

OGDEN VALLEY + POWDER MOUNTAIN

An Innovative Response to Growth

UtahStateUniversity

LAEP 4120 - Senior Capstone Studio
Department of Landscape Architecture and Environmental Planning
Spring 2018

How the Study Came About: In the spring of 2017 Ken White, dean of the College of Agriculture and Applied Science, convened a group of academics from the University of Utah, Weber State and Utah State University to focus on "Intelligent Integrated Infrastructure for Inter-mountain Cities." Attending the meeting was Greg Mauro representing Summit Powder Mountain Development Group. The Summit Group is an international high social impact think tank with a Powder Mountain address. The desire of this group was to fund a study by students of the Department of Landscape Architecture and Environmental Planning (LAEP) at Utah State to identify how planning and design could "address new strategies for sustainable development that promotes innovation for positive social impact."

Professors Todd Johnson and David Anderson wrote a proposal for LAEP to conduct an academic year-long investigation of Powder Mountain and the greater Ogden Valley. The focus of this investigation was to address the inevitable growth pressures of this magnificent valley which is so near the throng of growth along the Wasatch Front. The proposal included a department-wide charrette followed by specific investigations into four key areas 1) Valley-wide Open Space/Flora and Fauna, 2) Food and Agriculture – Community Builder, 3) Innovative Planning and Design for Eden, and 4) Innovative Planning and Design for Powder Mountain.

The Threat of Future Growth: Ogden Valley has approximately 7,000 full time residents today and receives approximately 35,000 visitors annually. However, in the next few decades, it is projected that Ogden Valley will have 20,000 full time residents and 80,000 visitors annually, including those who own second homes. This growth is monumental.

This will mean more buildings, more roads, more runoff and further degraded air quality. With new strategies for sustainable development, it can also mean more businesses, compact residential growth, and the opportunity to optimize community and to maximize natural assets.

Guest critics and students framed the mission this way:

"A way to correctly expand the West does not currently exist. We have to discover and apply a solution, to find mechanisms to save its precious resources." *Joe Porter*

"The way the valley is currently growing is destroying the values that people hold sacred." *Students*

"The solution, of course, is to create an innovative response to growth." *Students*

An Innovative Response to Growth: the students gathered many objectives and aspirations of the Powder Mountain sponsor and the stakeholders in the valley and focused these issues to create four teams, each with a separate geographic reach and topical bent.

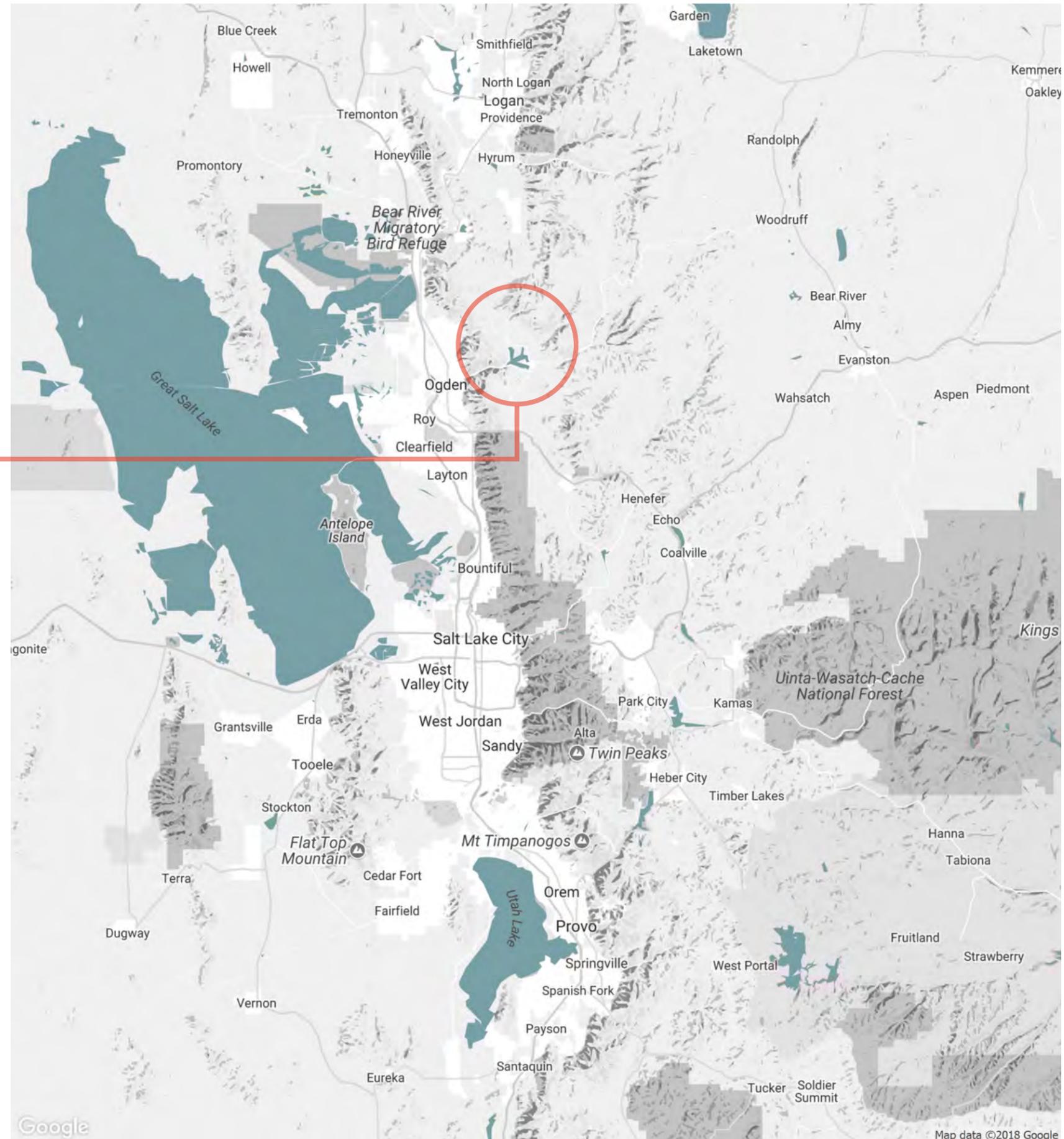
At the core of this effort is the desire to build a community forum to address the imminent growth challenge.

"For the community to be happy about growth there needs to be a preservation of the natural integrity and the natural beauty of this place. For this we need a community, ever-growing, that speaks to one another and forms the principles upon which growth must occur." *Students*

CONTEXT

This project encompasses topics as specific as the design of a play area and as broad as national migration patterns for wildlife. Within the context of the Wasatch Front, Ogden Valley and Powder Mountain represent the idea that this special valley, guided by strong principles and vision, may provide a model for sustainable growth in the western United States.

Ogden Valley + Powder Mountain project location



ACKNOWLEDGMENTS

The 2018 LAEP Capstone Studio was founded in Dean Ken White's conference room where Greg Mauro requested the assistance of Utah universities to study the possibilities for Powder Mountain to be more sustainable and socially responsible. The requirements for Capstone Studios are that the explore planning and design futures that generate broad public benefit. Many thanks to Powder Mountain for the generous funding of the studio which explores the concept of valley-wide innovation in Ogden Valley.

A second goal of capstone studios are that they engage real-life problems and involve real stakeholders in the design process. We wish to acknowledge the generous time and contributions of the following individuals:

UTAH STATE UNIVERSITY COLLEGE OF AGRICULTURE & APPLIED SCIENCES

Dr. Ken White - Dean, Extension Vice President

CAPSTONE STUDIO SPONSOR - POWDER MOUNTAIN

Greg Mauro - Co-founder and Chairman, Powder Mountain

Don Guerra - Director of Development, Powder Mountain

Shaun Mulreed - General Council, Powder Mountain

Sam Arthur - Director of Design and Branding, Powder Mountain

Dustin Haggett - Special Projects, Powder Mountain

Mark Schroetel - General Manager, Powder Mountain

WEBER COUNTY

Rick Grover - Planning Director

CACHE COUNTY

Josh Runhaar - Development Services Director

Chris Harrild - Planning Manager

Dayton Crites - County Trails Planner

VALLEY CITIZENS AND NGO'S

Bill White - Huntsville Town Council

Jim Truett - Huntsville Mayor

Steve Waldrip - Ogden Valley Land Trust

GUEST CRITICS

Davorin Gazvoda - Visiting Professor, University of Ljubljana, Biotechnical Faculty, Slovenia

Joe Porter - Alumni and Co-founder of Design Workshop

Ann Mullins - Aspen City Council

David Bell - Professor Emeritus LAEP

Joe Loftin - Headmaster Wasatch Academy

PROFESSORS

Todd Johnson - Practitioner-in-Residence, LAEP

David Anderson - Professional Practice Associate Professor, LAEP

ADVISORS

Dr. Eric Thacker - Rangeland Management Extension Specialist

Lynnette Harris - College of Agriculture and Applied Sciences, Marketing Communications

Donna Fallenborg - College of Agriculture and Applied Sciences, Marketing Communications

Larue Seron - Program Director, Utah's Own

Brandon Willis - Professional Practice Assistant Professor, Applied Economics



Audience members at the final presentation of the project

LAEP SENIORS

Brandon Blauer

Ryan Manning

Colton Broadbent

Sierra Mathews

Cameron Brown

Madison Merrill

Jonathan Cook

Brooke Olson

Mary Dowden

Topacio Patch

Kyle Funk

Aubrie Rhines

Katie Gerratt

Kristine Robison

Drew Hill

Sara Shirk

Emmeline Hoover

Skyler Smith

Trevor Kennedy

Rhett Taylor

Emily Mangum

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MATRIX

ENVIRONMENTAL

DEVELOPMENTAL

REGIONAL

AIR QUALITY

WATER

ASPECT

HABITAT

VIEW SHEDS

TRANSPORTATION

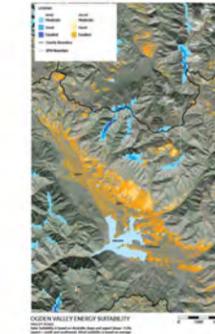
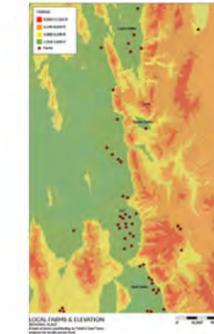
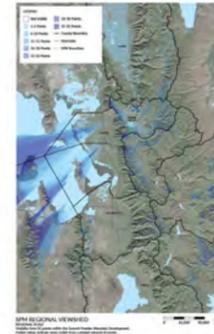
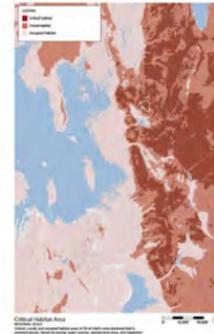
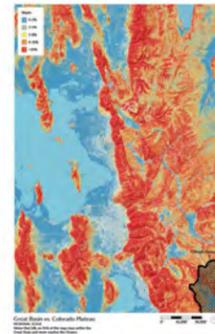
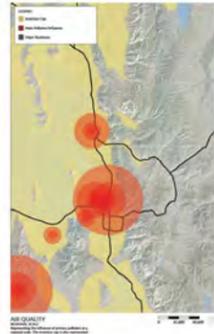
LAND USE

ZONING

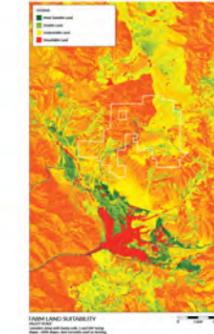
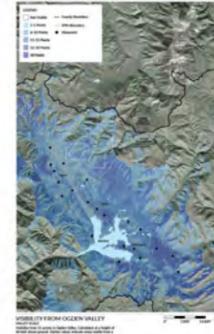
FOOD

ENERGY

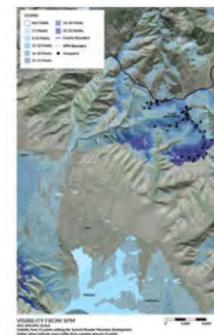
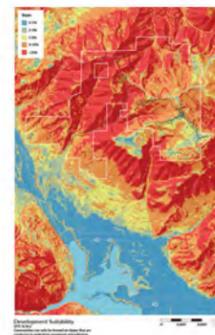
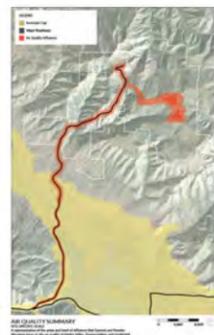
HOUSING



VALLEY



SITE SPECIFIC



CONCLUSIONS



INFORMATION MATRIX

To find substantial recommendations, we have used GIS (Geographic Information Systems, an ESRI program) to study both the Environmental and Developmental Systems in Ogden Valley.

The Environmental Systems include Air Quality, Water, Aspect, Habitat and View Sheds. The Developmental Systems include Transportation, Land Use, Zoning, Food, Energy, and Housing. Each of these topics was analyzed at a regional, valley and site specific scale, and then conclusions were drawn.

Topics were analyzed at common scales so they could be overlapped, conclusions could be drawn and relationships identified. All of these systems are dynamically interactive. This matrix was used to create an innovative response to growth that will guide the future to yield positive growth.

The specific maps used in the Matrix are found in the Appendix at the end of this document.



PROCESS - THE MATRIX

Interdependent Systems

INTRODUCTION

The Development Matrix illustrated how many patterns are set in motion at a global, national and regional scale. While the impact of these systems is felt at the site scale while standing on the ground, the fullest understanding comes from contextual understanding. None of the teams felt this more than the team looking at natural systems and the organization of "natural life" that occurs around topography and water. The success of plant and animal communities (flora and fauna) will in many ways reflect the success of the valley under the projected pressures of growth. The following goals result from synergies inherent in this very essential idea.

Wildlife as Foundation: Within wild populations there are "indicator species" that are the key to evaluating the health of populations. In the same way the presence of wildlife in the valley indicates a healthy ecosystem. The diminishing populations would reveal insensitive practices of development and a lack of open space preservation.

Habitat and Agriculture Together: When open agricultural land is farmed according to best practices and abuts wildlife corridors of appropriate dimensions, the effect is very positive. Habitat

areas for various species of animals best serve their purpose when they are large and contiguous. Larger mammals migrate through the valley using these contiguous thoroughfares to live sustaining and productive lives. Habitat and agriculture can be good partners.

Habitat, Agriculture and Scenery: When we add scenery to the mix the benefits accrue even further. Priority agricultural land adjacent to wooded drainages and within a scenic viewshed offers an ensemble worth saving.

Habitat, Agriculture, Scenery, Trails and Interpretive Centers: When the community and its planners can establish an interconnected network of trails linking the key wildlife corridors and providing interpretive awareness-building programs the stakeholders will strongly support a healthy valley. Heightening community awareness of these foundational issues is key to a prosperous and beautiful valley.

TEAM MEMBERS

Emmeline Hoover Ryan Manning

Kristine Peatross Madison Merrill

Topacio Patch



SYSTEMS - FLORA + FAUNA

Awareness



“LIVE, LEARN, WORK, AND PLAY”

Powder Mountain Core Values



Ogden Valley General Plan Vision

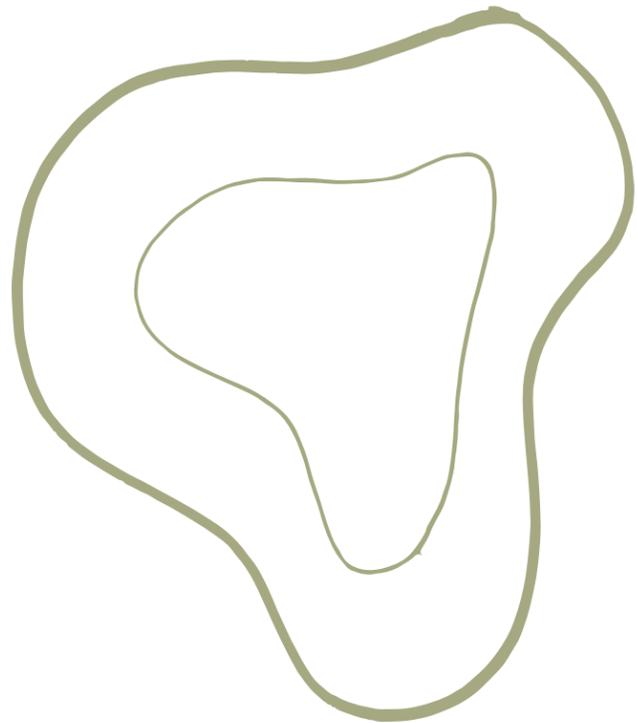
“SUPPORT AGRICULTURE, WILDLIFE, HABITAT AND SCENIC VISTAS”

AWARENESS IS OUR ULTIMATE GOAL

WE CAN MAKE THESE GOALS A REALITY THROUGH CREATING A MODEL OF **CONSERVATION AND CONNECTING** THE COMMUNITY TO UTAH'S NATIVE SYSTEMS IN A **RESPONSIBLE** WAY.

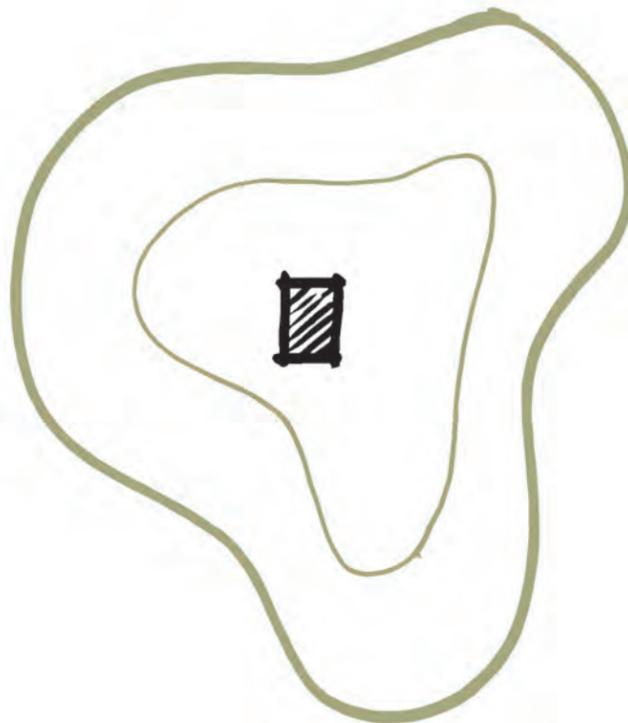


FRAGMENTATION



EXISTING PATCH

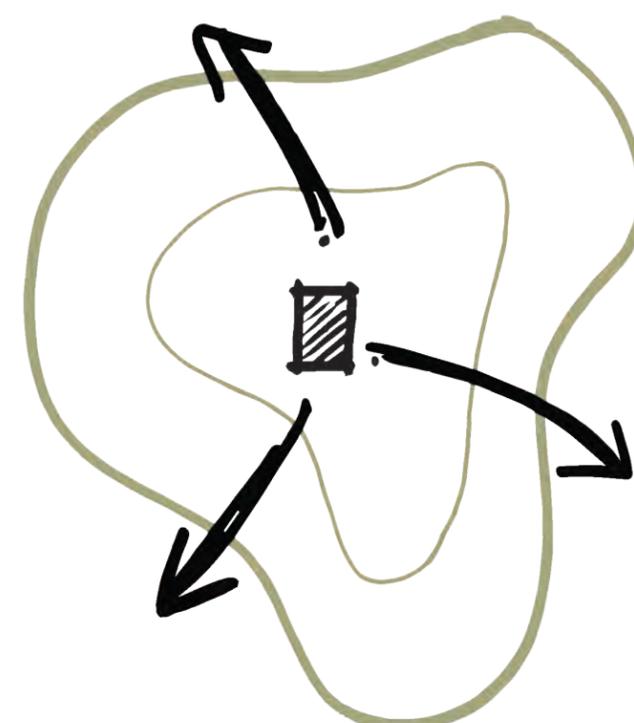
The most vital resources for wildlife are habitat and water sources. Concerning habitat, bigger is always better.



DEVELOPMENT

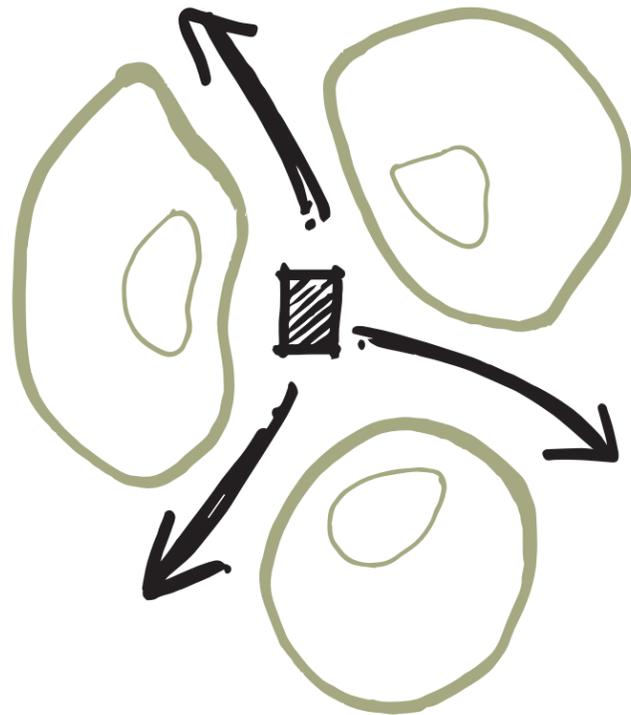
Because we love this beautiful landscape, we want to live there, and spend time there. We build cabins, homes, recreation center, ski resorts, etc., so we might be able to more easily enjoy the places we hold dear.

It's not too destructive to the habitat, right? Just a small little building in a beautiful place?



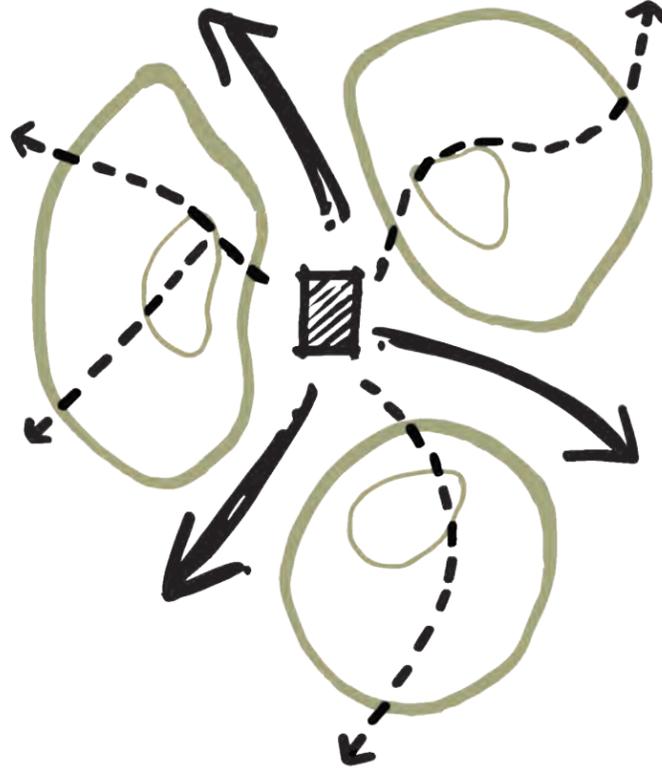
ACCESS

However, we then have to provide access to these places so that we can get there at all times of the year. And so that people from all places can access them as easily as possible.



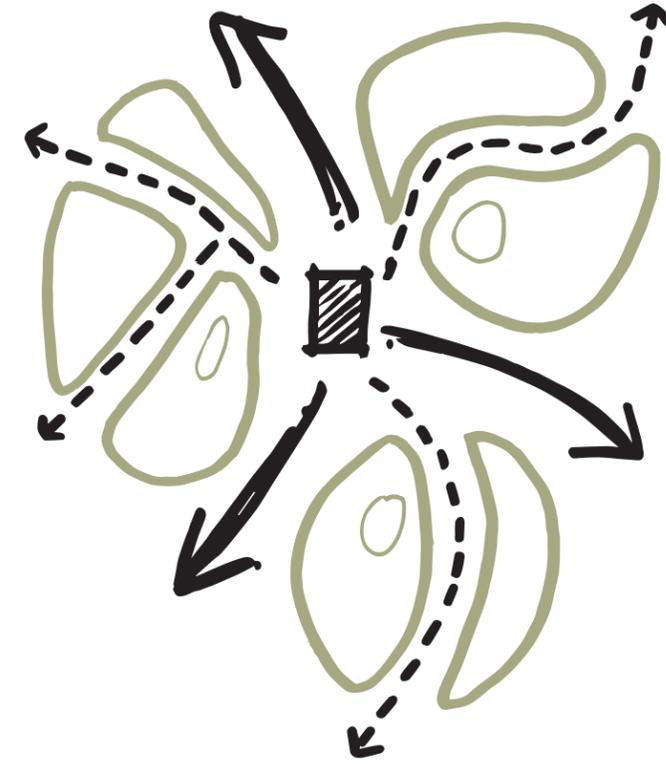
SEPARATION

This breaks the habitat into smaller pieces, as wildlife avoids human interaction for their safety and privacy, and for the safety of their young.



TRAILS + RECREATION

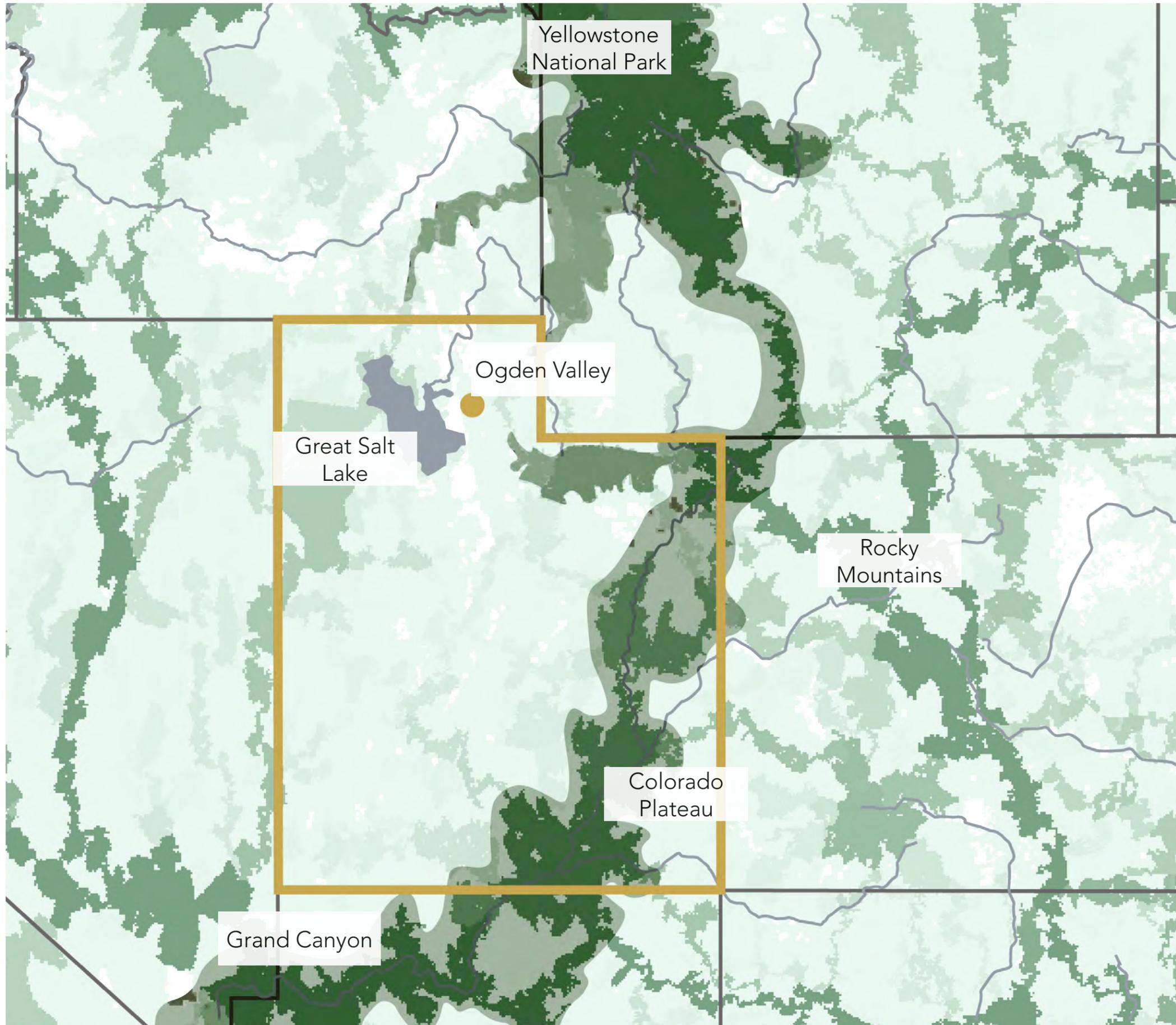
But the more time we spend in these places, the more wonderful they become, so we want hiking, biking and skiing trails through them so they can be enjoyed throughout the year.



FRAGMENTATION

This breaks the habitat into even smaller pieces, and we are left with extremely small patches that are disconnected and difficult to travel between. This is called fragmentation and is a major issue all across the United States. We have forgotten who lived here before us, we are destroying their lands, cutting off their migration routes, and making their homes dangerous for raising their young.

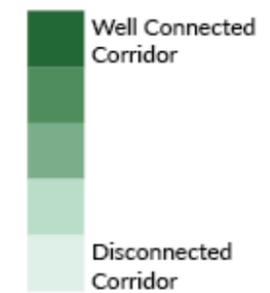




NATIONAL MIGRATION CORRIDORS

Ogden Valley is a key link in **connecting a fragmented corridor**. This fragmented corridor feeds into the largest migration corridor in the West, from Yellowstone National Park to the Grand Canyon.

Wildlife migration corridors in the western United States.





REGIONAL HABITAT

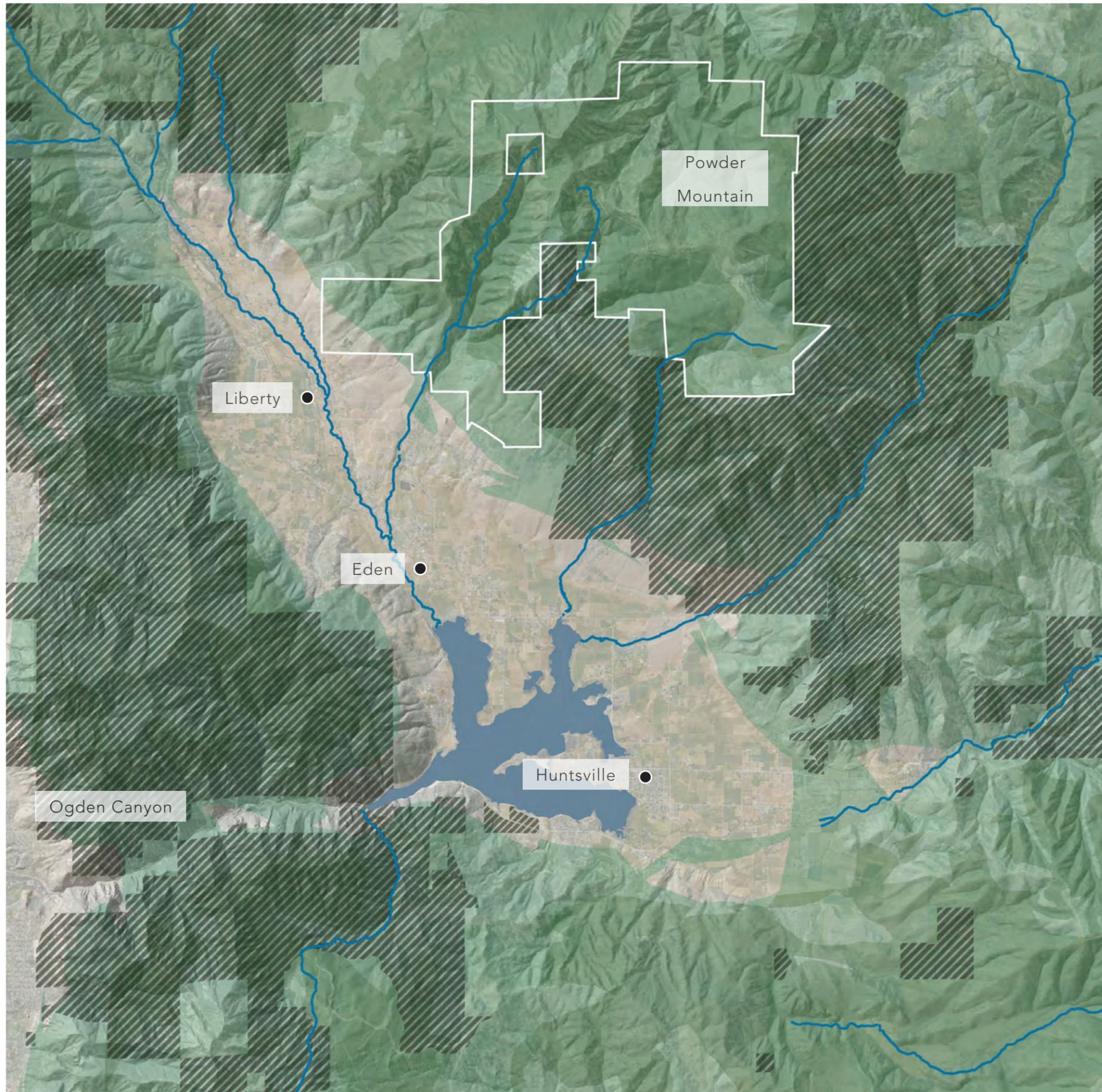
Wildlife habitat based on 27 of Utah's most dominate species including moose, elk, mule deer, and grouse.

At a regional scale, habitat fragmentation has occurred along the Wasatch Front and into Summit County. These highly developed areas have broken up habitat and pushed wildlife into higher elevations.

Source: Division of Wildlife Resources

- Critical Habitat
- Crucial Habitat
- Occupied Habitat





OGDEN VALLEY HABITAT

The map to the left shows wildlife habitat based on 27 of Utah's most dominant species including moose, elk, mule deer, and grouse.

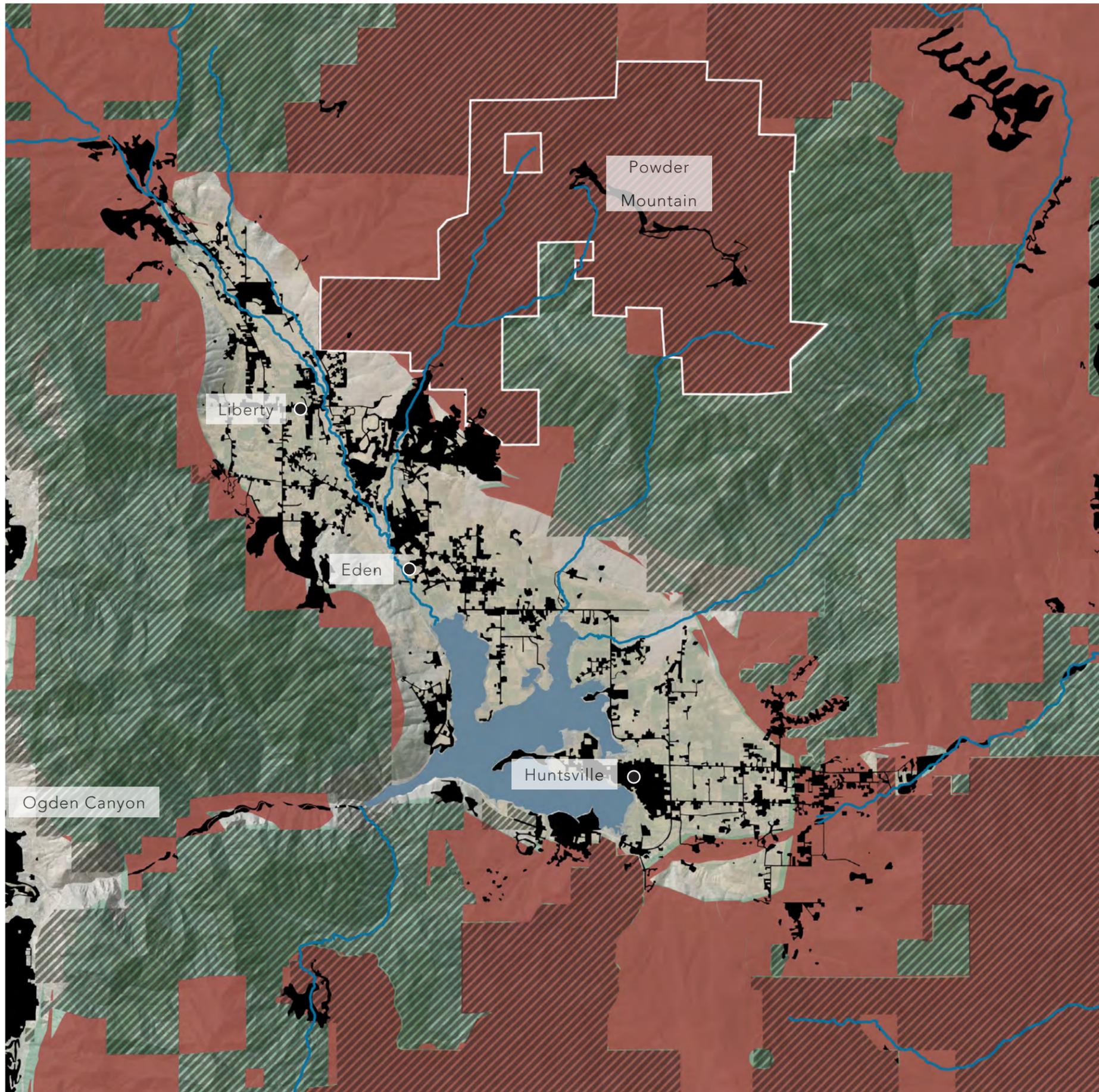
Ogden Valley is surrounded by critical wildlife habitat. Wildlife have been pressured to higher elevations due to development in the Valley.

Federal and State owned lands are locked down for wildlife conservation. These lands cannot be developed and therefore present little threat to habitat destruction. These lands are a good model for how the rest of the habitat should be preserved.

Federal and State owned lands includes BLM, BR, NPS, USPS, USFWS, DNR, and SITLA.

Source: Division of Wildlife Resources

- Village Center
- ▨ Preserved Habitat
- Critical Habitat
- Important Habitat
- Developed/Disturbed Land



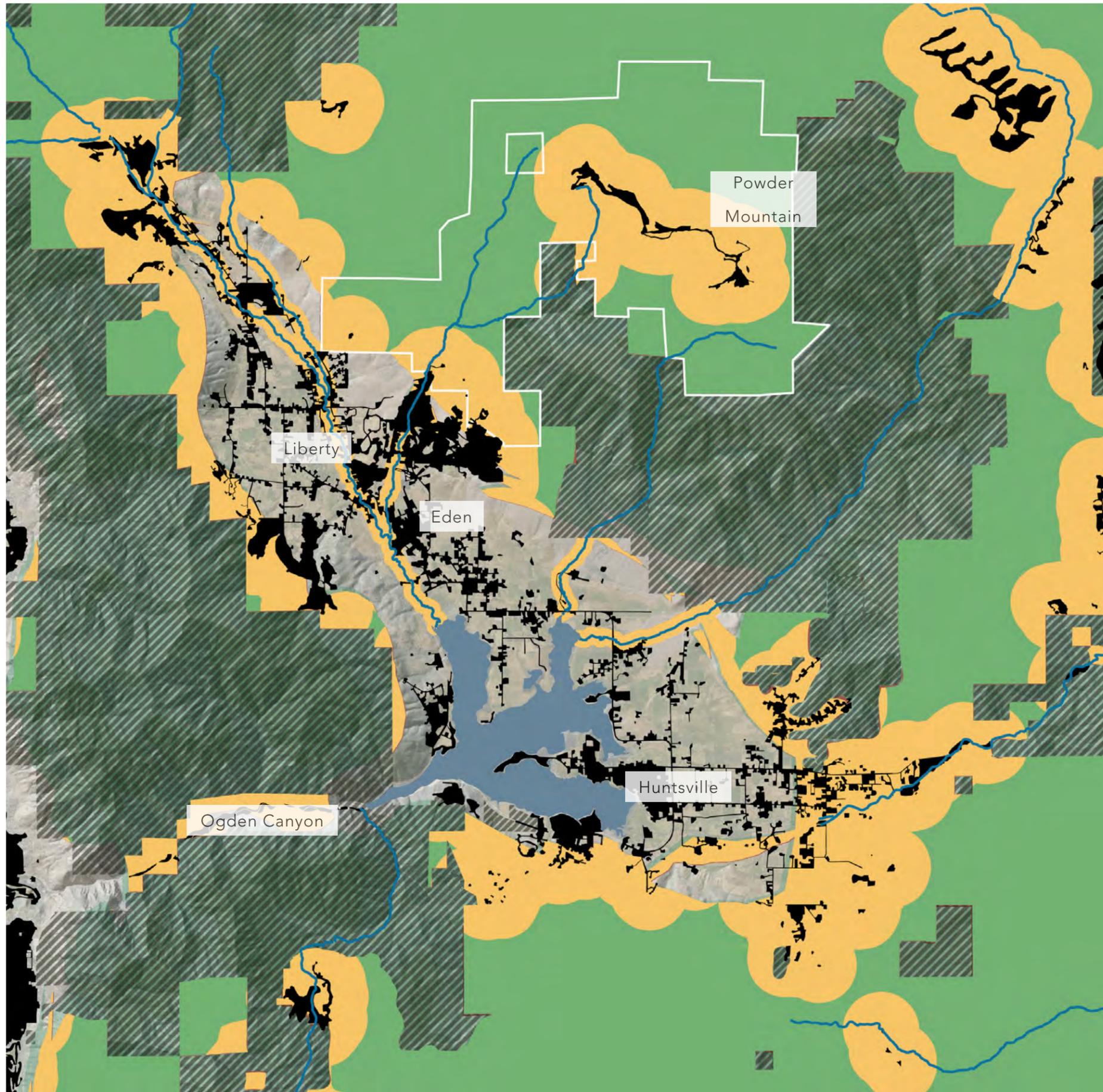
HABITAT AND DEVELOPED LANDS INTERFACE

Development in the form of urban sprawl is disturbing and encroaching upon habitat in unpreserved areas. If development continues, habitat will be nonexistent in these areas. Habitat that is privately owned and managed is especially at risk of being developed, compromising the critical habitat.

Cooperative Wildlife Management Units (CWMU) are privately owned but organizationally managed. CWMUs are currently managed for habitat protection but are not permanently conserved.

- Village Center
- Development
- Unpreserved Habitat
- CWMU (Cooperative Wildlife Management Units)
- Preserved Habitat
- Developed/Disturbed Land





HOW WILL WE RESPOND TO GROWTH?

CONSERVE REMAINING HABITAT AND CREATING THIS BUFFER OF

- Agriculture
- Recreation

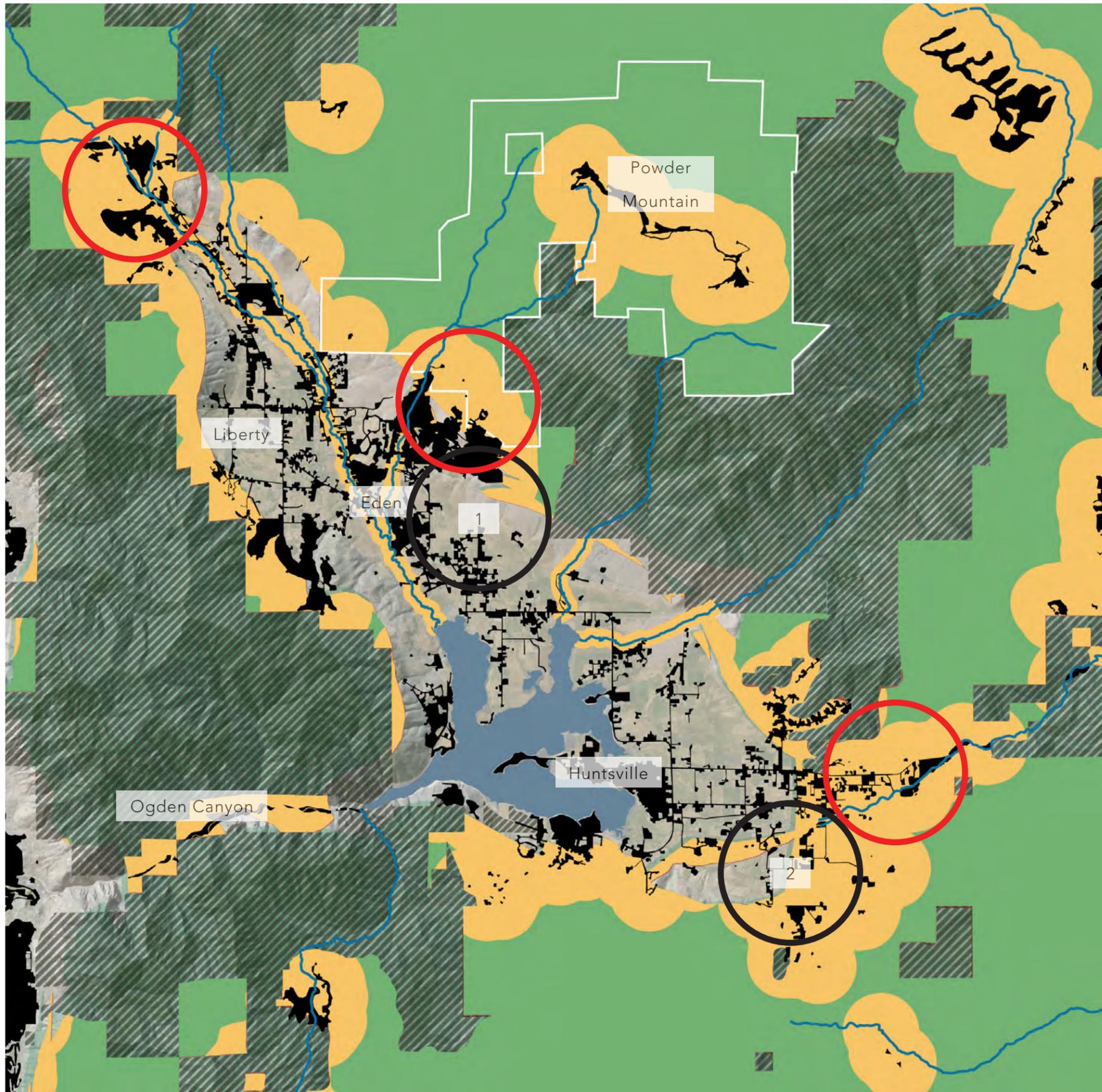
WILL PRESERVE

- Wildlife Habitat
- Scenic Vistas

By beginning with this impact buffer, the Ogden Valley General Plan Vision will be supported in saying:

“Support agriculture, wildlife habitat, and scenic vistas.”





IMPACT BUFFER: AGRICULTURE AND HABITAT

An impact Buffer will decrease habitat destruction. The buffer will act as transitional space from development to natural habitat.

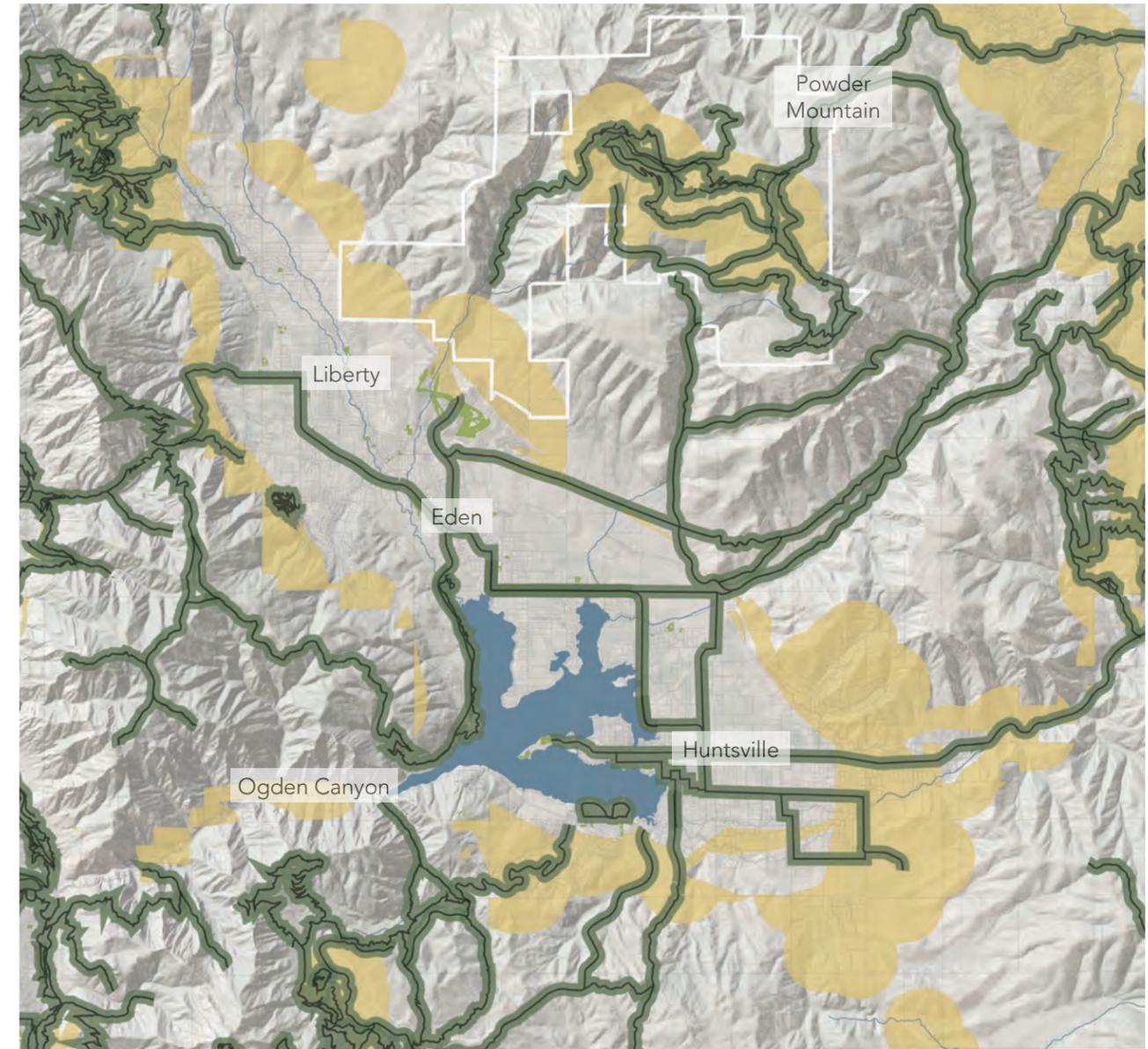
Agriculture and grazing preserves open space while honoring the valley heritage.

- 
VAST AGRICULTURAL LANDS NEAR EDEN
 Retaining these agricultural lands near Eden is vital for retaining open space identity.
- 
THE MONASTERY
 The Monastery is currently the only agricultural land over 20 acres within the Impact Buffer.
- 
Areas of concern where sprawl is compromising critical habitat.

-  Future Preservation
-  Impact Buffer
-  Development
-  Preserved Habitat



OGDEN VALLEY TRAIL SYSTEM



TRAILS AND THEIR IMPACT

To understand how recreational use can help create an impact buffer, the Ogden Valley Trail System was examined. Because there is not currently a complete summary of the entire trail system, information was gathered from both Geographic Information Systems, and Weber Pathways. Weber Pathways has been working hard to install new trails in the valley, maintain existing trails, and find a system to inform

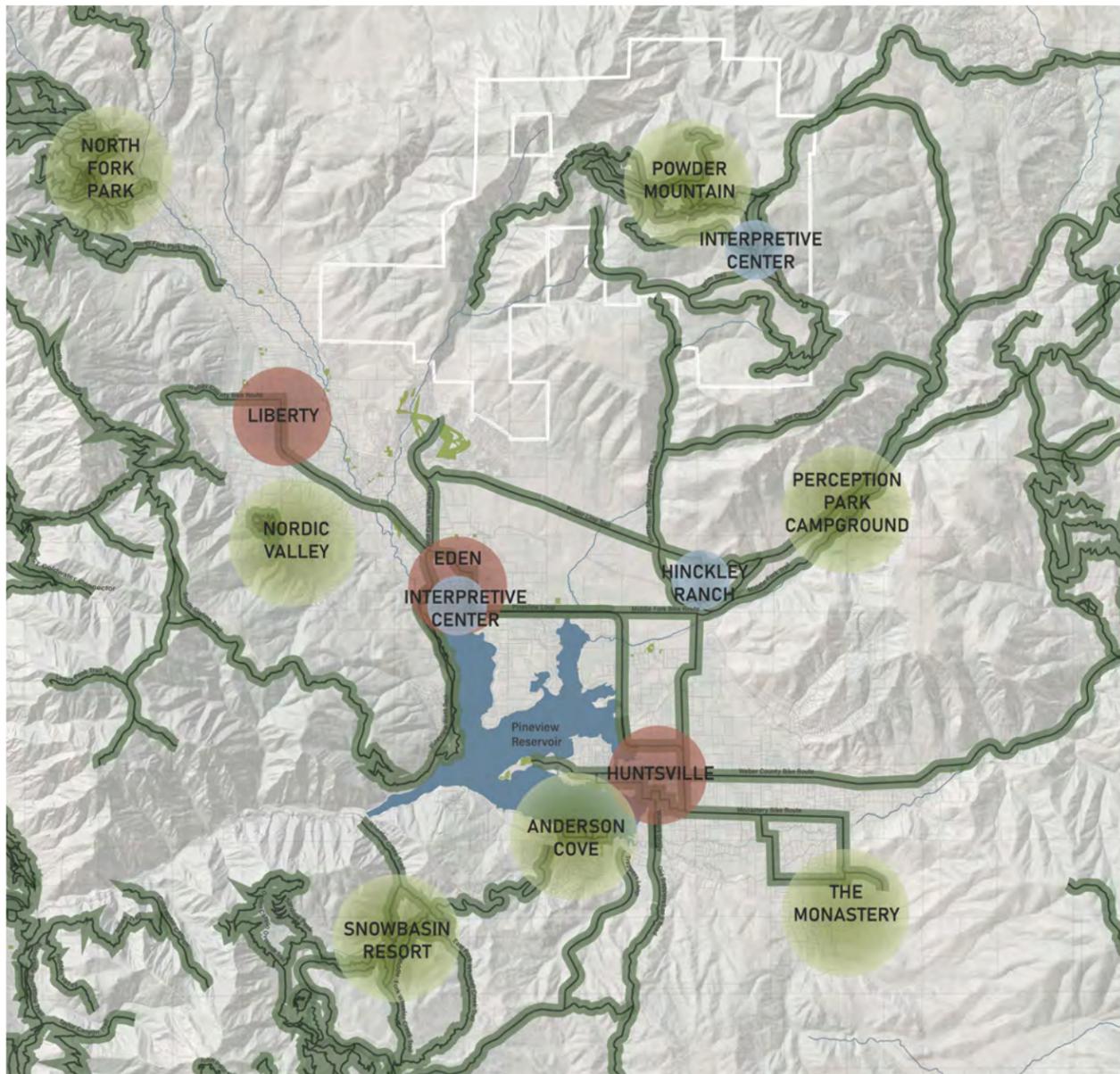
the trail community.

Detailed here is a sequence of the current trails in the area as well as several proposed trails. Beyond these maps, a key component to help maintain the trails in good condition and inform users of necessary information is signage on the trails. This implementation would help direct the community and bring awareness to all users.

EXISTING TRAILS + IMPACT BUFFER

To protect the wildlife habitat by creating the Impact Buffer, recreational opportunities can be condensed into the yellow zone shown above. Existing trails within the Impact Buffer are clustered but the majority of the trails stretch beyond.

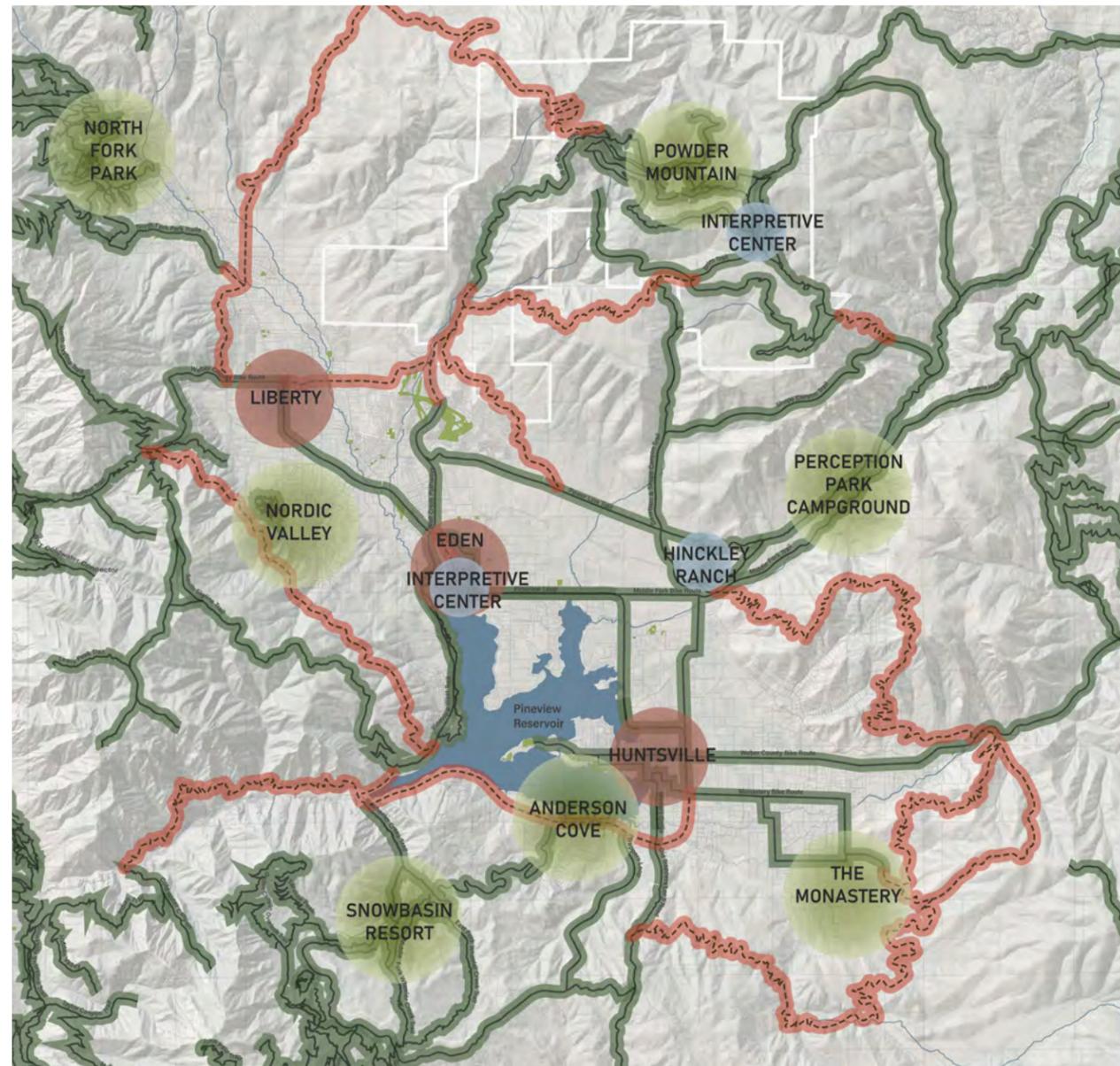
-  Impact Buffer
-  Existing Trails



MAIN NODES

There are many important nodes throughout the valley that are not currently connected by trails systems. One example is the disconnection between North Fork Park and Powder Mountain. Another is between Snowbasin and Nordic Valley. Overall there is a general lack of connection between Ogden Valley and Cache Valley.

- Recreational Nodes
- Community Nodes
- Educational Nodes
- Existing Trails



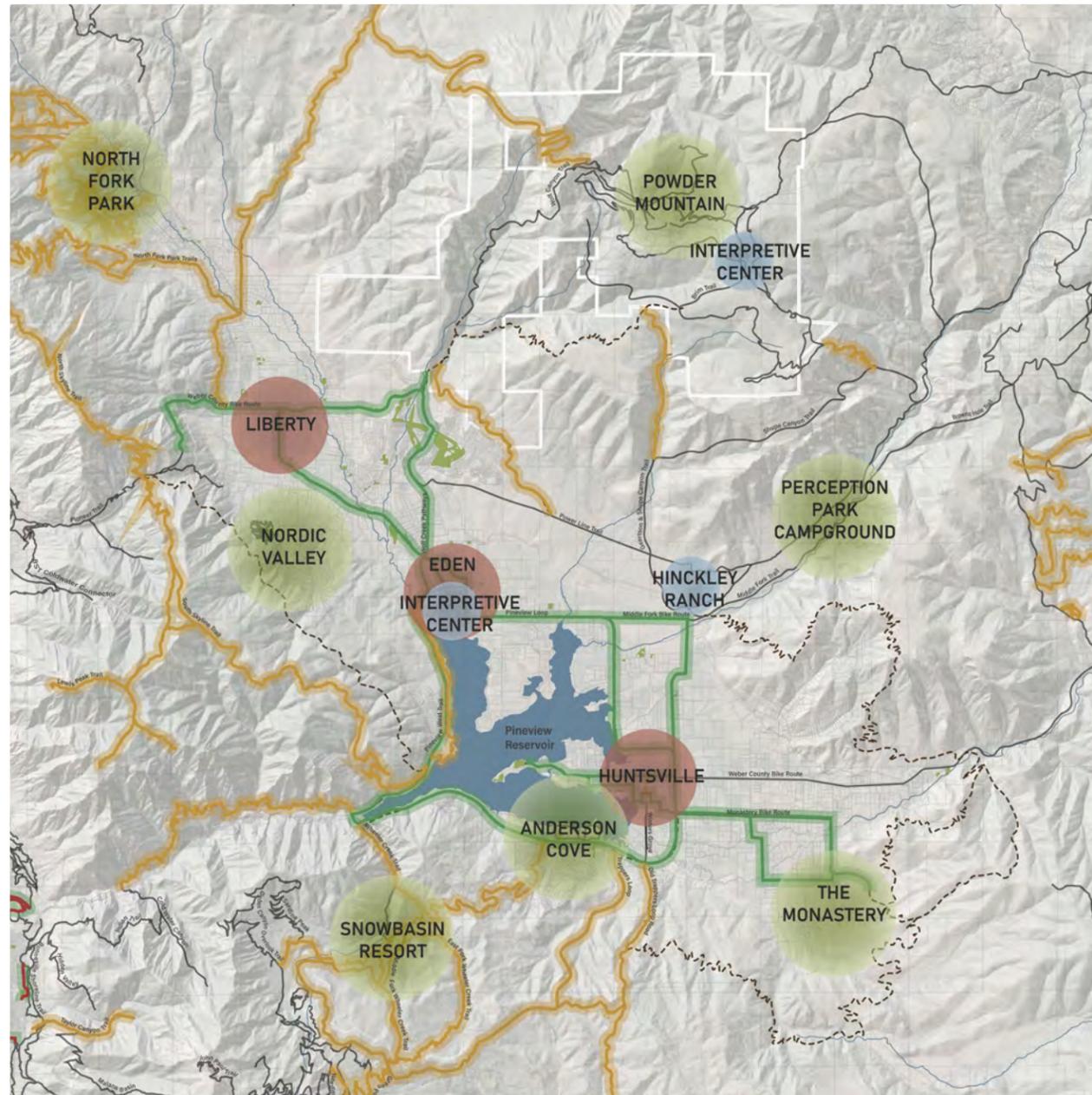
PROPOSED TRAILS FOR A MORE COMPLETE SYSTEM

Highlighted in light brown, are suggested pathways that would create a more complete trail system. These pathways strengthen access to main community nodes, and create more options for all users. These new proposed trails have been contained in the impact buffer zone as much as possible to seal off and minimize the impact on the surrounding wildlife habitat.

- Existing Trails
- Proposed Trails
- Recreational Nodes
- Community Nodes
- Educational Nodes



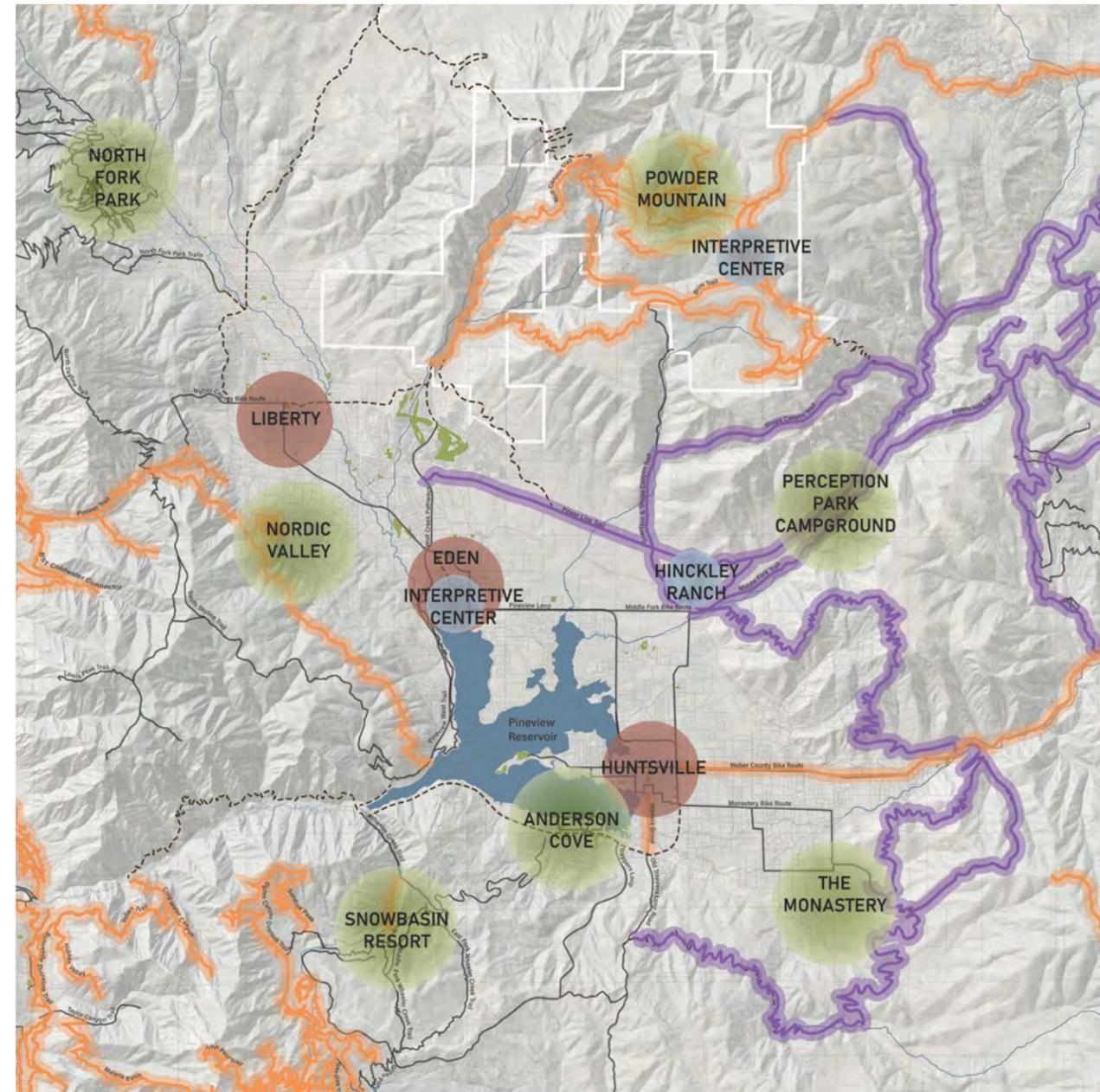
TRAIL USAGE



PAVED AND UNPAVED TRAIL SYSTEMS

The proposed unpaved trails grant access to greater regional trails. They are open to all uses in order to maximize trail versatility and access allowing for a wide variety of users. On these trails, trail etiquette is a necessity and every user must understand how to interact with others in the trail community. Proposed paved pathways are also open to all users. They help to strengthen community nodes through straightforward connection throughout the valley. One example is a complete trail system all the way around Pineview Reservoir.

- Proposed Paved Trails
- Proposed Unpaved Trails

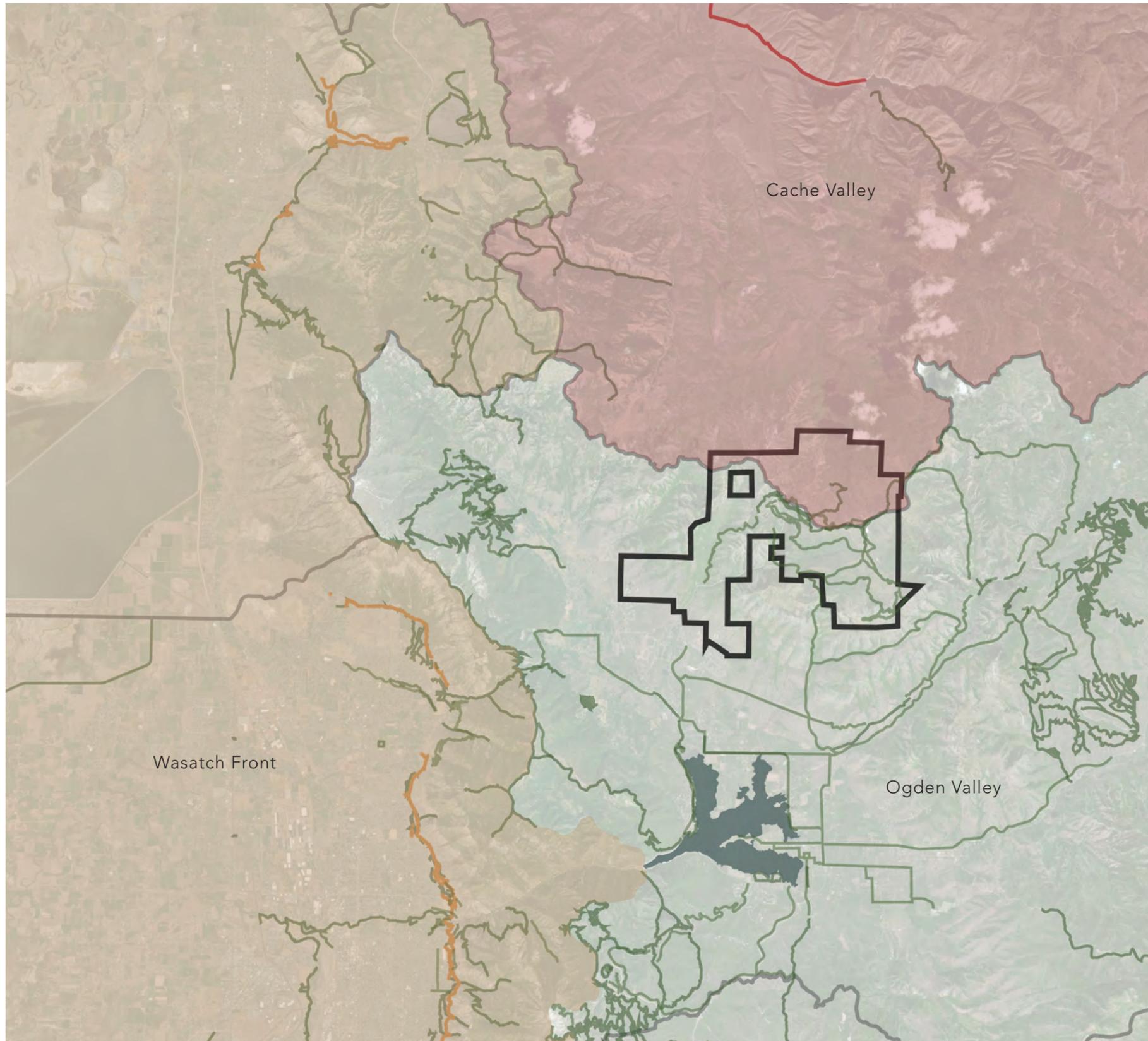


ACTIVE RECREATIONAL TRAIL SYSTEMS

Mountain Biking and Equestrian recreation are both very popular activities in the valley. In order to maintain their viability within the trail system, new trails should be created that fit the unique needs of both activities. Wider pathways are essential to ensure safety of those on foot and those on bikes or horses. Proposed mountain biking trails are based on easy access to ski resorts. Proposed equestrian trails link into the valley and the important agricultural nodes.

- Mountain Biking Trail Systems
- Equestrian Trail Systems

REGIONAL LINKAGES



Ogden Valley, and Powder Mountain along with it, are positioned within a rich regional trail system. Powder mountain in particular sits within a transect of 3 larger systems - Cache County, Ogden Valley (and Weber County), and the Bonneville Shoreline Trail. In their current state, these trail systems lack integration with one another. Powder Mountain has an incredible opportunity to enact linkages between all 3 systems both within and without their property boundary. They also have a vested interest in creating a world class trail system in order to attract 4 season users.

Cache County: The Cache County Trail System doesn't reach all the way to Powder Mountain, but it does have several branches close by. Trails within Cache County reach all the way to Idaho and Bear Lake.

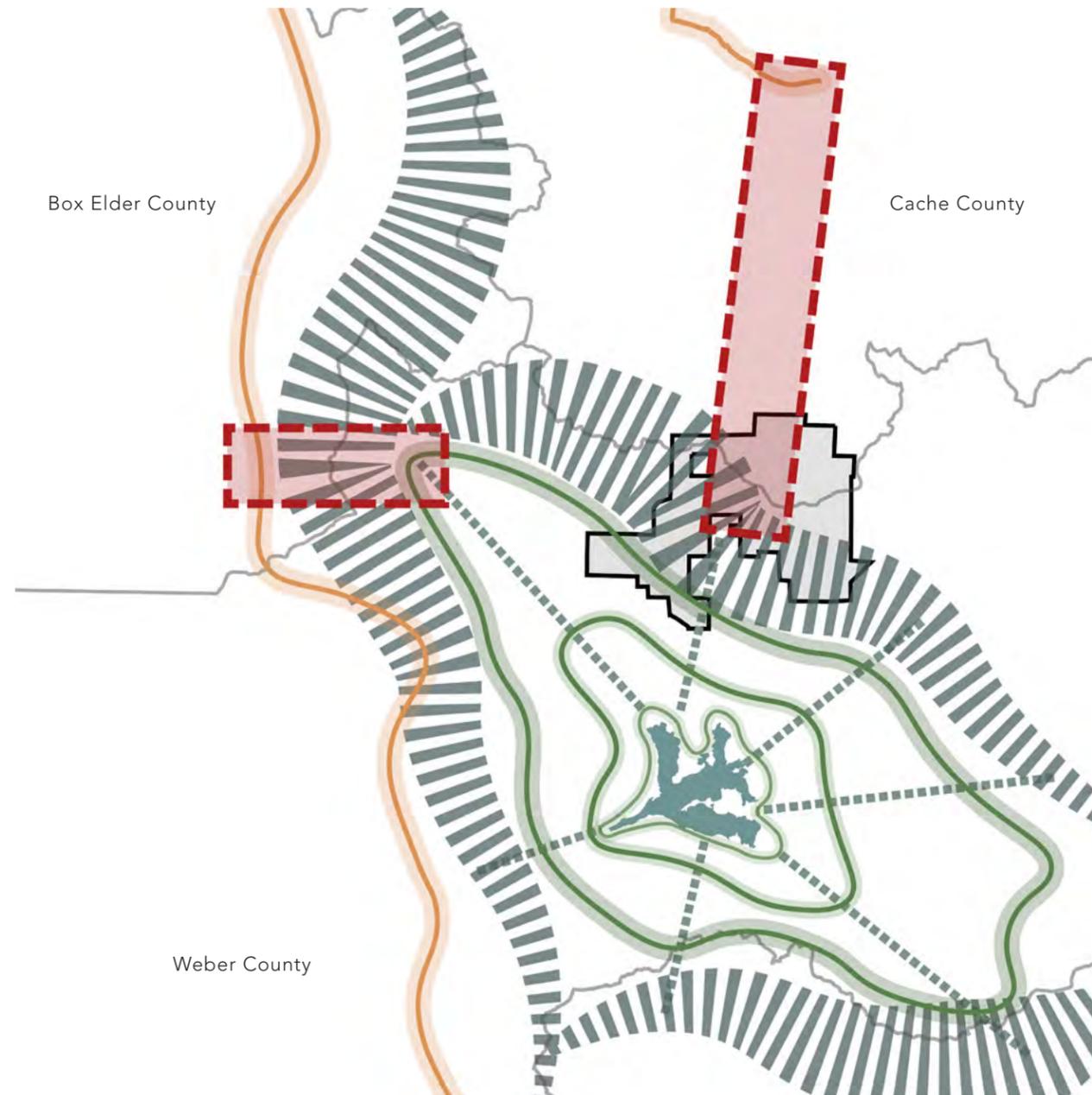
Ogden Valley: Ogden Valley's trail system is the Powder Mountain's "front porch." It is important that new additions to this trail system add cohesion and connection to Powder Mountain and other recreational amenities.

Bonneville Shoreline: The Bonneville Shoreline Trail is an incredible system that links the entirety of the Wasatch Front (with a population of 2,500,000) and beyond. Only portions of it are built currently, but plans are in the works to complete the rest.

Linking these 3 systems is a way to create a world class trail system all within a short walk or bike ride from Powder Mountain.

-  Existing Trails
-  Bonneville Shoreline Trail
-  Cache County Trail Connection
-  County Boundaries
-  Powder Mountain Boundary
-  Cache Valley Trail System
-  Wasatch Front Trail System
-  Ogden Valley Trail System

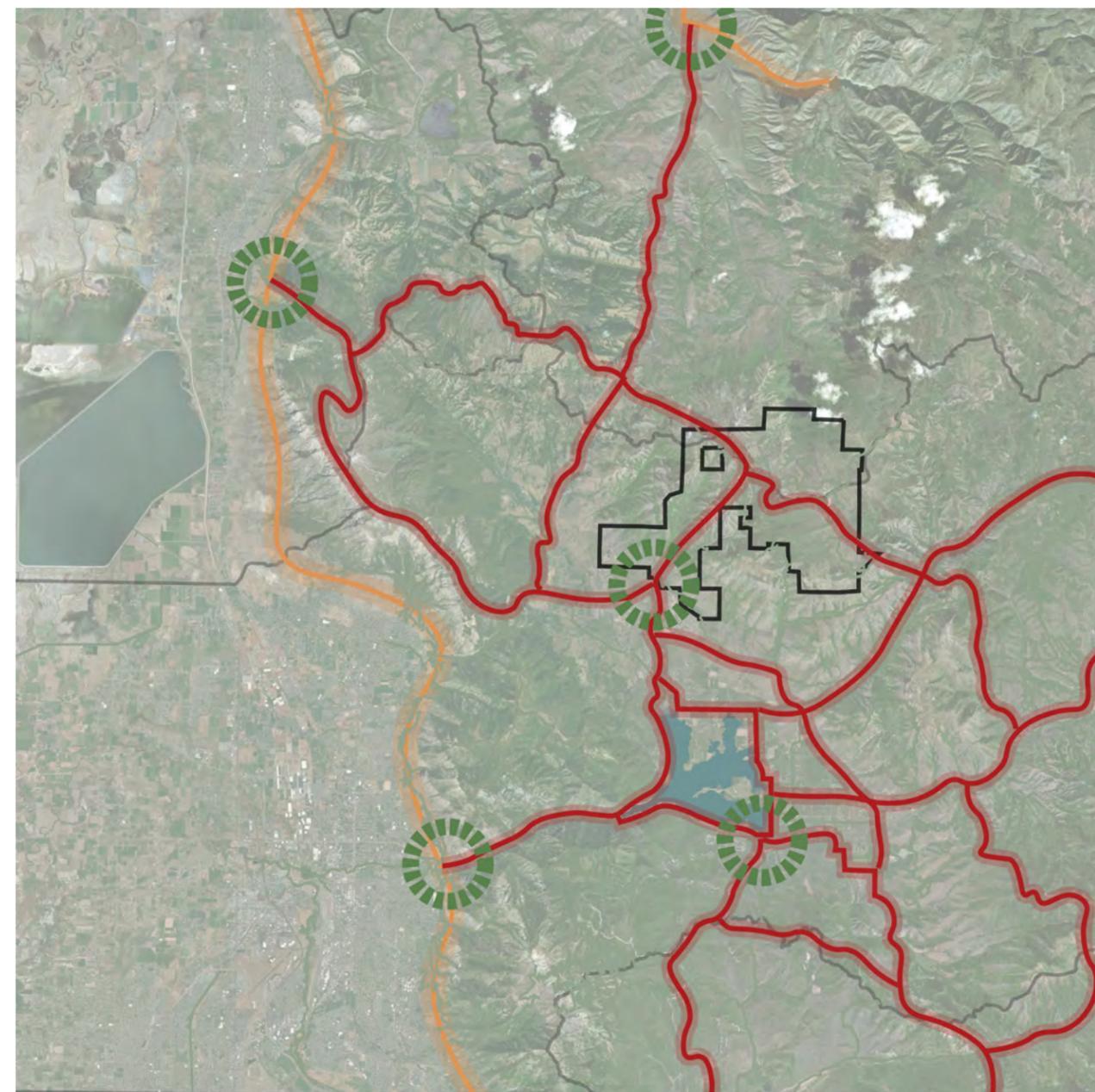




SOLUTIONS TO MISSING LINKAGES

A good trail system is scalable - it works both site (small) and regional (large) scales. The Ogden Valley needs a series of trail loops that builds and then connect these scales - around the reservoir, at the edge of the valley, and on the tops of the mountain ranges. Trails that follow the watersheds and canyons connect into these loops and thus into the regional system. The diagram above illustrates these loops, the watershed and canyon connections, and the missing regional links.

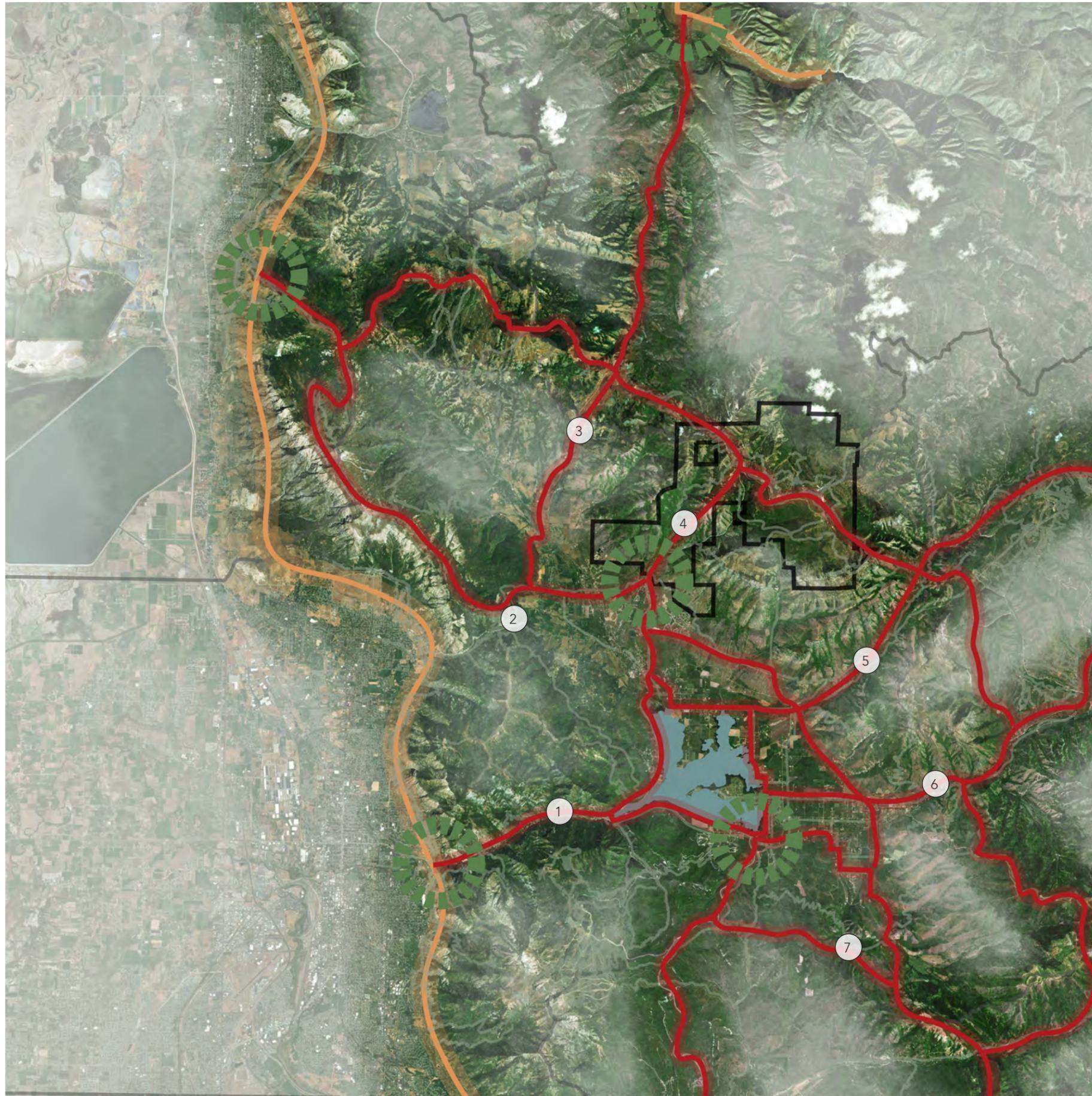
- Mountain Ranges
- Necessary Trail Loops
- Bonneville Shoreline Trail/ Cache County Trails
- County Boundaries
- Watershed/Canyon Trails
- Missing Links
- Powder Mountain



A WORLD CLASS TRAIL SYSTEM

The new trail system based on the valley, canyons, and ridge-tops, connects Ogden Valley and Powder Mountain into the regional system while setting it apart as a world class trail system. The system links users into a vast array of active and passive recreational amenities. The framework and mechanisms for this system are mostly in place, but it will take work from all parties involved to make it happen.

- Important Trail Intersections
- Proposed Trail System
- Bonneville Shoreline Trail/ Cache County Trails
- County Boundaries
- Existing Trails
- Powder Mountain



SEVEN CANYONS AND BEYOND

The landscape of Ogden Valley is easily perceptible (jutting mountain peaks, forested streams, agricultural lands) but development as it currently occurs is removed from that landscape. Instead of the landscape being a backdrop, future development should be integrated respectfully into the natural world, bridging the gap in smart and safe ways. Building a comprehensive trail and open space system is a great way to achieve this integration. An entire valley centered around a robust trail system that links open space, agriculture, economic, and recreational amenities at a local and regional scale is an incredible idea.

- ① Ogden Canyon
- ② North Ogden Canyon
- ③ Avon Pass
- ④ Wolf Creek
- ⑤ Middle Fork Ogden River
- ⑥ South Fork Ogden River
- ⑦ Sheep Herd Creek

-  Important Trail Intersections
-  Proposed Trail System
-  Bonneville Shoreline Trail/
Cache County Trails
-  County Boundaries
-  Existing Trails
-  Powder Mountain



TRAIL AWARENESS

Once trail usage has been assigned, the user needs to be informed. Currently in the valley, the signage is very minimal. Some proposed signage would be: directional, mile markers, interpretive, trail head gateways, and large Information kiosks.

Information kiosks would include more in depth information about the trails, trail etiquette, when to and when not to use the trail, and Leave No Trace principles.

Effective signage will result in user awareness, reduced conflict of use on trails and reduced maintenance if a precedent is set from the beginning.



Trail head Gateway



Information Kiosk



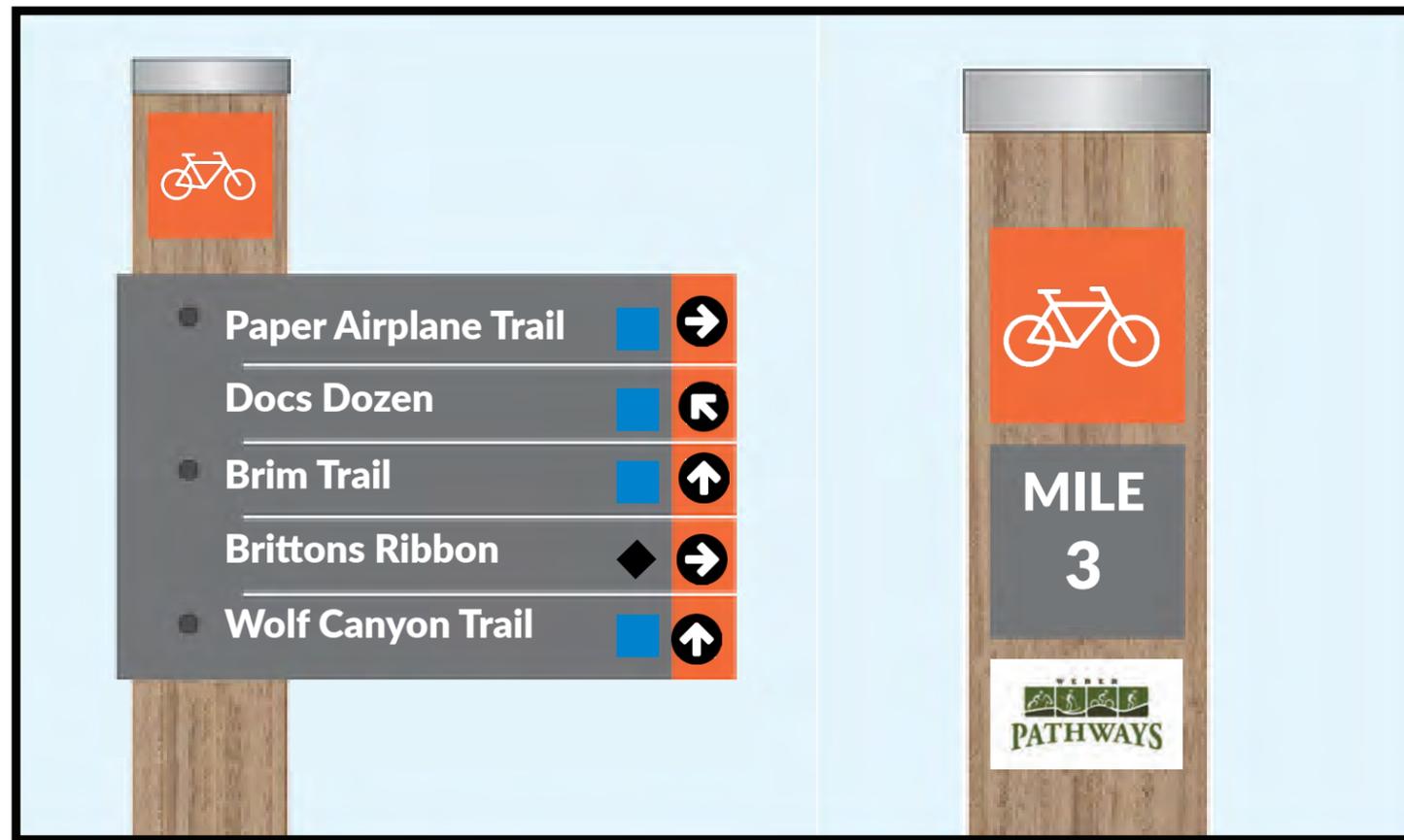
Directional Sign



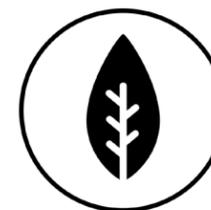
Mile Marker

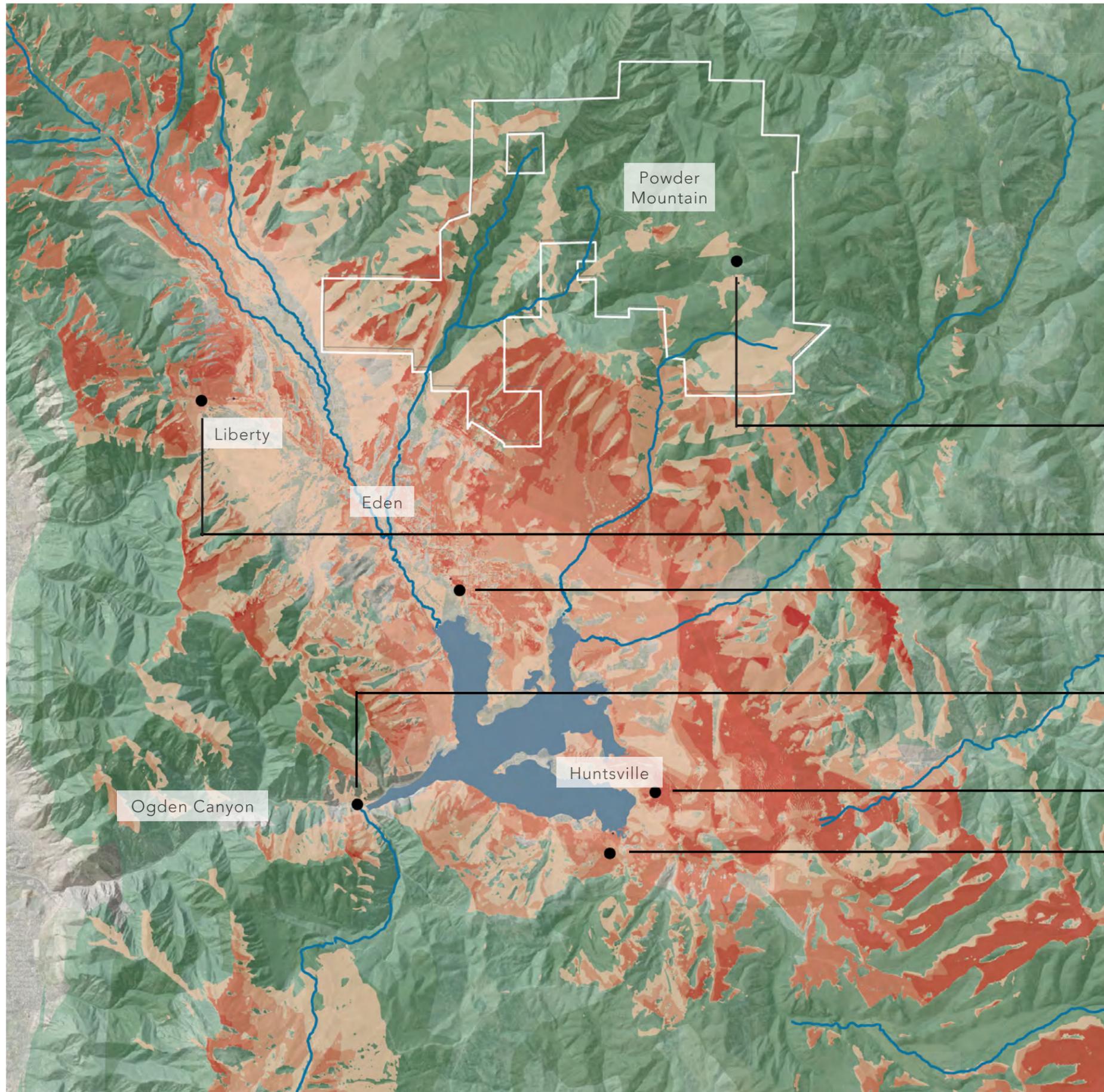


Interpretive Signage



Detailed view of Directional Signage and Mile Marker





TO PRESERVE: SCENIC VISTAS

Scenic Views from six critical locations throughout Ogden Valley

These areas are critical views to be preserved because they are the first views that visitors, and residents alike will see as they are entering the valley, or as they are at a main community node.

Ogden Valley is known for its beautiful, open views, and if these are not preserved, the rich heritage of the place could be lost.

SUMMIT Wildlife Interpretive Center, proposed

NORTH OGDEN PASS Entry View

VALLEY Wildlife Interpretive Center, proposed

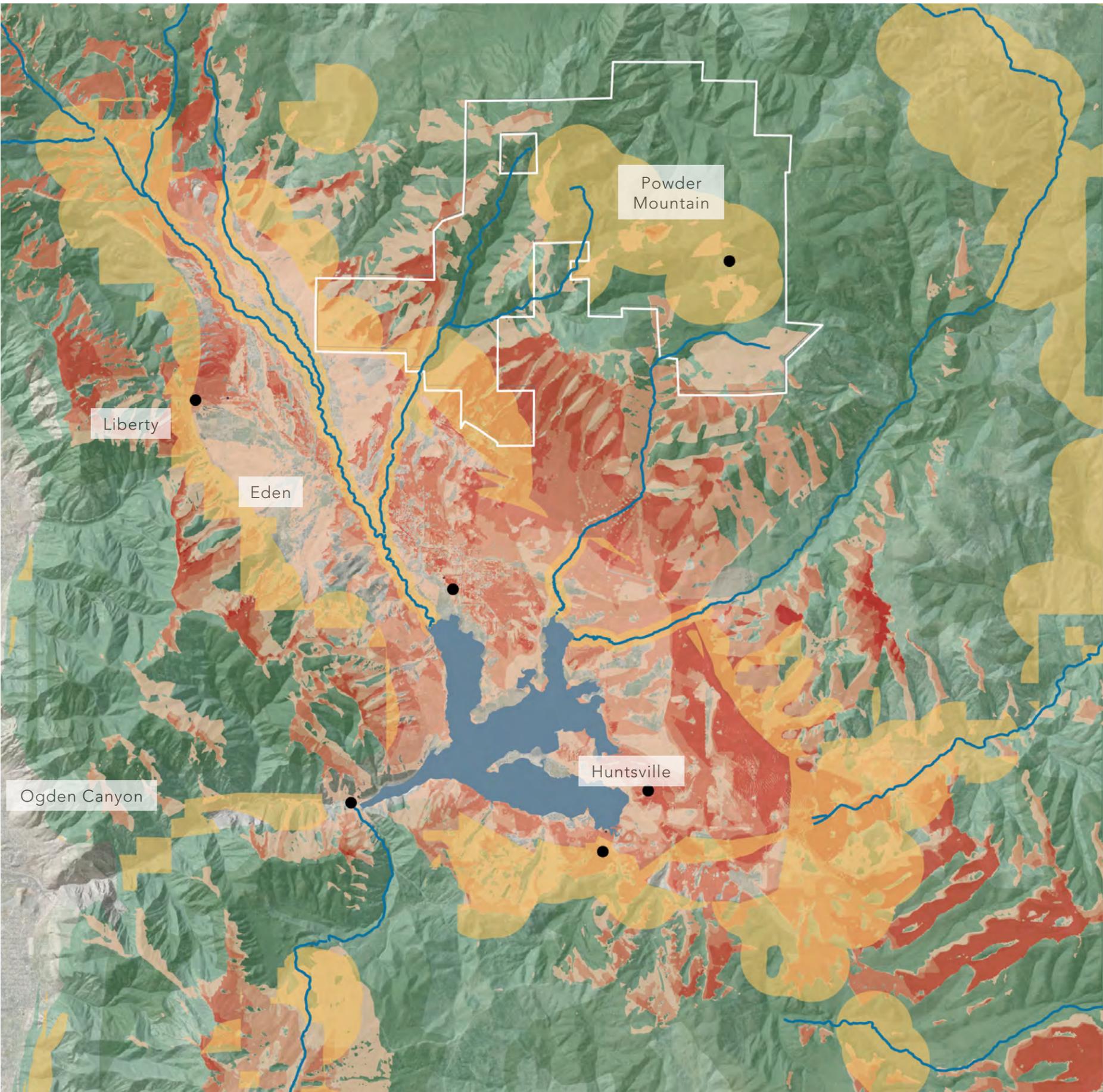
OGDEN CANYON Entry View

HUNTSVILLE City Square/Park

TRAPPER'S LOOP Entry View

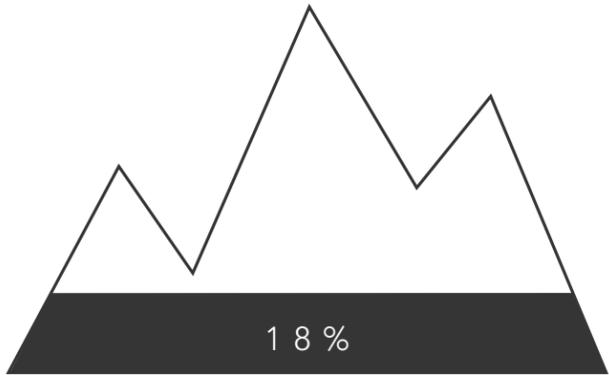
Visible from all points

Visible from 0 points



SCENIC VISTAS AND IMPACT BUFFER

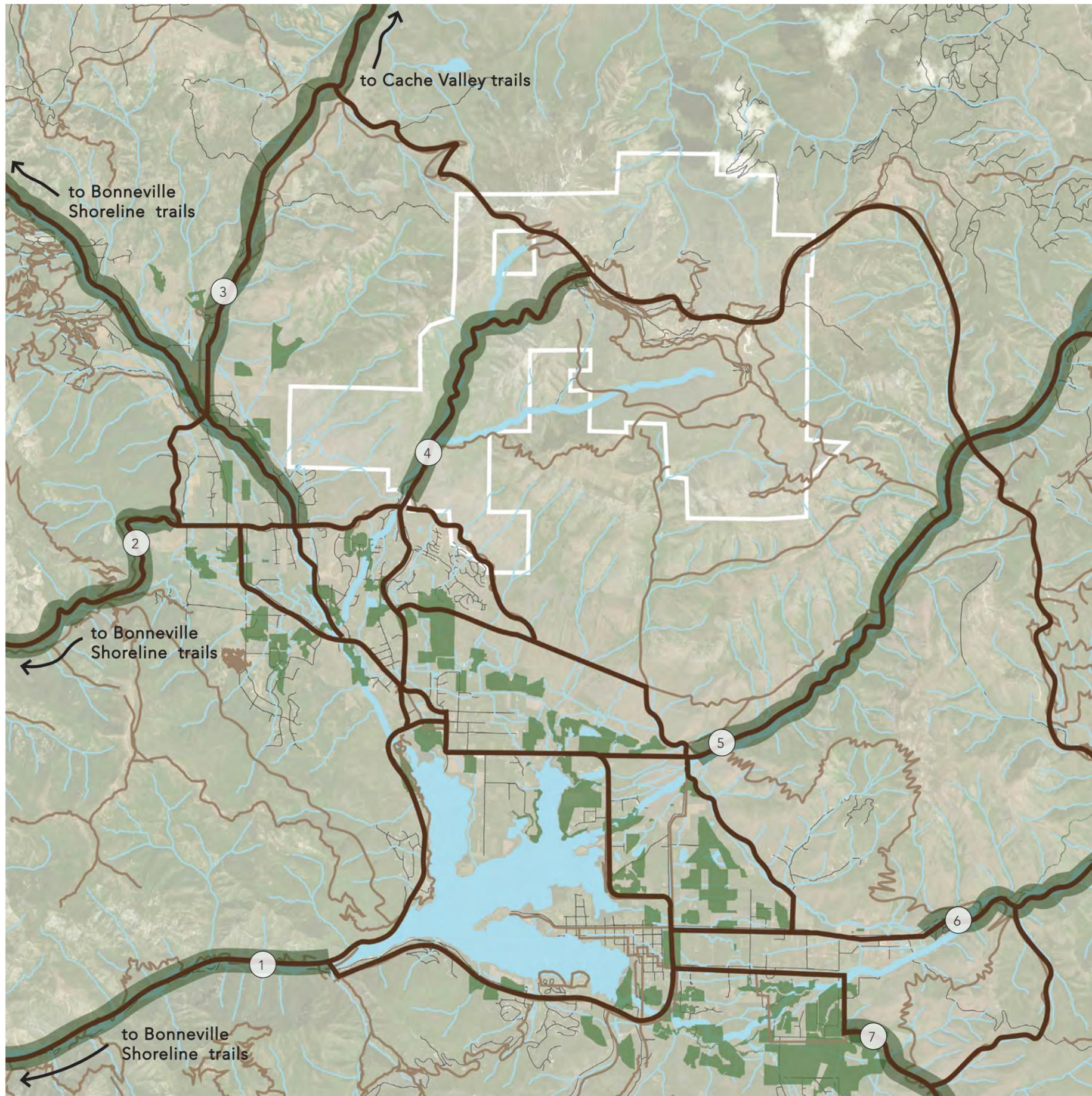
Wildlife conservation will protect scenic views. 44% of the Impact Buffer can be seen from at least one of the six points.



of the wildlife buffer can be seen from 3+ viewpoints

- Impact Buffer
- Visible from all points
- Visible from 0 points





The issues of flora and fauna valley-wide look to the connectivity of drainage ways (riparian habitats) and preserved agricultural land as a means of sustaining the visual and functional integrity of the valley. The vast amount of public lands needs to be connected down and through the valley bottom to the reservoir. This gesture will link animals and people to critical habitats and to each other. These systems are identified for the valley and for Powder Mountain in order that the prioritized lands and trails are linked up. The additional revelation is the opportunity to connect Bonneville Shoreline Trail through, Box Elder, Weber and Cache Counties linking exponentially greater numbers of desirable trails and destinations. Boasts like the interlinking of 500 miles of regional and supraregional trails are brand-defining for a valley that deserves a recreation and wild lands orientation.

- ① Ogden Canyon
- ② North Ogden Canyon
- ③ Avon Pass
- ④ Wolf Creek
- ⑤ Middle Fork Ogden River
- ⑥ South Fork Ogden River
- ⑦ Sheep Herd Creek

-  Streams
-  Creeks
-  Roads
-  Proposed Trail System
-  Preserved Agricultural Lands
-  Canyon trail connections

CONCLUSIONS

Recognize the Importance of Open Space: the foundation of wise decisions about valley growth is the “baseline preservation of environmentally vital and scenic landscapes”. Beginning with all of the drainage-ways of the watershed an open space system can be built that benefit everyone from the valley and beyond. Ogden Valley is a tremendous regional asset.

Connect Nested Opportunities: Ogden Valley is part of a much larger system of watercourses and watersheds that form a national environmental network. Open space within Powder Mountain, within each municipality and the network of valley-wide open space should be interconnected to maximize benefits to human and wildlife populations.

Provide Trails/Maps, Interpretation (stories): time and space conspire and offer us the unique opportunity to understand the environmental and cultural significance of the valley and physical wonders. By telling the geomorphological and cultural history of the valley and getting people to walk it, a campaign for preserving the essential experience can be launched.

Save What You Love: growth is inevitable, so why can't open space provide structure for growth? In addition to valuable landscapes for wildlife we value landscapes for their scenic quality. By making the connection between cherished viewpoints like the valley entrance we can also assign significance to critical views and prioritize land acquisition for open space. Trails engender personal attachments that build a constituency for open space.

Three Valleys International Attraction: to be as close to an international airport with the scenic quality of the valley and to have access to the assets and systems of Cache, Ogden and Great Salt Lake Valleys is an extraordinary opportunity. Connecting these valleys with non-vehicular trails would be a very distinguishing feature for Ogden Valley and every jurisdiction touching those trails.

WE WILL KNOW WE'VE **SUCCEEDED** IF A RICH POPULATION OF WILDLIFE—FROM INVERTEBRATES TO MOOSE—ARE **STILL PRESENT** AFTER THIS VALLEY'S POPULATION REACHES 20,000 PEOPLE.



INTRODUCTION

Having realized the importance of the natural integrity of the valley and how this integrity can be supported by agriculture, we looked for opportunities to highlight common values and partnering possibilities that might link valley residents. Success stories abound where food is used to draw people together. The community of Serenbe formed some 20 years ago near Atlanta, founded by chefs and foodies, has bound the populations in and around the village to the environmental and scenic values of agricultural life. Food is a central component of wellness, so the following are truths and goals for food in the valley.

Everyone Needs Food Every Day: For all of us food is the inevitable topic of conversations each day. It has become a major forum for conversation, family and community bonding. A meal is an opportunity to share thoughts and values. A meal is made of products that came from somewhere, but when they come from nearby they taste better and are better for you. The concept of food as an identity and community builder in Ogden Valley and at 9,000 feet is the subject of this team's efforts. Whether it is growing watermelons in Alaska, spinach on Mars, or carrots at 9,000 feet, these improbable outcomes only build a stronger brand.

Program for Food: The many faces of food include issues of growing (where and how), distributing/selling (in and out of the valley), issues of eating (where and with whom); all connecting people to food and to each other. Underlying all of this is the quality of the food and the activities undertaken to burn the calories consumed. The recipes and traditions of cooking introduce the artistry of the culinary world and our need to be educated about food. Opportunities exist all along this food chain; grow, distribute, market, cook/prepare, gather, eat,

exercise and begin again.

Connections: Connections are necessary to link the elements of the food chain, they are geographic and spatial. Beginning with "Utah's Own" agriculture and food program and the seeds of activity in the valley, the community must become aware of how this awareness and brand could build. Perhaps the most assertive idea is to motivate citizens of the valley to connect preservation of agricultural land to scenery and to the possibility of agritourism. What a brand for the valley!

Preservation: Open land preservation, of former agriculture lands, has been difficult to accomplish in most jurisdictions nationwide. The temptation to develop is great given the objectives of family farm businesses in estate transition. Building on the Agritourism theme the ability to prioritize open land preservation by finding multiple motives for doing so, makes the expense of these purchases worthwhile. A single great virtue of all open space is the scenic quality of the space that is saved. Two things to look for are scenery from key scenic points of origin and scenery adjacent to population centers like Eden.

Education: The essential ingredients of educating people about food are evident in the food chain. Education can occur at places of distribution, in markets, in kitchens, and at fitness venues. All along the food chain the community builds an understanding and appreciation for the valley, its water, people and the experience of being there. The possibilities for formal education venues include everything from existing elementary and middle schools to universities.

TEAM MEMBERS

Katie Gerratt
Sara Shirk
Rhett Taylor



SYSTEMS - FOOD

A Catalyst for Community



FOOD LEADS TO IDENTITY

People are happy when they're eating. Food physically nourishes, but also enriches the soul. Travel is often remembered through food experiences.

Whether it be wood-fired pizza in Italy, irresistible French pastries, traditional Texas barbecue, or a succulent, summer salad made from the freshest of farm ingredients, food connects us to a place and creates memories.

FOOD + EXPERIENCE + PLACE
= IMPACTFUL BRAND



OGDEN VALLEY AND POWDER MOUNTAIN

Ogden Valley and Powder Mountain can become the stimulus for new culinary memories – through innovative restaurants that incorporate local customs and introduce new traditions. The farmers market can provide niche growers a venue to market unique, local products, and create an opportunity for enriching socialization.



Liberty barn mural on the road near Huntsville, Utah



USU class eating lunch at the Summit Institute building at Powder Mountain

SYSTEMS - FOOD

A Catalyst for Community



CHALLENGES

There are significant challenges facing the valley and Powder Mountain due to the pressures of development. Urban growth usually increases the loss of agricultural lands, a frequent problem along the rest of the Wasatch Front.

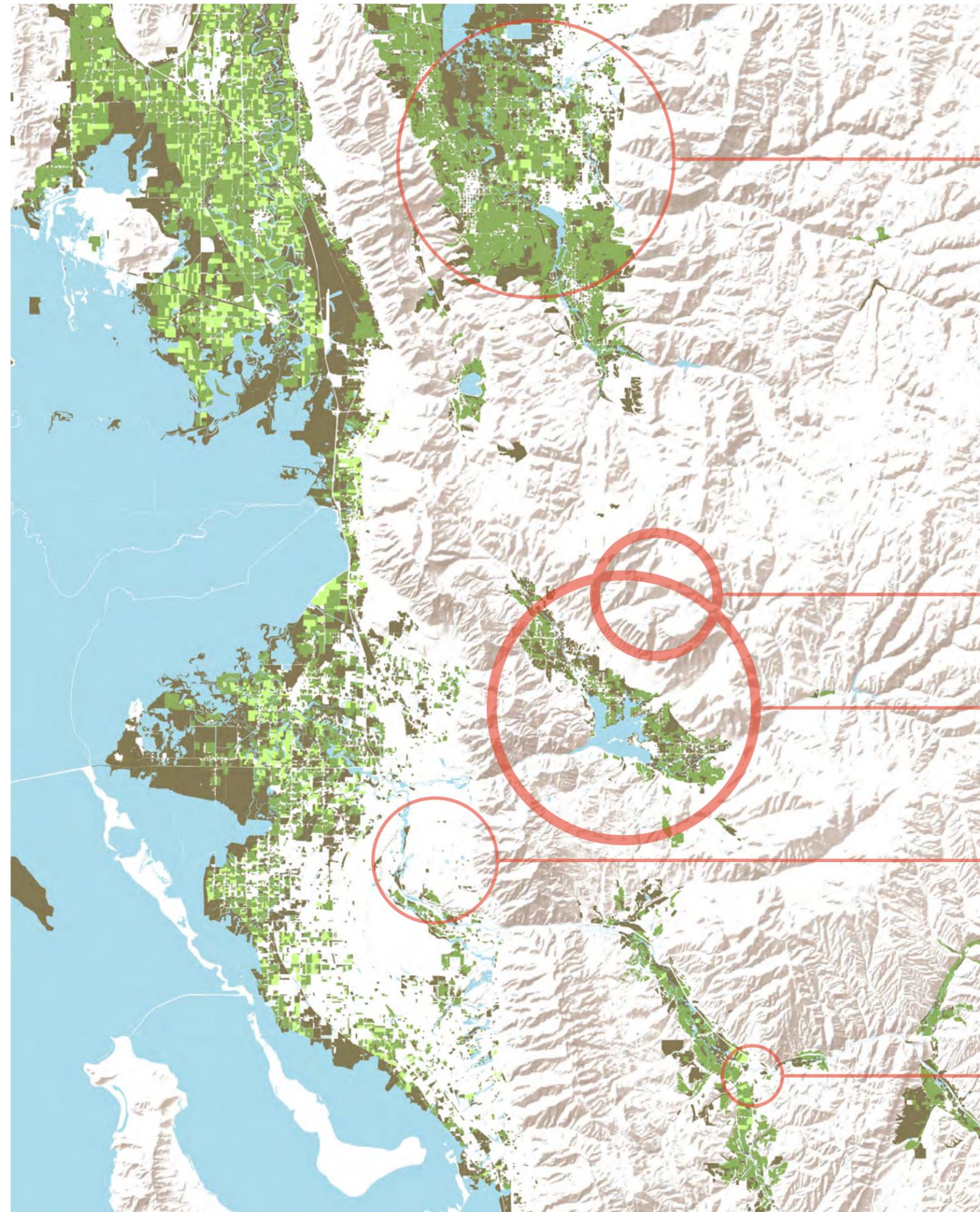
The most obvious challenge is the fact that the **climate** of the valley (and especially the mountain) is not ideal for typical food production.

Ogden Valley has a number of constraints that reduce its ability to grow food. First, **changing farmland to food production** from a previous stock feed or pasture requires a change of skill level and management. Second, the **growing population** puts pressures on farmers' lands, and threatens the values of open space critical to the area. The third challenge addressed by this chapter is the need for educational opportunities describing the process of **farm to table**.

Food Production 
Irrigated Agriculture 
Pasture Land 



0 10 Miles



CACHE VALLEY

POWDER MOUNTAIN

OGDEN VALLEY

OGDEN CITY

MORGAN

SOLUTIONS

RELATIONSHIPS & CONNECTIONS

It is the connections between farmers, chefs, consumers, and business owners that make the farm-to-table experience work. Some organizations in the state already work to foster those relationships, and these should be used to tap into the existing network of farmers and business owners.

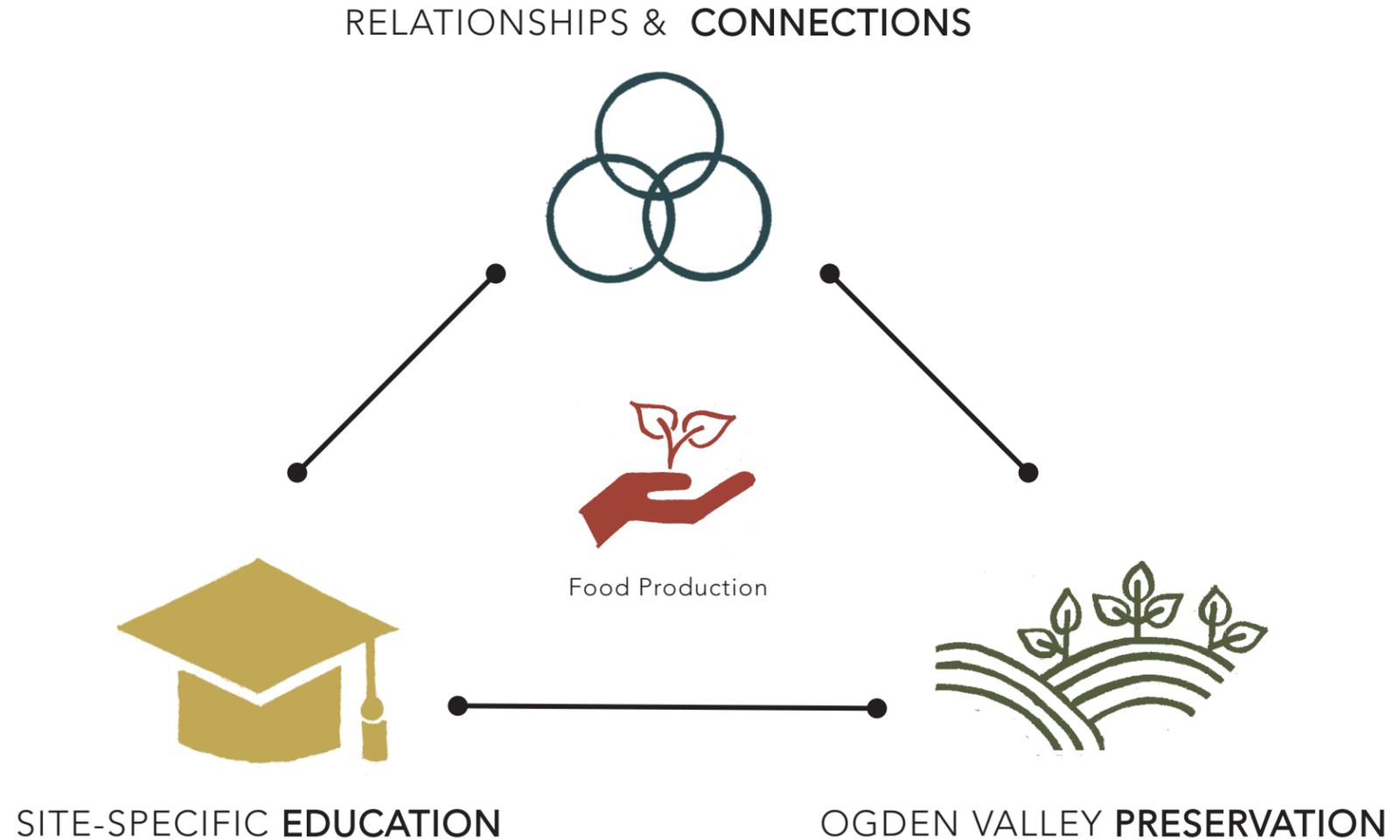
This network of support would help the challenge of changing farmland from pasture land into food production as needed.

AGRICULTURAL PRESERVATION

With a growing population, it is important to identify the most critical farmland. This process involves analyzing where urban growth is already taking place and where it can continue to grow intelligently, followed by efforts to preserve that which attracts people to the valley in the first place.

SITE-SPECIFIC EDUCATION

In order to educate people on the process of a local farm-to-table experience, key destinations need to be identified. These centers need to be able to draw people, whether through a dining experience or through another tourism opportunity.



THE ART OF CONNECTING

PRODUCTION PARTNERSHIPS

Some of the partnerships available for farmers and business owners to tap into include Utah's Own, the Utah State University Extension Program, and the Summit Group. Each of these entities provide a different type of service depending on the need of the individual.



SUMMIT GROUP

The Summit Group was established to bring a full spectrum of creative thinkers and doers to address the world's most challenging problems. They are equipped with the resources to think big and produce positive change.

One opportunity of connecting local valley farmers to the Summit Group would be through the business opportunities created at events like the one shown to the right. At this event, a line of tables was placed back-to-back, providing a continuous dining experience 1 mile long. Somebody needs to provide the food, somebody needs to cook it, and somebody needs to manage that process.

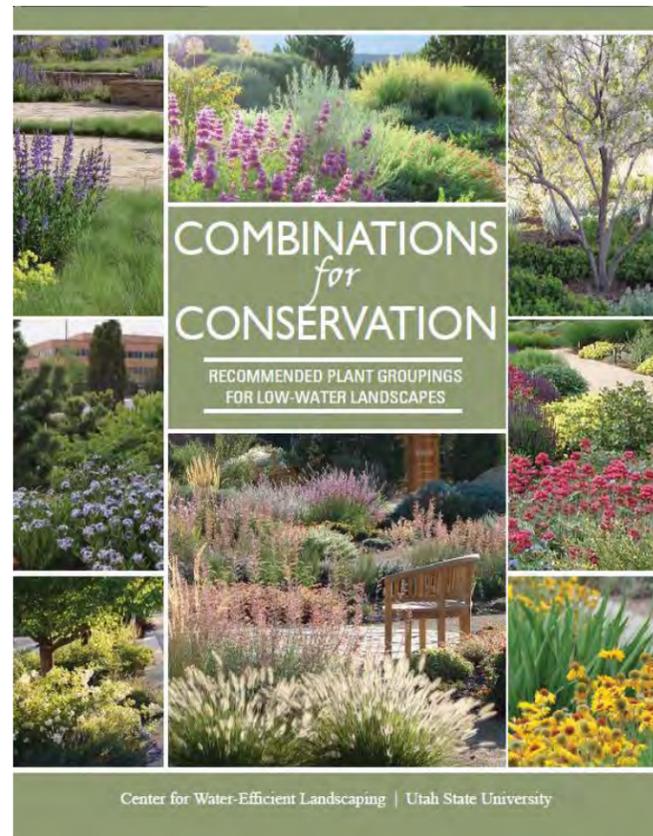


UNIVERSITY EXTENSION

Utah State University as a land-grant institution has continuously provided extension services to the state of Utah for many years. As the #1 Ag School in the nation, the College of Agriculture and Applied Sciences has a very positive **mission**. It is "...to enhance the lives of people through education, discovery and outreach, which collectively guide the ethical and sustainable use of land, food, water, and economic resources, thereby improving the health and well-being of humans, plants, animals and the environment."



USU Botanical Center



Examples of USU Extension resources and services



SYSTEMS - FOOD

A Catalyst for Community



REGIONAL PARTNERSHIP



Utah's Own is a network of farms and food producers throughout Utah. Its mission is to "help educate food lovers about the economic impact of supporting local small food-producers and showcase the incredibly large and diverse local product offering our great state has! Whether it's honey, cheese, farm grown produce or grass-fed beef—Utah has home fresh quality products that can become a staple at your dinner table."

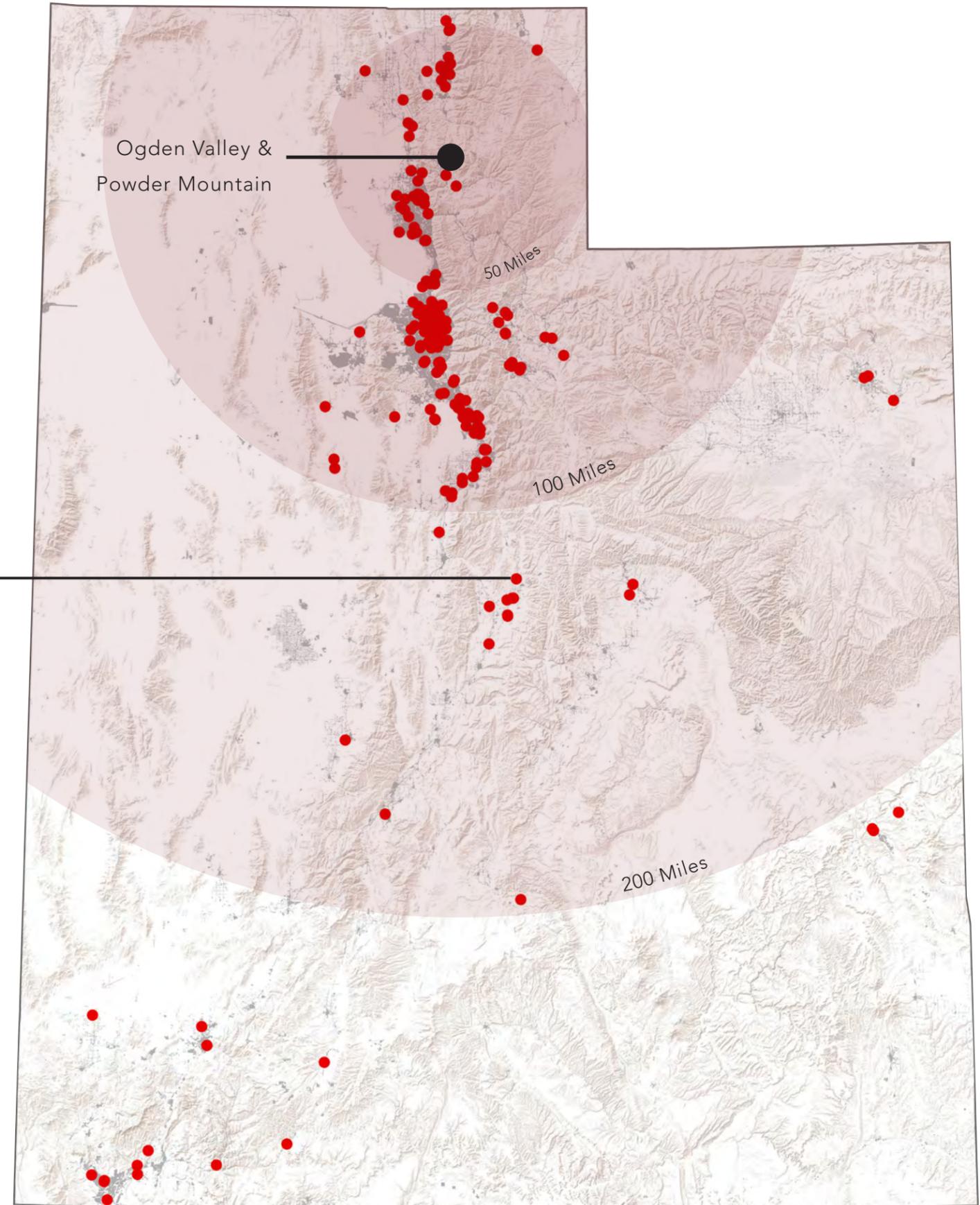
SPENDING



Source: utahsown.org

BUY LOCAL

"A recent study showed that if Utahns spent just 10% more on local businesses, it could keep up to \$1.3 billion in our state's economy every year. Supporting our local food producers creates more jobs for residents, provides extra tax revenues for local governments and provides you with products that simply taste better!"



Red Dots are farms in the state of Utah that are members of Utah's Own



LOCAL BRAND

Mountain West Hard Cider in Salt Lake City, Utah, is a proud member of Utah's Own. "With an experienced cider master and a passion for locally-produced products, Mountain West Hard Cider crafts year-round, seasonal, and artisan hard ciders. Mountain West Hard Cider Company sources only the finest local ingredients from the Mountain West region to craft everyday, seasonal, and artisan award-winning hard apple ciders."

Mountain West Hard Cider is a company that has branded itself with the identity of being local. In a similar way, Ogden Valley and Powder Mountain can be **branded** with the qualities that make these places unique. Imagine the Garden of Eden Salad, the Huntburger, the Powder Pie, or the 9,000 Foot Carrot Soup.



SYSTEMS - FOOD

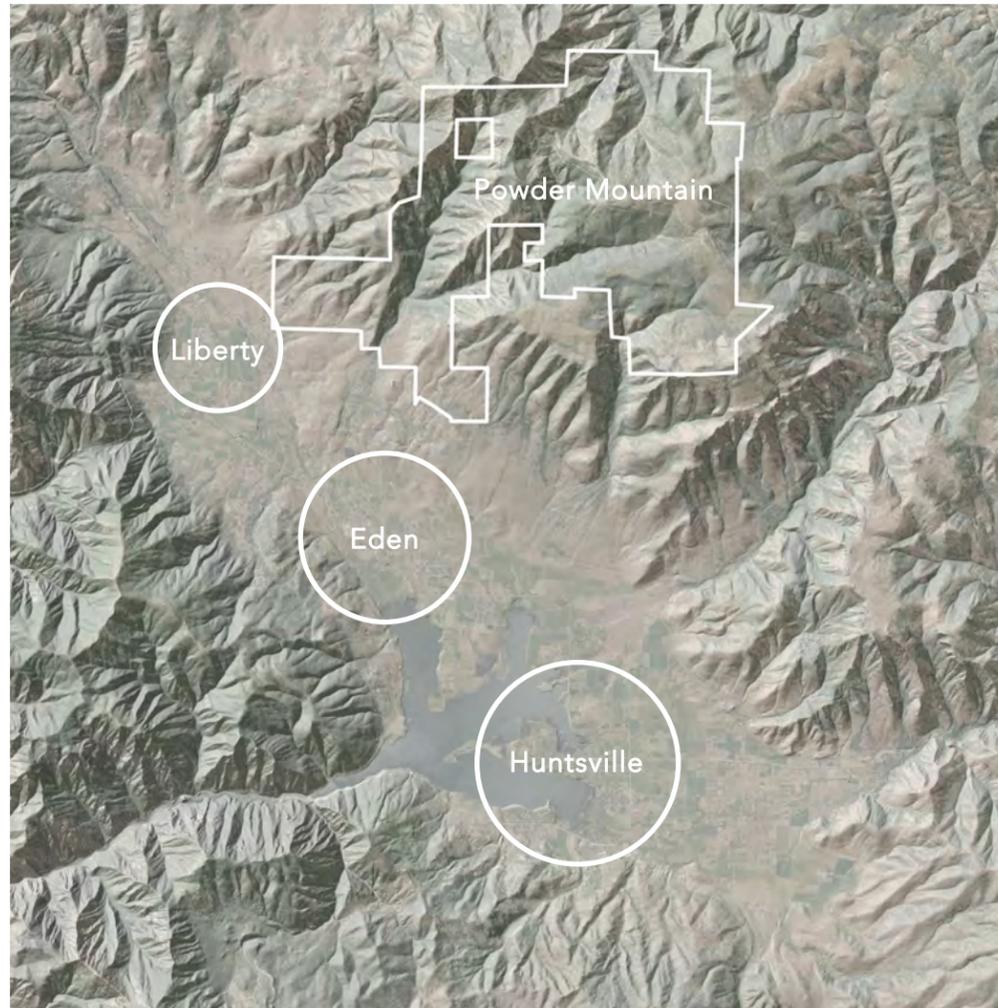
A Catalyst for Community



AGRICULTURAL PRESERVATION

In order to accommodate the needs of growth in the valley, development is inevitable. However, with careful planning, the characteristics that make the valley special can be maintained. Some of those characteristics include access to open space, an agricultural atmosphere, and spectacular views and vistas. To protect these characteristics, agricultural land must be preserved in a few key locations.

To determine those locations, many layers of data were compared to see which areas would have the greatest impact for the future. The data analyzed includes existing urban development, waterways and riparian zones with their associated buffers, soil types including primary and secondary soils, existing uses of agricultural land, the wildlife impact buffer from the Flora+Fauna team, and visually significant lands with parcels larger than 20 acres.

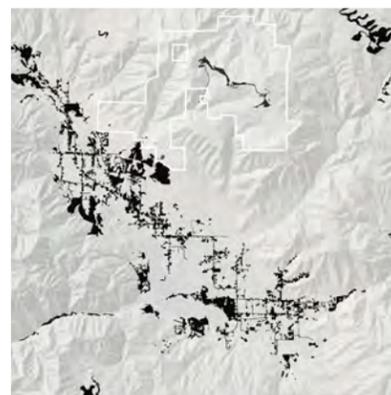


CONTEXT MAP

The extent of this analysis reached through the valley, as well as into the nearby mountains. This allowed a full understanding of how the valley interacts with the mountains nearby, and how the impacts of development influence both regions.

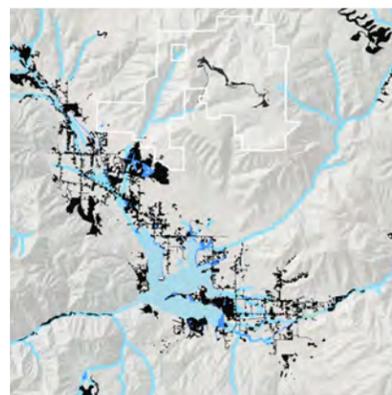
COMBINING & LAYERING DATA

-  Urban Development
-  Tributaries (300' Buffer)
-  Riparian Zones
-  Primary Soil
-  Secondary Soil
-  Pasture Land
-  Food Production
-  Irrigated Agriculture
-  Flora+Fauna Impact Buffer



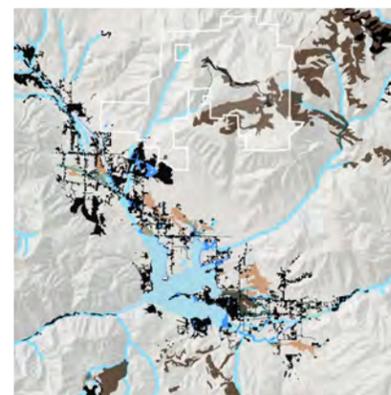
Urban areas

+



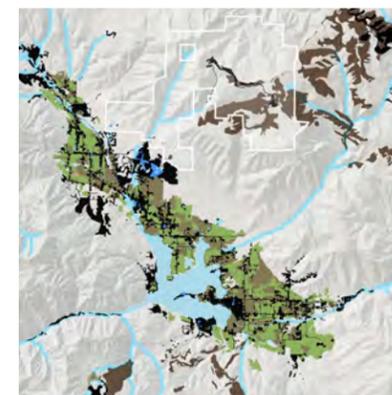
Water and riparian zones

+



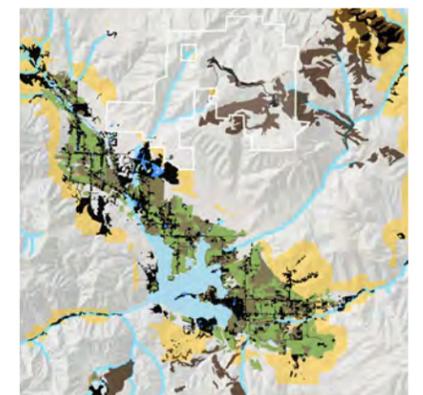
Soil types

+



Agriculture Land Types

+

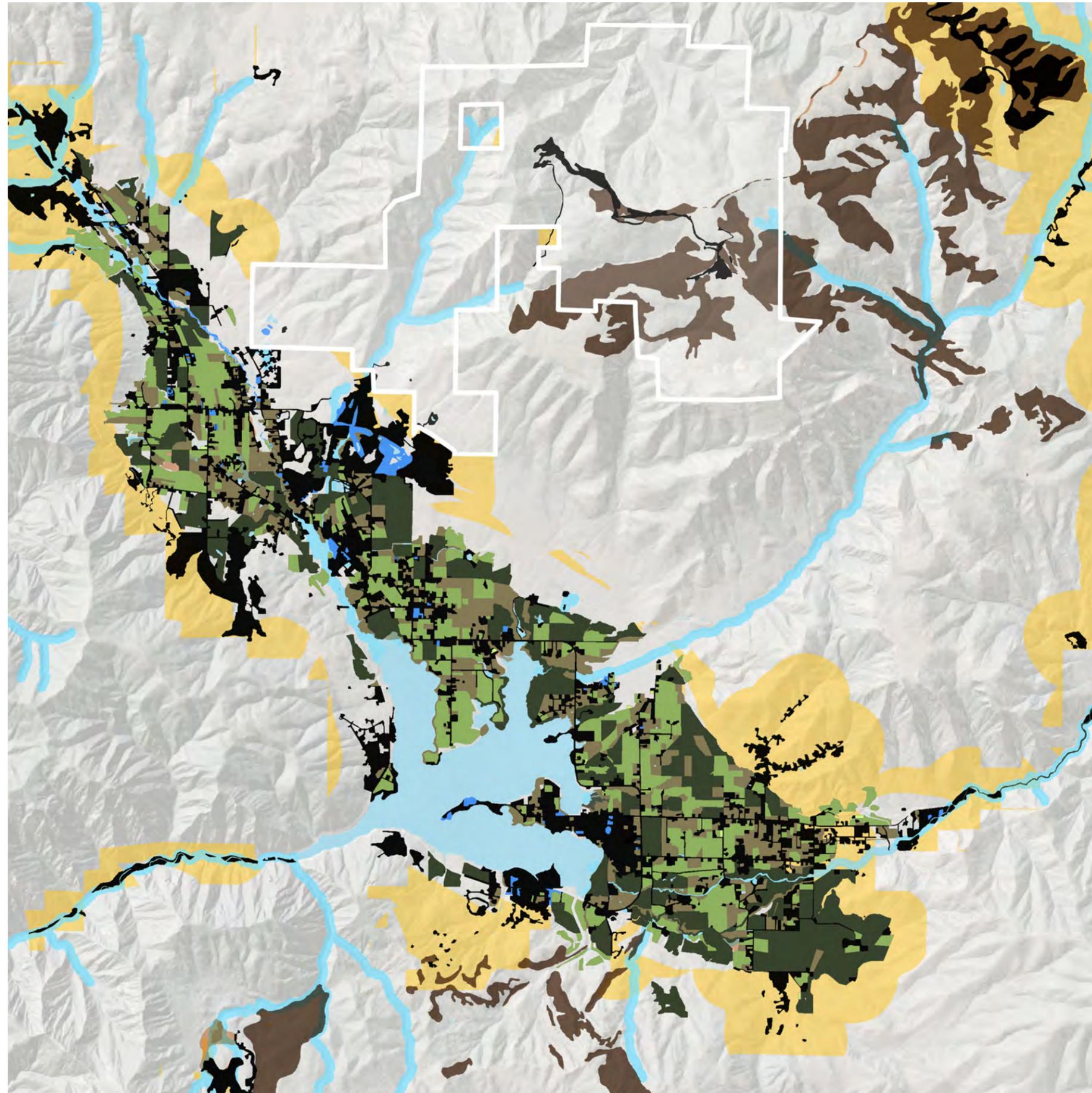


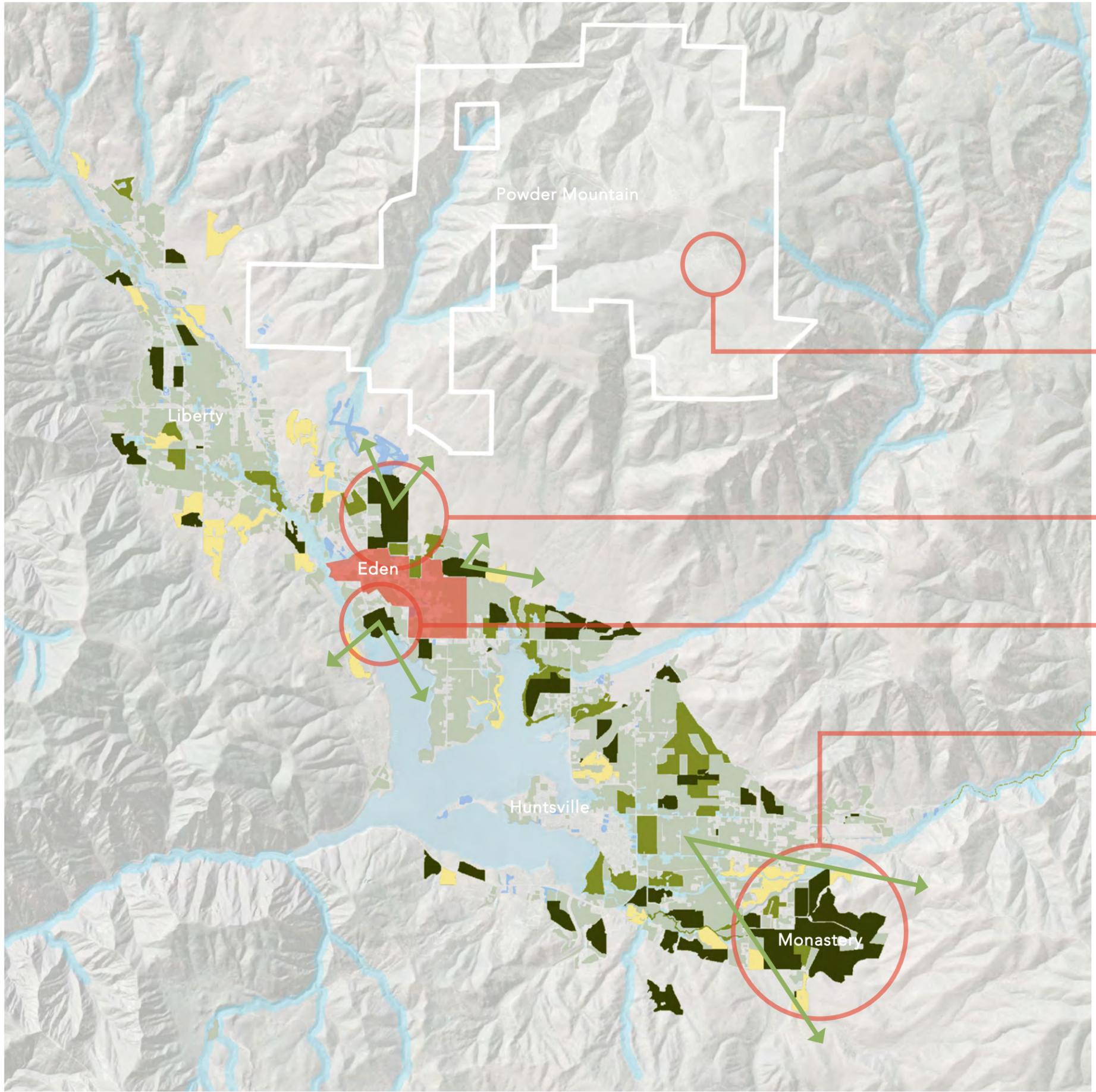
Wildlife Impact Buffer

KEY AG LAND PRESERVATION

This synthesis map looks at agricultural lands in the Ogden Valley, with the goal to see which ones are worth preserving. The layers below are different criteria for which the various lands were given value. The final layer in this map shows fields larger than 20 acres, and their proximity to other development.

- Urban Development
- Tributaries (300' Buffer)
- Riparian Zones
- Primary Soil
- Secondary Soil
- Pasture Land
- Food Production
- Irrigated Agriculture
- Flora+Fauna Impact Buffer
- Visually Significant Fields (over 20 acres)





AREAS OF OPPORTUNITY

In order to preserve critical lands, a few different approaches can be used. These include Land Trusts, Transfer of Development Rights (TDRs), and the general clustering of development.

The places below are called out for their significance in the valley, as well as the opportunity to create educational facilities.

Powder Mountain Interpretive Center

An Interpretive Center on the mountain is positioned to overlook prime meadow, sited to optimize solar exposure, providing an opportunity for educational greenhouses.

Eden Common

This is adjacent to proposed residential development allowing for public open space. Views, agricultural land, and habitat can all be incorporated into this area.

Valley Interpretive Center

An Interpretive Center in the valley combines education/interpretation opportunities with views, recreating, and wildlife habitat.

Monastery

This is the single largest parcel of land with one owner, contains a precious source of water, and is located deep within the Flora+Fauna Impact Buffer.

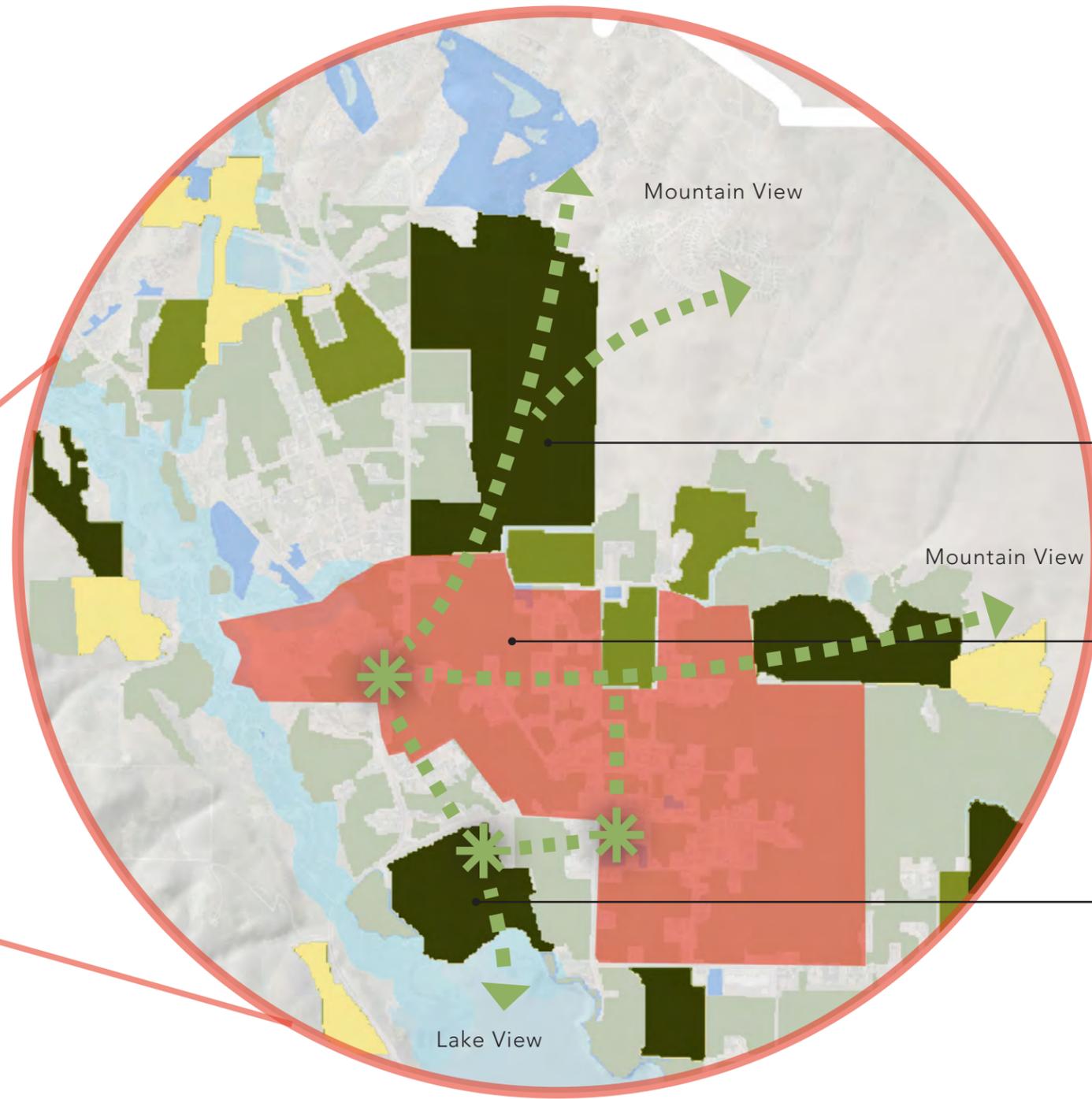
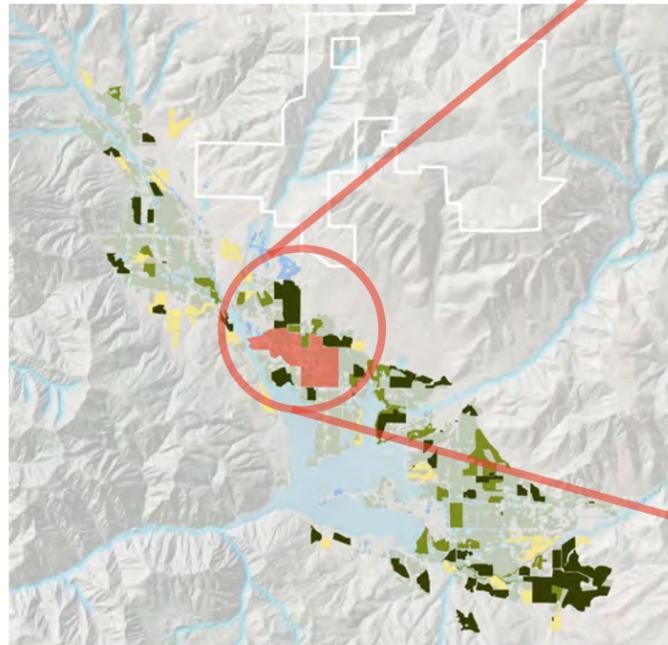
- Critical
- Crucial
- Important
- Development Extents
- Significant Views



0' 8,000'

DEVELOPMENT IN EDEN

Development in the Ogden Valley will be an important issue with agricultural land preservation. The orange shape shows the proposed size of Eden's full build-out, while the darkest green shapes indicate the highest priority of agricultural preservation. These lands provide the critical physical and visual links between development and wilderness.



Eden Common
Preserved Ag Land

Proposed Development

Valley Interpretive Center
Preserved Ag Land and Wetland

- Critical land
- Crucial land
- Important land
- Development Extents

- Physical and Visual Links
- ✱ Open Space Destinations



SITE-SPECIFIC EDUCATION

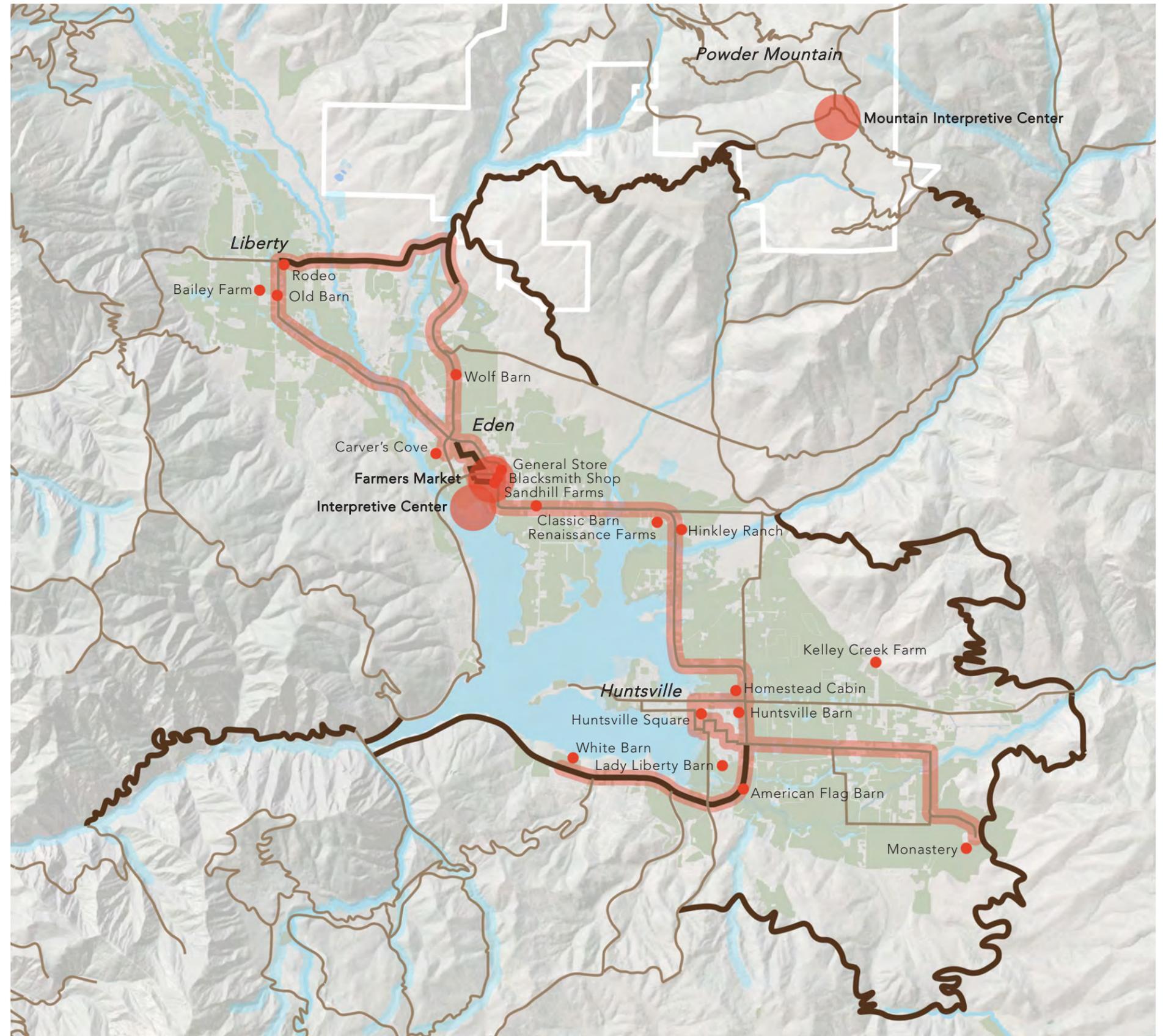
FOOD AND AGRITOURISM

There are opportunities to educate people on the values of Ogden Valley. These opportunities can take place at iconic structures and places throughout the valley, linked by the theme of agritourism. Places like Huntsville Barn, Old Town Eden, and the old monastery, can act as agritourism destinations.

Three centers of activity can be developed within the scope of this Ogden Valley + Powder Mountain project. These are Interpretive Centers both on the mountain and in the valley as well as a farmers market in Old Town Eden.

LEGEND

-  Existing Trails
-  Proposed Trails
-  Agritourism Routes
-  Agritourism Destinations
-  Proposed Educational Centers
-  Waterways
-  Ag Lands & Open Space



OGDEN VALLEY ICONS - AGRITOURISM DESTINATIONS



Eden General Store



Huntsville Barn



Carver's Cove Petting Zoo



Sandhill Farms



Shooting Star Saloon



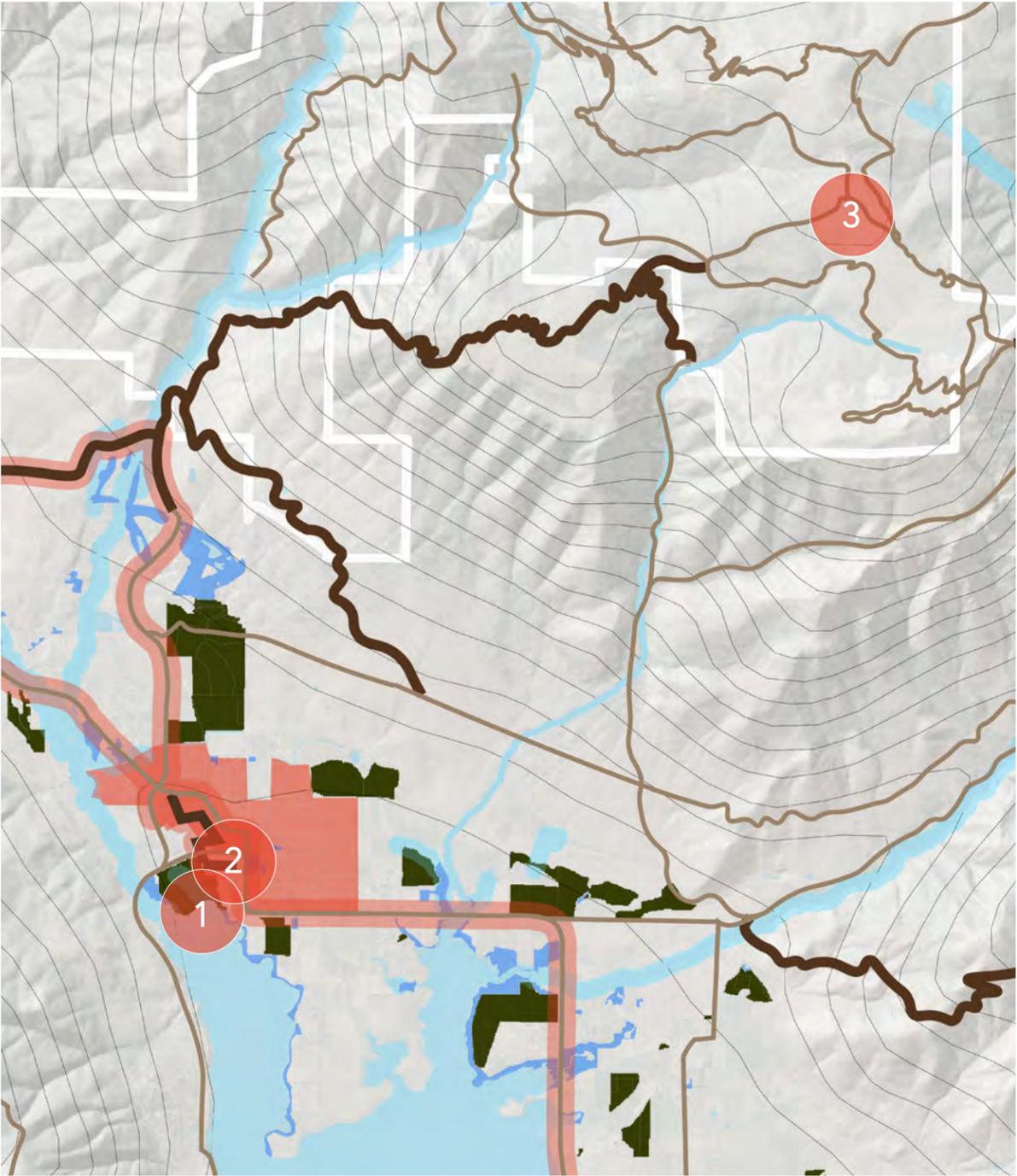
American Flag Barn

SYSTEMS - FOOD

A Catalyst for Community



FOOD DESTINATIONS



- Existing Trails
- Proposed Trails
- Agritourism Routes
- Proposed Food Destinations
- Waterways
- Critical Ag Lands

1. VALLEY INTERPRETIVE CENTER

Community Gathering from around the Valley could occur on the shores of Pineview Reservoir and within walking distance of Old and New Eden town-site. The Valley Interpretive Center affords the opportunity to tell the story of the valley from the bottom and with a 360 degree mural of this place to view. All this anchored by information about valley place for people to gather, for children to play...a place from which to understand, to share ideas and to break bread.



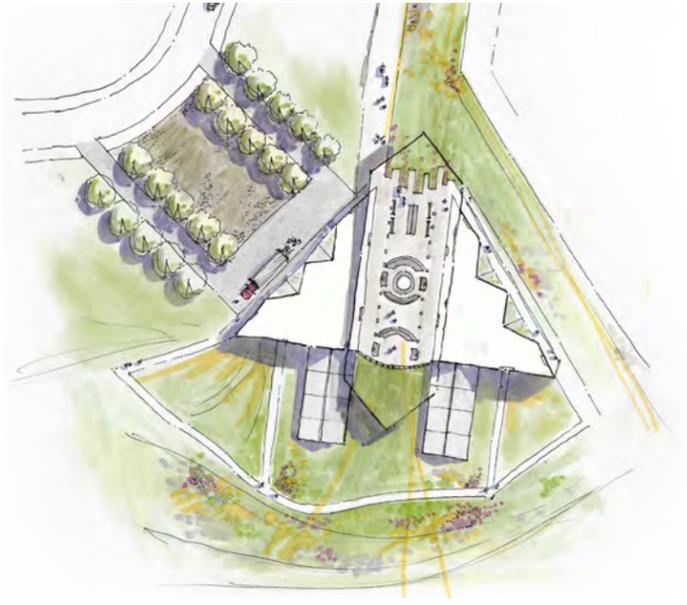
2. OGDEN VALLEY FARMERS MARKET

What better place for a farmer's market than squeezing it "between the blacksmith and the lettuce farm". The site adjoining Eden Park is perfect for its proximity to the town center, adjacency to the central park of town and its potential connectivity to new town Eden. Striving to find the best place is the first step and then building the pattern of use for this market into a year around affair becomes a community challenge. The ultimate form of the site and building should be planned to grow in response to growth and the success of the endeavor.



3. MOUNTAIN INTERPRETIVE CENTER

With an interpretive story that is told in similar fashion at all three destinations the unique experience here is the view and just being at the 9,000 foot elevation. This interpretive/restaurant/greenhouse complex provides a valley-wide community center on top of the mountain, to be shared with all. 9,000 foot lettuce and carrots along with a commanding interpretation of three valleys and being next to the granddaddy of all arid basins, the Great Salt Lake Basin.



CONCLUSIONS

This team has provided background work on the concept of bringing heightened food and agriculture consciousness to the valley. Powder Mountain has made food and convening people central to their mission. With a need for establishing bonds and relationships in the valley, food could provide a universal topic/venues for achieving common ground. Advancing the vision and controls necessary for improving physical development outcomes in the face of growth is the mission of this "common ground agency". Three significant ideas have been advanced:

Brand the Valley/Food and Agriculture: what significant destination doesn't conjure up some association with food and all that it does for people? Utah is following national if not global trends to make food an important part of our lives. The legacy of the valley - from Shoshone/Bannock native peoples to the Pioneers to current day residents offer the opportunity to make food a means to gather and preserve.

Destination Food: In Eden, on the mountain and in the other jurisdictions of the valley, creating destinations that represent "food excellence" is an opportunity to attract people and to connect with a future that we can be proud of. The proposed "interpretive center" includes valley history, destination restaurant and greenhouse (9,000 foot carrots). Old Town Eden offers a farmer's market beginning with Utah's Own and local growers and eventually acting as a food hub/community center.

Save the Fields: realizing that all current agriculture land cannot be preserved we like to think that some priority agricultural landscapes could be saved as open space and or ongoing agriculture space. By prioritizing existing agricultural land that falls within scenic pathways and connected with growth centers allows greater synergistic benefit for these actions.



INTRODUCTION

Having established that the natural assets of the valley should remain visually and functionally intact, and that food could be a catalyst for community we looked to the existing villages for solutions to added growth. In order to preserve the natural beauty and the environmental integrity of the valley, growth must be concentrated. A range of housing types are required to meet future demand - from affordable workforce housing to second home detached housing, including both rental and for-sale products. Commercial and retail services, parks, schools and public spaces are also required. The village form is well suited to this demand making Eden, Liberty and Huntsville logical candidates to take on this responsibility. The following goals were established to achieve "Innovation - Ogden Valley."

Strengthen Valley Identity: The pillars of Ogden Valley identity are its natural beauty, its history and its current attraction as an all-season recreation destination. These recreation assets include three ski resorts, hiking and biking trails and 3,000 surface acres of Pineview Reservoir. All of these natural and human made assets are within 100 miles of nearly 2 million people. This opportunity represents the threat; that development could either positively or negatively impact this precious identity.

Connecting Locally and Regionally: All forms of transportation need consideration regarding the future of the valley. With limited access capacity into the valley, the additional growth projections of triple the residents and triple the visitors will severely impact the valley and its residents. Think about automated cars, global connections to world-class skiing and the need for inter-village travel for workers and visitors in this valley. Think about

trail systems in Ogden Valley connecting to trails in Cache Valley and to the Bonneville Shoreline Trail, this is a world class idea! Connectivity, achieved with convenience and style, will hold the keys to valley-wide innovation.

Preserve Open Space: The Flora and Fauna Team established the foundation of valley wide sensibility "that natural systems and open space hold the key to the health of all living organisms - human and nonhuman." The identity of this valley might support the scenic objective of "villages in the valley."

Diversity/Wealth of Choice: At least two things conspire to accelerate land value in the valley. First the regional/national/global attention to the assets and convenience of this beautiful place. Second, the Utah economy is likely to continue its boom. Wasatch Front growth is projected to nearly double in 30 years making the cost of housing for workers in the valley prohibitive. The need for diversified housing and a good share of higher density housing stems from the need to provide a spectrum of affordability and creating a less monolithic community. All resort and recreation communities struggle with this phenomenon. We can get a handle on it for Ogden Valley if we act now.

Meeting Basic Needs and Beyond: With advanced planning and by defining a responsible role for existing villages, Ogden Valley can become a model for other contemporary communities where the scenic and recreation assets are so rich. By identifying common values around scenic assets and agreeing to affordable housing and transit initiatives, the County and the citizens of the valley will be more in control of their future.

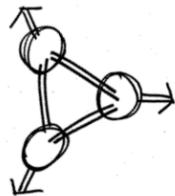
TEAM MEMBERS

- Skyler Smith Trevor Kennedy
- Brooke Olson Emmalee Mangum
- Cameron Brown

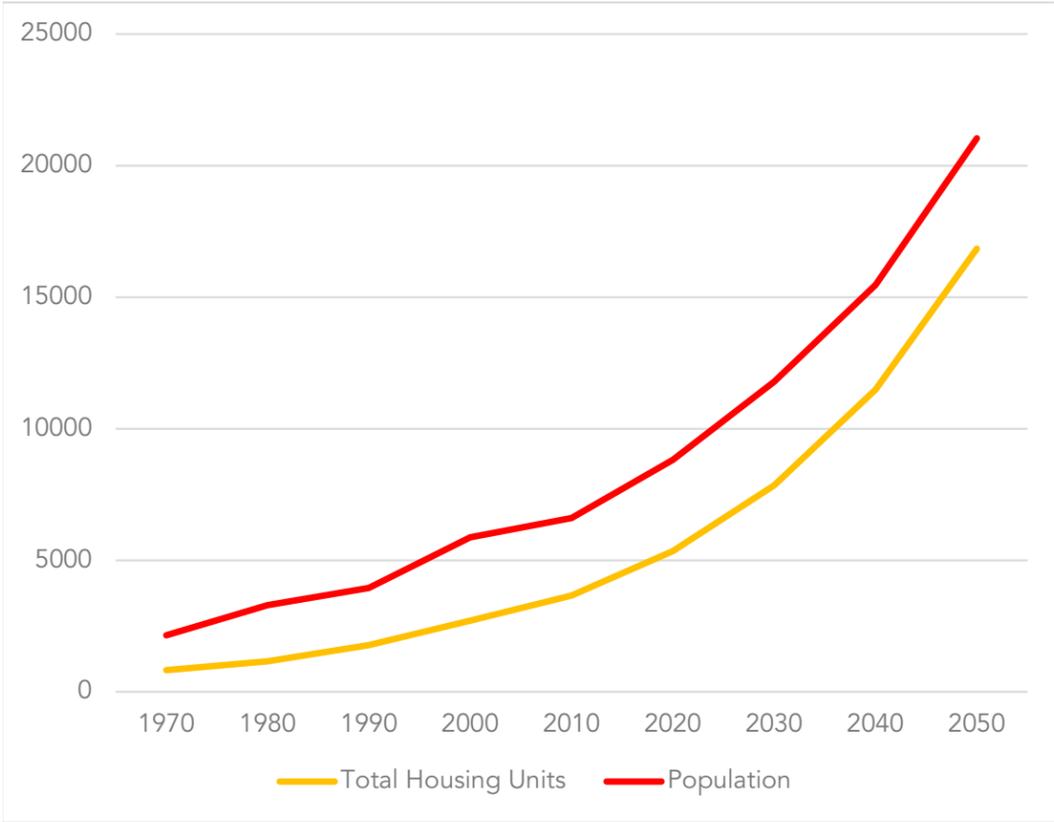


INNOVATION - OGDEN VALLEY

Innovative Response to Growth



20,000 PEOPLE

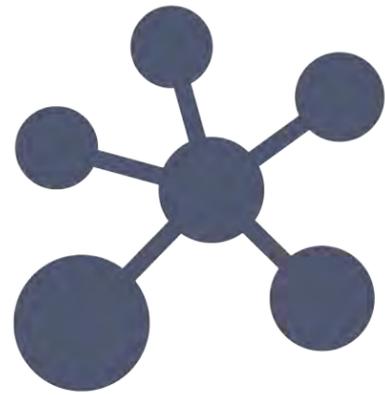


Predicted growth estimates that the population of the valley will exceed 20,000 people by 2050. Under current zoning, this growth would compromise most of the undeveloped agricultural land in the valley. Current growth and development is typically non-contextual with large setbacks from the road, favoring vehicular traffic over pedestrian. Major roads lack sidewalks making walking dangerous. More dense development that features pedestrian friendly and walkable design can help prevent sprawl.



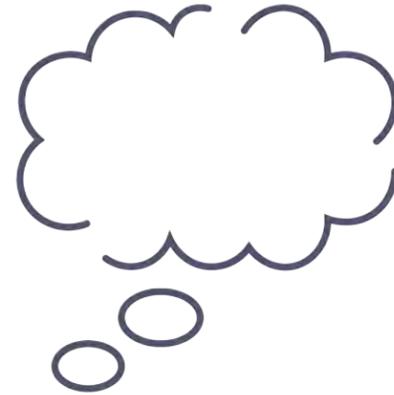
Aerial View of the current 4-way stop in Eden, Utah. This level of development is typical in the valley.

GROWTH CAN BE GOOD



CLUSTERED GROWTH

In order to preserve the open space and ensure ecological health, human development should be contained to strict boundaries. Otherwise the sense of place and environmental health could be compromised.



FORWARD THINKING

Even though it may be unwanted, growth should be planned for and anticipated. Without active planning and management mechanisms, growth can go unchecked, making everyone unhappy.



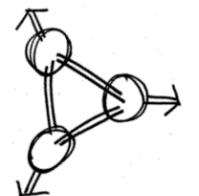
INNOVATION

Every community's needs are unique and challenging. It is important to apply innovative thought to communities individually. This can be done by gathering stakeholders and community members to brainstorm what types of innovation can be used in their community



CONTEXTUAL DESIGN

Good design is scalable - it fits within site specific, local, regional, and global demands. No matter how large or small, new developments should be designed with those issues in mind, whether it is climate change, trail connections, or surrounding architecture.



PLANNING FOR GROWTH

VILLAGE NODES

The Ogden Valley General Plan identifies several nodes for future development to be clustered around. Each has its own unique identity and needs. From the General Plan:

“The Ogden Valley community desires sustainable and thriving local businesses in Ogden Valley. Ogden Valley capitalizes on recreational tourism to support its economic base. New commercial development should be focused in and near existing commercial areas and resorts. New commercial development should be designed to be compatible with the rural character of Ogden Valley.”

Identified nodes are separated into recreational and commercial categories. Commercial nodes will take on most new growth for permanent residents while recreational nodes are focused on second home owners and tourism.

CHOOSING A FOCUS

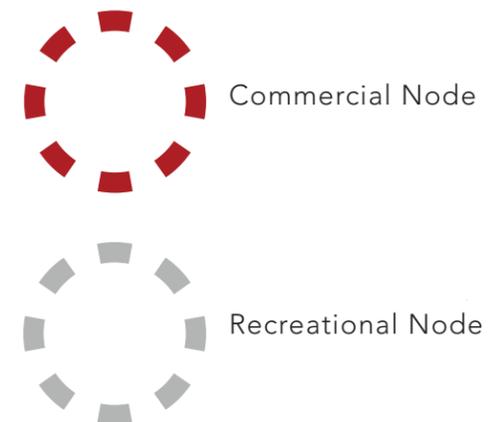
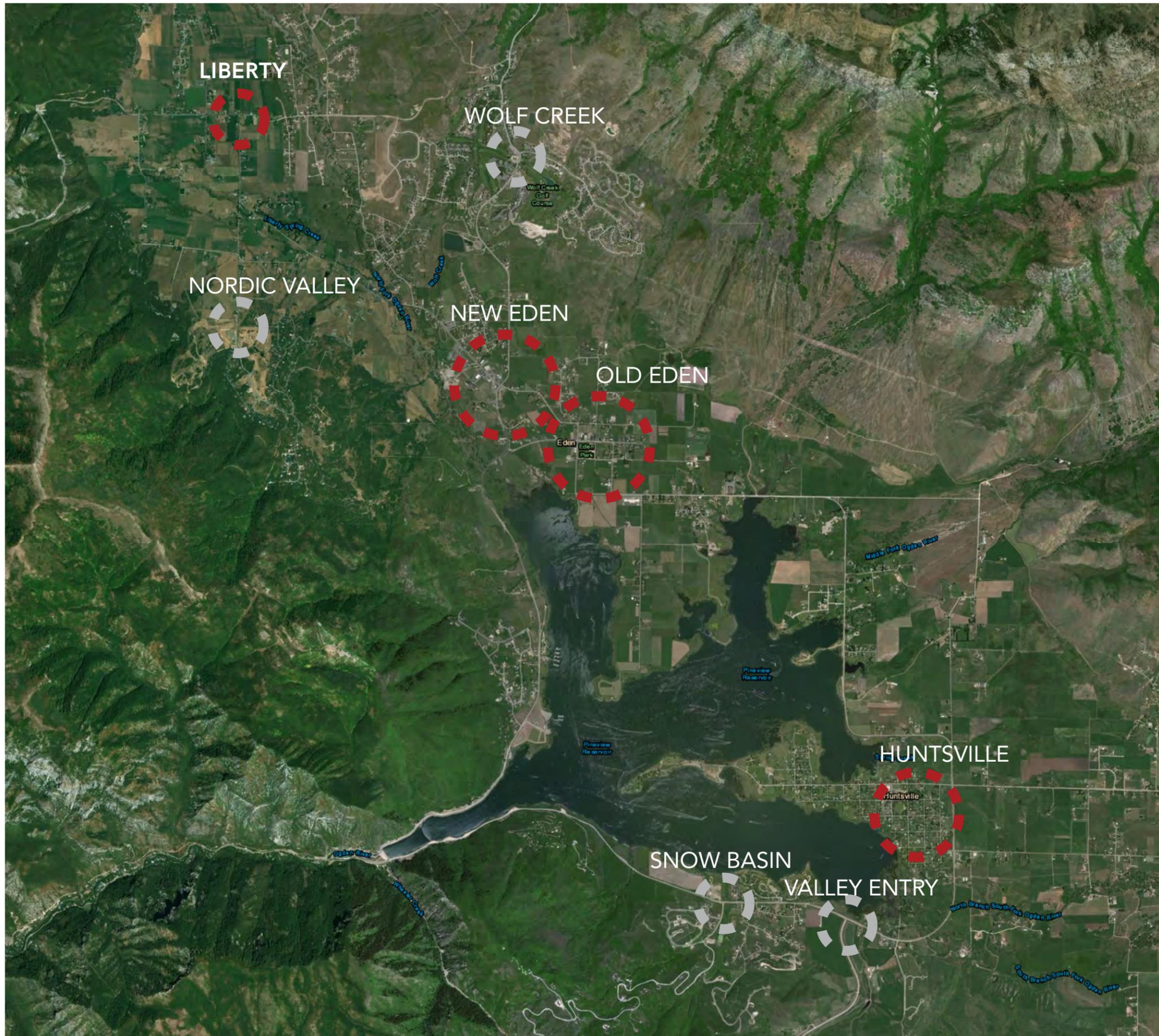
The General Plan identified three major commercial nodes - Huntsville, Liberty and Old/New Eden. Each of these areas has a unique identity and ability to contain future growth.

Huntsville: The only incorporated municipality in the valley has an established historical identity.

Liberty: Very little existing commercial development. Very spread out and lacks proximity to many amenities in the valley.

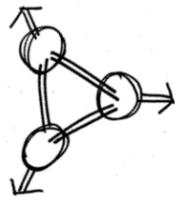
Eden: Located adjacent to the reservoir and along two of the main highways in the valley. It has existing development, identity, and energy.

We chose to focus our efforts on Eden due to its **proximity** to Powder Mountain and other regional amenities, its malleable **identity**, existing **energy** and **momentum** with current and recent developments.



INNOVATION - OGDEN VALLEY

Innovative Response to Growth



WHY EDEN?



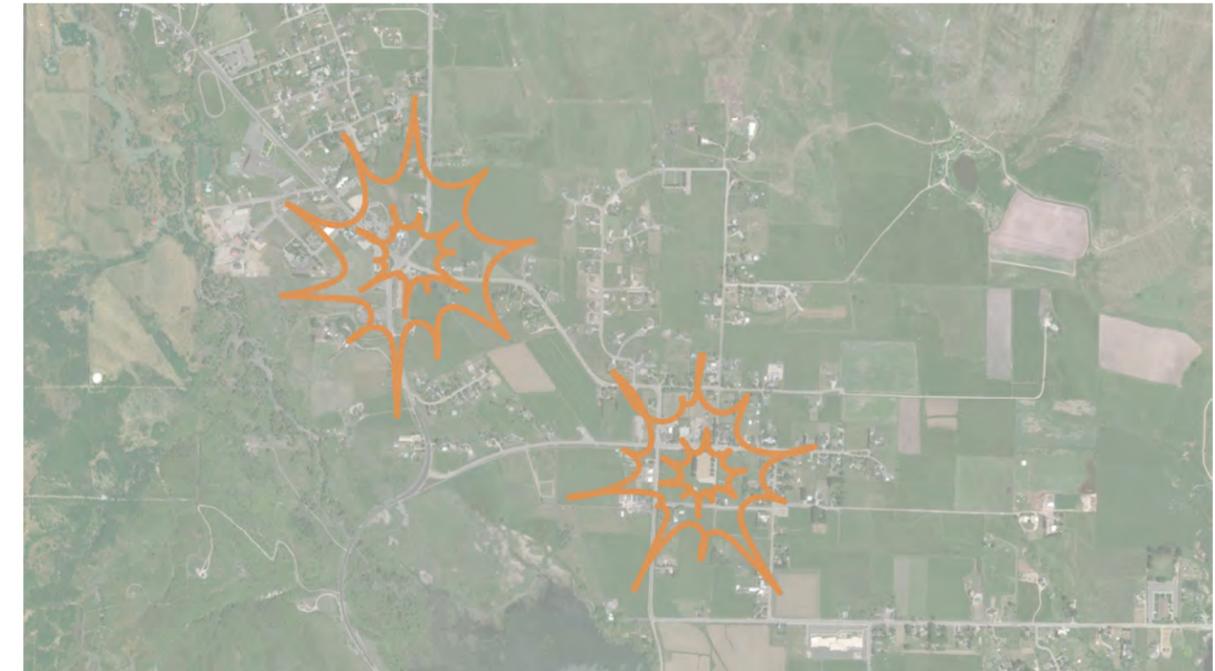
PROXIMITY

Eden is close to local amenities and acts as a connection between regional identities. The 4-way stop intersection is one of the largest in the valley.



MOMENTUM

The existing development in Eden has set the stage for similar commercial development. Blacksmith square is a good example of desirable development.



ENERGY

With two town cores, Old Town and New Town, Eden is well equipped to take growth. It also is bookended by two schools to the east and west.



IDENTITY

Old Town already has an established historical identity that can be expanded to act as a standard for future development while New Town lacks a viable identity. This is a great opportunity to preserve the history of Old Town while still having the freedom to create a fresh identity for New Town.

GOALS FOR GROWTH AND REDEVELOPMENT



STRENGTHEN VALLEY IDENTITY

Eden has a vibrant history from the influence of the Native Americans, pioneers, and early settlers within the valley. Much of the development in Old Town Eden also has historic value. The remaining evidence of these past influences needs to be protected, even expanded and improved upon where possible, to enrich the culture and identity of the area.



DIVERSITY/WEALTH OF CHOICE

The idea of multiplicity of choice should be scalable and applicable to all types of new development including housing, transportation, and recreation. By following this principle, a community can be a place for all types of people and visitors.



PRESERVE OPEN SPACE

Eden has acres of undeveloped land, but most of it is designated for agricultural use. There are very few parks and trails in Eden currently, so the recreational open space network not only needs to be maintained but greatly added upon as well. Also, the North Fork River and the Pineview Reservoir are vital pieces of animal habitat and need to be saved from urban development. A buffer zone needs to be established to protect these environmental areas.



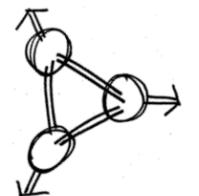
MEETING BASIC NEEDS AND BEYOND

Successful communities are built on the needs of its users. Eden has a myriad of visitors, residents, and those passing through. It is vital to meet existing and future needs without compromising the values of the community and valley.

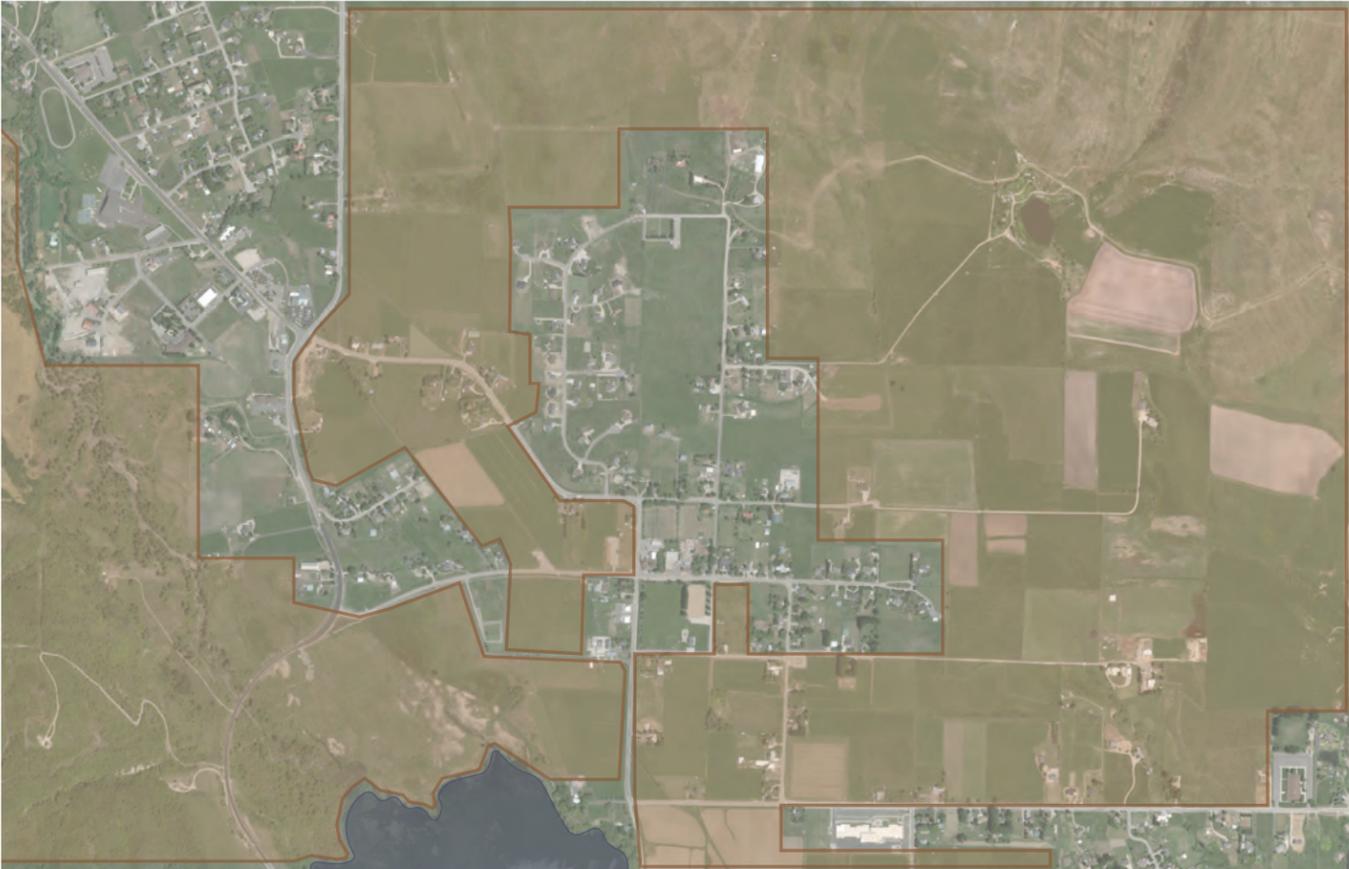


CONNECTING LOCALLY AND REGIONALLY

Not only is Eden itself disconnected in its open space and road networks, the town is also not well connected to other areas around the valley and surrounding cities. Connections through expanding the trails system and through providing additional transportation options will increase and strengthen connections throughout the valley, to the ski resorts, and to other areas in the region.



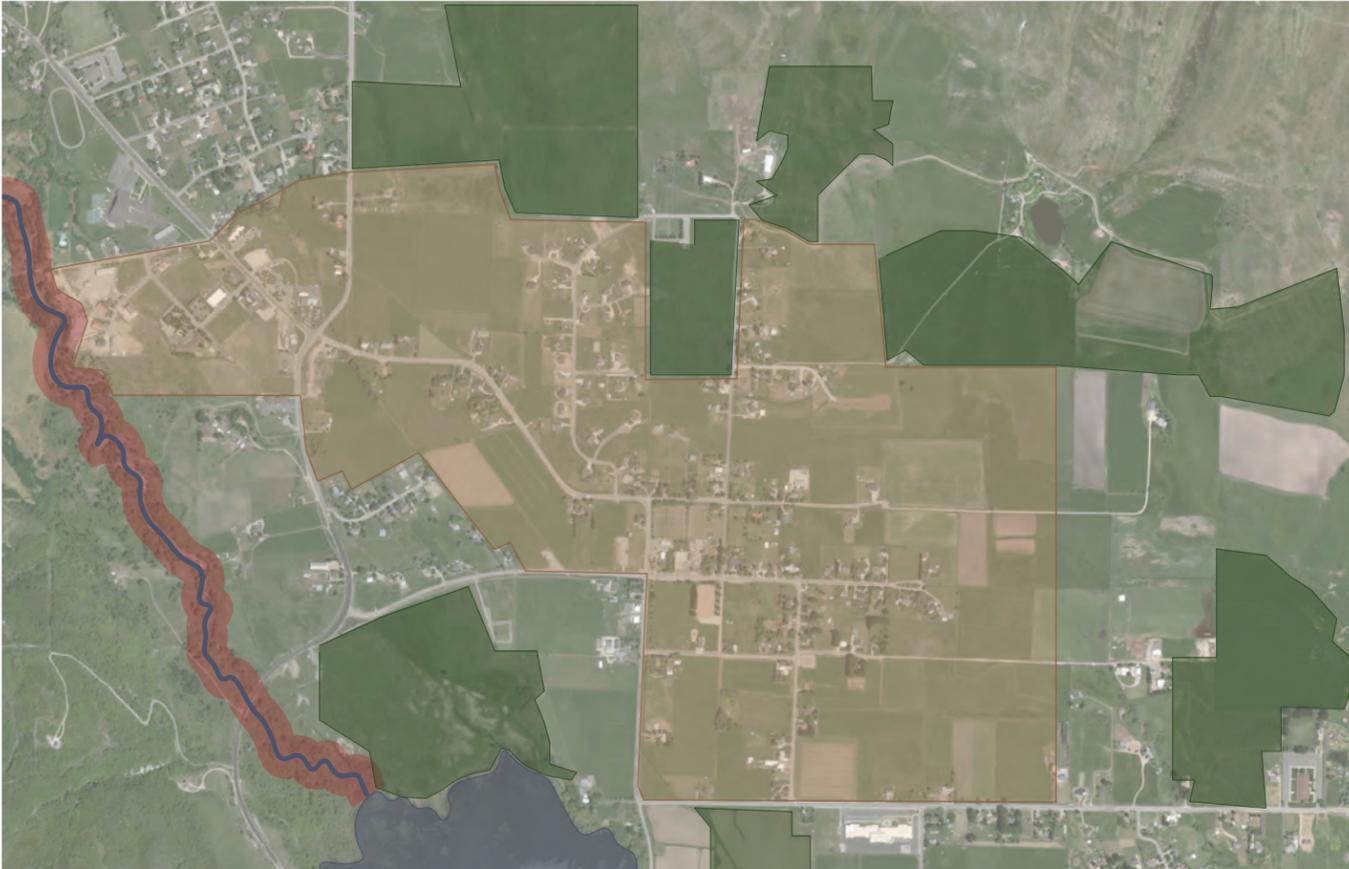
PLANNING FOR GROWTH



UNPLANNED GROWTH

If Eden continues to develop in its current pattern of random roads, unplanned development, and irregularity, the development will spread throughout the valley and fill all of the existing open space with development as shown above. This will destroy Ogden Valley's greatest asset - the views and landscape - and force wildlife to leave the area.

 Area under threat of growth

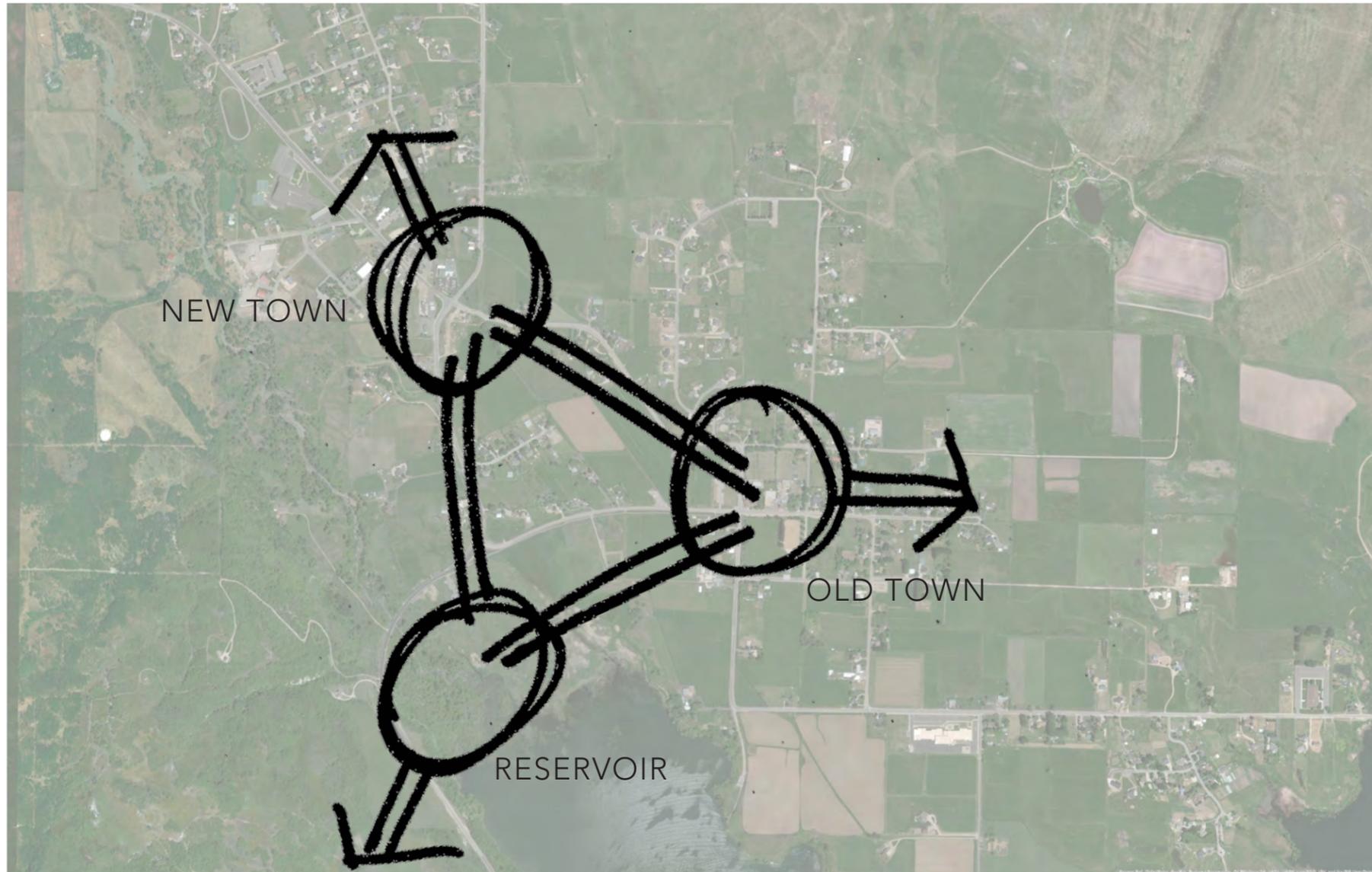


EDEN DEVELOPMENT CONSTRAINTS

To avoid the destruction of Ogden Valley's natural landscape, boundaries need to be set for urban development. Above is a map showing the established boundary for the proposed Eden Master Plan. The red shaded area is depicting the 300 foot buffer on either side of the North Fork River to protect that environment for the wildlife and their migration corridors. The dark green is valuable, historic, or important agricultural land that needs to remain untouched. The orange form is the proposed framework for all proposed development to be contained within to preserve as much natural beauty as possible within Eden.

 Vital Agricultural Lands
 Pineview Reservoir
 Suggested Growth Boundary
 North Fork River

BUILDING CONNECTIONS



Within the established boundary for Eden's future development and growth, there are three cores that the growth is already centered around.

NEW TOWN EDEN

This area is the budding commercial and retail hub, with contemporary design elements.

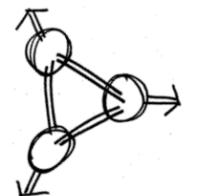
OLD TOWN EDEN

This core of Eden has historical architecture and sites that provide a style for additional development in the area.

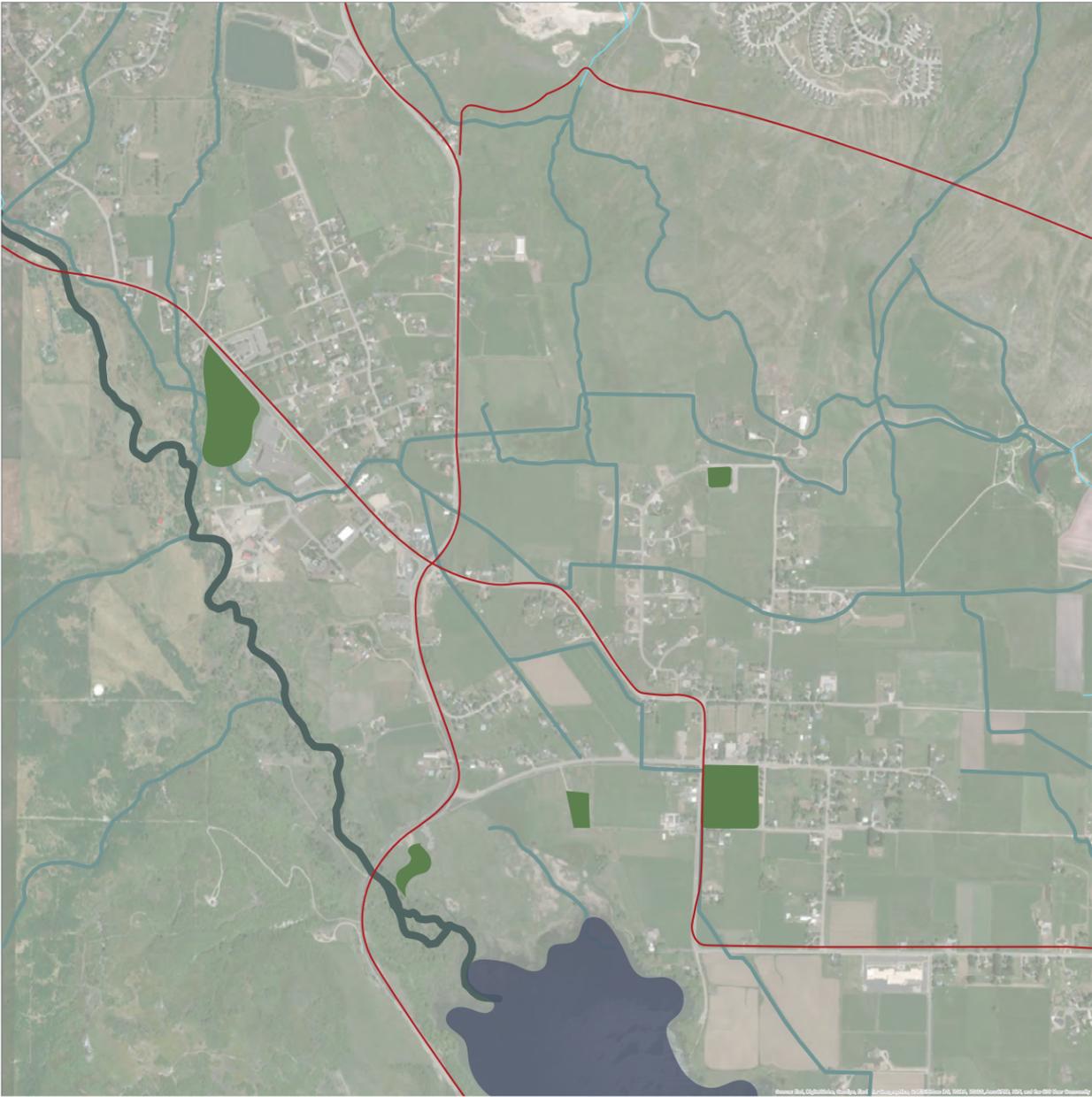
THE RESERVOIR

This core provides a strong connection for recreational open space through trail connections and nature interaction opportunities.

New development in Eden should not only build off of the existing culture and style of these cores, but it should also serve as a connector between the three cores. Rather than have three smaller independent developments, having one large and connected developed area provides a much stronger identity for the town and creates a unified community.



DEVELOPMENT FRAMEWORK - EXISTING



OPEN SPACE

In order to successfully redevelop a community, an understanding of existing conditions is important.

While Ogden Valley has plentiful undeveloped open space and agricultural land, the land dedicated to trails, parks, and other recreational open space developments is extremely limited. There is a series of canals that can provide a strong framework for new recreational open space.

-  Canals and streams
-  North Fork River
-  Trails
-  Pineview Reservoir
-  Parks/open space



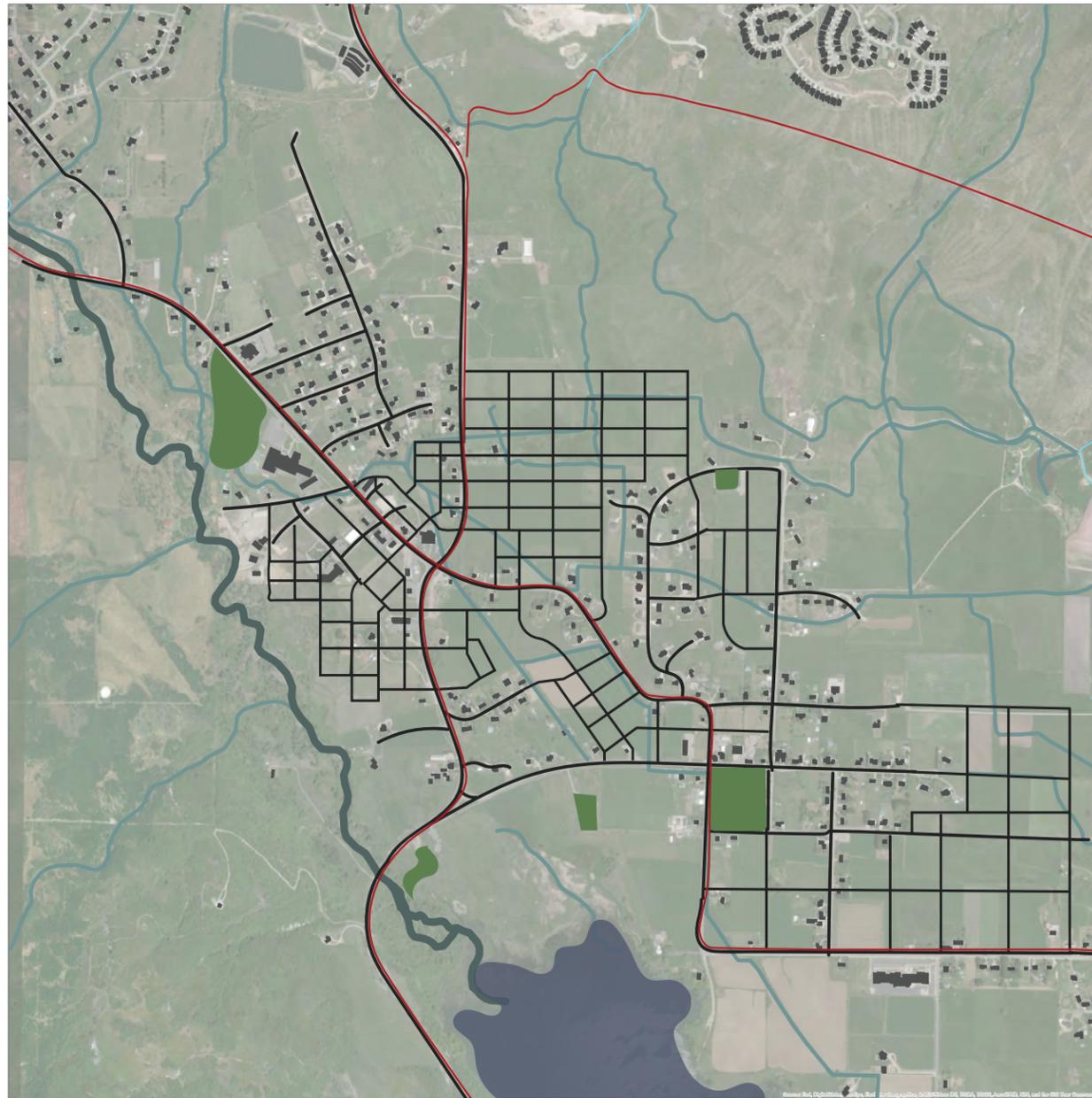
BUILT DEVELOPMENT

Looking at the existing road network, most roads end in a dead end or a cul-de-sac. In addition, there are no small blocks except for two within Old Town Eden, and the town as a whole is not walkable due to the lack of connections and smaller scale blocks.

Also, the buildings are set far back from the roads, with expansive parking along the street. There is no unifying building architectural style or guidelines in general to better direct the construction of new buildings.

-  Roads
-  Canals and streams
-  North Fork River
-  Trails
-  Buildings
-  Pineview Reservoir
-  Parks/open space

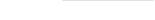
DEVELOPMENT FRAMEWORK - PROPOSED

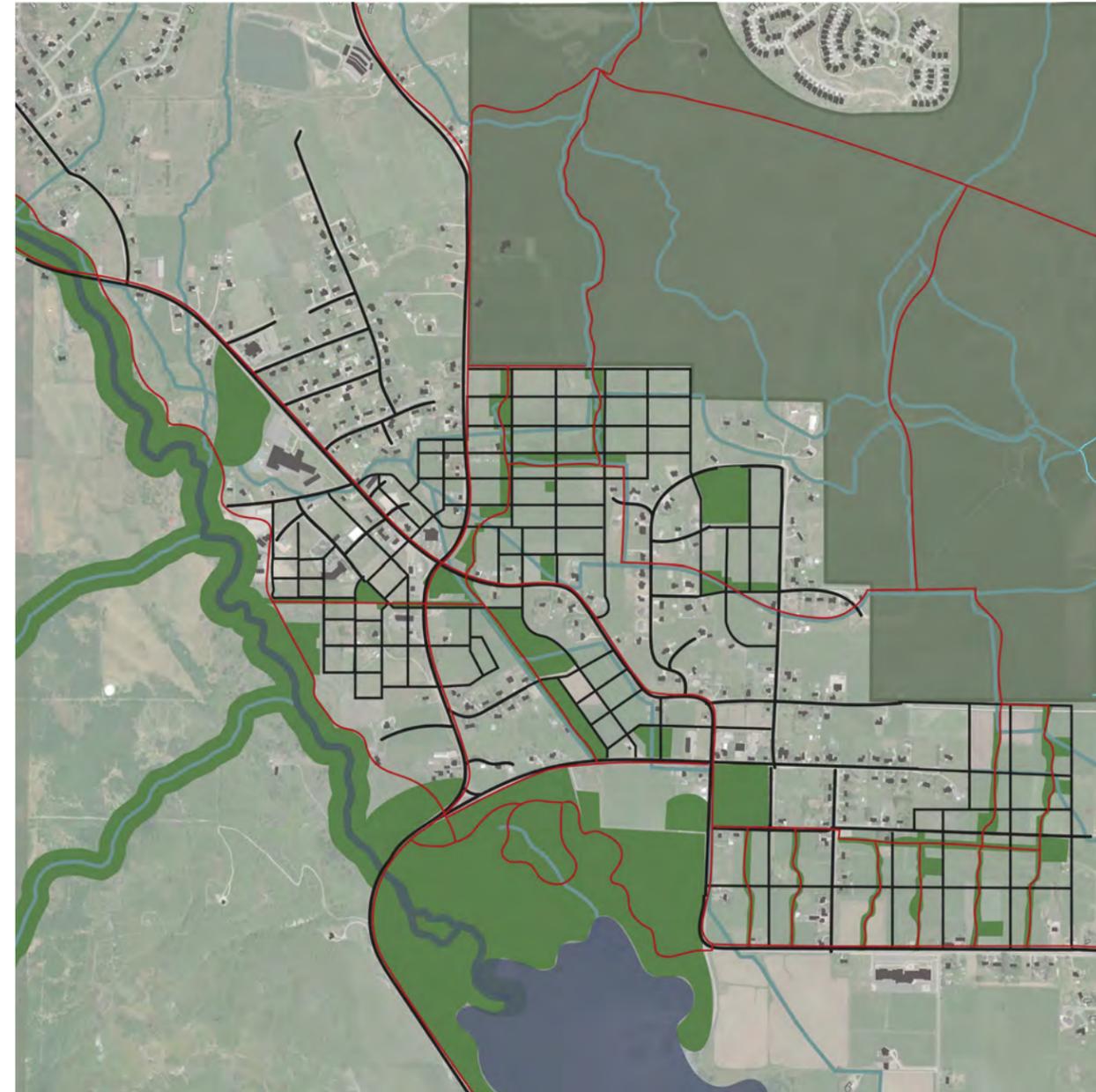


BUILT ENVIRONMENT

To make better use of land within existing development, blocks have been built within existing roads. Many smaller blocks have been created that make walking a desirable option and provide for new buildings and services to be integrated into Edén development near the cores.

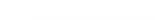
Very few existing homes would need to be demolished for the proposed road network.

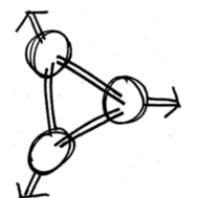
-  Roads
-  Canals and streams
-  North Fork River
-  Trails
-  Buildings
-  Pineview Reservoir
-  Parks/open space



OPEN SPACE

Using the roads and existing open space as a guide, additional open space has been added to Edén. This has been done by creating parks within new neighborhoods and around waterways, as well as the addition of new connecting trails. This not only creates a system of open space and trails within Edén but provides for connections to trails throughout the rest of the valley and the region.

-  Roads
-  Canals and streams
-  North Fork River
-  Trails
-  Buildings
-  Pineview Reservoir
-  Parks/open space
-  Preserved Ag Land



EDEN MASTER PLAN



EDEN MASTER PLAN - PROJECT AREAS

The proposed master plan for future development and expansion of Eden includes a few key areas and many uses and building typologies.

With an estimated 20,000 new residents moving to Ogden Valley by 2040, this plan contains enough units to support almost half of this population growth. There are 2,500 housing units included in this master plan, which provides housing for 9,000 new residents of Eden. The housing typologies include apartment complexes, town-homes, and single family homes, all with varying square footages and open space systems. These different housing typologies and space allocations allow for everyone to find a housing type suitable to their wants and needs within Eden.

Through the development of 11 projects, this master plan provides space for residential, commercial, retail, office, and open space development throughout Eden.



NEW TOWN

- 1 - 4-Way Intersection
- 2 - Transit Center
- 3 - New Town Park and Plaza
- 4 - North Pine Neighborhood
- 5 - Horseshoe Springs Neighborhood
- 6 - Canal Park and Trail
- 7 - Canal Neighborhood



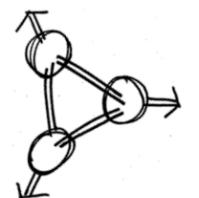
OLD TOWN

- 1 - Old Town Center
- 2 - Farmers Market
- 3 - Old Town Gardens Neighborhood



RESERVOIR

- 1 - Wildlife Interpretive Center



4-WAY INTERSECTION

As Ogden Valley starts to grow and development begins to form, the 4-Way Intersection is going to play a key role in the movement through New Town.

The 4-Way Intersection is currently completely automobile oriented. It lacks human scale and can be daunting for pedestrians or cyclists.

We propose to orient buildings to the street, placing parking lots behind. This will create a fresh street-building interface that prioritizes pedestrian access, safety, and aesthetics.



- HWY 185
- Commercial Building
- 4-Way Intersection
- HWY 168
- New Town Park Plaza
- New Town Playground



HUB OF ENERGY

Our goal for this design is to create a hub of energy at this 4-Way Intersection that will attract a wide variety of users.

The new streetscape separates pedestrians and bicyclists from vehicle traffic with planted medians. Street trees will provide shade and visual cohesion while new traffic lights will direct traffic efficiently through town increasing safety for all users.



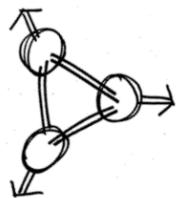
1



2 The restructured intersection provides safety and accessibility for all users, is visually appealing, and keeps vehicle traffic moving smoothly and quickly.

INNOVATION - OGDEN VALLEY

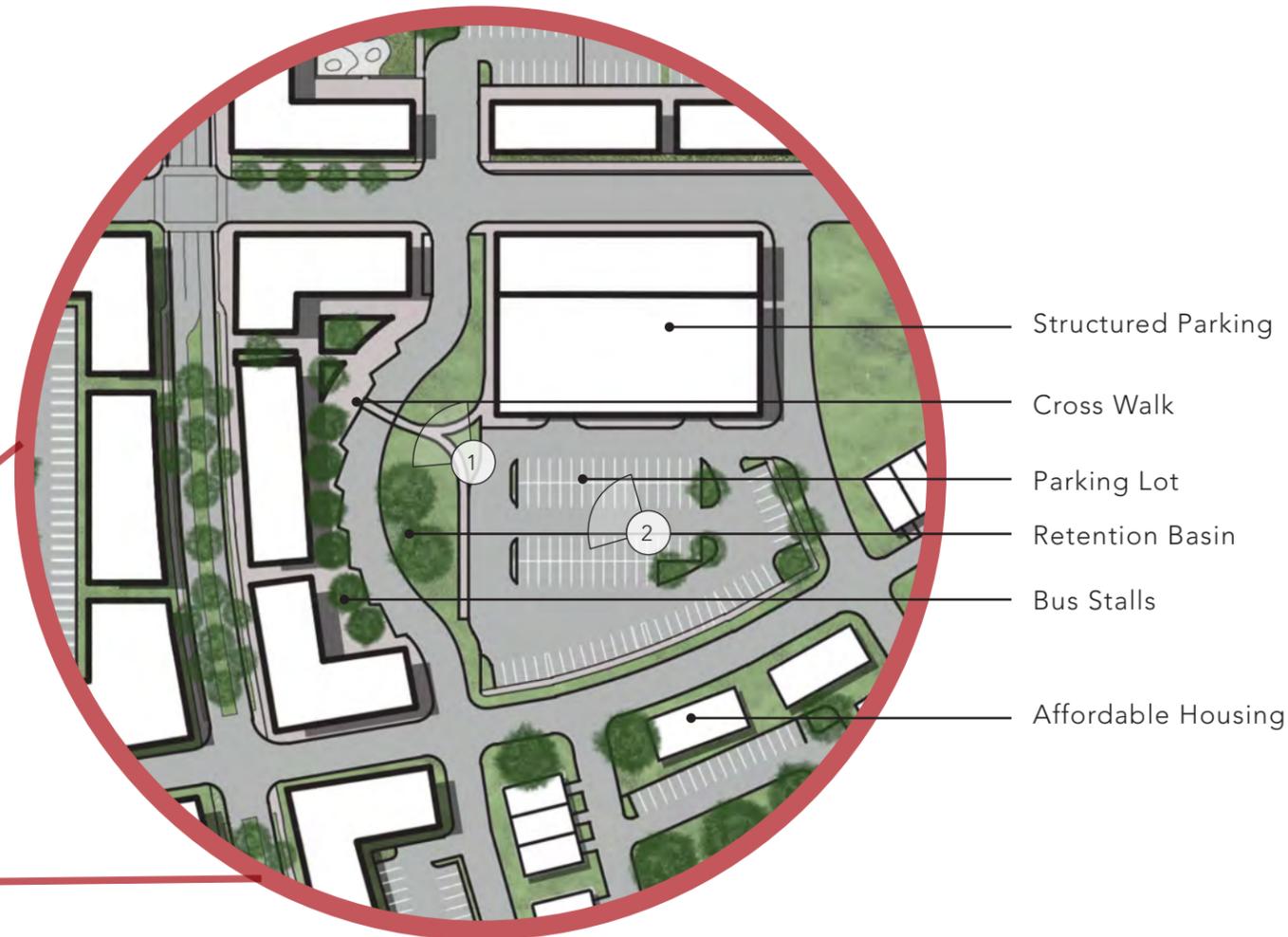
Innovative Response to Growth



TRANSIT CENTER

CONNECTING THE VALLEY

As of right now the valley does not have any form of public transportation. As the valley begins to grow and an influx of people come in, public transportation is going to be essential to the future of Ogden Valley.



We strategically placed the transit center just south of the 4-Way intersection to place it around the center of growth as well as to intercept visitors as they come into the valley.

The Transit Center also houses a park and ride for visitors and employees of the ski resorts and commuters headed out of the valley.

It is proposed that diversified and affordable high-density housing is located adjacent to the transit center. This will help mitigate the effects of rising housing costs.



1

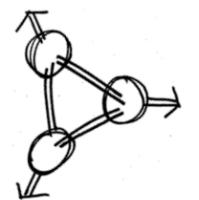


② The transit center acts as a modal hub for the entire valley connecting to all resorts, Huntsville, and Liberty. Its close proximity to the New Town Center is convenient for

both visitors and locals. It includes both structured and surface parking. Surface parking can be converted to structured as demand increases.

INNOVATION - OGDEN VALLEY

Innovative Response to Growth



NEW TOWN PARK AND PLAZA

The New Town Park Plaza is located right on the corner of the 4-Way intersection. This convenient location will collect and attract a diverse group of users.

The goal is to establish a central park in the center of New Town Eden just like the park in Old Town Eden.



- HWY 168
- Plaza Structure
- Park Gardens
- Canal
- Parking Lot
- Commercial Buildings

ICONIC IDENTITY

It is important that the park has multipurpose elements that provide for a wide variety of users. That is why we incorporated garden space, open space, plaza space, and recreational space.

The Park Plaza is a place intended for both programmed and spontaneous events. Its large size provides the opportunity for a large variety of both casual and formal uses. The goal is to provide a space that acts as an Icon for New Town.



1

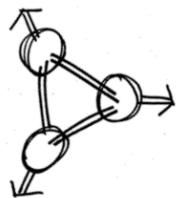


2 The Gardens within New Town park provide a place for contemplation, relaxation and observation, while providing a missing amenity in the valley. Native plants should be

used to educate visitors about water conservation. The Gardens also act as a buffer between the street and recreational areas.

INNOVATION - OGDEN VALLEY

Innovative Response to Growth



NORTH PINE NEIGHBORHOOD

Located just west of the New Town Core, the North Pine Neighborhood provides housing to suit all mobility and housing style needs. The housing typologies include apartments, town-homes, and single family units.



These homes are not large in square footage, but within each block is green space for the residents to enjoy when visiting the neighborhood.

In addition to the internal green spaces within each block, a new trail is proposed along the North Fork River

that runs along the established 300' buffer. A park along the North Pine Neighborhood connects into this trail and the entire system links into existing trails and parks throughout Eden.



ARCHITECTURAL STYLE SAMPLES

- Apartments
- Townhomes
- Single Family



HORSESHOE SPRINGS NEIGHBORHOOD

On the northeastern side of the four way stop is the Horseshoe Springs Neighborhood. Like the North Pine Neighborhood, the housing typologies include town-homes and single family residences.



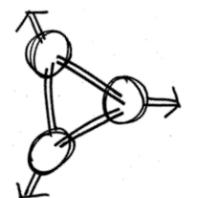
These units are much larger in square footage than the North Pine Neighborhood, which means that there is no internal green space for each block. But, a series of parks and trails has been designed around the existing horseshoe-shaped

spring and creek. This creates a larger network of open space and connections than in the North Pine Neighborhood and easily connects into the existing trails throughout the rest of the valley.



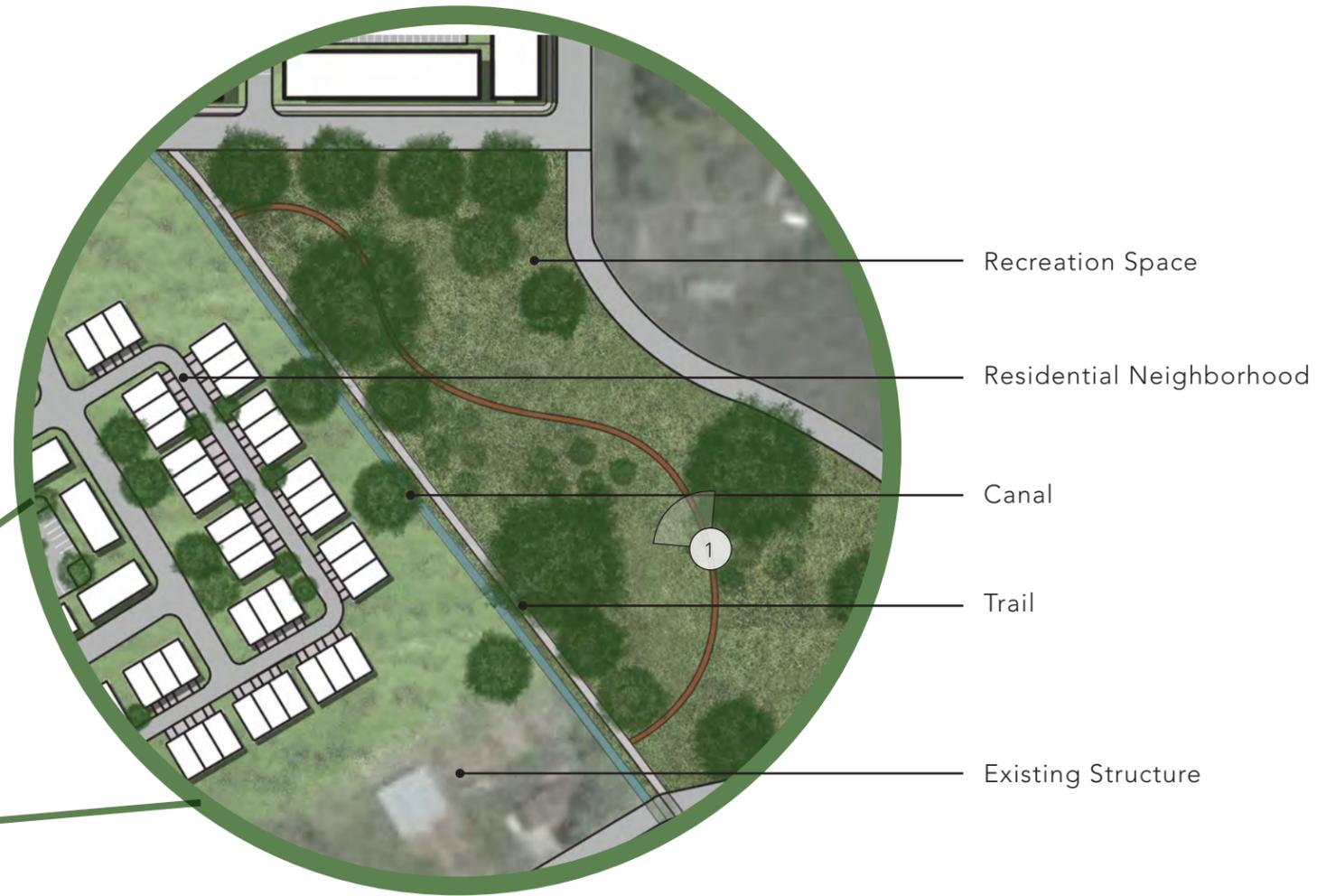
ARCHITECTURAL STYLE SAMPLES

- Townhomes
- Single Family



CANAL PARK AND TRAIL

The Canal Park and Trail act as the spine of the new Eden Master plan. It provides open space for recreation and relaxation while connecting New Town directly to Old Town and the Wildlife Interpretive Center.



REMINDER OF THE PAST

With adjacency to the higher density neighborhoods and core of New Town, the park will provide an important reminder of how Ogden Valley looks today. Open space and agricultural lands are a key visual landmark in the valley today and the park will ensure that stays true in the future.



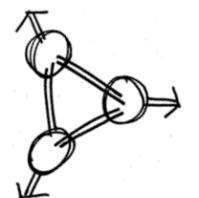
CANAL NEIGHBORHOOD

The Canal Neighborhood lies directly southeast of the Canal Park and Trail. It is similar in housing size and typology to the Horseshoe Springs Neighborhood.

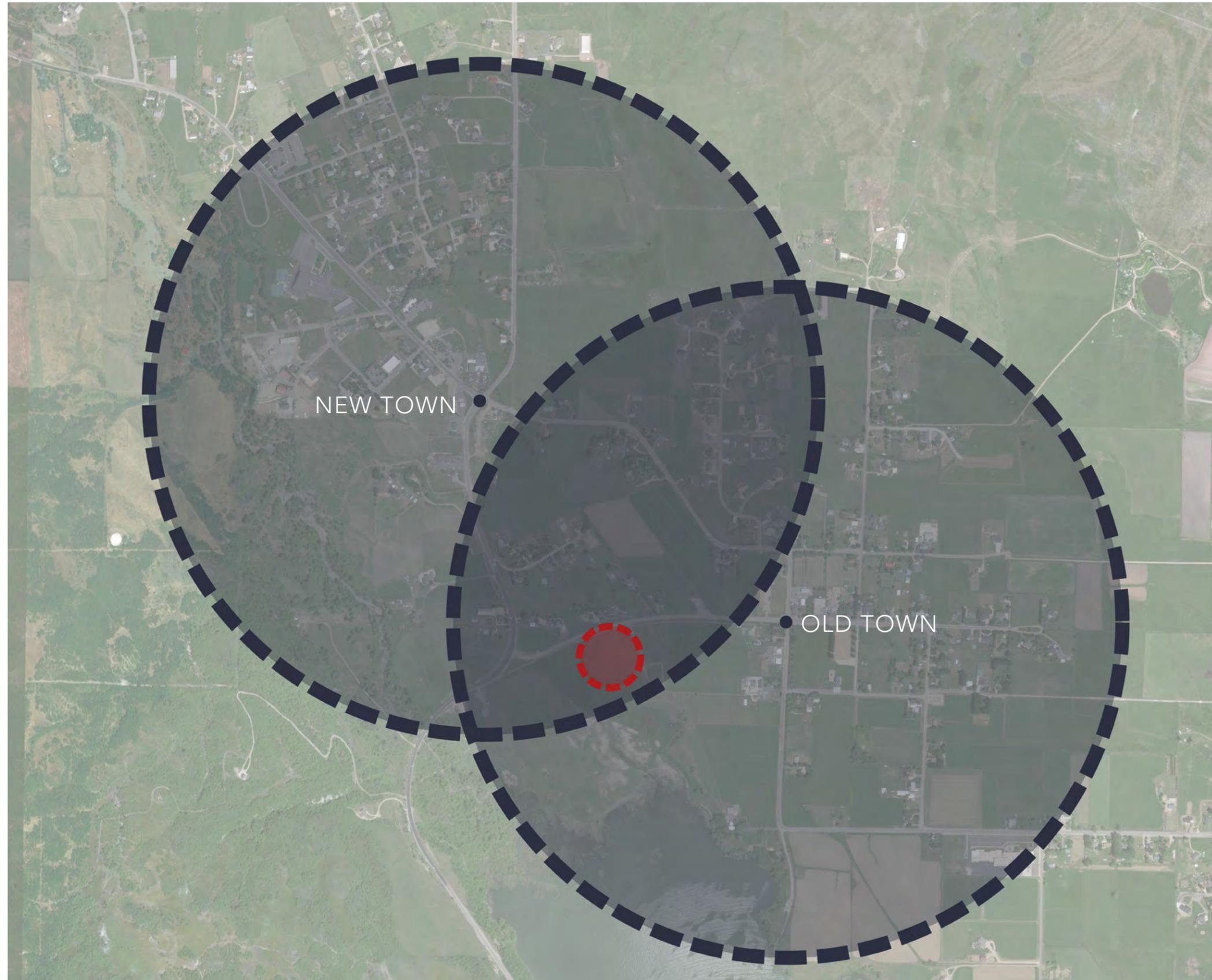


ARCHITECTURAL STYLE SAMPLES

- Townhomes
- Single Family



THE VALLEY INTERPRETIVE CENTER



FINDING A SITE

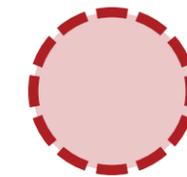
The Valley Interpretive Center will stand as a community resource for environmental education, outreach, and stewardship. It was important to find a site that was both accessible and beautiful with an opportunity to restore the land to ecological health. Site criteria included:

- Near water
- Walkable
- Near development
- On land zoned for conservation
- Relation to open space

The interpretive center is an important element in ensuring that the values of Ogden Valley are not compromised. It will also act as a major factor in achieving the goal of spreading awareness of preservation efforts, ecological health, and wildlife conservation.



1/2 Mile Radius



Interpretive Center Location

DESIGN INSPIRATION



<https://www.trover.com/d/16Dtd-the-great-salt-lake-shorelands-preserve-davis-county-utah>

Great Salt Lake Shoreline Preserve



<https://usubotanicalcenter.org/rent-a-venue/wetland-discovery-photo-gallery>

Wetland Discovery Point



<http://www.amdarchitecture.com/projects/learn/treasures-rainforest-exhibit-tracy-aviary-slc>

Tracy Aviary

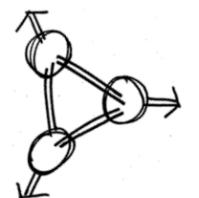


https://search.yahoo.co.jp/image/search?ei=UTF-8&fr=Imd_%E9%A4%8A%E8%80%81%E5%A4%A9%E5%91%BD%E5%8F%8D%E8%BB%A2%E5%9C%B0

Yoro Park

INNOVATION - OGDEN VALLEY

Innovative Response to Growth



DETAILED MASTER PLAN

The Valley Interpretive Center is the culmination and physical manifestation of the goals and principles of both the systems: Flora and Fauna Team and Innovation: Ogden Valley Team. It brings together elements of education, action, and recreation all within walking distance of both Old Town and New Town Eden.





① **OGDEN VALLEY DISCOVERY PLAY**

The Discovery Playground is modeled after Ogden Valley and the surrounding canyons. Through play and interactivity, it educates children and adults about the natural water systems of Ogden Valley.



② **OGDEN VALLEY DISCOVERY PLAY**

The interactive watershed playground is very hands-on and exploratory, allowing children to climb and splash through the valley replica.



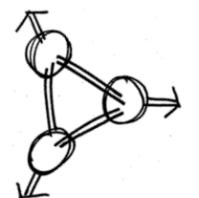
③ **DEMONSTRATION GARDEN + OBSERVATION DECK**

The building emerges from the natural topography of the site creating an observation deck that is a part of the landscape. On top of the deck is a demonstration garden for low-water and native landscapes with beautiful views of the reservoir.



④ **THE VALLEY INTERPRETIVE CENTER BUILDING**

The building is envisioned to be multi-use with year round programming. Proposed elements include Classrooms/Discovery Lab, Interactive Exhibits, Event Space, and Restrooms.



OLD TOWN EDEN

Old Eden is known for the historic character of the architecture and the "plot of Zion" block style. The structure of the town is built off of the central Eden Park which takes up an entire city block. Most of the existing commercial development in the area faces the park. Old Town is currently a hub of local activity, but has been slow to develop. Its businesses are disconnected by busy highways and they do not keep visitors around for very long. Recent redevelopments, like the Blacksmith Square, are a hopeful sign new energy is being infused into the district.



- Proposed Townhomes
- New Pedestrian Only Retail Area
- Reserved Open Space
- Blacksmith Square
- Eden Park
- Proposed Farmers Market
- Existing Structures



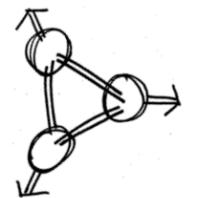
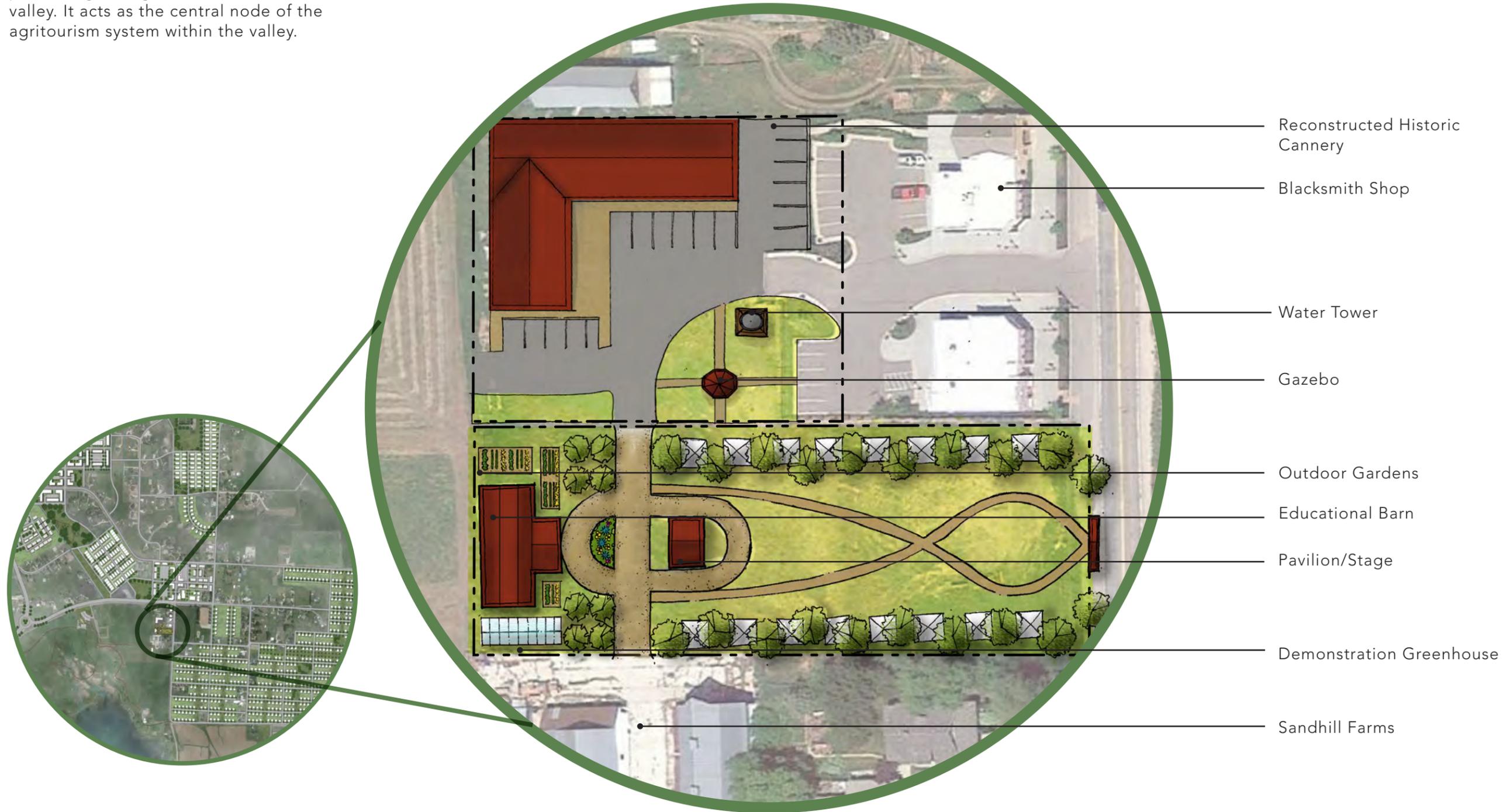
Entering from New Town Eden, this corner green space will bring the feel of a more natural and quaint space into the forefront of the district.

The open space will keep the area from becoming over populated with buildings and will preserve valuable views of the surrounding mountain vistas.



FARMERS MARKET

The Farmers Market provides an essential venue for selling and presenting the agriculture of the valley. It acts as the central node of the agritourism system within the valley.





② REVISED INTERSECTIONS

The proposed intersections will create narrower crossings and bring the fragmented elements of Old Town closer together.

This will make the entirety of Old Town very walkable and its proximity to the transit center should lower the amount of vehicular activity in the area.

All of the new buildings will be designed to reinforce the historic character of the existing buildings and strengthen this identity of Old Town.

The scale of the buildings should be based on existing buildings such as the Blacksmith Square buildings with a limit of two stories.



③ PEDESTRIAN PLAZAS

The plazas located on the interior of the Old Town blocks will be free of vehicular circulation. They will offer outdoor cafés and shaded seating.

These comfortable spaces will encourage visitors to stay for a longer period of time which will solidify the identity of the district.

OLD TOWN GARDENS NEIGHBORHOOD



The homes around Old Town will be set on larger lots and less square footage compared to New Town. This will blend the new homes in with the existing ones and create a more open, rural feel.

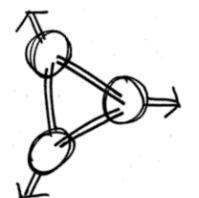
A network of parks will connect the trails in the area and will give the different blocks an individual character and identity.

This neighborhood will aim to reinforce the architectural identity of Old Town keeping with a more classic, early American style.

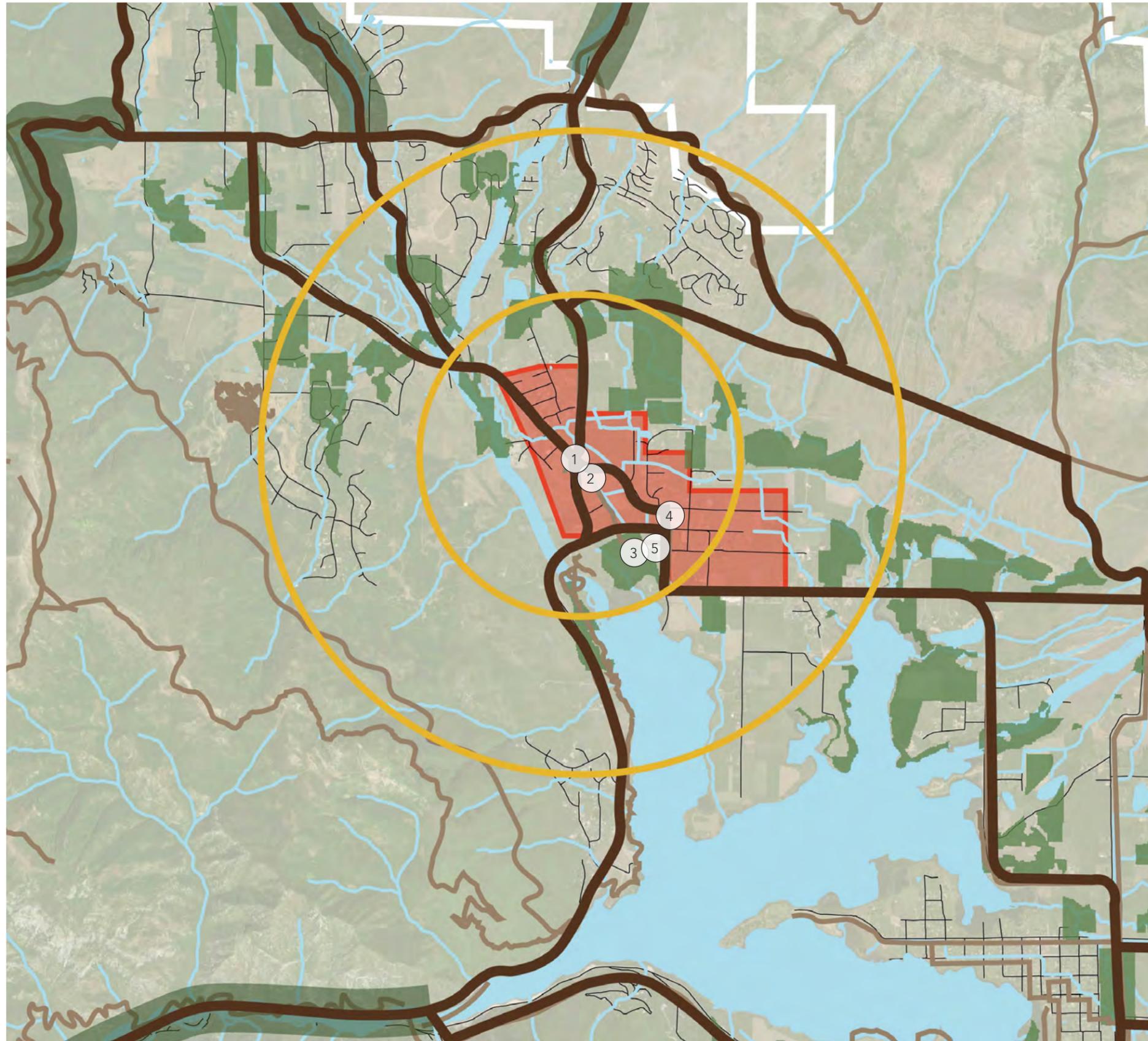


ARCHITECTURAL STYLE SAMPLES

- Townhomes
- Single Family



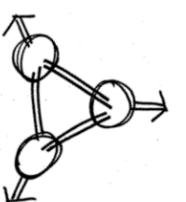
A VISION FOR THE FUTURE



The issues facing Eden and Ogden Valley are very pertinent and pressing. The time for planning for and solving these issues is now. The research and design work carried out identified important goals and areas of focus, but the major takeaway is this - without intensive planning and action the values that those in the valley hold dear will be compromised. The community culture, recreation, agriculture, and open space are all tied together and must be considered as a whole.

The issues challenging Eden's viability exist in many communities throughout Utah and the greater region. Eden has an opportunity to be an example for other communities through acting on the goals of growth and redevelopment: strengthen identity, preserve open space, connect locally and regionally, provide diversity/wealth of choice, and meet basic needs and beyond. It is possible to grow without sacrificing values, but it will take compromise and patience.

- Streams
- Creeks
- Proposed Trail System
- Roads
- Preserved Agricultural Lands
- Canyon trail connections
- Eden Growth Boundary
- 1 and 2 mile radius



CONCLUSIONS

Accept Growth/Responsibly: Existing municipalities/villages should accept a majority of the projected growth in the valley. Of the existing villages Eden seems the most capable of accepting significant growth. A contemporary or “new center” seems most appropriate at the intersection of State Highways 162 and 158.

Diversify Eden/Old and New: With the contrast of styles and transportation assets between the highway centered Eden and Old Town Eden it seems appropriate to reinforce the distinctions. Old Town should be less densely developed, attract the Farmers Market, be sensitive to Plat of Zion zoning characteristics and retain the historic feel of the valley. New Eden should attract more dense forms of development, cater to affordable housing needs and achieve a more attached architectural village style.

- ① **Center New Eden/Main Intersection:** Symbolically the “crossroads” signifies where Eden comes together with a hustle and bustle. Avoid the temptation to place a turning circle here as this must be the place where cars stop for pedestrians and ultimately the community comes together around transit, events and day to day living. Think - intimate scale, walkable, transit, loft, Valley Bluegrass Festival, Taste of the Valley Festival. Establishing a form-based code and supportive traffic vision are necessary to make this happen.

Strengthen Center/Transit: Increasing numbers of those working in the valley and even those visiting will increase the desire to use alternate forms of transportation. Having a hub for transfers to valley options with structured parking for current needs

and ultimately for automated vehicles reinforces the centrality of the “new Eden.”

- ② **Strengthen Center/Park Plaza:** Associated with the crossroads, the transit and the commitment to achieve a central meeting place is a park/plaza. This is designed for day to day use and for seasonal events and performances. It is connected through enhanced streetscapes and trails to the major open space destinations in the valley.

Strengthen Center/Neighborhoods: Diagrams for neighborhood infill and new projects will ultimately respect the need to assemble available land for parcels and projects that make sense. These building typologies and pattern illustrate how development might be fitted to existing conditions. These patterns are not intended to reflect specific proposals for purchase or demolition of any specific property.

- ③ **Strengthen Valley/Interpretive Center:** Interpretive centers can link information about history and the environment, and can create a meeting place for everyone in the valley to discuss the issues and a vision for the future. Key design ideas for the site development are the view of Pineview Reservoir and the marsh/meadow foreground with distant views to the Peaks of Snowbasin. A Watershed Play structure simulates the valley watershed with climbing rock and a graphic depiction of the key backbone elements (canyons and creeks) leading to Pineview. In this way the community provides a forum for conversation of adults and children, discovering and teaching the importance of environmental health and the health of the villages.

- ④ **Strengthen Old Town Eden/Commercial Infill:** At the major intersection in Old Town Eden (5500 E -2100 N) infill of modest commercial uses build off of the existing renovations of old homes and mercantile structures to establish a walkable “craft commercial” node. This should be accomplished in the spirit of the recently renovated “Blacksmith Village.” Housing typologies and block infill near the node could be at the upper end of townhouse density. All of this is organized near the Eden Park which anticipates ever expanding civic uses like soccer and larger performance events.

Strengthen Old Town Eden/Residential Infill: Residential infill around Eden Park should respect Plat of Zion design principles. The large blocks offer opportunities for some greater densities, yet should not compromise the “detached” unit feeling of the historic view.

- ⑤ **Strengthen Old Town Eden/Farmers Market:** Building on the attracting power of the Park, the investment energy of Blacksmith Village and the current food production activity at Sandhill Farms, we recommend location of a proposed Farmers Market at the southwest corner of the Park. As a meeting place organized around the passion and interest in food, this market could be seeded by activity of the adjoining farms. Ultimately a wide range of growing and even cooking and learning activities could occur.

INTRODUCTION

Having established that the natural assets of the valley should remain visually and functionally intact, that food could be a catalyst for community, and that existing village centers should attract a majority of the growth, we are poised to consider the role of Powder Mountain in the Valley's growth challenge.

Design an Intentional Community: Public spaces and all forms of transportation must shape buildings and support activities of innovation. Throughout time active public spaces have prompted innovation. They are a hedge against singular thinking and misunderstanding.

Next Generation Innovation and Tech: Bringing diverse skills, ages, and cultures of people together requires the strongest interface between virtual and real experience. The enlightenment/renaissance period stressed the relationship between thinkers and doers. Thinking and doing require progress via all forms of communication. The current emphasis on localism would suggest that all of the "equipment" for making and communication must facilitate direct and indirect meetings from an identifiable location (see Design an Intentional Community).

Walkable Scale: Although walking is the number one recreation activity it is downplayed as a utilitarian activity. Recent emphasis on walking as a stimulant for meditation, for thinking and for meetings requires that we think of walking, biking and skiing first and put the use of the private auto way down the list. This means that all aspects of planning and design keep this thought at the forefront.

Preserve Magical Skiing Experience: One very unique experience of Powder Mountain is skiing from the top. With expansive terrain, much of it above tree line, runs and routes and views combine to provide a very unique experience. Skiing must move freely throughout the village.

Sustainability and Balance with Nature: Life on top of the Mountain is both the magic and the challenge. Providing infrastructure that is conserving and using "off-grid" technologies supports the exotic isolation that this site offers. While traditional views of recreation/second home experience struggle to bring old world comfort to 9,000 feet, our goal is to be most creative and maybe just "do with less."

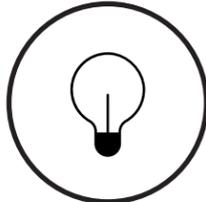
TEAM MEMBERS

Jonathan Cook	Mary Dowden
Drew Hill	Kyle Funk
Colton Broadbent	Sierra Matthews
Aubrie Rhines	



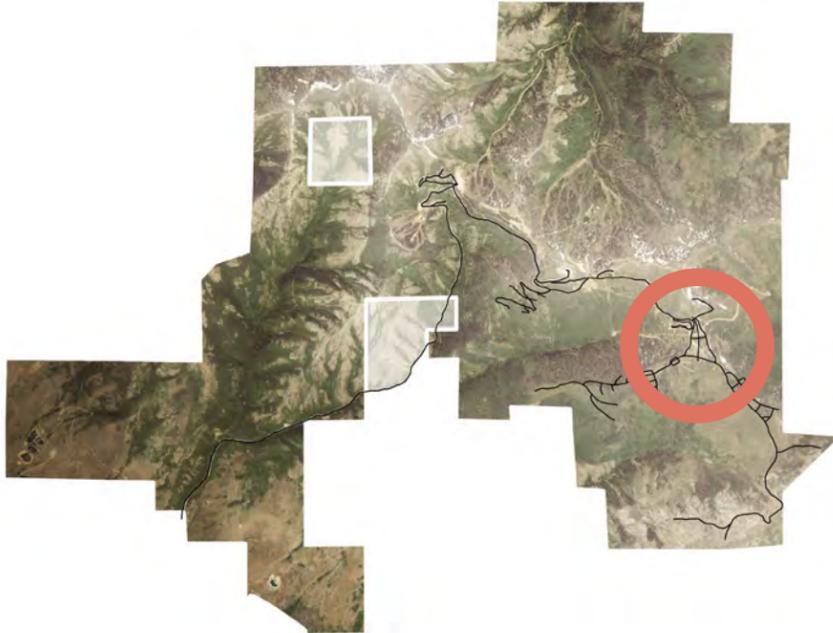
INNOVATION - POWDER MOUNTAIN

Innovative Response to Growth



MASTER PLAN

To begin the story of innovation within the Powder Mountain Village, we present at the proposed master plan. Powder Mountain's current plan has a number of positive characteristics, but when tested against the matrix of information and an exhaustive analysis, it has room for improvement.



The main element in the proposed master plan is a **Greenway** that makes up the spine of the village. It creates a way for the landscape to reach the core of the village in five unbroken pathways. Along the greenway, diverse spaces are designed to draw people from one end of the village to another. These spaces begin with the Village Entry Plaza at the north, and continue with the "Campanile" ski lift, the Crossroads Plaza, a Nature Play area, and terminates with an Interpretive Center at the south end of the village. Each of these spaces will be explored in greater detail later in this chapter.



DESIGN PROCESS

USING THE MATRIX

The matrix is designed to be flexible in how it is applied to any given project within the reach of the Ogden Valley region. This means that not every map is applicable to every situation. As a result, the bold maps to the right are the most relevant information to the area of Powder Mountain. Each bold map ended up informing how the existing plan was modified, thereby optimizing the future development.

The following pages organize the modifications to the existing Powder Mountain plan into five key topics. They are Flora + Fauna, Energy, Water Catchment, Transportation, and Innovation.

	Air Quality	Water	Slopes	Habitat	Viewsheds	Transportation	Land Use	Zoning	Food	Energy	Housing
Regional											
Valley											
Site Specific											
Conclusions											

FLORA + FAUNA

This section begins with a regional analysis of migration patterns, vegetation cover, and habitat fragmentation. Working with the Flora and Fauna team, criteria were generated that indicated the need to shift some of the proposed development.

ENERGY

In the search for alternative forms of energy, this topic focuses on Powder Mountain's potential for generating wind and solar energy.

WATER CATCHMENT

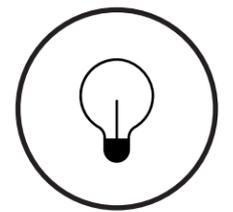
This topic introduces the idea of water catchment and water efficiency into projects within the village at Powder Mountain.

TRANSPORTATION

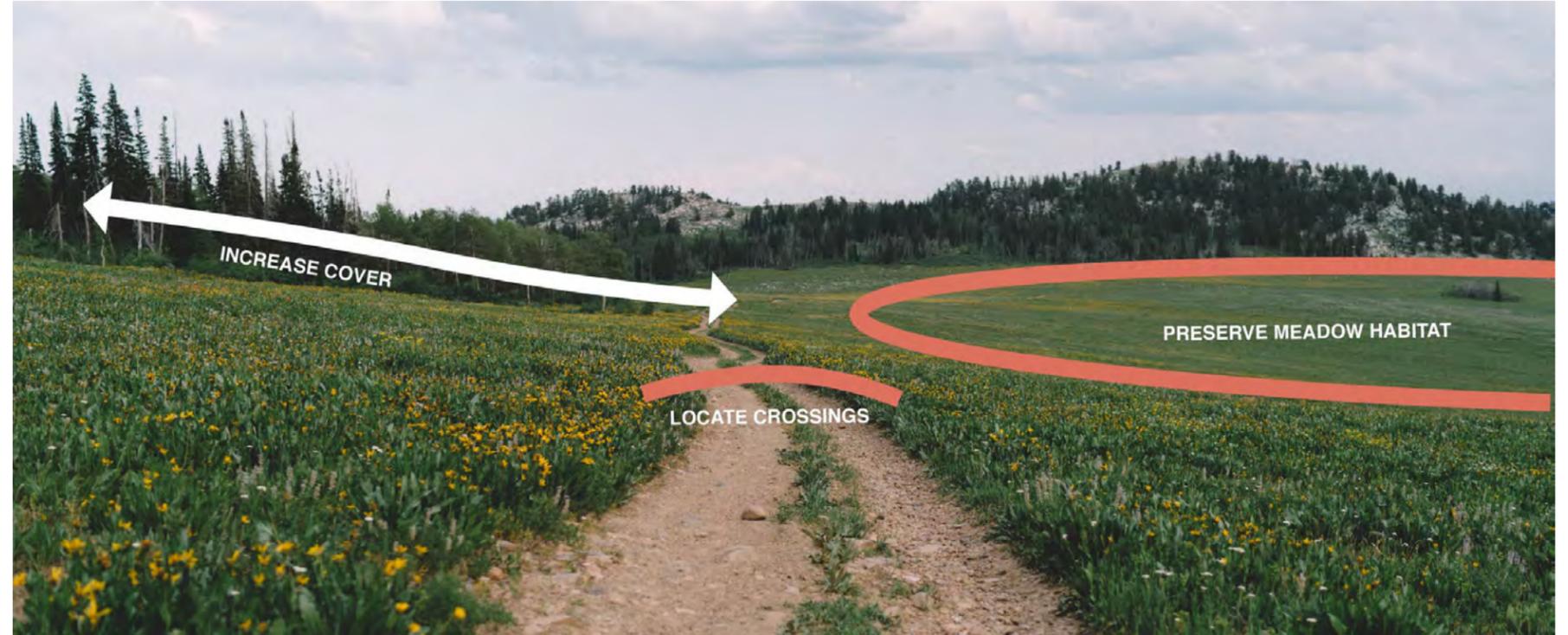
Movement of all modes of transportation have a major impact on the quality of the village. This section focuses on the both the hierarchy of streets, as well as nodes and intersections for different types of traffic.

INNOVATION

As an idea, innovation refers to the ability to learn and progress both educationally and through business. There are physical properties of space that encourage this process of innovation, and those are discussed in this section



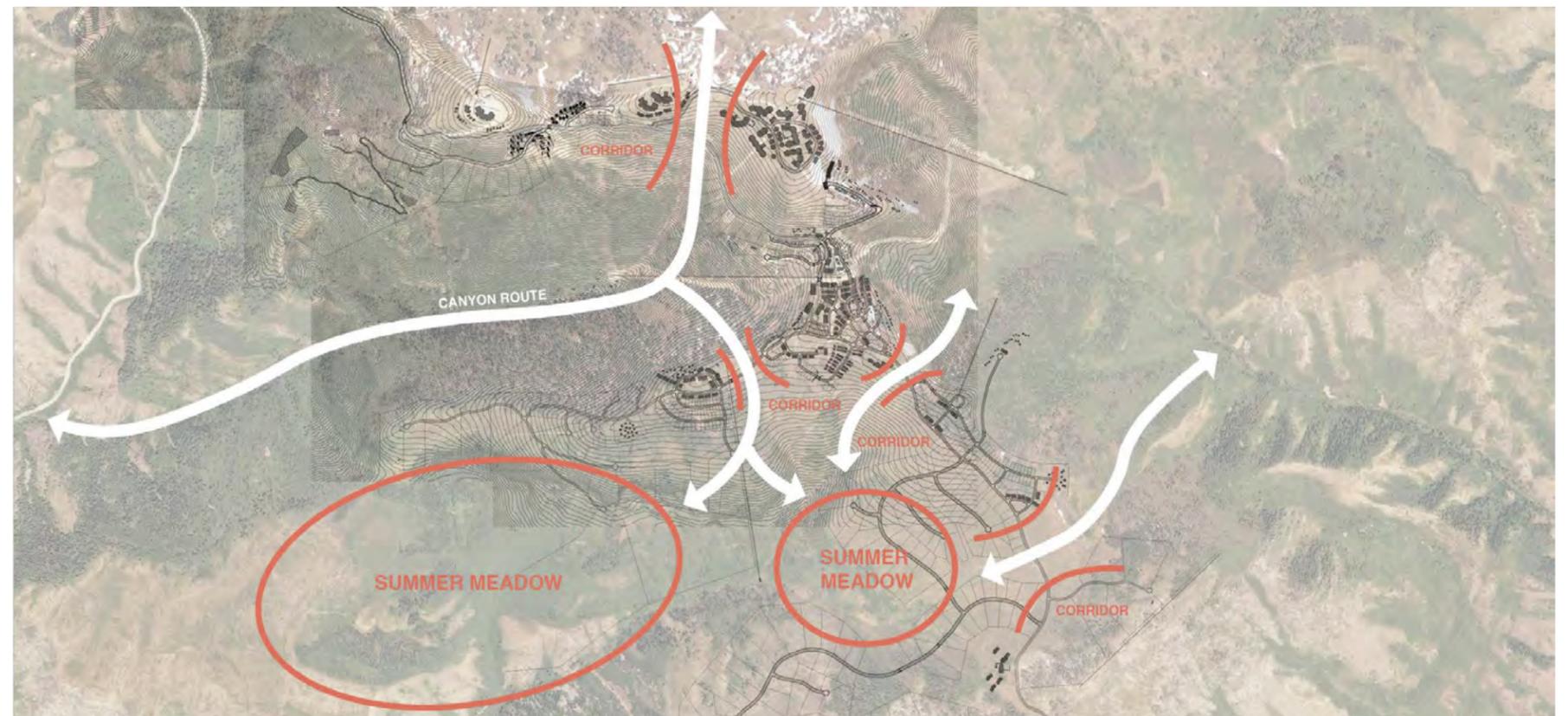
FLORA + FAUNA



In collaboration with the Flora and Fauna group, we investigated how well the current master plan of Powder Mountain was sensitive to the native plants and animals.

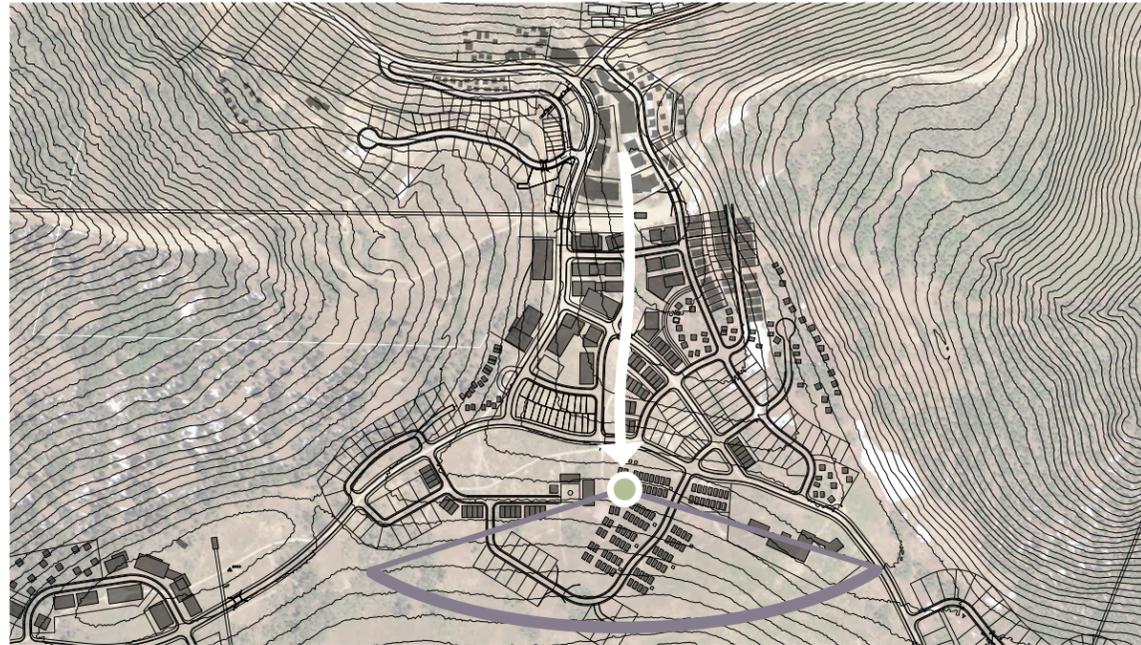
We determined that the limiting factors on wildlife during the summer months (when they would be inhabiting the area surrounding the Powder Mountain development) were (1) cover, (2) crossings, and (3) meadow areas.

The current plan presents a relatively sensitive development approach, except for the large lots to the south that would encroach upon the meadow habitat and require roads and utilities stretching far across the landscape. If this area instead became part of a conservation easement, valuable habitat and beautiful plant life would be preserved.



INTERPRETIVE CENTER LOCATION

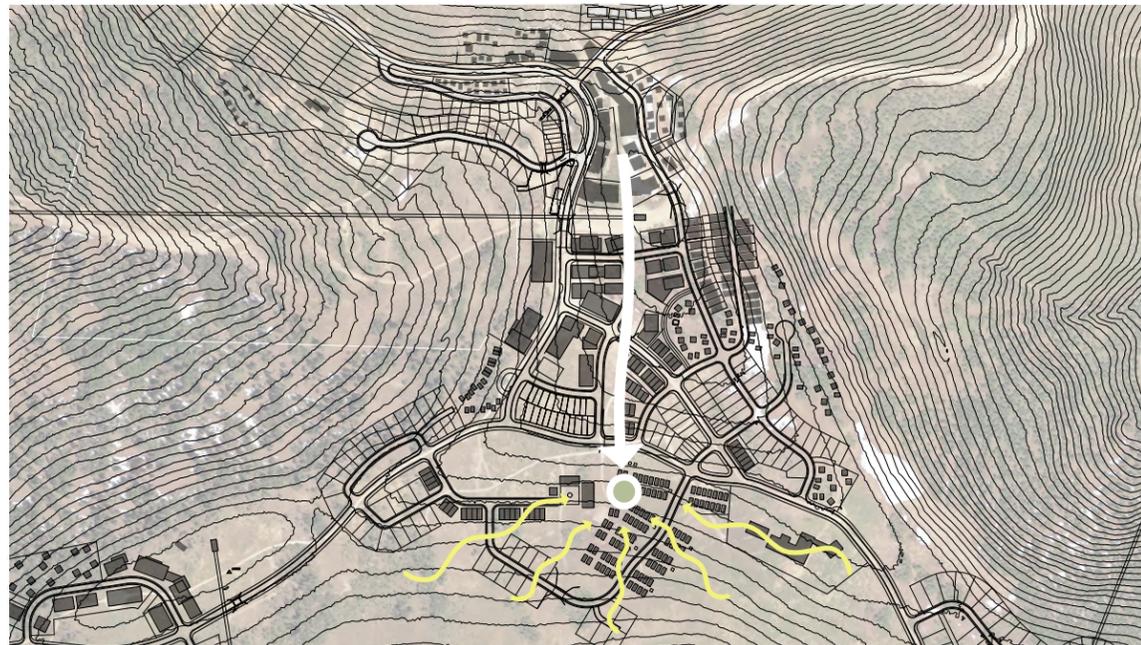
IEWS



TRAIL CONNECTION



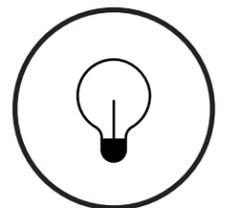
SUN EXPOSURE



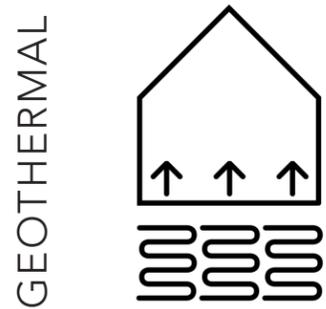
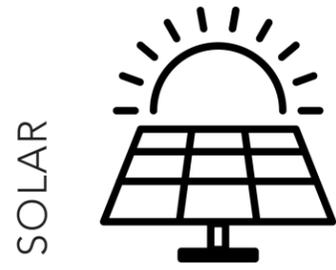
The Interpretive Center is a building with a nature center, greenhouse and restaurant inside. In the initial phases of design, this building was going to be placed in the urban core of the village.

After a lot of analysis a new location was determined. The Interpretive Center would be placed at the terminus of the greenway. This will allow the energy that comes from the greenway to go in and through the building and eventually spill out into the natural meadows below it.

This new spot was deemed more appropriate due to its views to the valley without obstructing the views from the valley, sun exposure for the greenhouse, and trail connections to allow for options at the end of the greenway.

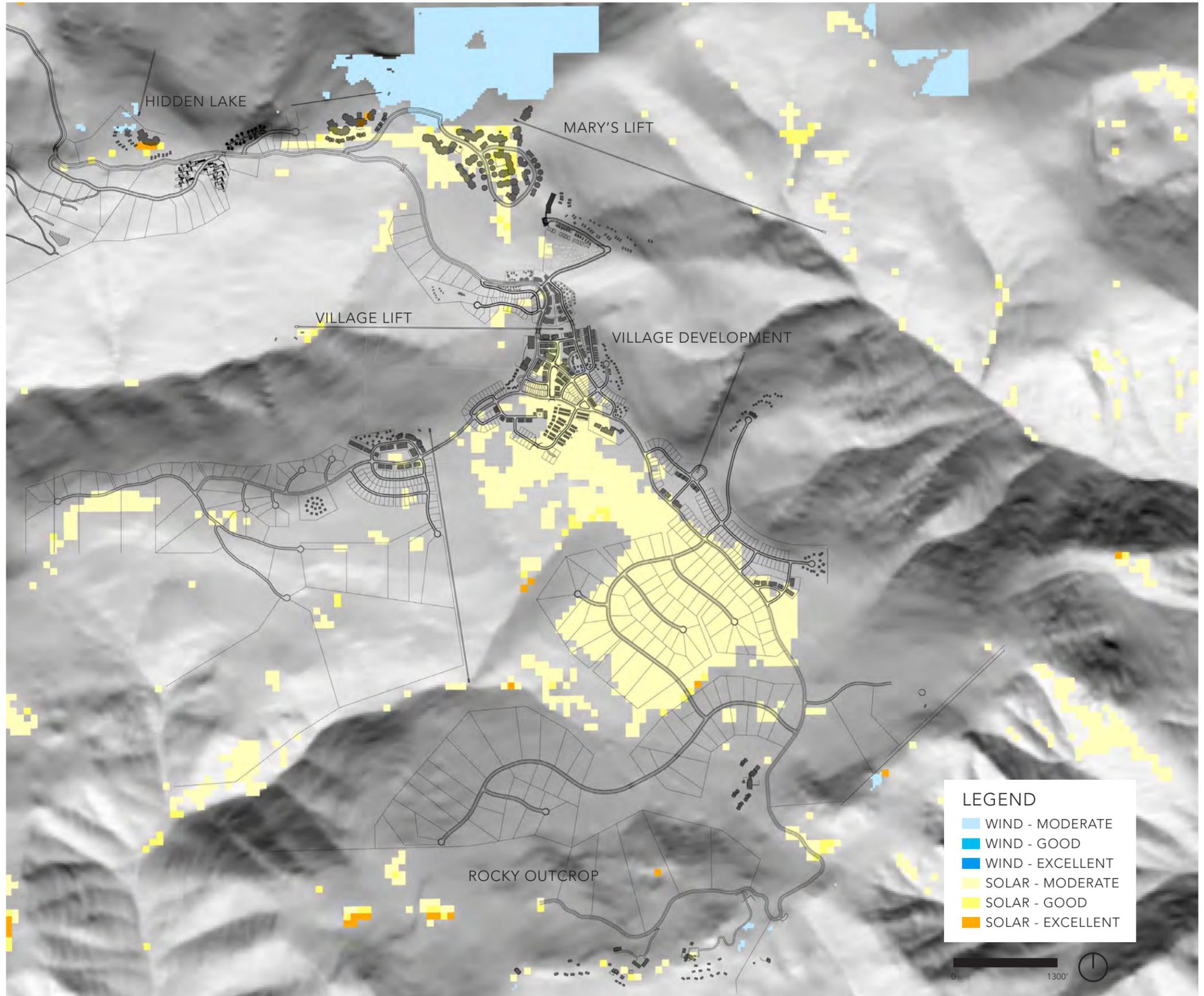


⚡ ENERGY



ENERGY MODEL

The model to the right shows a range of suitable areas for solar and wind energy near the village development at Powder Mountain. The model is informed by the criteria of slope, aspect, vegetation density, visibility from the valley and Powder Mountain Village, and wind speed. The legend shows the ranges of suitability based on the criteria described above.



1 - MOST SUITABLE AREAS

Based on the original energy model, this map shows the locations best suited for wind and solar energy production based on the previously specified criteria. Solar is shown in orange and wind in blue.



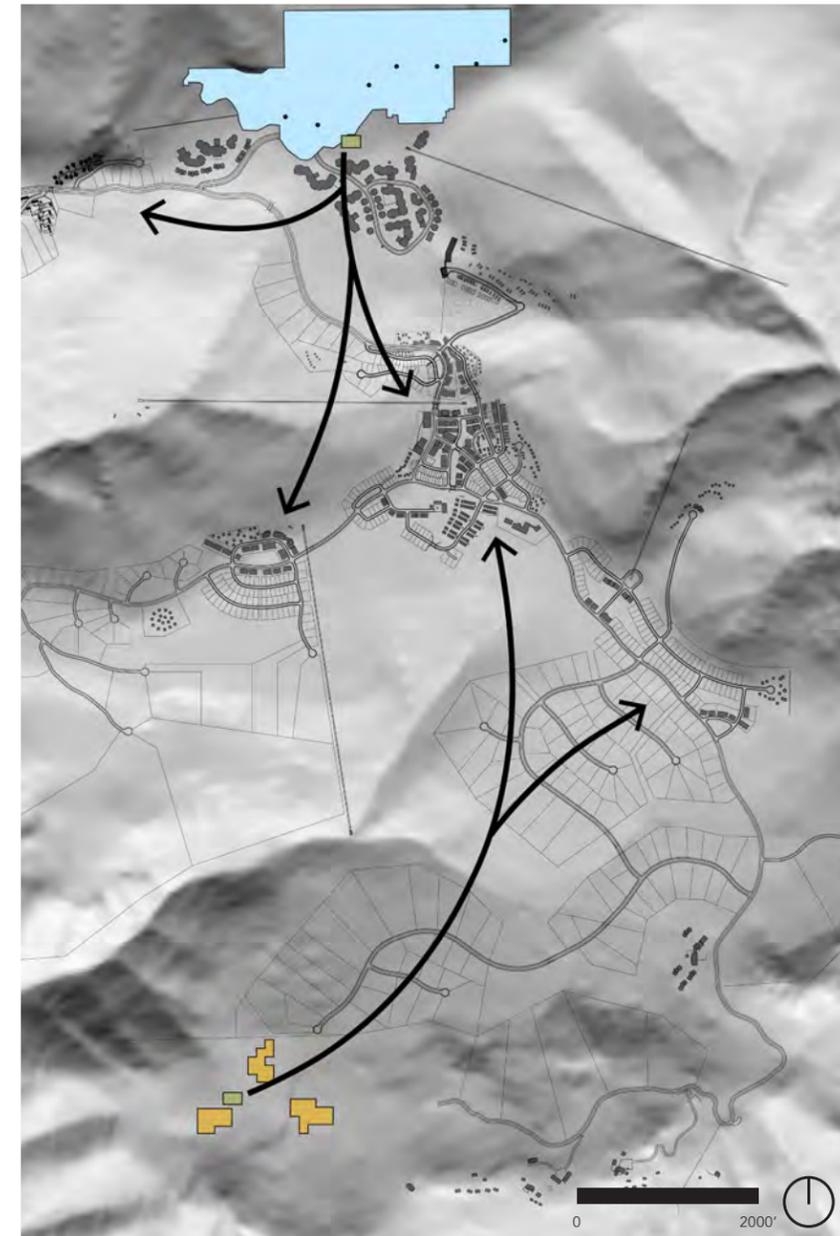
2 - GENERATE AND STORE POWER

Energy production at these sites would be stored in commercial grade batteries such as the Tesla Powerpack.

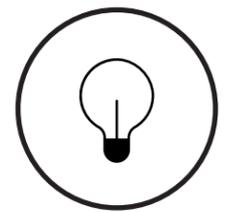


3 - MICRO-GRID

A micro-grid would be created with the batteries providing a consistent source of energy available for consumption by residents and mountain operations at all times of the day.



-  Solar-cell locations
-  Optimal wind turbine locations
-  Electricity storage locations



💧 WATER CATCHMENT AND CONSERVATION



The theater has been around for thousands of years. It has long been considered a cultural center for any community.



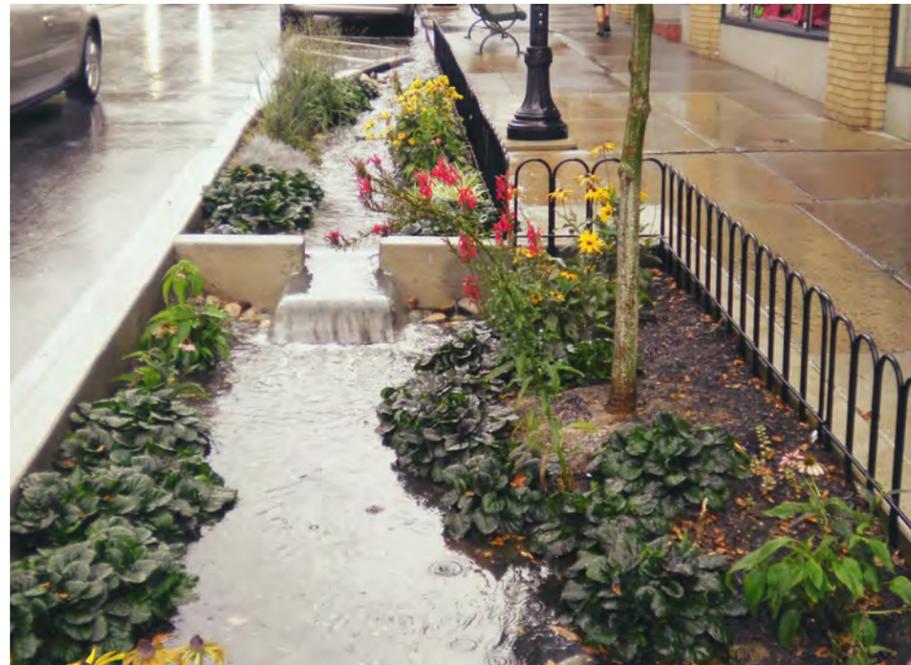
Over time, theaters have turned into movie theaters and there are multiple of these centers throughout most communities around the world.



As technology has advanced and culture has changed, people have started incorporating the theater into their homes.



This trickle down effect can be applied to water catchment and conservation in the Powder Mountain community.



Artful water capture systems have been incorporated into cities all around the world to demonstrate the importance of water.



By incorporating these displays in visible areas around the village, water will be a conscious part of the community member's lives and therefore they will incorporate these systems into their homes.

Village Entry Plaza



Large creative water catchment systems should be located in places of high visibility such as this Entry Plaza and Summit Institute building.

Summit Institute



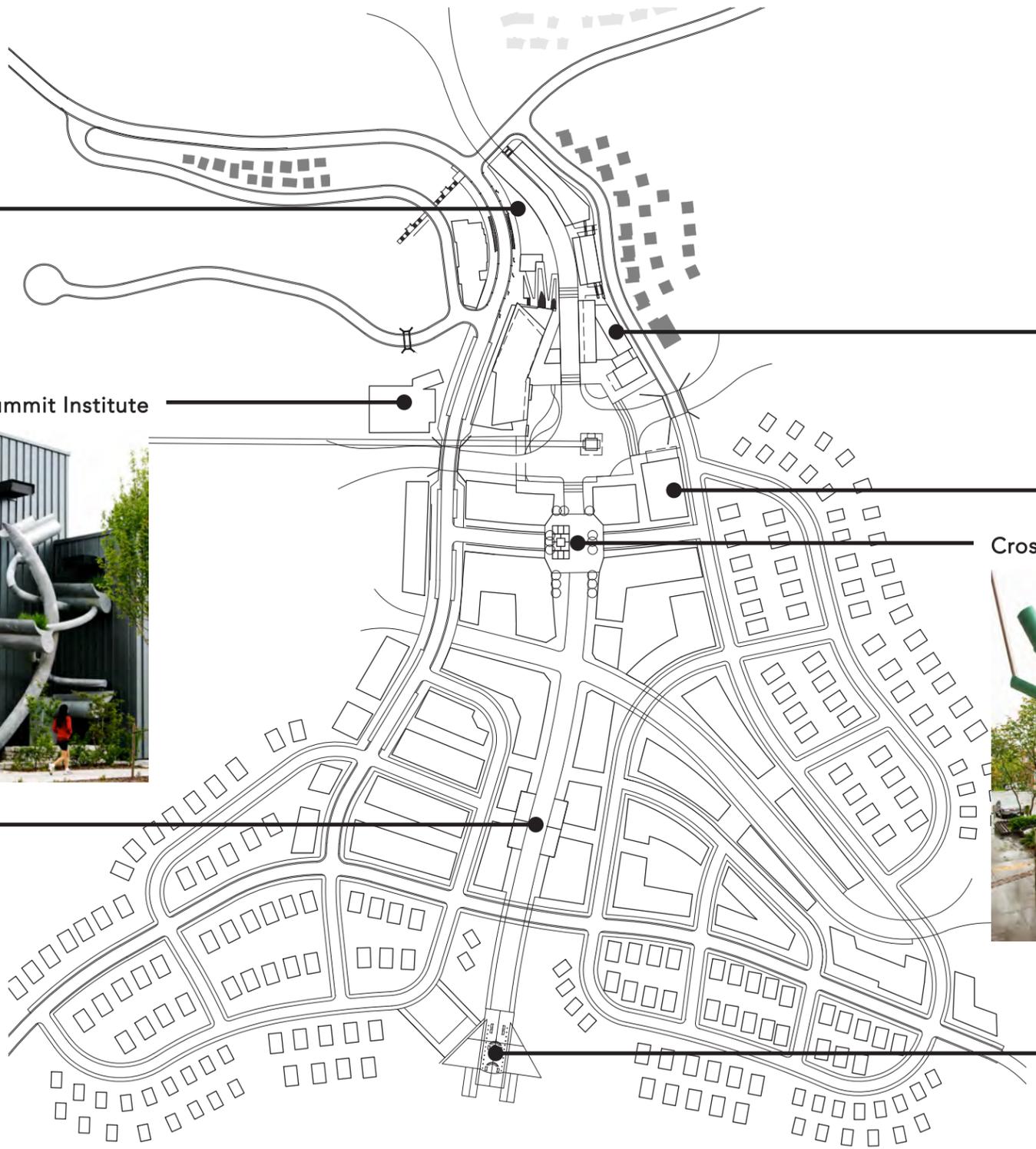
Nature Play



Incorporating creative water catchment solutions in a nature play environment provides an opportunity to educate children on the issues of water and where it comes from.

PRIME WATER CATCHMENT LOCATIONS

The map above illustrates the most visible areas in the new master plan. Creative water catchment designs should be incorporated into these areas over time as the village develops.



Innovation and Discovery Center

Indoor Solutions

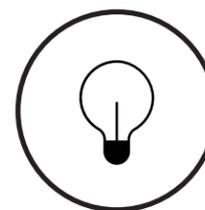


This sink and toilet combination made by Roca is an example of reducing water consumption by recycling gray water

Crossroads Plaza



Interpretive Center





TRANSPORTATION

Creating an infrastructure at a local scale can support the growth and relation to the surrounding valleys.

As we studied Powder Mountains current development plan, and understood their main idea of limiting vehicular use on top of the mountain, we really wanted to continue that trajectory.

STRONG CENTRAL CORE



ITRI Campus | Hsinchu, Taiwan
Increasing interactions with residents and visitors on top of the mountain.

SENSE OF PLACE

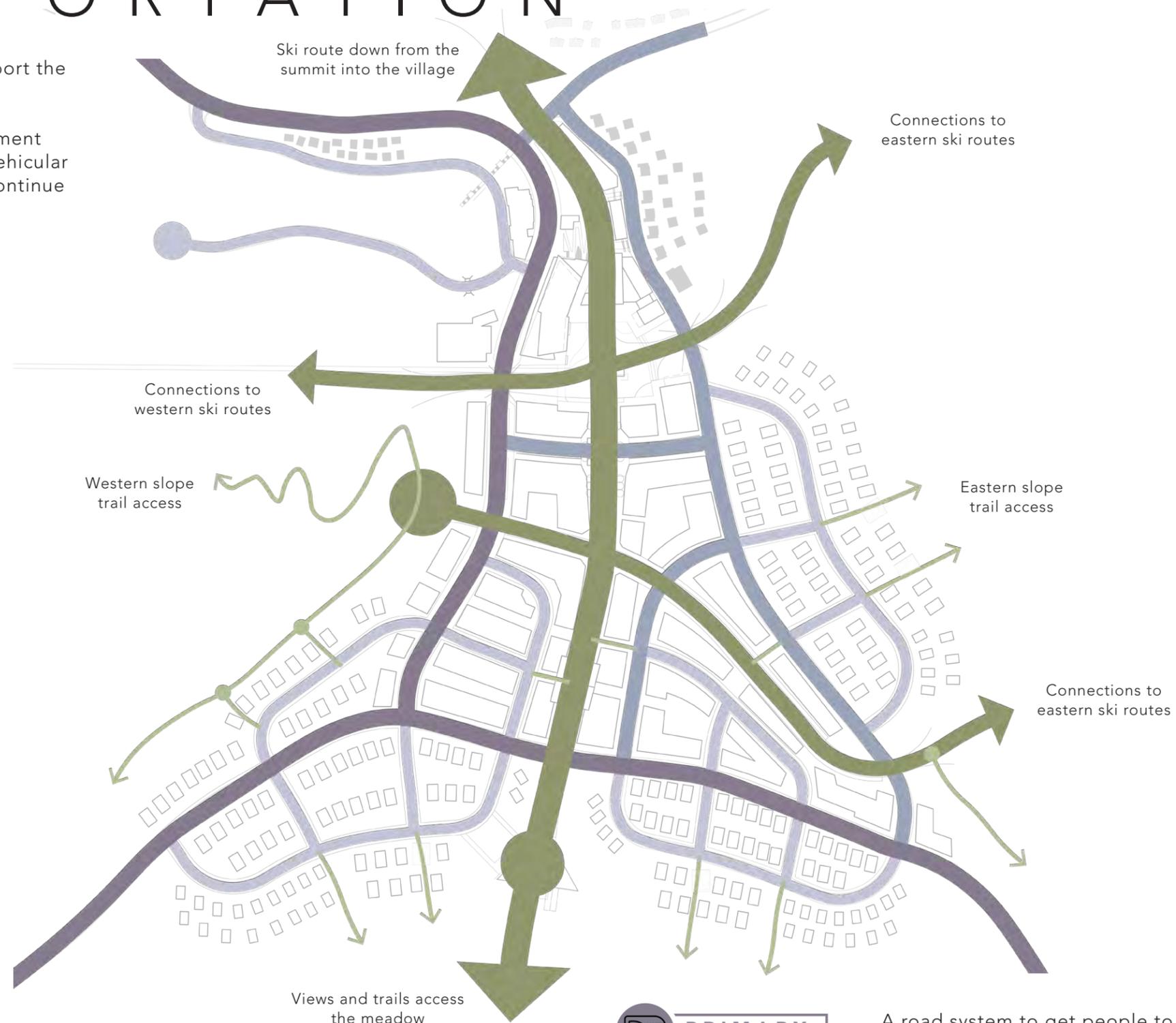


Gafton Street | Dublin, Ireland
Creating a strong sense of place with a pedestrian focused environment.

HIERARCHY OF PATHS



Burke Gillman | Seattle, WA
Wrapping it all together with a multi-modal hierarchy of paths.



 **GREENWAY**

A greenway down the center of the village with five seamless connections to the surrounding areas.

 **TRAILS**

A trail system to further the edge connections around the village.

 **PRIMARY**

A road system to get people to the mountain.

 **SECONDARY**

A road system to get people around the village.

 **TERTIARY**

A road system to get residents of Summit to their homes.

As we build back up the hierarchy of paths created by the road systems, a secondary system of nodes are naturally created at varying crossroads.



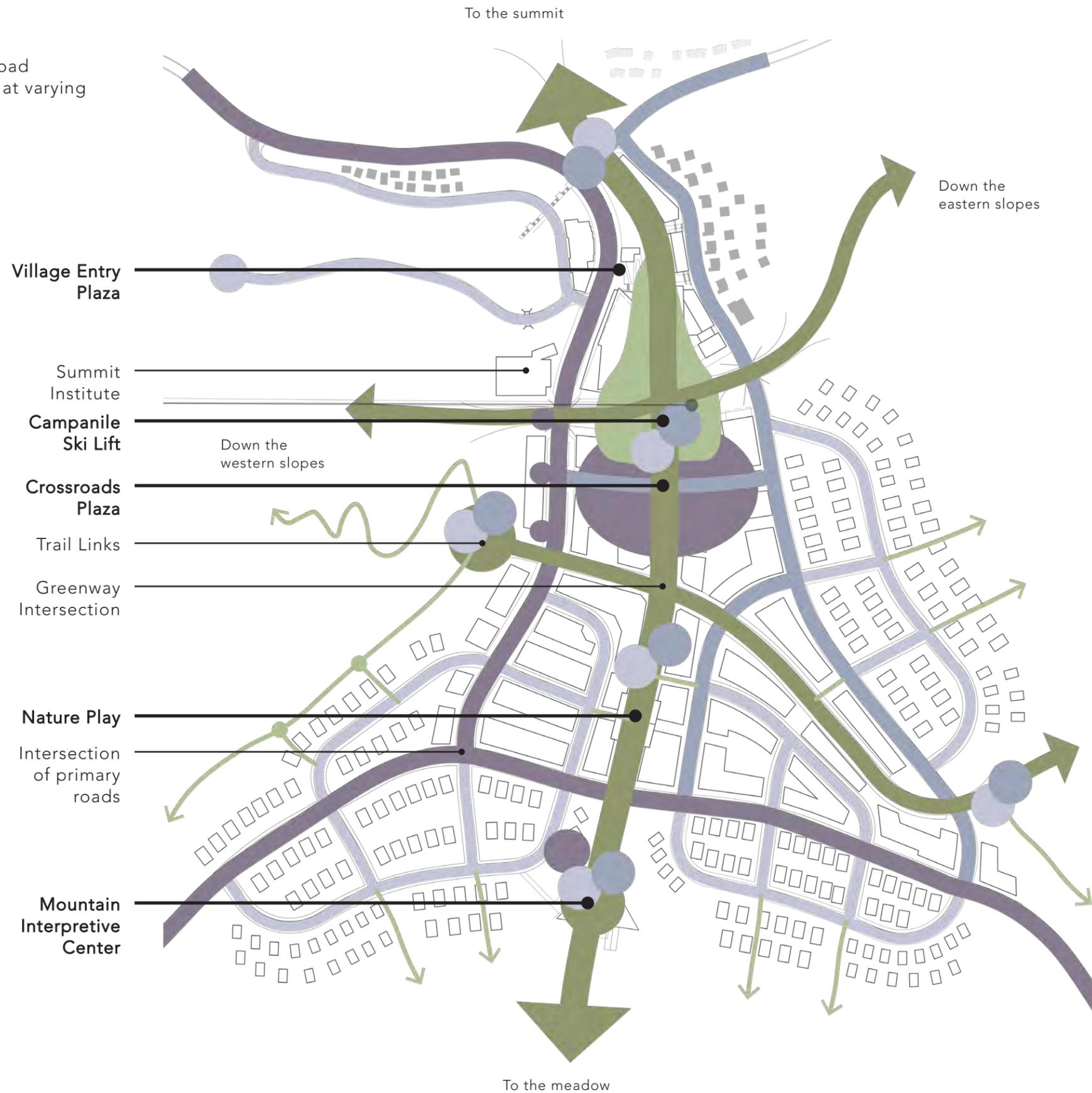
Along the tertiary road system, rental opportunities for activities such as snow shoeing and cross country skiing will be available.



Along the secondary road system, a bike share program that would include snow bikes for the winter as well as E-bike opportunities.

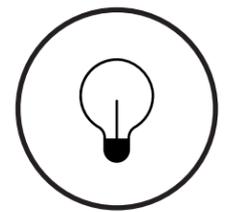


Along primary road systems, an Eco-friendly bus route will be implemented, as well as parking along the outside of the village and under the center core.



INNOVATION - POWDER MOUNTAIN

Innovative Response to Growth



💡 INNOVATION

EDUCATION + BUSINESS

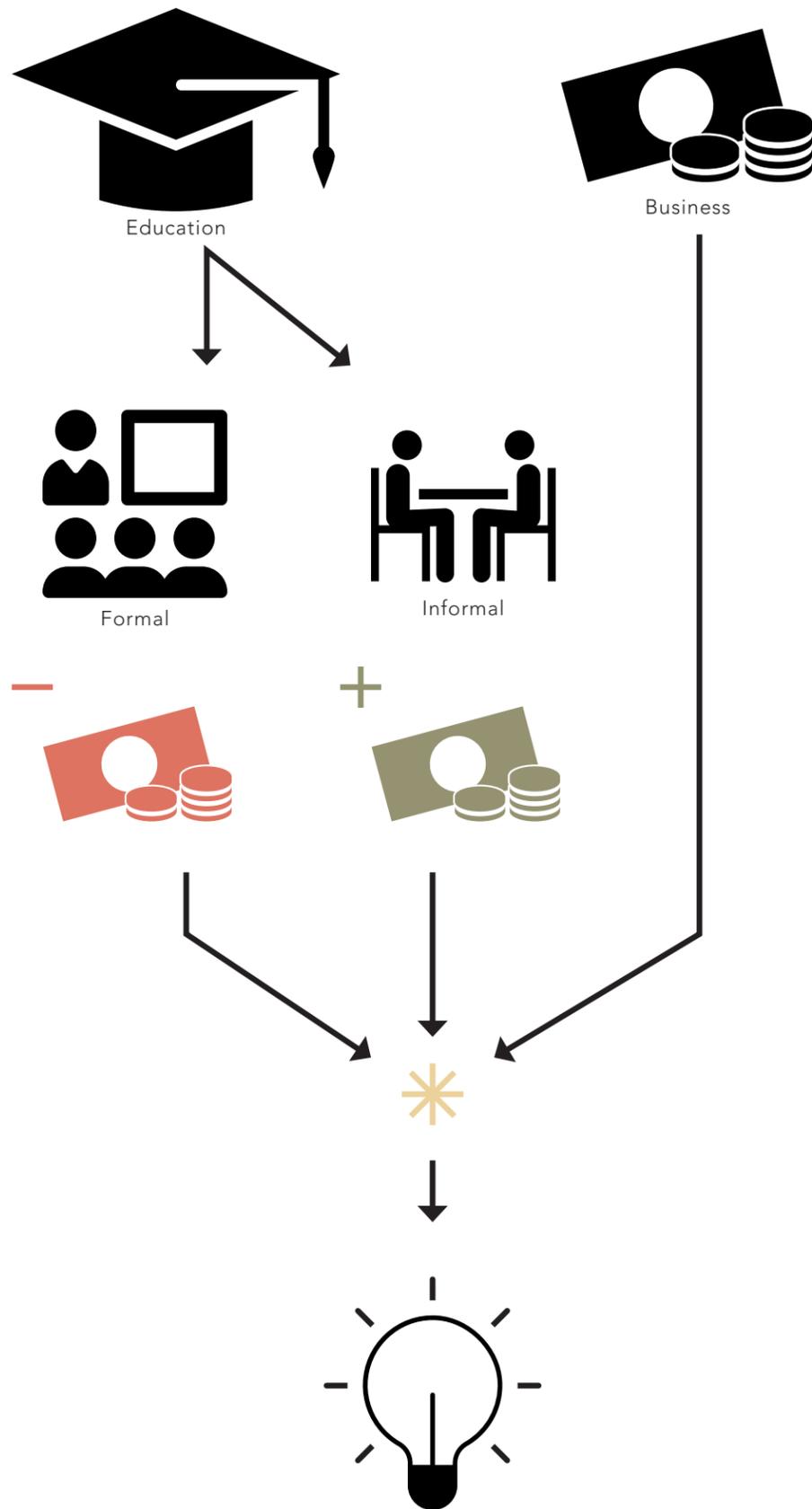
Innovation takes place when **education** and **business** overlap. It is when the thinkers come in contact with the doers. The New Jersey Innovation Zone legislation continually points out how this relationship is critical to develop both programmatically and physically.

< Education takes place in two different forms. One is **formal**, such as school and conferences, the other is **informal** such as coffee shop meetings and spontaneous gatherings.

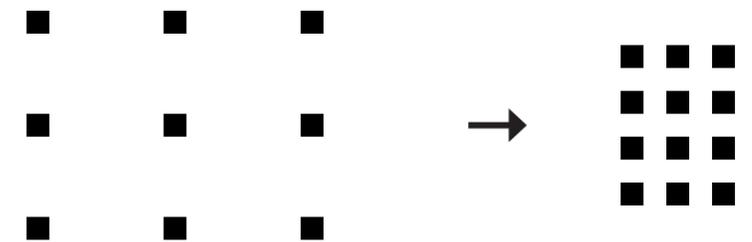
< Formal education and conferences are effective in teaching, but they take a lot of **resources** (time and money) to make happen. Informal gatherings have the potential to generate resources, and happen much more frequently than formal gatherings. Both types, however, are important to include in planning and design.

< When both types of educational gatherings **combine** with business, innovation and discovery take place.

= INNOVATION

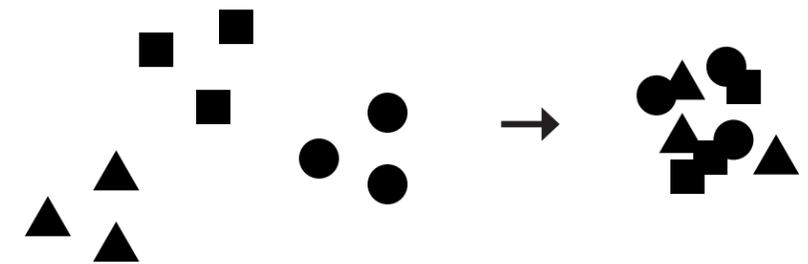


DENSITY OF PLACE



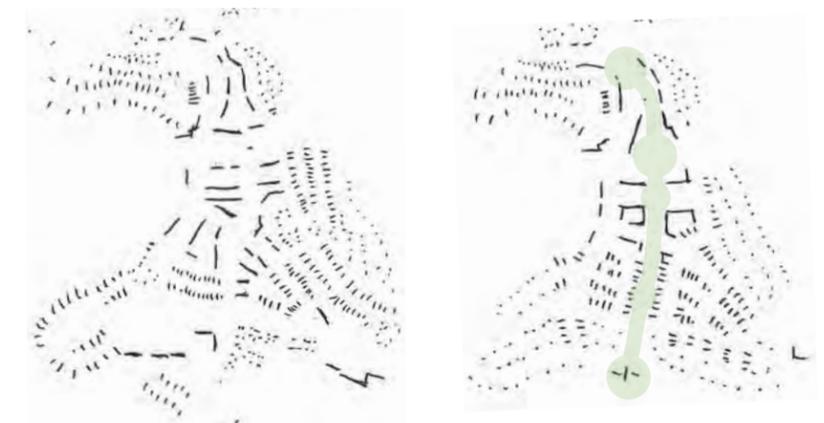
Density is required to allow for easy pedestrian access from one location to another. This increases the likelihood of people meeting one another face to face rather than bumper to bumper from inside their cars.

PROXIMITY OF USE



Overlapping functions increase the opportunities of businesses to capture revenue from residents nearby.

LEGIBILITY OF SPACE



Legibility refers to both the physical form and the intuitive way-finding quality of the village. A visitor must maintain a sense of orientation if trying to navigate from destination to destination. Therefore both buildings and the spaces between them need to feel very intentional in design.

DENSITY & PROXIMITY



- Residential
- Commercial
- Institutional

This diagram shows the proposed ground-floor building uses of the village. The original Powder Mountain master plan already does a fairly good job at both of density and proximity, so this maintains those principles.

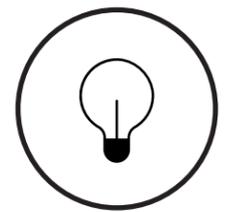


LEGIBILITY



- Greenway
- Plaza & Sidewalk
- Trail Access
- Primary Road
- Secondary Road
- Tertiary Road

This diagram indicates the function of spaces between buildings, including both roads and public spaces. By laying these out consciously, a form of the village emerges that allows motorists to know the hierarchy of streets, while simultaneously indicating to pedestrians how to clearly travel from one destination to another



VILLAGE MODIFICATIONS



EXISTING

Summit Institute
Ski Lift

Village Ski Route

SUMMIT INSTITUTE

The Summit Institute will be built to provide the Summit group a place to convene within the bounds of the main village on Powder Mountain.



Summit Institute rendering

SKI LIFT

The ski lift at the center of the village brings people up from the west and drops them off here. Skiers then have the choice to ski directly east or west, or continue slowly south through the village toward the meadow.



Village core ski lift

VILLAGE SKI ROUTE

This ski route through the village is a shallow slope that forces slower movement. It is designed to be a ski-in ski-out run, with southern down-slope movement, crossing roads through tunnels and bridges as slope permits.



PROPOSED

Destination (Entrance)

Public Open Spaces

Greenway

Destination (Terminus)

ENTRANCE DESTINATION

The village needs a clear point of arrival, and an open space surrounded by architecture is an effective way to accomplish that.



Royal Crescent in Bath, England

PUBLIC OPEN SPACES

Throughout the village, public open spaces provide a wealth of choice and a diversity of experience. These spaces draw people from one to another.



Greenway use in Chattanooga, TN

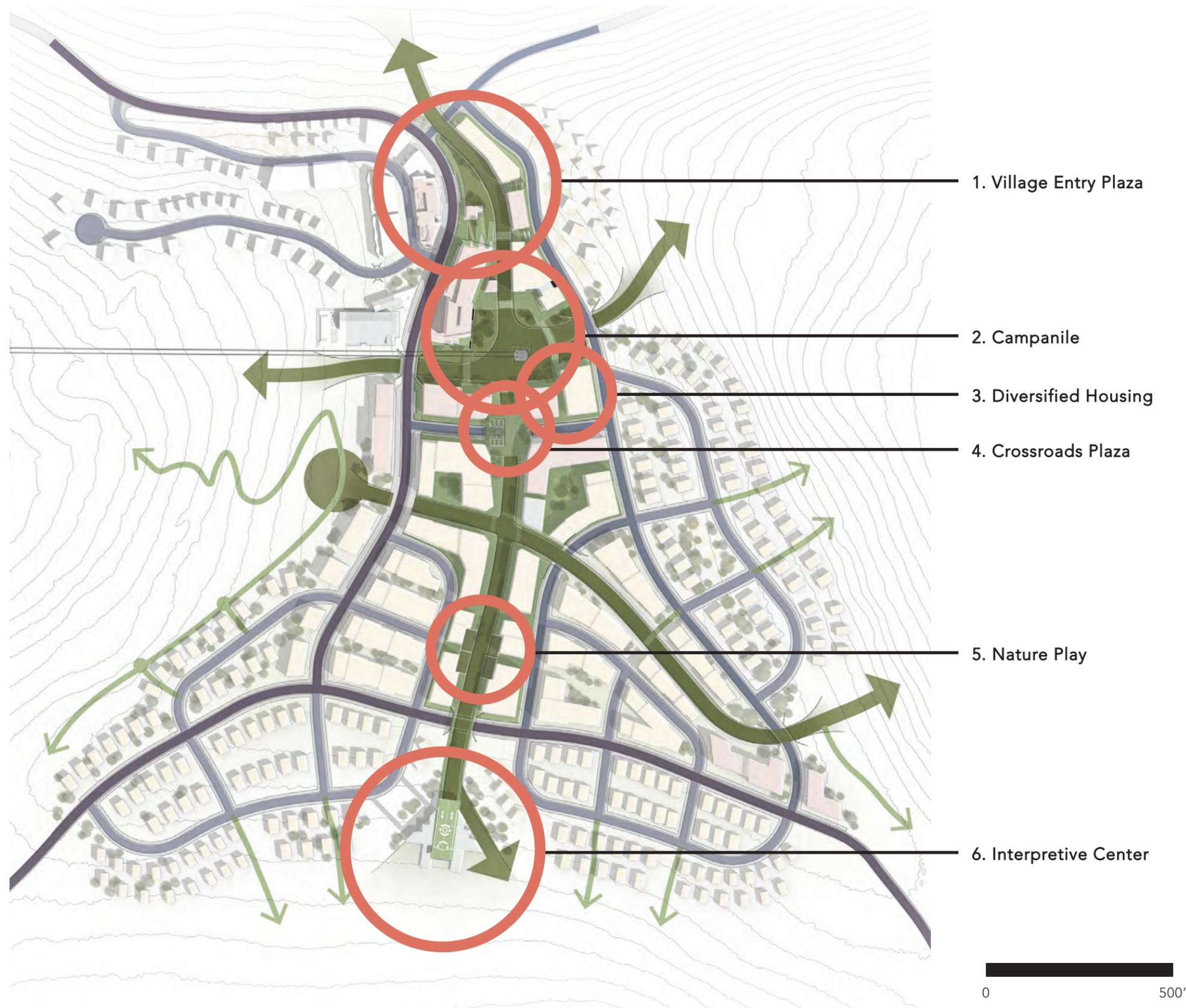
GREENWAY

A new and clearly defined greenway connects the village core to the landscape in five unbroken pathways. This "main street" acts as the spine of the village, but instead of pavement, it's meadow.

DESTINATION TERMINUS

At the southern end of the village, an Interpretive Center terminates the greenway with spectacular views of the meadow.

SITE DESIGN



1. VILLAGE ENTRY PLAZA

The Village Entry Plaza is the first space visitors will see as they turn the corner right into the village.

2. CAMPANILE

The Campanile is a term referring to the ski lift at the core of the village, and represents the public space connecting the surrounding commercial buildings.

3. DIVERSIFIED HOUSING

This building contains a level for commercial and a hotel lobby, a level of diversified housing for village employees, and two levels of hotel rooms above.

4. CROSSROADS PLAZA

This plaza is where the commercial activity crosses the greenway, and creates the need for a place to gather.

5. NATURE PLAY

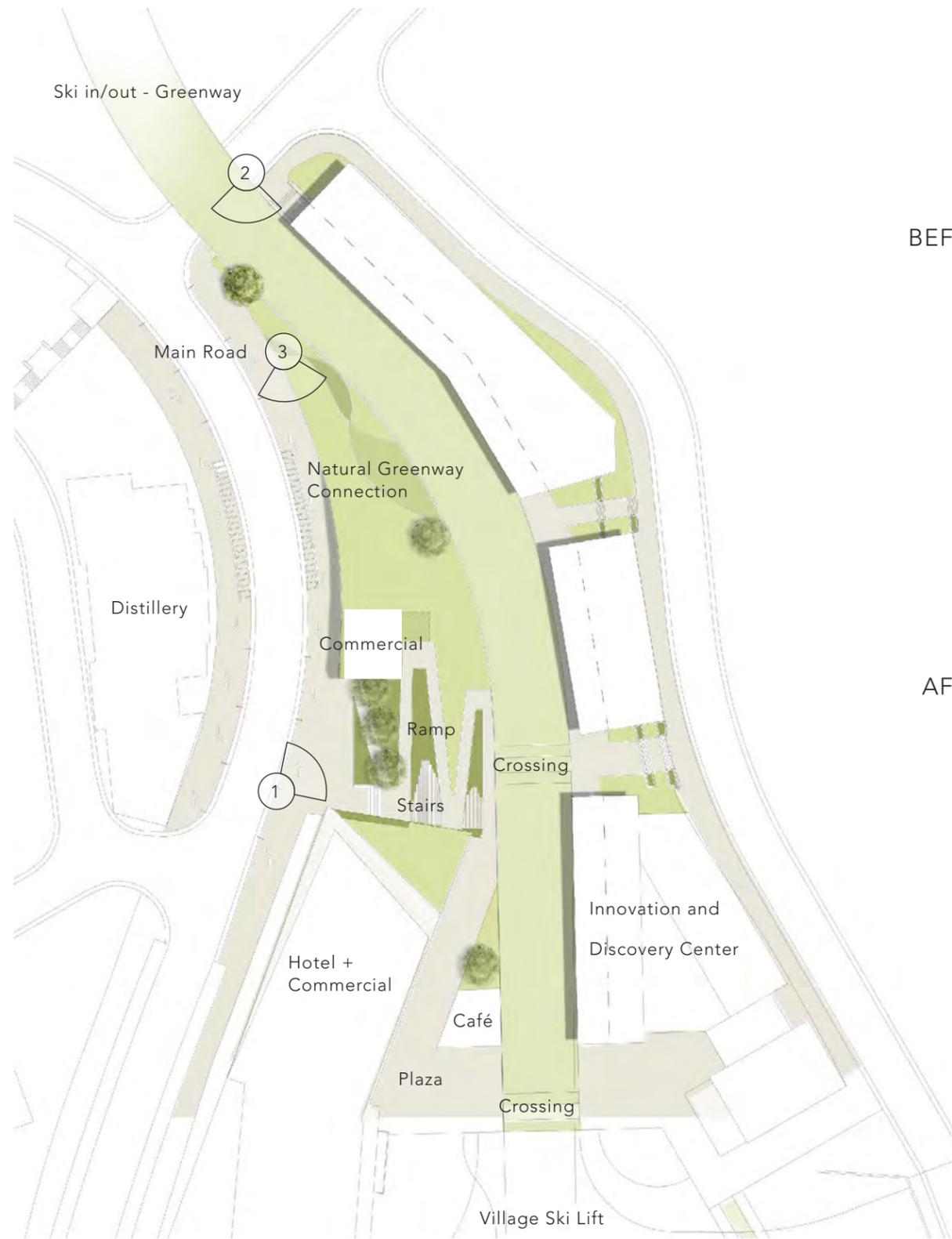
This open break in the facades facing the greenway creates an opportunity for a natural play environment for children.

6. INTERPRETIVE CENTER

The educational Interpretive Center provides a place to view wildlife in the meadow below, eat at a restaurant, and even learn about the habitats, flora, and fauna of the mountain. This destination terminates the axis of the greenway.



SITE 1: VILLAGE ENTRY PLAZA



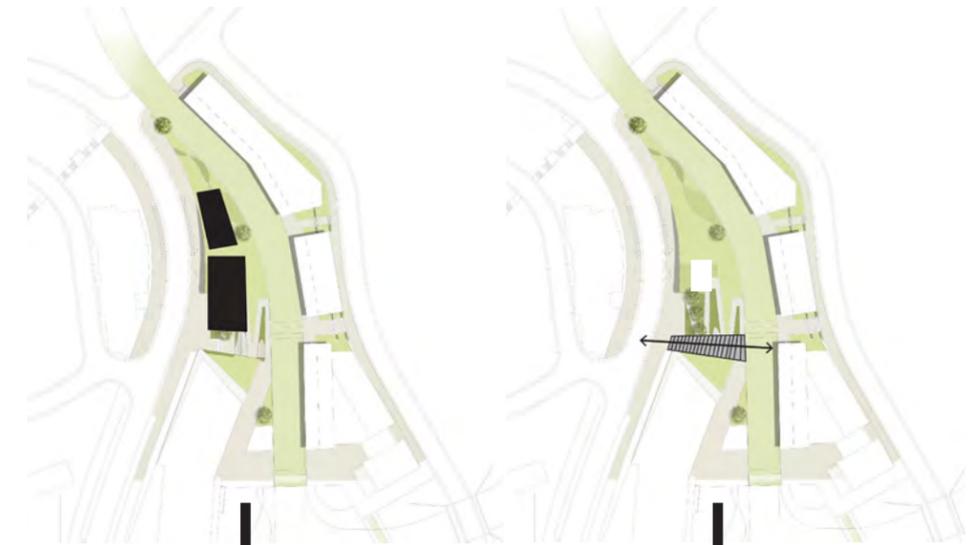
IMPROVE ARRIVAL

Connect to greenway

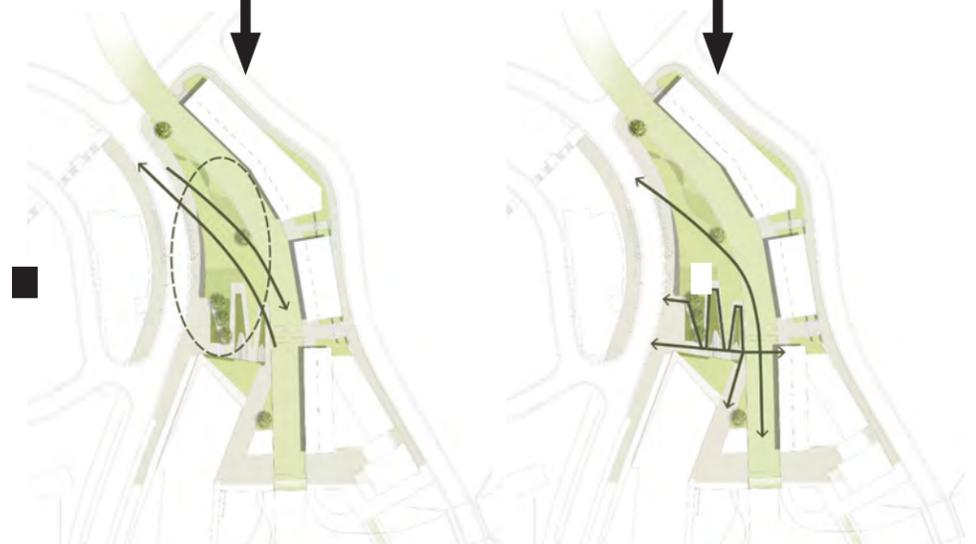
IMPROVE ACCESS

Ramp and natural connections

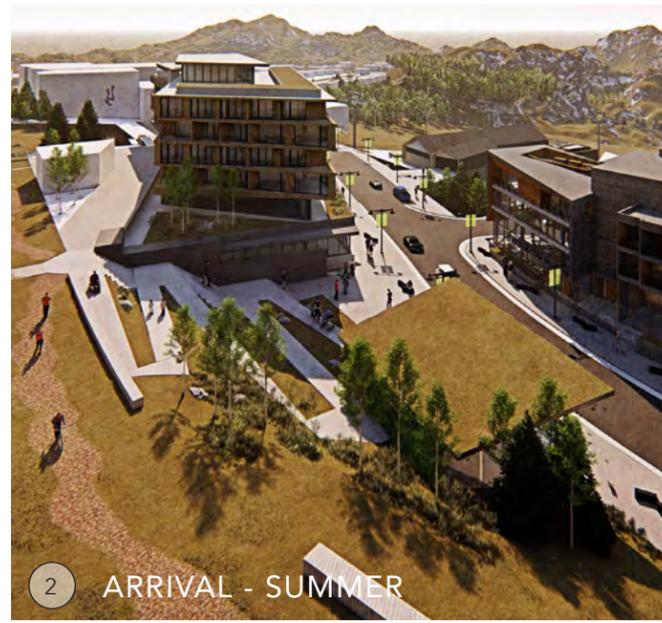
BEFORE



AFTER

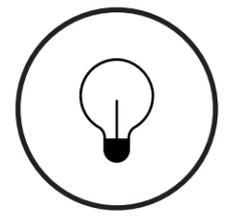


Through analyzing the original plans in virtual reality, we concluded that we needed to improve the sense of arrival to the village, as well as improve access from the main road to the greenway / ski-in ski-out space. The sense of arrival was improved by eliminating the buildings shown above and bringing the greenway down to meet the road, which creates a more comfortable and naturalistic space. Access was improved by redesigning the stairs across the street from the distillery to include an ADA accessible ramp, as well as the natural connection of the greenway down to the road. This creates a variety of routes and makes the original staircase less intimidating.

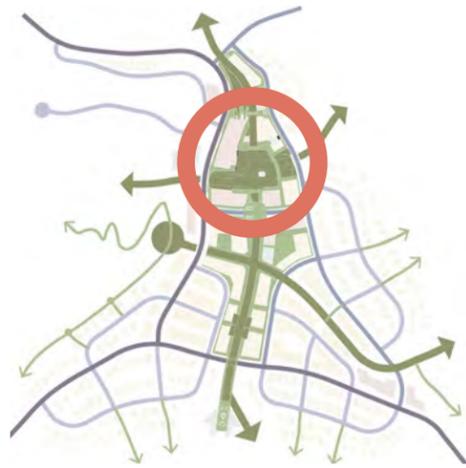


INNOVATION - POWDER MOUNTAIN

Innovative Response to Growth



SITE 2: CAMPANILE



SKI LIFT "CAMPANILE"

The term Campanile comes from Italy, in that many historic Italian towns have a bell tower at their center. Those towers are called campaniles. They act as both a way-finding feature and a place for gathering. In a similar way, the ski lift at the heart of the Powder Mountain Village is a natural location for such a symbol. The height of the buildings, the plazas and pathways lining the park, and the ski lift itself, all contribute to that purpose.

INNOVATION AND DISCOVERY CENTER

Education, entrepreneurship, art, business, and even housing can all take place in the Innovation and Discovery Center. The building could be built in phases as the programs expand along with the growth of the village.

The building would include housing for the artists and entrepreneur-in-residence programs. There would be flexible studios for research and design as well as a shared maker space where different disciplines could come in contact with one another. Finally the place to test the ideas would be in the form of flexible "pop-up shops" where the products could be sold or displayed. The main idea is to provide a highly-collaborative space with easy access to the rest of the village amenities.

A potential opportunity with this type of space is collaborating with nearby universities. The Outdoor Product and Design department at USU is one such program very interested in collaborating with Summit.

PARKING GARAGE

As the village first develops, temporary surface lots can be located where future buildings will be built, but as the village grows, a more permanent parking facility is required.

The grading and elevations of the village center influenced our idea of locating a below-grade parking structure under the greenway and buildings south of the Campanile park. As the ski lift is on the highest point of the ridge, a parking structure could be located on the downhill side. Since the greenway and ski routes are unobstructed, the cross street going underneath creates the perfect opportunity for an intersection below the Crossroads Plaza, where the parking garage entrance could be located. A driver would head east toward the Crossroads Plaza, travel underneath it, then turn south into the parking structure.





SUN + SHADE

The amount of solar exposure identifies the location and function of gathering areas. Year-round activity is the goal in this space, so the sunny areas will be more important in the winter, then shade in the summer.

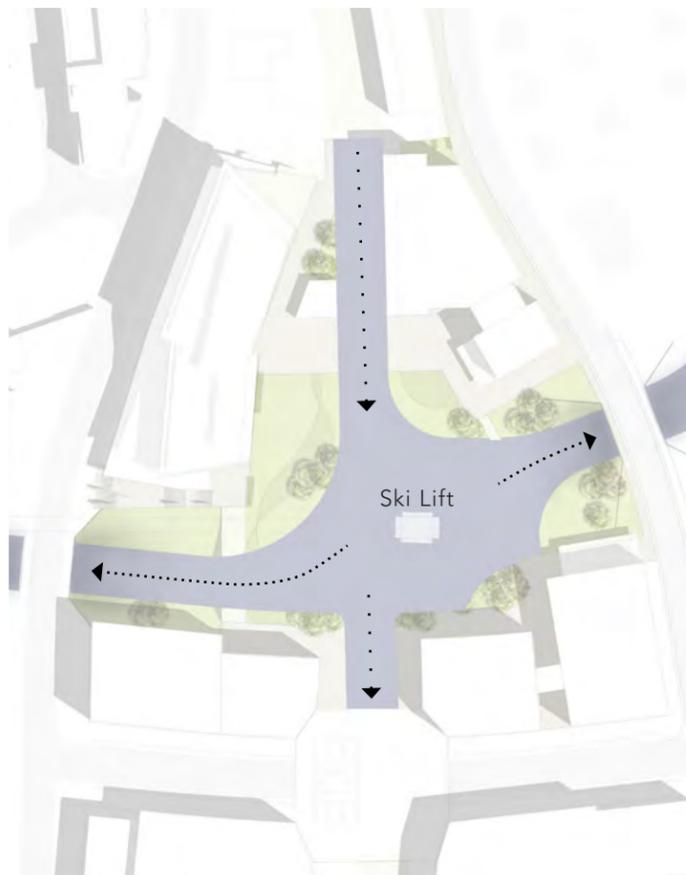
An additional cafe has been positioned to tie the architecture of the Innovation and Discovery Center into the hotel, which frames both the greenway and the space bathed in morning sunshine. This adds legibility and continuity from one space to another.



CIRCULATION

Designing pedestrian circulation is critical in order to facilitate movement from one destination to another. However, in order to encourage movement along these routes, they must be interesting and active spaces, which means no successful pedestrian route can have blank walls.

Qualities such as prospect (views) and refuge (shelter) are important characteristics that make people comfortable in a space.



SKI ROUTES

As the main function in this portion of the village is skiing, all other activities must be complementary to it. For example, that means when skiers want to rest, there must be places to get out of the way and grab a bite to eat, or sit and watch other skiers.

In the summer, the ski routes are left open as a meadow landscape. Further down the greenway, that ends up looking like a main street, but instead of pavement, the street is natural landscape.

The slopes are shallow from the top down, so skiing speeds will be slower. Slopes are steeper traveling left and right, and will allow for faster skiing.



"CAMPANILE"

The "Campanile" was created to provide the village with a clearly identifiable destination, completely different than the surrounding buildings.

While the predominant architectural style in the village is mountain-modern, the Campanile is designed to reflect the more rustic and historic character of existing mountain structures (ranger stations, wildfire lookouts, etc.). It carries the timber-frame style of the Wildlife Interpretive Center into the core of the village, and provides an opportunity to create a common design language for structures other than housing, hotels, and retail.





① The Campanile is patterned after ranger stations and wildfire lookouts that dot the mountains throughout the west. As a timber frame structure, the supports can be located adjacent to the ski lift so as to not disrupt the existing structure.

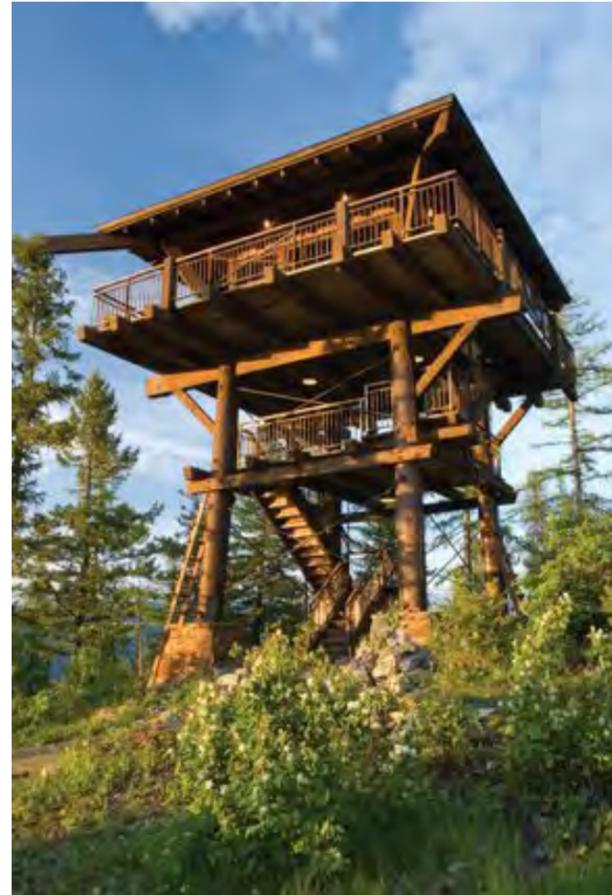
Based on the design of the Campanile, a similar timber-frame language can be continued throughout the public spaces in the mountain village. One example is the use of timber and glulam supports for the pedestrian bridge connecting across ski routes. Other timber elements could include street lighting, poles

for banners, benches, traffic lights, railing, pavilions, bike shelters, etc.

DESIGN PRECEDENTS



This glulam **bridge** is one way to combine the mountain-modern aesthetic to a functional and structural component in the landscape.



Fire lookouts like this are a great source of inspiration for a **tower** at the center of the Powder Mountain Village. Its timber construction is flexible enough to build in close proximity to existing structures.



The **Innovation and Discovery Center** is positioned with spectacular views, so a structure like the one above could be a good way to take advantage of the views while incorporating local building typologies.

1



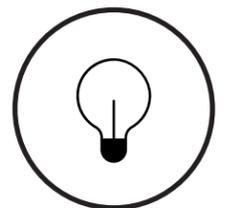
WINTER USE

Ski routes under the pedestrian bridge shown to the left are of use in both winter as well as in summer, used instead as walking trails. They create the perfect opportunity to link the village to mountain recreational opportunities.

The rest of the village should be kept clear of snow along the pedestrian routes. This is made possible through the use of wide sidewalks, allowing enough room for snow piles in the winter, and cafe seating in the summer.

INNOVATION - POWDER MOUNTAIN

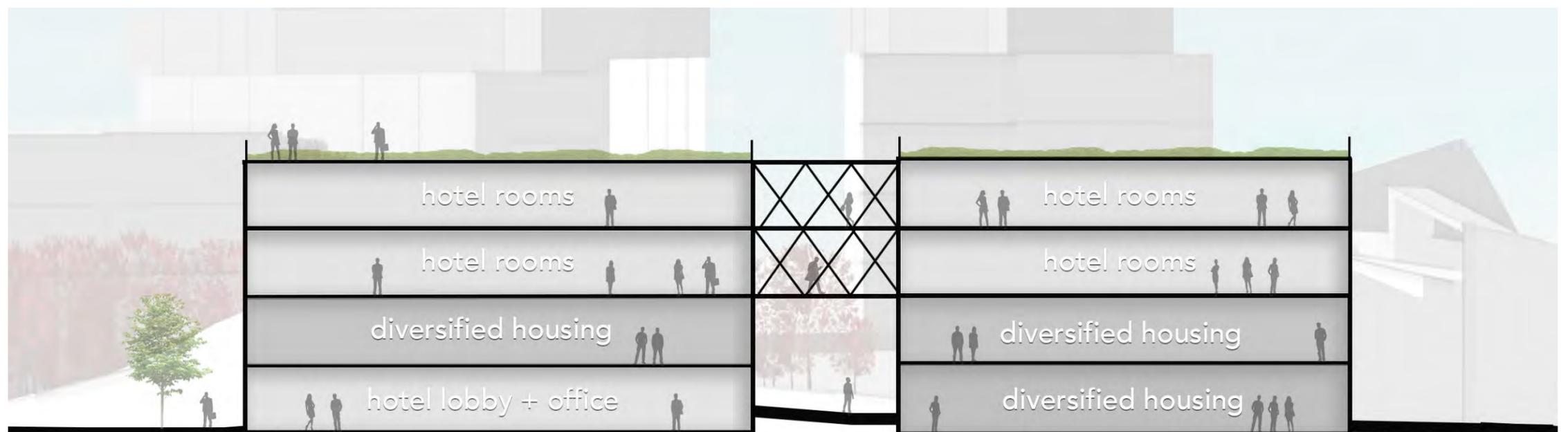
Innovative Response to Growth



SITE 3: DIVERSIFIED HOUSING



With the cost of living on top of the mountain being a limiting factor, generating "affordable housing" becomes a challenge. The traditional model for affordable is government subsidized and is a response to displacement caused by gentrification, homelessness, and ghettos. With a new development, the focus will be more on diversified housing. The term describes high density housing applied to select floors dispersed throughout the village which will house employees, artists in residence, and temporary visitors during low visitation periods throughout the year.





PHASES OF DIVERSIFIED HOUSING

As the village is built out, these phases of diversified housing built by the Summit Group are located based on building typology, unit mix, estimated real-estate value, proximity to transit, as well as overall demand.

PHASE 1

This phase is most important to the physical and social structure of the core of the village. Diversified housing in this location would supply employees to the surrounding businesses, as well as more affordable options for artists-in-residences, or even tiny time-shares.

PHASE 2

This phase is placed away from the core of the village in order to provide different building typologies and alternative unit sizes. This area will probably be developed before phases three and four due to its proximity to the primary road, which will be built before the rest of the village.

PHASE 3

Development in this location will continue the form of the village core. This is toward the outer extents of the highest densities, and will be developed near full build-out.

PHASE 4

As full build-out of the village approaches, this location of diversified housing will be needed to satisfy the demand of more affordable residential units. The location will not take up prime real-estate based on views and access, but is still in close-enough proximity for transit options.



LIVING ARRANGEMENTS



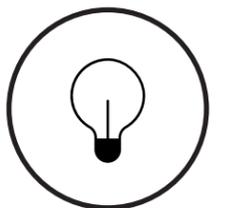
Inside the diversified housing there are common spaces that serve four or more personal bedrooms. The purpose of these spaces are to create a sense of community and provide comfortable amenities for a larger number of people in a compact space. With a full kitchen, large dining area, and large living room, the space is functional and comfortable. For the one-person unit, there is a smaller kitchen and a living room that is flanked by a movable wall. The wall contains a fold up bed so that at night, a bedroom can be created for the one-person user.



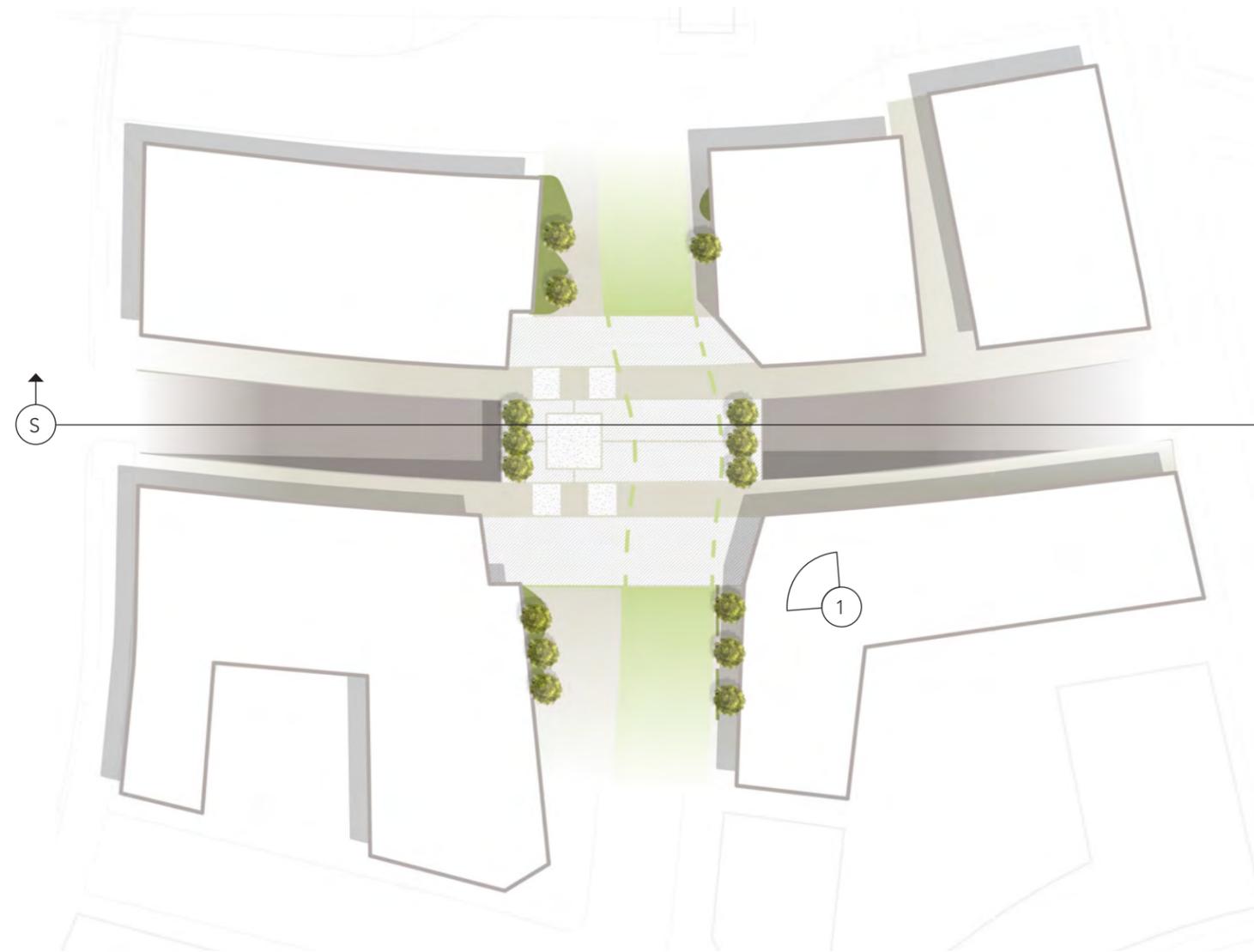
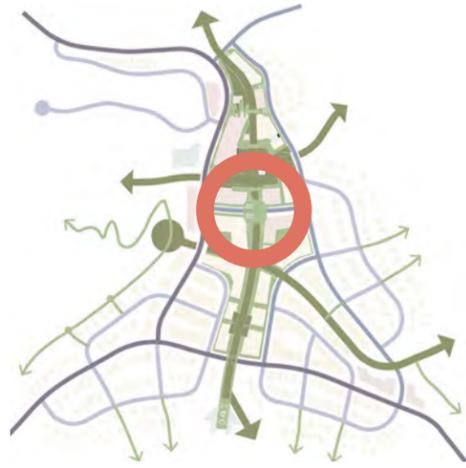
To ensure that the diversified housing retains a sense of privacy, each room contains a personal bathroom, kitchenette, and ample storage space. This will make it so that the employees at Powder Mountain can feel comfortable and that diversified housing will be a desirable option for those working for the resort. It also ensures that the spaces will be better suited for part time users in the slow months.

INNOVATION - POWDER MOUNTAIN

Innovative Response to Growth



SITE 4: CROSSROADS PLAZA

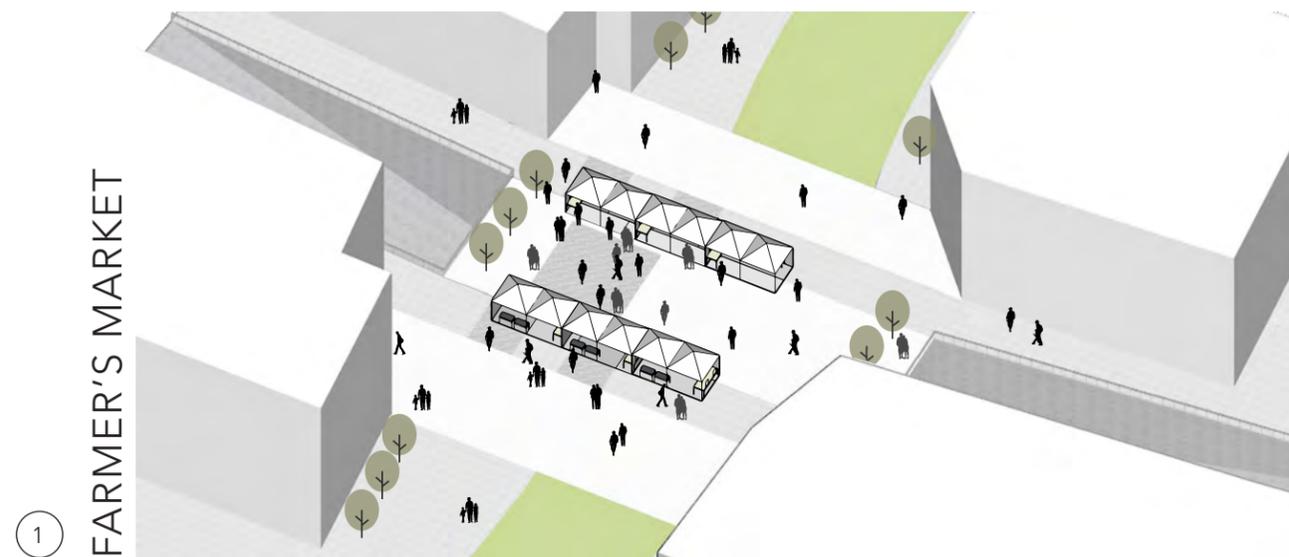


The Crossroads Plaza is a smaller more formal area that will have access to a variety of events for every season. The unique feature in this plaza is that the whole plaza has pavers - including the space that crosses the greenway.

The greenway will remain ski-able throughout the winter. This is accomplished by cooling the pavers, much like one would heat the pavers to melt the snow, keeping the snow frozen and ski-able all winter long.

Events such as farmers markets, concerts, bonfires, and exhibits are just a few possibilities of all the different uses of the Crossroads Plaza. Any formal gathering can and should be held here.

With so many mixed use buildings around the site there will always be people going through the site, creating interest and drawing others into the space.



CROSS-SECTION

5



The Crossroads Plaza has a comfortable pedestrian scale that will help draw people in and create an inviting atmosphere so people will want to stay.

The road going underneath the plaza leads to the underground parking garage. The amount of parking underground will allow many people to drive up, park and participate in the greenway without having to make a lot of space for parking that can be seen from the natural environment.

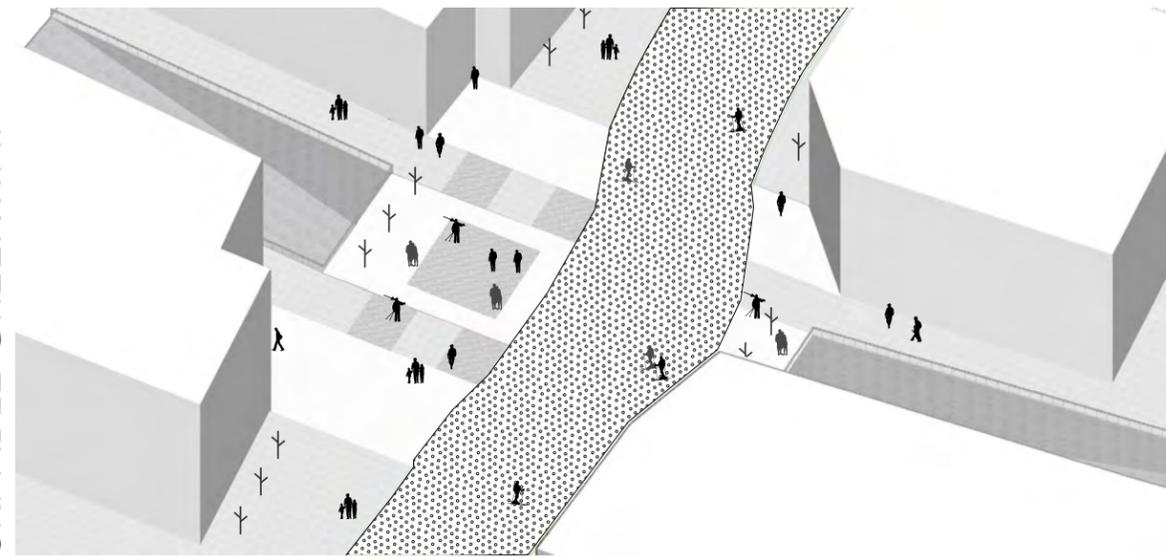
EXHIBIT



BONFIRE

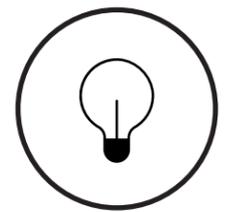


SKI-ABLE GREENWAY

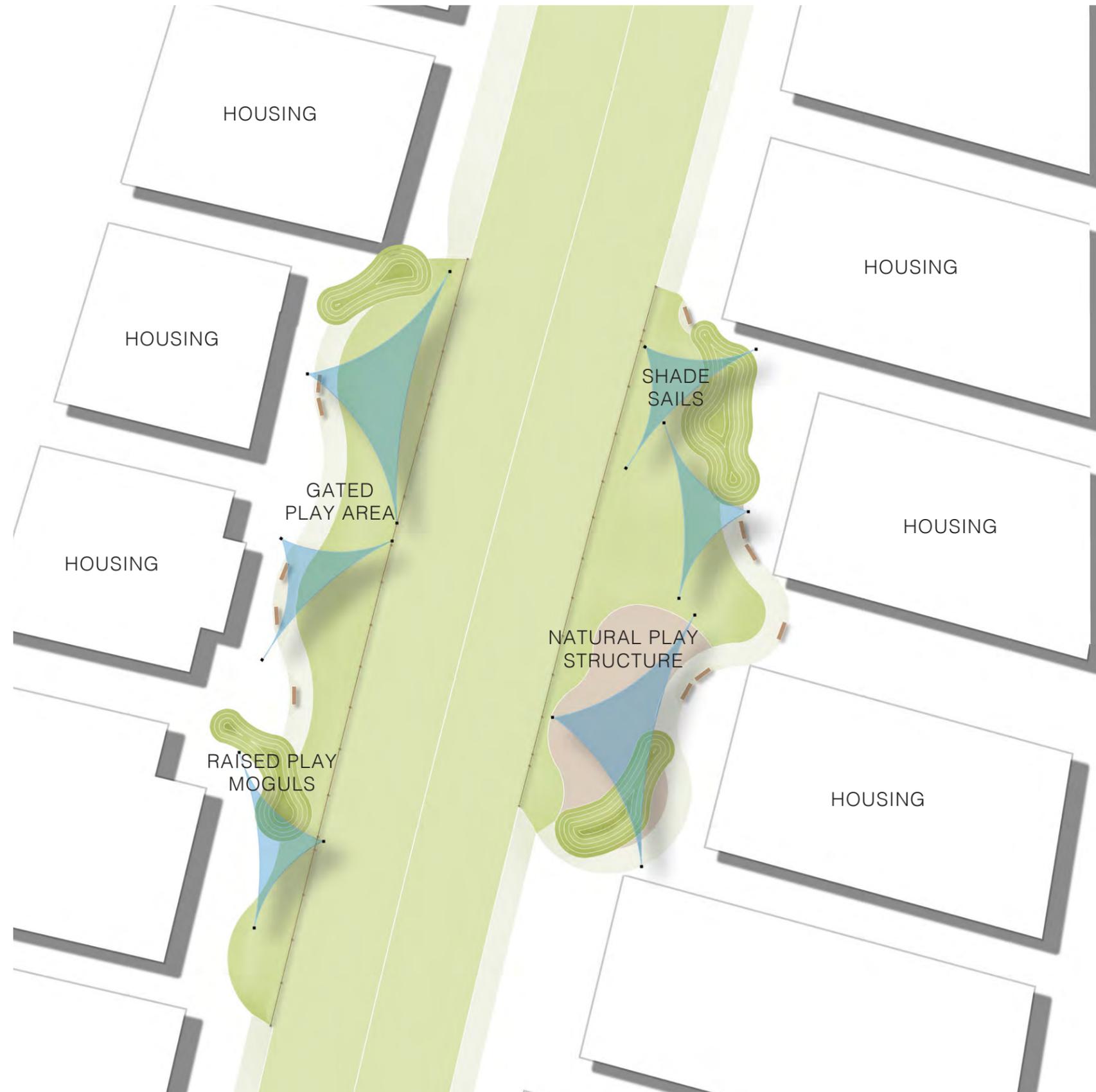


INNOVATION - POWDER MOUNTAIN

Innovative Response to Growth



SITE 5: NATURE PLAY



Widening the greenway in this area creates the opportunity to design a space for children on the top of the mountain.

A natural play environment is different from a traditional playground in that it brings children in contact with natural materials and creates educational opportunities as a result.

The housing along this section of the greenway would be of a different configuration to allow for space for the natural play environment. This would allow each housing unit to still have enough front setback from the public space.



SHADE SAILS

Shade sails are an effective way to create a comfortable environment, while still being flexible enough to remove for off-season activity.



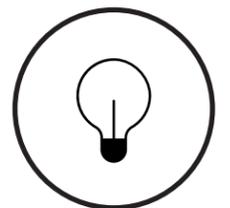
NATURAL STRUCTURES

These create a non-obtrusive environment to mesh with the natural surroundings of the mountain. Much of the material removed for construction of the village could be re-purposed for natural play structures thereby increasing sustainability.

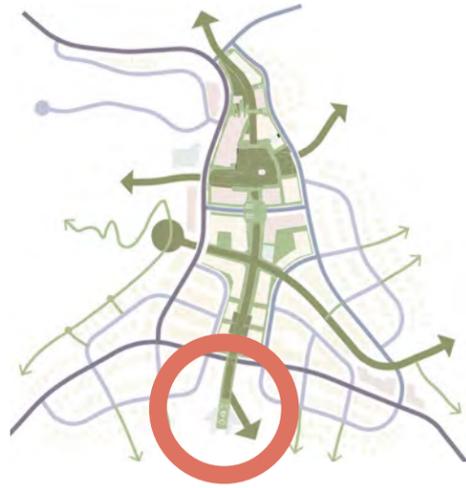


RAISED PLAY MOUNDS

Both natural or synthetic mounds could be used to create an interesting landscape for the children to play in, while still maintaining a safe environment. Variations in terrain provide children with learning opportunities to develop motor skills while still having fun.

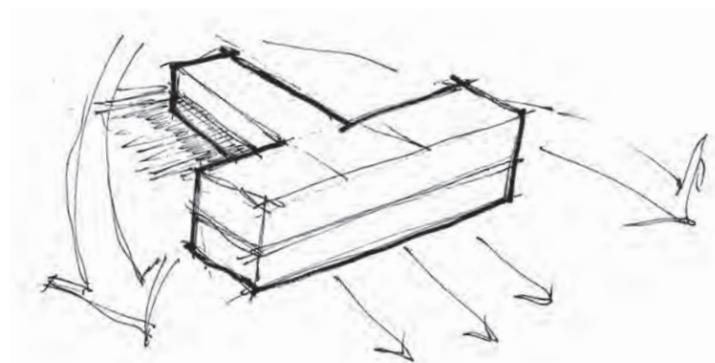
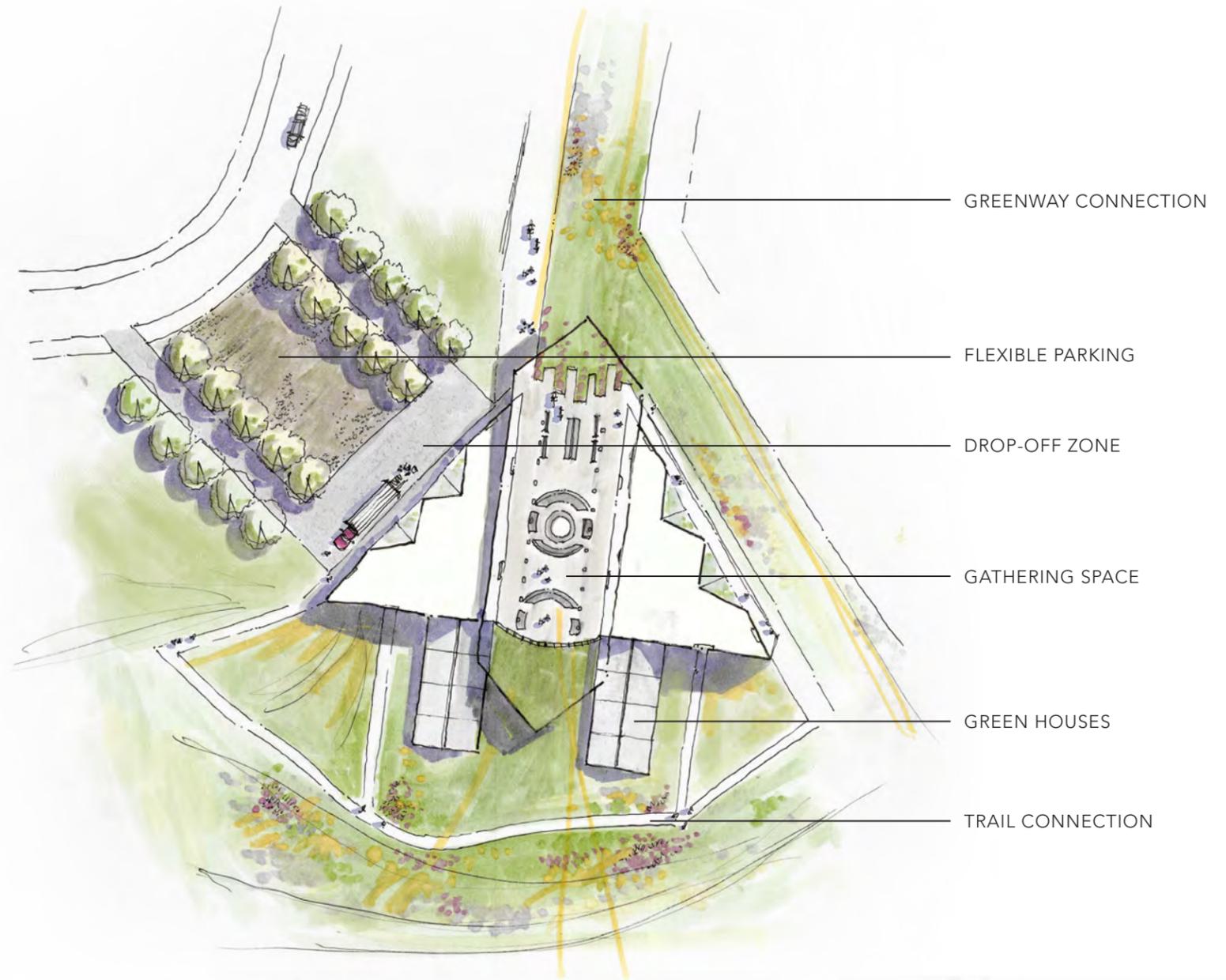


SITE 6: INTERPRETIVE CENTER

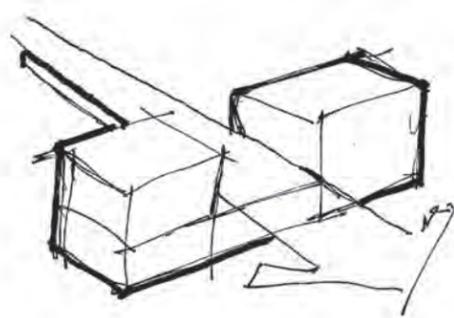


The process of design for the Wildlife Interpretive Center began by working to gather with the Food and Summit Innovation teams to locate the optimal location. It was discovered that at the southernmost part of the village, there was a beautiful meadow vista. Our design for the Mountain Interpretive Center is centered around the amazing views from the meadow, the walkable connection to the rest of the village, and the energy created from the implementation of the village greenway.

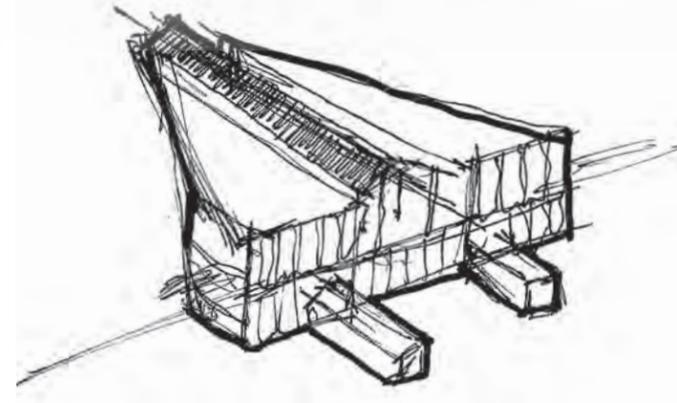
The Wildlife Interpretive Center acts as an engine, propelling the energy collected from the greenway out into the meadow and surrounding trail systems. The design also creates a sacred space using a style similar to the architecture of Fay Jones. Climatic needs were also taken into consideration, specifically sun orientation and snow removal needs.



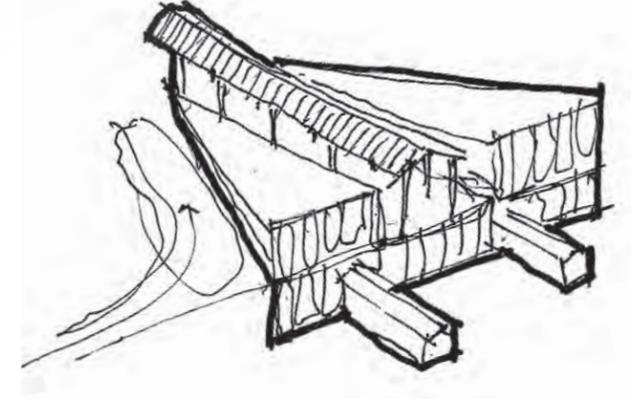
Taking advantage of views



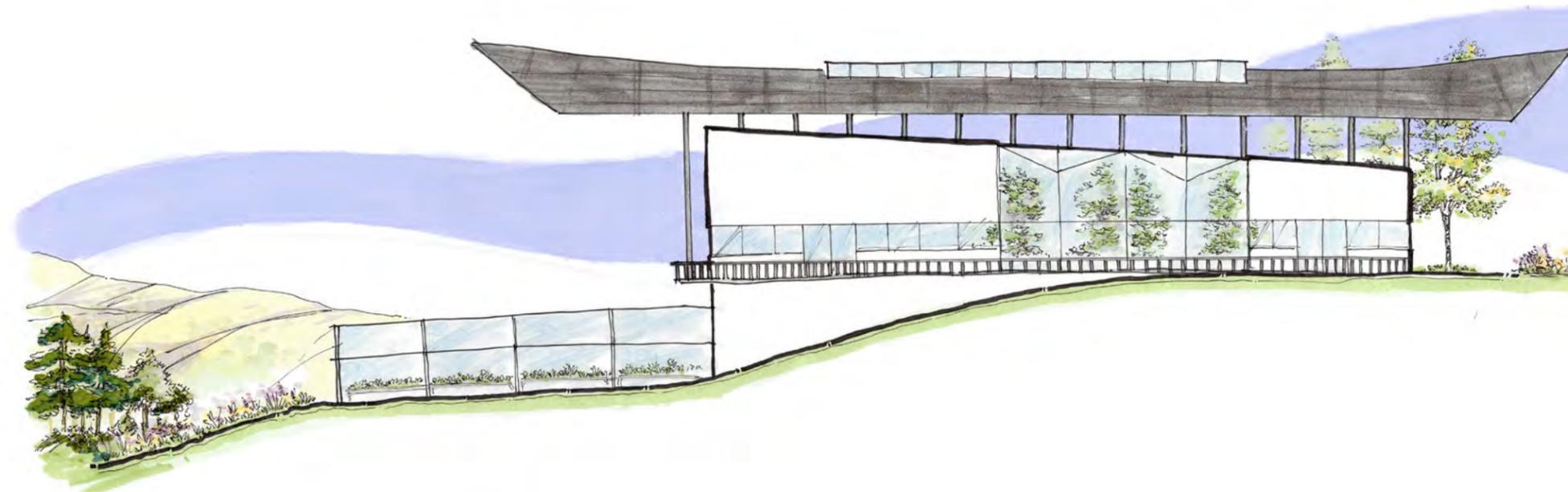
Propelling greenway energy into meadow



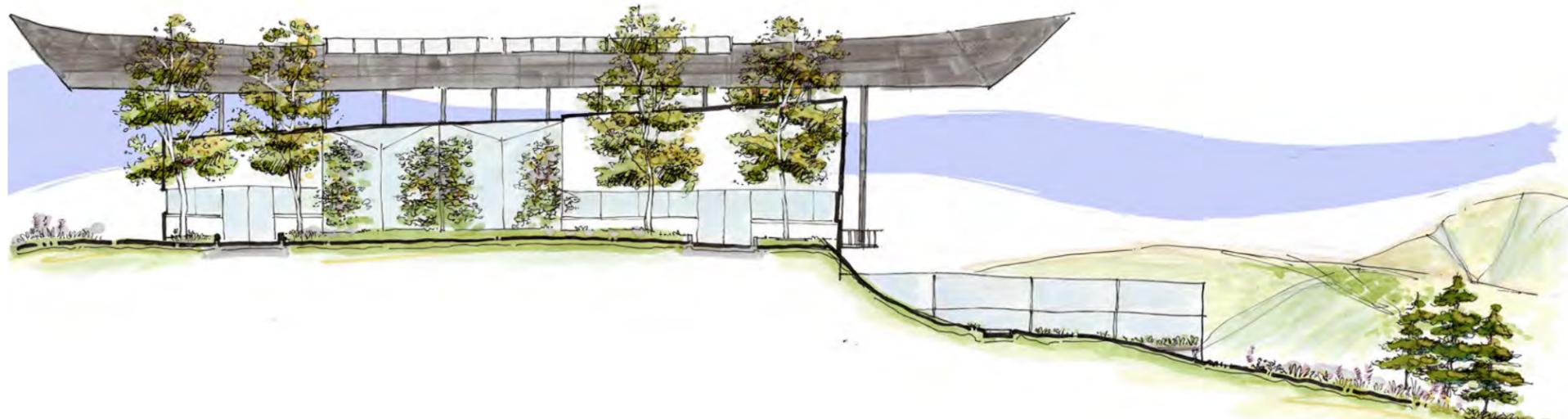
Creating a sacred space



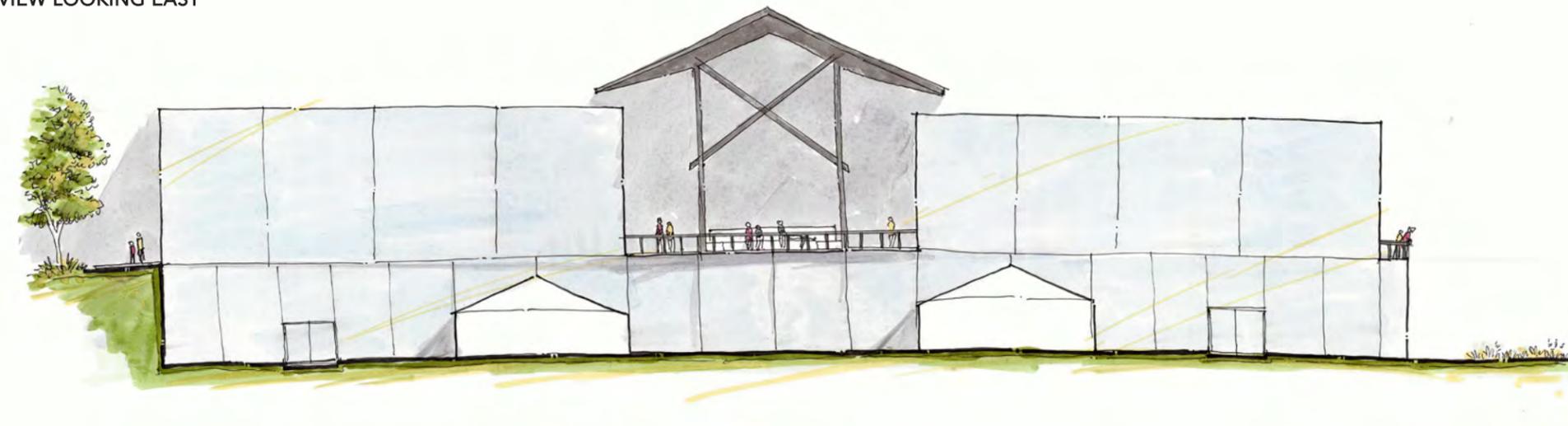
Fitting climatic needs



VIEW LOOKING WEST



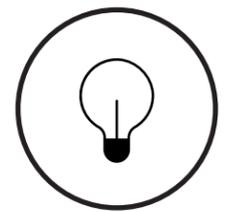
VIEW LOOKING EAST



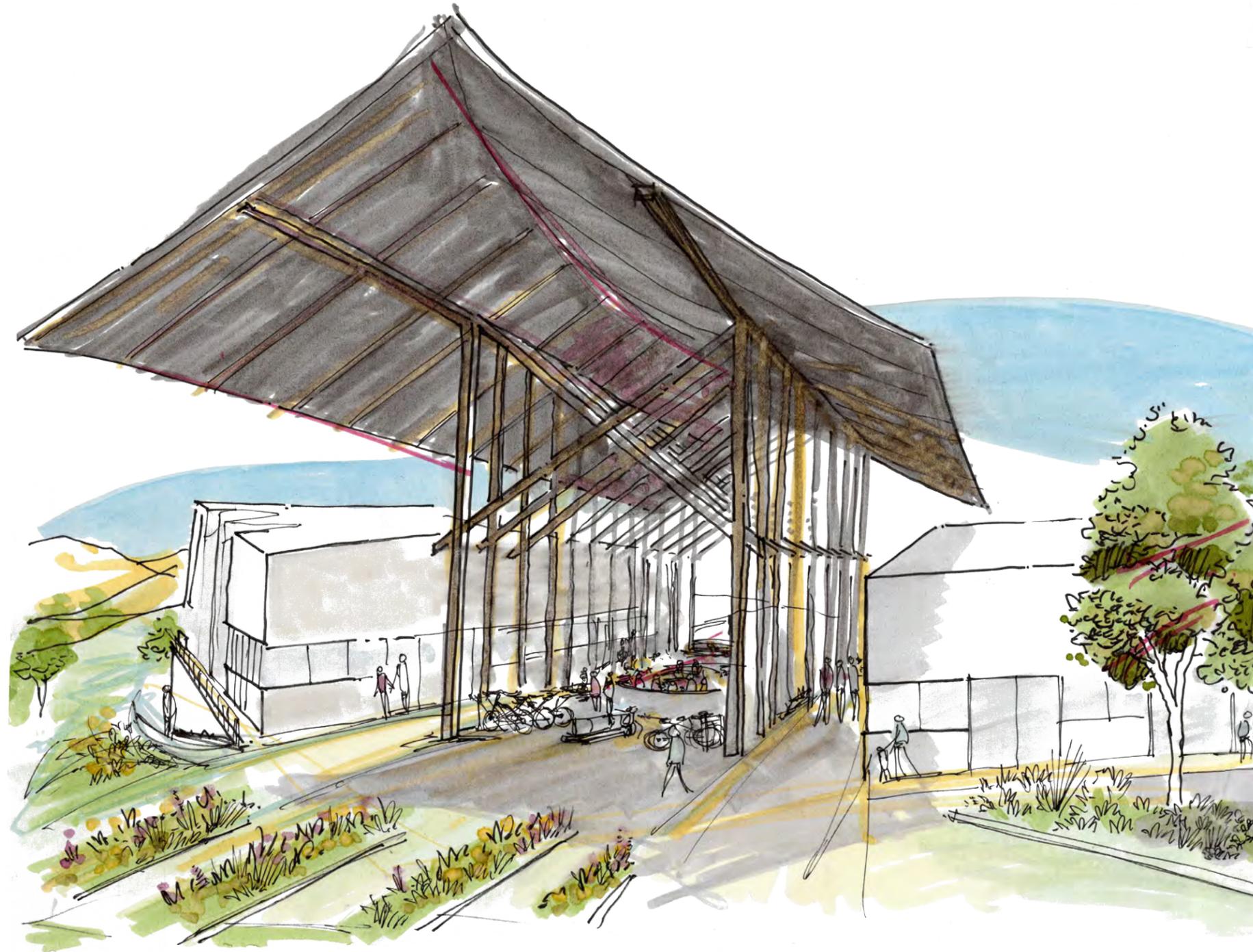
VIEW LOOKING NORTH

The Interpretive Center has a three-fold mission:

1. An interactive, nature oriented learning center on the upper level provides unique, hands-on learning experiences for people of all ages. This space could also double as an event space when needed.
2. A greenhouse restaurant comprises the lower floor of the building. The innovative collaboration of a greenhouse and a restaurant provides not only a farm-to-table experience for visitors, but it also provides an educational episode.
3. A sacred, outdoor community space at the heart of the design promotes an interactive atmosphere where collective appreciation of natural systems can occur. Locations for the storage of equipment such as bikes, skis, and snowboards would be provided.



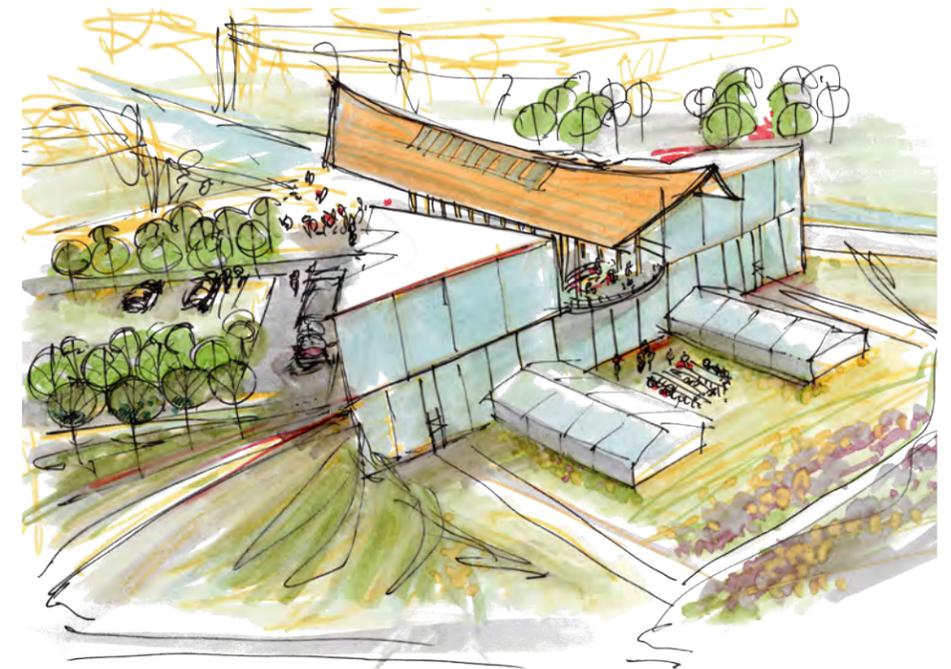
HELPING BUILD AWARENESS



View of the open gathering space within the Interpretive Center

The Powder Mountain Interpretive Center is a culmination of sustainable principles that promote education, experience, life, and appreciation of the natural environment.

The Summit village sits in a breathtaking area of the world, and has the grand opportunity to show the rest of the world just how important these sacred spaces are to us.



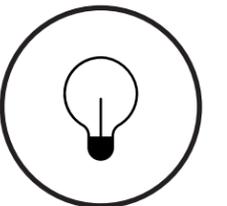
Aerial View looking northeast, viewing the southern facade of the Interpretive Center



View of the southeast corner of the building



We have the responsibility to be stewards of the land around us. As the rest of the world continues to develop and grow with no regard to the impacts they have on the environment, Summit will truly act as a precedent.



INTERPRETIVE CENTER GREENHOUSE

Since growing food at an elevation of 9,000 feet is not practical on a large scale, greenhouses could be a good opportunity to provide visitors to the Interpretive Center with an educational experience. They can view information on wildlife and habitat, or visit a restaurant and see how plants and food grow. This creates the opportunity for a farm-to-table experience in a very local setting.

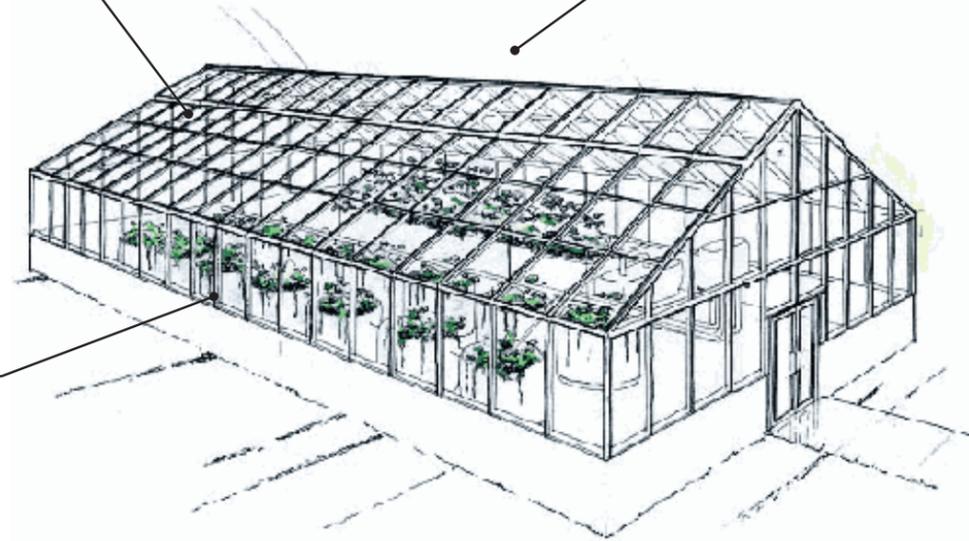
The diagram to the right indicates the best possible structure and material choice for the construction of greenhouses on top of the mountain.

PANES

-  Polycarbonate
-  Polyethylene
-  Glass

FRAMING

-  Extruded aluminum
-  Metal
-  Wood



ORIENTATION

-  N to S for year round
-  E to W for winter production

HEATING

-  Alternative fuel and heat sources
-  Active solar or subterranean heating
-  Passive solar or heat storage

GREENHOUSE CROPS

Cold Season:

- Asparagus
- Broad Bean
- Broccoli
- Brussels Sprouts
- Cabbage
- Collard
- Garlic
- Kale
- Kohlrabi
- Leek
- Onion
- Pea
- Radish
- Rhubarb

Warm Season:

- Shallot
- Spinach
- Turnip
- Cantaloupe
- Cucumber
- Pumpkin
- Tomato
- Pepper
- Sweet Potato
- Squash
- Sweet Corn
- Watermelon
- Eggplant
- Snap Bean



GROWING CONDITIONS

	Ogden	Eden	Brighton
Elevation	4,300'	4,950'	8,740'
USDA Hardiness Zone	6b	4b	4a
Growing Season	172 days	115 days	59 days

Source: USU Climate Center and USDA Agricultural Resource Service

LIVING WALL



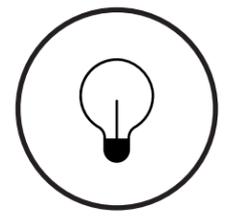
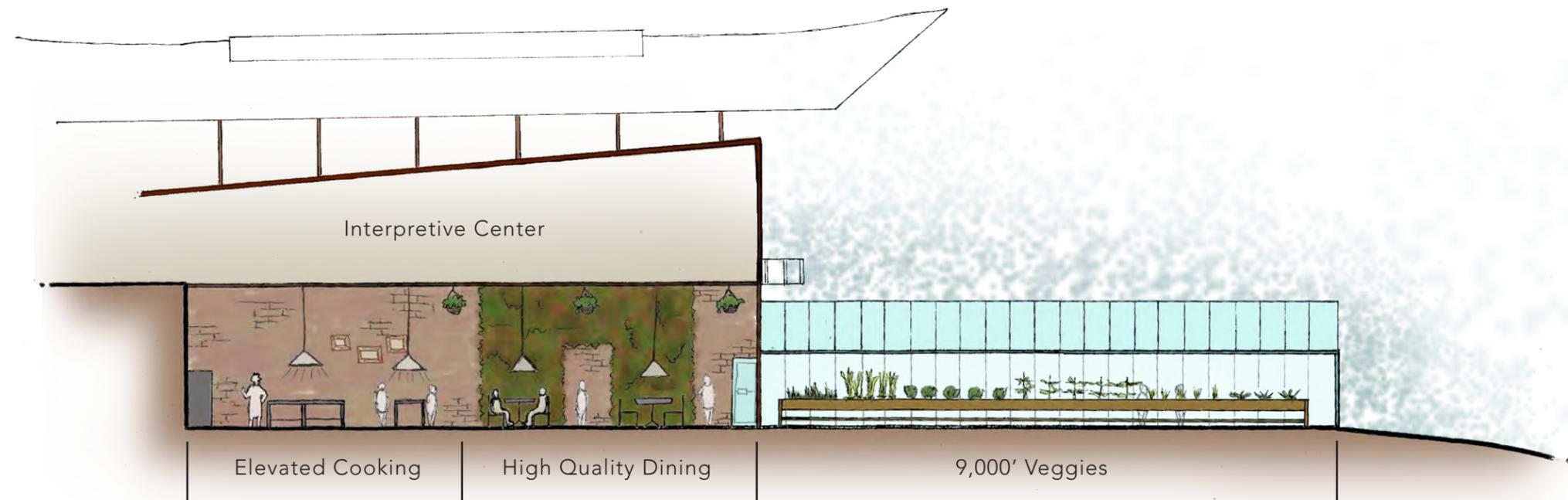
Living walls are a fantastic way to bring visitors to the restaurant in contact with the natural environment. The cafe at the Interpretive Center could have a green living wall all year long.



This cafe in London shows how a living wall can contain many different plants. This provides the opportunity for a variety of plants, some even edible, to be grown within the same environment as those coming to eat.

FARM TO TABLE

Since growing food at an elevation of 9,000 ft is not practical on a large scale, the attached greenhouses allow for the opportunity of a very visual farm-to-table experience. A visitor to the Powder Mountain Interpretive Center can experience a farm-to-table meal where greenhouses provide food for a restaurant, or view a figurative farm-to-table show of the meadow feeding the wildlife.



CONCLUSIONS OF EXISTING PLAN

The Powder Mountain Innovation team graphically represented the five goals outlined by Powder Mountain. The graphic illustrates how goals were met before revisions to the master and how goals were met after revisions.



Design an Intentional Community

The core of the village will create a community, but a community may fail to reach the outer edges of the village.



Next Generation Innovation and Tech

- Community club house
- Artists in Residence program



Walkable Scale

-  There is no clear hierarchy of roads and circulation may be hard to navigate.
-  Users will only walk around the core of the village. The rest of the village is lacking connection. (Ring shows 1/8 mile radius.)



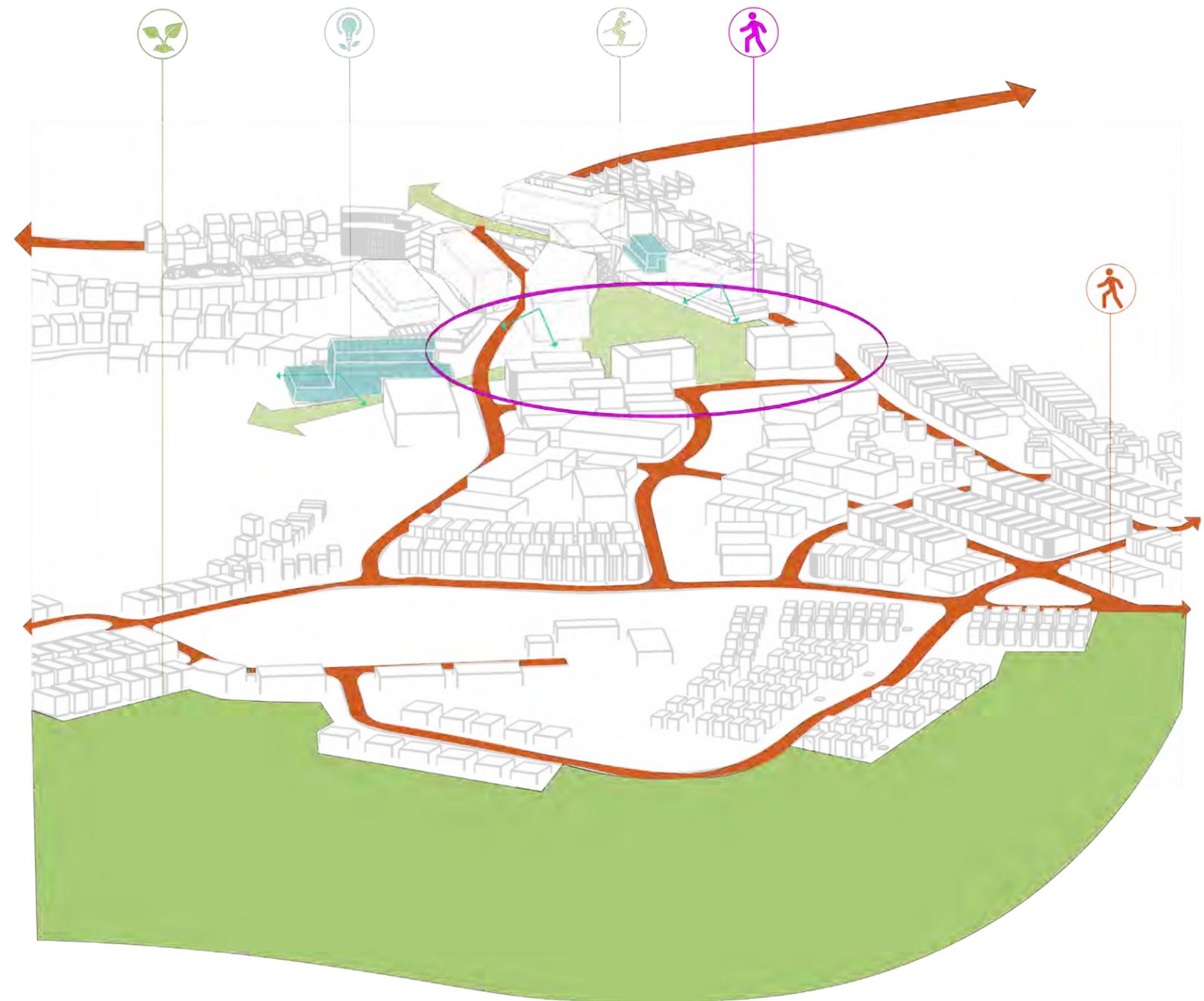
Preserve Magical Skiing Experience

Community core has ski-in / ski-out opportunity but the residential homes are lacking connection.



Sustainability and Balance with Nature

Strong effort to maintain flora and fauna presence on the mountain. Some lower density areas break up potential habitat.



ORIGINAL PLAN

CONCLUSIONS OF PROPOSED PLAN



Design an Intentional Community

The goals addressed above create an intentional community.



Next Generation Innovation and Tech

The community center was kept as is and the Artists-in-Residence program was expanded. The expansion includes a university campus that can keep residence at the mountain year-round and provide a work force for retail and services.



Walkable Scale

Distinct street hierarchy. Primary roads function as a loop to help circulation and navigation.

Village core is maintained but the village has walkable destinations to connect the outsides of the village with the core.



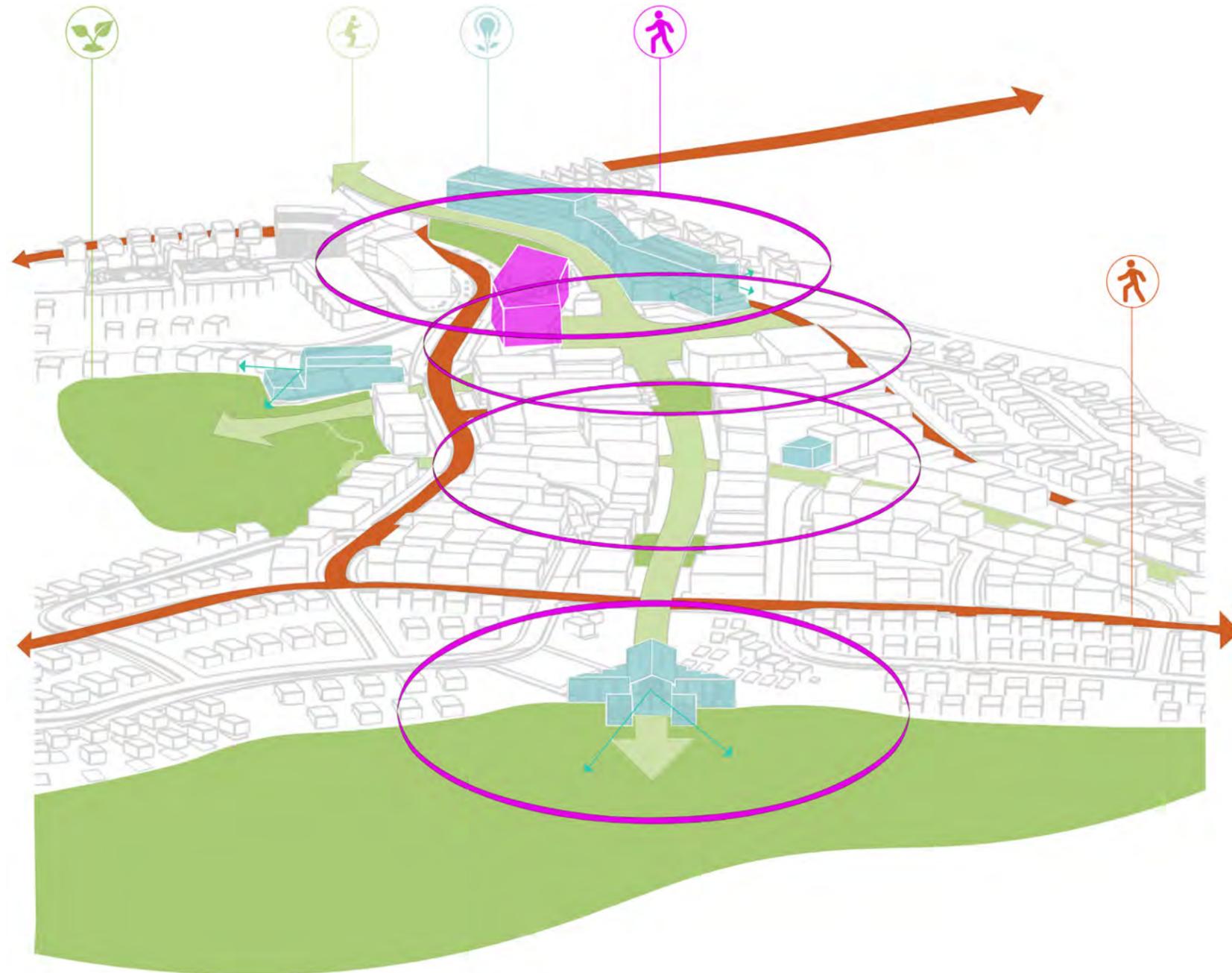
Preserve Magical Skiing Experience

The ski-in / ski-out areas extend throughout the village as part of the greenway.

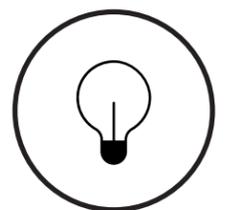


Sustainability and Balance with Nature

The design kept the preserved flora and fauna areas and expanded the preserved areas. A denser village core also added to the additional open space.



REVISED PLAN



OGDEN VALLEY + POWDER MOUNTAIN

STUDIO PRINCIPLES

The Investigations of the Fall and Spring 2017/2018 Studios yielded a collection of timeless principles for the benefit of future planning for Ogden Valley, Powder Mountain and other stakeholders in the region. The growth projections for the Wasatch Front suggest a doubling of population within the next thirty years. Ogden Valley hosts a collection of assets that include natural scenery and a delicate watershed and natural systems that will be severely impacted by the projected growth. The valley and its natural systems must be studied to determine appropriate planning principles that give shape to responsible growth. These foundational principles are manifest in the following ideas:

- With the threat of projected growth the priority for this valley is sustaining the integrity of the watershed.
- The health of the watershed is promoted by maintaining vegetated stream corridors in each of the drainages flowing into the reservoir.
- Animal populations (fauna) inhabit and rely upon the uplands, drainages and farmland adjoining these watercourses.
- This underlying structure of drainages and public lands in the valley forms the scenic backdrops that make this valley special.

- Growth should be responsibly concentrated in existing municipalities organized around mass transit, promoting non-vehicular movement and emphasizing open space connections to drainages and regional trails.
- Innovation on the Mountain must reap the benefit of being at 9,000 feet. The village form is beckoning the visitor to participate in an extraordinary landscape experience on top of the mountain.

Across the two semesters and through countless stakeholder conversations and critiques the class organized around four topic areas influenced by geography and content. These four topics are: "Systems-Flora and Fauna", "Systems-Food", "Innovation-Ogden Valley", "Innovation-Powder Mountain". In the interest of clarity we have attempted to glean three or four conclusions from the work of each team. These conclusions are expressed as quotes with the intent that they find their way into plans and actions of both the public and private sectors.



SYSTEMS - FLORA + FAUNA

"Support agriculture, wildlife, habitat and scenic vistas." *O.V. Citizens*

"We will know we've succeeded if a rich population of wildlife, from invertebrates to moose, are still present after this valley's population reaches 20,000 people." *USU Students*

"Habitats, agricultural land and scenery must be carefully preserved in patterns that promote the feeling of wellness. The ultimate brand of the valley, of Powder Mountain, of Snow Basin, is the visual and functional quality of the landscape!" *USU Students*

SYSTEMS - FOOD

"Food is necessary every day. We wake up thinking about it, about what might be good for breakfast. We spend considerable time bonding with others around food...it is a community builder!" *USU Students*

"Growing and promoting great food and gathering in a specific place brands that place." *USU Students*

"Growing food at altitude, (9,000 foot carrots), is emblematic of the fresh food conviction. Getting locals to partner with Powder Mountain at 9,000 feet or 4,941 feet builds important community bonds." *USU Students*

INNOVATION - OGDEN VALLEY

"Eden has willingly become the service center for the valley, it is providing goods and services that allow people to function within the valley." *Rick Grover, Weber County*

"By accepting growth and building upon the Pioneer legacy of Ogden Valley, Old Town and New Town Eden will likely take responsibility for building the valley's most accommodating village." *USU Students*

"Planning goals for Eden promote people gathering-walkability-scenery and connections to natural open space that befit a recreation/agriculture-oriented community." *USU Students*

INNOVATION - POWDER MOUNTAIN

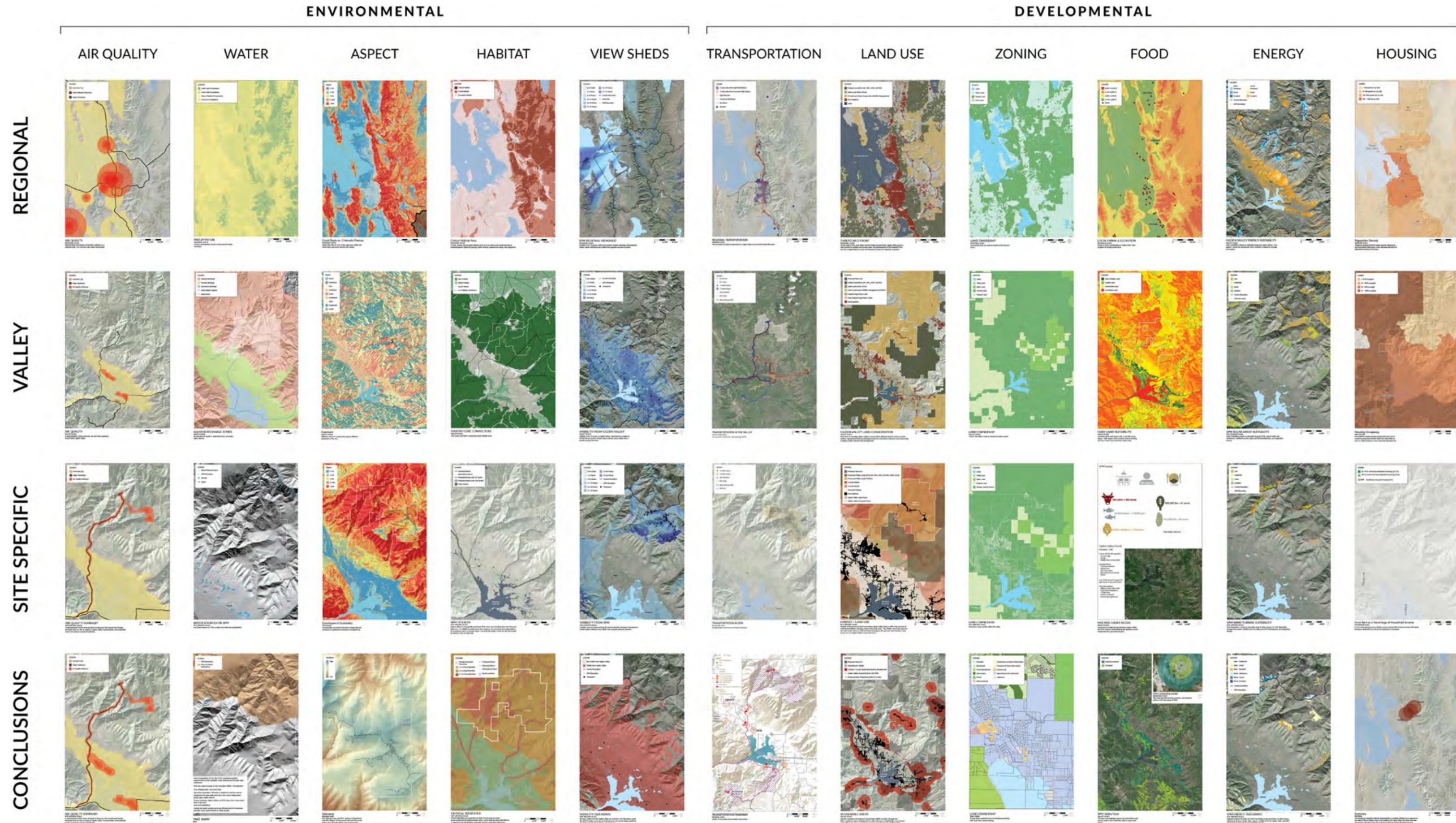
"The greenway is the spine of the village, it links the head of the entry plaza to the tail of the interpretive center." *USU Students*

"The nagging challenges of mountain village planning are employee housing, transportation, parking, cost of construction and visual impact. So what else is new?" *Joe Porter, Planner*

"A village from scratch at 9,000 feet should be specifically tailored to the occasion. It should express the energy of being this elevated, the energy of this natural and spectacular place. It should not copy conventional resort aesthetics borrowed from European mountain villages." *Todd Johnson/David Anderson, Professors USU*

"Powder Mountain wants people to feel special at 9,000 feet - special experience and special responsibility." *Greg Mauro, Powder Mountain*

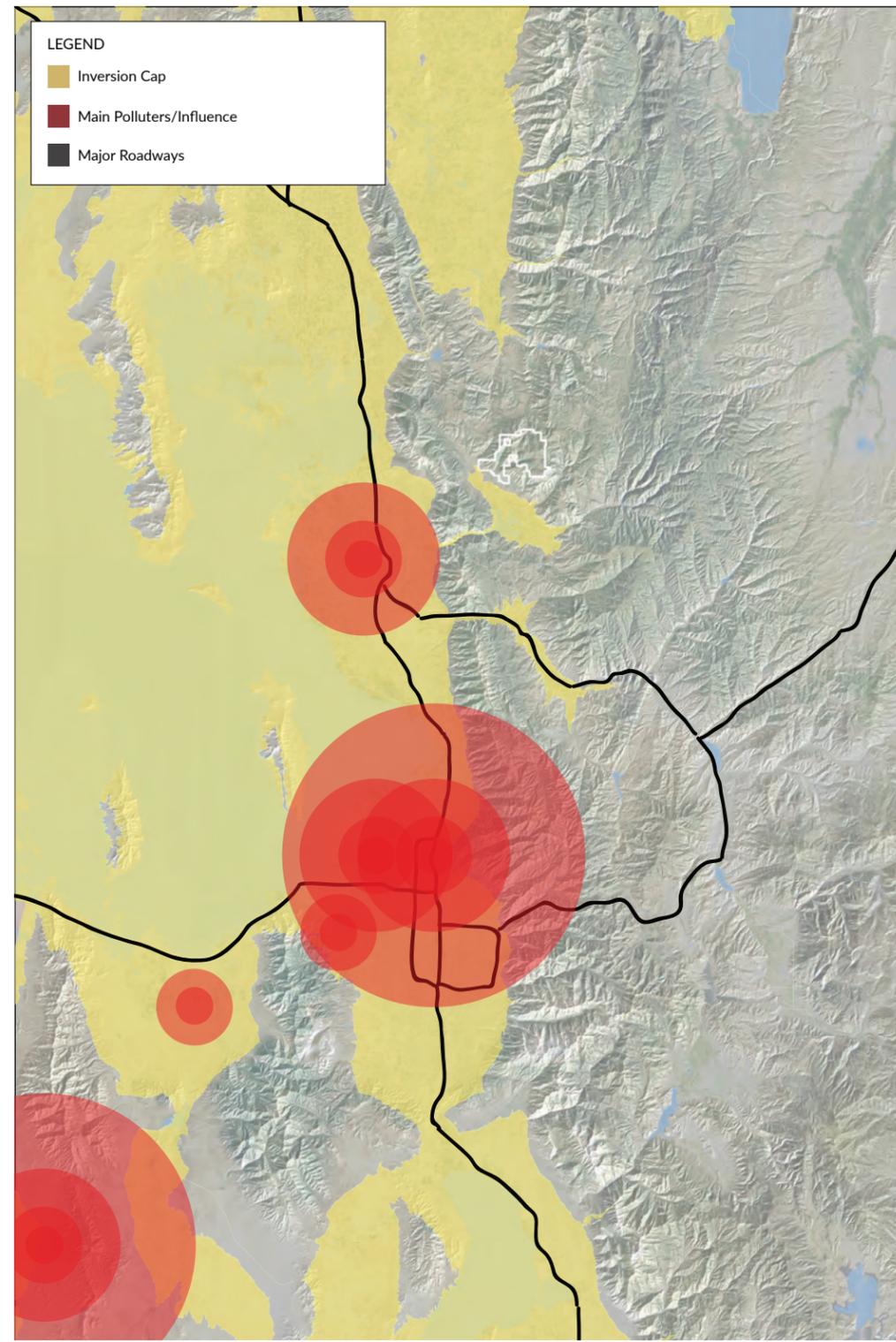
APPENDIX



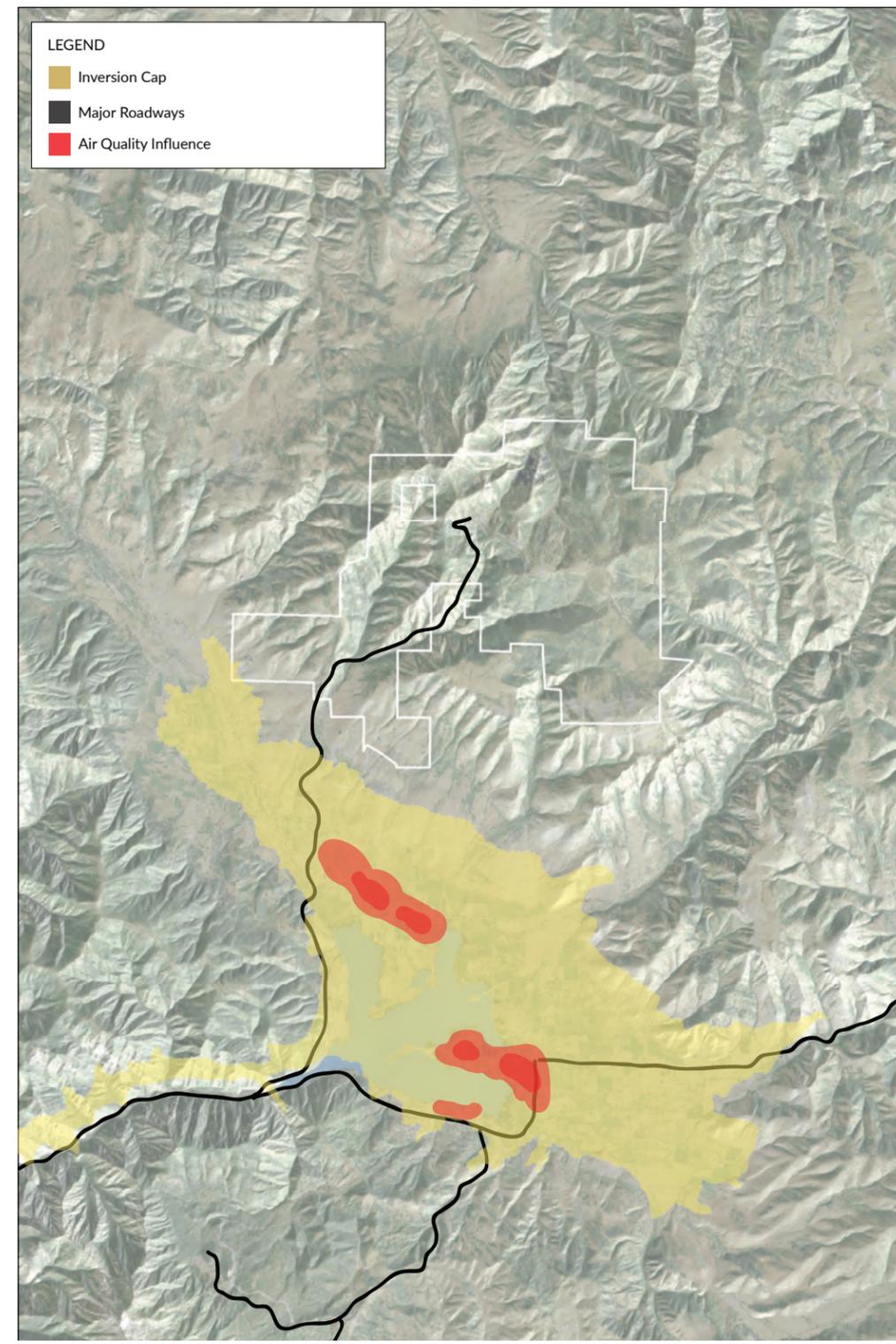
APPENDIX - PARTS OF THE MATRIX

Interdependent Systems

AIR QUALITY



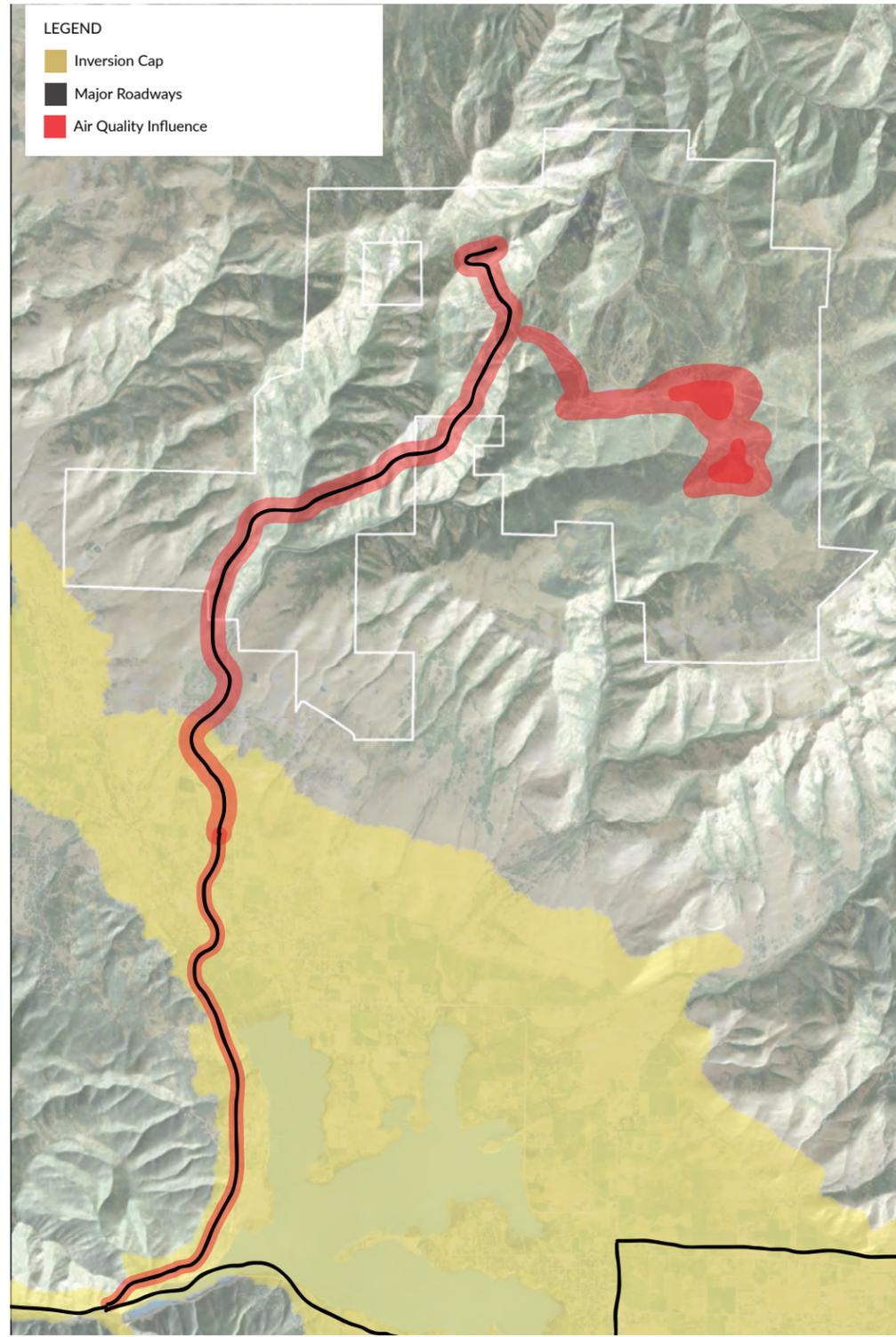
AIR QUALITY
REGIONAL SCALE
Representing the influence of primary polluters at a regional scale. The inversion cap is also represented.



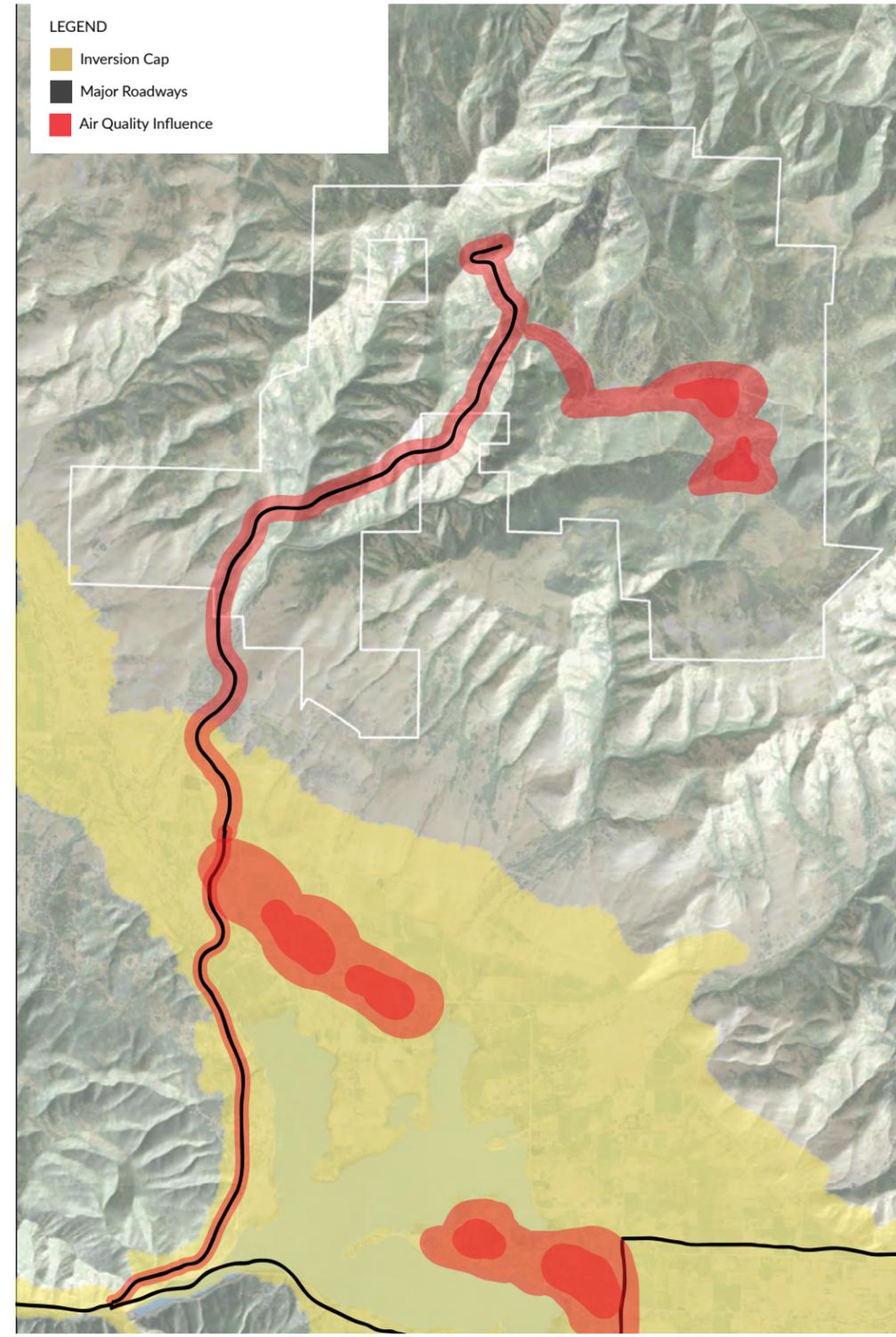
AIR QUALITY
VALLEY SCALE
A representation of the inversion cap and major roadways found within Ogden Valley.

APPENDIX - PARTS OF THE MATRIX

Interdependent Systems

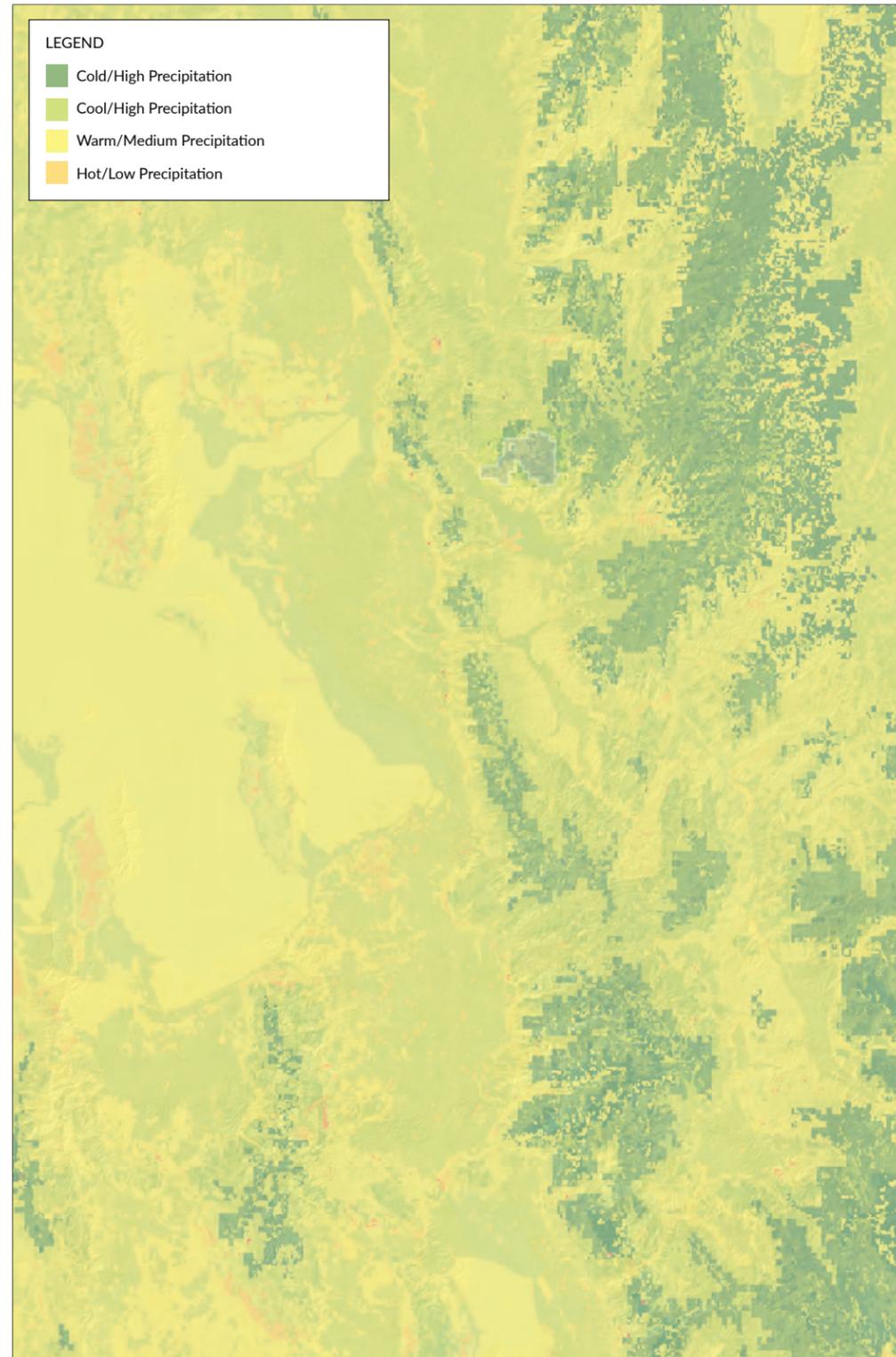


AIR QUALITY SUMMARY
SITE-SPECIFIC SCALE
A representation of the areas and level of influence that Summit and Powder Mountain have on the air quality of Ogden Valley. Transportation and residential homes are primary sources of pollution.

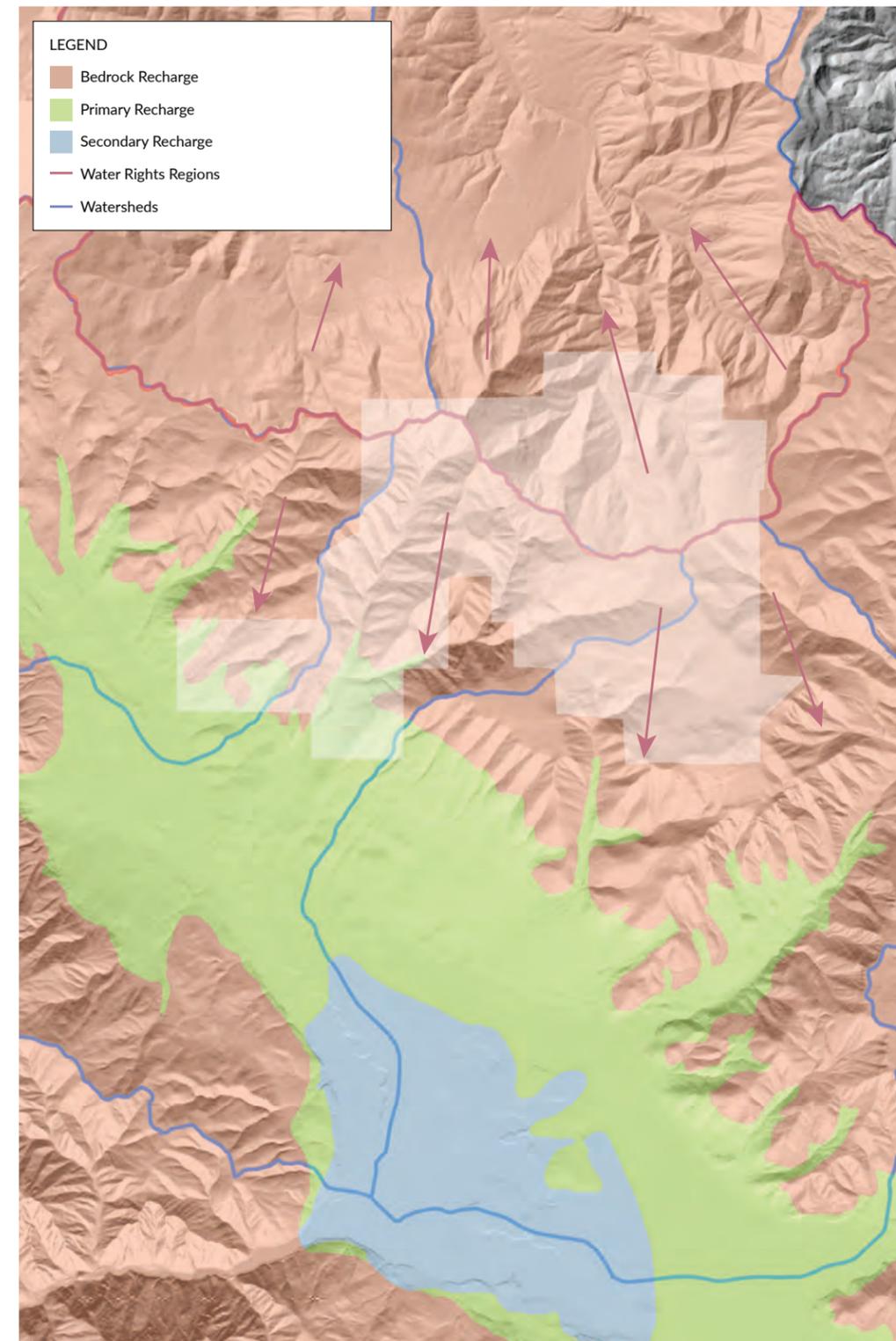
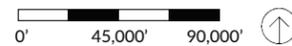


AIR QUALITY SUMMARY
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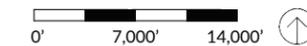
WATER



PRECIPITATION
REGIONAL SCALE
A look at precipitation levels in and around Powder Mountain.

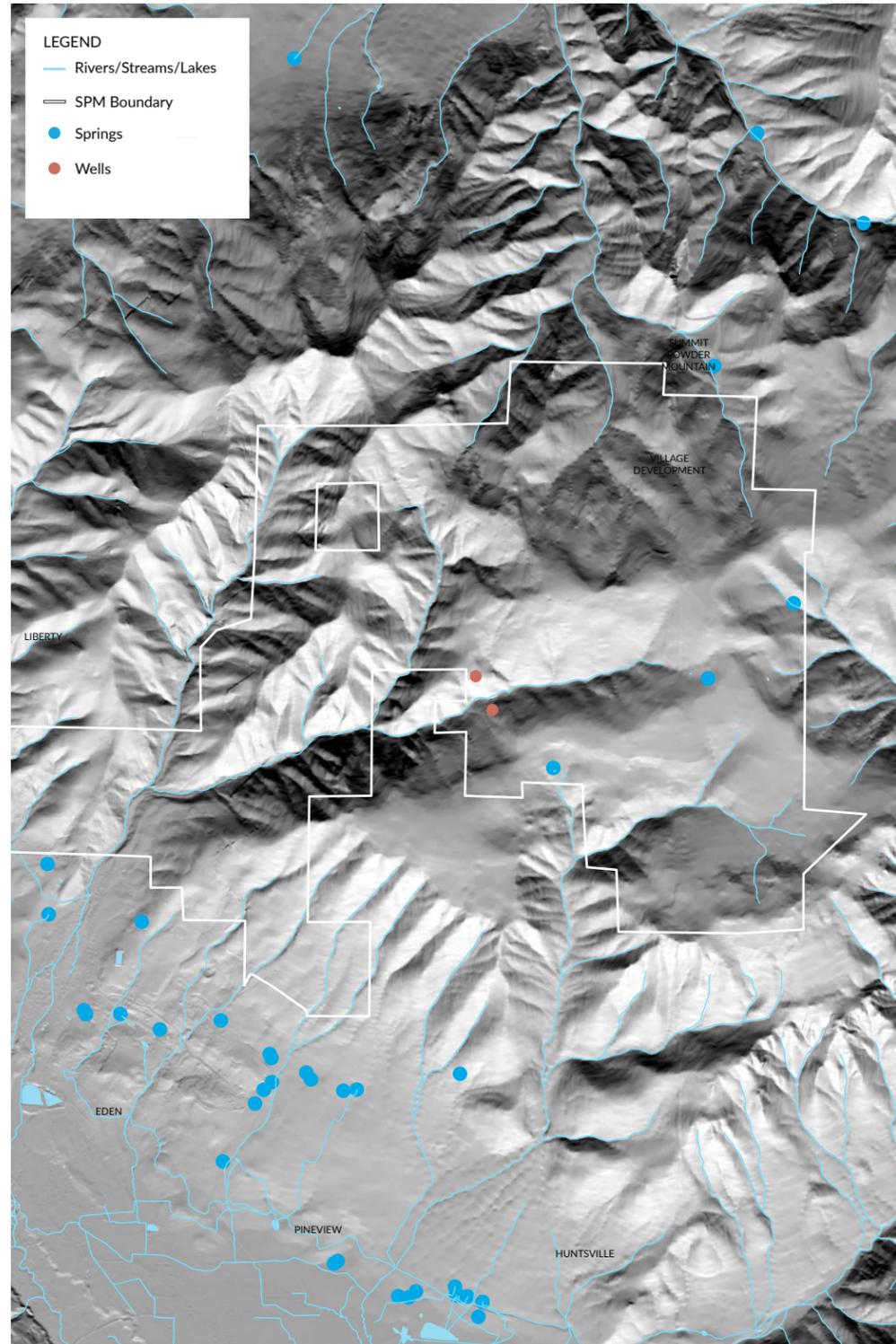


AQUIFER RECHARGE ZONES
VALLEY SCALE
An overview of aquifers, watershed areas, and water rights districts.

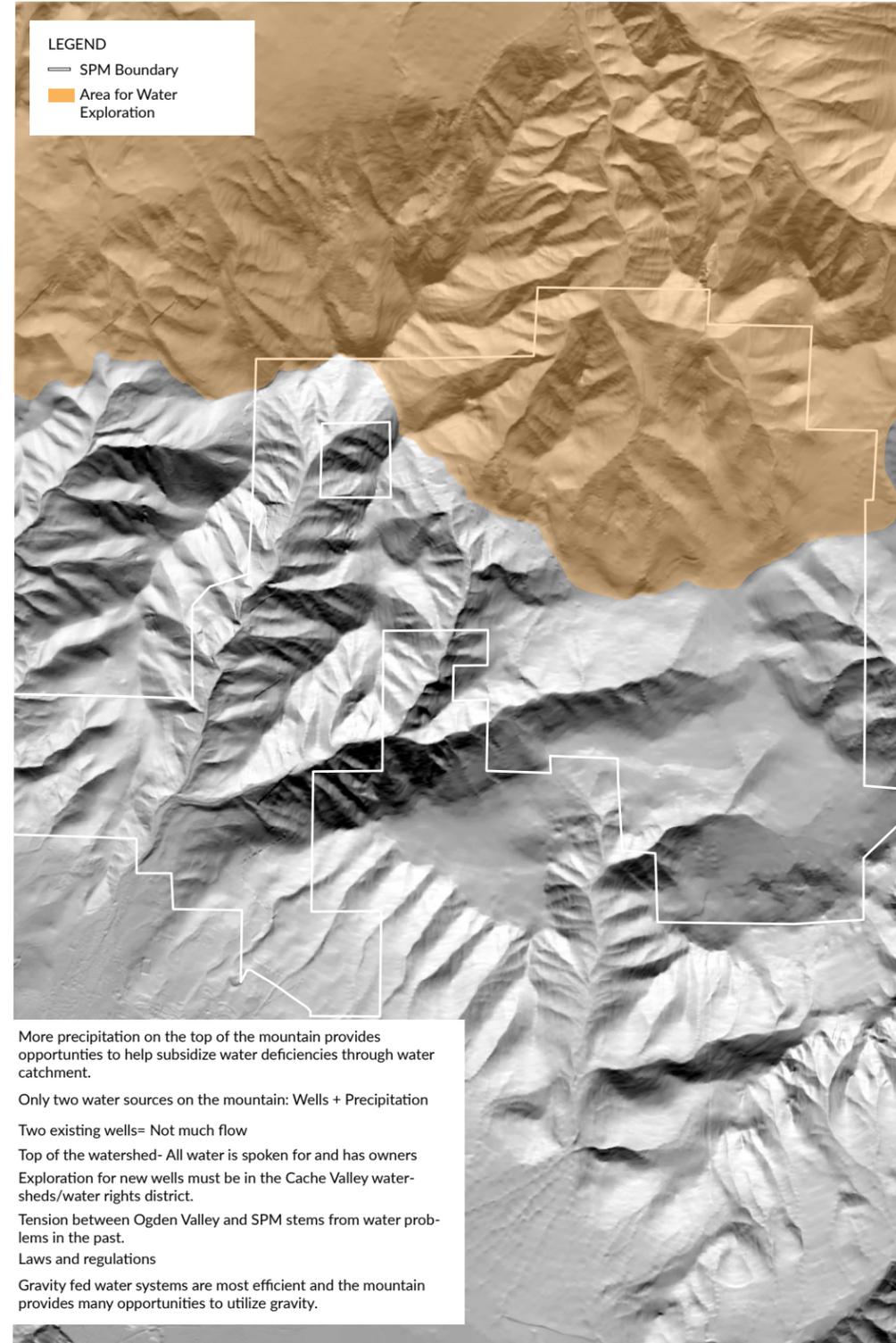


APPENDIX - PARTS OF THE MATRIX

Interdependent Systems



WATER SOURCES ON SPM
SITE-SPECIFIC SCALE
Few water sources on SPM, mostly from wells and precipitation.



More precipitation on the top of the mountain provides opportunities to help subsidize water deficiencies through water catchment.

Only two water sources on the mountain: Wells + Precipitation

Two existing wells= Not much flow

Top of the watershed- All water is spoken for and has owners

Exploration for new wells must be in the Cache Valley watersheds/water rights district.

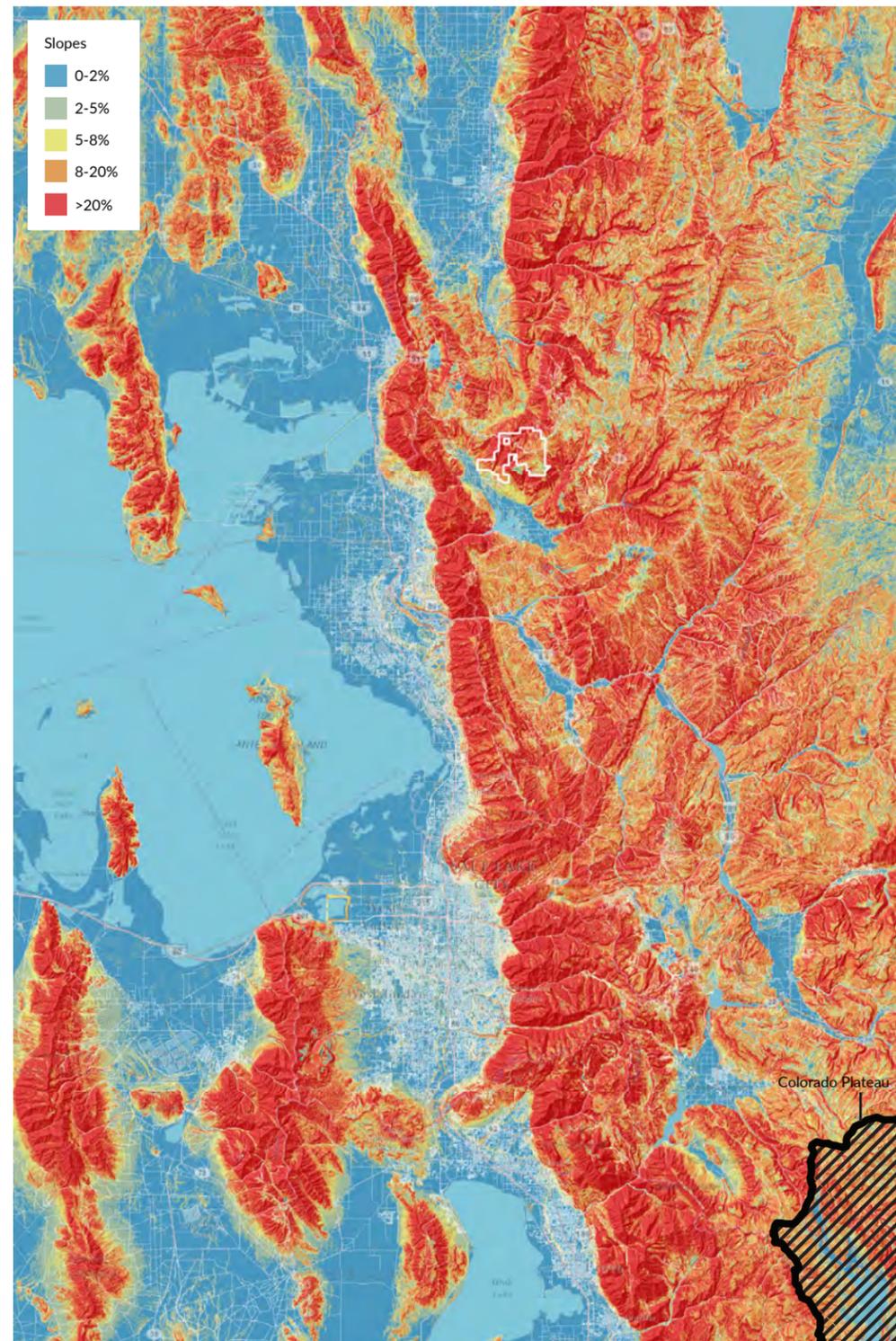
Tension between Ogden Valley and SPM stems from water problems in the past.

Laws and regulations

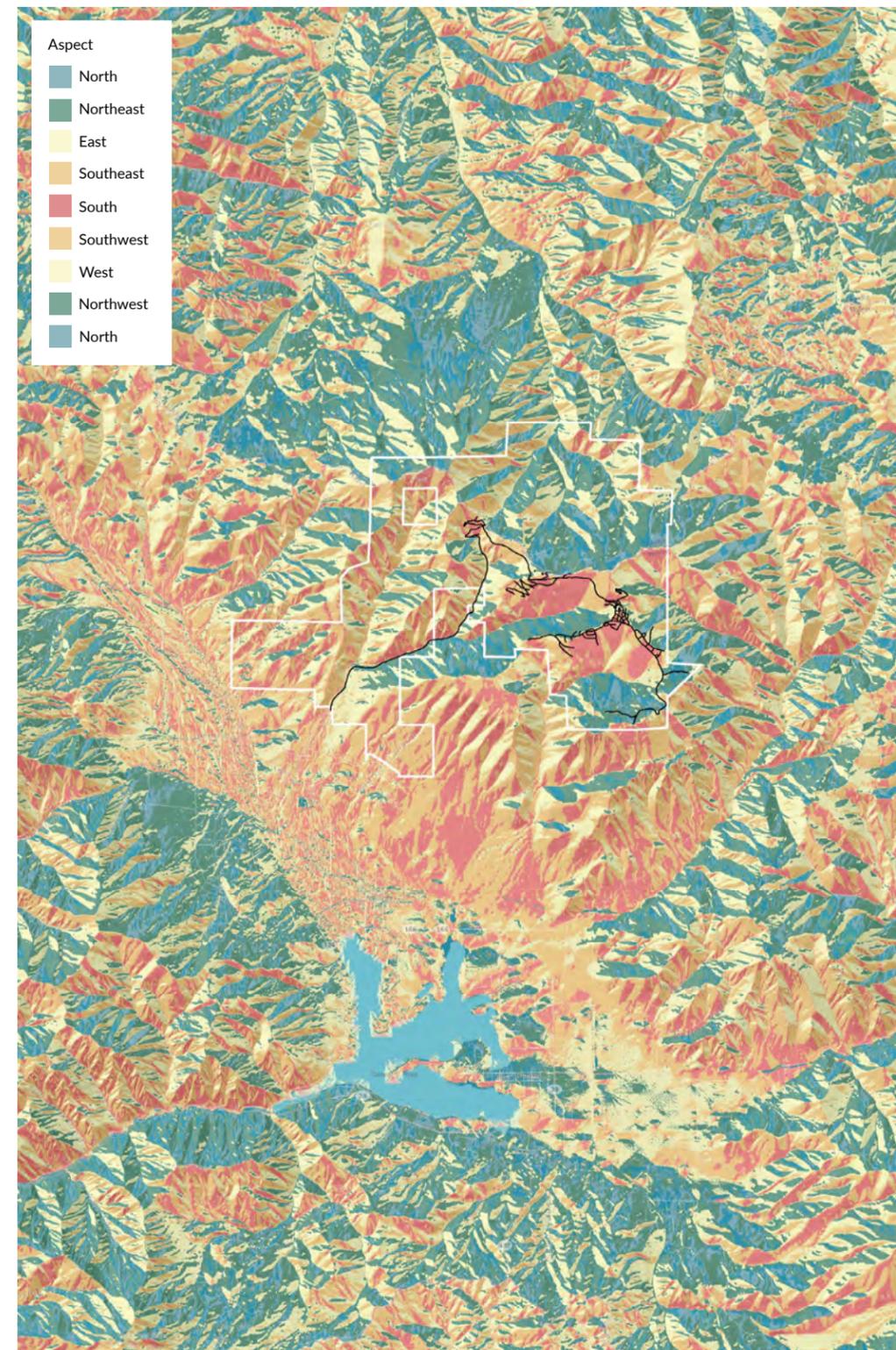
Gravity fed water systems are most efficient and the mountain provides many opportunities to utilize gravity.

TAKE AWAY
SPM

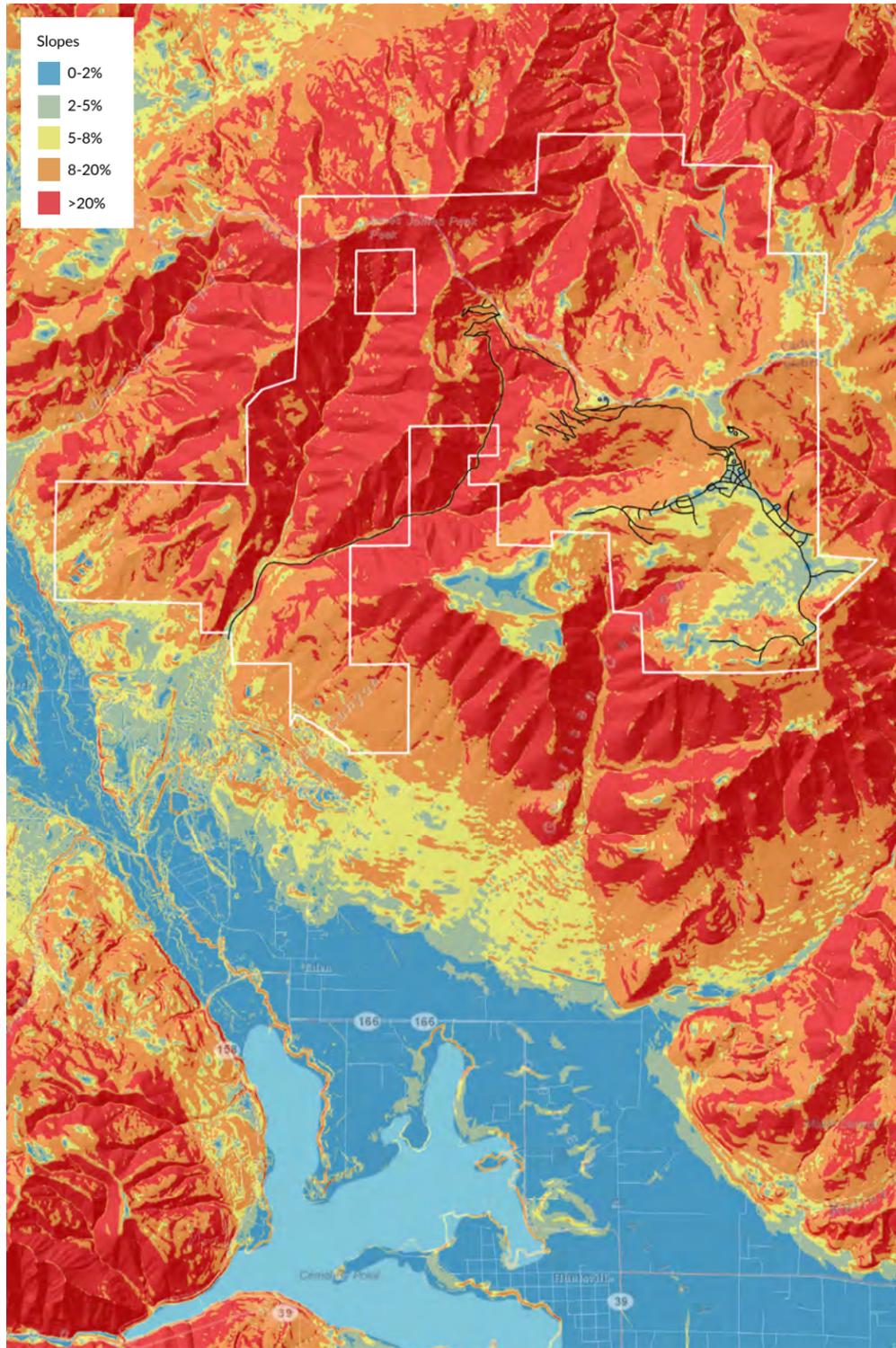
SLOPES & ASPECT



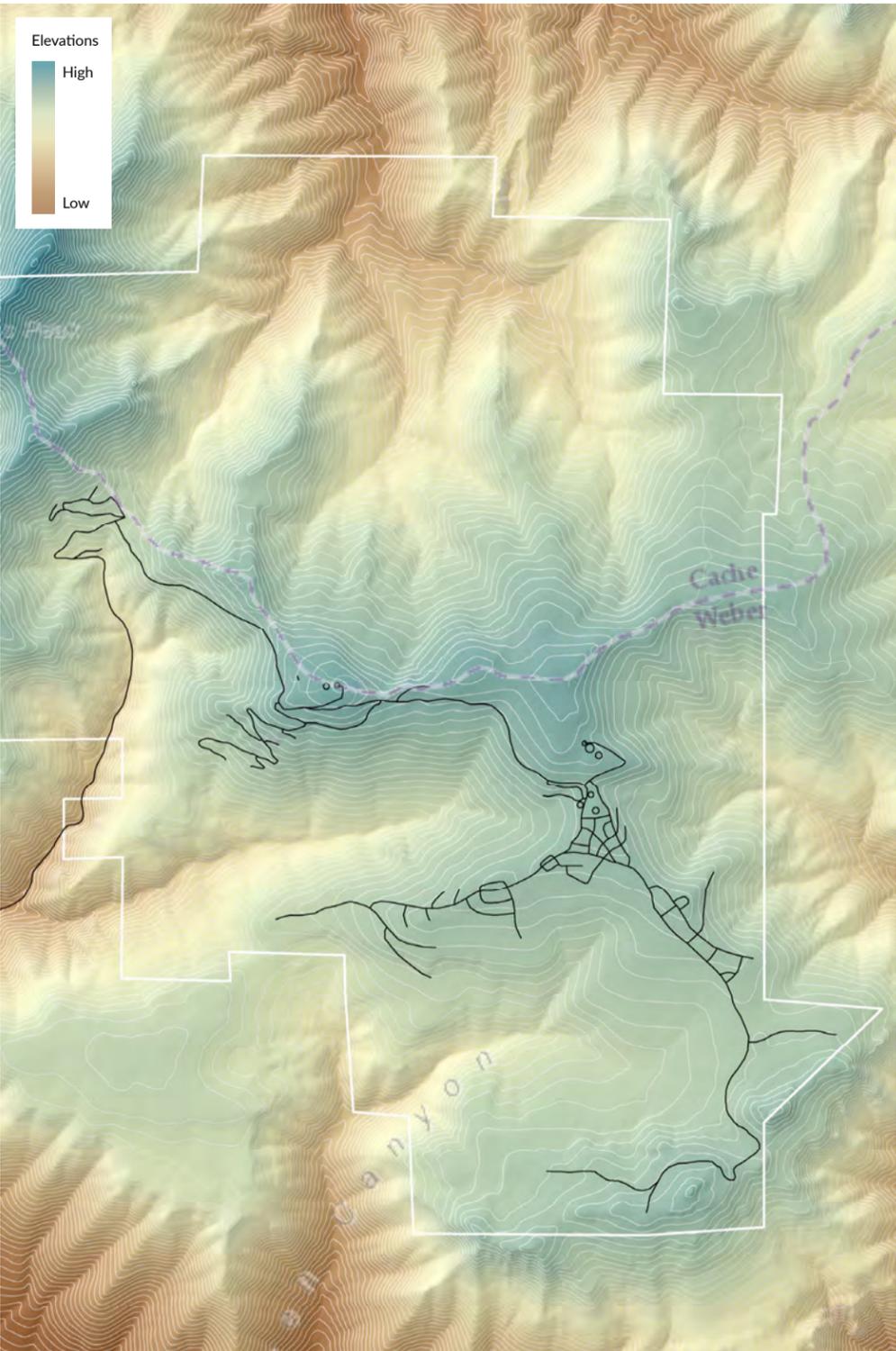
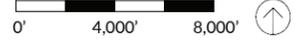
Great Basin vs. Colorado Plateau
 REGIONAL SCALE
 Water that falls on 95% of this map stays within the Great Basin and never reaches the Oceans.



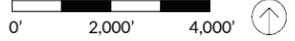
Exposure
 VALLEY SCALE
 Different areas of a community require different exposures to the sun.



Development Suitability
 SITE SCALE
 Communities can only be formed on slopes that are conducive to pedestrian movement and gathering.



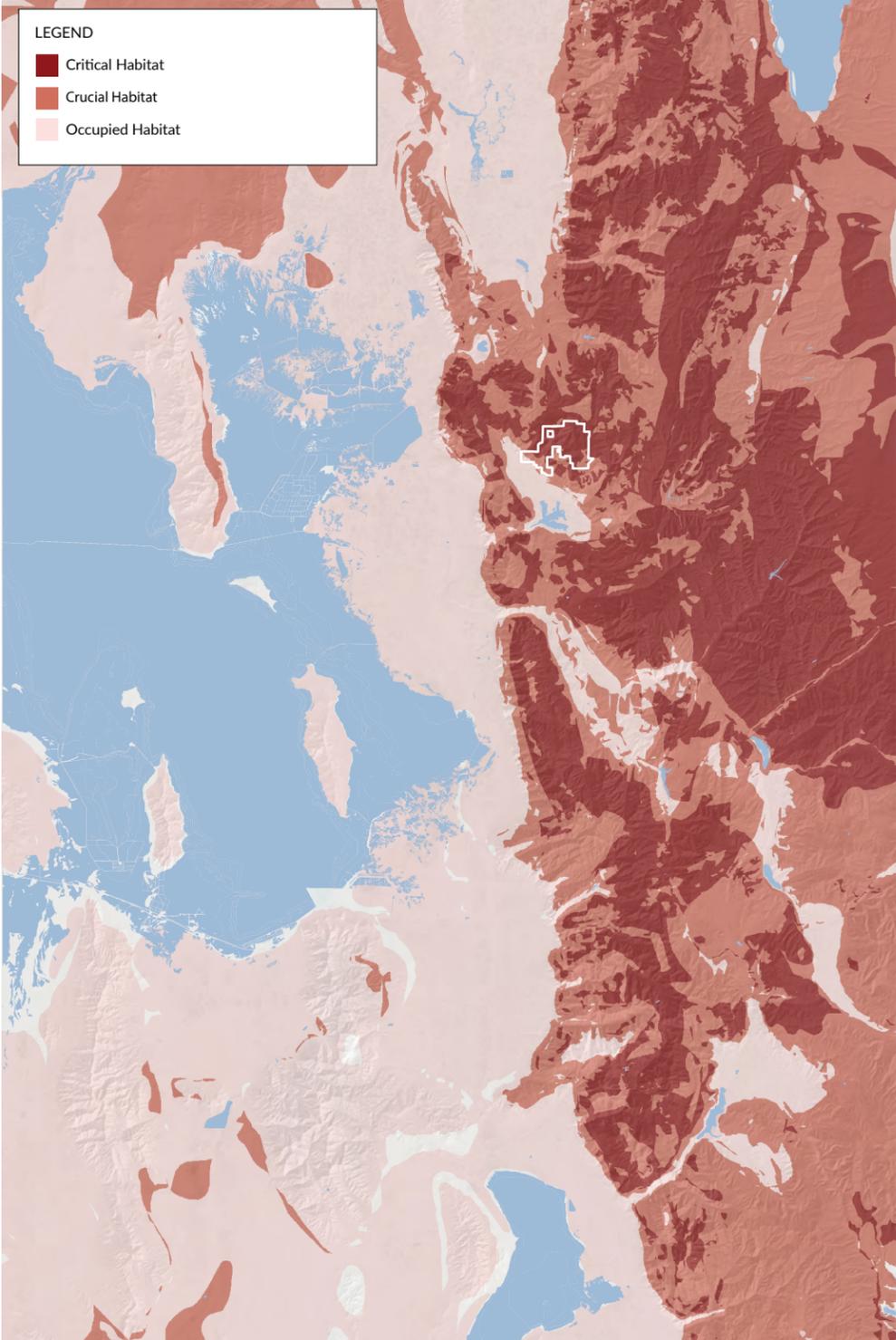
Takeaway
 Mountain Scale
 This elevation map and 50 ft. contours indicate how close the village is to the summit and how the terrain slopes away from the village core on three sides.



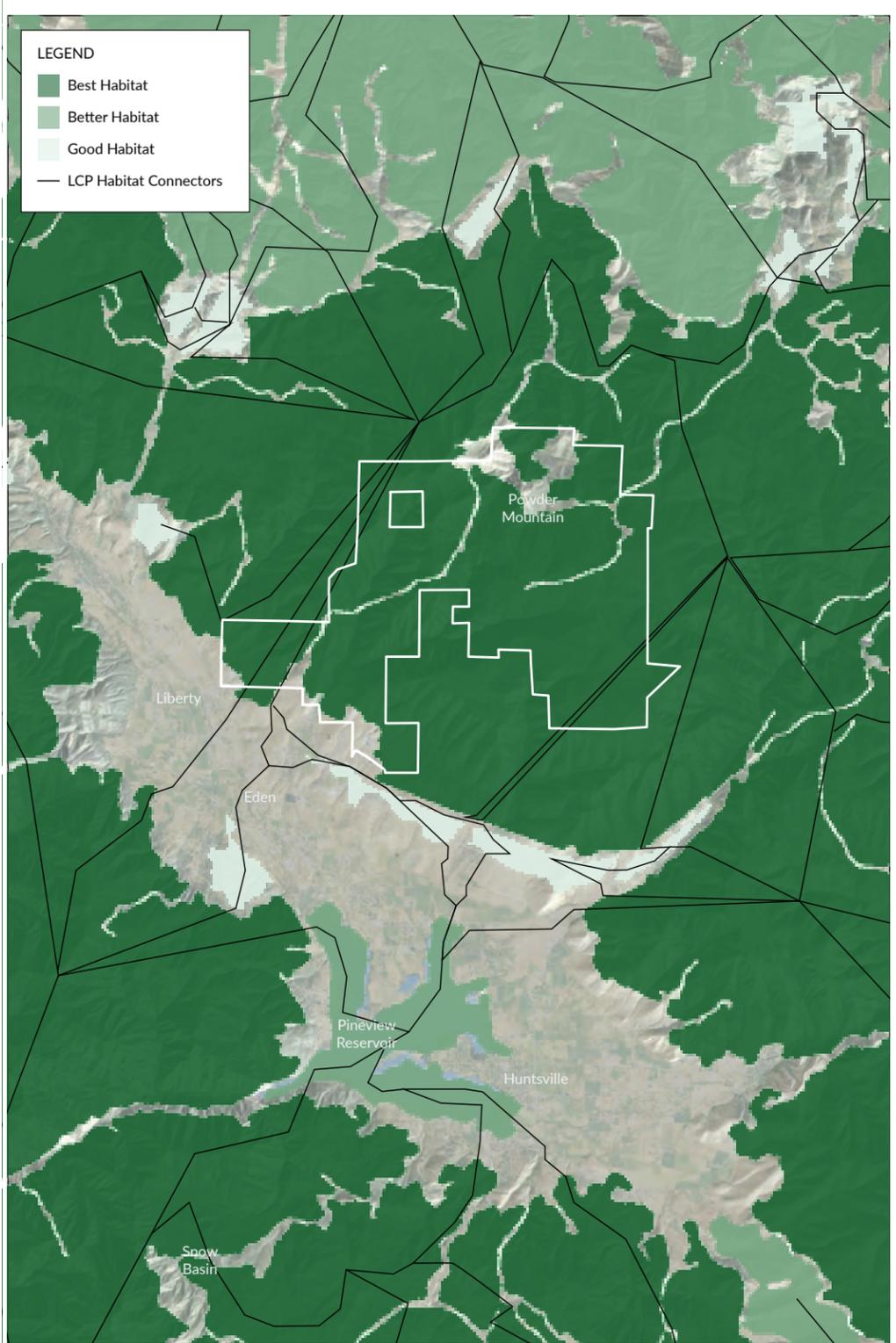
APPENDIX - PARTS OF THE MATRIX

Interdependent Systems

HABITAT



Critical Habitat Area
 REGIONAL SCALE
 Critical, crucial, and occupied habitat areas of 20 of Utah's most dominant bird & mammal species. Based on grazing, water sources, reproductive areas, and vegetation.

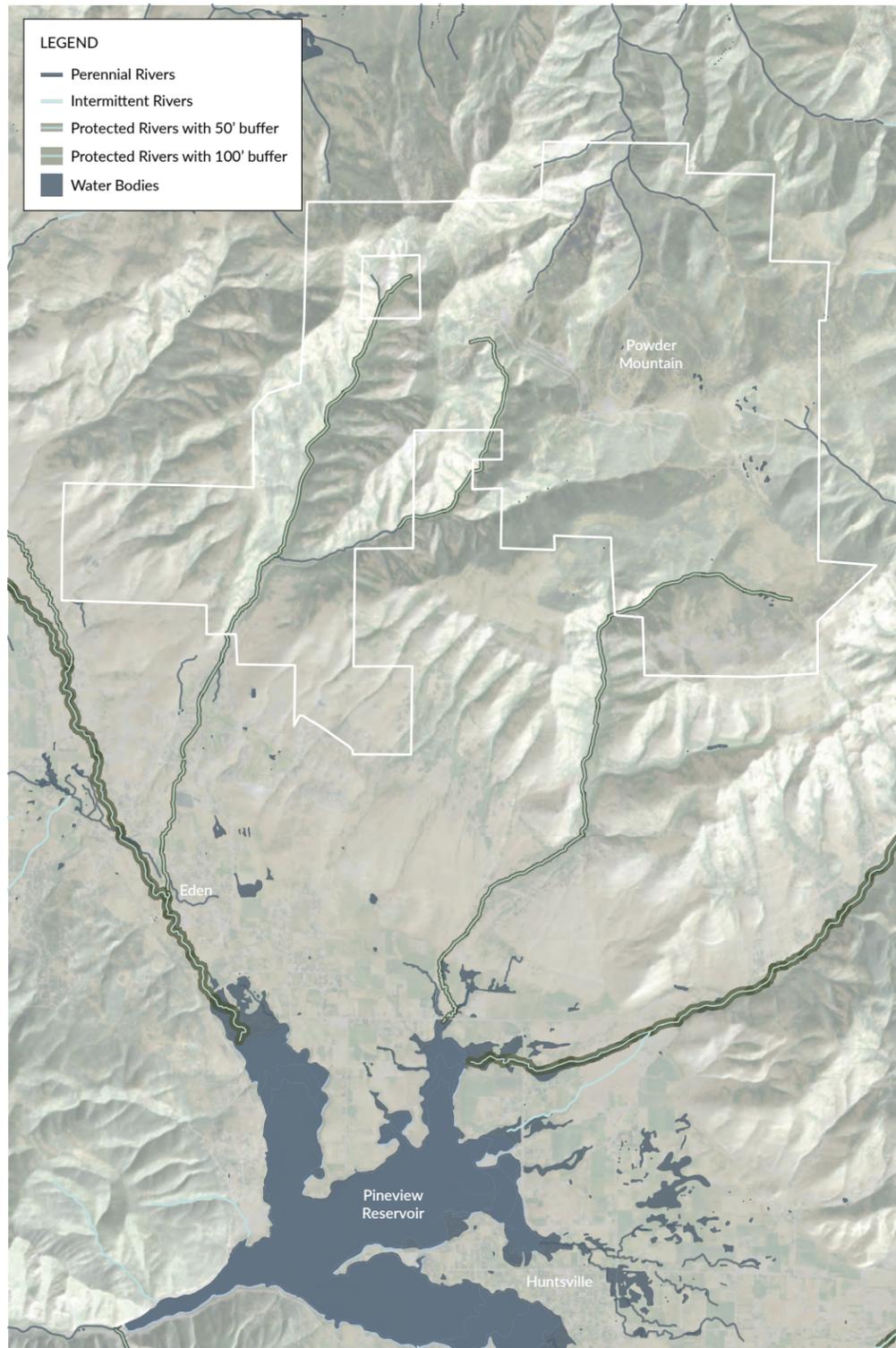


HABITAT CORE CONNECTORS
 VALLEY SCALE
 The 'Least Cost Paths' connecting intact habitat cores.



APPENDIX - PARTS OF THE MATRIX

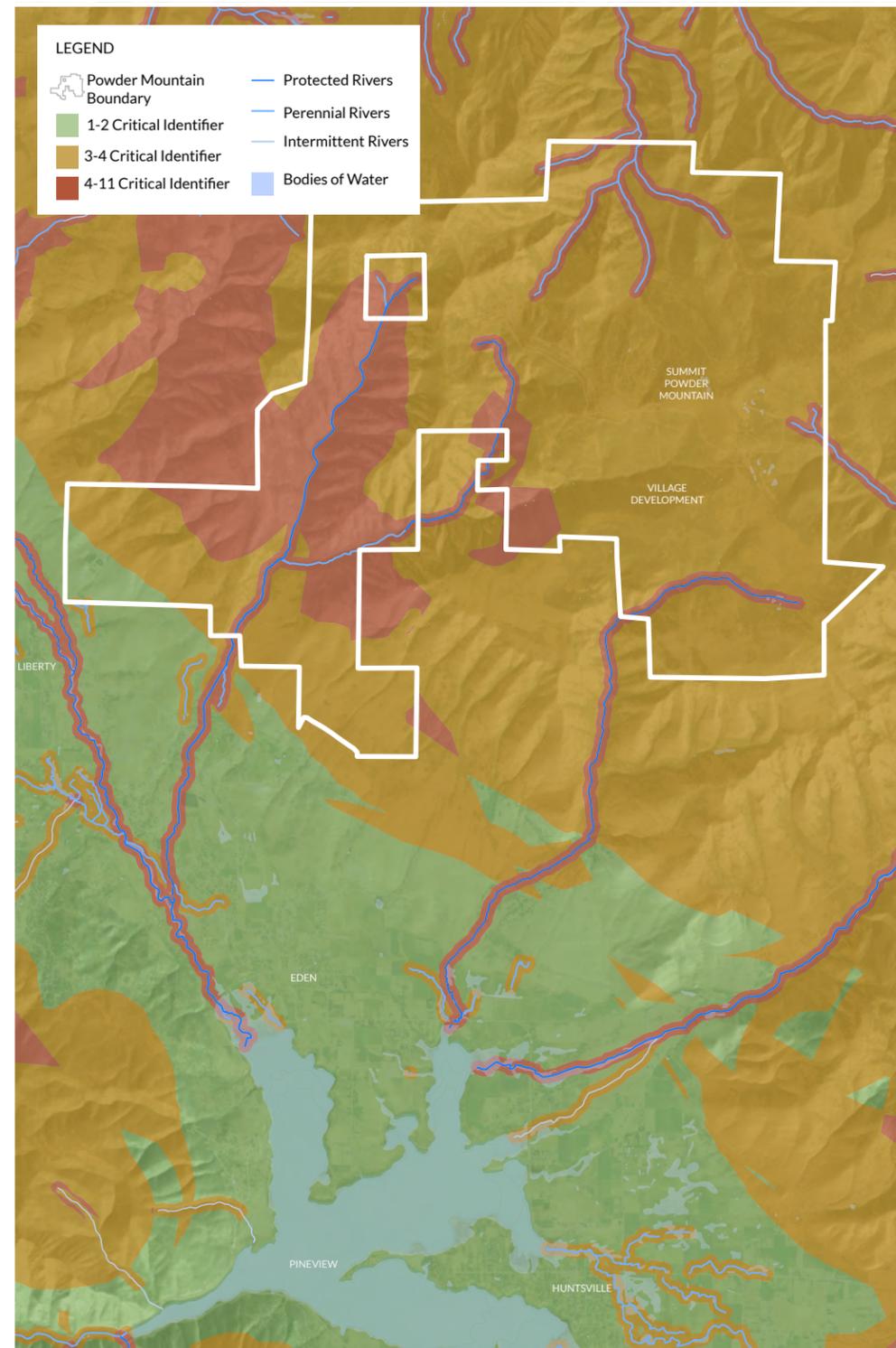
Interdependent Systems



WATER SHEDS

SITE-SPECIFIC SCALE

Ogden Valley has thoughtfully protected all the main rivers feeding down into Pineview Reservoir. For wildlife to safely access this resource, it is necessary that larger buffers be instated on each of the main rivers. Currently the buffer is only 50-100' but should be closer to 300' on each side.

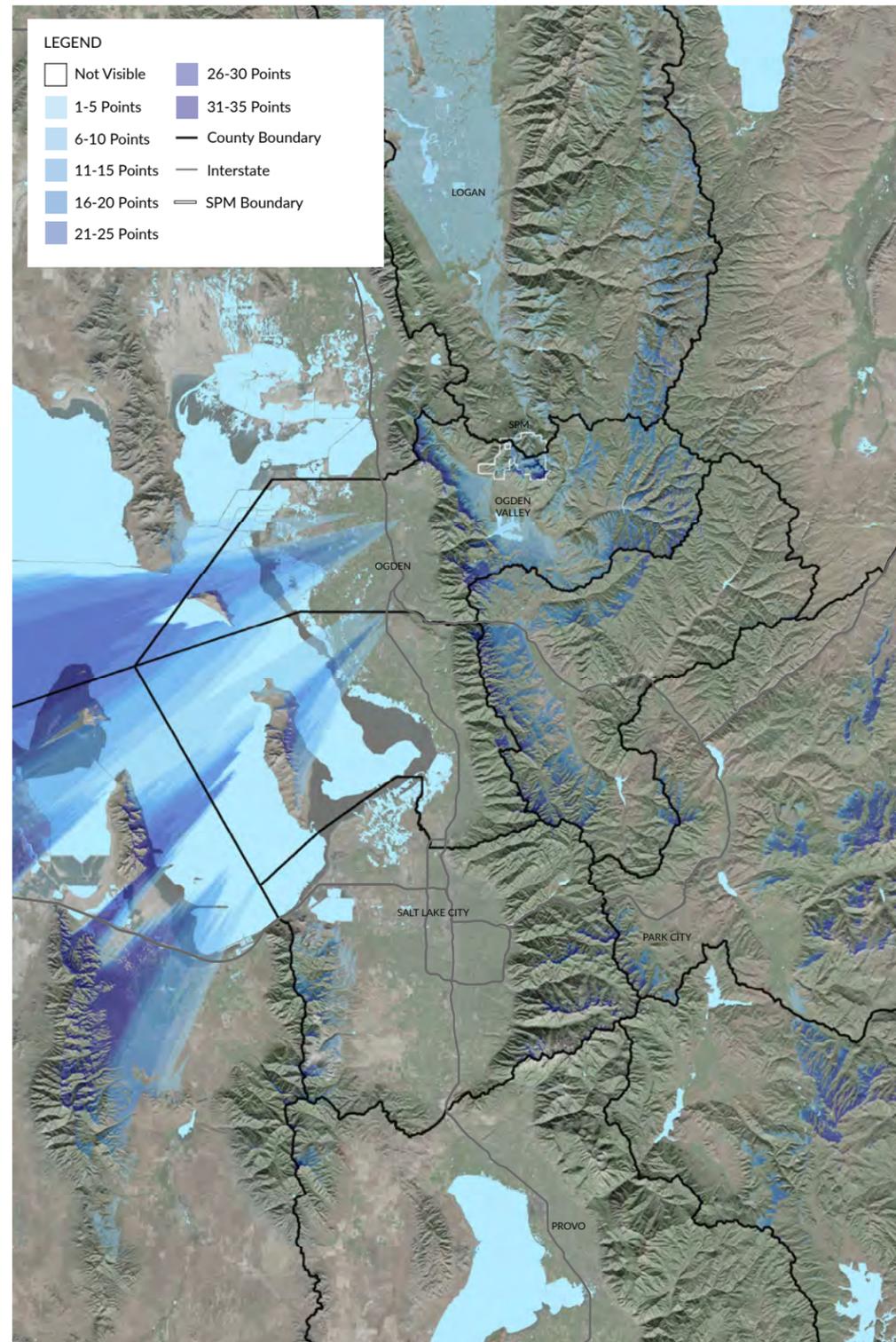


CRITICAL IDENTIFIER

SITE-SPECIFIC SCALE

Critical Identifiers are areas that are both critical areas for water preservation and for habitat preservation. Green indicate areas with little to no importance to the habitats and water. Red are of greater importance.

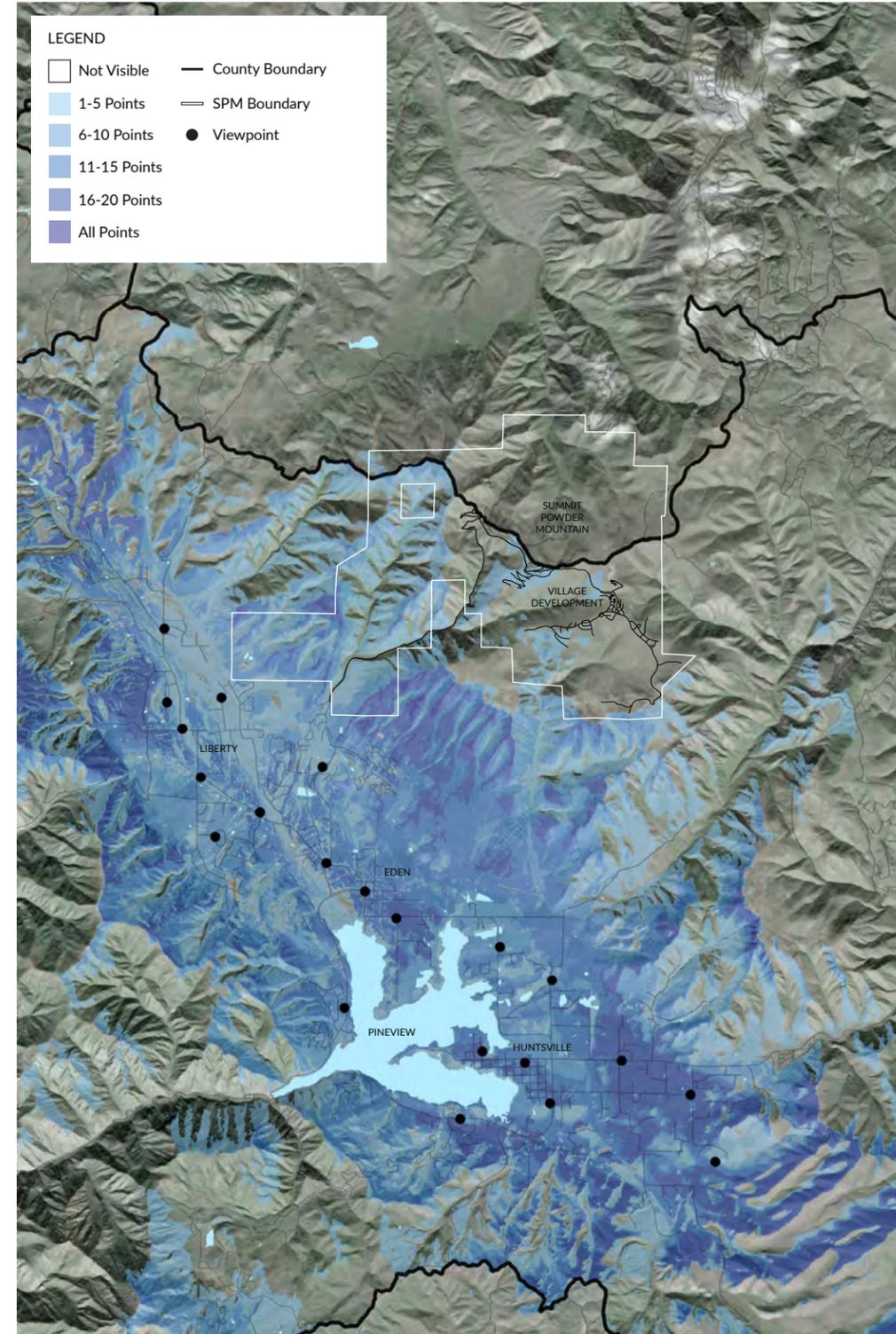
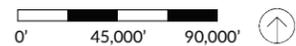
VIEW SHEDS



SPM REGIONAL VIEWSHED

REGIONAL SCALE

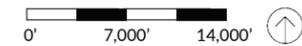
Visibility from 35 points within the Summit Powder Mountain Development. Darker values indicate areas visible from a greater amount of points.



VISIBILITY FROM OGDEN VALLEY

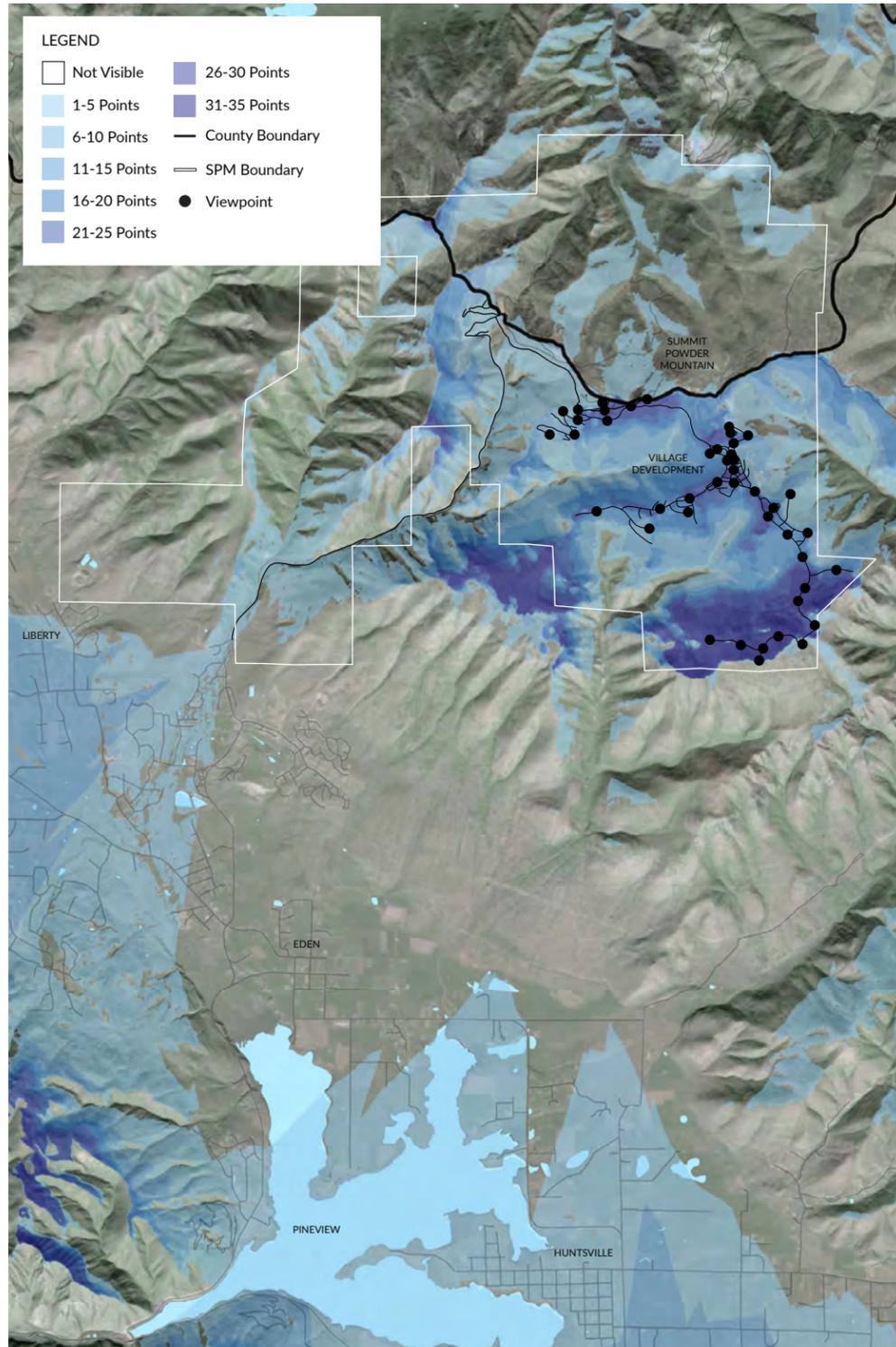
VALLEY SCALE

Visibility from 21 points in Ogden Valley. Calculated at a height of 30 feet above ground. Darker values indicate areas visible from a greater amount of points.

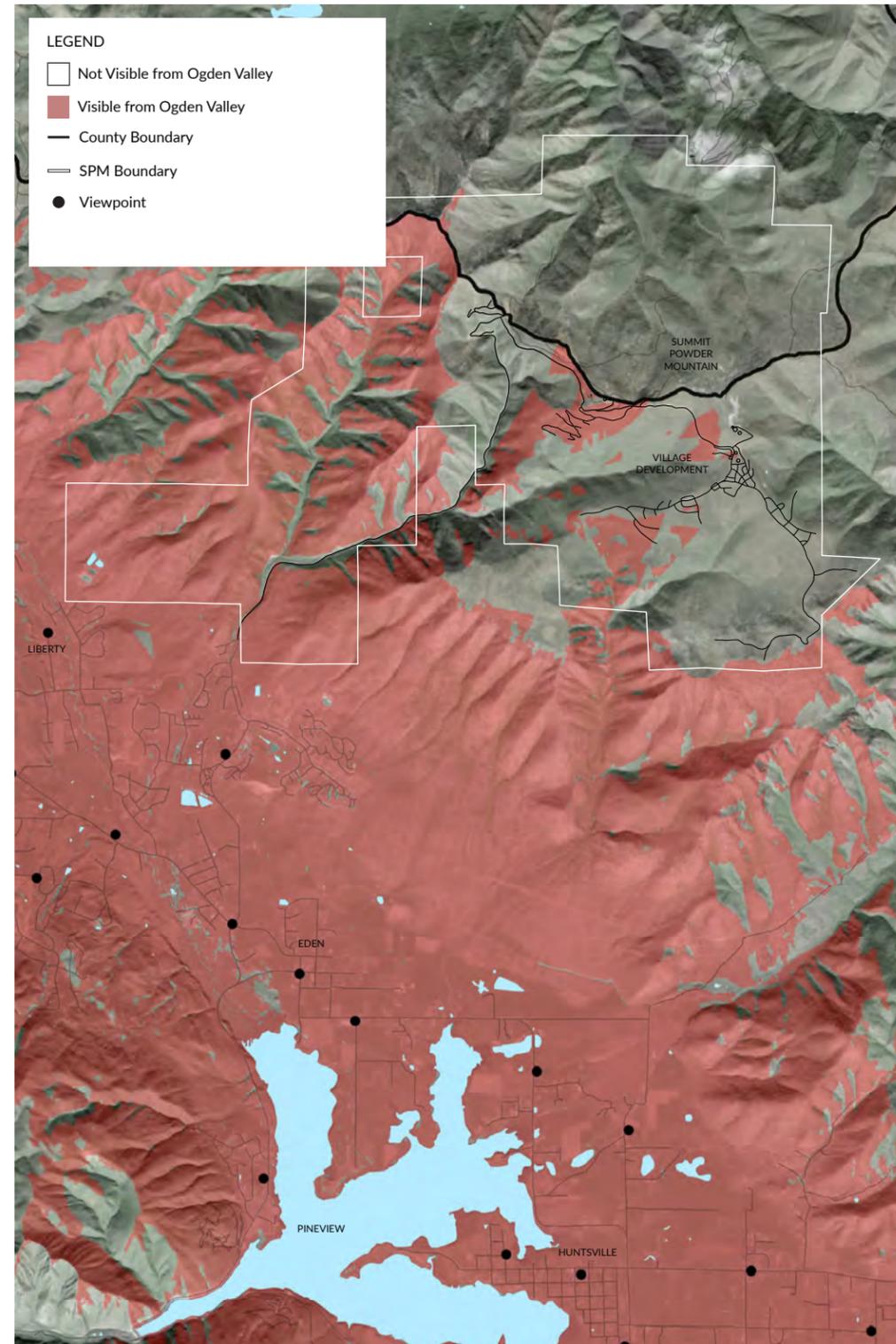


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Interdependent Systems

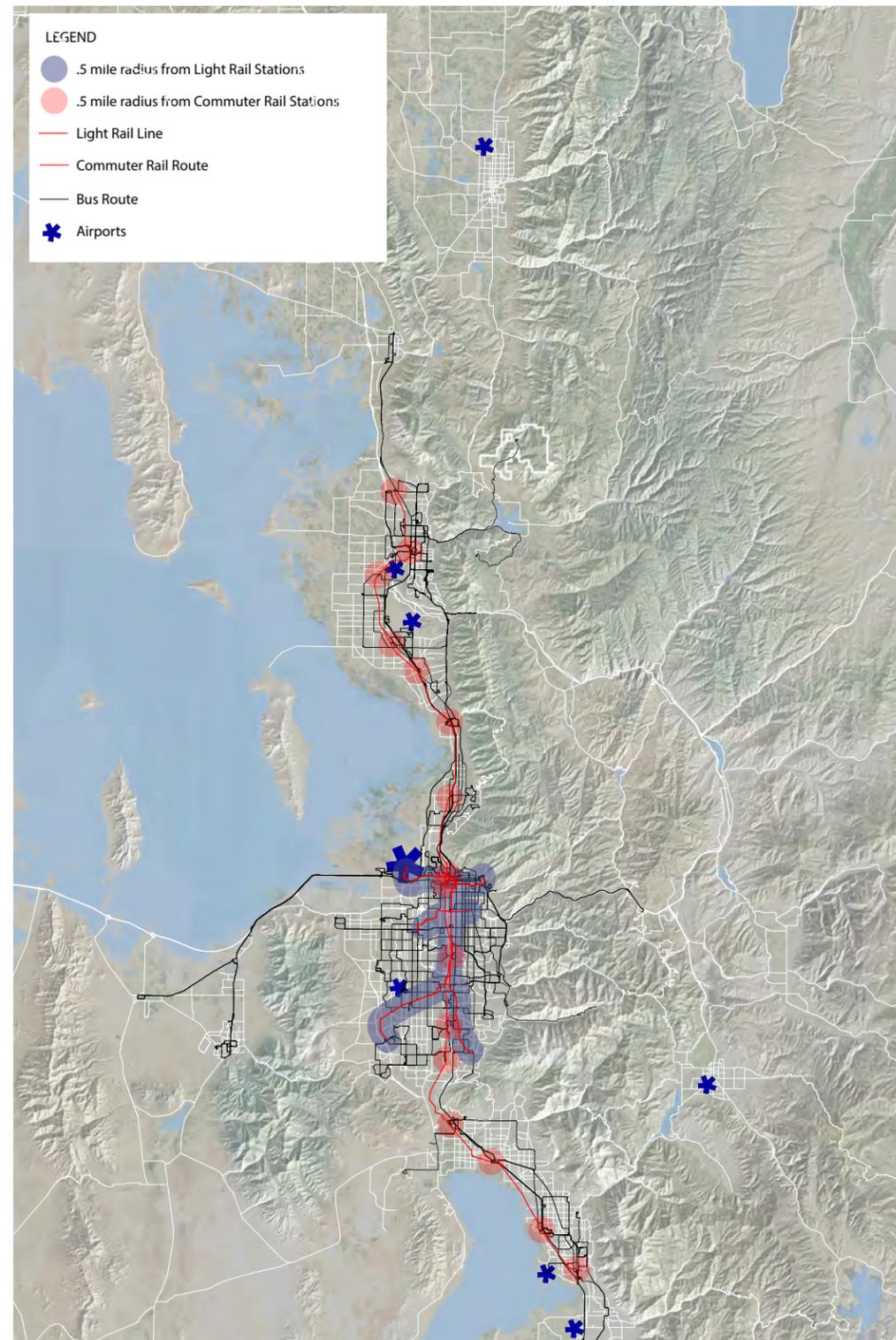


VISIBILITY FROM SPM
 SITE-SPECIFIC SCALE
 Visibility from 35 points within the Summit Powder Mountain development. Darker values indicate areas visible from a greater amount of points.

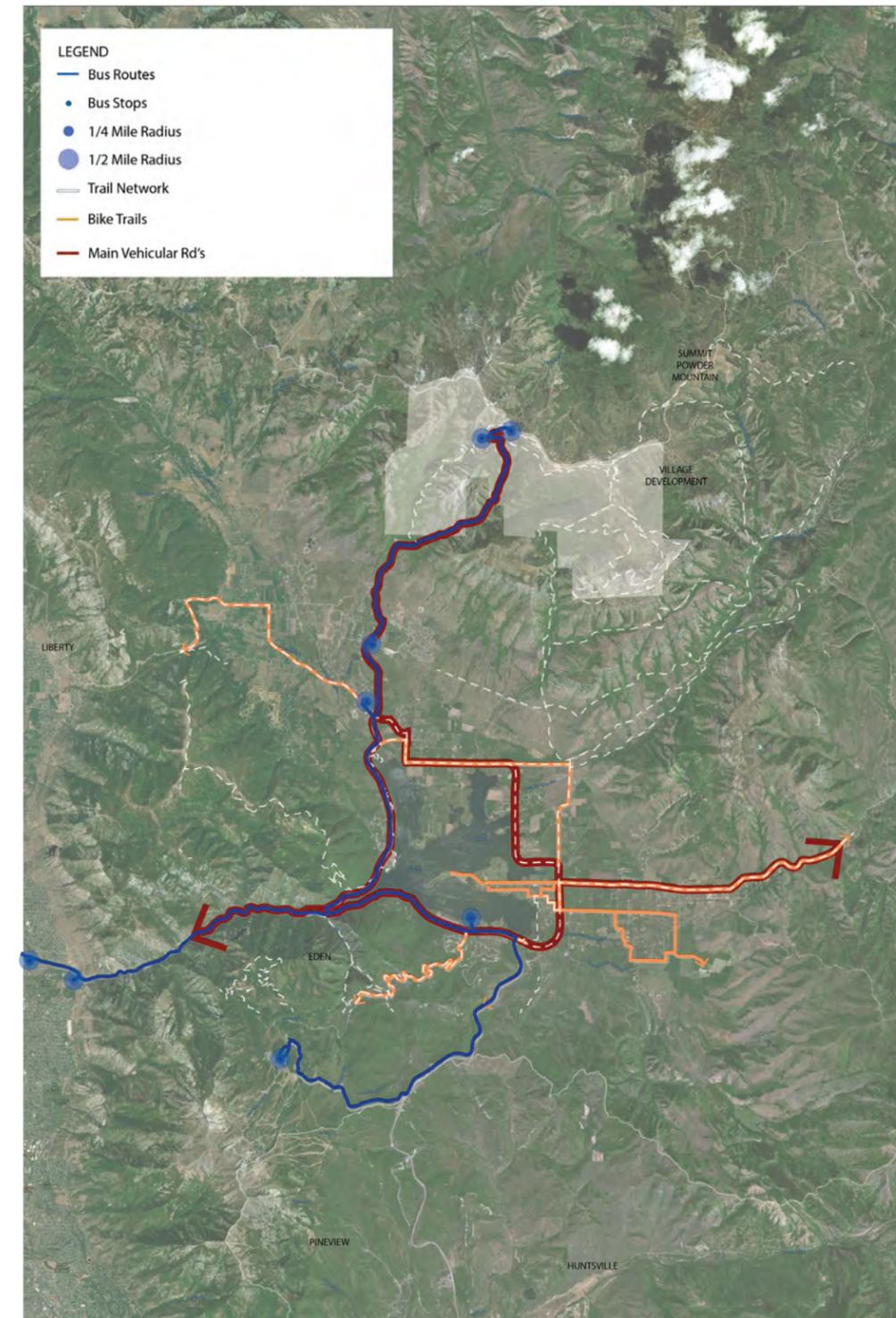
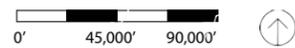


VISIBILITY TAKEAWAYS
 SITE-SPECIFIC SCALE
 All areas visible from the Ogden Valley are marked in red. Red values inside the SPM boundary are areas of visual concern and special design guidelines should be considered to mitigate visual impacts.

TRANSPORTATION



REGIONAL TRANSPORTATION
 REGIONAL SCALE
 Disconnection of public transportation to Ogden Valley and Summit Powder Mountain

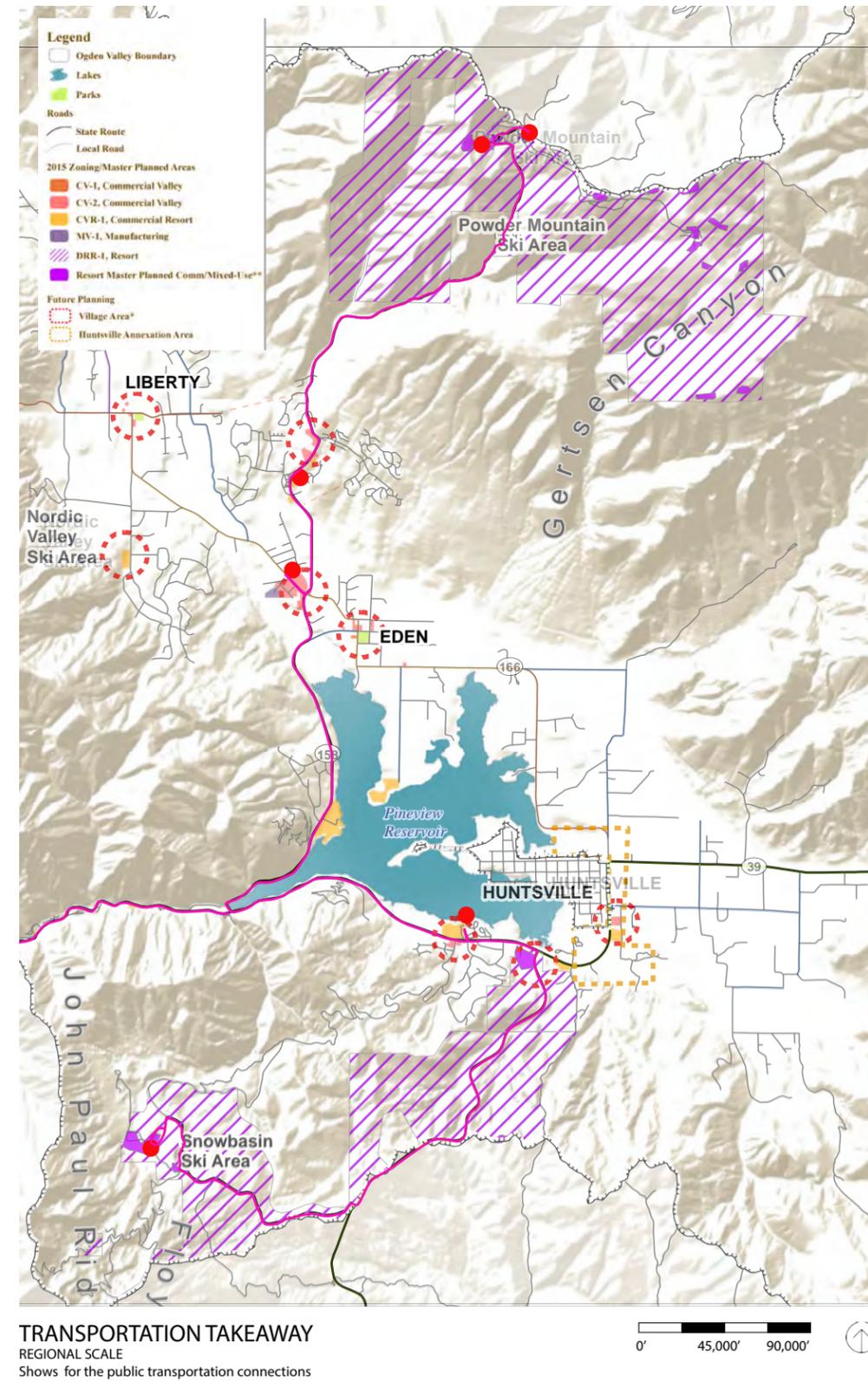


TRANSPORTATION IN THE VALLEY
 VALLEY WIDE SCALE
 transportation within the valley getting to SPM.

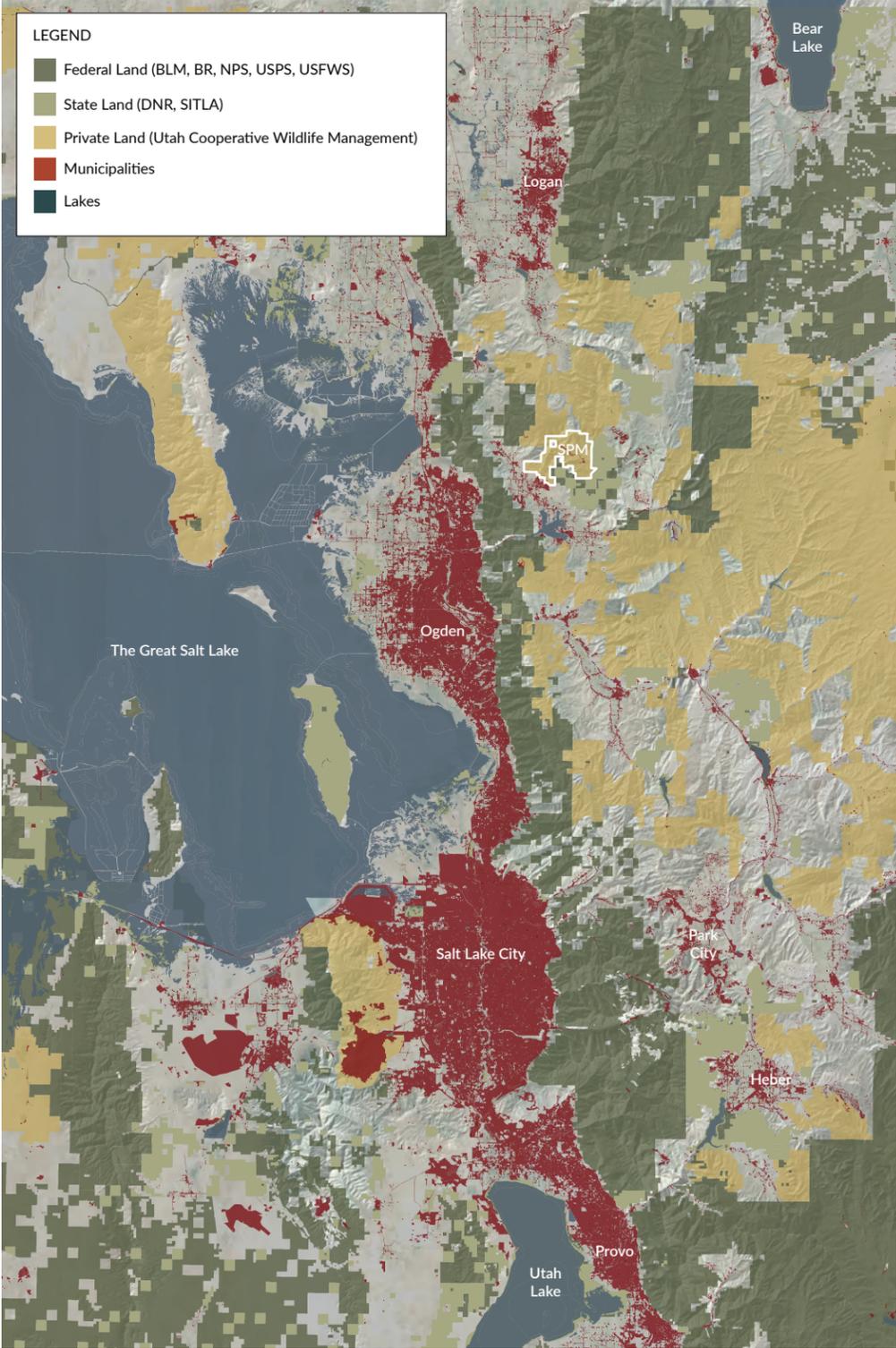


APPENDIX - PARTS OF THE MATRIX

Interdependent Systems

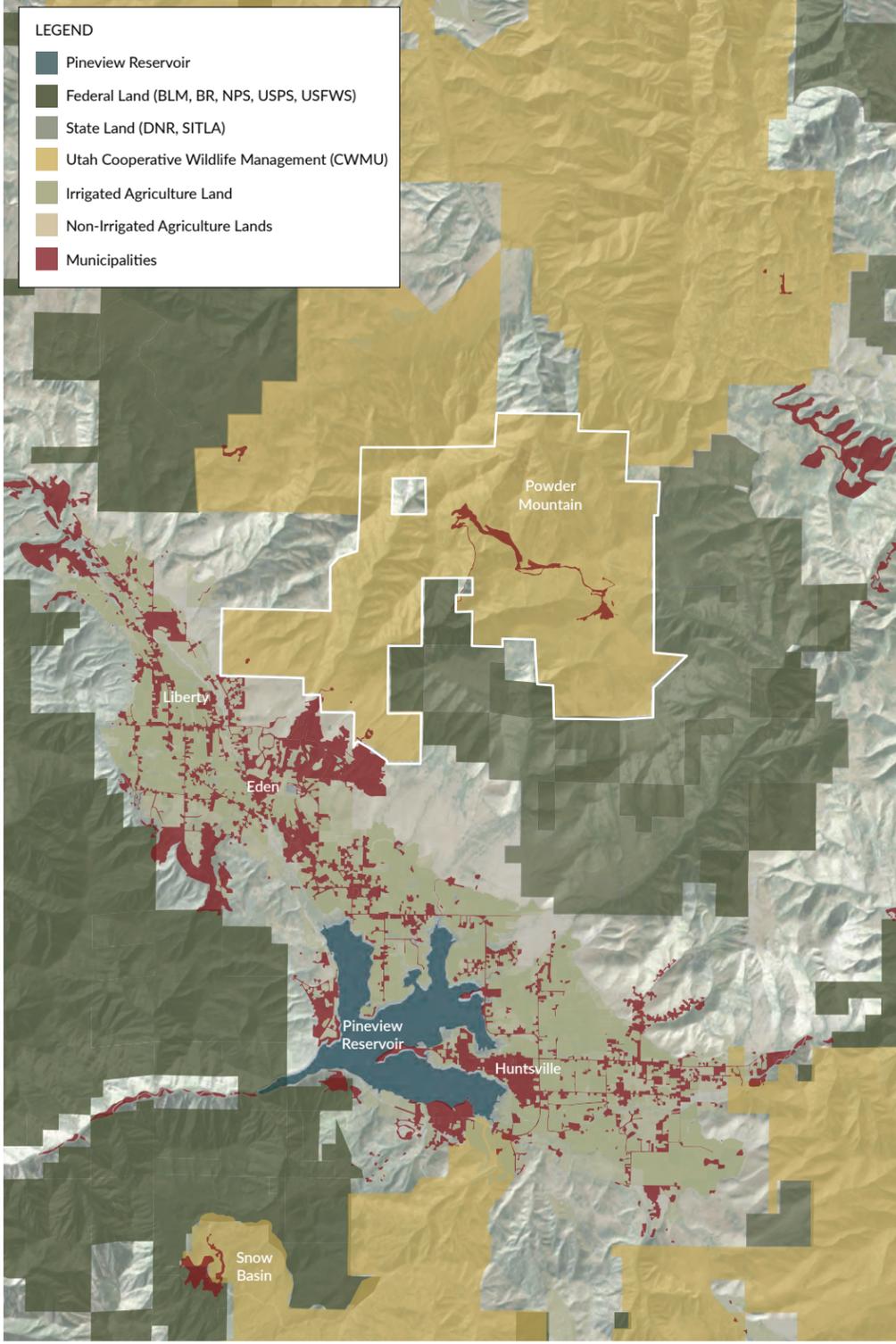


LAND USE



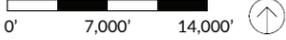
THREATENED FRONT

REGIONAL SCALE
 On the edge of the Great Basin and the Intermountain West, Ogden Valley poses a vital enclave for wildlife and humans alike. The development of the Wasatch Front has left a fragmentation of safe and threatened zones for migrating ungulates.



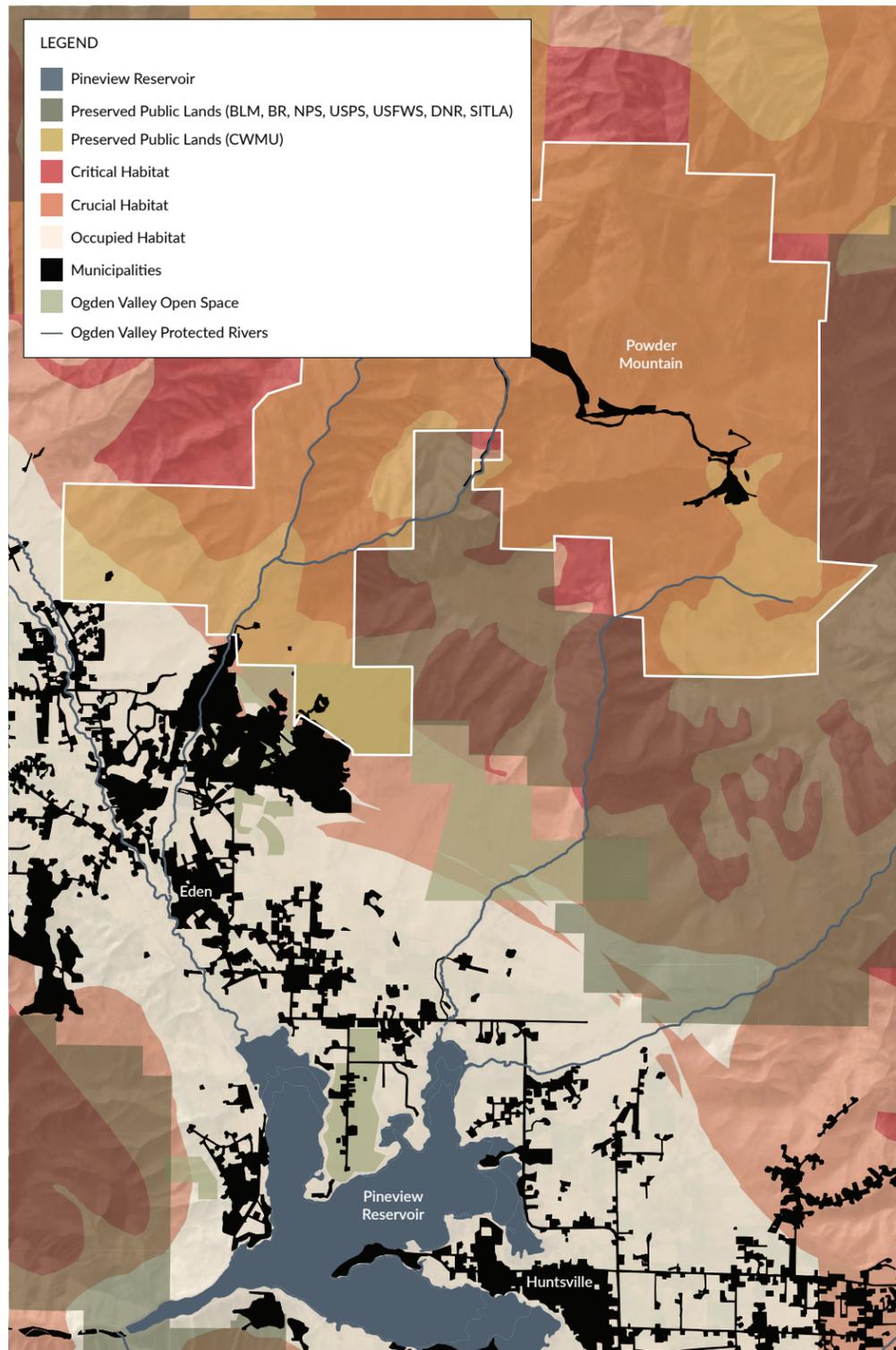
OGDEN VALLEY LAND CONSERVATION

VALLEY SCALE
 Most land surrounding Ogden Valley is preserved by different federal, state or private entities. Agricultural lands provide opportunity for connections between such areas while creating a buffer between the development.



APPENDIX - PARTS OF THE MATRIX

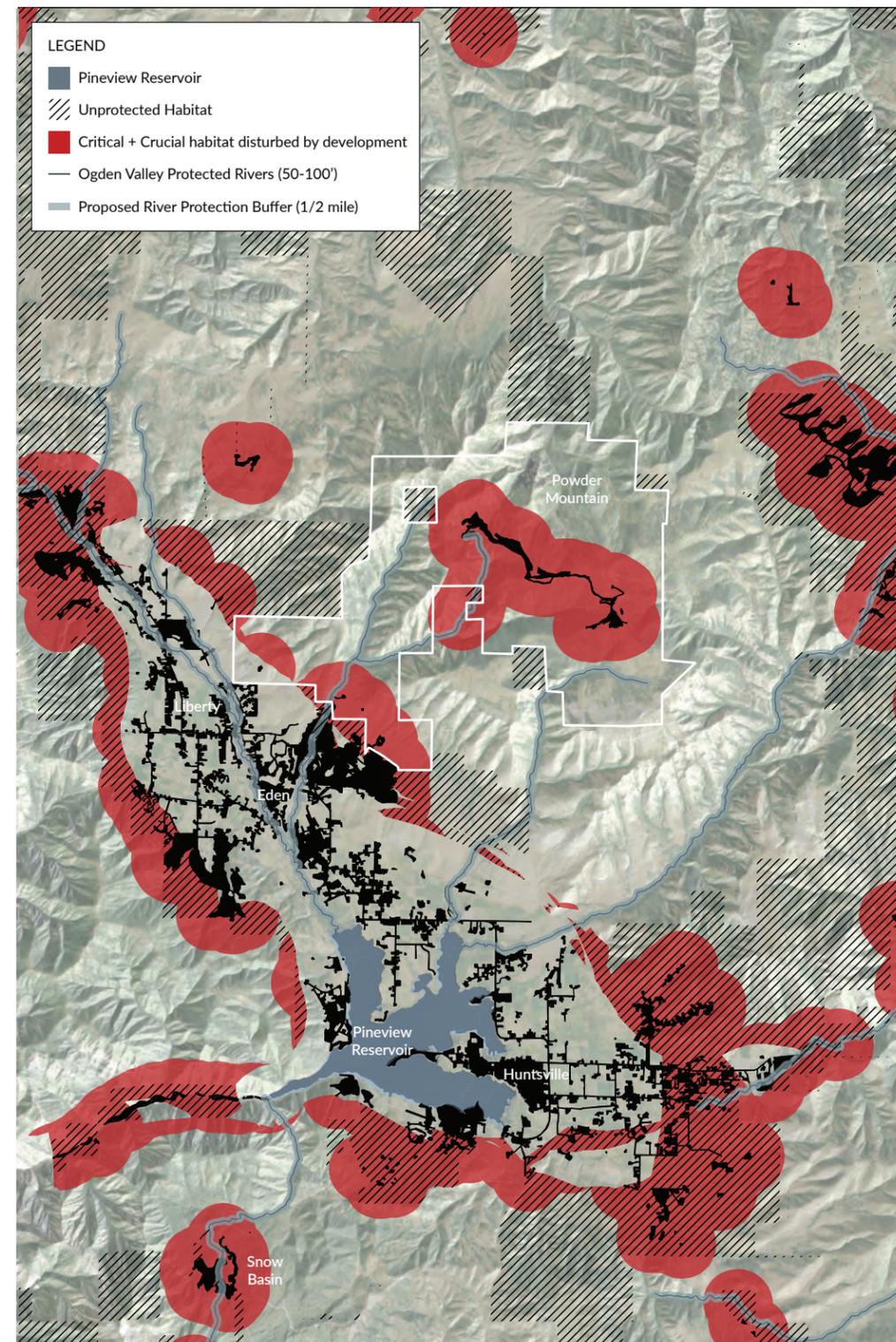
Interdependent Systems



HABITAT + LAND USE

SITE-SPECIFIC SCALE

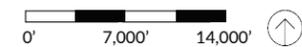
Despite all the preserved land surrounding Ogden Valley, there is still a large amount of unprotected habitat, including critical and crucial areas. The wildlife rely on the reservoir as a main water source at different times throughout the year and must therefore have access to it, via Ogden Valley's protected rivers.



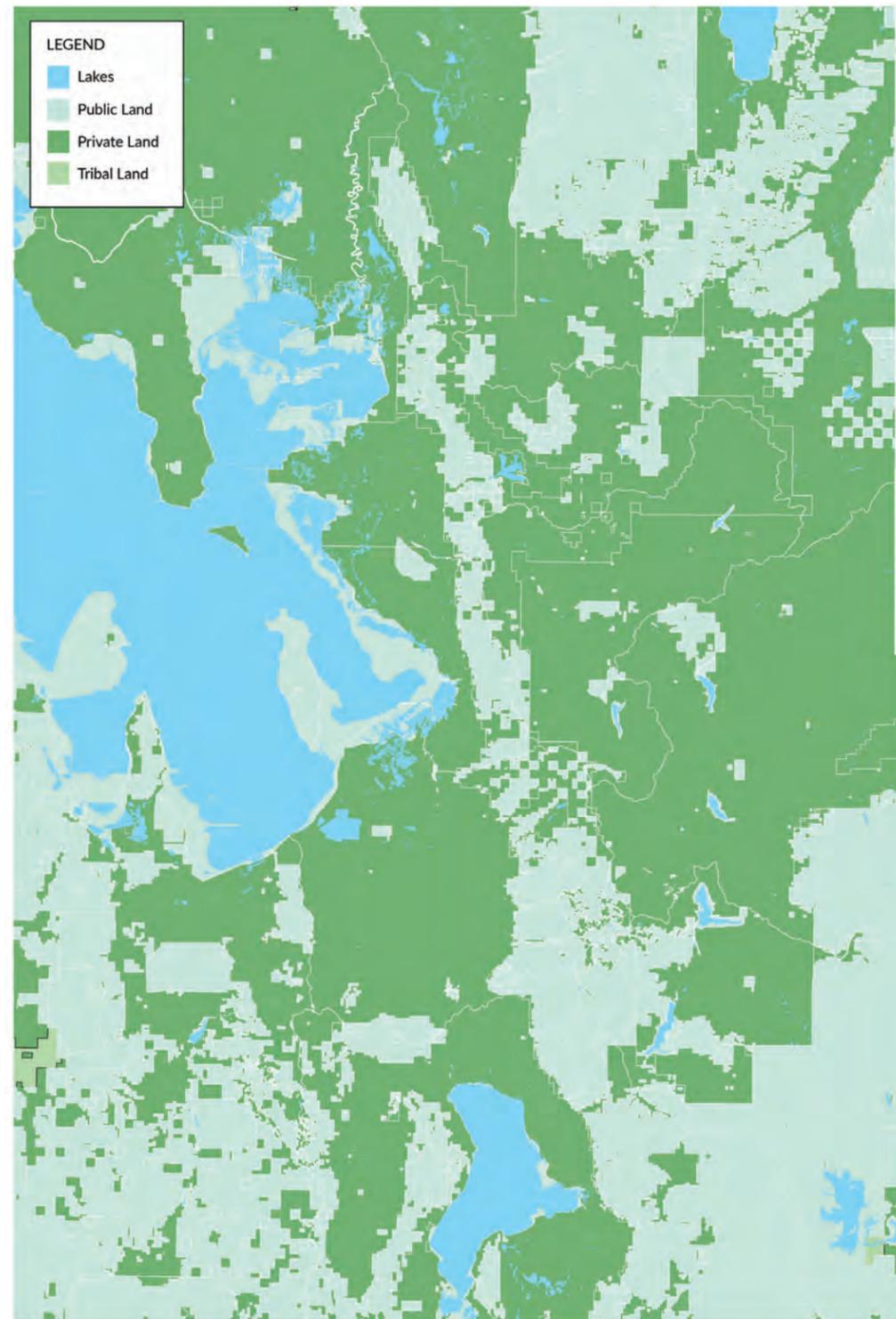
VULNERABLE AREAS

VALLEY SCALE

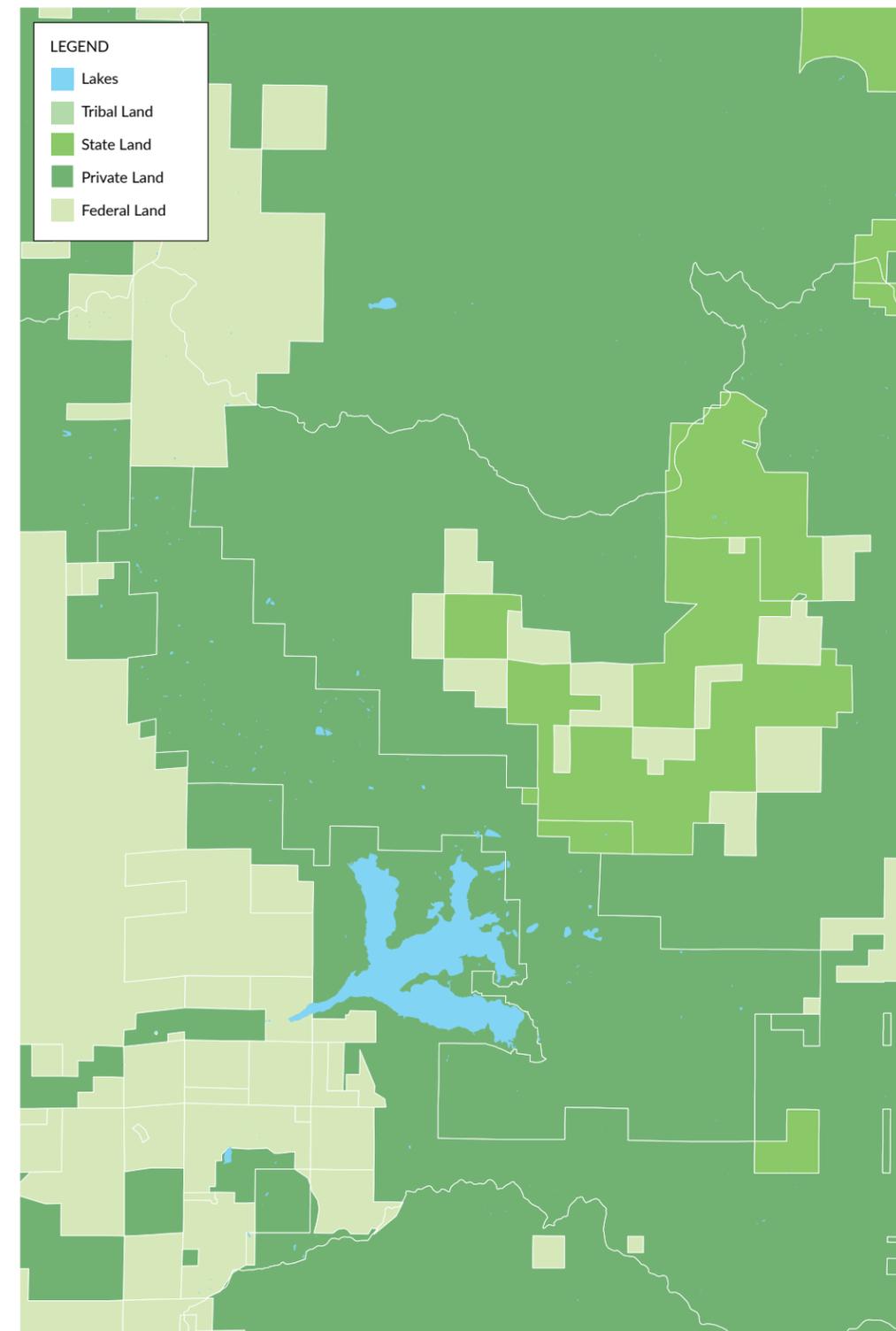
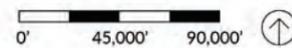
Summit: Condense development and provide wildlife corridors through site
 Eden: Condense future development so valley influence on habitat does not increase
 Huntsville: Limit urban sprawl and conserve land to the east for wildlife habitat



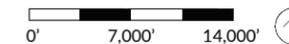
ZONING

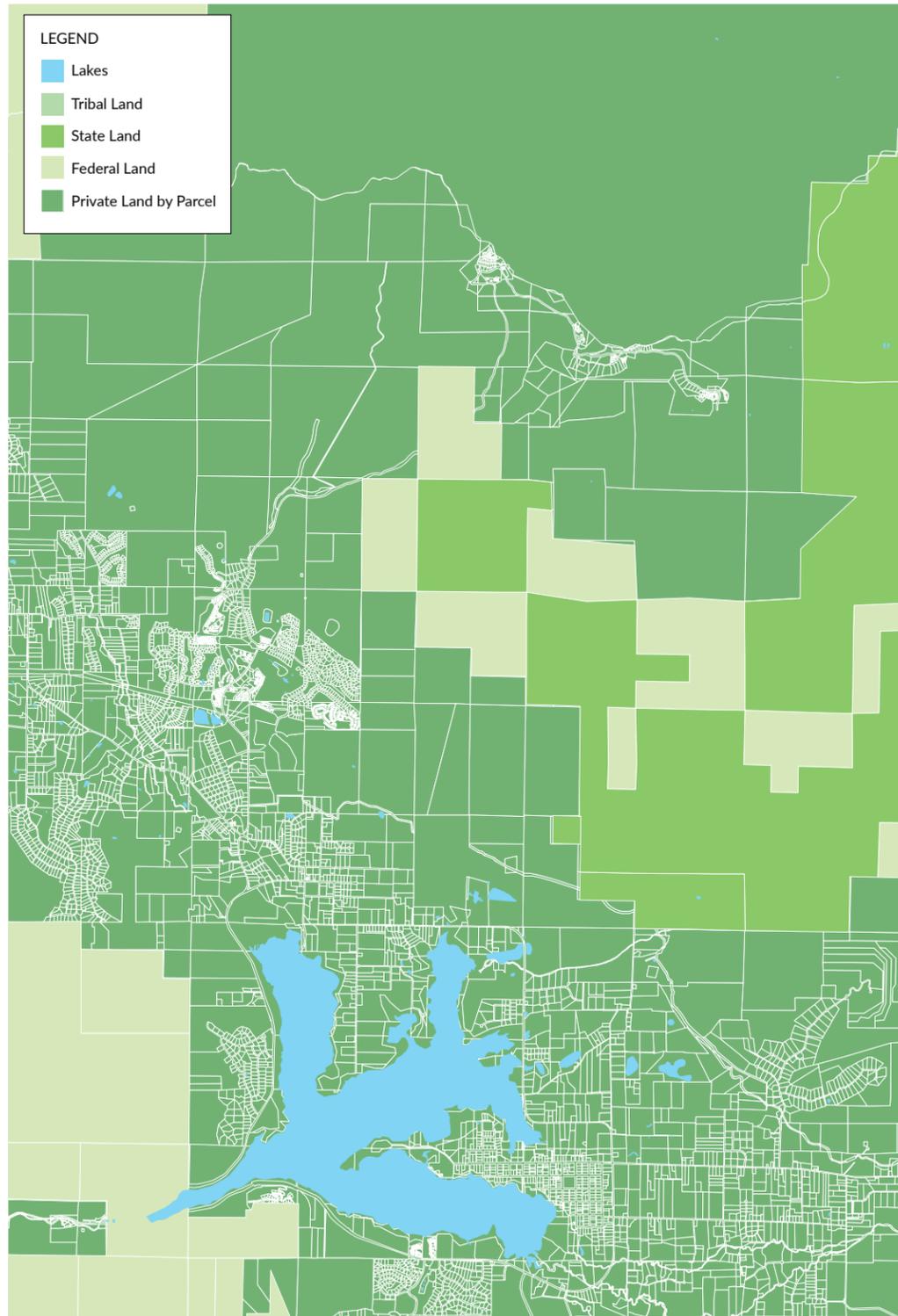


LAND OWNERSHIP
REGIONAL SCALE
Most public lands are located outside of the Wasatch Front.

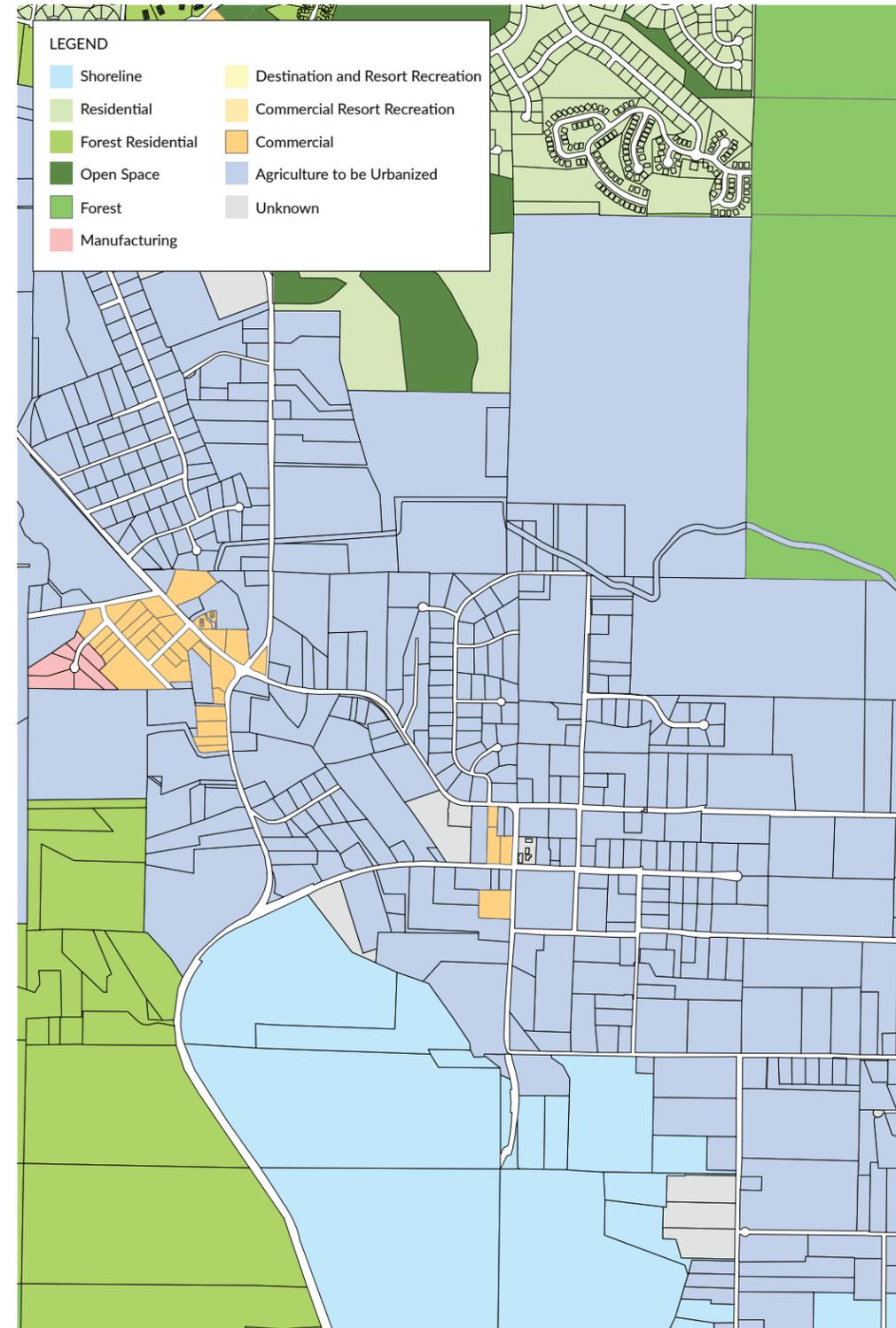
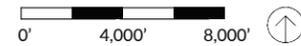


LAND OWNERSHIP
VALLEY SCALE
Land in the valley is almost entirely privately owned.





LAND OWNERSHIP
 SITE-SPECIFIC SCALE
 Parcel size varies greatly within the valley.



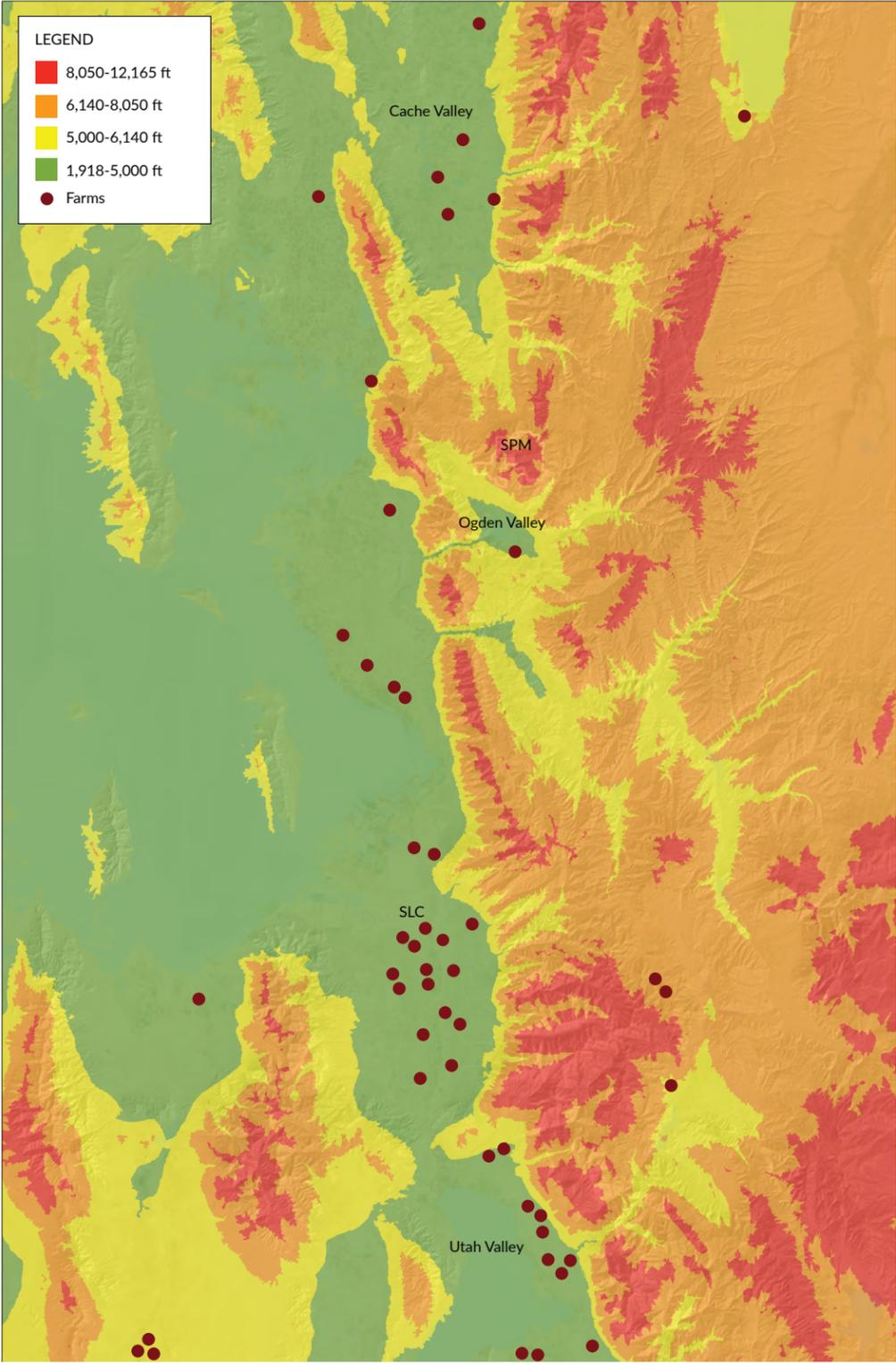
LAND OWNERSHIP
 TAKE-AWAY
 Zoning shows potential areas for development along with areas that need protecting.



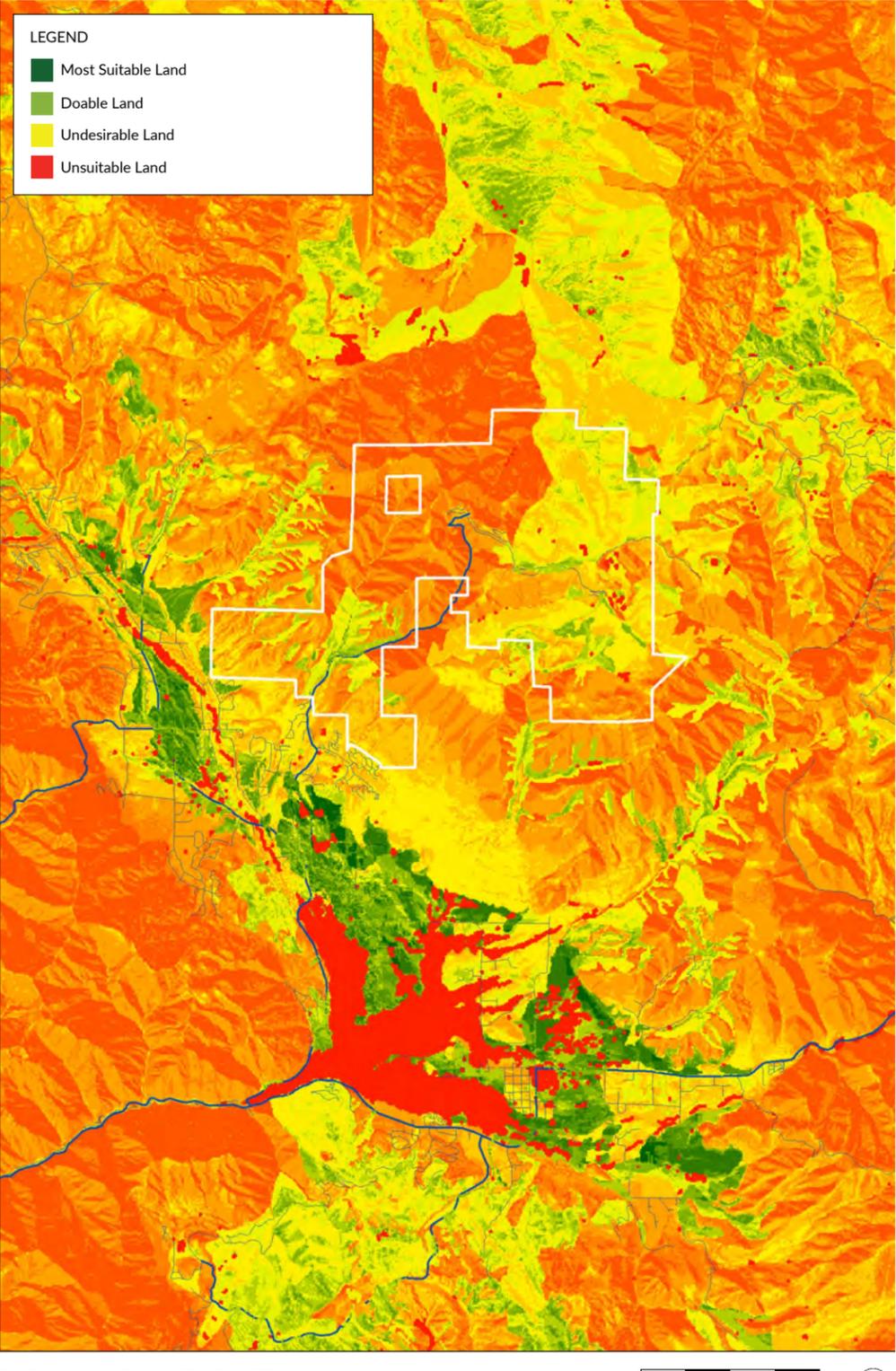
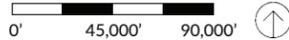
APPENDIX - PARTS OF THE MATRIX

Interdependent Systems

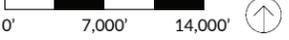
FOOD PRODUCTION



LOCAL FARMS & ELEVATION
 REGIONAL SCALE
 A look at farms contributing to "Utah's Own" farm program for locally grown food.

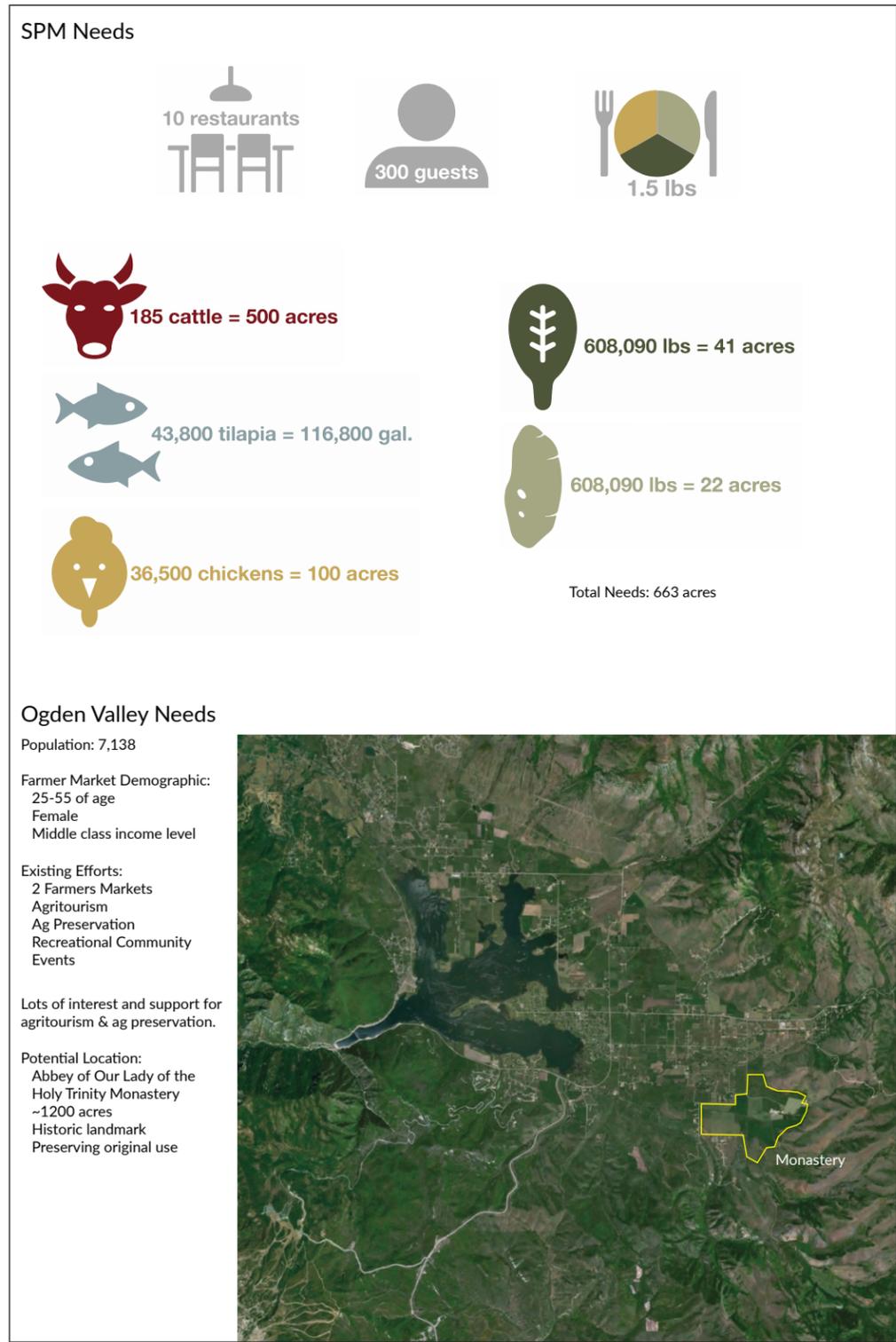


FARM LAND SUITABILITY
 VALLEY SCALE
 Considers areas with loamy soils, S and SW facing slopes, <30% slopes, land currently used as farming, and that is not in any wetland or water areas.

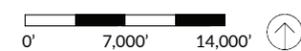
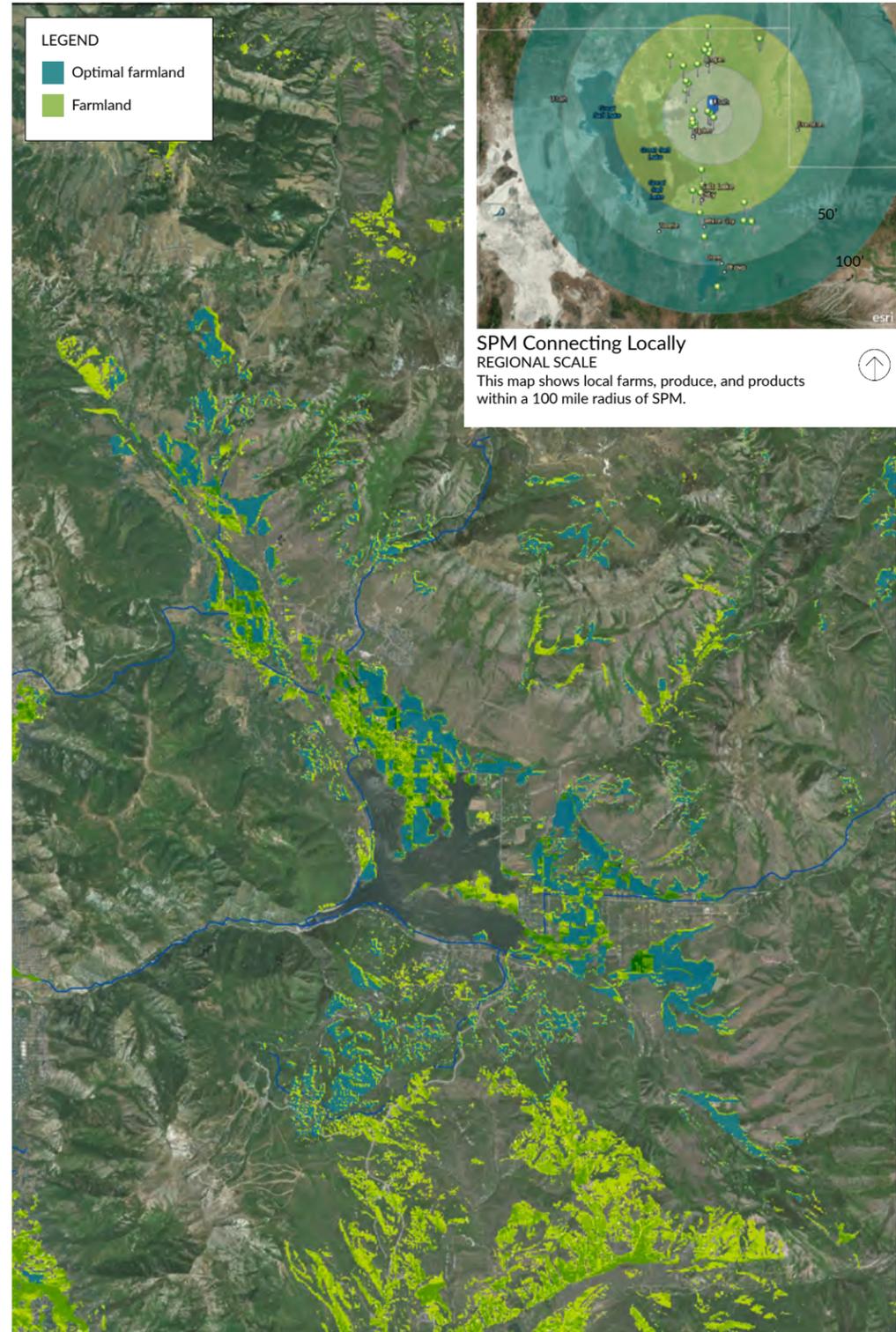


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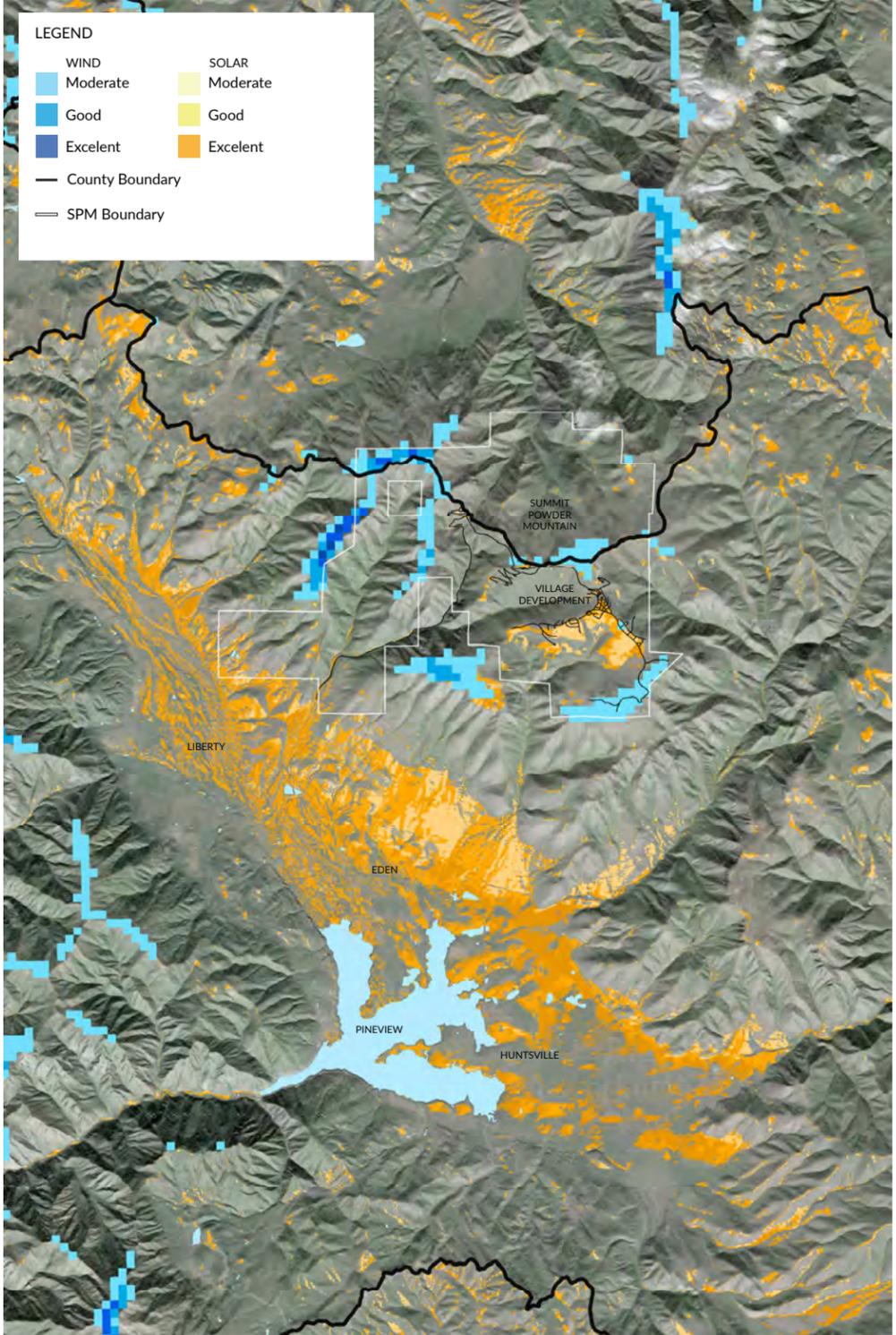
Interdependent Systems



MEETING USER'S NEEDS
VALLEY SCALE
Using food to bridge the gap between Ogden Valley and SPM requires understanding the quantity of food needed and the space that requires.

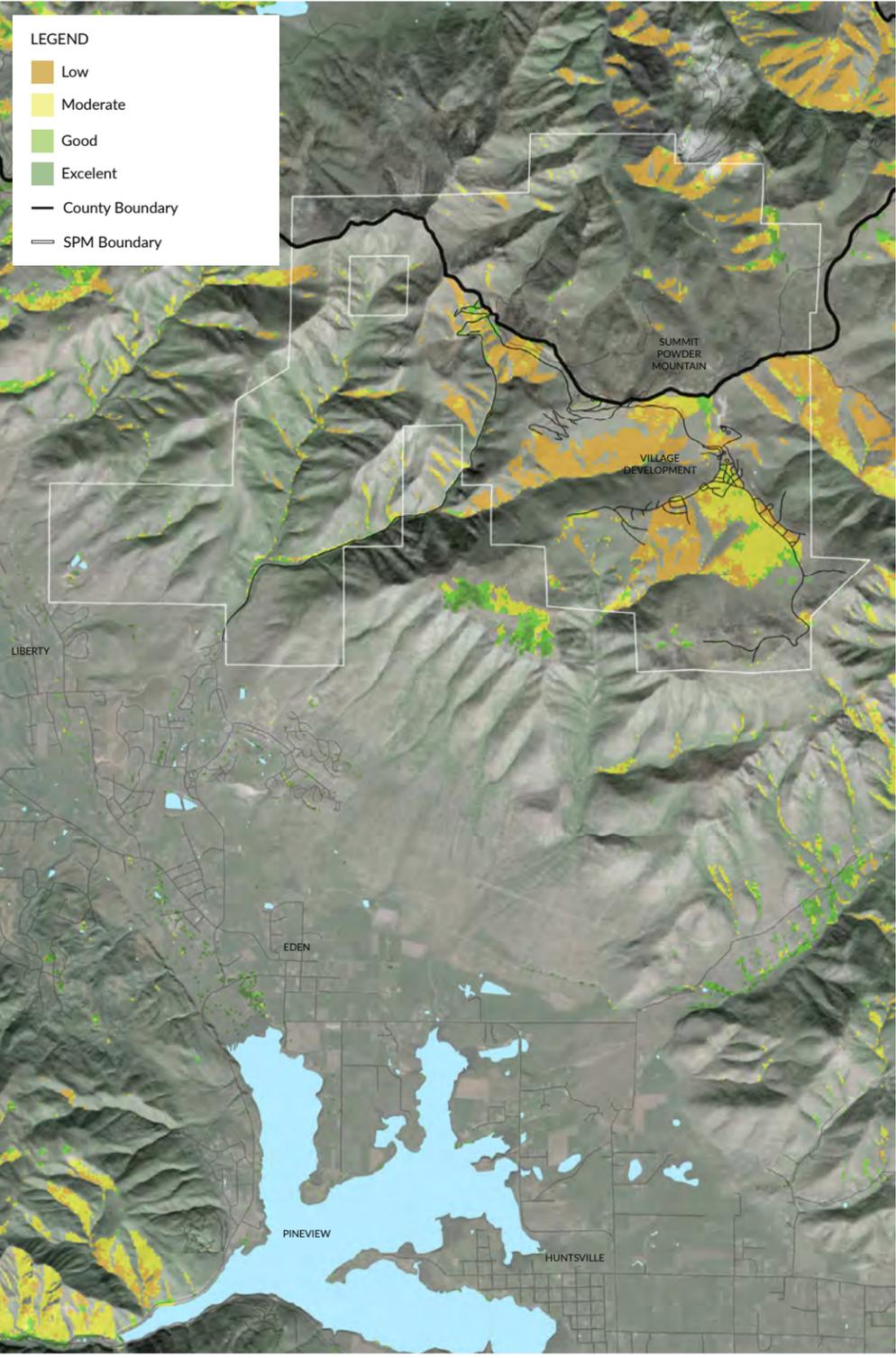


ENERGY



OGDEN VALLEY ENERGY SUITABILITY
 VALLEY SCALE
 Solar Suitability is based on desirable slope and aspect (slope >15%, aspect = south and southwest). Wind suitability is based on average wind speed.

0' 7,000' 14,000'

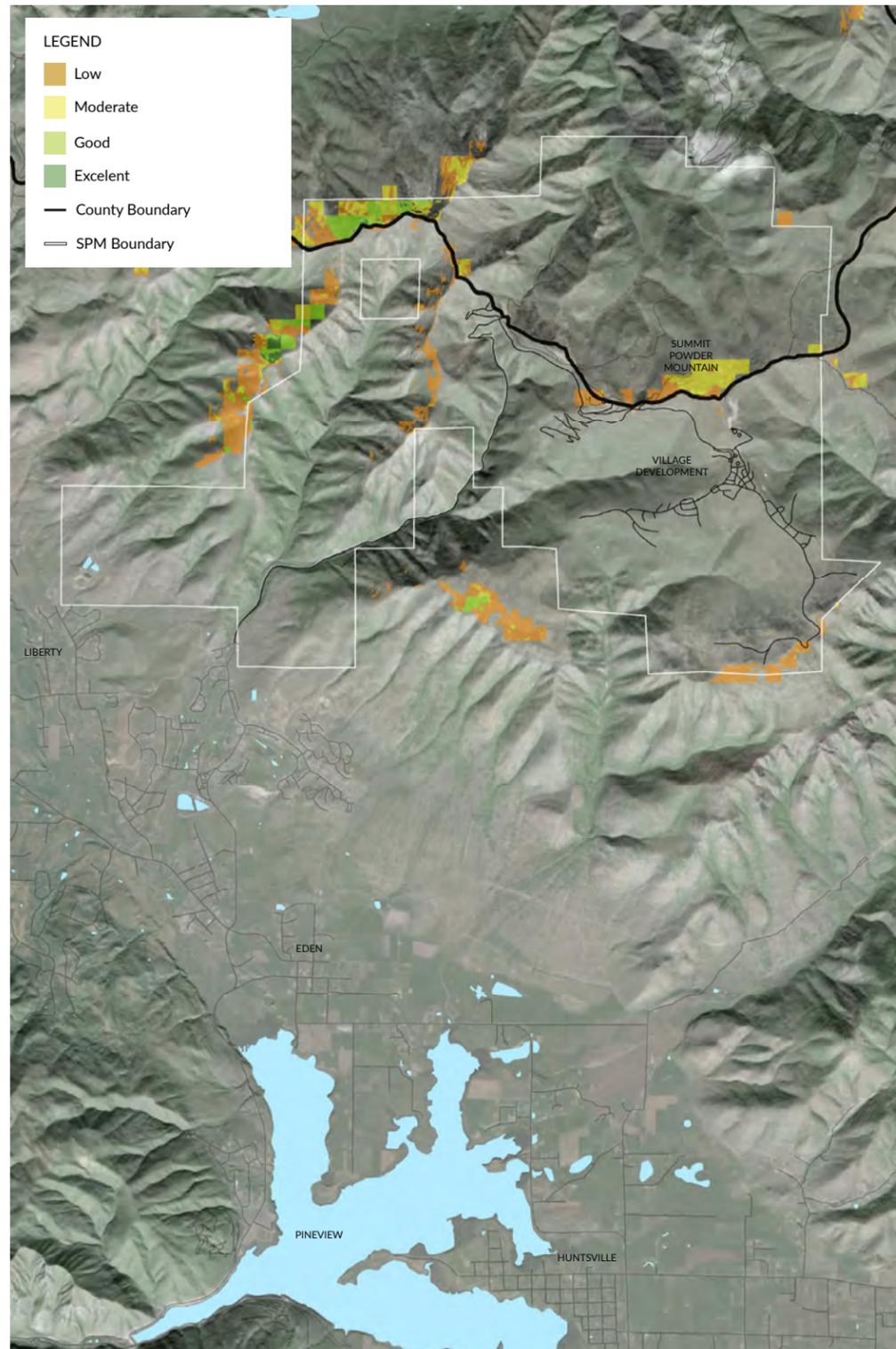


SPM SOLAR ARRAY SUITABILITY
 SITE-SPECIFIC SCALE
 Solar Suitability is based on desirable slope (0-15%), aspect (south and southwest), visibility from the valley and SPM development, and vegetation density.

0' 4,000' 8,000'

APPENDIX - PARTS OF THE MATRIX

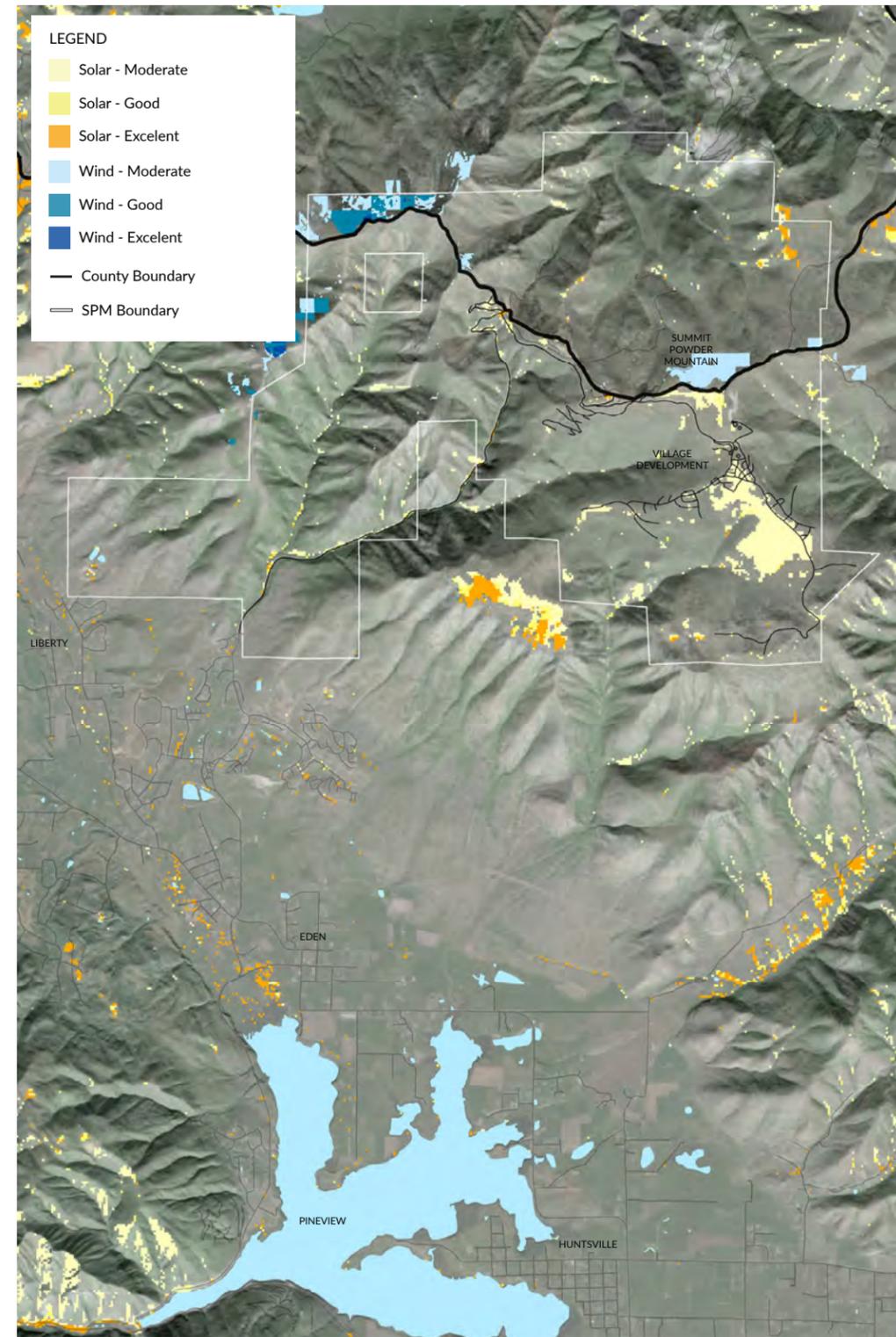
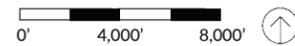
Interdependent Systems



SPM WIND TURBINE SUITABILITY

SITE-SPECIFIC SCALE

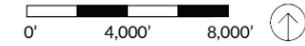
Wind Suitability is based on desirable slope (0-20% optimal, 21-35% allowable), average wind speed, visibility from the valley and SPM development, and vegetation density.



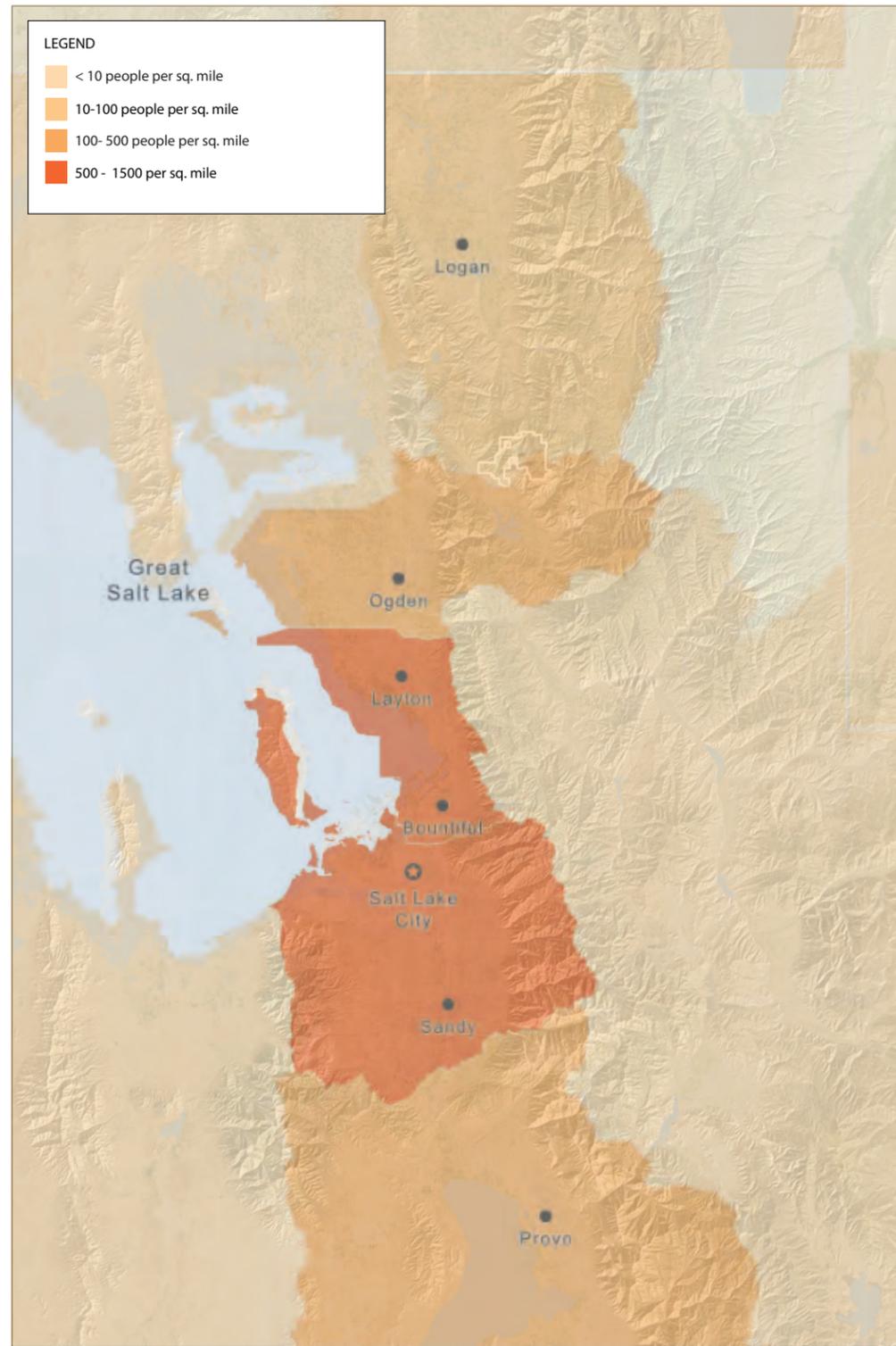
SPM ENERGY TAKEAWAYS

SITE-SPECIFIC SCALE

Optimal locations for solar and wind renewable energy generation are show above. Influencing factors include: slope, aspect, visibility from the Ogden Valley and SPM development, wind speed, and vegetation density.



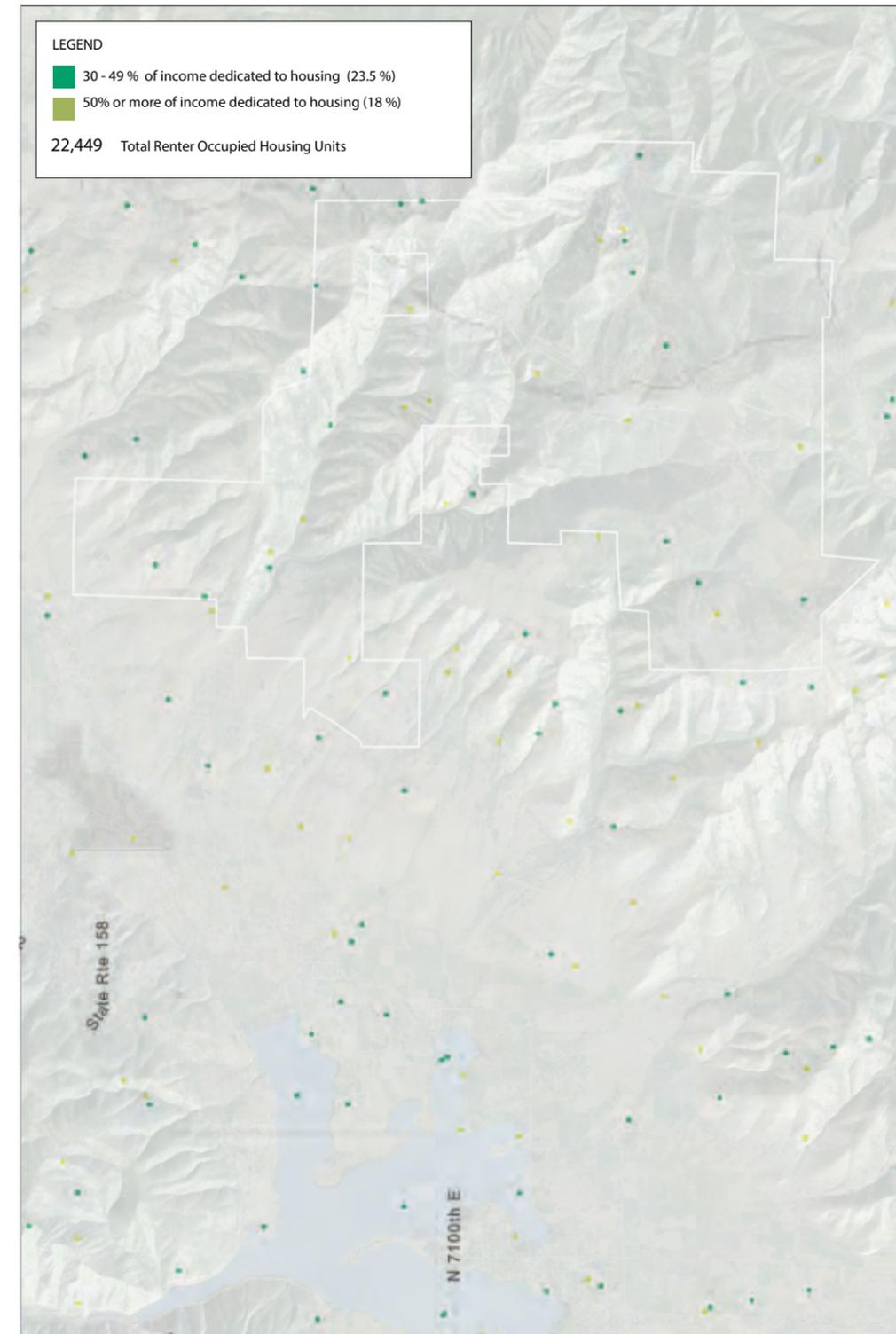
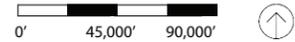
AFFORDABLE HOUSING



Population Density

REGIONAL SCALE

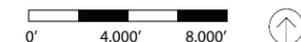
People are migrating North toward Summit. Addressing the issue before it becomes a crisis will lessen the stress of affordable housing in the future.



Gross Rent as a Percentage of Household Income

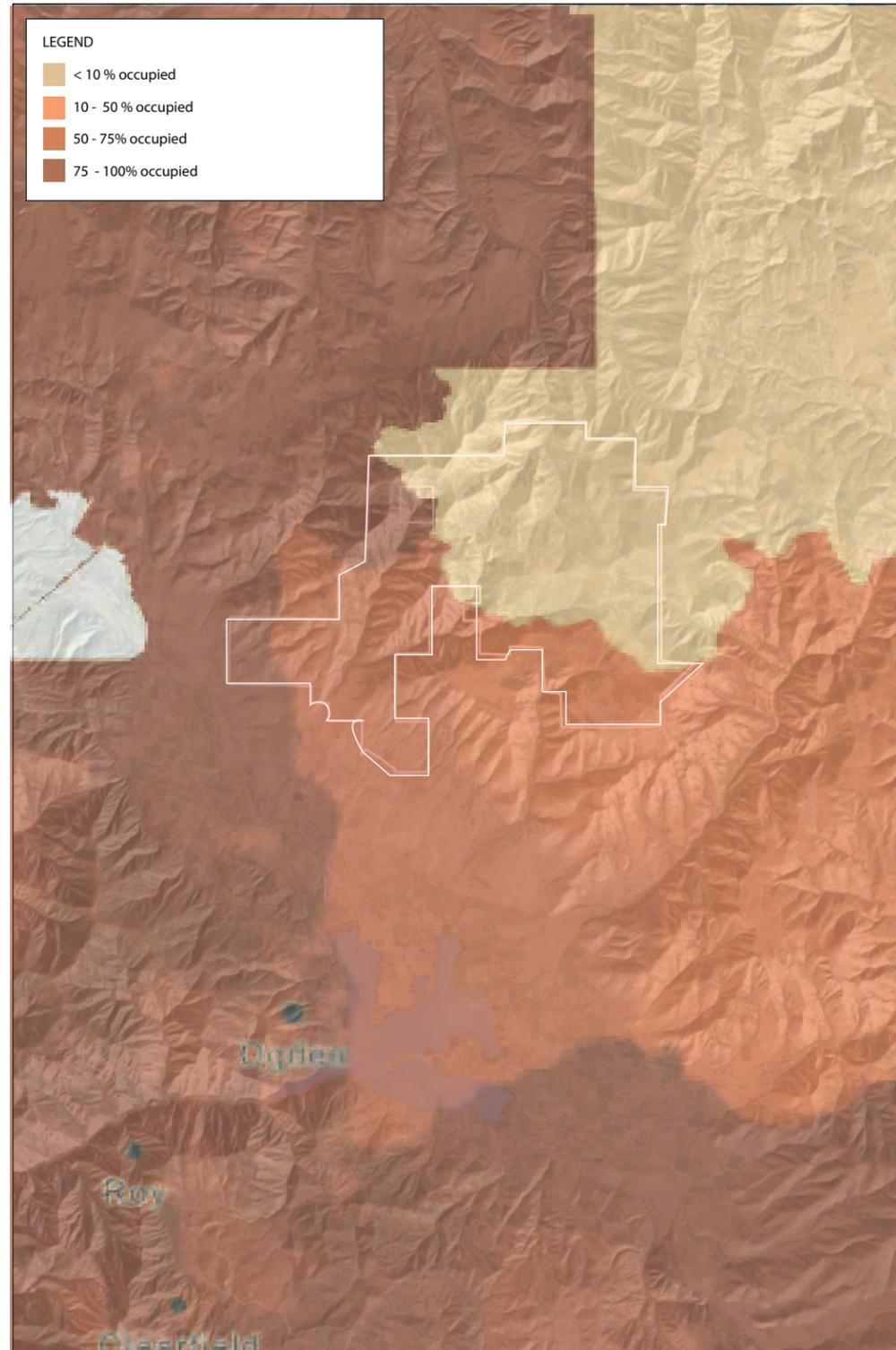
SITE-SPECIFIC SCALE

41.5% of all housing for rent in Weber county is above 30% of renters income. Affordable housing is needed but assistance for employees is necessary.

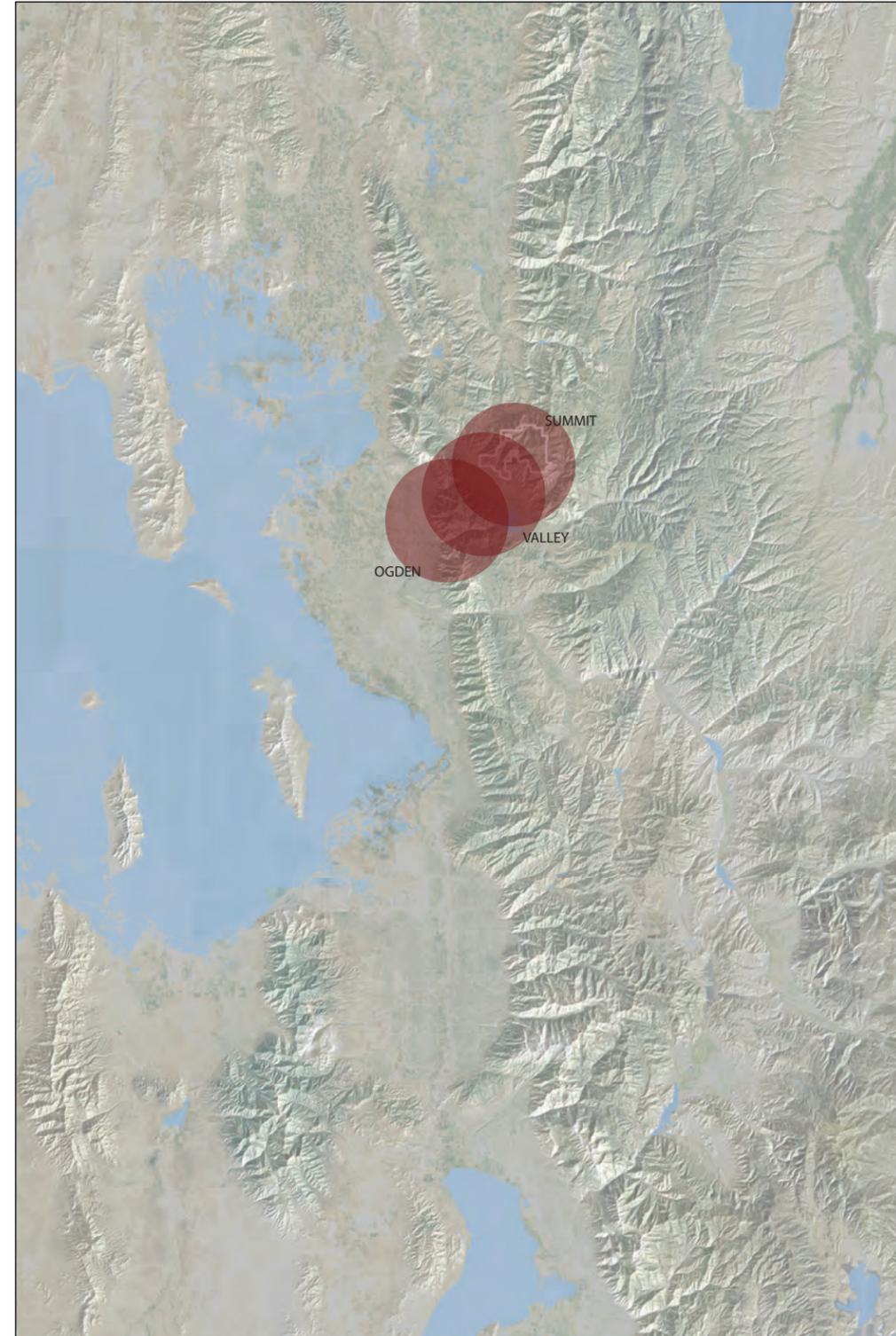


APPENDIX - PARTS OF THE MATRIX

Interdependent Systems



Housing Occupancy
 VALLEY SCALE
 Even with the rapidly growing density, there are a lot of vacant housing opportunities within the valley that can focus on infill and denser more sustainable development.



Summary
 REGIONAL
 The increase in population density and proximity to activities will lead to less vacancy in the valley. SPM and Ogden meet in the middle at the valley where the influx of workers and dguests will want to live. This is the best option for dense affordable housing.

