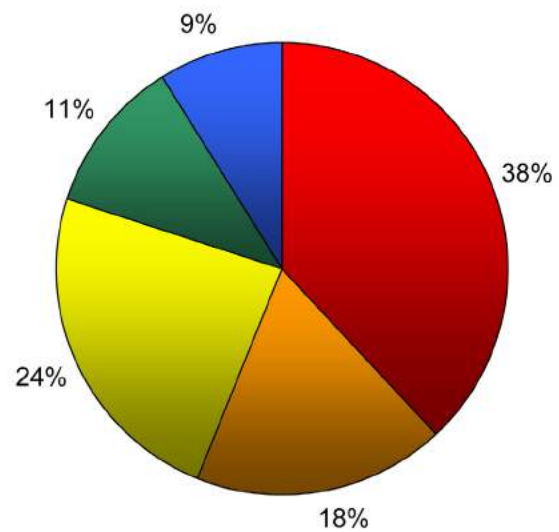


Economic

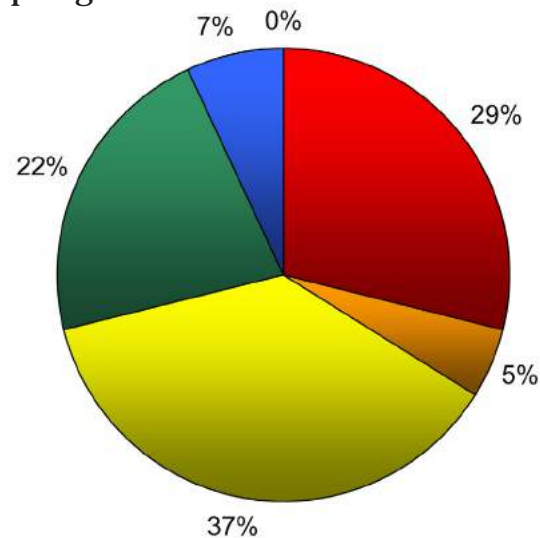
Tourist business is essential to the economy of Springerville.



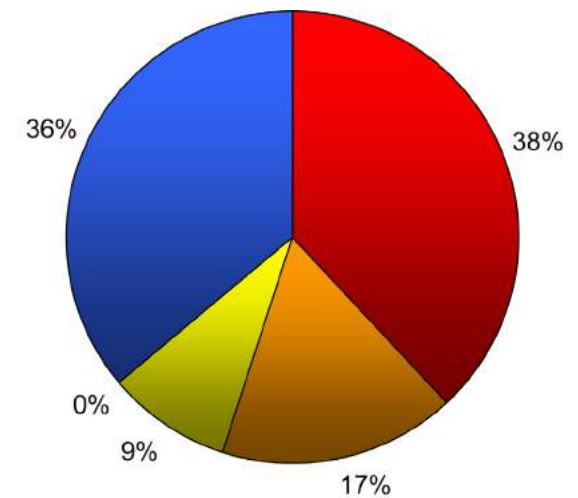
There is adequate space for outdoor gatherings in Springerville.



All essential shopping can be accomplished within the town of Springerville.

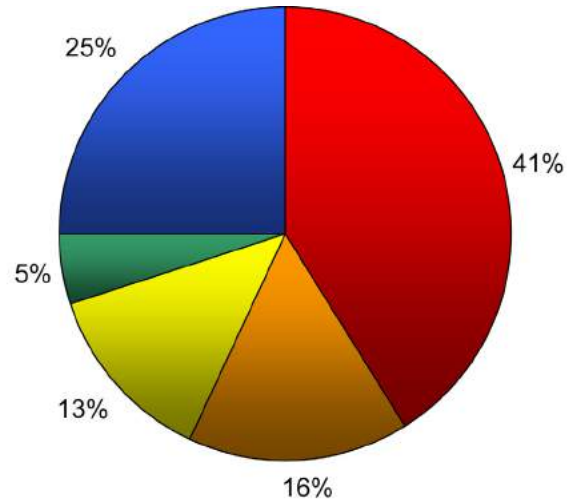


The economic health of Springerville could be revitalized through development downtown.

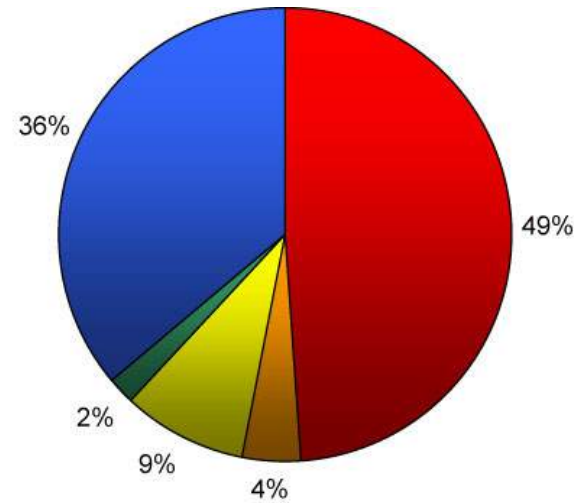


Socio- Cultural

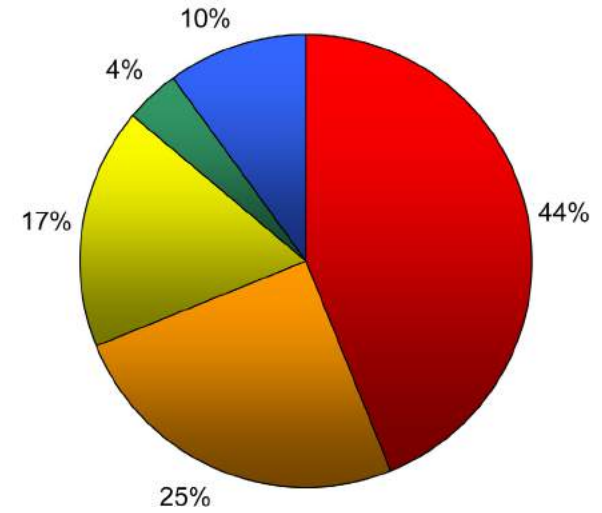
The economic health of Springerville could be revitalized through sustainable tourism related activities.



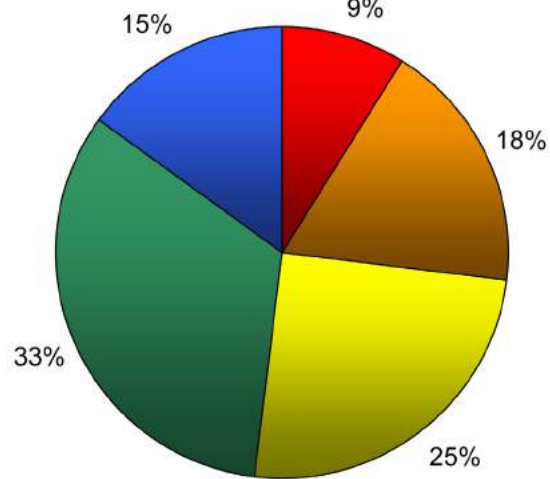
Springerville's history should be a major part of the town's identity.



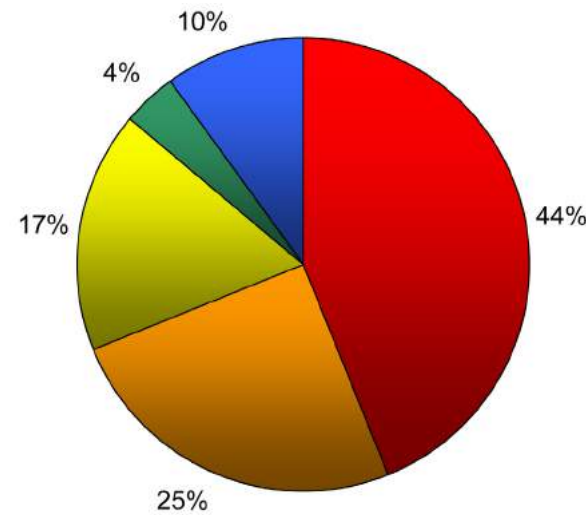
The towns of Springerville and Eagar work together as a community.



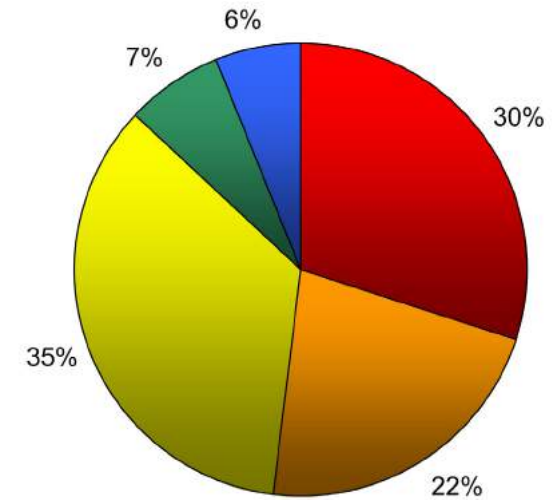
The economic benefits and services provided by large retail corporations outweighs the economic impact to local retail stores.



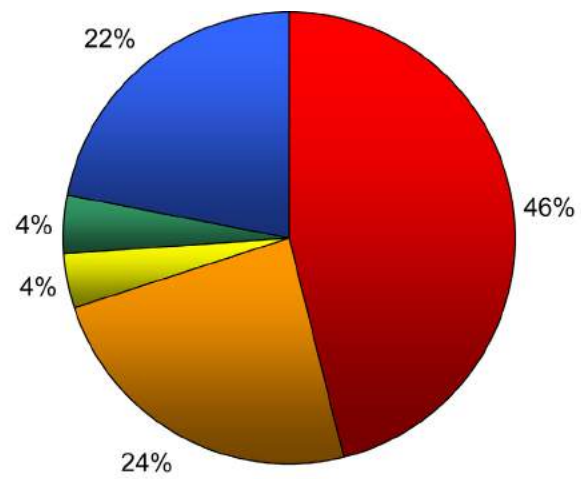
There is a strong sense of community in Springerville.



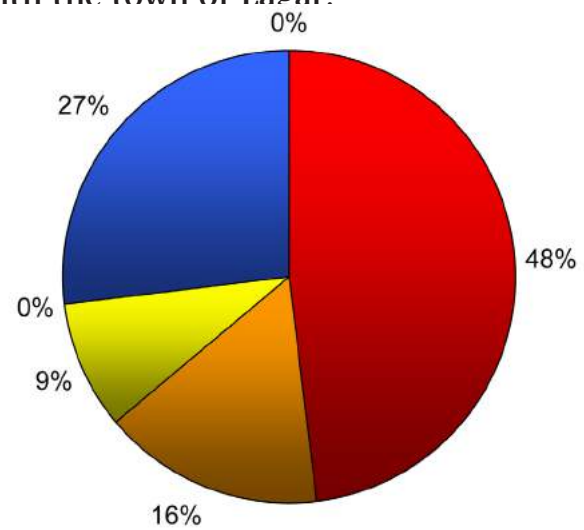
There is a positive relationship between residents of Eagar and Springerville.



Springerville's history is a major part of the town's identity.



The town of Springerville would benefit from increased cooperation with the town of Eagar.



APPENDIX



The following photos depict native plant material that could be used in Springerville. These photos are provided to give examples of plants that could be incorporated into the future plans of Springerville and the round valley. This list is not all inclusive. A local landscape architect or horticulturalist should be consulted before proceeding with planting plans.

Native Trees

Ponderosa Pine
Gamble Oak
Quaking Aspen
New Mexico Locust
Box Elder
Rocky Mountain Maple
Narrowleaf Cottonwood
Lanceleaf Cottonwood
Pinyon Pine
Alligator Juniper
One-Seed Juniper
Utah Juniper
Rocky Mountain Juniper
Hackberry

Pinus ponderosa
Quercus gambelii
Populus tremuloides
Robinia neomexicana
Acer negundo spp. *californicum*
Acer glabrum
Populus angustifolia
Populus acuminata
Pinus edulis
Juniperus deppeana
Juniperus monosperma
Juniperus osteosperma
Juniperus scopulorum
Celtis reticulata





Native Shrubs

Buffaloberry
 Snowberries
 Utah Serviceberry
 Three Leaf Sumac
 Smooth Sumac
 Wild Rose
 Golden Currant
 Fendler's Buckbrush
 Mountain Mahogany
 Banana Yucca
 Coyote Willow
 Shrubby Cliffrose
 Apache Plume
 Parry's Agave
 Manzanita

Shepherdia spp.
Symphoricarpos spp.
Amelanchier utahensis
Rhus trilobata
Rhus glabra
Rosa woodsii
Ribes aureum
Ceanothus fendleri
Cercocarpus intricatus
Yucca baccata
Salix spp.
Cowania mexicana
Fallugia paradoxa
Agave parryi
Archostaphylos spp.



APPENDIX



Streetscape Appendix

The Following pictures contain images of well conceived main street environments for our clients to review. These images are intended to catalyze discussion regarding the “appropriate” urban image for the Springerville Main Street area.

These images include samples of paving, planters, street trees, street furniture, lighting, and traffic calming strategies and crosswalks.





APPENDIX



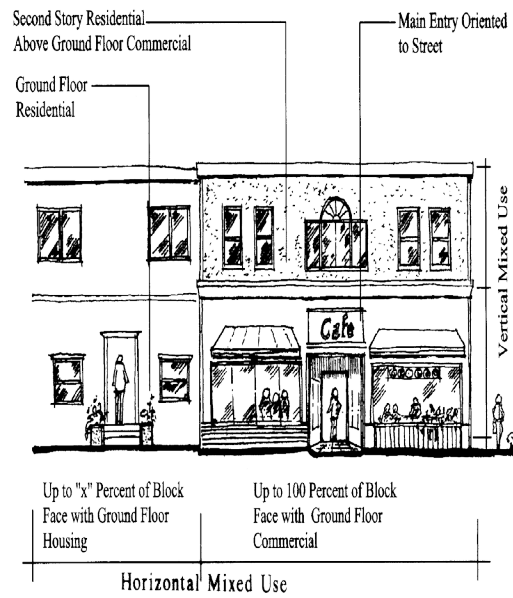


APPENDIX





APPENDIX





Additional References

Image References

All images are from Tejido or previous Tejido case studies unless cited below. Images are referenced left to right and top to bottom.

Preface:

All images by Tejido

Introduction:

All images by Tejido

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</div>
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Chapter Five:

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<http://www.equestrianrealestatenetwork.com/EquestrianRealEstateNetwork.com.jpg>

Appendix:

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utah- mountain- biking.jpg
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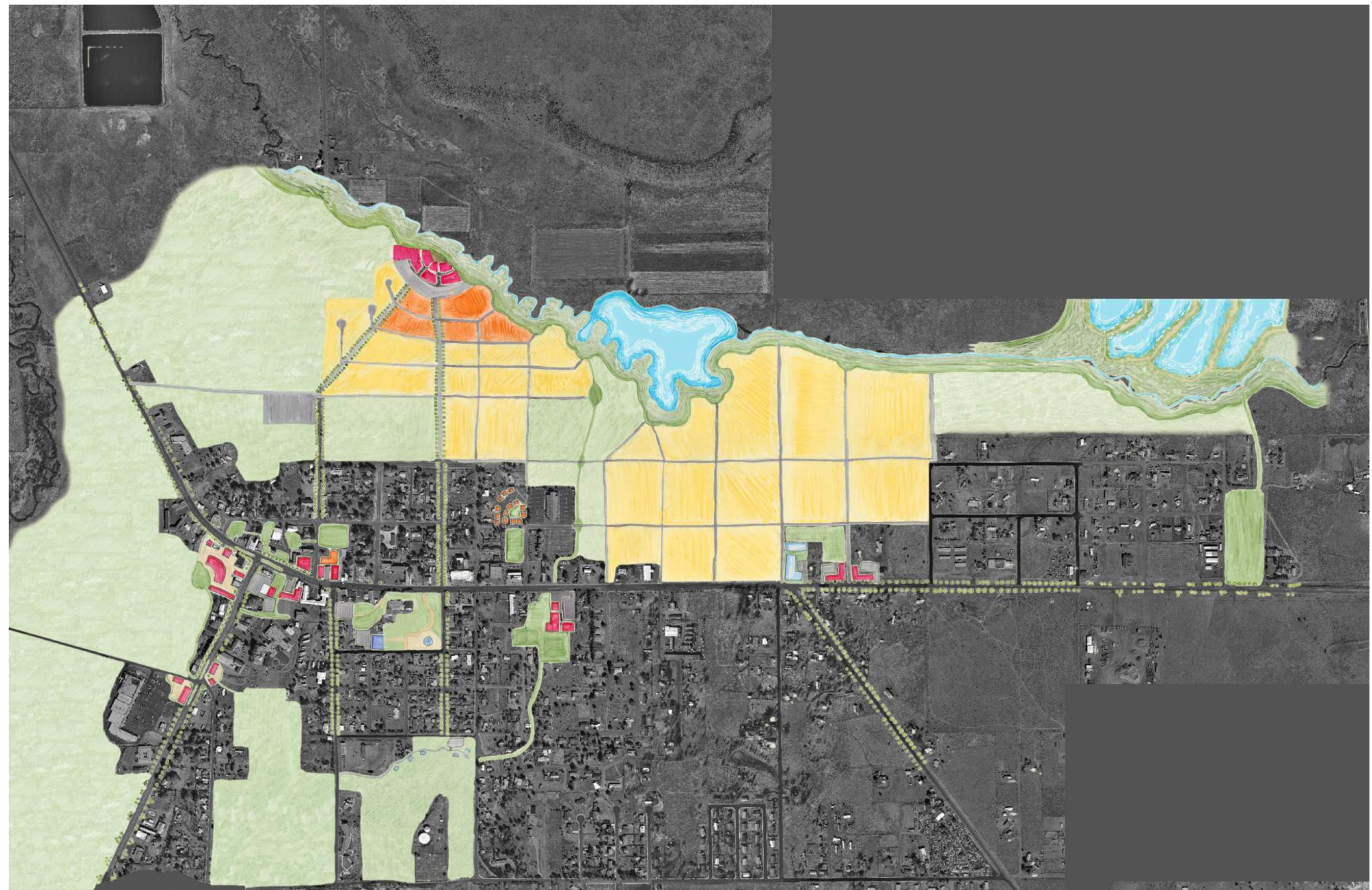
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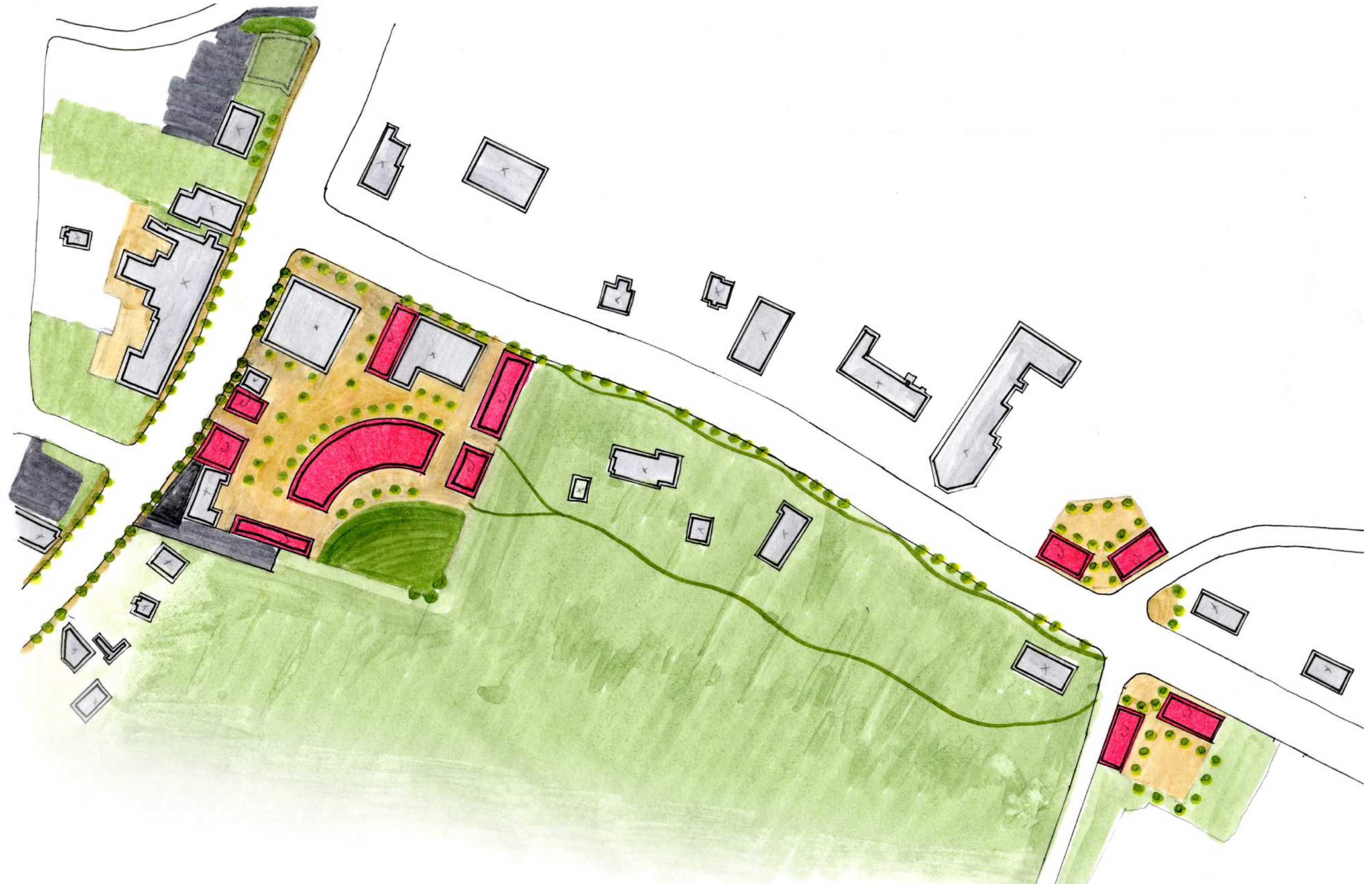
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DESIGN

DESIGN





After



Before



Before



After

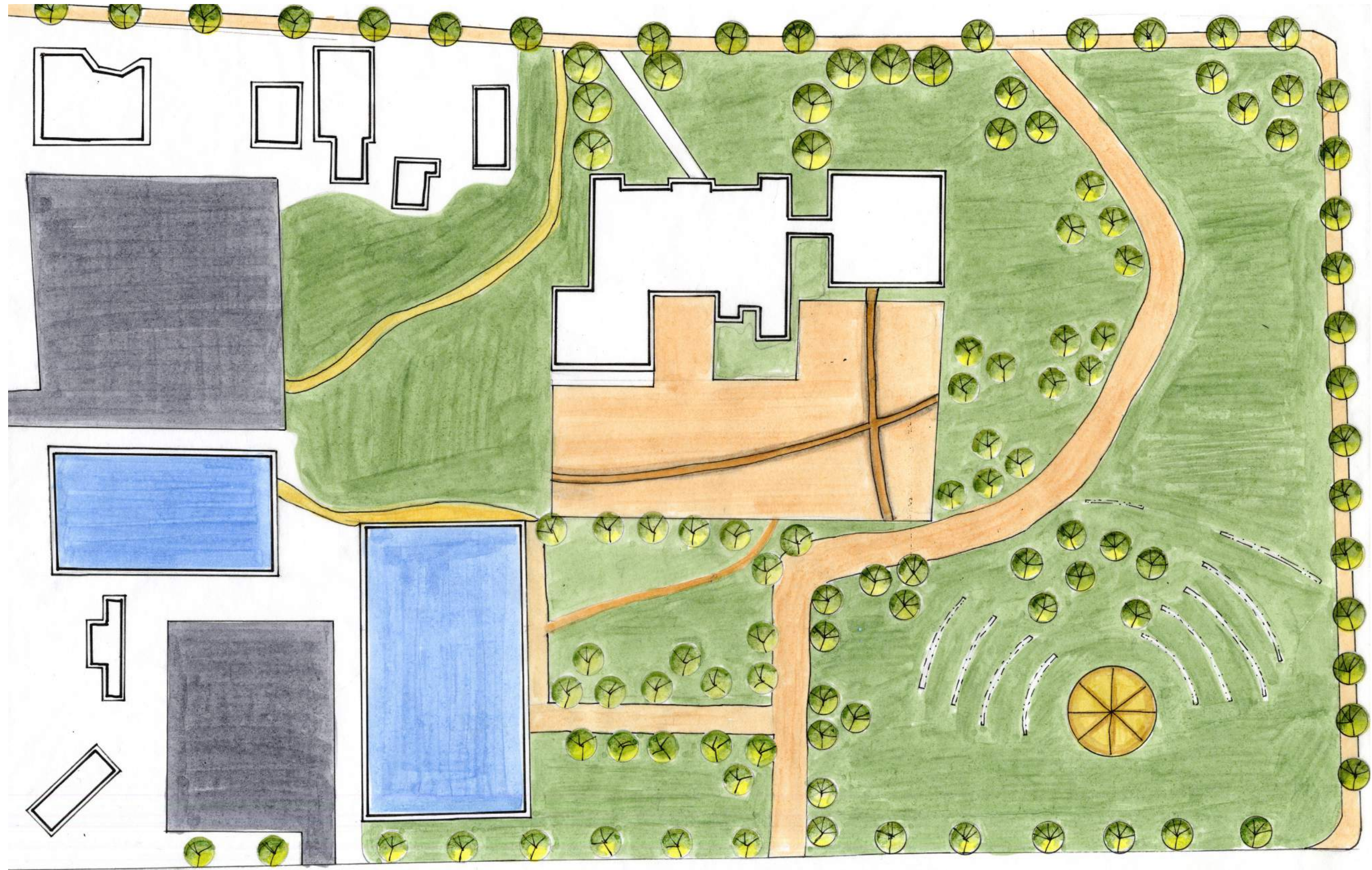


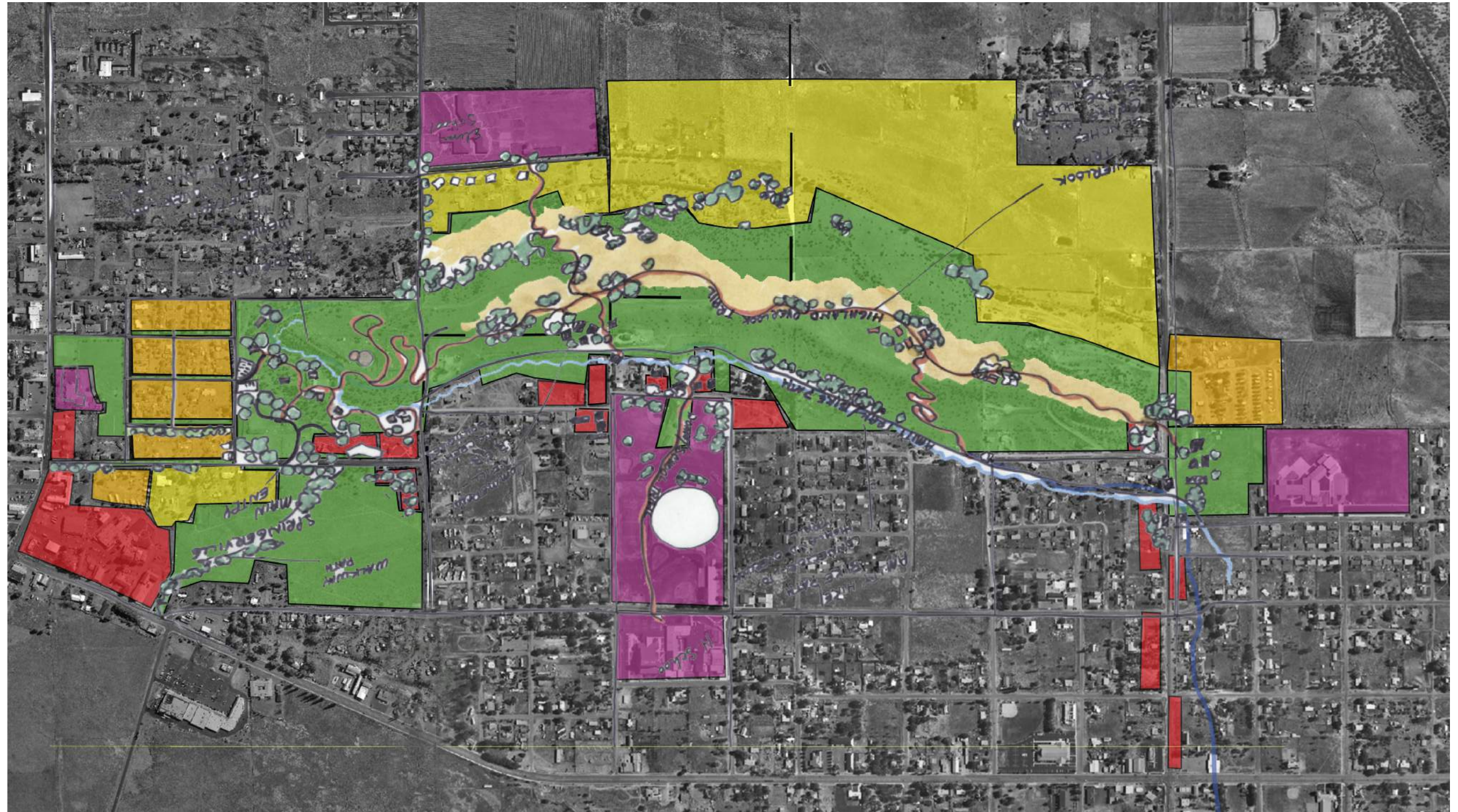
After



Before

DESIGN





Overall concept map of the Central Park beginning in Springerville, through the historic section, along the ridge, and into Eagar. The park includes Amity Trail with a bike/hike trail.

DESIGN

The Tejido Group

College of Architecture & Landscape Architecture
University of Arizona

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