WEST YELLOWSTONE TRAIL PLANNING AND DESIGN

Trail Background and Proposed Route

U.S. Department of Transportation
Federal Highway Administration

Background

The Town of West Yellowstone, Montana, has several separate trails that the town would like to see connected. West Yellowstone seeks to design and construct a trail network system through its town to connect the currently separate Yellowstone Shortline, Frontier, Boundary, Rendezvous Nordic Ski, and Riverside Trails to create a complete network for users to recreate or commute on. This project will therefore develop a plan to engage and gather public input, an analysis of existing conditions, and conceptual designs and costs for the proposed trail system though the Town of West Yellowstone.

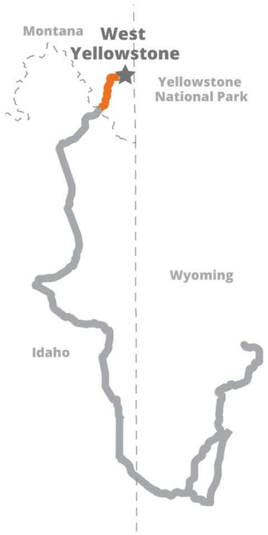
Goals

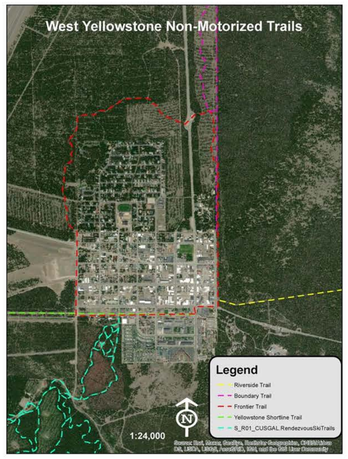
This project will develop conceptual designs for a trail network that combines the different trails in the Town of West Yellowstone into a cohesive trail network. The specific project goals are to:

1. Identify a proposed trail corridor route connecting existing trail and recreation facilities in the Town of West Yellowstone
2. Produce conceptual designs and cost estimates for future design and construction grant applications
3. Ensure proposed trail route, design, and other considerations reflect the interest of Town residents, visitors, and stakeholders

Quick facts about the trail

- **Trail length**: 1.8 miles (2.3 miles with alternate route)
- **Estimated cost**: $2.63M (2023 dollars) for 1.8 mile paved trail alone
- **Trail connections**: Shortline Trail, Rendezvous Ski Trail, Boundary Trail, Frontier Trail, Riverside Trail
- **Users**: Bicycle and pedestrians in non-snow months; ski and snowmachine likely for snow months
- **Design considerations**: Final design will mirror Shortline Trail signs, wayfinding, and supporting facilities
- **Areas of feedback especially needed:**
  - Community preferences on proposed and alternate trail route
  - Community preferences on highway crossing alternatives
  - How the feedback so far has been addressed
  - Any other comments, questions, or concerns that can inform a final route and design recommendation





The regional trail context

The proposed trail sits within a wider regional trail context that includes the Greater Yellowstone Trail (above left) and the convergence of US Forest Service and National Park Service trails at the Town of West Yellowstone (above right).

Trail Route

The proposed route connects trails systems around West Yellowstone into a single, cohesive regional trail network. The trail is anticipated to be a 10 foot wide paved path on existing public land only and would be open to bicycles and pedestrians. The images at right show the approximate route in relation to current conditions.

The route shown includes an alternative western segment (shown in yellow dashed line) that would extend to the boundary of the Town's 80-acres expansion area rather than along Iris Street. The trail route's western boundary would need to cross US 20 at Iris Street no matter the final alignment.

Trail route at Boundary Road, looking south

Trail route behind Museum, looking west

Trail route on former rail bed, looking east

Trail route on Iris Street and US 20, looking north

Trail route on Iris Street and Alley D, looking northwest to Powerline Road and Frontier Trail

What feedback do you have? Write it below or use the QR code to visit the project website and add it later!

Scan the QR code to visit the project website, views project documents, and submit feedback through the online comment form.

WEST YELLOWSTONE TRAIL PLANNING AND DESIGN

Trail Design and Cost Estimate

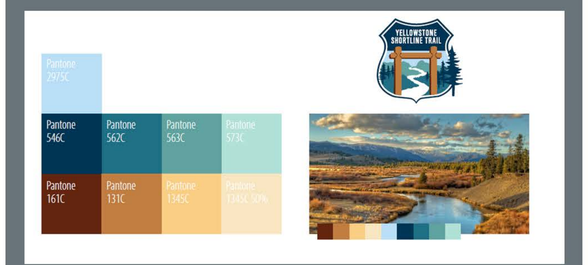
U.S. Department of Transportation
Federal Highway Administration

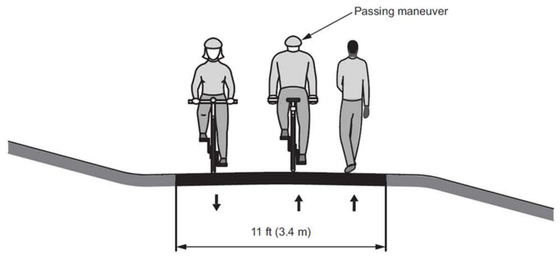
Trail Route

The proposed route connects trails systems around West Yellowstone into a single, cohesive regional trail network. The trail is anticipated to be a 10 foot wide paved path on existing public land only and would be open to bicycles and pedestrians. The images below and at right provide examples of how the trail could appear when complete.

Design Color Scheme

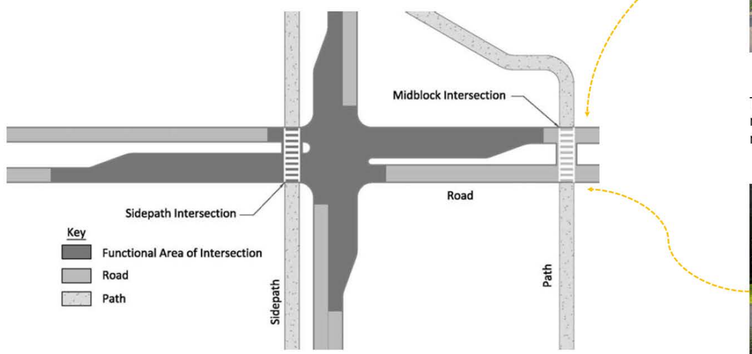
The color scheme for the project, including any possible trail signs and wayfinding, will align with those planned for the wider Shortline Trail, shown here. The images were developed by Sea Reach, Ltd., for the Shortline Trail and are used for reference only.





Cross Section

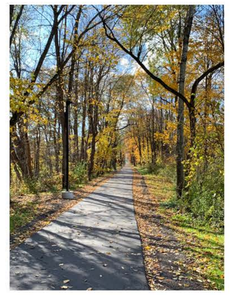
The minimum paved width for shared use path is 10 feet. The width can vary 10-14 feet, depending on context. A reduced width down to 8 feet is allowed if bicycle traffic is low enough, pedestrian traffic is occasional, passing is easy, and low vehicle-use for maintenance is expected. For the proposed route the project team assumes with a 10 foot paved surface throughout. The figure above below provides a typical cross section of shared use path with space for passing.



Relationship to Roadway

The proposed trail will generally follow the side path design shown above for segments along Boundary Street and Iris Street. As the trail follows the Shortline Railbed it will follow the path design shown above, including midblock crossings for neighborhood streets.

The images above provide an example of an approximately 10 foot wide paved path with both bicycles and pedestrian use



The images above provide an example of an approximately 10 foot wide paved path, including features for the end of a trail segment (top left)

The images above and below show what a midblock crossing might look like through neighborhood streets

Estimated Cost

The cost for designing and constructing the proposed trail is estimated at $2.63M in 2023. This estimate does not include the cost of the two highway crossings, which are contingent on final recommendations.

	Feet	Construction	30% Contingency	Total Construction	PE	CE	CM	Total
			Expressed in millions		15%	10%	10%	
2023	10381	$1.500	$0.450	$1.950	$0.293	$0.195	$0.195	$2.633
2028 (4% Inflation)	10381	$1.830	$0.549	$2.379	$0.357	$0.238	$0.238	$3.212
2033 (4% Inflation)	10381	$2.165	$0.650	$2.815	$0.422	$0.281	$0.281	$3.800

The table above represents the 1.8 mile proposed trail, estimated construction cost, a contingency percentage for project changes, and the breakdown of preliminary engineering (PE), construction engineering (CE), and construction modifications (CM).

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WEST YELLOWSTONE TRAIL PLANNING AND DESIGN

Highway Crossing Designs and Cost Estimate

U.S. Department of Transportation
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Highway Crossings

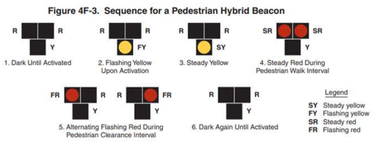
The proposed route crosses busy state highway facilities at two points: (1) US 20 and Iris Street and (2) US 191 (Yellowstone Avenue) and Boundary Street, both shown above. The designs below and at right provide four options for crossing both highway intersections.

Option 1 - Rapid Flashing Beacons

Very low cost relative to other options with relatively high visibility. Not as safe as grade separated or other alternatives. Can be attached to power source or battery.

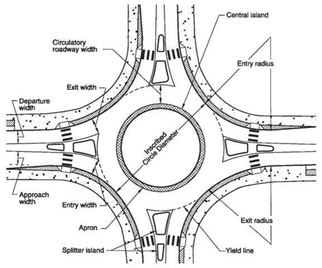
Option 2 - Pedestrian Hybrid Beacons

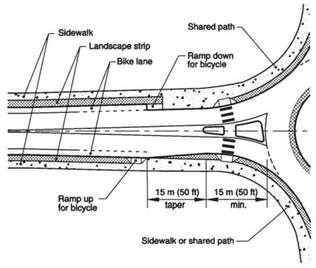
Offers the highest-level of visibility option, with up to 95% driver stopping compliance, 55% reduction in pedestrian crashes, and 29% reduction in total crashes. Effective when speeds are above 35 MPH and where traffic volumes are high. Challenges include ongoing source of electricity, the signal pattern may be unfamiliar to some, more expensive than rapid flashing beacon.



Option 3 - Roundabouts

Roundabout provide significant benefits for safety of motorized traffic. There are available concepts that help bicycle and pedestrian traffic navigate a roundabout safely as well. The project team assumes a single lane roundabout. Challenges include high cost, high right of way needs, and further engineering analysis required before decision can be made to convert either intersection to a roundabout.



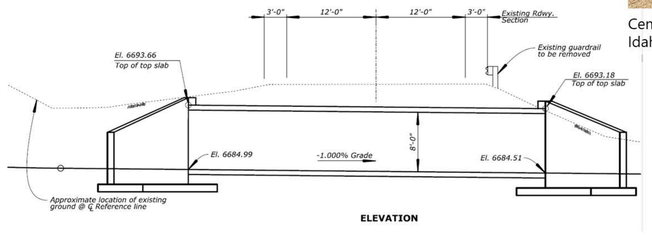


Gros Ventre roundabout, Grand Teton National Park

Option 4 – Grade-Separated Crossings

Highest level of safety. Removes vehicle to non-motorist interaction at the crossing. Challenges include acquiring possible right of way, digging 12 feet underground, and creating a slope to enter the tunnel that may be 250 feet long to allow for safe access and drainage.

Centennial Trail Grade Separated Crossing (Pedestrian Tunnel) at Idaho-Wyoming Border (ID-33 and WY-22)



Two illustrations of bicycle and pedestrian tunnels in context with the approximate length for access ramps needed (250 feet)

What options(s) do you prefer? Write it below or use the QR code to visit the project website and add it later!

Scan the QR code to visit the project website, views project documents, and submit feedback through the online comment form.

Estimated Cost

The cost for designing and constructing the highway crossings ranges between $26,000 for the lowest cost alternative (Rapid Flashing Beacons) to $2.98M (Pedestrian Tunnel). The table below represents the costs of proposed highway crossings, including estimated construction cost, a contingency percentage for project changes, and the breakdown of preliminary engineering (PE), construction engineering (CE), and construction modifications (CM). Each cost is shown for a single crossing, not total cost for both crossings.

2023 Estimate

Feet	Construction	30% Contingency	Total Construction	Design	CE	CM	Total
		Expressed in millions		15%	10%	10%	
Rapid Flashing Beacon	$0.015	$0.005	$0.020	$0.003	$0.002	$0.002	$0.026
Pedestrian Hybrid Beacon	$0.300	$0.090	$0.390	$0.059	$0.039	$0.039	$0.527
Roundabout	$1.500	$0.450	$1.950	$0.293	$0.195	$0.195	$2.633
Tunnel	$1.700	$0.510	$2.210	$0.332	$0.221	$0.221	$2.984

2028 Estimate (4% inflation)

Feet	Construction	30% Contingency	Total Construction	Design	CE	CM	Total
		Expressed in millions		15%	10%	10%	
Rapid Flashing Beacon	$0.035	$0.011	$0.046	$0.007	$0.005	$0.005	$0.061
Pedestrian Hybrid Beacon	$0.375	$0.113	$0.488	$0.073	$0.049	$0.049	$0.658
Roundabout	$1.830	$0.549	$2.379	$0.357	$0.238	$0.238	$3.212
Tunnel	$2.075	$0.623	$2.698	$0.405	$0.270	$0.270	$3.642

2033 Estimate (4% inflation)

Feet	Construction	30% Contingency	Total Construction	Design	CE	CM	Total
		Expressed in millions		15%	10%	10%	
Rapid Flashing Beacon	$0.040	$0.012	$0.052	$0.008	$0.005	$0.005	$0.070
Pedestrian Hybrid Beacon	$0.445	$0.134	$0.579	$0.087	$0.058	$0.058	$0.781
Roundabout	$2.165	$0.650	$2.815	$0.422	$0.281	$0.281	$3.800
Tunnel	$2.460	$0.738	$3.198	$0.480	$0.320	$0.320	$4.317