

## APPLICANT INFORMATION

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Department

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# FREIGHT PROGRAM PROJECT APPLICATION US-20, CHESTER TO ASHTON



# Project Cost Estimate

This project is still in development, awaiting the Environmental Assessment (EA). As such, the following estimates are subject to change. The Right-of-Way and Construction Costs were developed using the preferred alternative footprint and typical section (See pages 3, 5, and 6).

The minimum match amount for the total project cost is 7.34%. The total project cost is estimated at \$120M of which District 6's matching contribution would be \$8,808,000.

Preliminary Development Cost*	Year Required
\$682,900.00	FY 2019 (Expended)
\$1,164,646.00	FY 2020 (Expended)
\$923,033.00	FY 2021 (Expended)
\$600,000.00	FY 2022
\$75,000.00	FY 2023
\$25,000.00	FY 2024

\* For consultant and ITD project development work, including administration.

Right-of-Way Cost	Year Required	Property Type
\$1,500,000.00	FY 2023	42 Farm Acres (FA)
\$3,900,000.00	FY 2024	154.33 FA
\$1,700,000.00	FY 2025	2.57 FA/4 Houses
\$11,000,000.00	FY 2026	60.89 FA/8 Houses/ 2 Businesses

Environmental Cost	Status of Environmental Requirements
\$3,500,000.00	Environmental Assessment (EA) scheduled for completion Summer of 2022

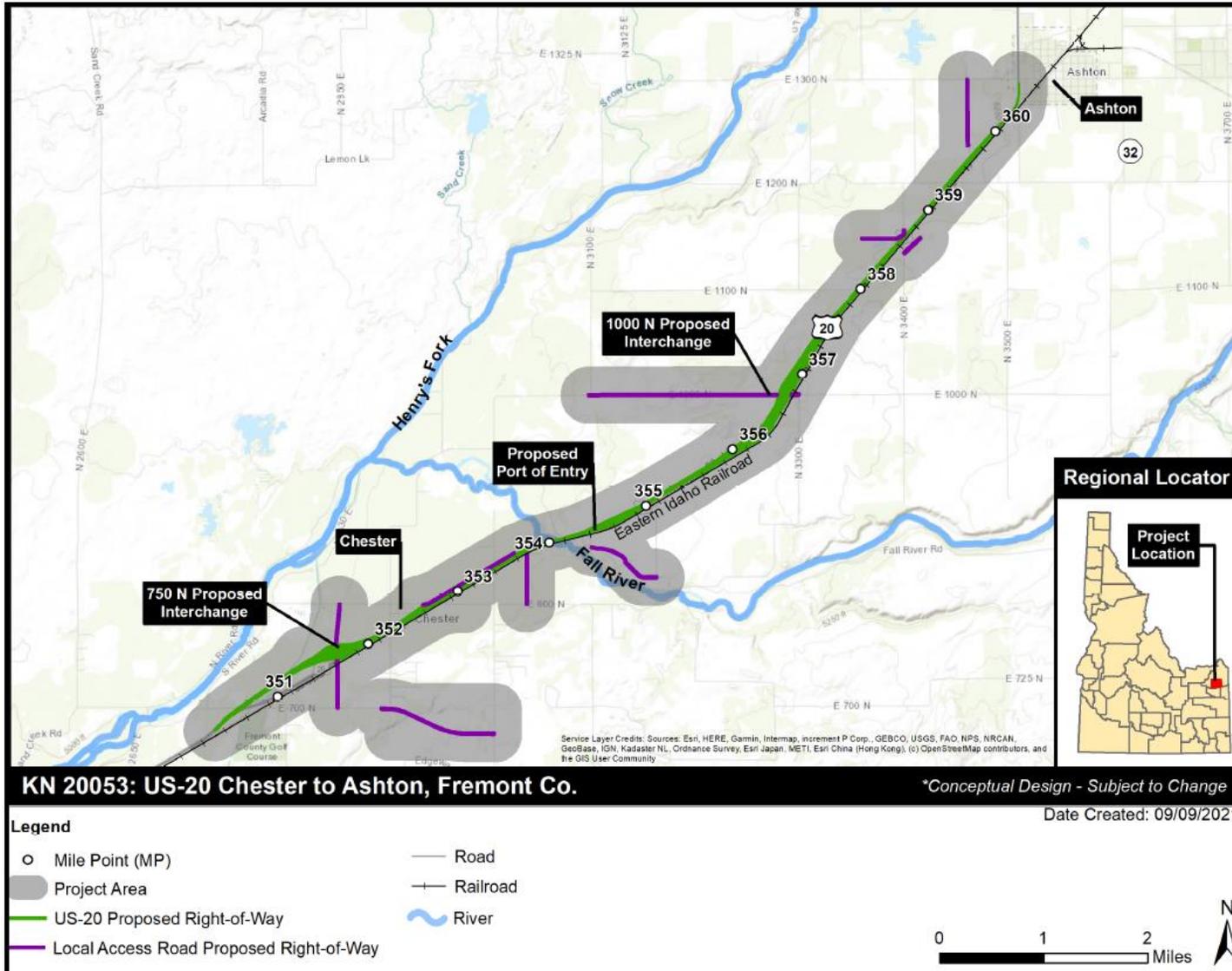
Construction Cost*	Year of Execution
\$2,900,000.00	FY 2024
\$36,000,000.00	FY 2025
\$20,000,000.00	FY 2026
\$36,000,000.00	FY 2027

\* Includes two interchange bridges and minor structures for canal crossings.

There are currently two contributing agencies for this project. Toward the balance of project costs, the State of Idaho, Idaho Transportation Department (ITD) is contributing 7.34%, and the Federal Highway Administration (FHWA) is contributing 92.66%. However, the project is currently underfunded. Of the estimated \$120M needed only \$58,653,000.00 is scheduled. Any additional funding would greatly assist in the timely execution of this much needed project.

Right-of-Way - \$500,000  
 POE Ramps and Lanes - \$1,000,000  
 Scales – 300,000  
 Structures (Scale House/Restroom) - \$700,000  
 Weigh-in-Motion – 4,000,000  
 Engineering/Development - \$650,000  
 Total - \$7,150,000

# Project Detail Map



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# Project Details

## Project Setting

US-20 provides a north-south route in southeastern Idaho, connecting larger city centers to rural communities, and is Idaho's gateway into Yellowstone National Park. While US-20 traverses the communities of Chester and Ashton at the southern and northern ends of the project, this segment of US-20 is primarily surrounded by agricultural lands with dispersed residences and few businesses. There are a variety of user types on the roadway, including passenger vehicles, agricultural equipment, large commercial trucks, and recreational vehicles.

## Roadway Condition

The original roadway was built in 1932, and various projects have been completed to maintain its functionality, most recently a chip seal in 2016. However, the last major rehabilitation project was almost 20 years ago. Today the existing roadway has exceeded its design life, and issues such as frost heaves, cracking, and rutting are commonplace. Current pavement conditions, such as roughness and cracking, are generally rated as poor to very poor, and the rutting is rated as fair.

## Alternatives Development Process

Recommendations included in ITD's planning studies for the US-20 Corridor, and the results of public scoping were used to develop preliminary alternatives. The preliminary alternatives were subjected to screening, which evaluated them against specific criteria developed by ITD. Following the preliminary screening of the alternative, ITD conducted a Concept Level Value Engineering (VE) Study in order determine the most evaluate cost-effective, functional, and viable alternative that would meet the project's purpose and need.

Based on similar projects in the region, eight preliminary alternatives (including the No Build Alternative and seven build alternatives) were considered, given their potential ability to address the purpose and needs of the project.

- Alternative 1: No Build Alternative
  - Existing two-lane roadway and routine maintenance
- Alternative 2: Minor Improvements
  - Site-specific improvements to be identified and implemented as needed in the future
- Alternative 3: Improved Two-lane Roadway with Added Center Passing Lanes
- Alternative 4: Three-lane Roadway with Center Turn Lane
- Alternative 5: Four-lane Divided Roadway with Median
- Alternative 6: Five-lane Roadway with Center Turn Lane
- Alternative 7: Four-lane Divided Roadway with Median and Interchanges
- Alternative 8: Four-lane Divided Roadway with Barrier and Interchanges

Based on the evaluation and comparison of alternatives, ITD recommends Alternative 7 (Four-Lane Divided Roadway with Interchanges). The ITD Recommended Alternative would provide capacity improvements to accommodate 2045 traffic volumes, improve or exceed the LOS B standard for the 2045 design year, provide roadway and pavement improvements for long-term performance, and improve safety by reducing crash types, rates, and severity. Interchanges would provide safe, efficient, and well-coordinated access when compared to the existing at-grade intersections within the segment.

Importantly, the ITD Recommended Alternative would match the existing lane configuration immediately south of the project limits from Idaho Falls to Chester. Maintaining a consistent lane configuration and driver expectancy would reduce traffic incidents, especially in areas with recreational traffic or where inclement weather could obstruct lane markings. The ITD Recommended Alternative would also eliminate existing at-grade intersections, which are often accompanied by high severe crash rates. Based on early public involvement, the need for these features to improve safety are widely recognized and supported by the community.

### Summary of the Alternative Screening Results

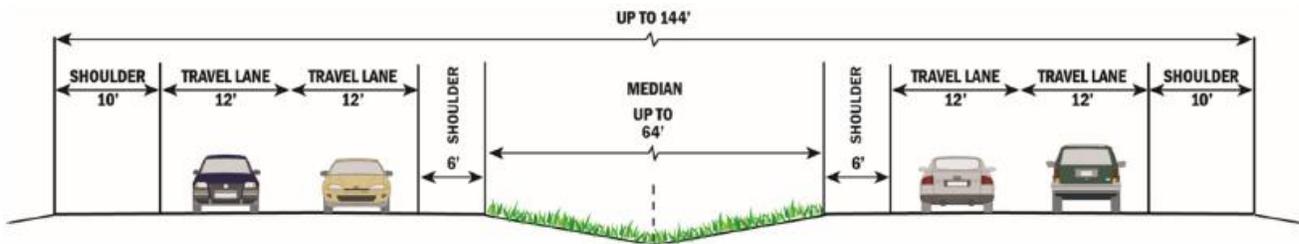
Need	Evaluation Criteria	Alternative 1: No Action	Alternative 2: Minor Improvements	Alternative 3: 2-Lane with Passing Lanes	Alternative 4: 3-Lane with Center Turn Lane	Alternative 5: 4-Lane with Median and Crossovers	Alternative 6: 5-Lane with Center Turn Lane	Alternative 7: 4-Lane Divided with Interchanges	Alternative 8: 4-Lane Divided with Barrier and Interchanges
Capacity and Mobility	Meets LOS B standard for 2045 design year	No	No	No	No	Yes	Yes	Yes	Yes
	Limits time spent following slower vehicle (agricultural/recreational)	No	No	Partially	No	Yes	Yes	Yes	Yes
Roadway Condition	Improves roadway condition	Partially	Partially	Yes	Yes	Yes	Yes	Yes	Yes
Safety	Reduces number of crashes	No	Partially	Partially	Partially	Partially	Partially	Yes	Partially
	Provides safe, efficient, and well-coordinated access	No	Partially	No	Partially	Partially	Partially	Yes	Yes

### Description of the ITD Recommended Alternative

The proposed improvements to US-20 would replace the existing two-lane roadway by constructing a divided four-lane roadway with above-grade interchanges. Passing would be accomplished using travel lanes, and the median would allow space for errant vehicles to return to the roadway or recover at design speeds. The ITD Recommended Alternative would reconstruct US-20 from Chester to Ashton and include the following scope of work.

- Improvement of US-20 to include the following design characteristics:
  - Four 12-foot travel lanes, two lanes in each direction
  - 10-foot outside shoulders
  - 6-foot inside shoulders

- A depressed grassy median up to 64 feet wide (with a reduced median where there are right-of-way or environmental constraints)
- Roadway geometry designed for a 70mph posted speed limit



- New bridge(s) over the Fall River compatible with the four-lane roadway
- New bridges or culverts compatible with flow volumes of irrigation canals crossed
- Modification of the existing road network to maintain local access to properties following the closure of the existing access points and the introduction of controlled access at interchanges
- Roadway drainage improvements
- Relocate the existing southbound Port of Entry (POE) at MP 355.75
- Highway lighting and signage

### Local Access Road Locations

New and improved local access roads would provide connections to parcels affected by the access consolidation of US-20. The locations of these new and improved local access roads have developed over time through input gathered by ITD from public meetings and one-on-one conversations with local property owners. The local access road locations were also adjusted by ITD as biological and historic field surveys and analysis revealed the potential impacts the proposed roads would have on environmental resources such as wetlands, historic structures (barns, irrigation canals, etc.), and potential threatened and endangered species habitat.

### Relocation of the Existing Port of Entry

The purpose of a POE is to encourage and promote commercial vehicles' safe operation while protecting transportation infrastructure and the public. One existing POE station is located within the proposed project area on US-20 approximately three miles north of Chester at MP 355.75. This single POE serves southbound vehicles and consists of a small employee building with a single axle scale at the front. To accommodate the widening of US-20 to a 4-lane divided roadway with a median, the existing POE would need to be removed.

Together ITD and ITD POE staff identified potential options to address the assumed US-20 project impacts to the existing POE. Four options were considered:

- Option 1: Relocate the POE just west of the existing location (MP 355.75)
- Option 2: Incorporate the POE into the proposed East 1000 North Interchange design
- Option 3: Relocate the POE to south of St. Anthony, Idaho
- Option 4: Relocate the POE to MP 354.60

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ITD recommends Option 4 which includes relocation of the existing southbound POE to approximately MP 354.60. This option is desirable because truck traffic has limited options to bypass the location, out of direction travel is reduced compared to incorporation into the East 1000 North Interchange, and the location provides enough distance between the POE and the proposed East 1000 North Interchange to avoid safety concerns.

The preferred option would relocate the existing POE on the new southbound travel lanes at MP 354.60. This option consists of a small employee building with a single axle scale at the front. However, ramps would be constructed to accommodate a northbound POE. The POE would be designed to have a parallel transition of 500 feet and merging taper of 300 feet meeting the AASHTO Green Book standards. The operational hours would likely be from 8 a.m. to 5 p.m. but may be extended if a high number of vehicles are passing outside of standard operating hours. The station may be updated in the future to accommodate weigh in motion operating 24 hours a day. Standard lighting would be installed and consist of three to five poles on the ramps which would remain on all night.

## Potential Phasing

Due to its length and cost, it is highly likely that the project would need to be constructed in phases. A full analysis of phasing would be included in the later final design phase of the project, following completion of the EA, however, there are two likely scenarios.

### Scenario One: Phased Construction over Entire Project Limits

- **Phase I** - Construction of the local access roads: This will allow access to US-20 to be shut down for future phases of the work. Through traffic would remain on the existing US-20 roadway and current access points would remain in place during this period of construction.
- **Phase II** – Construct New Southbound Travel Lanes: The US-20 southbound travel lanes and shoulders would be constructed following the completion of Phase I. Upon completion, all US-20 traffic would shift over to the newly constructed southbound travel lanes. ITD would identify some locations where at-grade crossings would need to remain in place and possibly turning lanes would need to be constructed until the interchanges in Phase IV are completed (applies to Phase III also).
- **Phase III** – Reconstruct Northbound Travel Lanes: The northbound travel lanes would be reconstructed from its current two-way configuration to one-way for northbound traffic. During construction of Phase III, US-20 traffic would be shifted to the newly constructed southbound travel lanes.
- **Phase IV** – Construct New Interchanges: The construction of the two new interchanges would be the final phase.

### Scenario Two: Phased Construction from South to North or North to South

This scenario would look like Scenario One, except Phases I to IV would occur at the same time for small segments of US-20 starting from the south or north depending on greatest need and funding availability.

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# Safety, Economic and Mobility Improvement Details

## Highway Capacity and Level of Service

The amount of traffic traveling the US-20 corridor from Chester to Ashton has grown between 2000 and 2010 by approximately 12 percent. In addition to the increased traffic volumes, the current highway configuration does not provide capacity or passing opportunities to accommodate current and future traffic volumes.

Between Chester and Ashton, US-20 is utilized by various vehicles types consisting of personal vehicles, recreational vehicles (trucks towing campers and motor homes), agricultural equipment, and heavy trucks (freight and commercial trucks). In 2017, the Average Annual Daily Traffic (AADT) volume between Chester and Ashton was estimated near 6,100. Roughly 80 percent of the 2017 AADT is attributed to personal vehicles, 6 percent recreational vehicles, and 14 percent attributed to heavy trucks (Pettingill and Calderwood 2018).

Recreational traffic causes traffic volumes to vary seasonally, with substantially higher volumes in the summer months and lower traffic volumes throughout the winter. On average, traffic volumes in July are typically 192 percent of the annual average, while February traffic volumes decrease to about 50 percent of the annual average.

Since the ITD traffic assessment was completed in 2018, ITD updated the traffic volume projections using 2019 as the existing conditions year. The AADT in 2019 was recorded as 6,720 vehicles. Future traffic volumes were projected for the anticipated implementation year of 2025 and 2045 design year by applying a 2.3 percent growth rate. In 2021, ITD projected that by 2045, the AADT for the Chester to Ashton segment would reach 10,790 vehicles. This is an increase of nearly 41 percent from the projected 2025 AADT of 7,660 vehicles.

Currently, highway capacity is impeded by the accumulation of traffic behind slower-moving agricultural and recreational vehicles and high access point density. It is likely that the gravel accesses to the paved highway also slow the turning movements, further compromising capacity. As the time spent following a slower-moving vehicle increases, so does the probability that other vehicles will catch up to vehicles queued behind the slower-moving vehicle already trying to pass. As the other vehicles catch up and are also unable to pass, queuing occurs, creating congestion.

The measure of this congestion, or Level of Service (LOS), is graded on a scale of A to F, with A representing excellent or free-flow conditions and F representing extremely poor conditions with considerable delays. LOS for two-lane highways is based on annual average travel speed, percent time delay (i.e., the amount of time spent following a slower vehicle), and capacity utilization (i.e., the volume of vehicles using the highway versus the volume it was designed to handle). LOS is determined for the peak travel hour within a day—typically during either the morning or afternoon commute times. ITD’s standard for two-lane highways, like this segment of US-20, is LOS B. Using 2017 traffic volumes, travelers spend an annual average of 82 percent of

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their time in the project corridor following other vehicles, which corresponds to LOS E. By 2045 if no improvements occur, the percent time spent following slower vehicles is projected to approach 90 percent.

## **Speed Data**

The current posted speed limit within the project limits is 65mph. Traffic counters were placed at MP 352, 355 and 360 on September 7, November 15, and November 16, 2016 and collected speeds of 10,343 vehicles. The average car was calculated at 66.4 MPH and the Average Truck Speed was calculated at 65.1 MPH. The 85<sup>th</sup> percentile was calculated at 70.9 MPH. The proposed alternative would increase the posted speed limit to 70mph with roadway geometry designed to safely accommodate the increased traveling speeds.

## **Highway Safety**

Safety has long been a concern along the US-20 corridor, as indicated in ITD's planning efforts for the highway. Crash occurrences can be highly variable from year to year and are frequently attributable to driver behavior and circumstance—distraction, driving too fast for conditions, overcorrection, weather, etc. However, design characteristics of a roadway (shoulder width, lane separation, numbers of accesses, and turning movements) also influence the crash frequency and can greatly influence crash severity, particularly as traffic volumes increase over time. Between 2011 and 2018, a total of 80 crashes (an average of 10 per year) occurred on US-20 between Chester and Ashton, nearly 40 percent of which resulted in injuries or fatalities. Although 2011 to 2018 is the latest period for comprehensive safety data, through ongoing coordination with ITD, community members have continued to voice their concerns about safety, especially given numerous injuries and recent deaths on this section of US-20.

When totaled, crashes related to turning maneuvers and passing (sideswipe and head-on) represent 19 crashes, or 24 percent, between 2011 and 2018. A total of 22 crashes, or 28 percent, resulted from a driver departing the travel lane (overturning and fixed object). The existing shoulders likely contribute to these crashes as there is minimal width for a driver to recover if they drift out of the travel lane. One travel lane per direction encourages passing maneuvers in the opposing lane. As vehicles prepare to pass, drivers increase their chances of encountering opposing vehicles traveling in the opposite direction (which increases the potential for head-on, overturning, and sideswipe crash types). Frequent access points connecting US-20 to private driveways and local access roads within the project limits increases the chances for vehicle collisions. Although local drivers are accustomed to these access points, visitors are not, therefore increasing the potential for collisions, particularly during summer months when highway use is higher.

## **Safety Evaluation**

A Safety Evaluation (ITD Form 2658) was completed for this segment of US 20. Of the 80 crashes, 26 resulted in property-damage-only, 21 resulted in Injury, and two resulted in fatality. The cost of the crashes over the life of the project is \$39.4 million. The crash reduction factor of this project will result in an average of 51% reduction in accidents, which will result in \$125 million savings over 20 years or \$6.3 million annually.

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## Benefits of Project to Freight Network

In short, we believe this project will provide many quantitative and qualitative benefits to freight and travelling public alike:

- Greater capacity throughout design life
- Higher travelling speed
- Fewer and less severe accidents due to:
  - Safer roadway geometry
  - Improved roadway surface
  - Removing at-grade crossings
  - Controlling access to US-20
  - Less time following slower vehicles
  - More passing opportunities
  - Reducing opportunities for head-on collisions
  - Better visibility of wildlife
- Fewer delays due to accidents
- Snow storage in median and shoulder
- Improved winter maintenance
- Improved local access roads (weighted by public input)
- Improved opportunities for economic development at interchanges
- Improved Port of Entry (more efficient)
- Improved bridge structures with greater traffic and ice damming capacities

## Conclusion

District 6, ITD recognizes the value safe and efficient roadways bring to our communities and interstate commerce alike. We have performed our due diligence and invested significant resources to develop the ideal solutions to the unique problems presented by this now substandard section of the Primary Highway Freight System (PHFS). We have been proactive in communicating with the public and have valued their useful input. We look forward to the lifesaving and economic benefits this project will provide to the community in which we both live and recreate. We respectfully request your consideration to provide additional funding for this large and impactful project.