

# POCATELLO CITY & PORTNEUF RIVER



## SOUTH REACH

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## POCATELLO CITY



The Shoshone tribe were originally hunters, fishers and seed gatherers from the Great Basin cultural group of Native Indians who were closely related to the Northern Paiute people. The Great Basin social and cultural patterns were those of the non-horse bands. These people were highly skilled basket makers and wove the baskets so closely that they would hold the finest seeds. With the introduction of the horse the tribe migrated to many different areas and adopted different lifestyles and cultures.

A postcard message informs us " Indians are fond of camping along the streams in summer, the majority of indians live in their TEE PEE'S all the year.



In 1888, the Bannock and Shoshone tribes who lived at Fort Hall reservation were forced to cede 1,800 acres of their 1.2million acre reservation to accommodate development of the town of Pocatello.



The 1887 Dawes Act initiated the allotment of the Fort Hall Reservation. This process was completed by 1914, with over 347,000 acres having been distributed among 1863 individual land allotments between 1911 and 1913. By the time allotment of the tribal lands was terminated, nearly 36,000 acres had been alienated from native ownership through sales, patents in fee and certificates of competency. Surplus lands were ceded to Pocatello or sold to non-natives, thus creating the checkerboard pattern of land ownership that now exists within the reservation boundaries.



In 1910 total population of Bannock County was 19,242 out of which rural population was 10,132 about 52.66%. Few decades of connection with the Railroad which lead to connection from east to the west and fostered urbanization.

# HISTORY

Unwind and Reflect

## PORTNEUF RIVER



The hydroelectric power plant was first activated in 1892. It was used until 1899. By 1902 the Portneuf river was unable to produce enough electricity for Pocatello, so the Snake river at American Falls was used to provide for the growing town. The population density per sq. mile was 1.0 in 1890 which increased to 2.5 in 1900.



The Railroad - The Central Pacific Railroad began in Sacramento, California in 1862 and built eastward, and the Union Pacific Railroad began in Chicago, Illinois in 1863 and built westward. Both railroads built rapidly toward each other, and on May 10, 1869, the tracks were joined together with a golden spike at Promontory Point in Utah.

The rail tracks cut across the meanders of the river. This image shows an ox bow separated from the main river on the west side.



1962: Year of 'Big Flood' - The second week of February the temperature remained in the upper 40's during the day, followed by a high of 55 without going below freezing at night, which brought the unexpected devastation. For the following week, almost, thousands dealt with frigid, swirling, silt-laden water. The Red Cross estimated 415 homes effected in Bannock County. The water had risen 5 1/4 feet above the flood stage, that the flood workers were aware off.



1969 - In the month of July started the Construction of Concrete Channel. The Army engineers said "RIVER 'STAY' WAY FROM MY DOOR" - Songs like these appropriate to many homeowners, in that decade. In 1962 and 1963 the Portneuf river spilled over its banks nearly 2,990 cubic feet per second. The new channel was constructed to prevent over twice as much water as the near disasters of the big flood. Hence, the channel was designed to protect against a maximum flow of 6,000CFS.

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## THE HEADWATERS OF THE COLUMBIA RIVER BASIN



The Portneuf River is located in Bannock county Idaho, and is part of the larger Columbia River Basin Watershed.

The Portneuf begins above Chesterfield Reservoir and ends at American Falls Reservoir, where it joins with the Snake River.

The basin culminates at the Columbia River in Oregon, where it empties into the Pacific Ocean

## A HIGHLY USED AMENITY

The Portneuf river has a history of being utilized, often at the cost of the degradation of the ecosystem and the natural state of the river.

- Sediment from Chesterfield Reservoir gets into the Portneuf River
- Channelization, and straightening for irrigation speed up the flow of the Portneuf, contributing to erosion.
- Grazing cattle also contribute to erosion when they walk down the banks of the river to get a drink of water.
- The Downey Irrigation Canal diverts much of the water in the Portneuf. The Portneuf has 70% less water than it would without irrigation withdrawals
- The Portneuf was channelized in the 1960's after severe flooding, further altering and straightening out the river.

## POSITIVE CHANGE FOR THE PORTNEUF

The Portneuf river has also had a history of restoration and care. Friends of the Portneuf, a group of avid fishermen, have taken measures to restore the area. Below are some of the ways the Portneuf is returning to a natural state.

- Friends of the Portneuf have planted native riparian plants to stabilize the once eroded river banks.
- Fences have been installed on sections of the river to protect the banks from cattle.
- These measures have helped clean up the ecosystem enough to restore cutthroat trout to the Portneuf.

## THE JOURNEY OF THE PORTNEUF RIVER

1 Chesterfield Reservoir



2 Previous erosion on the Portneuf



Riparian restoration to fix erosion



3 Downey Irrigation Canal Irrigation Runs the River Dry



4 Brown Sediment at Marsh Creek



5 Aquifer in the Historic Floodplain



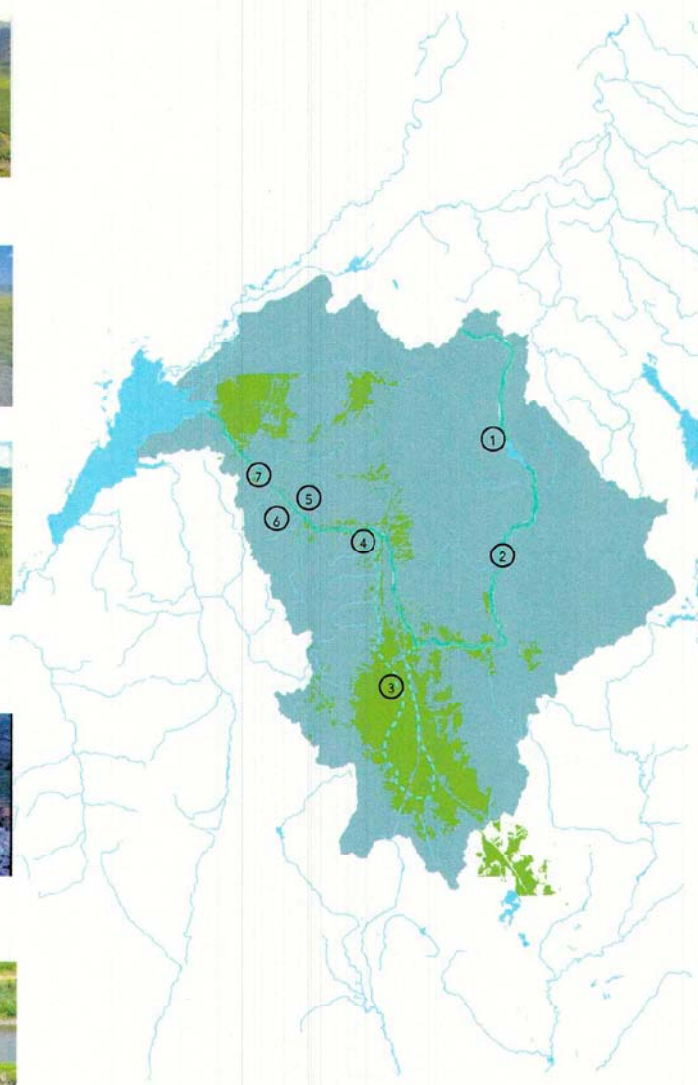
6 Mink Creek, a Healthy Tributary



7 Concrete Channel Downtown



Channelized Levees



- Portneuf Watershed
- Agricultural Lands
- Portneuf and Tributaries

## THE FLUCTUATING RIVER

The Portneuf River has changed throughout time to meet the needs of people in the Pocatello area.

With the arrival of the railroad, the river's meandering nature was straightened over time. The floodplain was divided, reducing overflow areas during times of high waters.

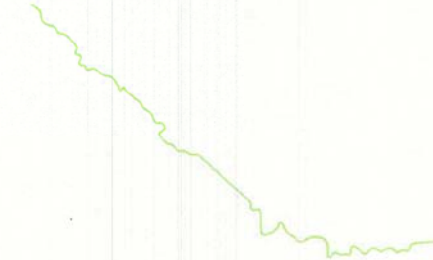
The now abandoned oxbows once created seasonal wetlands in the river valley. These wetlands provided critical habitat, as well as slowed the flow of the river to prevent flooding.

Restoring seasonal flows to some of the historic oxbows would revitalize the ecosystem, and help prevent flooding further downstream in the urban center of Pocatello.

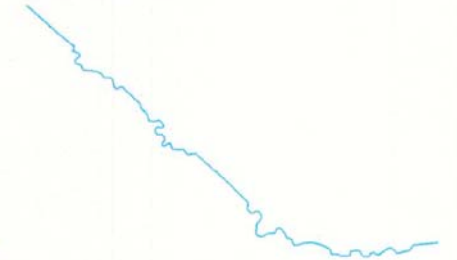
Portneuf River Pre-Railroad, 1889



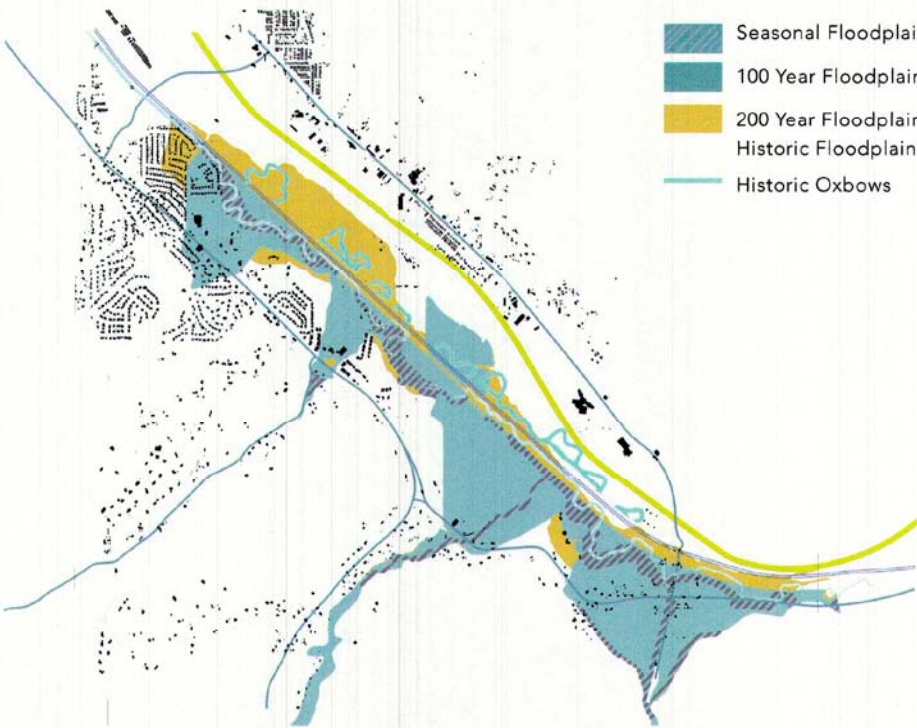
Portneuf River Post-Railroad, 1937



Portneuf River Today



- Seasonal Floodplain
- 100 Year Floodplain
- 200 Year Floodplain/ Historic Floodplain
- Historic Oxbows



Floodplain in the South Reach



The three Portneufs: 1889 Pre-Railroad, 1937 Post-Railroad, and Today.

# HYDROLOGY

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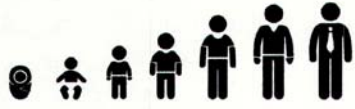
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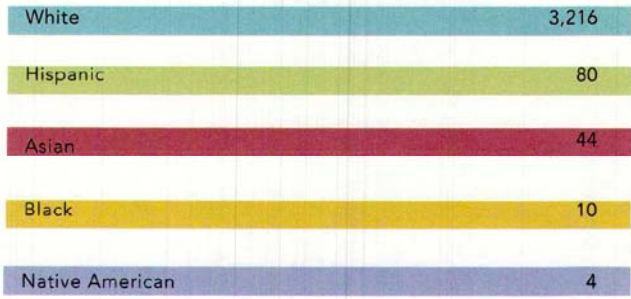
## THE PEOPLE OF SOUTHERN POCATELLO

### WHO THEY ARE



Avg. Age

38



Avg. Family Income

73182



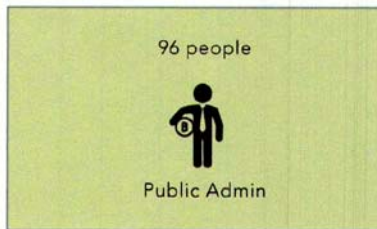
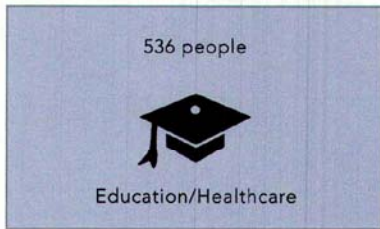
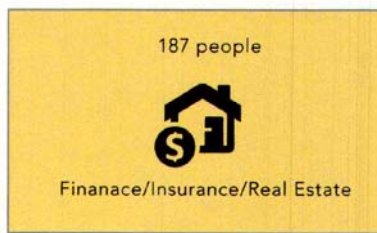
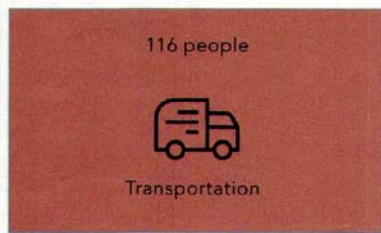
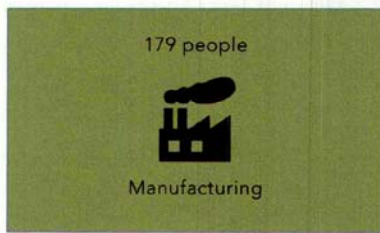
1698

1607

Male Pop.

Female Pop.

### WHAT THEY DO



### WHAT THEY THINK

"I'd like to see this project done yesterday."

"The Portneuf? I for sure wouldn't swim in it."

"I love the Edson Fichter area, it has a lot of potential."

"I don't really go to the east side (of the highway), nothing takes me over there."

"We could use more trails here."

"I don't go down there too much, it's too hard to get there."

"I wouldn't eat a fish I caught there."

"It's too hard to go south. There's no trail access."

"This community is sometimes... Resistant."

"If the river had been left alone, none of us would be able to afford to live here- it would be so popular."

"Maintenance is a big issue."

"Every city with a river has a river walk. Not Pocatello, we have a concrete channel. Drives me crazy."

### HOW THEY MOVE

#### SOUTH-WEST POKY

##### AV. TRAVEL TIME TO WORK

Less than 10 min.	270
10-19 min.	809
20-29 min.	296
30-39 min.	54
40-59 min.	49
60-89 min.	0
Work at Home	66



0 BIKED



0 WALKED



195 CARPOOLED



1292 DROVE ALONE



0 BIKED



38 WALKED



268 CARPOOLED



1364 DROVE ALONE

#### SOUTH-EAST POKY

##### AV. TRAVEL TIME TO WORK

Less than 10 min.	410
10-19 min.	807
20-29 min.	92
30-39 min.	0
40-59 min.	22
60-89 min.	61
Work at Home	21

# SOCIO-CULTURAL

People, Patterns, Ideas

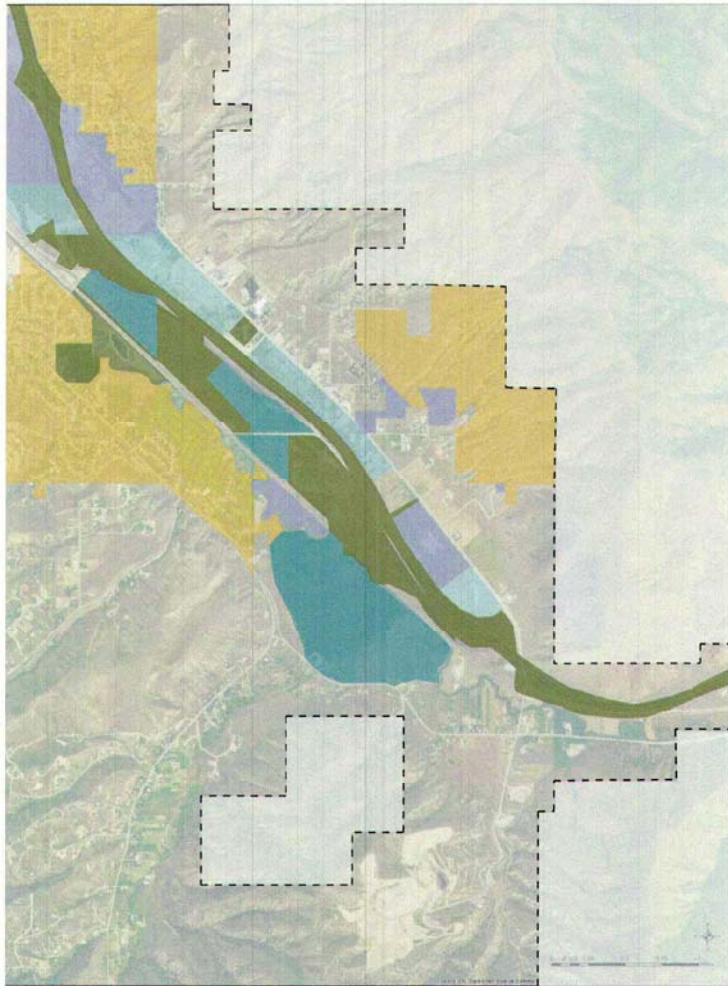
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- Industrial
- Residential
- Agricultural
- Commercial
- City/State Owned
- BLM Land

**ZONING MAP**

The south reach of Pocatello shows an interesting conglomerate of zoning areas. There are few commercial areas, only dotting the sides of the highway on the east side and with one service station on Bannock Highway. The residential areas encase some city and state-owned land as well as some private agricultural land. Pocatello municipality ends just north of the church farm area and runs into the Portneuf county area where more residences and some farmland are located. Our main opportunity area is in the middle where the river runs. The city and state own large chunks there next to Edson Fichter Park and next to the railroad tracks. Up on the hills is where the Bureau of Land Management stewardship begins and continues for large spans up towards the forests.



**SOFT/ HARD ANALYSIS**

Many of the areas we found to be hard consisted of residential housing throughout the area surrounding Bannock Highway and focused near the mountains. It is also very industrial on the east side of the Interstate with some residential areas and farms. Soft areas can be found along the railroad with open land that is undeveloped as well as Edson Fichter nature park area. These areas have potential to be connections to the community and to the town as part of a greenway.

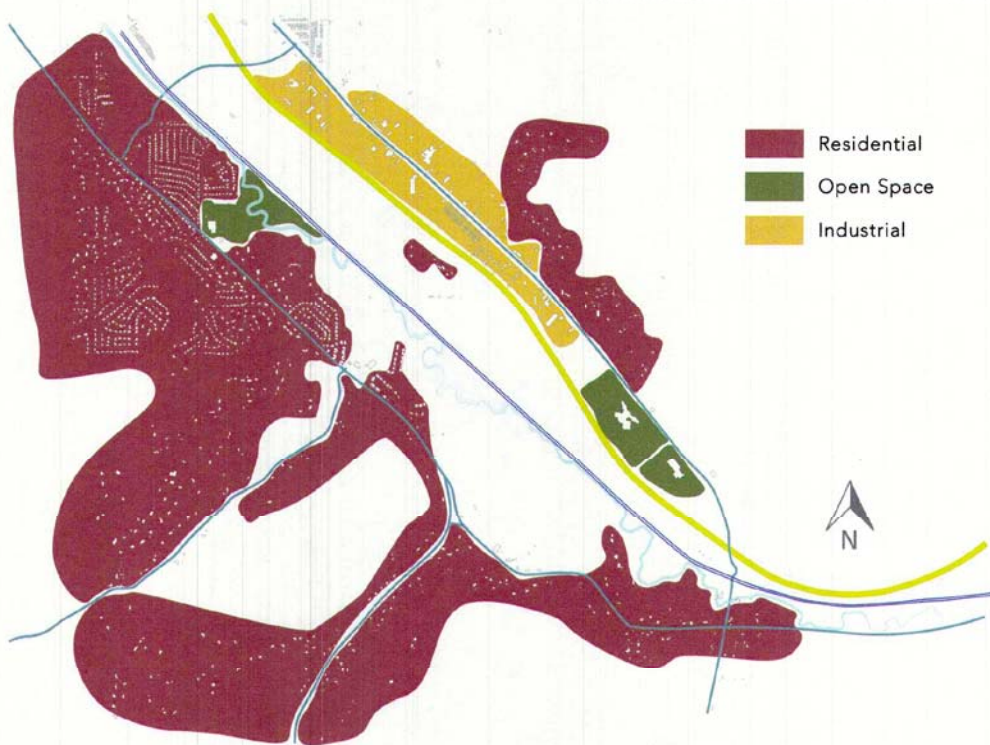
- The Interstate, Bannock Highway, 5th Avenue and the railroad are hard areas while the areas surrounding them could be open to change and redevelopment.
- Areas surrounding homes have potential and possibilities for development. Some areas may be too steep considering the mountain ranges.
- Not all soft areas will be changed, this map just shows areas that are established and can't change and areas that have potential for change, new development, or redevelopment.

**RESIDENTIAL VS. OPEN SPACE**

- This map shows the area in the form of built and unbuilt in a comparison of built areas and their relationship with open space or parks.
- As the map indicates, existing open space is very minimal considering the large areas of residential in the area. There is also a disconnect in the area with the residential mixed with industrial.
- There isn't much of a connection to the rest of Pocatello and there is minimal connections to the immediate community.

**THE TAKE AWAY**

These maps give insight and inform decisions about where change can take place. While much of our area is residential, there is still plenty of land in surrounding areas to provide a way to connect the residents to the landscape and the river as well as the city. There is a great disconnect between the East and West sides of the site with a division created by I-15, the railroad, and the river. Opportunities for connections between these different areas are what these maps help us see.



# AREA ANALYSIS

An Analysis of the Zones and Uses of the Existing Landscape

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## GREENWAY










^ The Current greenway in Pocatello is not well connected. It is chopped into little segments scattered throughout the valley. At Edson Fichter Nature Center the paths there are heavily used by the surrounding community, with slap dashed trails that people have blazed themselves.

The paths that have been laid out in this map are as follows:

- › Good: These paths are well used but could use an update, and a better use of human scale.
- › Ok: Community uses these paths but they are well worn and need a lot of maintenance
- › Bad: Used by a few but would be used by other citizens if the path was better maintained
- › Potential: These are spots where the community said they would like to see a path or have started to make their own

With this knowledge we can begin to see where the potential is to make a fully connected greenway. It also shows possible connections to Century High School to the greenway. This would be beneficial because it connects to the community and allows possibilities for an outdoor classroom.

### LEGEND

-  Good path
-  Ok path
-  Bad path
-  Potential path
-  Residential roads
-  Railroad
-  Interstate
-  River
-  Building footprint

## PEDESTRIAN PATTERNS










## RECREATE

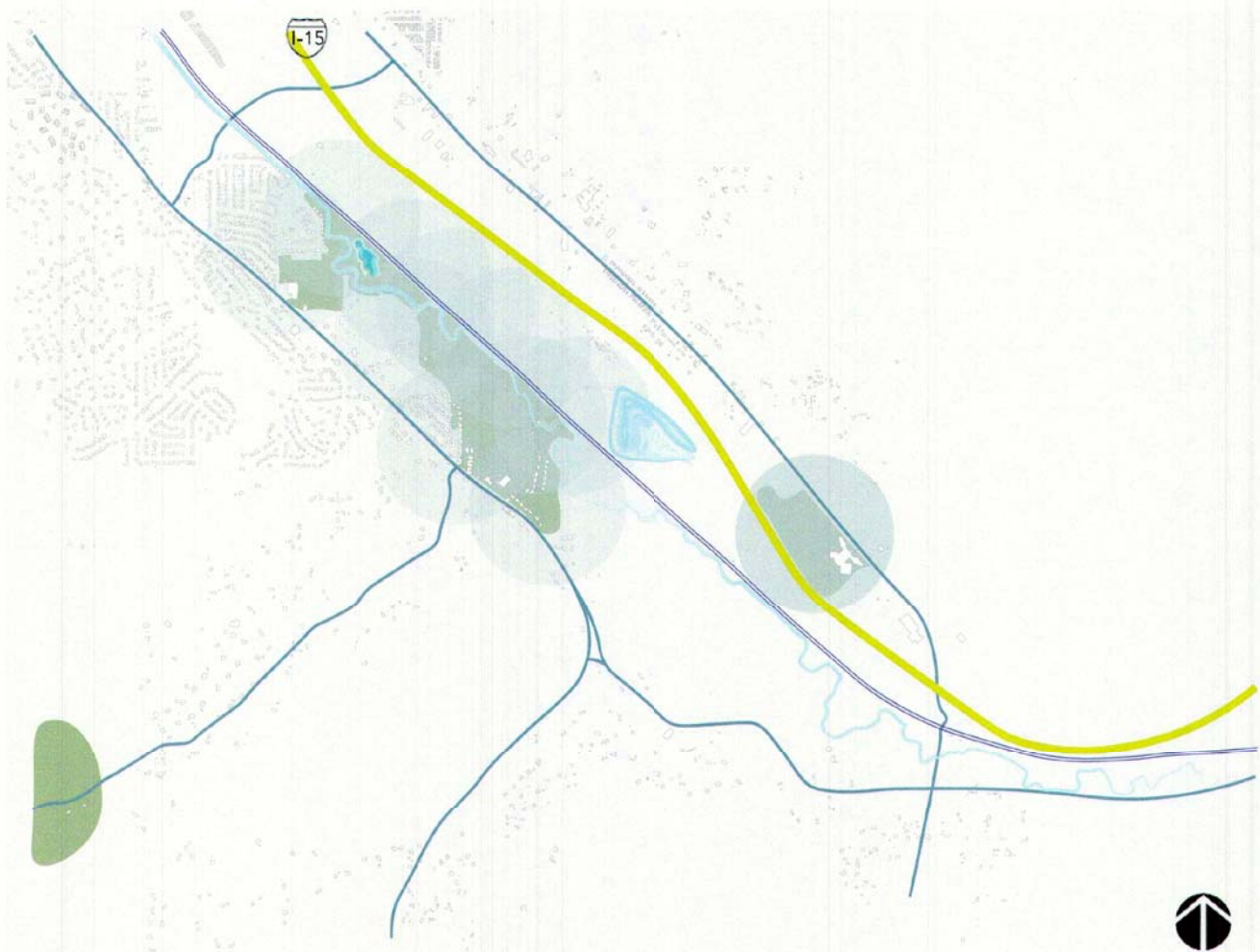
^ Edson Fichter is the most popular park in the South reach, but there is also the Country Club, high school, and elementary in the zone. Because people tend not to walk longer than ¼ of a mile to get to a destination some of these public areas are seldom walked to.

The high school is a current green space that has amenities but is completely secluded from the community around it. We want the south reach to be a recreational destination, and with the lack of walkability and proximity in linking green spaces it becomes difficult to create a greenway. Understanding this lack of green spaces for the city we can promote the growth of more open spaces then promoting recreation. This will also create an identity for the area, and not leave it as a forgotten place.

### LEGEND

-  Residential roads
-  Existing park
-  ¼ mile buffer
-  Railroad
-  Interstate
-  River
-  Building footprint

## ACCESS TO PARKS & OPEN SPACE



# OPEN SPACE

Greenway, Unwind, Recreate

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## UNWIND


^ In order to understand where the opportunities lie within the south reach we have to unwind the information that we have found. We know that we want to create a greenway that people can recreate in and that draws more attention to the river. We also know that there is a disconnect in the open space. So, the proposition of more open space and of mixed use areas will help the community be able to be active in but also unwind and relax while in the site.

The new open space will help to connect the currently disconnected greenway. It will also allow for better wayfinding while using the river for recreation, allowing the user to have certain put-in and take out areas. The open space will also allow more room for the native inhabitants such as the deer, beavers, and migratory birds. In turn these spaces act as a wilderness classroom for the surrounding schools to use.

The proposed mixed use areas are placed in the south region because it would allow for another urban riverwalk way closer to the entrance of the valley and enhancing the continuous greenway. It also creates amenities for the southern community, that is not a 45 minute trip into town. This will also create an area for the high schoolers to go within a walking distance.

Some other improvements to consider would be the points of interest which include the church farm, the Gibson Jack trailhead, mountain biking trails that need revision in the west mountains, and the mink creek recreational access areas.

## LEGEND

	Potential mixed use		Residential roads
	Potential park		Railroad
	Existing park		Interstate
	Points of interest		River
			Building footprint

## POTENTIAL GROWTH



## PRECEDENTS



^ River restoration is a major part of the south reach team. This will add aesthetic and bring back lost wildlife to the area

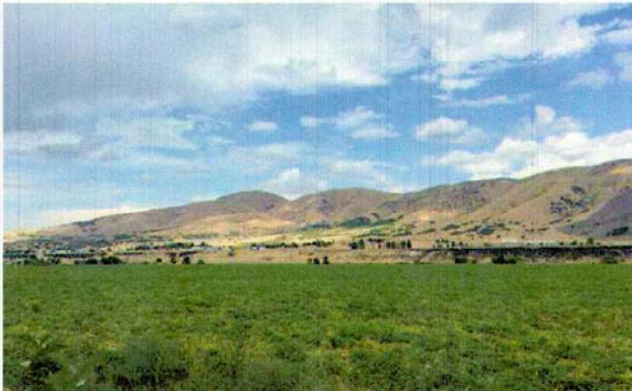


^ The connecting greenway is a key component that would allow for recreation along the portneuf



^ The possibility of a mixed use area such as this one would help build an identity in south Pocatello

## CURRENT CONDITION



^ The Church farm is currently empty and unused



^ The land along the river has random trails that come from all over with no distinct put-in areas.



^ River bank restoration is very much needed for the Portneuf River

# OPEN SPACE

Greenway, Unwind, Recreate

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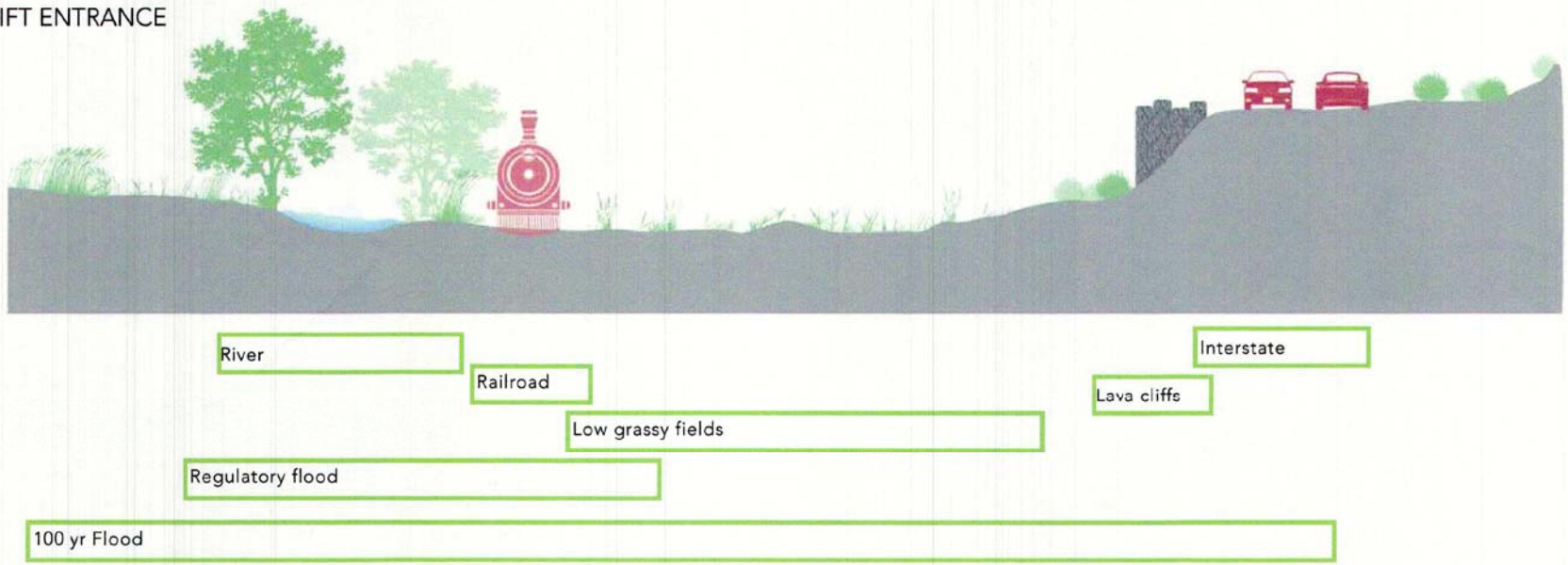
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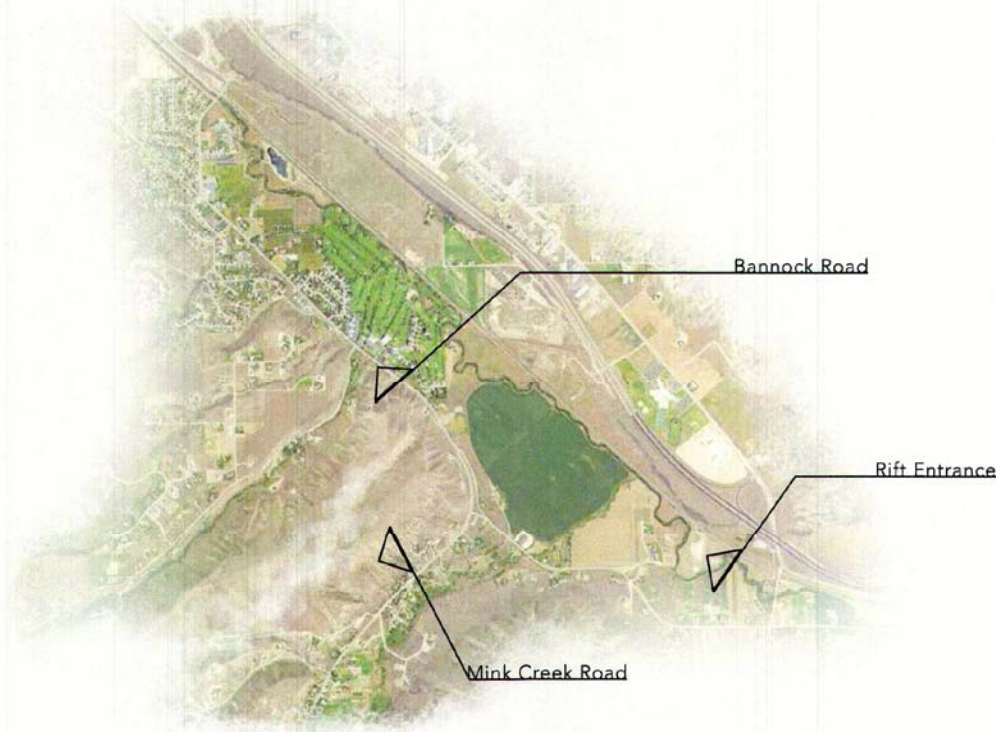


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CLOSE UP RIFT ENTRANCE



POCATELLO



As we enter into the 'Gateway City' there is not anything very distinctive to look at or to catch your attention besides the colorful billboards. To the west the landscape spans out to a flat grassy landscape. The homes are sparse, and hidden behind patches of trees. There is no realization of the lava cliff just to the west of the interstate or even the glimpse of the river. The homes that are close to the river are overgrown with shrubs. These homes are set back about 20 feet and much of it is farmland. There are not any access points that are designated and most of the homes that border the river have fences running into its shallow stream.

The relationship between the built infrastructure is very weak and is not well used.

∨ The open grassy plains to the west are large and span out

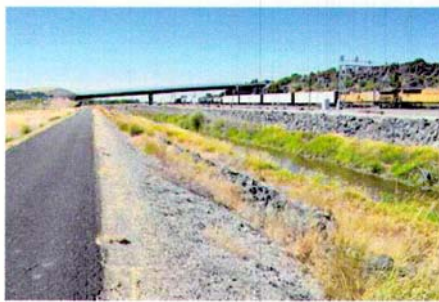


RIFT ENTRANCE

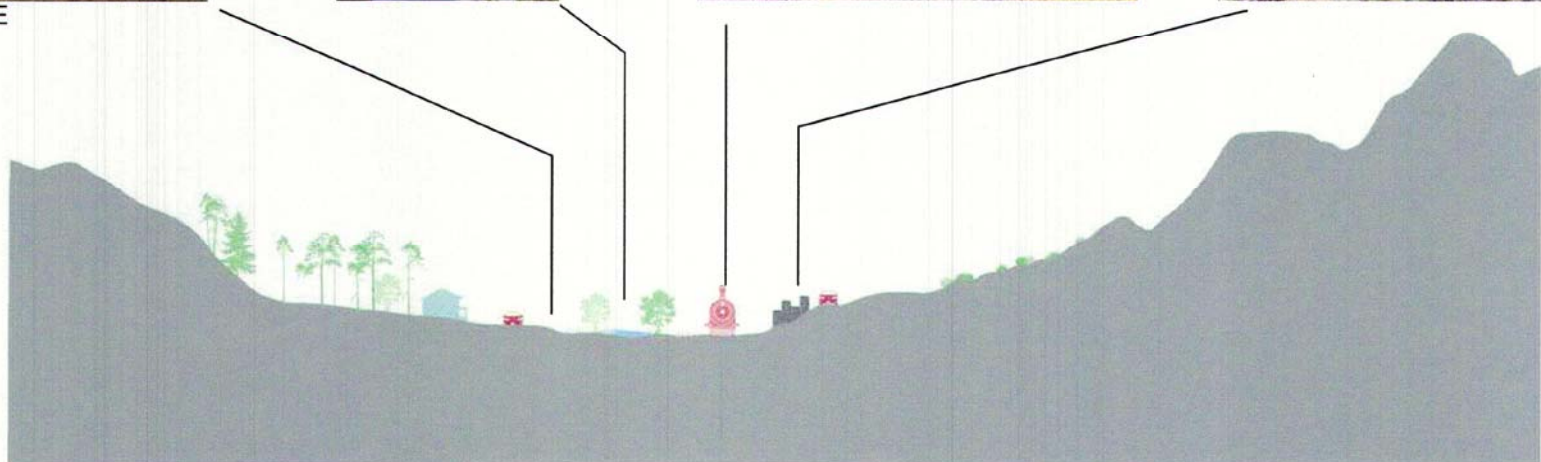
∨ There is patchy connections along the river some private some public. There is also erosion issues



∨ Some of the paths go parallel to the railroad, which is aesthetically unpleasant and dangerous.



∨ The lava cliffs create a steep barrier but has much history and potential for recreation



# STREET BUILDING INTERFACE & VIEWS

Rift, Bannock, Mink Creek

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Paco Patch  
Sara Shirk  
Antra Sinha  
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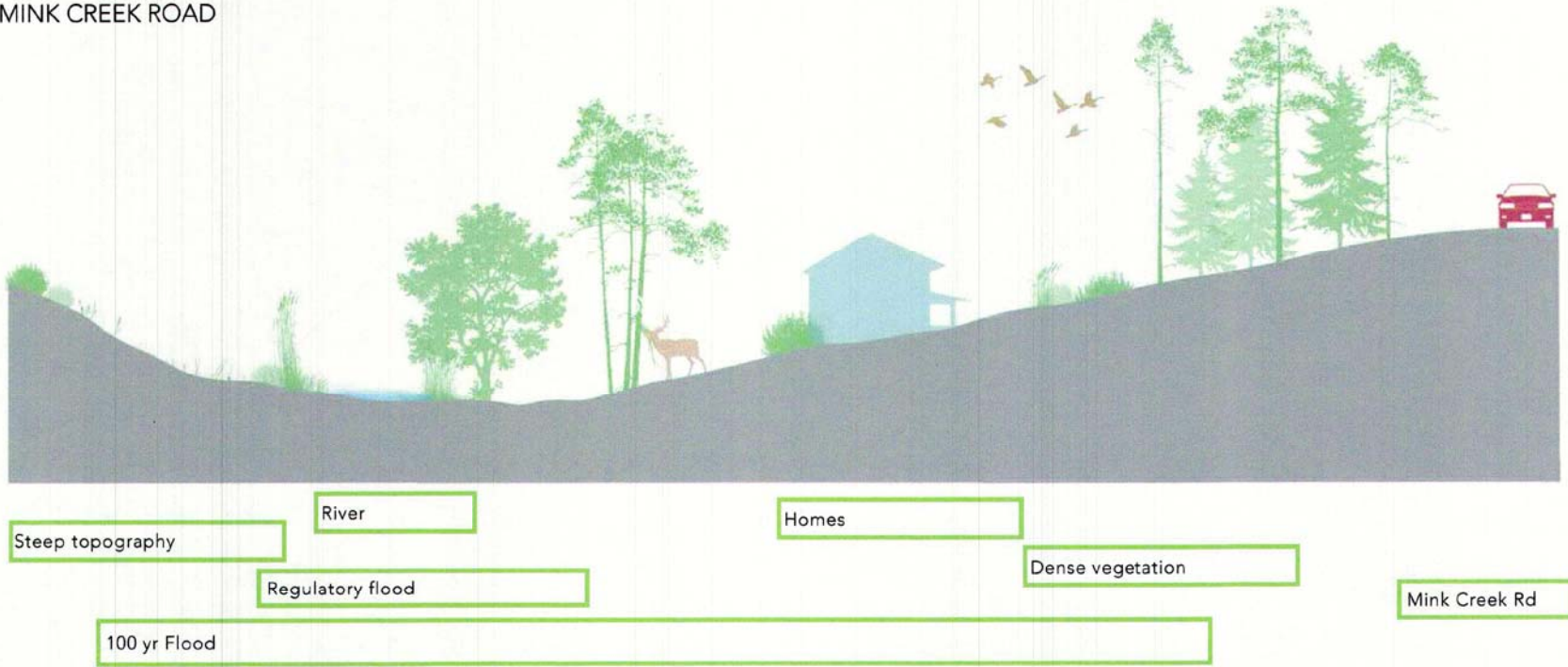
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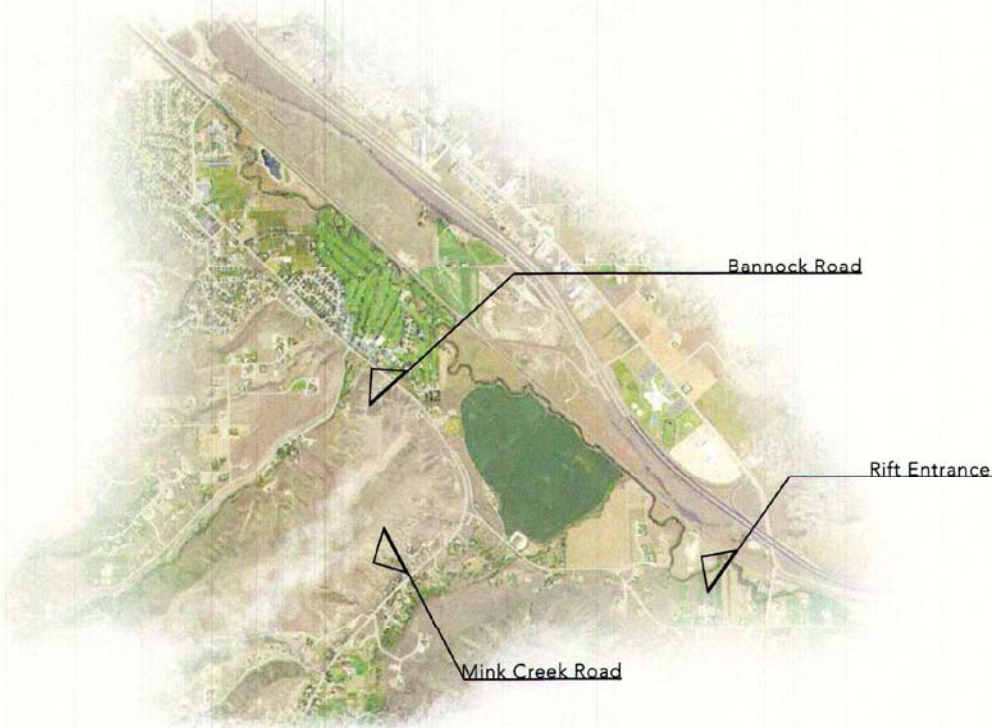
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CLOSE UP MINK CREEK ROAD



POCATELLO



Mink Creek is a small tributary to the Portneuf River and is typically on private land. The homes are set back about 10 feet and have some dense vegetation that protect it from the road. It is land where there are huge deer migratory patterns. It is protected in a little notch and is quite relaxing. There is no sidewalk or bike lane for the users who recreate up the canyon. It is very steep and it looks like most of the properties come straight to the road. Many people who live up the canyon have mentioned a need for more protection for cyclist is needed. The landscape has two very steep slopes on either side of the canyon.

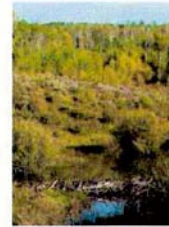
MINK CREEK ROAD



^ Mink creek is a small shallow tributary that flows out of a narrow canyon



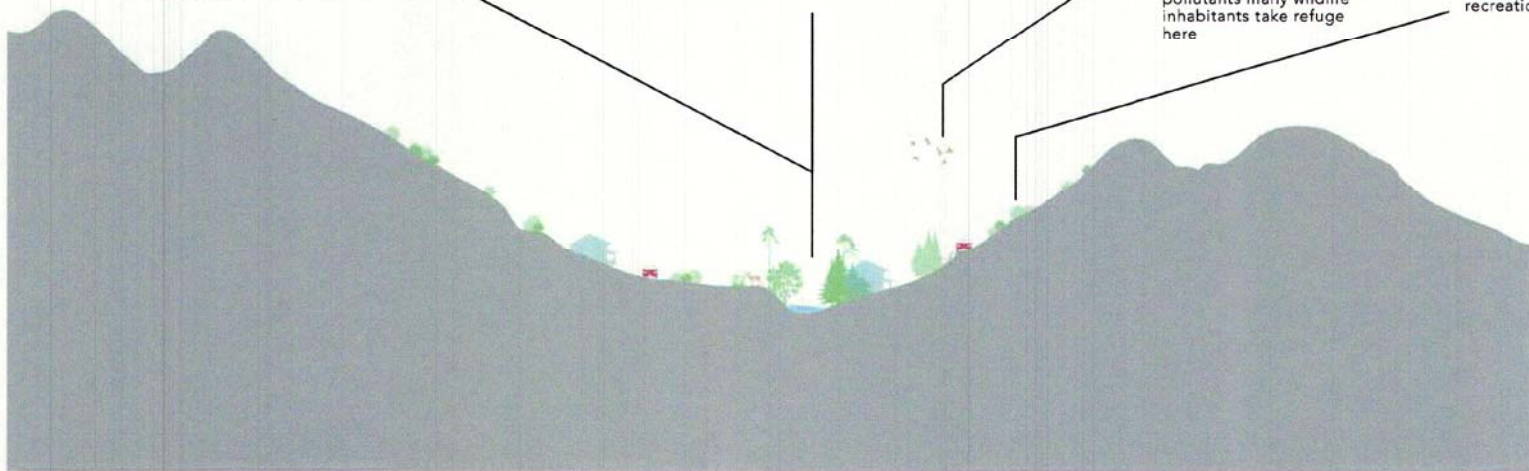
^ The creek runs along through the properties of the people that live in up Mink Creek



^ Because the creek is away from much of the pollutants many wildlife inhabitants take refuge here



^ The canyon leads up to many day use areas, and people are drawn here for recreational activities



# STREET BUILDING INTERFACE & VIEWS

Rift, Bannock, Mink Creek

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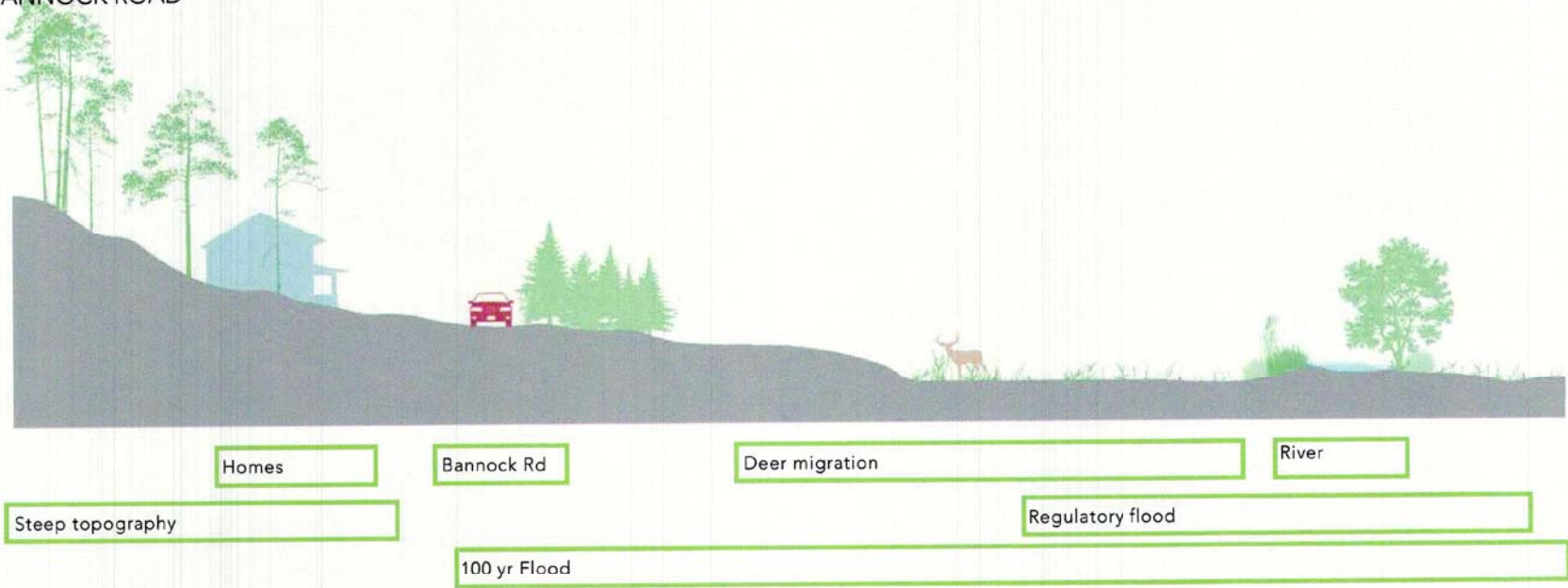
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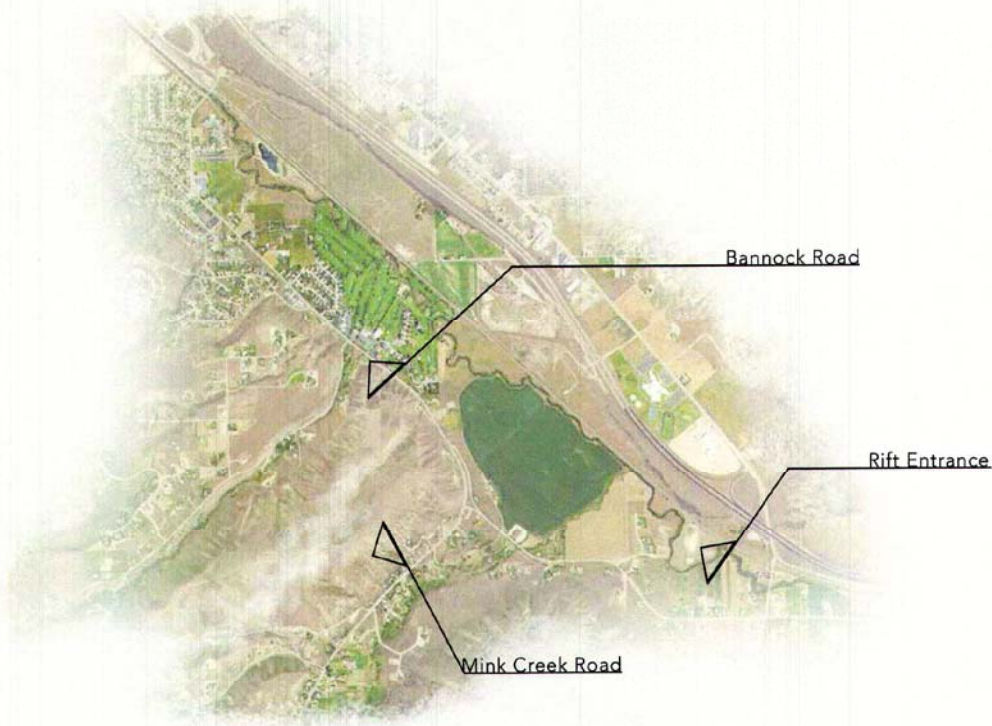


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CLOSE UP BANNOCK ROAD



POCATELLO



Bannock Road varies as it moves south to north, some of the locations along the road the homes are set back 25 feet, while there are residents that have a 10 foot setback. There are also some homes that have a sidewalk in front near the elementary and then the sidewalk ends randomly. It is a highly trafficked area that is a danger to pedestrians and cyclists. Many of the community members that recreate near this road say they run, walk and cycle on this road often but try to avoid it because of how much vehicular transportation there is. The west side of Bannock becomes very steep and goes up residential roads. It is heavily populated with deer, because it is the deer migratory pattern to come down from the side canyons to the flat valley. The river is typically set back on the east side of the road and is on lots of privately owned land, such as the country club. It is very dense vegetation that surrounds the river. At Edson Fichter there are lots of haphazard trails that lead to the river. There is not much awareness of the river, and the relationship between the land and building is somewhat weak.



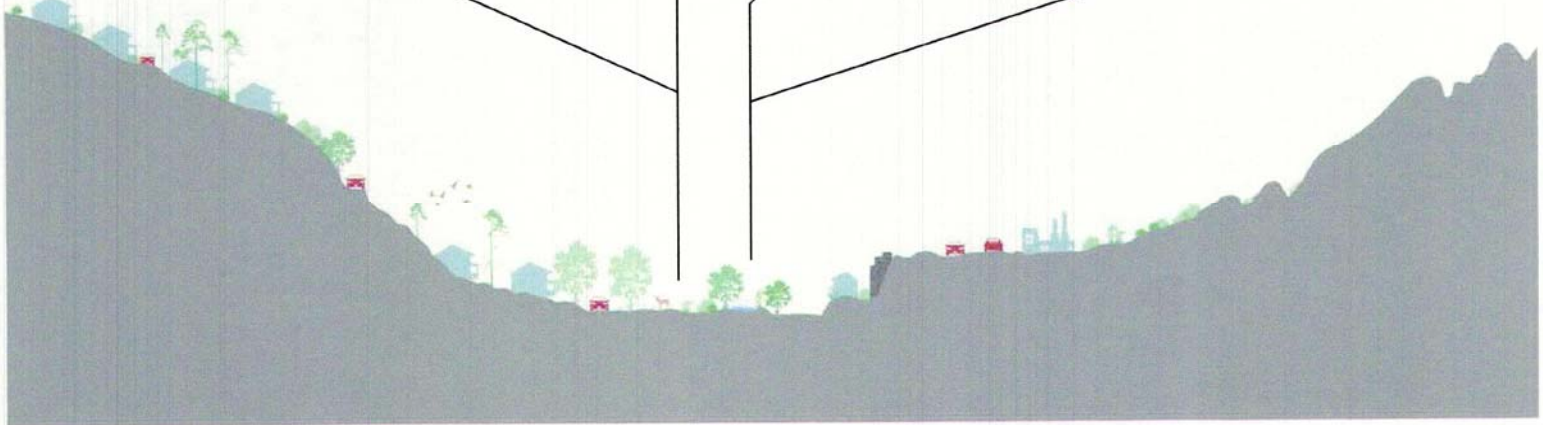
BANNOCK ROAD

^ The stocked pond at Edson Fichter is a popular place for the community to do small day activities

^ Many people come to the public space to enjoy the outdoors without having to commit a whole day to activities

^ Many of the trails that run along the river are haphazard footpaths that also add to the expedited erosion.

^ The swimming hole at Edson Fichter is a popular destination especially in the summer, but many of the residents don't the river due to pollutants in the water, and dangerous waste that lies below



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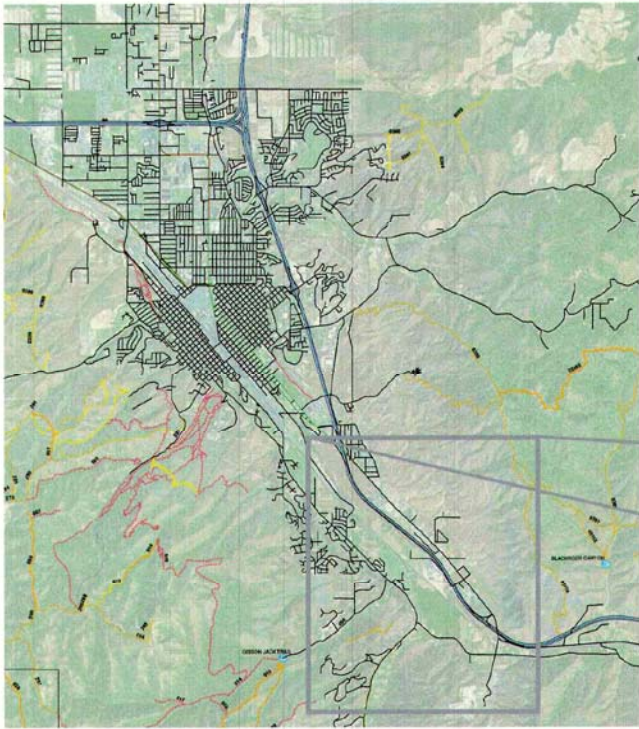
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## REGIONAL TRAILS



There are a large quantity of trails around Pocatello. The ones that are accessible from the south reach are Gibson Jack and Mink Creek. The trail heads are at the ends of canyon roads respectively and are quite well known. While trails are quite prominent around Pocatello, the south reach has very little public access trails. This is one of the reasons why the river is so underused.

## WALKABILITY

The south reach is a very widespread area with great amounts of open space. This in turn is not conducive to many walking areas. There are not many connections between sidewalks, parks, and the roads act as barriers and repellents to walkers because of higher speed limits.

## VEHICULAR CIRCULATION

Many vehicles pass through the south reach area on Interstate 15, but very few actually experience the area. I-15 acts as a barrier, as there are only two places to cross from east to west in the south area. Not only does the Interstate act as a barrier, but so does the railroad, the large lava ledge, and the river. East and west are two different worlds there with two completely different experiences.

## LEGEND

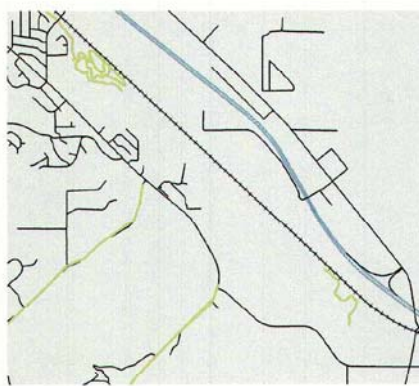
- Interstate 15
- Lava Wall
- Constraints/ Problems
- Roads

## CONNECTIONS NEEDED

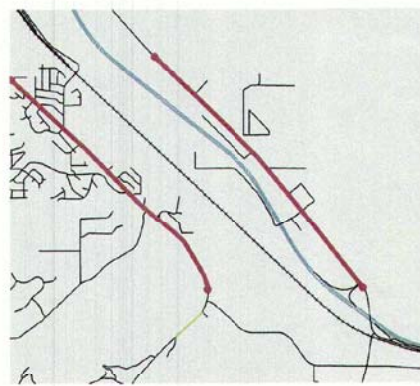
Circulation in south Pocatello is separated and disconnected in many different places. It is mostly a vehicle used area because of the lack of biking and walking areas. Connections are needed in the following areas:

- Roads from east to west between interstate exits
- Biking trails connecting the existing greenway with the area to the south of the church farm
- Walking trails to accompany biking areas to increase accessibility

## BIKING ACCESSIBILITY



^ Good Biking Accessibility

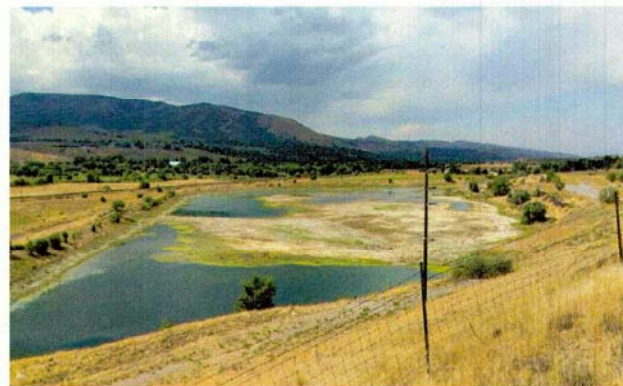
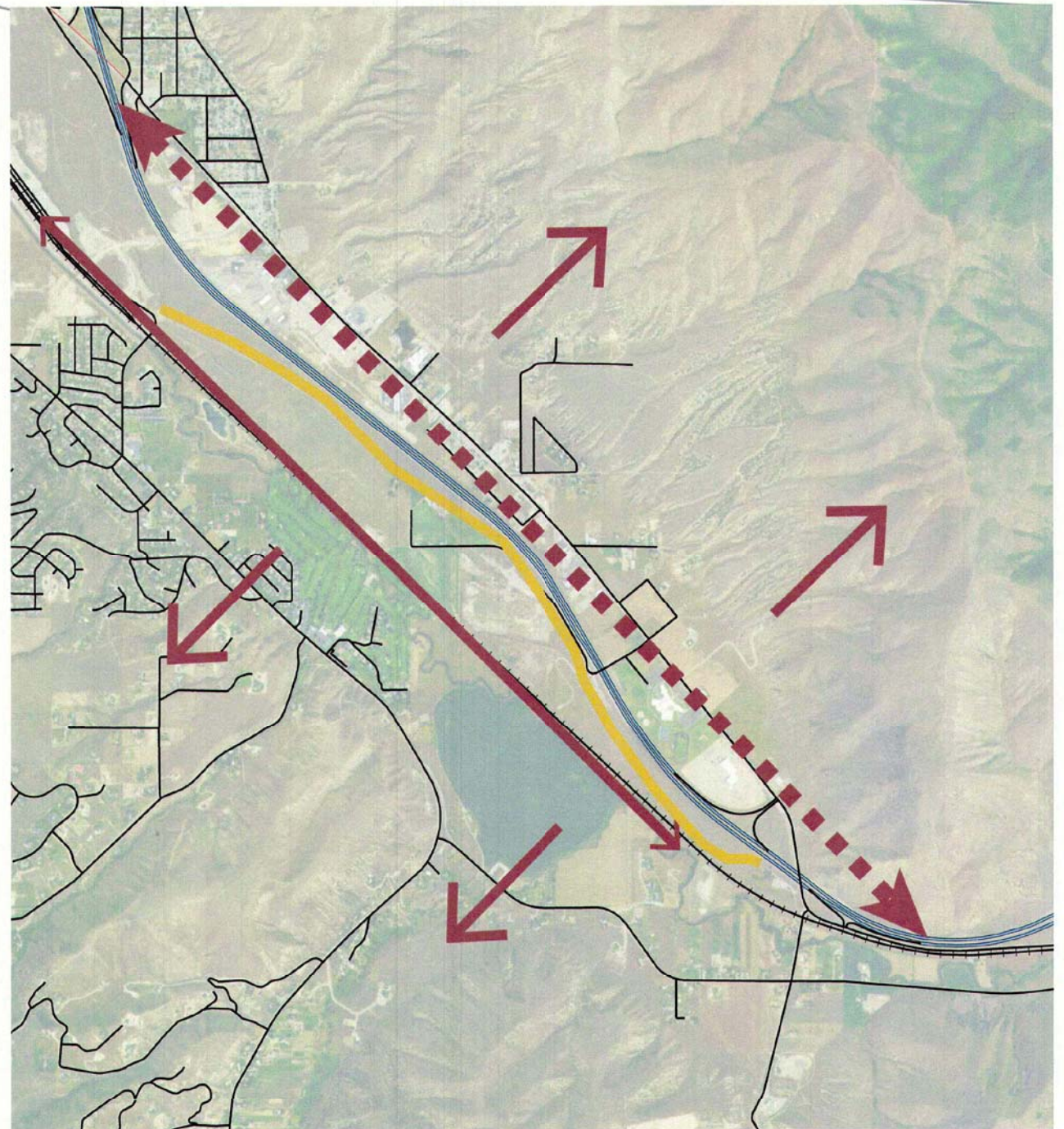


^ Bad Biking Accessibility



^ Needed Biking Accessibility

## VEHICULAR CIRCULATION



View from I-15 ^



^ Closed Road near Elementary School

# CIRCULATION

Disconnected and Separated

Mary Oliver  
Paco Patch  
Sara Shirk  
Antra Sinha  
Rhett Taylor

Utah State  
University

Department of Landscape Architecture  
and Environmental Planning  
Professor Caroline Lavoie  
Matt Starley, T.A. Fall 2017



South Reach >



TRENGTHS

- Large amounts of open space for many different uses
- Deer migration
- Topographical changes provides sense of interest
- Existing river and tributaries
- Great amounts of soft space for use and development
- Ability to obtain land and areas to manipulate and change the river path for the benefit
- Edson Fichter park is developed and used



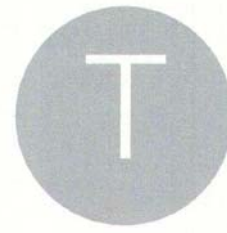
WEAKNESSES

- Geographical barriers between east and west sides
- Low accessibility to pedestrians and bicycle riders
- River is dirty and polluted
- Hidden viewsheds
- Roads all have speed limits not conducive to pedestrian and bicycle use
- People don't feel completely safe in the parks
- Railroad takes up a lot of space and doesn't mix well with other uses



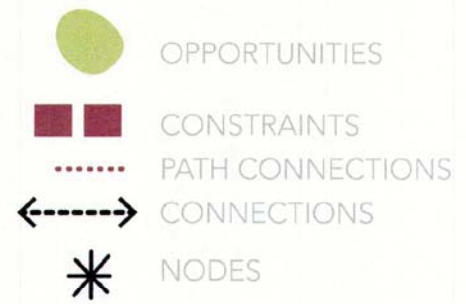
OPPORTUNITIES

- Places to restore historic meanders in the river
- Possibility for wildlife observation and refuge
- Water based recreation
- Water fowl refuge
- Greenway link to connect south reach and downtown areas
- Exposure of hidden viewsheds to create points of interest



THREATS

- Erosion could pose a possible threat if the river is not cared for correctly
- Having to remove citizens from homes
- Flooding



# POCATELLO CITY AND PORTNEUF RIVER

SOUTH REACH

Mary Oliver  
Paco Patch  
Sara Shirk  
Antra Sinha  
Rhett Taylor

Utah State  
University

Department of Landscape Architecture  
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Professor Caroline Lavoie  
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South Reach >