

WHAT IS THE GRAND AVENUE BRIDGE PROJECT?

The Grand Avenue Bridge project is being proposed to improve the connection from downtown Glenwood Springs, Colorado, across I-70, the Colorado River, and the Union Pacific Railroad (UPRR) to the historic Glenwood Hot Springs area. The State Highway (SH) 82/Grand Avenue Bridge is the gateway to Glenwood Springs, Glenwood Canyon, the Roaring Fork Valley, and Colorado's western slope communities. It serves as a vital link for local and regional travelers, the Glenwood Springs community, emergency responders, bicyclists, and pedestrians. This project proposes replacing the existing four-lane bridge with a new four-lane bridge on a modified alignment. The study area and its regional location are shown in Figure ES-1 and Figure ES-2.

This project proposes replacing the existing four-lane SH 82/Grand Avenue Bridge with a new four-lane bridge on a modified alignment.

The National Environmental Policy Act of 1969 (NEPA) requires that federal agencies use a systematic, interdisciplinary approach to decision-making when actions may affect the quality of the human environment. This Environmental Assessment (EA) documents the NEPA process for this project.



Aerial view of the existing Grand Avenue Bridge.

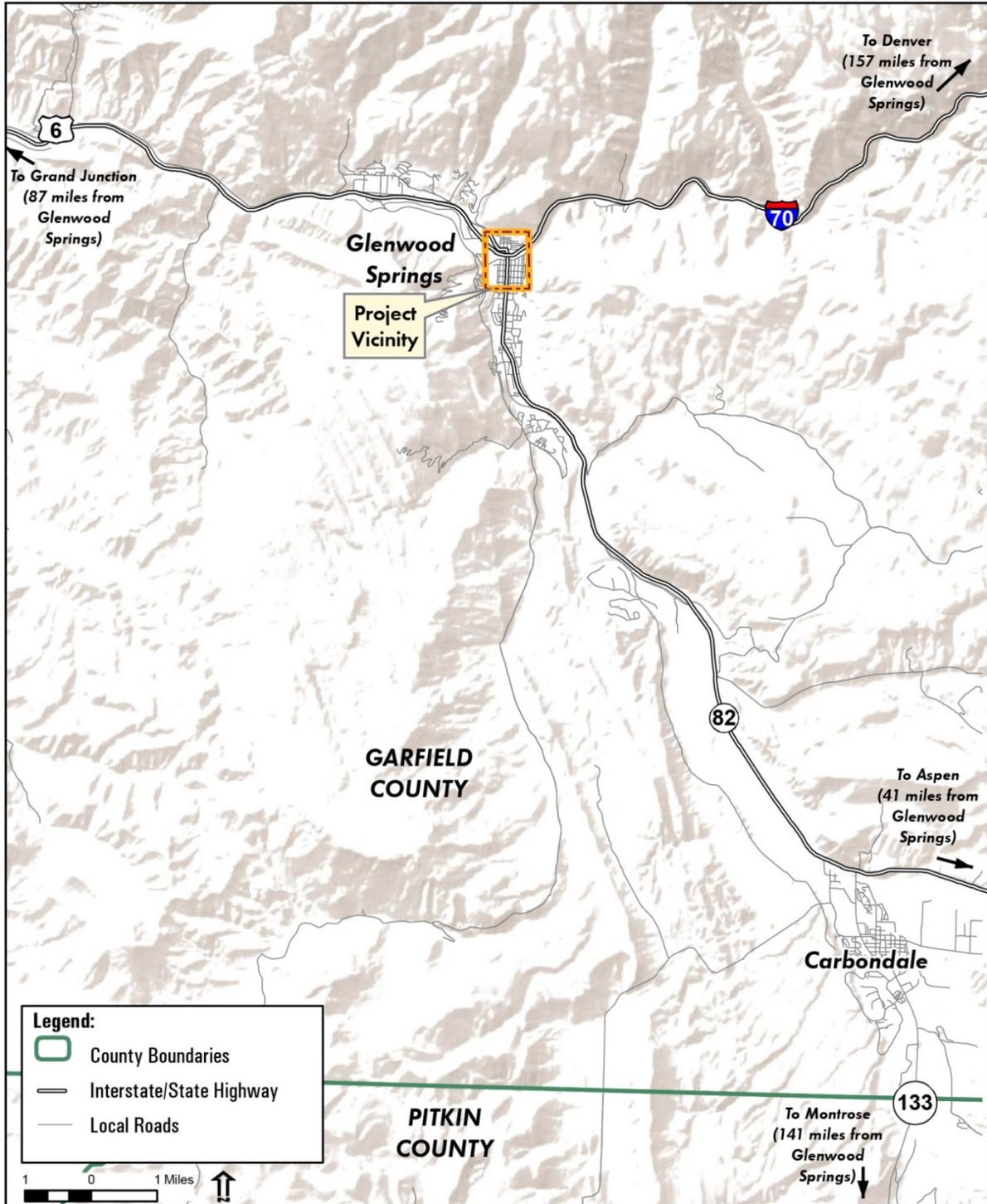
SH 82 GRAND AVENUE BRIDGE

FIGURE ES-1. STUDY AREA



Source: Jacobs, 2014.

FIGURE ES-2. REGIONAL CONTEXT



Source: Jacobs, 2014.

SH 82 GRAND AVENUE BRIDGE

WHO IS INVOLVED IN THIS PROJECT?

The Federal Highway Administration (FHWA) is the lead agency for this Proposed Action and is responsible for supervising the environmental analysis for this project. The Colorado Department of Transportation (CDOT), as the project sponsor and co-lead agency, prepared the analysis and documentation, and the City of Glenwood Springs is a cooperating agency.

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The SH 82/Grand Avenue Bridge EA process involved an extensive public and agency involvement program. Project groups were formed to help guide the project, including a Project Leadership Team (PLT), Project Working Group (PWG), Stakeholders Working Group (SWG), and Issue Task Forces. Each group had a specific objective and consisted of team members best qualified to help meet that objective. In addition, outreach activities were held to engage citizens interested in the project. Since November 2011, members of the study team have had one-on-one contact with approximately 3,000 stakeholders through an array of outreach activities, including public open houses, stakeholder workshops, open forums, meetings with more than 30 business owners, one-on-one meetings with stakeholders, meetings with public officials and community groups, and event displays.

Also, the study team contacted several local and state agencies throughout the EA development process to address specific issues. Meetings were held with the U.S. Army Corps of Engineers; State Historic Preservation Officer; Colorado Parks and Wildlife; and the Glenwood Springs Planning Department, Fire Department, and Police Department.

CDOT conducted an extensive public and agency involvement program that was consistent with the Context Sensitive Solutions (CSS) guidelines established as part of the I-70 Mountain Corridor CSS process. This CSS process aims to identify the full range of stakeholder values and actively incorporate them into the design process and final results.



A physical model was developed to depict various bridge type alternatives designed to meet the project's purpose and needs.

WHAT IS THE PURPOSE OF THIS PROJECT?

The purpose of this project is to provide a safe, secure, and effective multimodal connection from downtown Glenwood Springs across the Colorado River and I-70 to the historic Glenwood Hot Springs area.

WHY IS THIS PROJECT NEEDED?

The existing Grand Avenue Bridge was constructed in 1953 as a two-lane bridge with a sidewalk on each side. The sidewalks were removed in 1969 to add two additional lanes. Originally designed for a 50-year lifespan, the 61-year-old bridge has been identified with numerous problems that require either major rehabilitation or replacement.

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The Colorado state legislature passed a bill in 2009 to fund a program to address the state's poorly rated bridges. The Grand Avenue Bridge is one of approximately 150 bridges on the state system that has a "poor" rating.

The importance of the bridge to the local and regional transportation network and its existing conditions underscore the following two project needs:

❖ *Improve multimodal connectivity between downtown Glenwood Springs and the Roaring Fork Valley with the historic Glenwood Hot Springs area and I-70.*

◆ **Narrow Lanes.** The bridge's lanes are a substandard width (9 feet 4 inches instead of the standard 12 feet) and have no shoulders. These conditions impair the ability of the bridge to provide connectivity.

◆ **Inadequate Pedestrian/Bicycle**

Facilities. The existing pedestrian bridge does not meet the requirements of the Americans with Disabilities Act. Additionally, CDOT is a multimodal transportation agency, and part of its mission to meet the intent of CDOT Policy Directive 1602.2 is to consider the needs of all users during facilities, planning, design, and operation (CDOT, 2009).

◆ **Traffic Congestion.** Traffic growth of 2 percent per year would result in increased congestion on the bridge and its connecting streets, and future traffic increases will worsen the bridge's ability to provide connectivity.



A truck taking up both lanes on the bridge worsens traffic congestion.

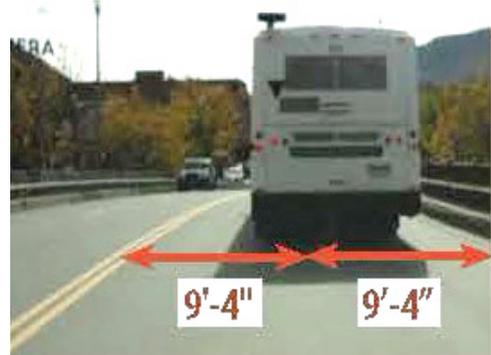
SH 82 GRAND AVENUE BRIDGE

The lack of sufficient alternate routes emphasizes the need to improve the connection between downtown, the Hot Springs pool area, and I-70. No alternate routes are planned or under construction. Therefore, traffic will continue to use the Grand Avenue Bridge because it provides the capacity and the connectivity for existing and future traffic through the Roaring Fork Valley.

❖ *Address the following functional and structural deficiencies of the bridge.*

◆ Based on a bridge inspection and report prepared in 2013 (CDOT, 2013), CDOT classified the bridge as “functionally obsolete” because:

- The bridge width is too narrow to accommodate four standard lane widths.
- Vertical clearances are substandard at 7th Street and the UPRR tracks.
- Horizontal clearances are substandard because of the location of bridge piers related to I-70 travel lanes.
- The bridge is “scour critical,” which means the bridge foundations have been determined to be unstable under certain scour (erosion) conditions. Specifically, erosion has been observed to have occurred below the concrete footing that supports the piers in the river. Hydraulic analysis has determined the bridge to be unstable at flow rates below a 500-year flood event.



Converting the bridge to four lanes narrowed the lanes to a substandard width.



The sand and rock that support the pier footings erode, particularly in years of high water flows, compromising the piers over time.

- ◆ Structural deficiencies reduce the sufficiency rating of the bridge because:
 - Existing bridge load carrying capacity was designed in 1953 for two lanes of traffic using standards at the time. Current standards for a four-lane bridge require significantly more capacity. The bridge load capacity is substandard, but not low enough to require the bridge to be load posted or to limit the use by legal roadway traffic.
 - There are isolated areas of incidental section loss of the steel girders and spalling of concrete columns that do not warrant a structural analysis. Other maintenance needs include repairing expansion devices, repairing spalled concrete, and bridge painting.

WHAT WILL HAPPEN WITHOUT THIS PROJECT?

The impacts of what would happen without this project are analyzed in this EA under a scenario called the No Action Alternative. This alternative may include modifications normally made in ongoing maintenance of SH 82 and I-70, including improved lighting, signals, and signage. These modifications would result in a minor reduction in accidents in the study area, but would not address the other numerous accident and safety issues caused by traffic congestion, narrow lanes, inadequate clearances, and erosion under the bridge piers. In addition, deterioration of the aging structure reduces the sufficiency of the bridge and increases maintenance requirements. An emergency short- or long-term closure of the bridge would result in significant travel impacts for local and regional SH 82 users.

HOW WERE ALTERNATIVES DEVELOPED AND EVALUATED?

The alternatives and the evaluation criteria were developed based on the project Purpose and Need, Project Goals, and Critical Success Factors established by the PLT, as well as the visioning and scoping process and evaluation of existing conditions. As the study progressed, additional alternatives were developed and further refined with ideas generated through extensive agency and public involvement outreach.

The number of alternatives was reduced through three successive levels of evaluation, or screening, according to the established criteria, as shown in Figure ES-3. The PWG also developed Measures of Effectiveness for each project evaluation criterion as the alternatives went through each level of screening.

WHAT IS THE PROPOSED ACTION?

The alternatives development and evaluation process resulted in identification of a Build Alternative that meets the project Purpose and Need. FHWA and CDOT have identified the Build Alternative as the Proposed Action. It is described below and depicted in Figure ES-4. The Build Alternative would:

The Build Alternative was shaped by input from numerous stakeholders who participated in the extensive public involvement process.

SH 82 GRAND AVENUE BRIDGE

FIGURE ES-3. ALTERNATIVES SCREENING PROCESS

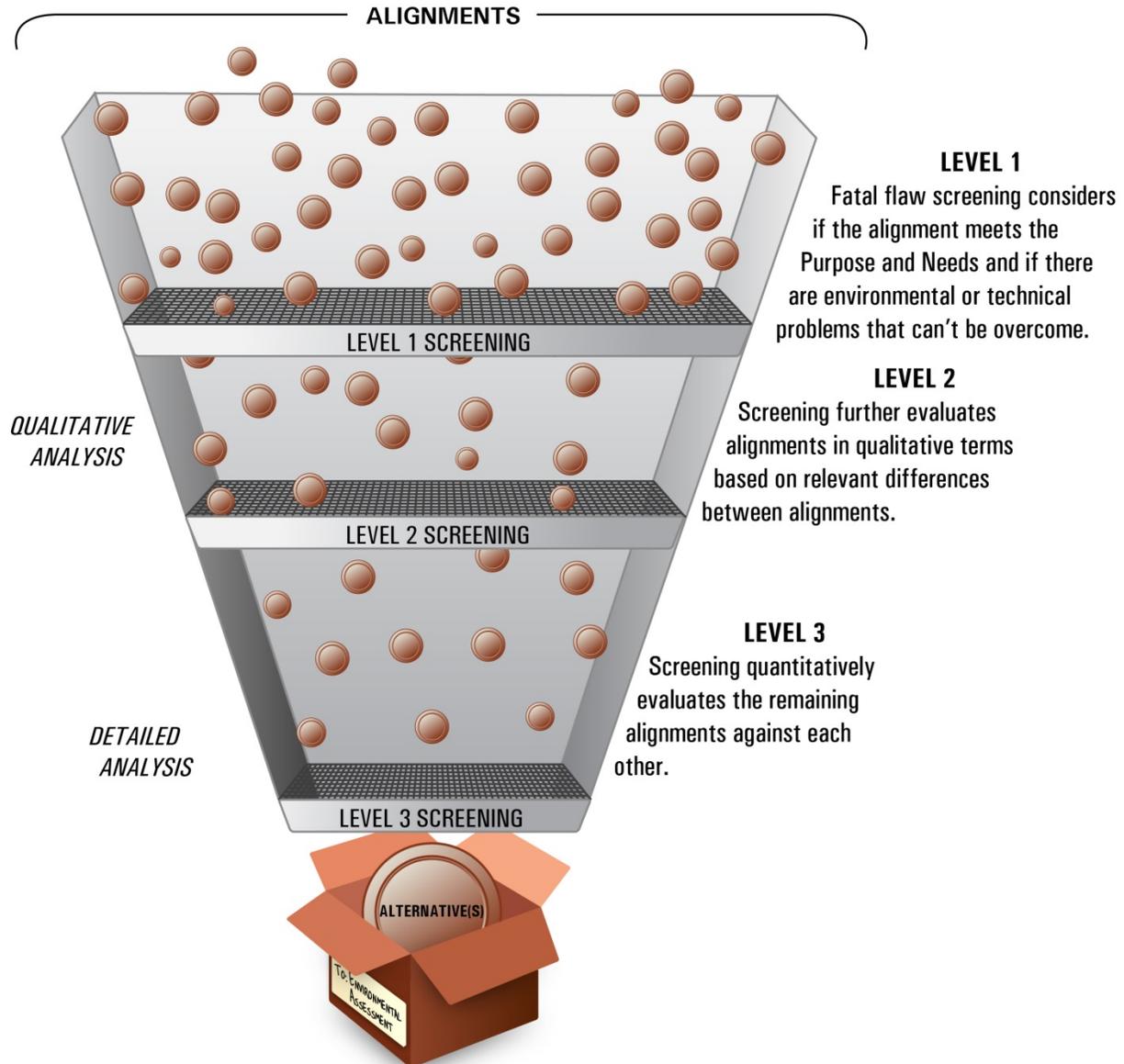
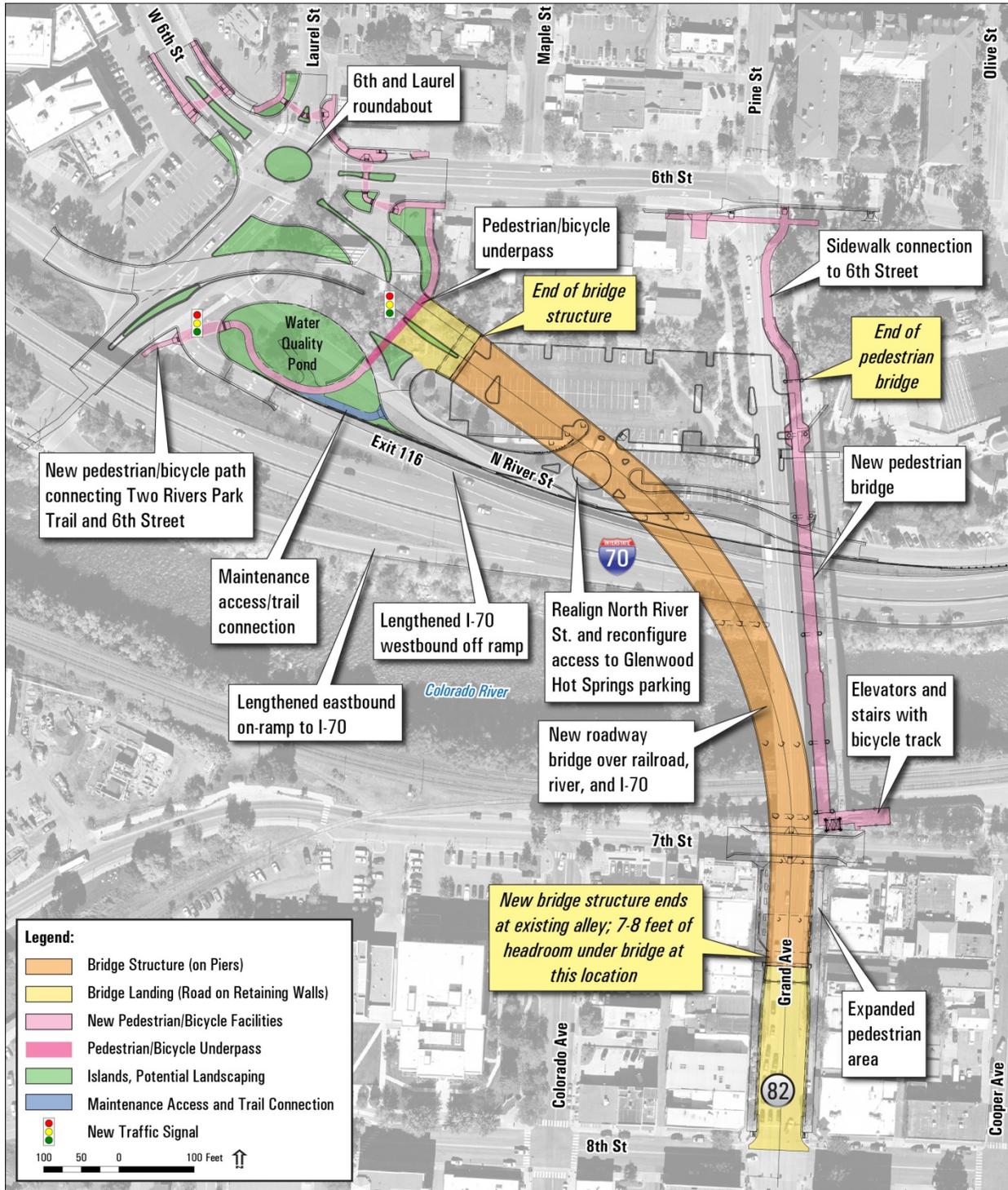


FIGURE ES-4. BUILD ALTERNATIVE



Source: Jacobs, 2014.

- ❖ Replace the existing four-lane SH 82/Grand Avenue highway bridge with a new four-lane bridge on a modified alignment.
- ❖ Widen lanes to improve safety and mobility, and lengthen the southbound left turn lane to 8th Street.
- ❖ Provide a new five-leg roundabout at the 6th and Laurel intersection to help distribute traffic between I-70/SH 82 and local businesses and residences along 6th Street and along Laurel Street.
- ❖ Replace the existing pedestrian bridge immediately east of the highway bridge.
- ❖ Improve bicycle and pedestrian connections on both sides of the river.
- ❖ Lengthen Exit 116 I-70 eastbound on and westbound off ramps, and provide minor, long-term improvements to North River Street.

HOW WERE THE IMPACTS ANALYZED?

Potential beneficial and adverse effects of the Build Alternative and the No Action Alternative were analyzed in this EA for direct, indirect, and cumulative impacts to socioeconomic and natural resources.

- ❖ **Direct impacts** are caused by the action and occur at the same time and place.
- ❖ **Indirect impacts** are caused by an action and are later in time or further removed in distance but are still reasonably foreseeable.
- ❖ **Cumulative impacts** result from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions.

Minimization and mitigation measures were identified to reduce the degree of adverse impacts expected.

WHAT ARE THE IMPACTS OF GREATEST CONCERN?

SHORT-TERM CONSTRUCTION-RELATED IMPACTS

Short-term Transportation Impacts from Construction Detours

Transportation impacts during construction would be experienced by both regional traffic and local traffic. Impacts would occur on SH 82, on I-70, and within Glenwood Springs around construction staging areas and the detours. These impacts would affect residents, visitors, emergency service providers, transit service, and commuters who travel to work north and south of the Colorado River in the study area. Travelers would be required to travel out of direction

Travelers would need to travel out of direction and otherwise adjust their travel behaviors during construction.

and otherwise adjust their travel behaviors during construction. Motorists would likely experience more congestion and increased travel times.

To mitigate these impacts and provide other means of accommodating transportation needs, CDOT will provide detour routes and work with the City of Glenwood Springs and stakeholders. CDOT will also maintain access and local connectivity throughout construction activities as much as possible.

Short-Term Economic Impacts to Local Businesses

Construction of the Build Alternative would directly impact businesses because of temporary impaired access and mobility. Replacing the bridge would require lane closures and rerouting of traffic, including a full bridge closure lasting approximately 90 days. Businesses also would experience increased noise and other construction nuisances. Most businesses closest to the main construction areas would likely suffer a decline in sales, despite all efforts to maintain access and minimize construction nuisances. After construction, sales would recover over time.

To minimize and mitigate the economic effects to businesses during construction, CDOT will keep pedestrian access across the river open at all times, maintain access to all businesses at all times, target bridge closure during the traditionally slower traffic times during the year, minimize bridge closure time, communicate regularly with businesses about the construction schedule, provide additional signage to clarify detour and access changes, conduct public outreach to let the local community and region know that the area is open for business, and participate with local business organizations to communicate construction progress and identify other mitigation measures.

Short-Term Construction Noise Impacts

Short-term construction noise impacts would be experienced near the construction and staging areas throughout the construction period. The primary source of construction noise would be operation of heavy equipment, typically consisting of diesel-powered equipment, such as dump trucks and bulldozers, earth-moving machinery, demolition equipment, back-up alarms on certain equipment, and compressors. CDOT will implement measures to minimize construction noise, such as limiting construction activities to adjacent noise-sensitive receptors when they are most sensitive as practical and feasible, and using muffling devices on equipment and quiet-use generators at noise-sensitive receptors.

LONG-TERM IMPACTS

Long-Term Displacement and Right-of-Way Impacts

The Build Alternative would result in property acquisitions and permanent and temporary (construction) easements that would affect 14 parcels. Total property acquisition would be approximately 1.44 acres from 6 parcels. This would involve

displacement of the Shell station located on the southeast corner of the 6th and Laurel intersection and some parking for the Glenwood Hot Springs. There would be no displacement of other businesses or any residents, public facilities, or non-profit organizations. Mitigation will comply with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended.

Long-Term Visual Changes

The new alignment of the Grand Avenue Bridge would partially block views of the river for residents in upper-story buildings along 6th Street and 7th Street, degrading visual quality for those viewers. However, in most cases, visual cohesiveness would be strengthened and overall visual quality improved, primarily because of the aesthetic and context-sensitive elements that would be incorporated into the new bridge designs and other design elements. In addition, the east entry to Glenwood Springs and the new pedestrian bridge would create visual gateways into Glenwood Springs.



Rendering of new Grand Avenue Bridge from west side of bridge looking east.

Long-term Impacts to Historic Structures

The Build Alternative would adversely affect the existing SH 82/Grand Avenue Bridge. Six historic properties on the 700 block of Grand Avenue would experience indirect adverse effects because the new bridge would be wider and taller in this area, bringing it closer to these properties. No adverse effects are expected to other historic properties in the study area. Mitigation will include historic recordation of the highway bridge and railroad and working with historic preservation parties on final design elements.

WHAT ADDITIONAL IMPACTS ARE EXPECTED?

- ❖ **Land Use.** Potential redevelopment opportunities would be provided along 6th and 7th Streets.
- ❖ **Noise.** Noise Abatement Criteria would be exceeded long term for nine noise-sensitive properties.
- ❖ **Water Resources/Waters of the United States.** During construction, causeways and cofferdams in the Colorado River would cause temporary impacts. Construction activities could potentially impair water quality in the Colorado and Roaring Fork Rivers; however, various measures will be used to avoid and minimize these risks.

- ❖ **Special Status Species.** The state-listed Colorado River cutthroat trout and roundtail chub may experience temporary habitat loss during in-stream construction. Additional effects may result from sedimentation from construction-related activity.

Chapter 3.0 *Affected Environment, Impacts, and Mitigation* includes a discussion of all potential impacts and associated mitigation.

WHAT HAPPENS NEXT AND HOW CAN I BE INVOLVED?

The public has a 30-day period to review this EA and submit comments. During the review period, a public hearing will be held with the opportunity to provide written and oral comments. You can be involved by reviewing and commenting on the EA and/or attending the public hearing. Comments on the EA will be accepted during the 30-day public review period via email, mail, fax, at the public hearing, and through the project website: www.coloradodot.info/projects/sh82grandavenuebridge.

You can be involved by reading this EA and submitting meaningful comments on any topic you would like to address.

After consideration of public comments, FHWA will make a final decision about the project. If FHWA issues a Finding of No Significant Impact, CDOT expects to continue with project development. Subsequent stages of project development include final design, right-of-way acquisition, and construction. Environmental and construction permits will be acquired, including FHWA approval to the temporary changes in the I-70 access. Because of the anticipated complexity of the project's construction and the community's sensitivity to construction impacts, CDOT has engaged a Construction Manager/General Contractor to help strategize phasing and constructability issues during the planning and design process.

HOW MUCH WILL THE PROJECT COST?

Funding has been identified for this project primarily through CDOT's Colorado Bridge Enterprise program, with other funds coming from local sources and other state funds. Ramp improvements will be completed prior to opening of the Grand Avenue Bridge project. CDOT estimates the total project construction cost at approximately \$60 million (see Table ES-1).

TABLE ES-1. OPINION OF PROBABLE COST

Item	Opinion of Probable Cost*
Construction	
Grand Avenue Bridge and Approach Roadways	\$40.5 million
Pedestrian Bridge with Elevator	\$9.5 million
Construction Detour	\$5.5 million
Multimodal Connections and Underpass	\$1.5 million
Walls	\$3.0 million
Construction Total	\$60.0 million
Preconstruction	
NEPA and Design, Right-of-way and Utilities	\$25.3 million

*These costs do not include indirect costs associated with CDOT management, administration, etc., or other direct costs associated with procurement and review.