

Warm Springs Preserve

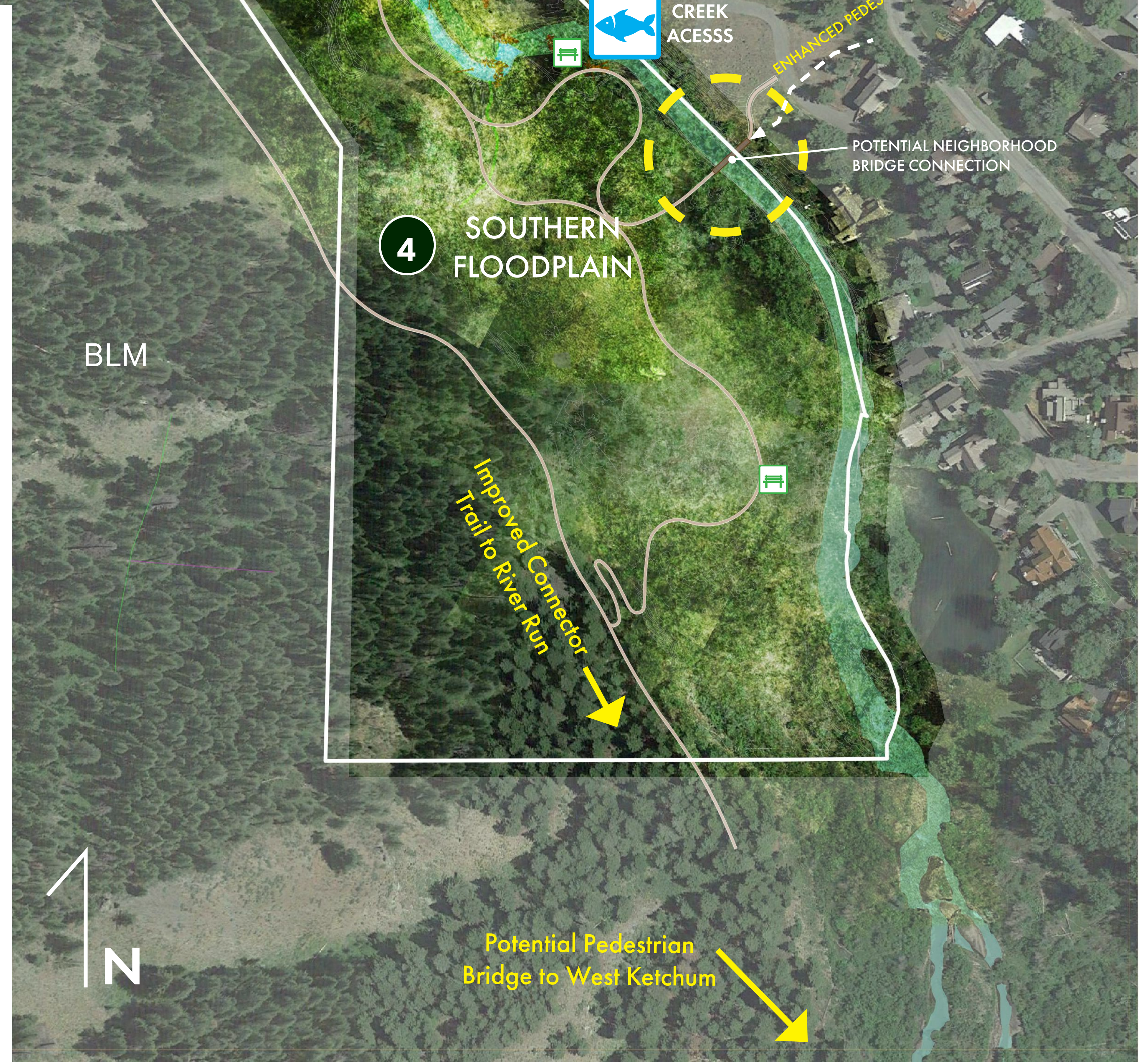
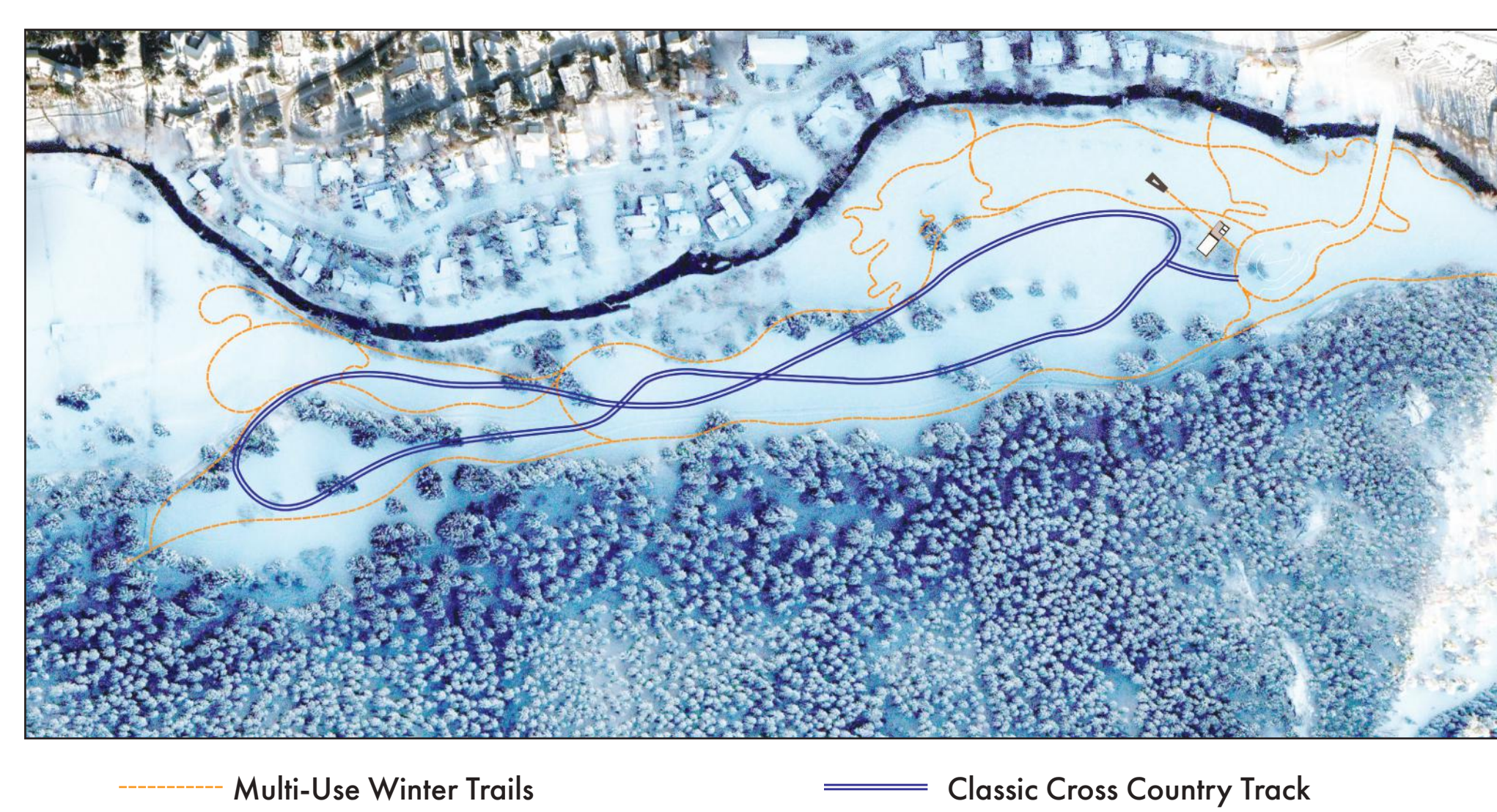
Master Plan Vision



- 1 Fairway - 9 acres**
- 2 Middle Terrace - 4 acres**
- 3 Lower Creek Edge - 9 acres**
- 4 Southern Floodplain - 14.5 acres**
- 5 The Woods - 22 acres**
- 6 The Creek - 5.5 acres**
- 7 Improved Parking & Facilities - 1 acre**

- ADA Trails & Parking**
- Bench**
- Picnic Table**
- Creek Access**
- Public Toilets**
- Water & Pet Fountain**
- Disc Golf Start**

Winter Trails



Project Partners

City of Ketchum

Wood River Land Trust

Friends of Warm Springs Preserve Committee

Design Team

Superbloom
Team Lead, Community Engagement,
Landscape Architecture

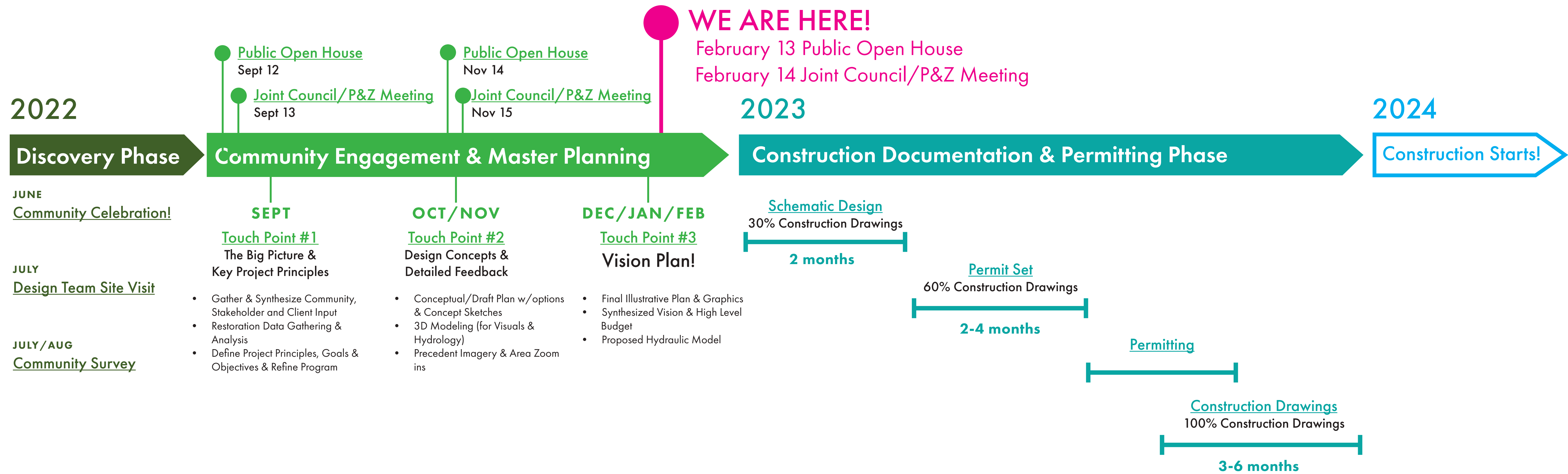
Rio Applied Science & Engineering
Engineering, Geomorphology, Hydrology

Ecosystem Sciences
Ecological Systems

Master Plan Process



Vision Public Meetings Design + Planning Action



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Ecosystem Sciences
Ecological Systems



10
public meetings
(from Sept. - Feb.)



\$7-\$1M
donation value
range



\$9.5M+
donations raised
thus far

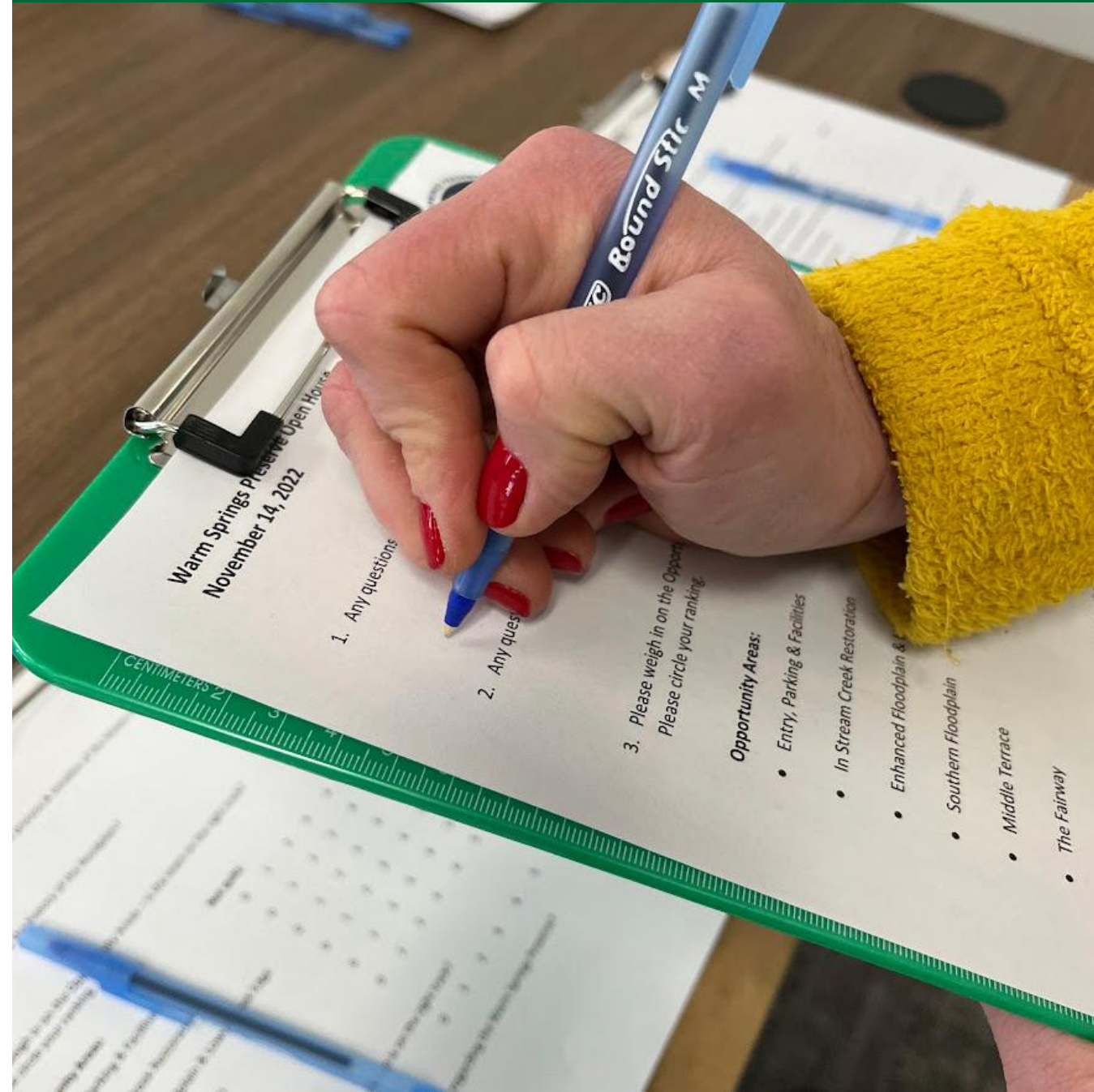


"I really appreciate
how much community
feedback is incorporated
into the plan!"

"Thank you for taking
community feedback -
excited for it to begin!"



900+
donors



329
online + in-person
survey results



200+
estimated average
daily visitors today



WARM SPRINGS PRESERVE

Draft Construction Phasing Class 3 Estimate -20% to +30%

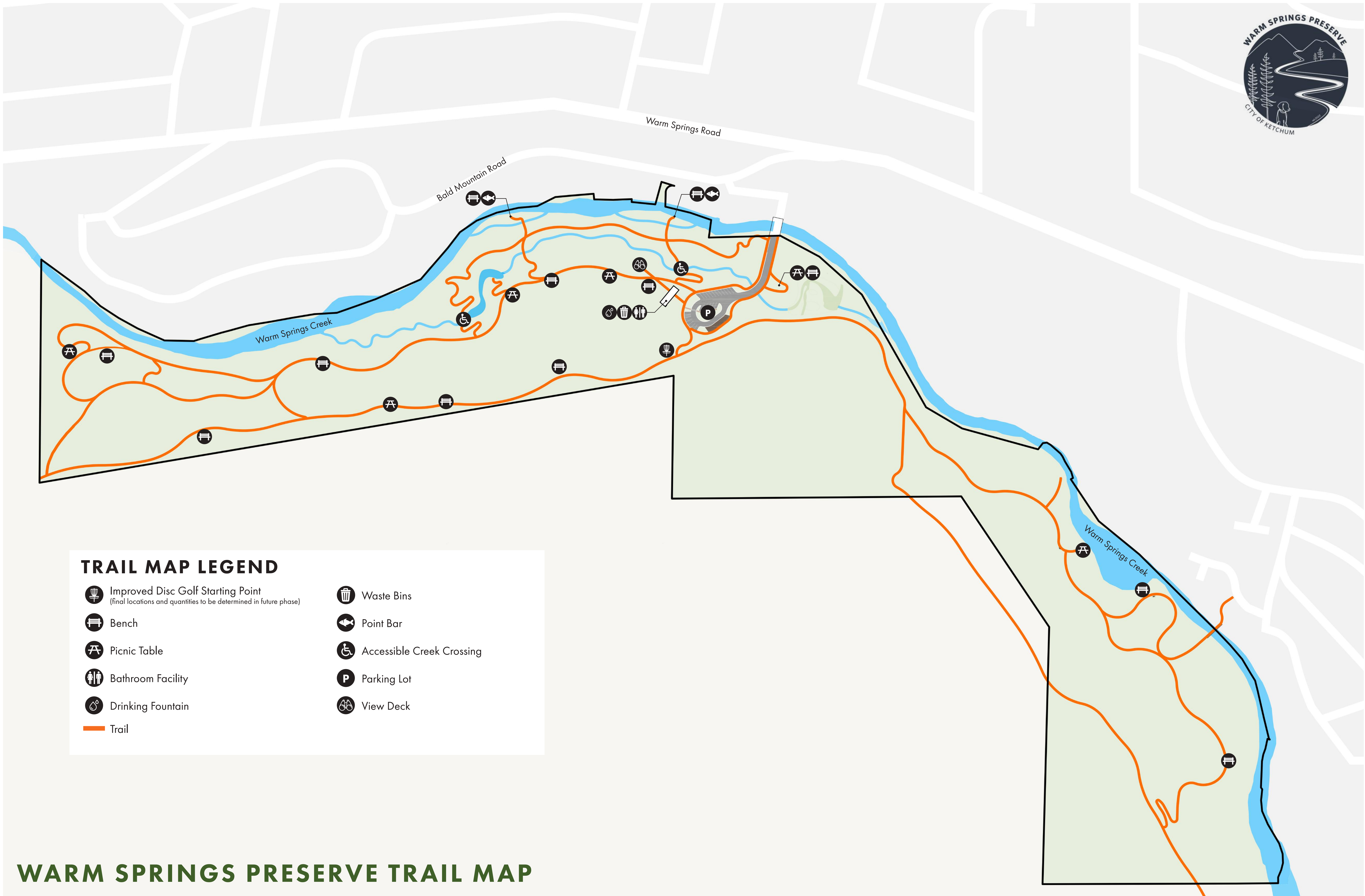
Date: February 06, 2023



		2024					2025									
		AUG	SEPT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	
1 A	PHASE 1A FLOODPLAIN RESTORATION	\$2,254,000														
	1. Floodplain Excavation															
	2. Temporary Fencing															
	3. Planting															
1 B	PHASE 1B NON-FLOODPLAIN RESTORATION	\$1,600,000														
	4. New Fairway Irrigation															
	5. Middle Terrace Planting & Irrigation															
	6. Utilities for Future Building															
	7. Committed Donor Recognition Elements															
	8. Minimum Amenities															
	9. Trails & Footbridges															
	2	PHASE 2 BUILDING/ROAD	\$630,000													
		10. Paving the Road														
11. Storage Building/Restroom w/Donor Sign																
3	PHASE 3 AMENITIES	\$750,000														
	12. Overlooks & Additional Seating Areas															
4	PHASE 4 SOUTHERN FLOODPLAIN	\$100,000														
	13. Trails & Restoration Areas															

Notes

1. All estimated item costs include full compensation for all materials, labor, equipment, and all appurtenances unless noted or itemized separately.
2. Class 3 estimates are generally prepared to form the basis for budget authorization, appropriation, and/or funding. As such, they typically form the initial control estimate against which all actual costs and resources will be monitored. Typically, engineering is from 10 to 40 percent complete. Class 3 estimates usually involve more deterministic estimating methods and usually involve high degree of unit cost line items, although these may be at an assembly level of detail rather than individual components.
3. The total construction cost excludes permitting, permit costs, and engineering support during construction (bid support, pre-bid and pre-construction meetings, and construction observation and inspections by engineering staff during construction).



TRAIL MAP LEGEND

- | | |
|---|---------------------------|
| Improved Disc Golf Starting Point
<small>(final locations and quantities to be determined in future phase)</small> | Waste Bins |
| Bench | Point Bar |
| Picnic Table | Accessible Creek Crossing |
| Bathroom Facility | Parking Lot |
| Drinking Fountain | View Deck |
| Trail | |

WARM SPRINGS PRESERVE TRAIL MAP

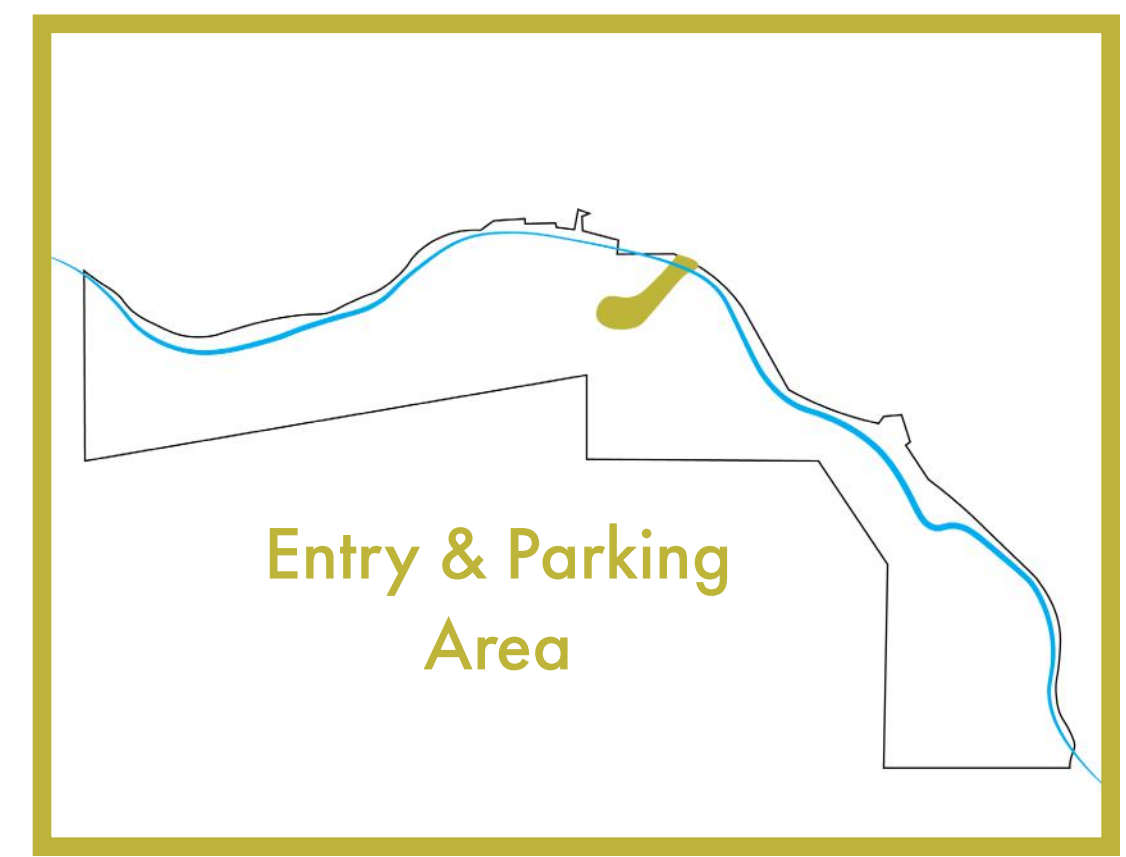
Opportunity Area

Entry, Parking & Facilities

What's planned:

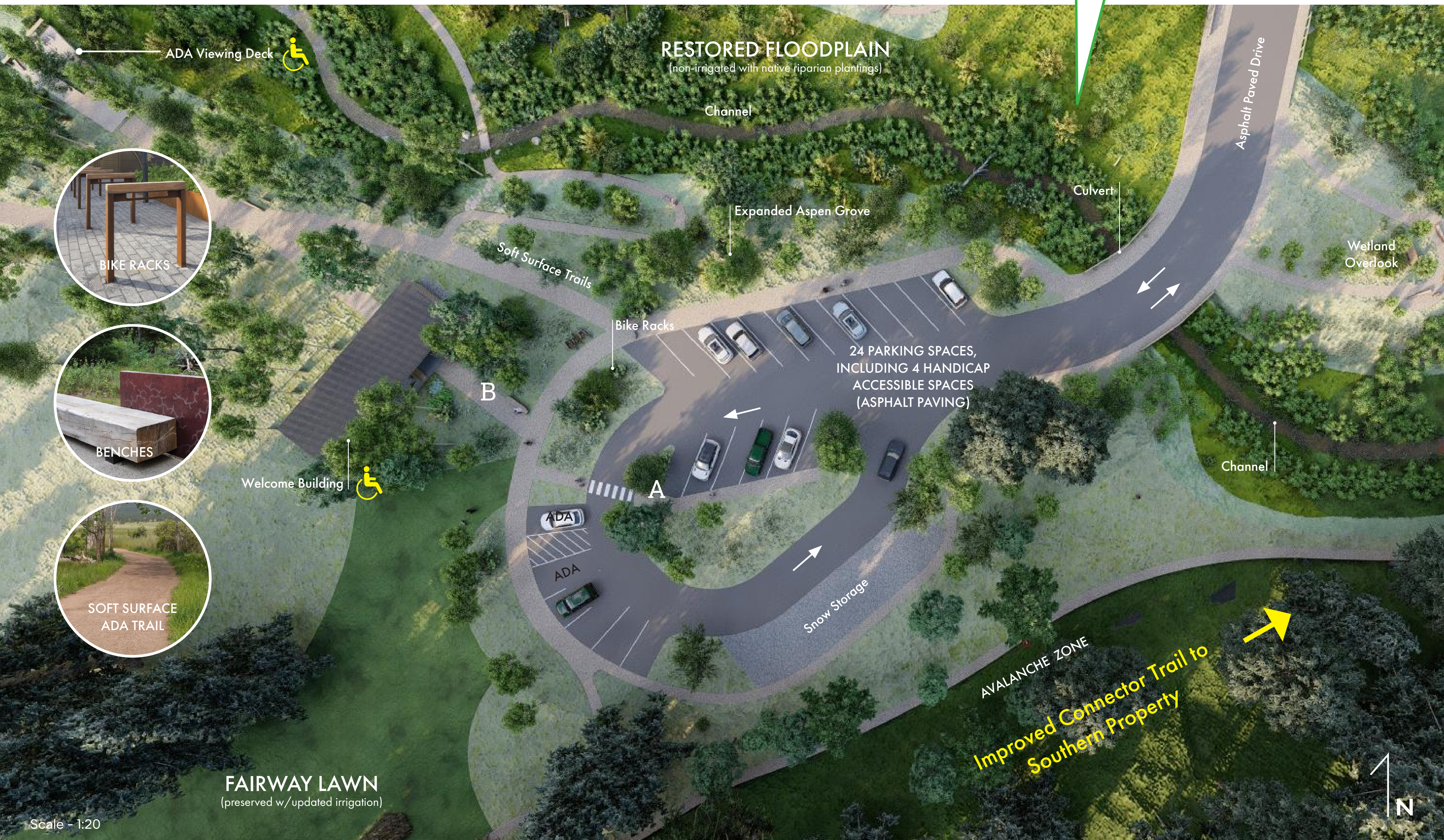
To improve the existing parking area and reduce maintenance, the design proposes to pave the parking lot; adjust its shape to increase efficiency; provide handicap accessible spaces.

- Two (2) year-round public toilets
- 1,000 sq. ft. (max) storage building for maintenance equipment
- Donor Recognition Wall (\$1,000+)
- History and Preserve Map
- Bike Racks
- Leash Hook Board



NOVEMBER FEEDBACK

- Preference to keep some parking spaces on exterior
- Like having the building nestled in the aspen grove
- Flush toilets and ADA access are important
- Plan for overflow parking or future expansion



The proposed restroom and storage building will be compact and efficient while providing needed services and facilities to support the Preserve. It will include two (2) toilets for year round use, storage for maintenance, water fountains for people and dogs, waste receptacles, donor wall to recognize community supporters, a trail map, historical infographics, bike racks and sheltered seating. The building will have ample screening set within the enhanced grove of trees.

Your Responses to the November Survey
How On Track Was the Previous Design for this Opportunity Area?

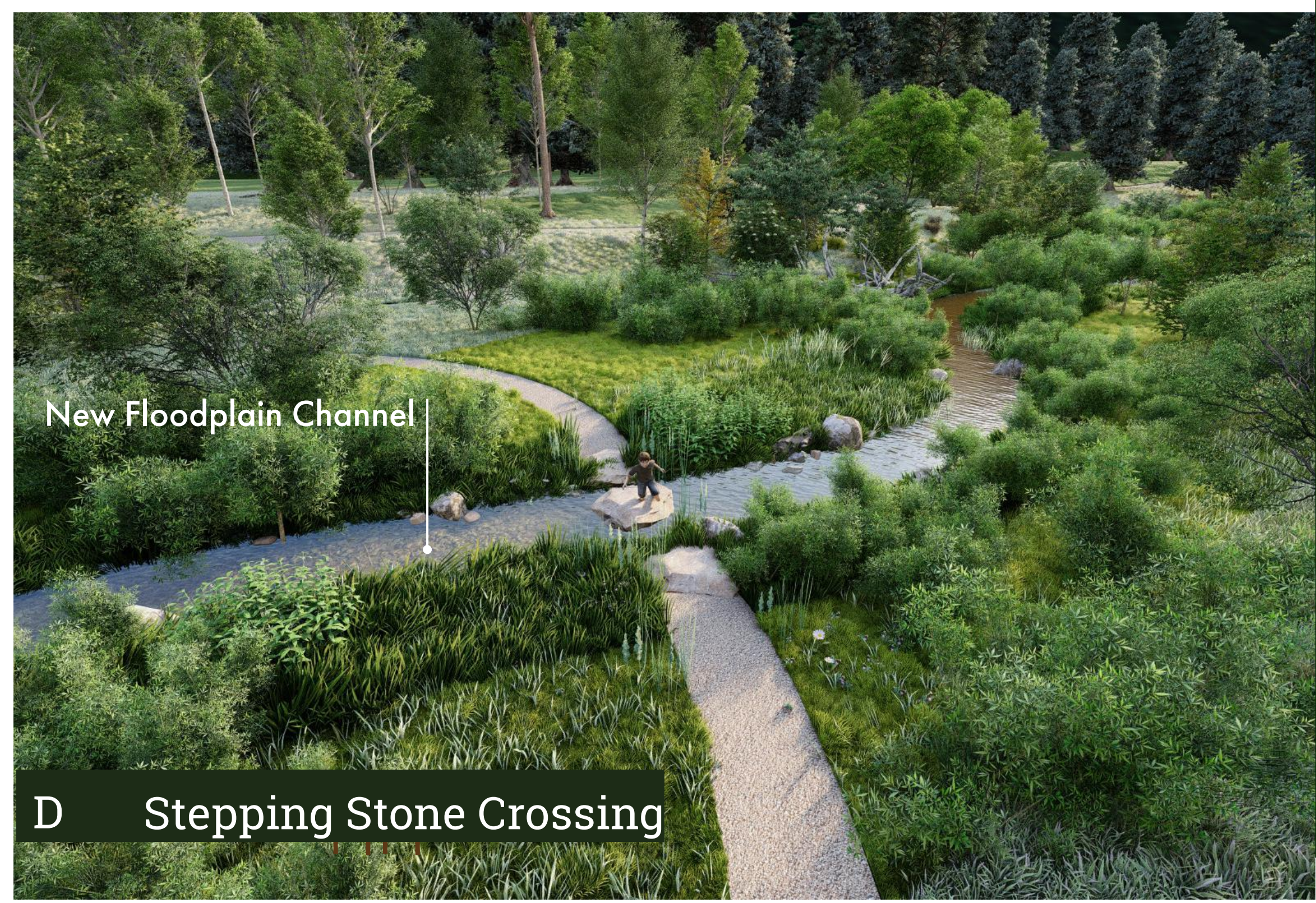
- on the right track
- neutral
- needs improvement



Enhanced Floodplain & Lower Creek Edge



C Footbridge



D New Floodplain Channel
Stepping Stone Crossing



E ADA Floodplain Viewing Deck



F New Pond & Gravel Beach

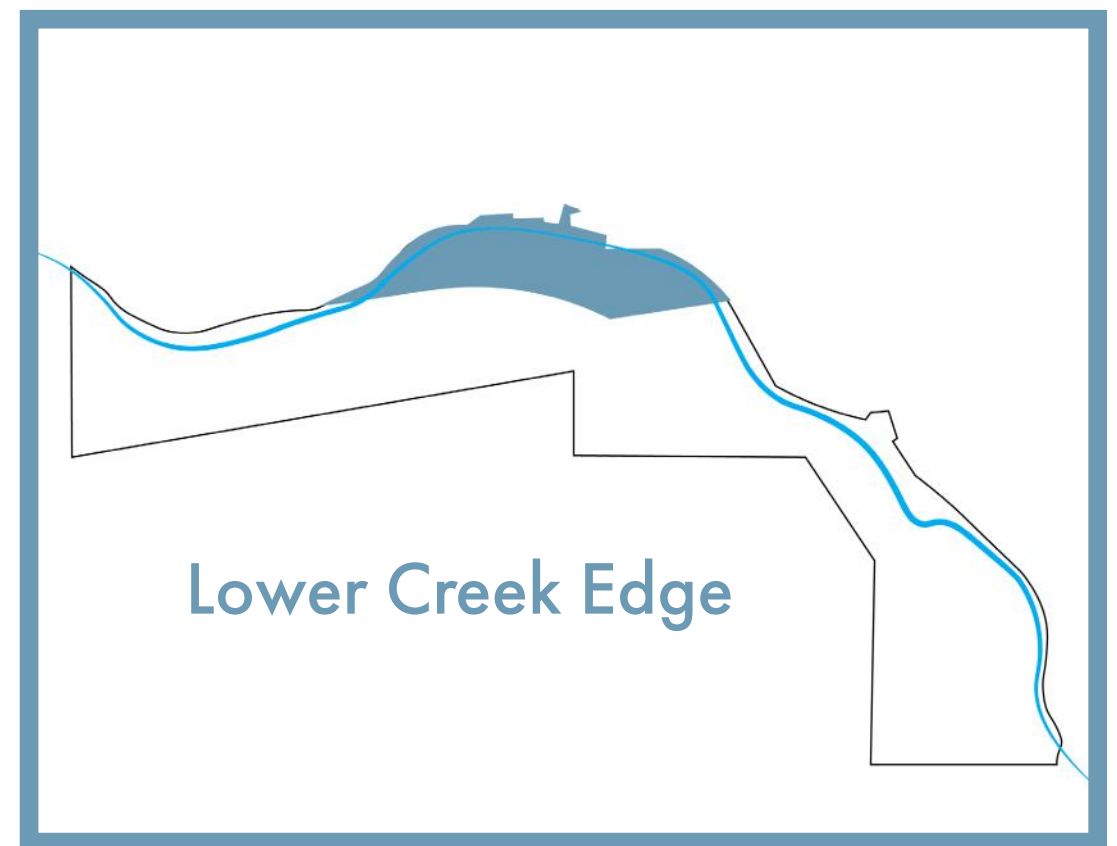
Opportunity Area

Enhanced Floodplain & Lower Creek Edge

What's planned:

The lower creek edge area is proposed to expand and enhance the floodplain to restore ecological services and wildlife habitat. Excavated materials would be relocated to the middle terrace and revegetated with native plants.

- Extensive grading & earthworks
- New side channel and pond
- Islands & gravel bars
- Low water crossings for side channels
- Expanded riparian zone including native trees and shrubs
- New beaver wetland



NOVEMBER FEEDBACK

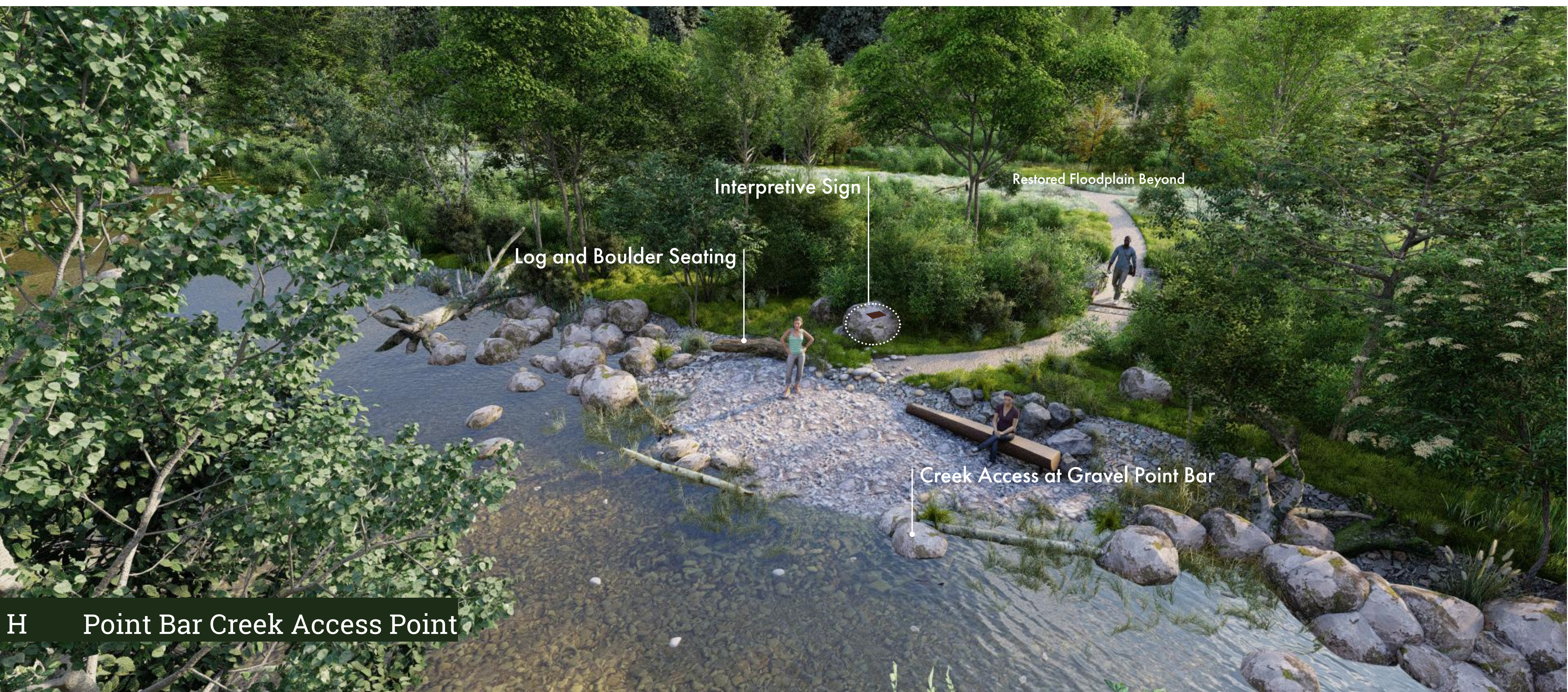
- Habitat enhancement and protecting existing ecosystems is important
- Extensive support for creek restoration and the integration of native species
- Consider subtle 'nature play' integrated with restored areas
- Creekside owners concerned about views and creek access points

Your Responses to the November Survey
How On Track Was the Previous Design for this Opportunity Area?



Scale - 1:100

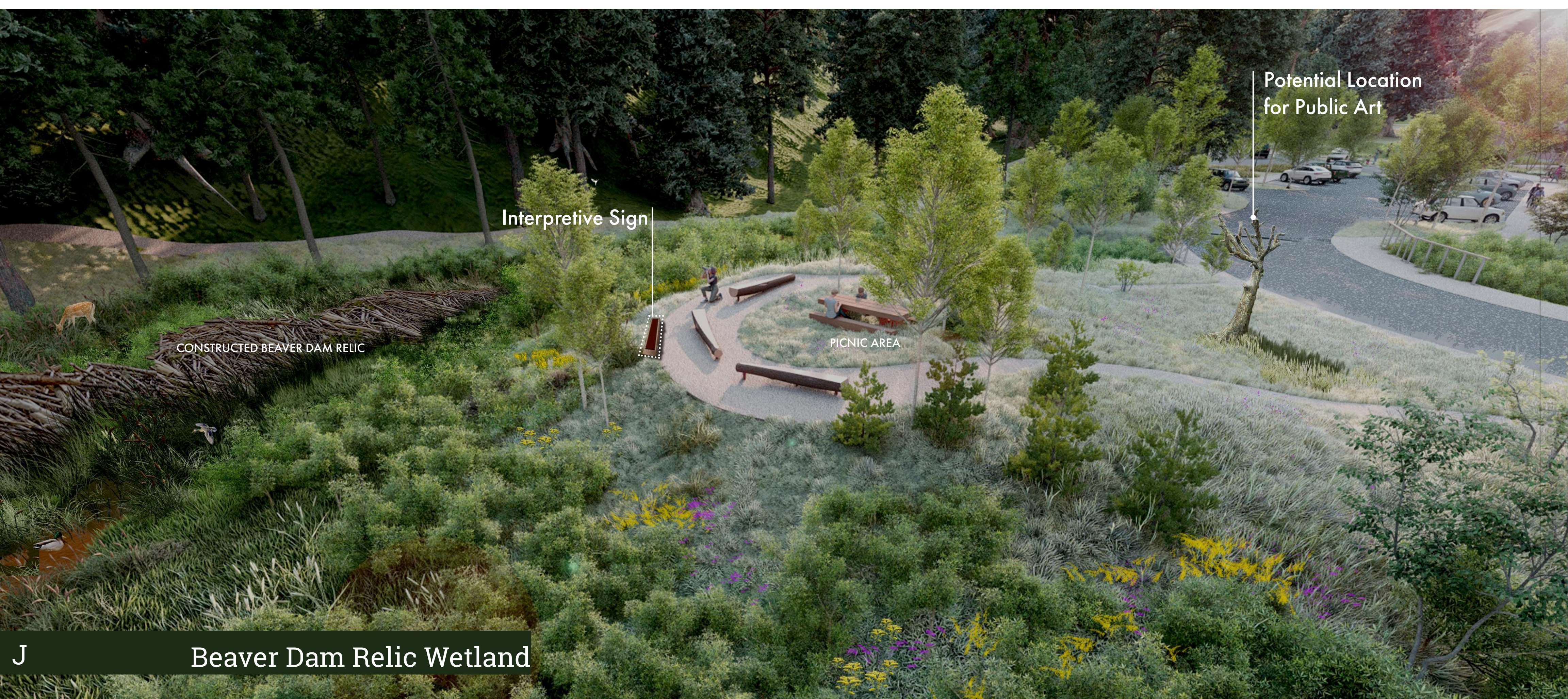




H Point Bar Creek Access Point



I Beaver Dam Relic Wetland



J Beaver Dam Relic Wetland

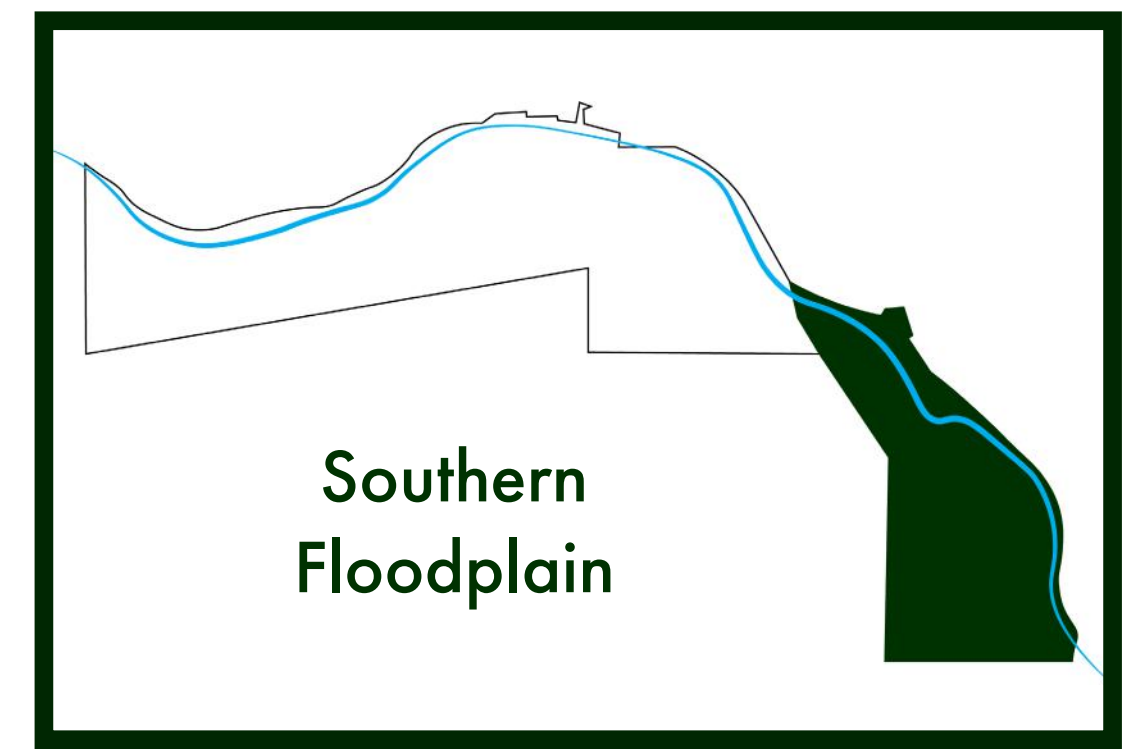
Southern Floodplain



What's planned:

The intent for this area is to celebrate and preserve the existing floodplain along the creek while improving access and connections. The southern property has been minimally touched by humans which has allowed native ecosystems to thrive. Minimal improvements can make it even better and safer. Despite less impact in this area, the stream lacks pools and habitat complexity while the floodplain is not well connected and has many weeds. Minimal changes include removal of invasive plant species and overseeding and planting of targeted native plants for enhanced restoration.

- Light touch, minor enhancements
- Minor grading
- Strategic floodplain connections
- One minimal soft surface pathway to connect at key access points
- Removal of invasive species
- In-stream fish habitat (wood & boulders)



NOVEMBER FEEDBACK

- Desire to keep the southern property as natural and untouched as possible
- Excited about the expansion and making access easier and safer
- Some want to restrict access to minimize impacts

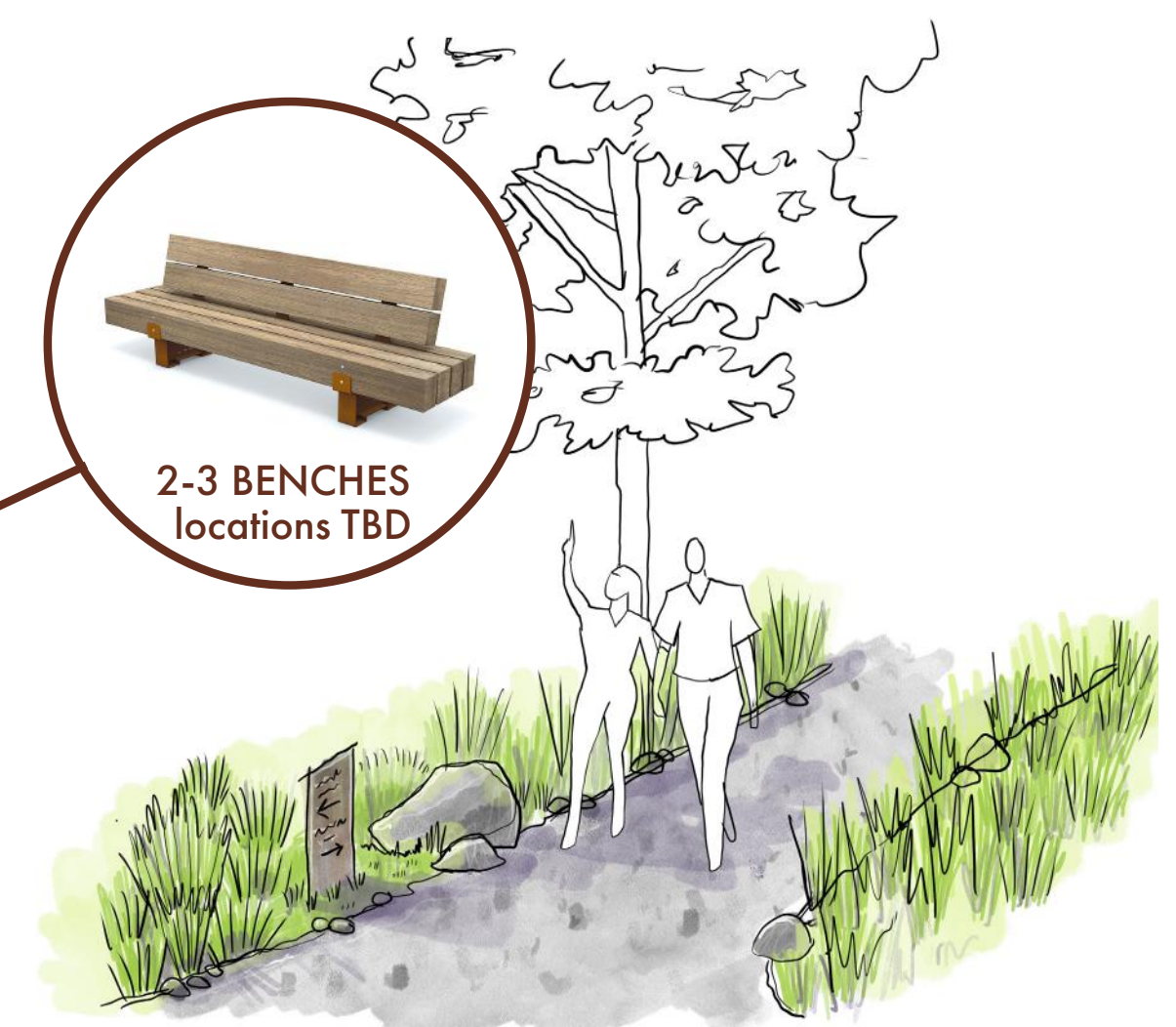
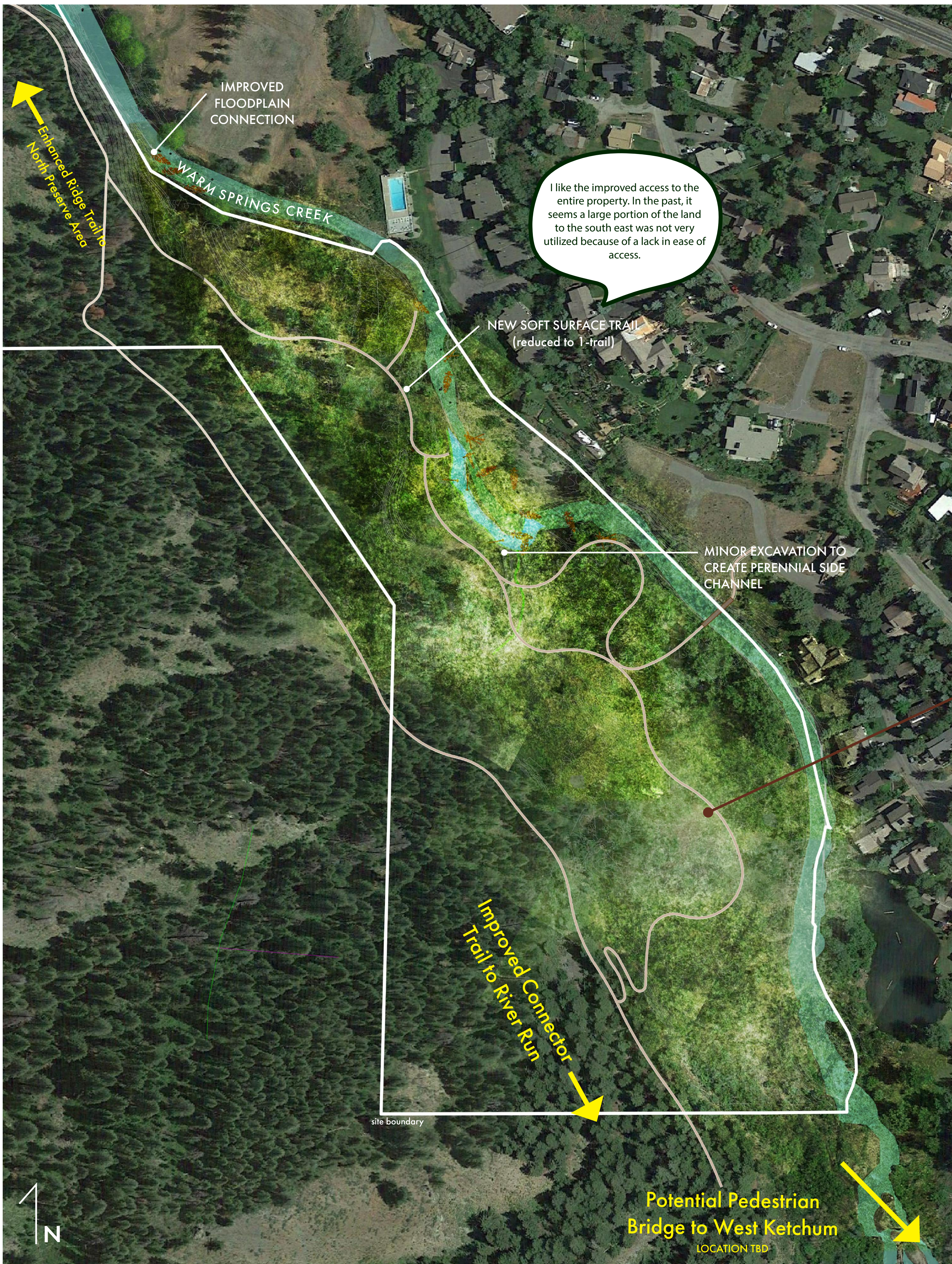
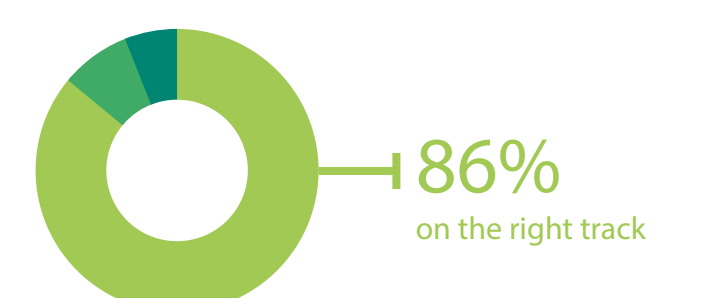


Illustration of Proposed Soft Surface Path through Existing Native Landscape

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How On Track Was the Previous Design for this Opportunity Area?



■ on the right track
■ neutral
■ needs improvement

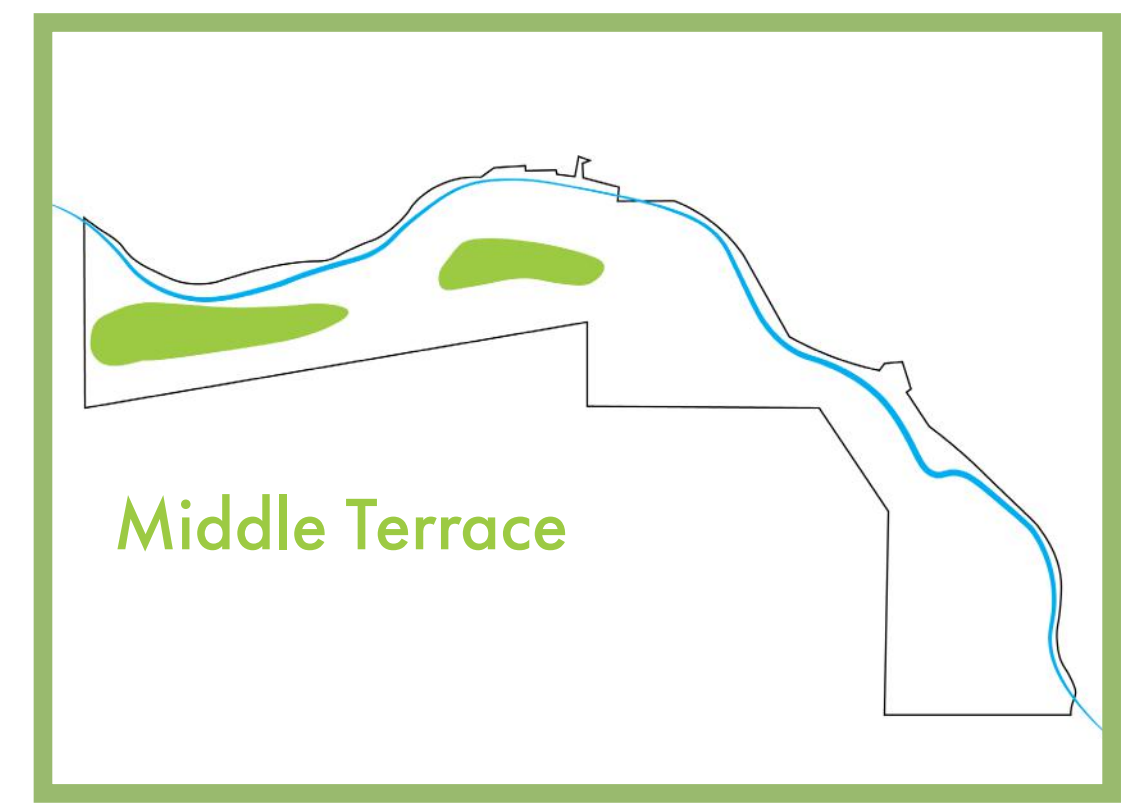
Opportunity Area

Middle Terrace

What's planned:

To reduce costs and keep all excavated earth on site, the middle terrace will receive the fill excavated from the restoration. This will be replanted with native grasses and wildflowers as well as expanded aspen groves for shaded sitting areas.

- Potential for seasonal native wildflower meadow
- Enhanced biodiversity & pollinator species
- Minimal irrigation
- Mown pathways



NOVEMBER FEEDBACK

- Excited about native species, restoration and increased biodiversity
- Want to ensure success of native meadow restoration while keeping water use low
- Concern for dog waste in non-lawn areas

Your Responses to the November Survey
How On Track Was the Previous Design for this Opportunity Area?



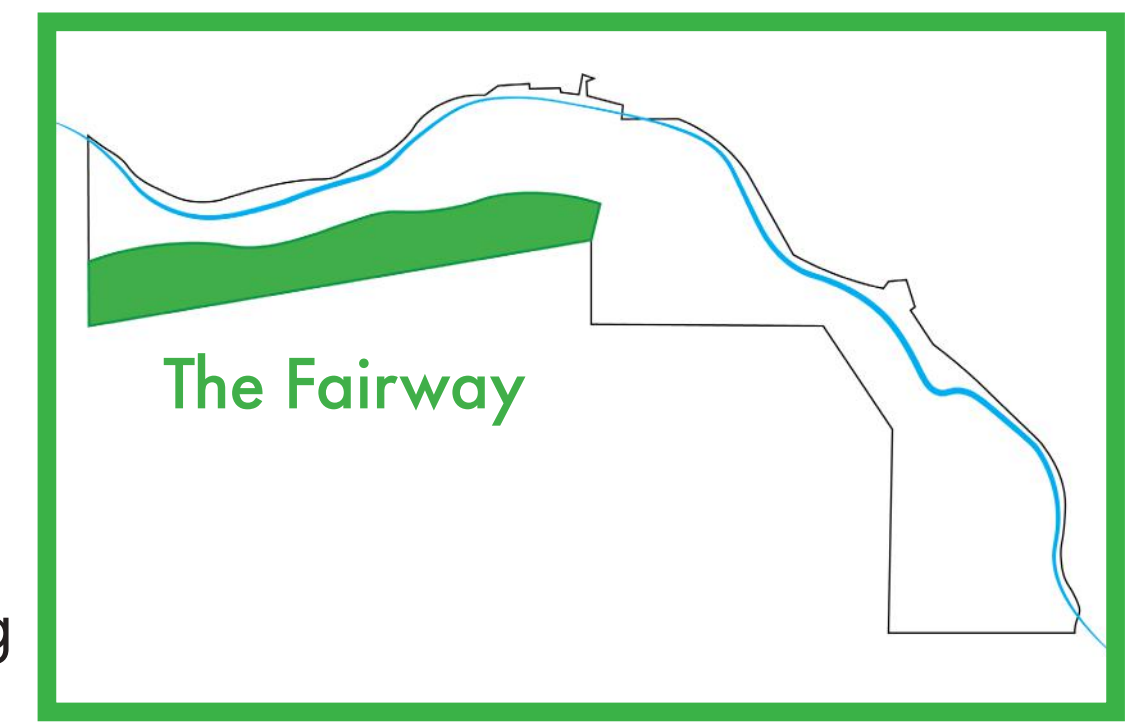
Scale - 1:100



The Fairway

What's planned:

The existing upper Fairway is a unique and special landscape that is loved by Ketchum residents and dogs alike. Minimal changes are contemplated and the Fairway will be preserved as an open irrigated lawn. Some improvements are needed to upgrade the irrigation system for water efficiency and amenities such as new benches, picnic tables and waste receptacles will also improve visitors' comfort. Existing path will be updated to ensure ADA access.



- Maintain upper terrace fairway with some restored edges
- Replace inefficient irrigation system
- Opportunities for benches & picnic tables (material TBD)
- Potential for bear-proof dog waste receptacles
- Update existing path to ensure ADA access

NOVEMBER FEEDBACK

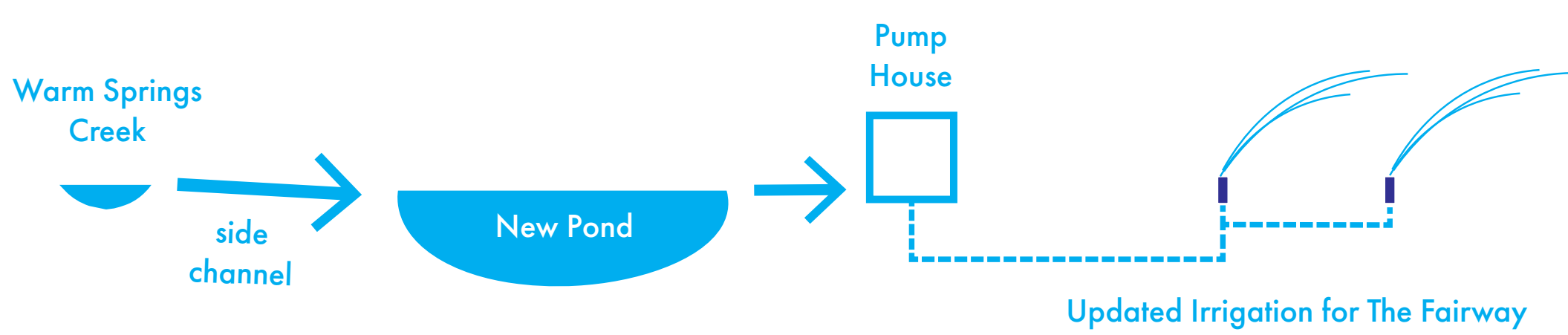
- Preserve and enhance the Fairway
- Reduce irrigation use for lawn
- Park management issues and maintenance
- Manage relationship between people, dogs, wildlife
- Include disc golf in master plan
- Excited about nordic skiing trails in the winter

Scale - 1:100

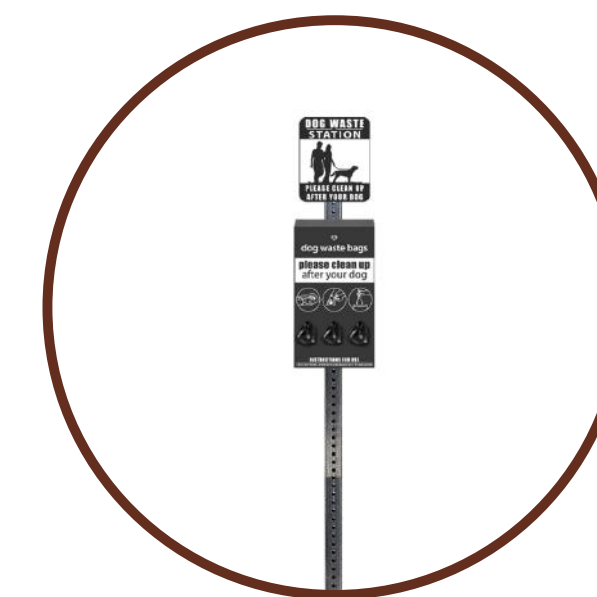


How will the new irrigation system work?

The new irrigation system will be much more efficient, and will run at night!



Bear Proof Waste



Dog Station



Disc Golf Basket



Did you know that currently WSP uses 80% more water per acre than the ballfields at Atkinson Park?

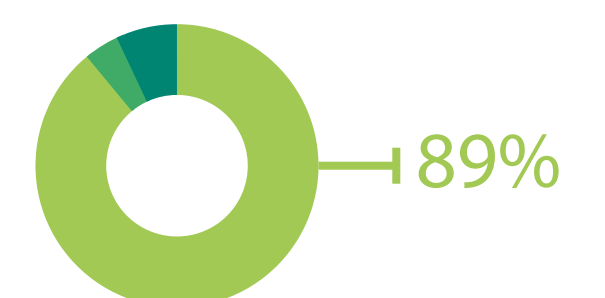
In July 2022:

Atkinson Park:
9.5 acres @ 1.25mil gal
131,500 gal/acre

Warm Springs Preserve:
10.5 acres @ 2.5mil gal 238,000
gal/acre

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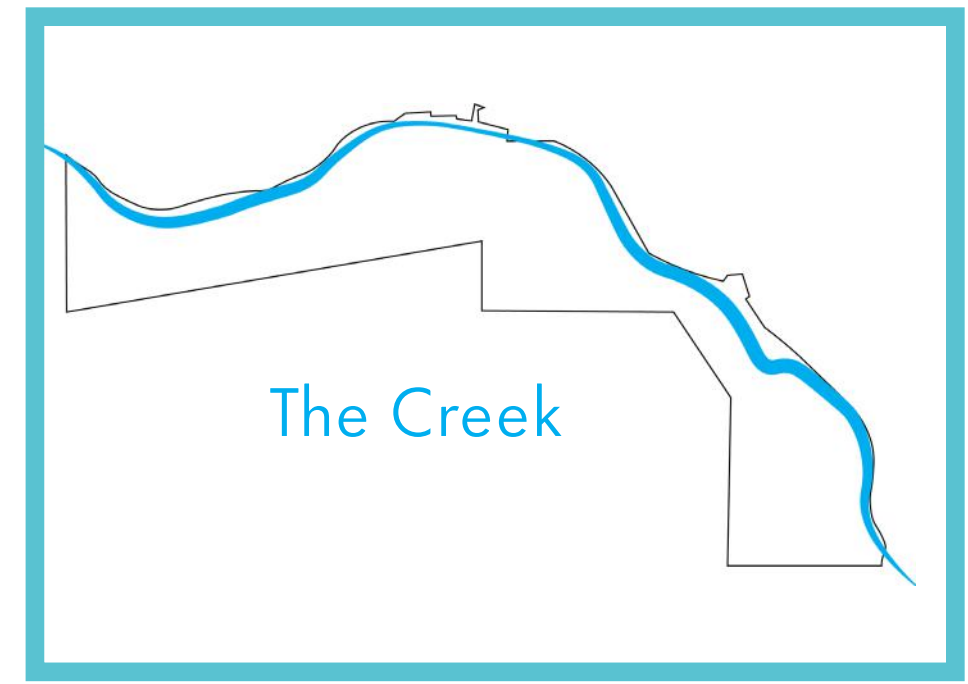
on the right track
neutral
needs improvement



Opportunity Area

In Stream Creek Restoration

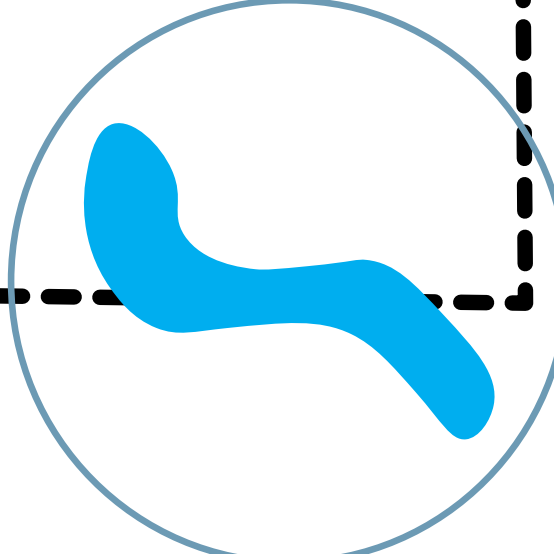
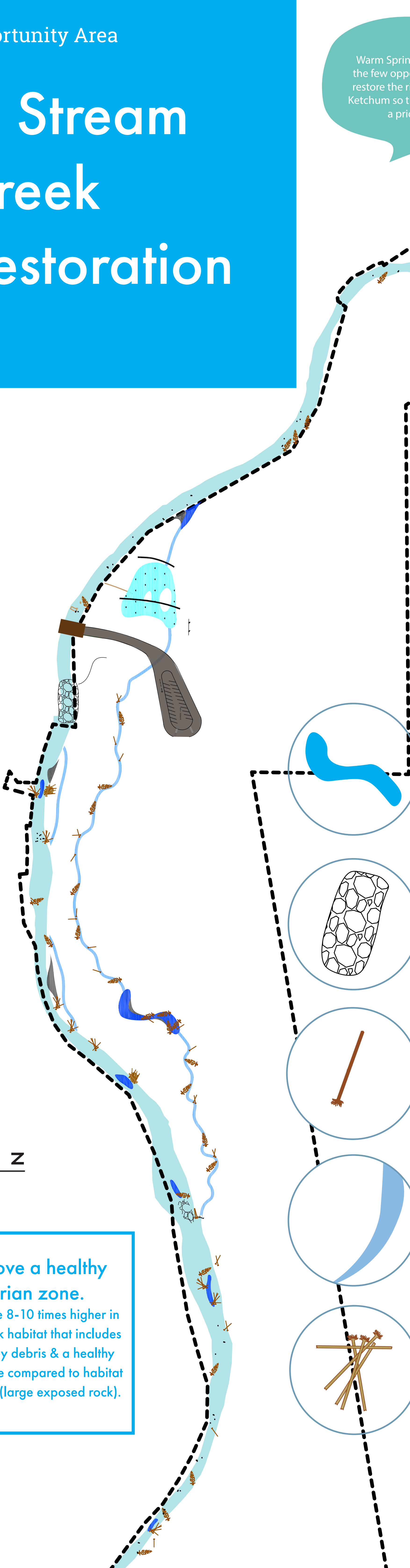
Warm Springs is one of the few opportunities to restore the river through Ketchum so this should be a priority.



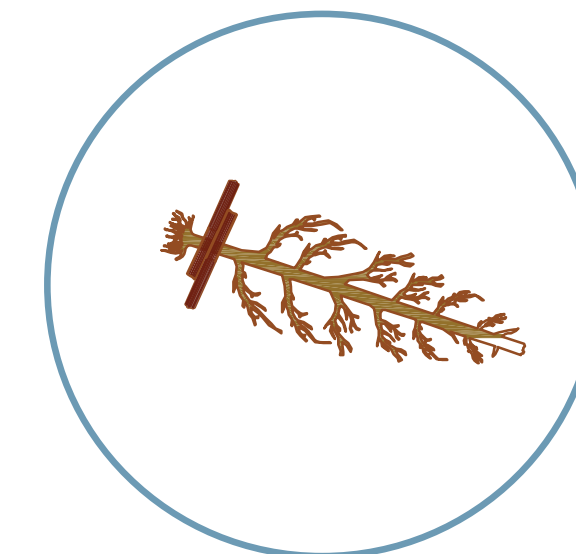
What's planned:

Several improvements can be made along the creek edge to enhance hydrologic and ecological health of the creek.

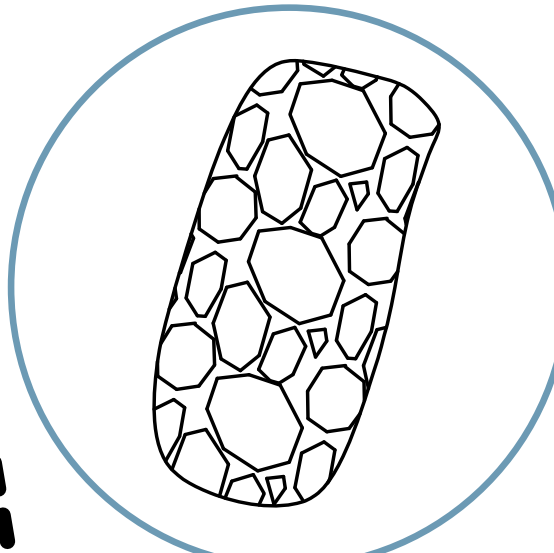
- Improved fish habitat
- Modifications will create more pools and off channel areas for fish rearing
- Greater floodplain connection
- Native riparian vegetation



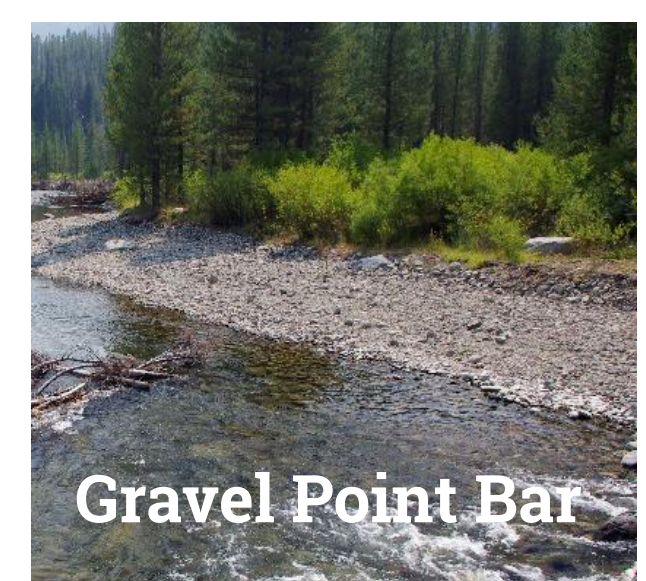
New Pond



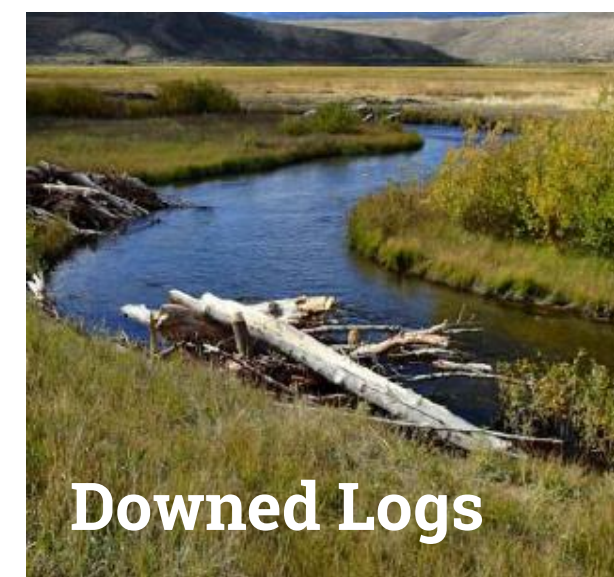
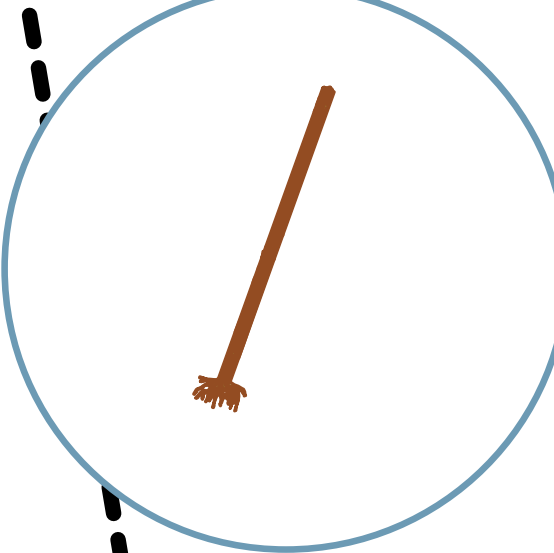
Downed Trees



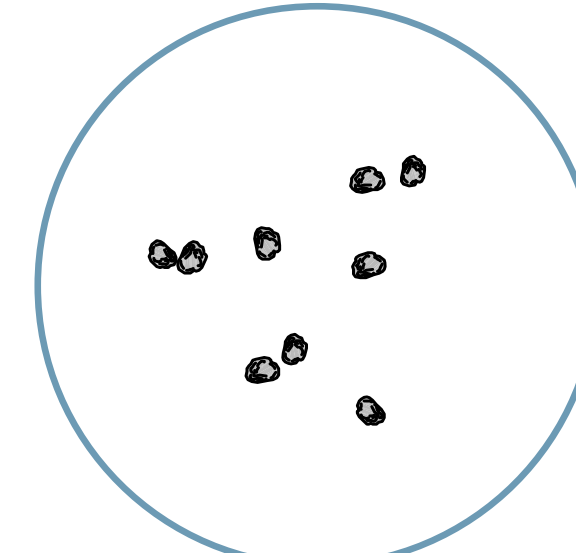
Constructed Riffle



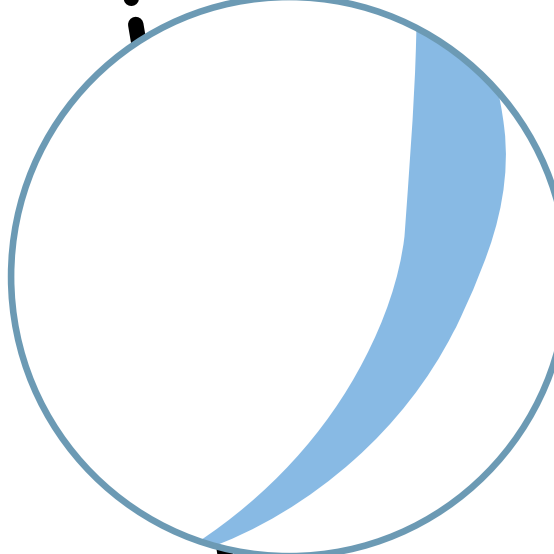
Gravel Point Bar



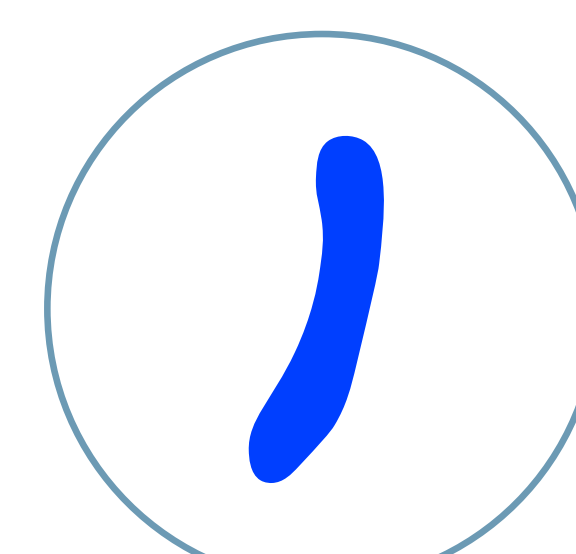
Downed Logs



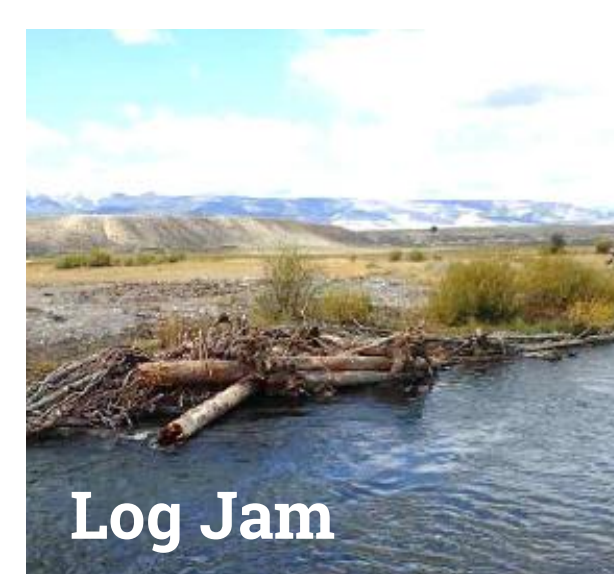
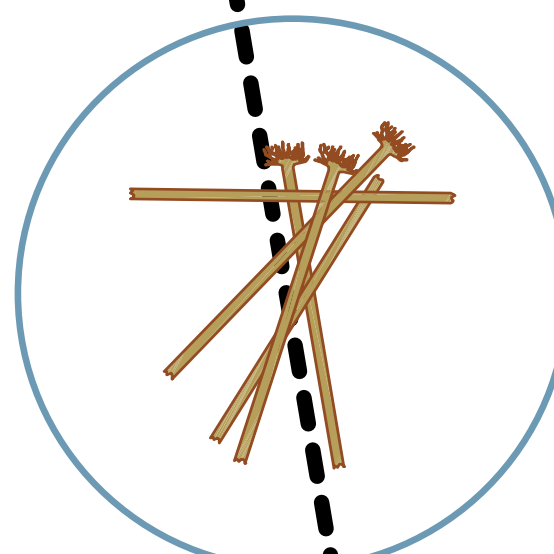
Boulders



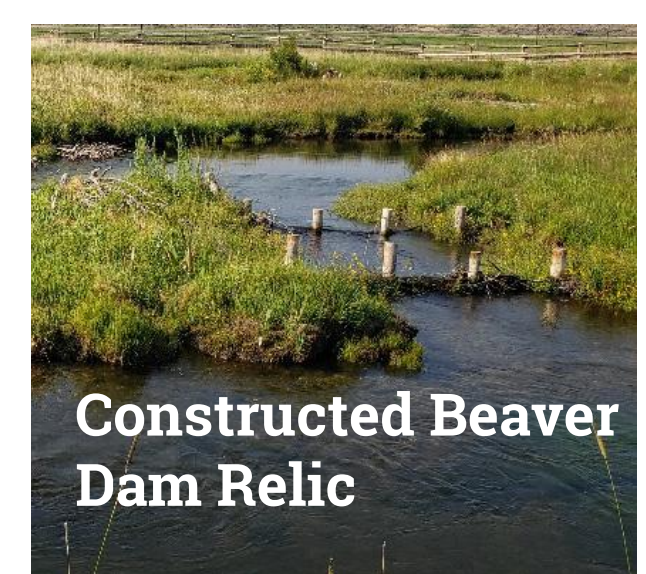
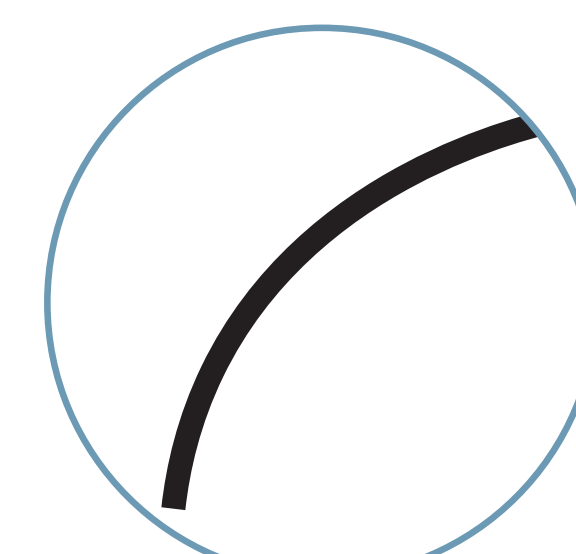
Side Channel



Pools



Log Jam



Constructed Beaver Dam Relic

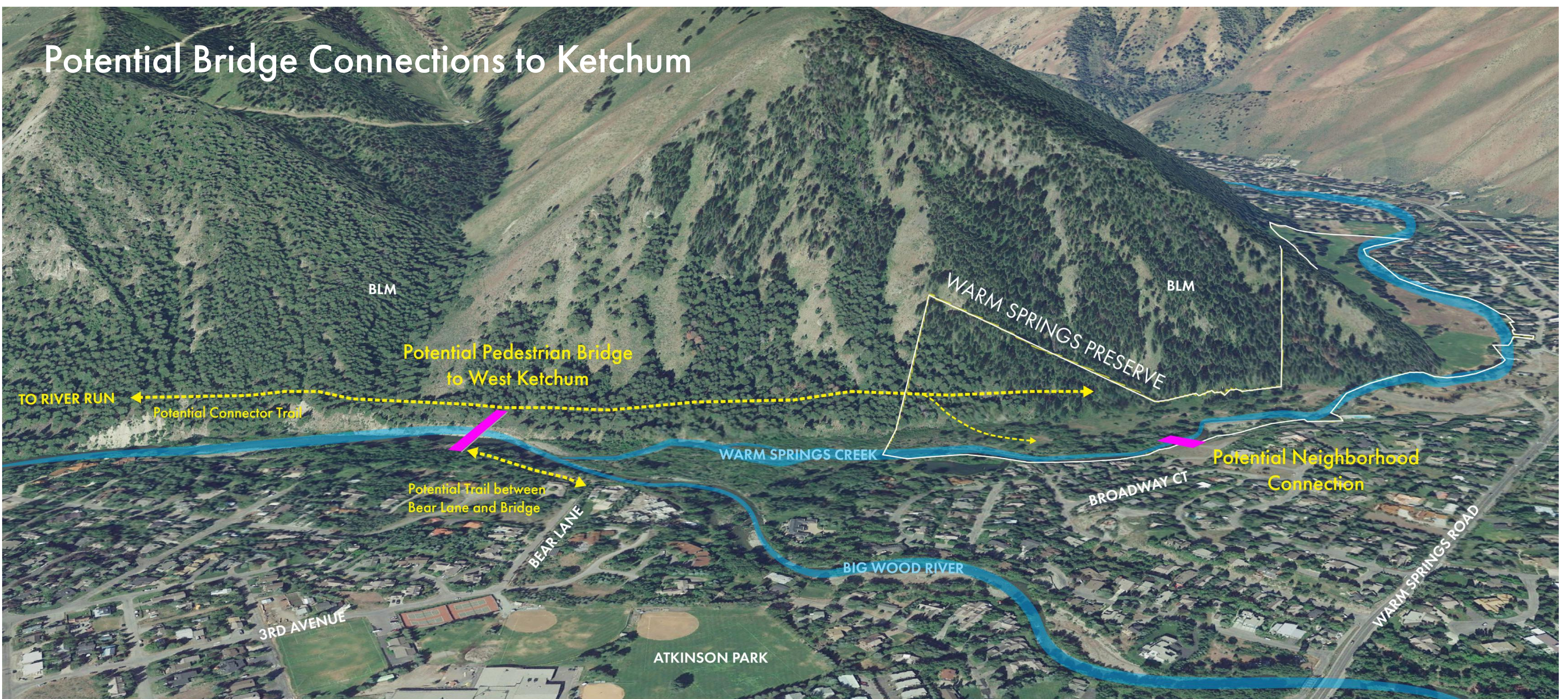
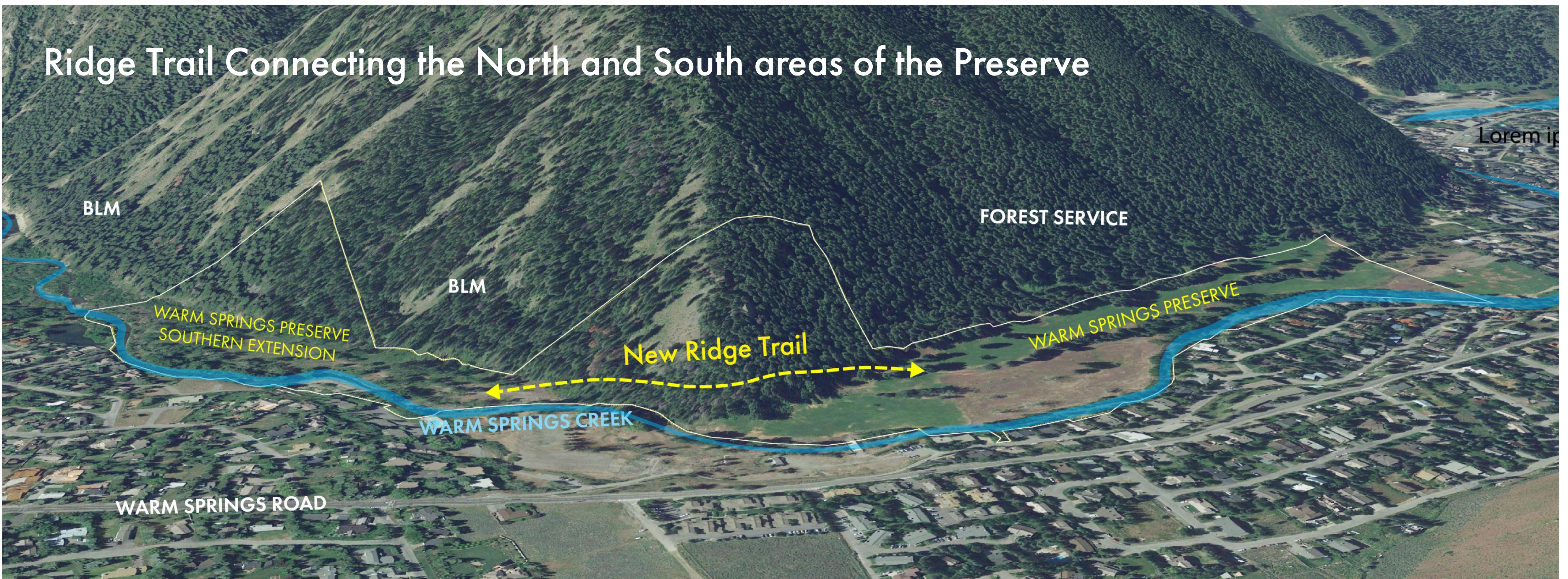
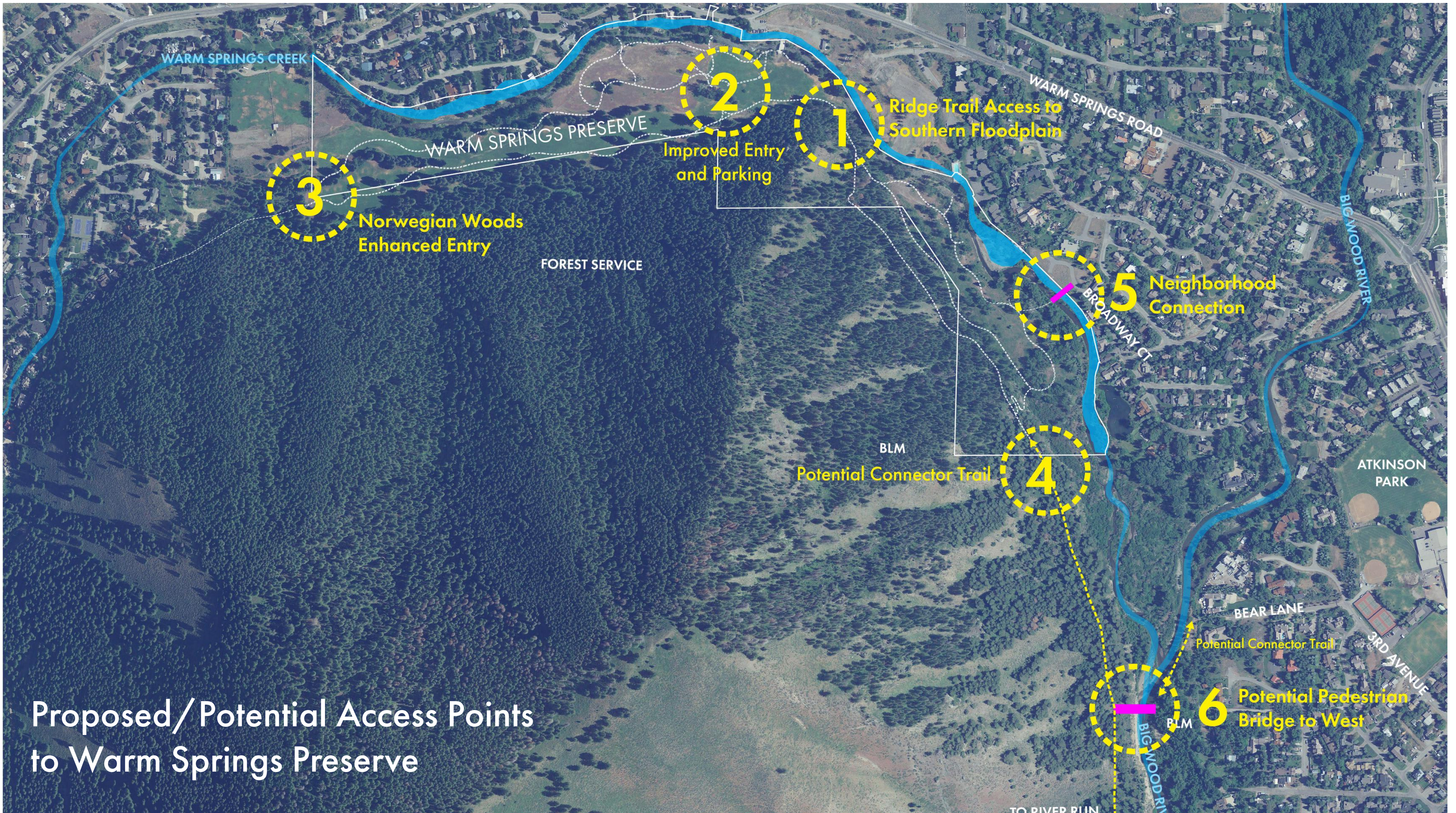
Trout love a healthy riparian zone.

Densities are 8-10 times higher in healthy creek habitat that includes large woody debris & a healthy riparian zone compared to habitat with rip-rap (large exposed rock).

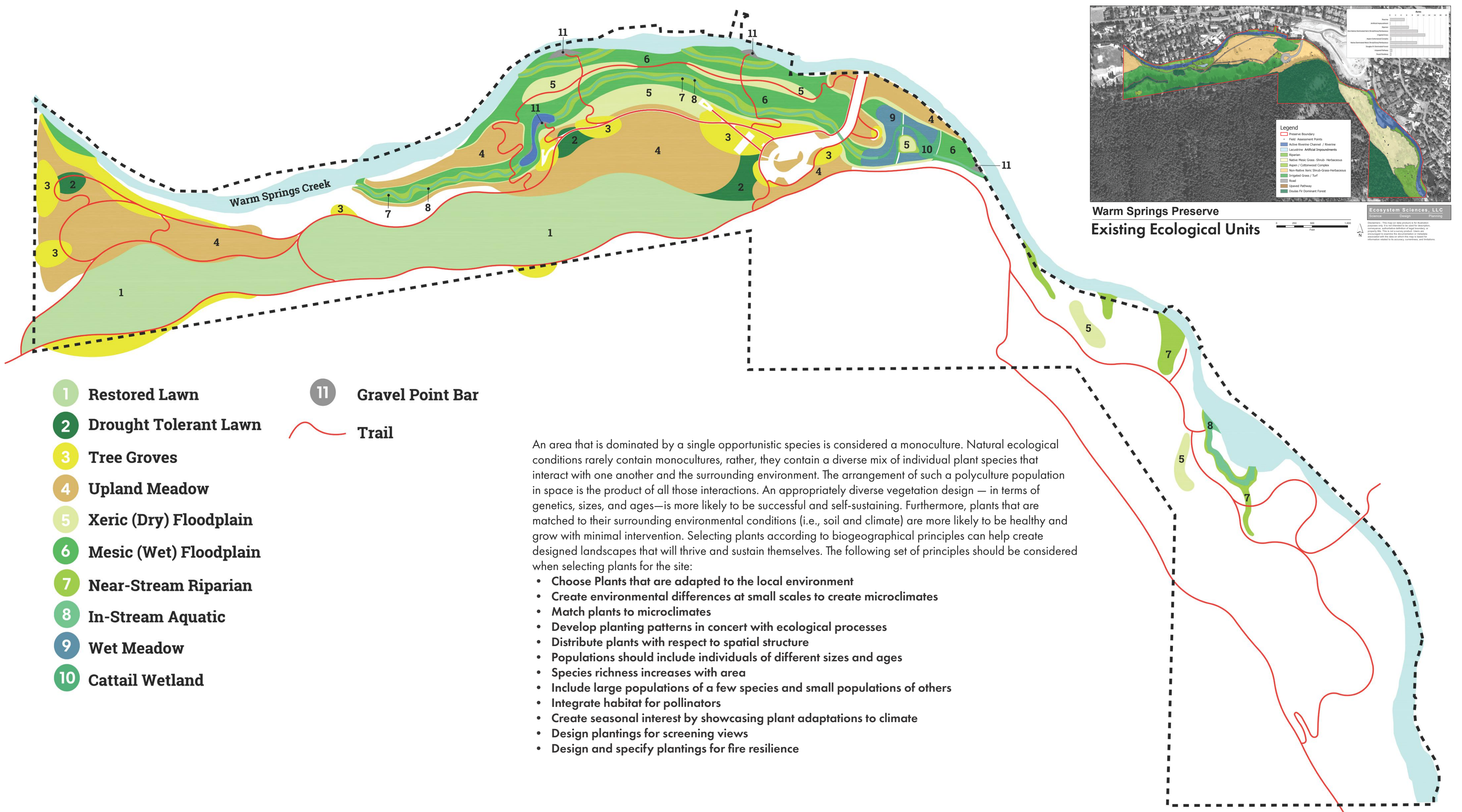
Your Responses to the November Survey
How On Track Was the Previous Design for this Opportunity Area?

■ on the right track
■ neutral
■ needs improvement





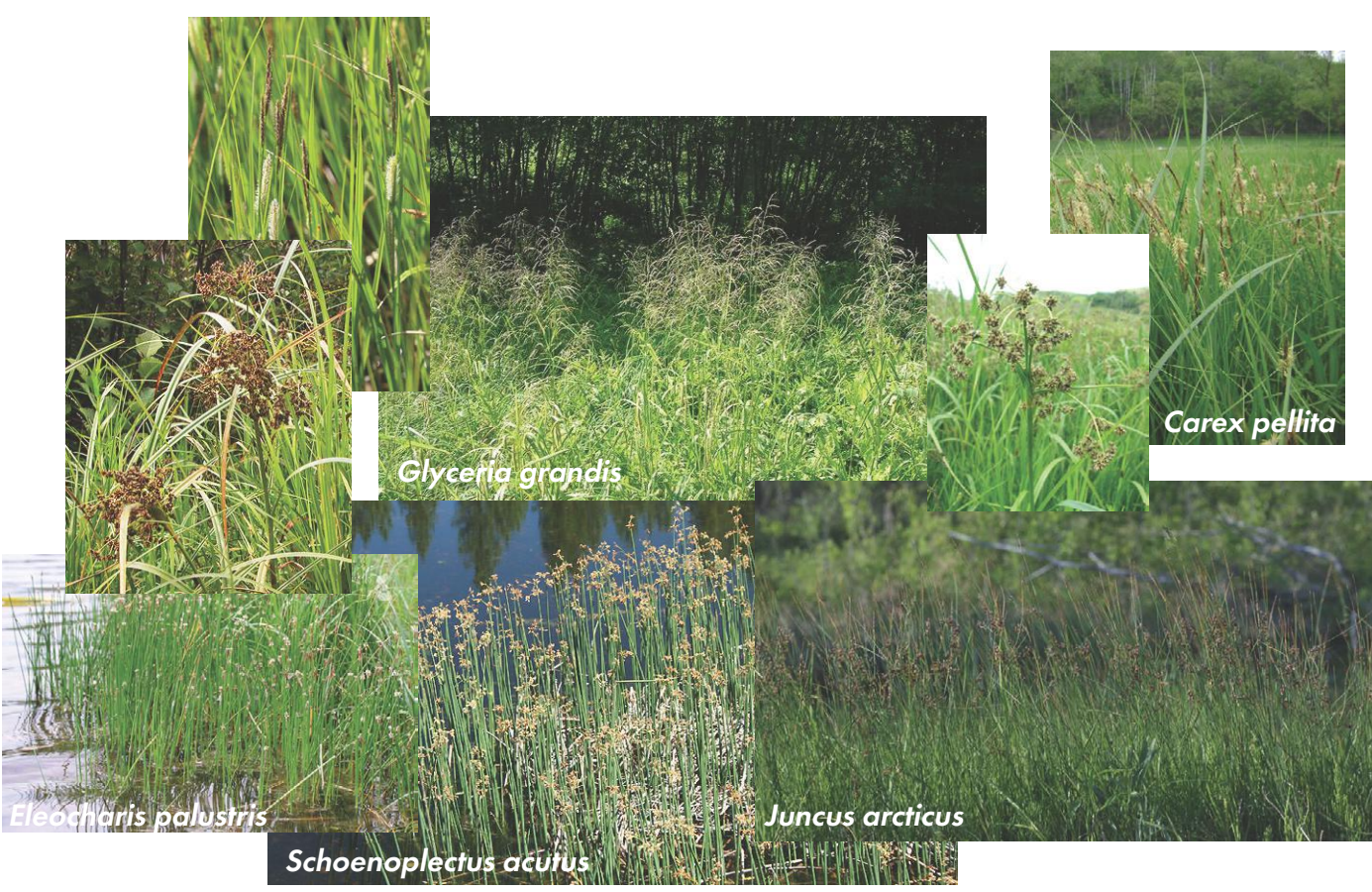
Planting Character Zones



- 1 Restored Lawn
 - 2 Drought Tolerant Lawn
 - 3 Tree Groves
 - 4 Upland Meadow
 - 5 Xeric (Dry) Floodplain
 - 6 Mesic (Wet) Floodplain
 - 7 Near-Stream Riparian
 - 8 In-Stream Aquatic
 - 9 Wet Meadow
 - 10 Cattail Wetland
 - 11 Gravel Point Bar
- Trail

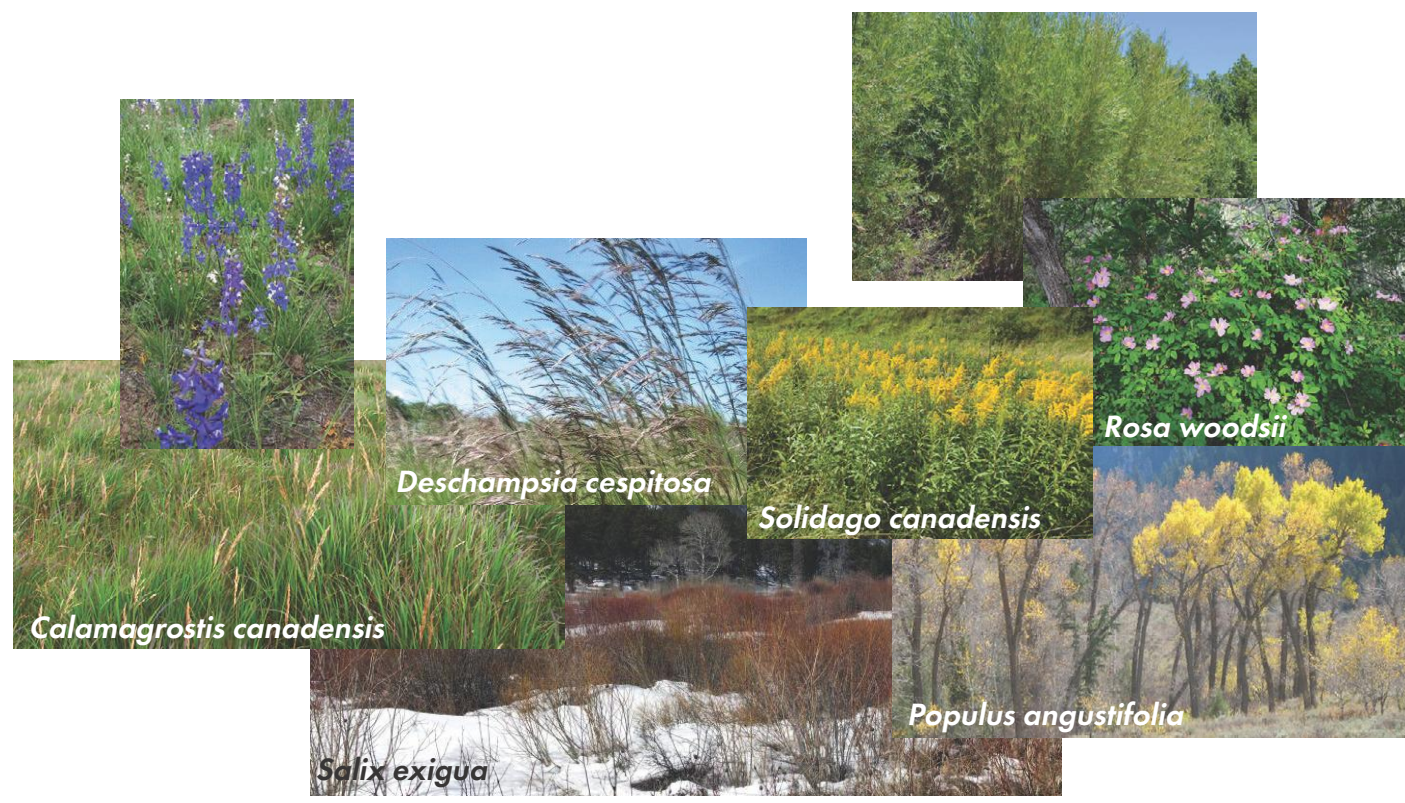
An area that is dominated by a single opportunistic species is considered a monoculture. Natural ecological conditions rarely contain monocultures, rather, they contain a diverse mix of individual plant species that interact with one another and the surrounding environment. The arrangement of such a polyculture population in space is the product of all those interactions. An appropriately diverse vegetation design — in terms of genetics, sizes, and ages—is more likely to be successful and self-sustaining. Furthermore, plants that are matched to their surrounding environmental conditions (i.e., soil and climate) are more likely to be healthy and grow with minimal intervention. Selecting plants according to biogeographical principles can help create designed landscapes that will thrive and sustain themselves. The following set of principles should be considered when selecting plants for the site:

- Choose Plants that are adapted to the local environment
- Create environmental differences at small scales to create microclimates
- Match plants to microclimates
- Develop planting patterns in concert with ecological processes
- Distribute plants with respect to spatial structure
- Populations should include individuals of different sizes and ages
- Species richness increases with area
- Include large populations of a few species and small populations of others
- Integrate habitat for pollinators
- Create seasonal interest by showcasing plant adaptations to climate
- Design plantings for screening views
- Design and specify plantings for fire resilience



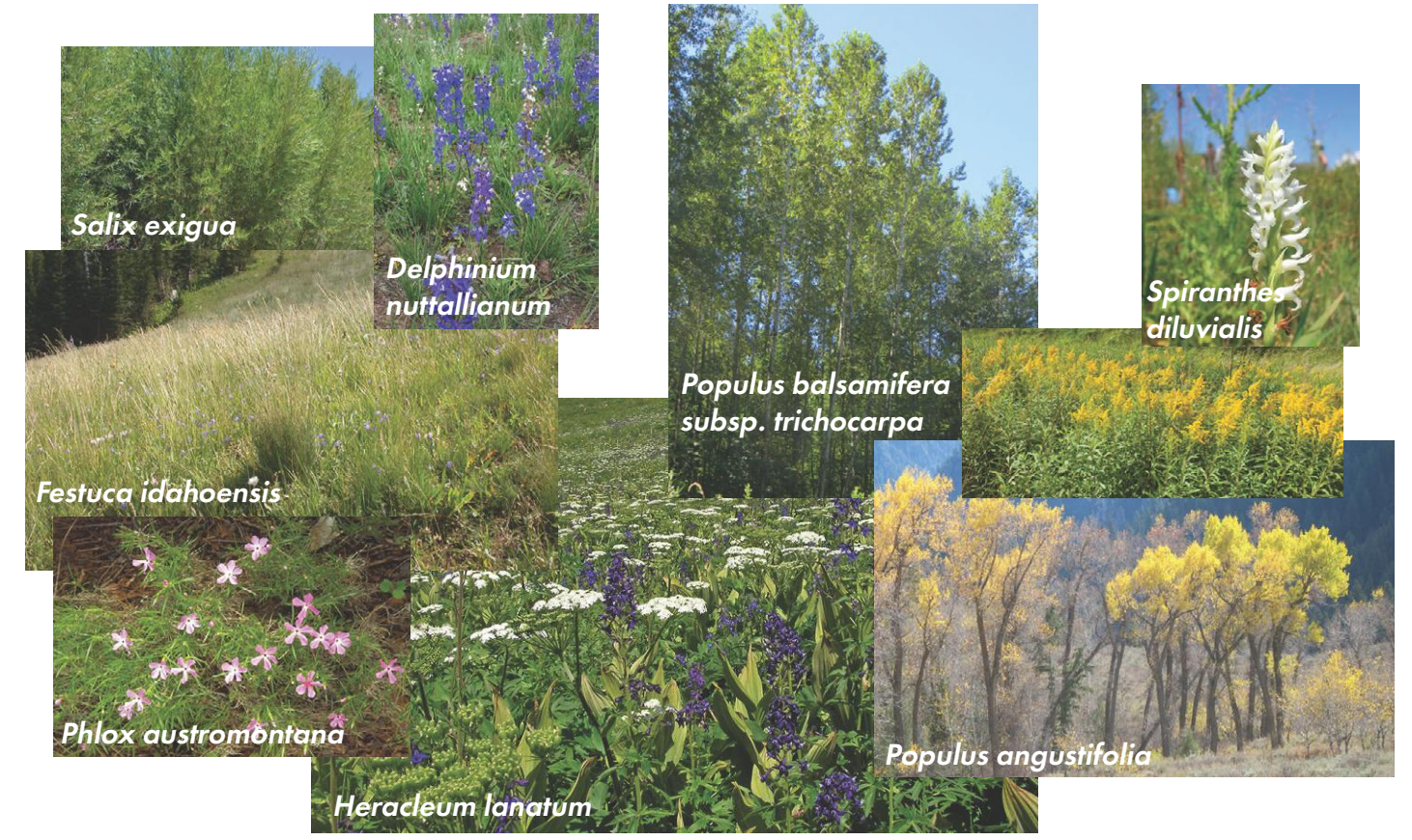
8 In-Stream Aquatic

This zone is closely associated with the spatial extent of the current active stream channel and is mostly composed of open water and/or scoured substrate. Located at or below the Ordinary High-Water Mark (OHWM) of the stream, occurrences of established riparian vegetation are uncommon. However, in low velocity areas of the stream and in the proposed wetland, emergent aquatic vegetation may include common cattail, bulrush, water sedge, and Baltic rush.



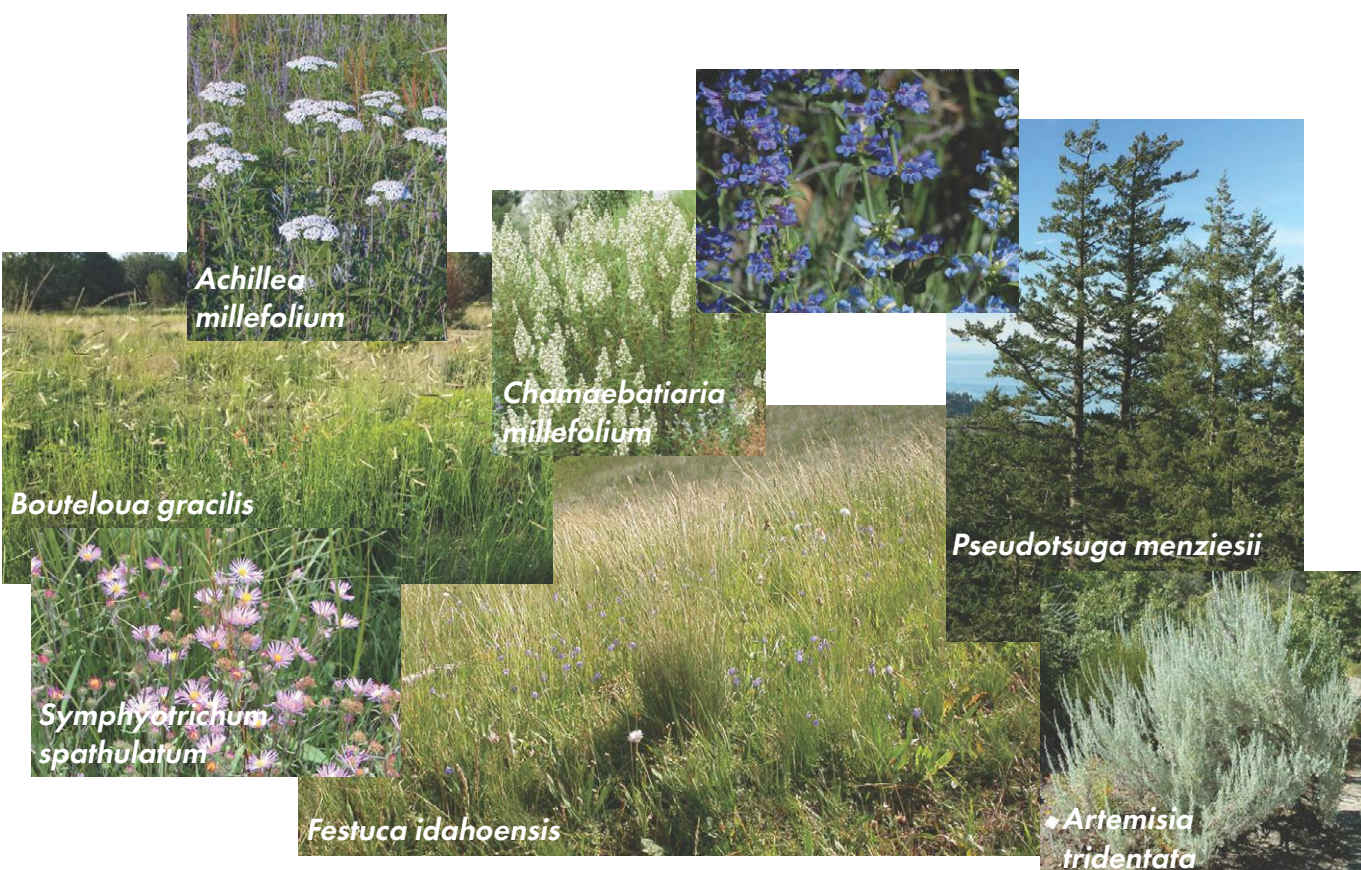
7 Near-Stream Riparian

This zone occurs directly adjacent to the active stream channel, proposed side channels, and low-lying portions of the restored floodplain that has access to Warm Springs Creek's hydrology. Currently only a narrow strip of riparian habitat is present. The restoration strategy envisions a restored and enhanced riparian zone. Common species that occur within this class are: Black cottonwood, narrowleaf cottonwood, coyote willow, peachleaf willow, booth's willow, pacific willow, bittercherry, Red-osier dogwood, Wood's rose, Canada goldenrod, Baltic rush, Larkspur.



6 Mesic (Wet) Floodplain

A mesic habitat is a type of habitat that has access to a moderate or well-balanced supply of moisture. The elevation of the mesic floodplain area is generally lower and more connected to the hydrology of Warm Springs Creek than portions of the xeric floodplain. Healthy mesic habitats function like a sponge; they effectively store water, which can be utilized by neighboring, drier habitats. Healthy mesic habitats also provide a higher density of herbaceous plants and insects that can be used as cover and forage by organisms belonging to higher trophic levels, such as grouse.



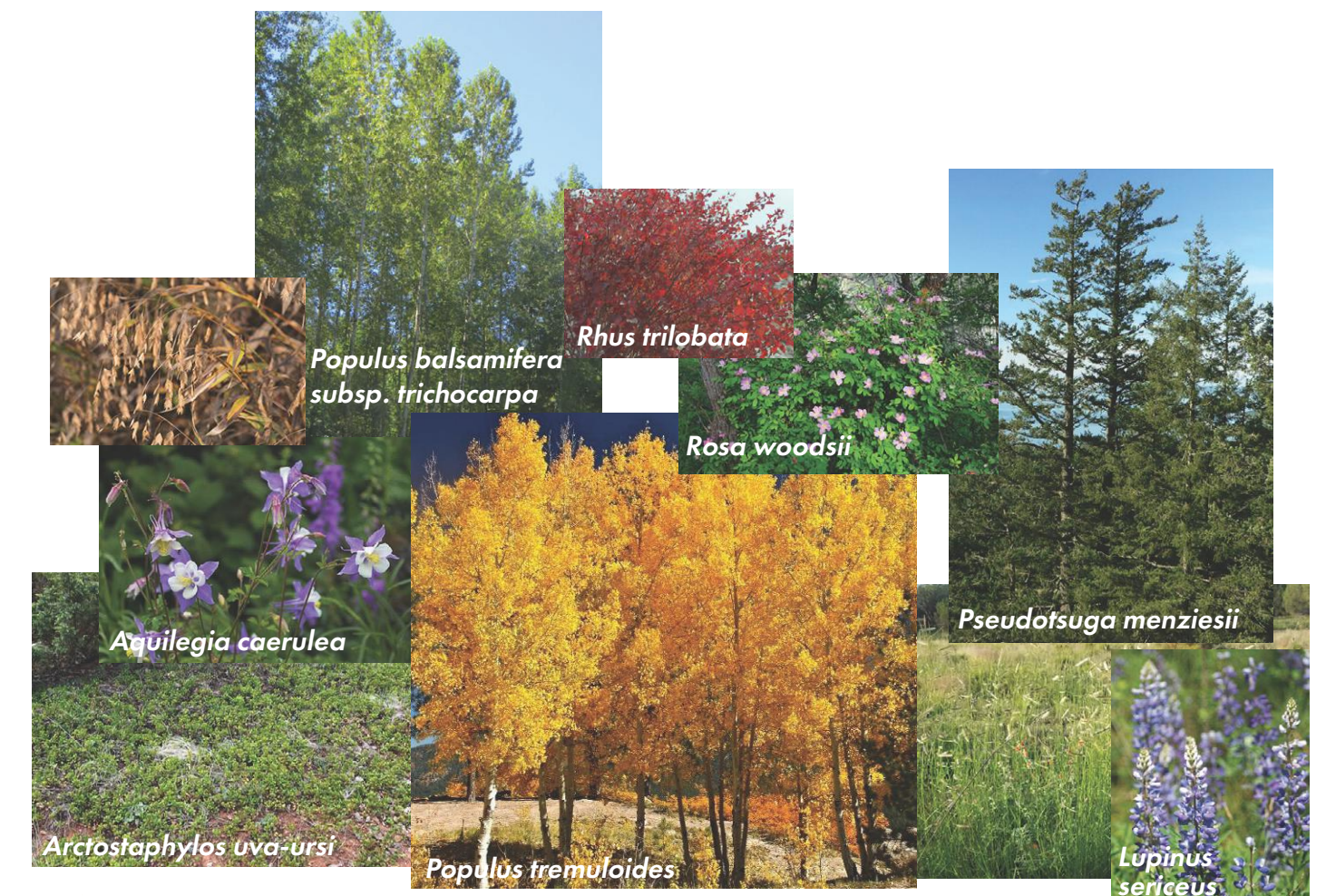
5 Xeric (Dry) Floodplain

This zone occurs almost exclusively within the flat surfaces of the project area that are at a higher elevation than the mesic floodplain area. The surfaces that are inhabited by xeric species are disconnected from the hydrology of Warm Springs Creek. The xeric floodplain character zone is a mixed plant community, consisting of some native upland shrub species, wildflowers, grasses.



4 Upland Meadow

This zone occurs in upland portions of the site above the floodplains, particularly in areas of fill and adjacent to the restored lawn. The plantings here focus on drought tolerant grass, forb and shrub species that are attractive to pollinator insects and birds.



3 Tree Groves

The tree groves connect to existing evergreen planted areas on the site or positioned as islands throughout the upland areas. In time, the shade created by the deciduous and evergreen trees in this zone creates a microclimate for unique native shrub and perennials that provide diversity within the landscape for visitors to experience.



Trout Life Stages and Preferred Habitat

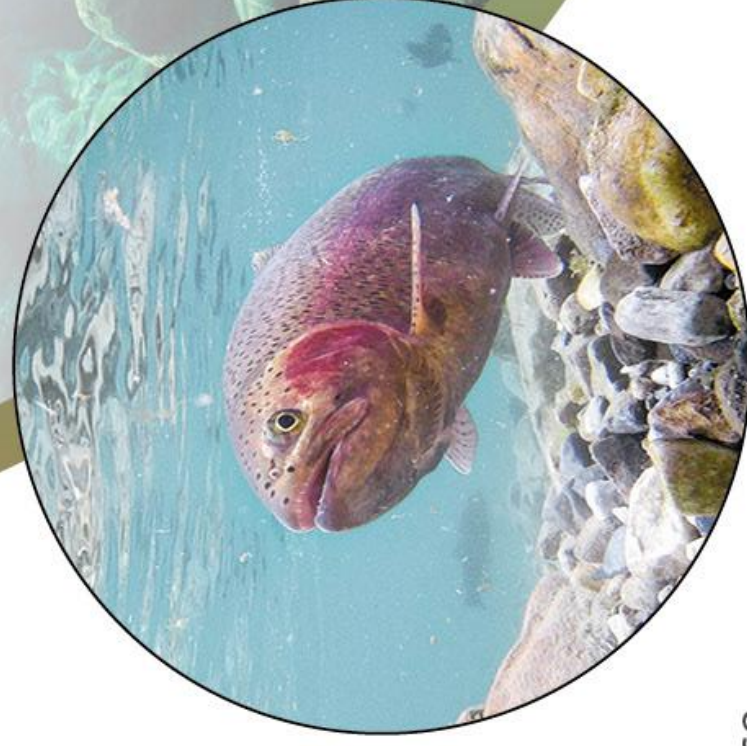
Trout need cool, clear water and plenty of food to eat. They also need cover from predators and room to travel upstream and down at different times of the year when feeding, overwintering and spawning.



Spawning Female trout dig a nest or redd in clean gravel shallows. As she releases her eggs, they are fertilized by the male and then covered with gravel. The gravels must be 10-40mm in size, loose and free of silt with plenty of oxygen rich water flowing through them. Spawning occurs in the spring.



Eggs At 2-5mm in diameter, eggs incubate in clean gravels and hatch into alevins. Female rainbow trout usually produce 2000 to 3000 eggs. The eggs usually hatch in about four to seven weeks, depending on stream temperature.



Adults Adult trout have a territory that gives them a good supply of food and a place to hide from predators, preferring deeper pools. In winter, they migrate, perhaps miles upriver, to spawn in early to late spring.



Alevins Newly hatched trout are called sac fry or alevin. Alevins stay in the gravel, living off the yolk sac. In approximately two weeks, the yolk sac is completely consumed, and fry commence feeding mainly on zooplankton. They then emerge as fry, set up territories and grow into parr. Alevins develop into parr in early summer, depending on stream conditions.



Parr Fry and parr are territorial and solitary. They need plenty of cover in the stream from rocks, emergent and trailing bankside plants, and shallow water that is not too fast flowing. Side channels are incredibly important for native trout. They provide vital habitat and often allow these juveniles to escape high velocity flows during flood events, escape predators and offer a food resource.



Insects + Plants = Fish Food Aquatic invertebrates like insects, are integral to the trout food web. Insects feed on aquatic plants, decaying matter and microscopic animals. In turn, they become food for fish.



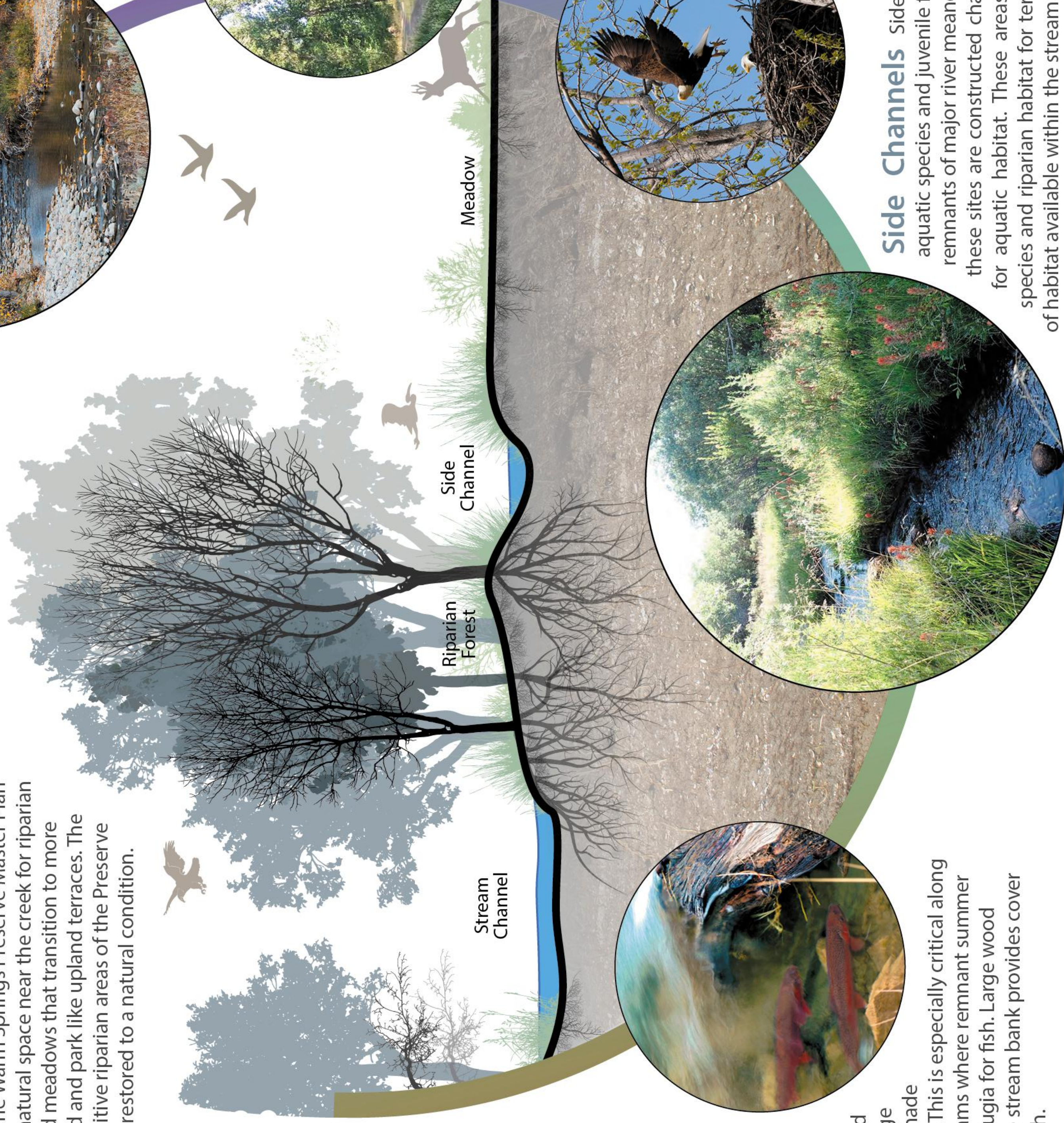
Riparian Vegetation Riparian vegetation helps stabilize banks while providing shade and cover for fish. Juvenile fish need slow water and cover generally near the bank and in side channels.



Deep Pools and Cover Adult fish need deep pools and cover often associated with in-stream wood and boulders.

Riparian Stream Edge

Riparian zones are the areas bordering the stream channel and provide many environmental and recreational benefits. The Warm Springs Preserve Master Plan includes natural space near the creek for riparian forest, and meadows that transition to more manicured and park like upland terraces. The most sensitive riparian areas of the Preserve are being restored to a natural condition.



Cottonwood - Willow

Riparian Forest This community occurs at low elevations, along the stream channel, where the water table is high and/or there is year-round water flow. Frequent spring flows provide areas of scour and sedimentation within the channel; this dynamic hydrologic regime contributes to the habitat's structural diversity and high wildlife value.

Botanical Resources

Vegetation within this community is predominantly composed of deciduous species. The tall riparian trees and dense understory result in almost full canopy cover. Typical tree species include cottonwood, willow, bittercherry, rosewood, dogwood, herbaceous shrubs and grasses.

Wildlife Resources This habitat type is noted for its very high bird species diversity and abundance. Deciduous trees and shrubs are used by nesting migrants for foraging during migration. Mature trees provide numerous cavities for cavity-dependent wildlife such as woodpeckers. Tall trees are used by nesting raptors; stream banks provide nesting for belted kingfishers. A variety of mammals utilize the dense forest for cover, shade and food.

Side Channels Side channel habitats (built specifically for aquatic species and juvenile fish) and riparian habitat are small watered remnants of major river meanders across the floodplain. On the Preserve these sites are constructed channels connecting ponds built specifically for aquatic habitat. These areas provide off-channel habitat for aquatic species and riparian habitat for terrestrial species and increases the diversity of habitat available within the stream corridor.

Fisheries Resources

Vegetation rooted at the water's edge provides cover, shade and food for fish. This is especially critical along intermittent streams where remnant summer pools provide refugia for fish. Large wood embedded in the stream bank provides cover and refuge for fish.

Dynamic + Continually Changing

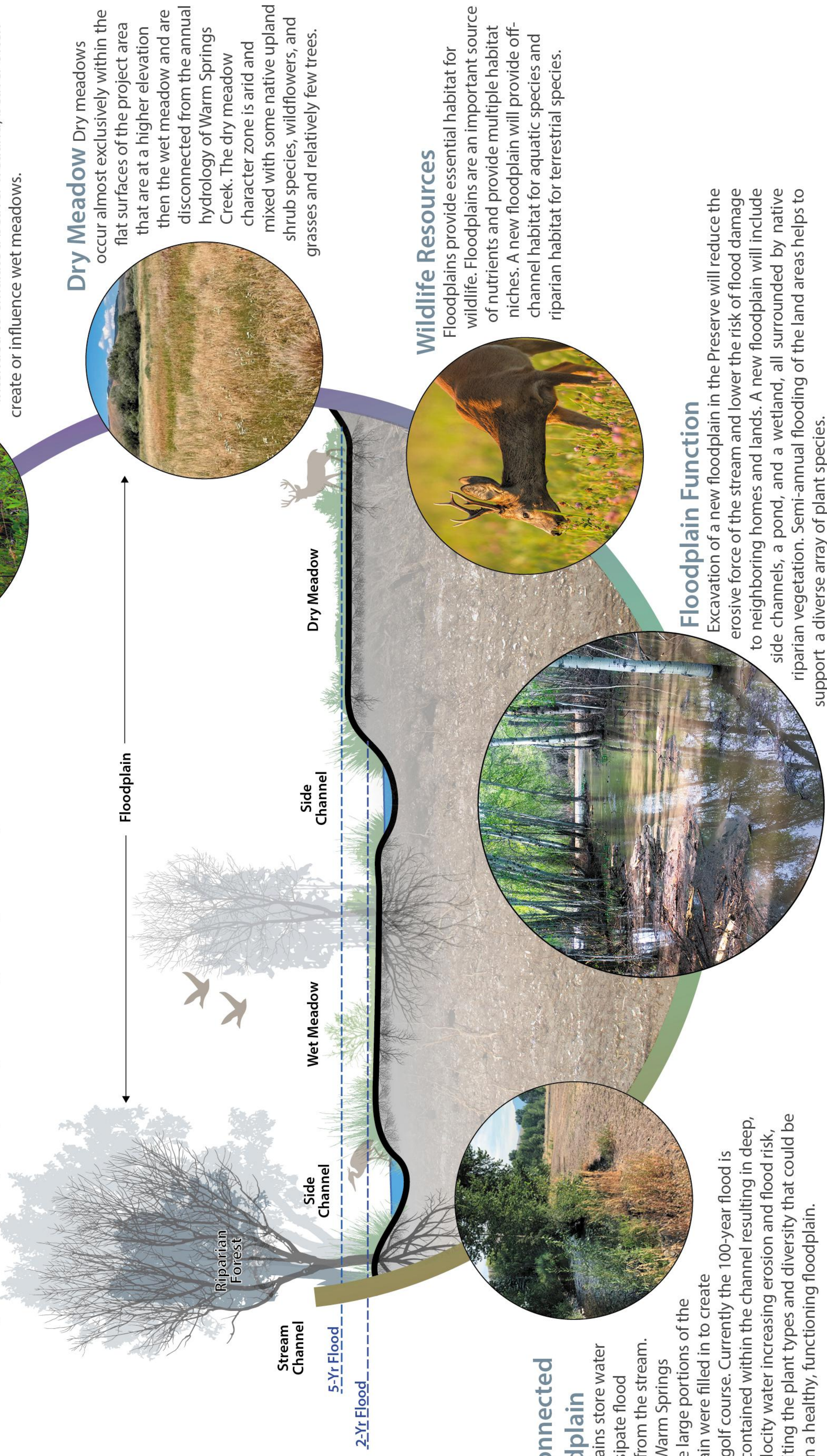
Riparian forests grow within an alluvial environment that is continually changing due to the ebb and flow of the stream. Riparian vegetation is constantly being reset by flooding disturbance.

Mature cottonwood stands do not regenerate in place, but regenerate by "moving" up and down a river reach. Over time, a healthy riparian area supports all stages of cottonwood communities.

Periodic flooding events are needed for Cottonwood seedlings to germinate and become established on newly-deposited, moist sand and gravel bars. This cottonwood community can grow into a mature riparian forest.

Floodplain

Streams and rivers are much wider than the channels we associate them with. The areas next to streams, which are only covered by water during floods, are also part of the river system. Known as floodplains, in their natural condition they are an important ecological part of the landscape. The floodplain in the Preserve is made up of mesic (wet) and xeric (dry) meadows. Floodplains filter and store water, secure both natural flood protection and the healthy functioning of the stream ecosystems, and help sustain high biological diversity.



Wet Meadow/Wetland

The elevation of the wet meadow or wetland is generally lower and more connected to the hydrology of Warm Springs Creek than portions of the dry meadow. Wet meadow habitats effectively provide drought insurance as land at higher elevations warms due to seasonal or other changes. Wet meadows may include some trees and larger shrubs. The Warm Springs Preserve wet meadow is intended to emulate a beaver wetland; beaver often create or influence wet meadows.

Dry Meadow

Dry meadows occur almost exclusively within the flat surfaces of the project area that are at a higher elevation than the wet meadow and are disconnected from the annual hydrology of Warm Springs Creek. The dry meadow character zone is arid and mixed with some native upland shrub species, wildflowers, and grasses and relatively few trees.

Wildlife Resources

Floodplains provide essential habitat for wildlife. Floodplains are an important source of nutrients and provide multiple habitat niches. A new floodplain will provide off-channel habitat for aquatic species and riparian habitat for terrestrial species.

Floodplain Function

Excavation of a new floodplain in the Preserve will reduce the erosive force of the stream and lower the risk of flood damage to neighboring homes and lands. A new floodplain will include side channels, a pond, and a wetland, all surrounded by native riparian vegetation. Semi-annual flooding of the land areas helps to support a diverse array of plant species.

Disconnected Floodplain

Floodplains store water and dissipate flood energy from the stream.

On the Warm Springs Preserve large portions of the floodplain were filled in to create the old golf course. Currently the 100-year flood is largely contained within the channel resulting in deep, high-velocity water increasing erosion and flood risk, and limiting the plant types and diversity that could be found in a healthy, functioning floodplain.



Connected Stream Floodplains

The importance of the hydrologic and ecological functions of floodplains is well understood and there are many benefits to restoring connectivity of floodplains so that they actively flood. This not only supports native

riparian and aquatic species, but it also accommodates floodwaters, thereby reducing flood peaks downstream. The Warm Springs Preserve plan recognizes the ecological benefits of floodplain inundation and is planned in a way to provide multiple benefits, such as combining flood risk reduction, ecosystem restoration,

and adaptability to climate change. The plan highlights the challenges, opportunities and the many benefits of a reconnected floodplain that include habitat for fish and wildlife, groundwater recharge, carbon sequestration, open space and recreation.