



SH 82
GRAND AVENUE BRIDGE

Welcome

SH 82 Grand Avenue Bridge Environmental Assessment

Public Open House
August 22, 2012
5:00 P.M. to 7:30 P.M.



Purpose of Tonight's Public Open House

- Give an update on the evaluation process.
- Provide updated information on Alternatives 1 and 3 and their options.
- Obtain public feedback on the alternatives.
- Explain next steps.



Project Overview

The Colorado Department of Transportation (CDOT) and the Federal Highway Administration (FHWA) have initiated an Environmental Assessment (EA) process to address functional, structural, and safety deficiencies of the SH 82 Grand Avenue Bridge and to bring it up to current standards for a four-lane bridge.

The EA's broad purposes are to:

- Complete and define the Purpose and Need for the project.
- Describe reasonable improvement alternatives.
- Evaluate the social, economic, historical and environmental impacts of the improvements.
- Define measures to avoid, minimize or mitigate negative impacts of the project.
- Solicit and obtain public input for the decision-making process.

Project Background

- Improvements to the Grand Avenue Bridge will be primarily funded by the Colorado Bridge Enterprise.*
- The project team fully considered rehabilitation options for the bridge.
- CDOT is committed to working with the Glenwood Springs community throughout this study.
- The design of any improvements will address federal, state, and local standards.

*The Colorado Bridge Enterprise (CBE) operates as a government-owned business within Colorado Department of Transportation. The purpose of the CBE is to finance, repair, reconstruct, and replace bridges designated as structurally deficient or functionally obsolete, and rated "poor".

Existing Bridge Conditions

Background: The existing Grand Avenue Bridge was constructed in 1953 as a two-lane bridge with a sidewalk on each side of the bridge. In 1969, the sidewalks were removed to add two additional lanes. Currently the bridge is classified by CDOT as Functionally Obsolete due to the issues of concern noted below with additional detail to the right. Due to the old age of bridge (58 years), it is deteriorating rapidly, requiring more frequent repairs and becoming more susceptible to failure every day.

Geometric Deficiencies



1 The bridge is too narrow.*



2 Vertical clearance to railroad.



3 Substandard vertical clearance at 7th St.*



4 Substandard horizontal clearance at I-70.*



5 Piers force I-70 to have narrow shoulders.

*Items that contribute to low sufficiency rating.

Potential for Washout



5 Existing bridge piers are supported on shallow spread footings that are susceptible to erosion.

Bridge Structural Condition

6 Based on the 2010 bridge inspection, the bridge condition has the following ratings:

- Bridge Deck 6 out of 9
- Superstructure (girders) 6 out of 9
- Substructure (piers and abutments) 6 out of 9
- Bridge Rail substandard

The remaining fatigue life, calculated using the current design standards, is estimated to be essentially depleted within the next five years.

Load Carrying Capacity

7 The existing bridge load carrying capacity is 55% of new bridge design standards.

Functional Obsolescence

8 The bridge being considered "functionally obsolete" is the result of four geometric deficiencies:

- The bridge is too narrow (see item 1)
- Substandard vertical clearance at 7th St. (see item 3)
- Substandard eastbound right horizontal clearance (see item 4)
- Substandard westbound right horizontal clearance (see item 4)

Additional Detail Information

- 1** The existing lane widths are 9'-4", compared to 11'-0" wide approach lanes south of the bridge. Standard highway lanes are 12'-0". In addition, there are no shoulders on the bridge. The appraisal rating for bridge width is 2 out of 9.
- 2** Currently, the vertical clearance from the railroad tracks to the bottom of the bridge girders is 22'-6". The current railroad standards require 23'-6" clearance over railroads.
- 3** Currently, the vertical clearance from 7th St. to the bottom of the bridge girders varies from 12'-0" to 14'-2". This low clearance results in an appraisal rating of 3 out of 9. Current standards require 14'-6" clearance on local streets.
- 4** Piers are located less than 6' from the edge of traveled roadway on I-70, resulting in an appraisal rating of 3 out of 9. This close pier location does not allow for proper impact protection of the piers with guardrail, and existing piers were not designed for an impact load.
- 5** The existing piers supporting the Grand Avenue Bridge pinch the width of I-70 below. The location of the piers adjacent to the east bound I-70 shoulder limit the length of the ramp as it merges onto I-70, not allowing for sufficient acceleration distance for traffic merging onto I-70 eastbound.
- 6** The existing bridge piers are supported on spread footings that rest 7' below the river bed. An underwater inspection in 1992 found that the river had caused erosion around the footing to a depth of 2' below a portion of the footing. (Scour hole depth equals 9' below river bottom.) This erosion was repaired at the time by filling the hole and placing rock around the footing to provide some erosion protection. Records show that this repair was intended to last eight years.
- 7** The condition rating indicates that the bridge is in satisfactory condition, but shows minor deterioration, such as:
 - Deterioration of the concrete curbs and piers
 - Exposed reinforcing steel on the curbs and piers
 - Corrosion on the railing
 - Peeling paint that has led to girder corrosion
 - Corrosion of the girders
 - Damage to girders over 7th St. due to vehicular impact
 - Corrosion on the bridge supports
- 8** The bridge 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. The noted load carrying capacity of 55% of new bridge design standards is relative to frequent common loads that a bridge experiences. The bridge is capable of carrying higher loads on an infrequent basis.
- 9** All four geometric deficiencies must be corrected for the bridge not to be considered functionally obsolete.

Key Public Events

<p>November 15, 2011 Public Scoping Meeting</p> <ul style="list-style-type: none"> • Critical Success Factors • Draft Key Issues • Draft Context Statement 	<p>June 6, 2012 Public Open House</p> <ul style="list-style-type: none"> • Results of Level 2B Evaluation - 4 alignment alternatives 	<p>July 31, 2012 CDOT/DDA Joint Open House</p> <ul style="list-style-type: none"> • 2 alignment alternatives with options (new traffic, visual, and development information) 	<p>August 22, 2012 Public Open House</p> <ul style="list-style-type: none"> • 2 alignment alternatives with options (updated traffic, visual, and pedestrian/bike information)
<p>April 14, 2012 Public Open House</p> <ul style="list-style-type: none"> • Results of Levels 1 and 2A Evaluation - 12 alignment alternatives (single bridge, couplets, rehabilitation) • Draft Purpose & Need and Goals • Existing bridge condition information 	<p>June 25, 2012 Newspaper Ad</p> <ul style="list-style-type: none"> • Results of Level 3A Evaluation - 2 alignment alternatives with options 		

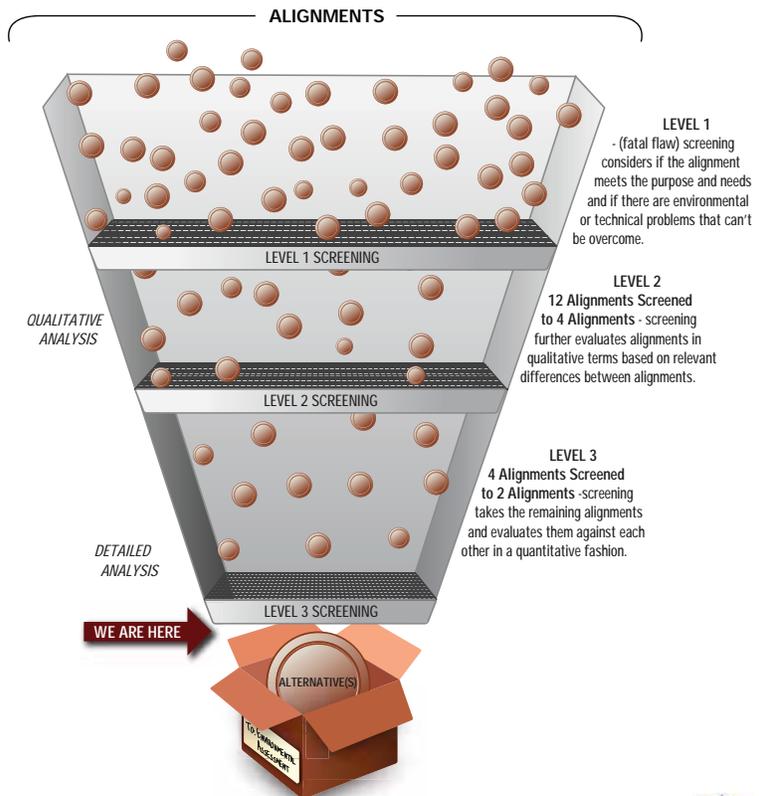
Updated information on project status and alternatives under consideration has been communicated at public open houses, the Stakeholder Working Group meetings, organizations, press releases, one-on-one meetings, group meetings, and presentations to the Glenwood Springs City Council and the Garfield County Board of County Commissioners.

Evaluation Levels 1 2 3

Evaluation Process for Levels 1, 2, and 3

Alternatives Evaluation Process

The alternatives development, evaluation and screening process determines the alternative(s) to study in the Environmental Assessment.



Criteria that Determined the Alternatives

Feedback from Public Open Houses, Stakeholder Working Group meetings, and other outreach, combined with technical analysis, established the criteria that have contributed to the evaluation and screening of alternatives to date.

Criteria	How Evaluated/Measured	Preferences Based on Public Feedback and Technical Analysis
Purpose & Need		
Improved connectivity between downtown and Hot Springs and I-70 and Grand Avenue	Comparative ability or opportunity to improve traffic, bike, and pedestrian connections.	Preferences for creating more direct connectivity and incorporating bike and pedestrian facilities.
Bridge condition, function, and reliability	Comparative ultimate condition of bridge to function safely and reliably.	Preference for a safer bridge and longer projected life.
Community		
Business impacts	Comparative amount of impacts on downtown and 6th Street businesses, including changes to parking.	Preference for maintaining business access and visibility and as much parking area as possible.
Construction impacts	Relative impact of construction related to duration and cost of construction and the ability to phase construction.	Preference for a shorter impact duration.
Property acquisitions	Relative number of property acquisitions required to implement the alternative.	Preference for lower number of business and/or residence acquisitions.
Visual	Comparative ability/opportunity to incorporate aesthetics in the final design.	Preference for more opportunity to design a visually pleasing structure(s) that fits the context of the Glenwood Springs area.
Technical		
Traffic circulation	Comparative ability of the alternative to maintain acceptable traffic circulation, comparative complexity of traffic circulation, for residents and tourists, and comparative ability to mitigate intersection congestion—on north and south side of river.	Preference for less complex traffic movements, i.e., no “S” curves, no out-of-direction travel, simpler intersections. Smaller, single-lane roundabouts are acceptable.
Design & Feasibility		
Cost	Comparative cost to implement alternative.	Preference for minimizing costs related to property acquisitions and bridge length.
Design standards	Comparative ability to meet current design standards for load, lane widths, and clearances.	Preference to design to today’s standards for safety, reliability, and operability.
Environmental		
Noise and air impacts	Comparative closeness of traffic to residences and businesses.	Preference for not spreading impacts to streets not used to SH 82 traffic.
Natural resources impacts	Comparative level of impact to water and water quality, recreational resources, and historic resources.	Preference for avoiding/minimizing impacts to resources.

Key Ideas Received from the Public That Have Shaped the Alternatives

7th Street Under the Bridge

Create a better pedestrian environment under the bridge at 7th Street. Bridge concepts have more clearance under the bridge; a larger, better lit area; and the ability to provide a continuous walkway through the alley between 7th Street and 8th Street. All new bridge options now eliminate a bridge pier in the river.

Minimize Construction Impacts to Businesses

This was incorporated into one of the evaluation criteria. It also generated the idea that a new bridge on a new alignment could reduce construction impacts because the bridge could be constructed off-line. Alternative 3 is a direct result of this consideration. Also, we have identified new accelerated bridge construction techniques that could reduce overall construction impacts for Alternative 1.

Historic Context

The project team has made a commitment to develop design options that fit into the character of Glenwood Springs, while achieving this and other aesthetic goals. There is strong interest in improving the entrance to Glenwood Springs. The team is taking this into consideration with Alternative 3 at Exit 116, where most visitors arrive.

Pedestrian and Bicycle Connections

Improvements to connections to both Two Rivers Park and downtown are being incorporated into the conceptual bridge alternatives. The intersection options for Alternative 3 have been revised to better accommodate pedestrian movements.

Improving Congestion

While a bypass or alternate route would more directly address the problem of congestion, it would not address problems with the bridge itself. Therefore, the project team is evaluating how the Grand Avenue Bridge project could be compatible with a future bypass. Alternative 3 does address some of the SH 82 congestion along 6th Street between Laurel and Pine.

Activities Since June 6 Public Open House

Level 3A Evaluation

Since the June 6 Public Open House, Alternatives 1 and 3 have been further evaluated and enhanced, based on public input and further technical analysis. These alternatives, with options, were presented in the local newspapers on June 25, 2012, at subsequent meetings with local groups and elected officials, and at tonight's Public Open House.

Independent Peer Review June 26-28, 2012

- Purpose
 - To confirm that the project team has considered all reasonable alternatives and to ask for recommendations on different aspects of the alternatives to improve and refine them.
- Who participated?
 - 7 professionals with expertise in roadway, structural, traffic, bridge aesthetics, construction methods and local issues. None of them had been involved in developing the alternatives that have been presented to the public.
- What were the recommendations?
 - Generated two new concepts that the PWG evaluated and eliminated.
 - Confirmed that Alternatives 1 and 3 are viable and should be considered further.
 - Generated ideas for consideration during the NEPA and design process for:
 - ◆ Structure types
 - ◆ Constructability
 - ◆ Bridge aesthetics
 - ◆ Traffic control
 - ◆ Utilities
 - ◆ Future development opportunities
 - ◆ Pedestrian/bicyclist access

Alternative 1-A

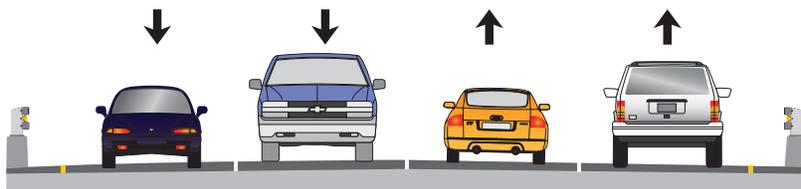
New 4-lane Grand Ave. bridge on/near existing alignment



- Keep existing pedestrian bridge, no sidewalk north of railroad on new bridge
- No changes to existing 6th Street or the I-70 interchange area

LEGEND:

- = New bridge structures
- = New or revised roadway pavements
- = Medians, traffic islands
- = New or revised signals
- = Stop signs



Alternative 1-B

New 4-lane Grand Ave. bridge on/near existing alignment

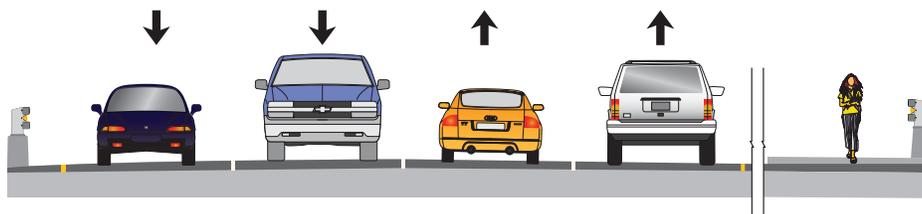


- Remove existing pedestrian bridge to enhance new bridge aesthetics.
- Peds/bikes may be separated by a barrier or space.
- No change to existing 6th Street or the I-70 interchange area

LEGEND:

	= New bridge structures
	= New or revised roadway pavements
	= Medians, traffic islands
	= New or revised signals
	= Stop signs

↑↑
Not to Scale



4 traffic lanes on the bridge +
a sidewalk separated with either barrier or space

Alternative 3-A (Intersection Option A)

SH 82 separated from 6th Street +
Single-lane roundabout for local traffic at 6th/Laurel



LEGEND:

-  = New bridge structures
-  = New or revised roadway pavements
-  = Medians, traffic islands
-  = New or revised signals
-  = Stop signs



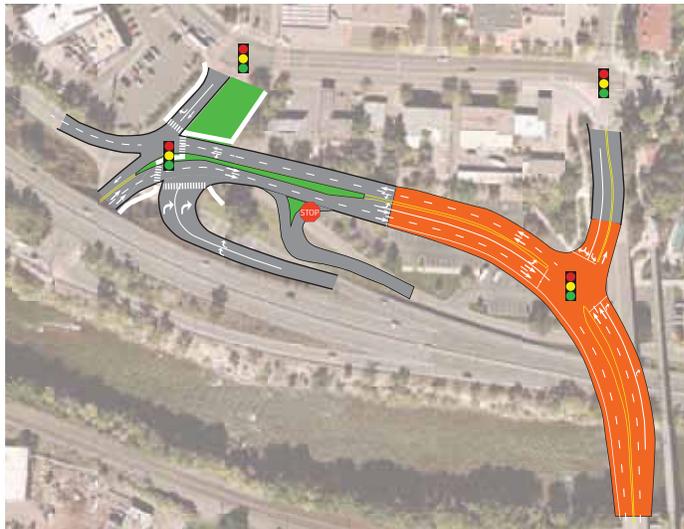
Not to Scale

*(modified based on input received at
June 6 Public Open House)*

- River Road connected with right-turn only access to SH 82
- Full acquisition of Shell station and former Dairy Creme
- See separate graphics for pedestrian and bicycle connections

Alternative 3-D (Intersection Option D)

SH 82 separated from 6th Street +
"T" intersection to 6th/Pine for local access



LEGEND:

- New bridge structures
- New or revised roadway pavements
- Medians, traffic islands
- New or revised signals
- Stop signs

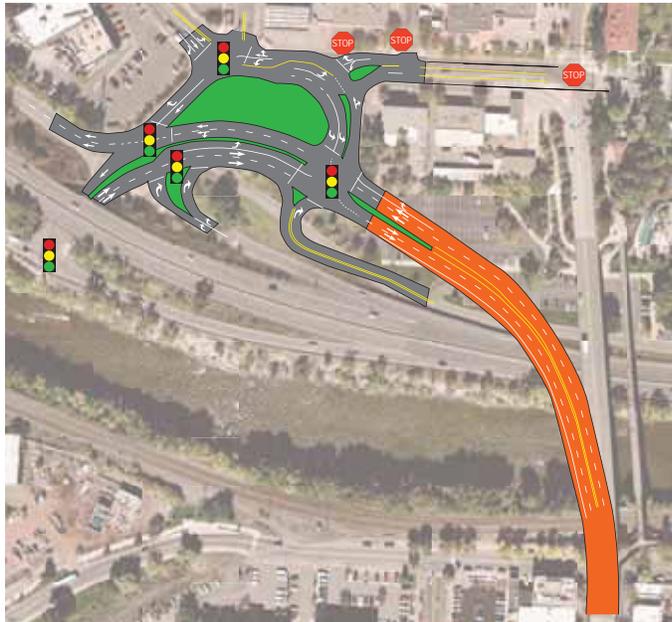


(new since June 6 Public Open House)

- Partial acquisition of Shell station (south side)
- Traffic signal at 6th/Laurel intersection
- Traffic signal at SH 82 and Pine Street
- River Road connected with right-turn only access to SH 82
- See separate graphics for pedestrian and bicycle connections

Alternative 3-E (Intersection Option E)

SH 82 separated from 6th Street +
Traffic signal for local traffic at 6th/Laurel Street



LEGEND:

- █ = New bridge structures
- █ = New or revised roadway pavements
- █ = Medians, traffic islands
- █ █ █ = New or revised signals
- █ = Stop signs



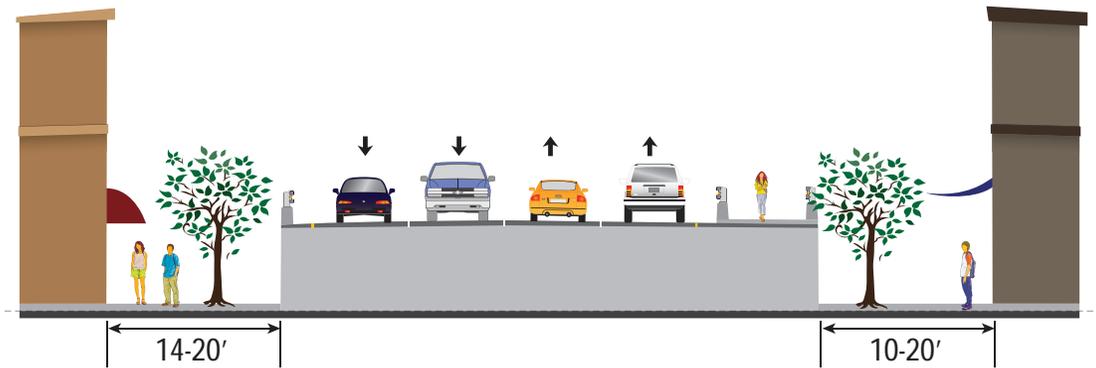
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(new based on feedback from June 6 Open House and coordination with businesses)

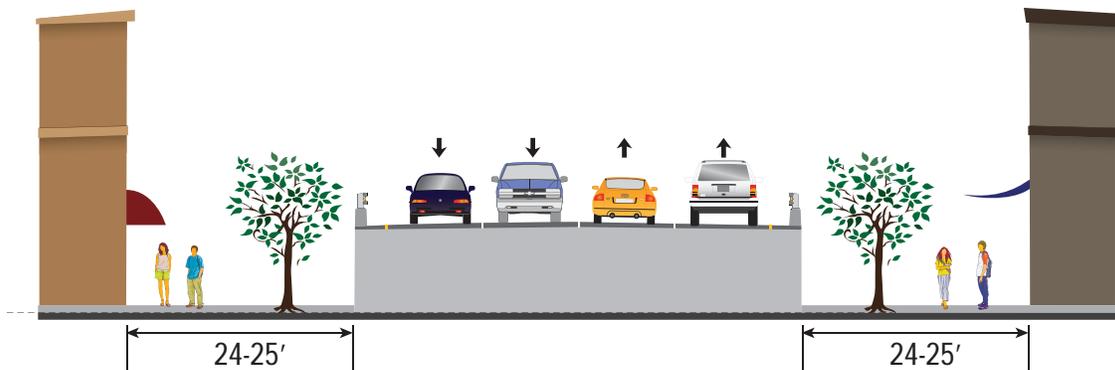
- River Road connected with right-turn only access to SH 82
- Full acquisition of Shell station and former Dairy Creme
- See separate graphics for pedestrian and bicycle connections



South Pedestrian Connection Options for Alternatives 1 and 3



- Attach 8- to 12-foot sidewalk to bridge between the railroad and 8th (11-foot lanes).



- Four 11-foot lanes plus minimal shoulders.

Pedestrian Bridge Options for Alternatives 1 and 3



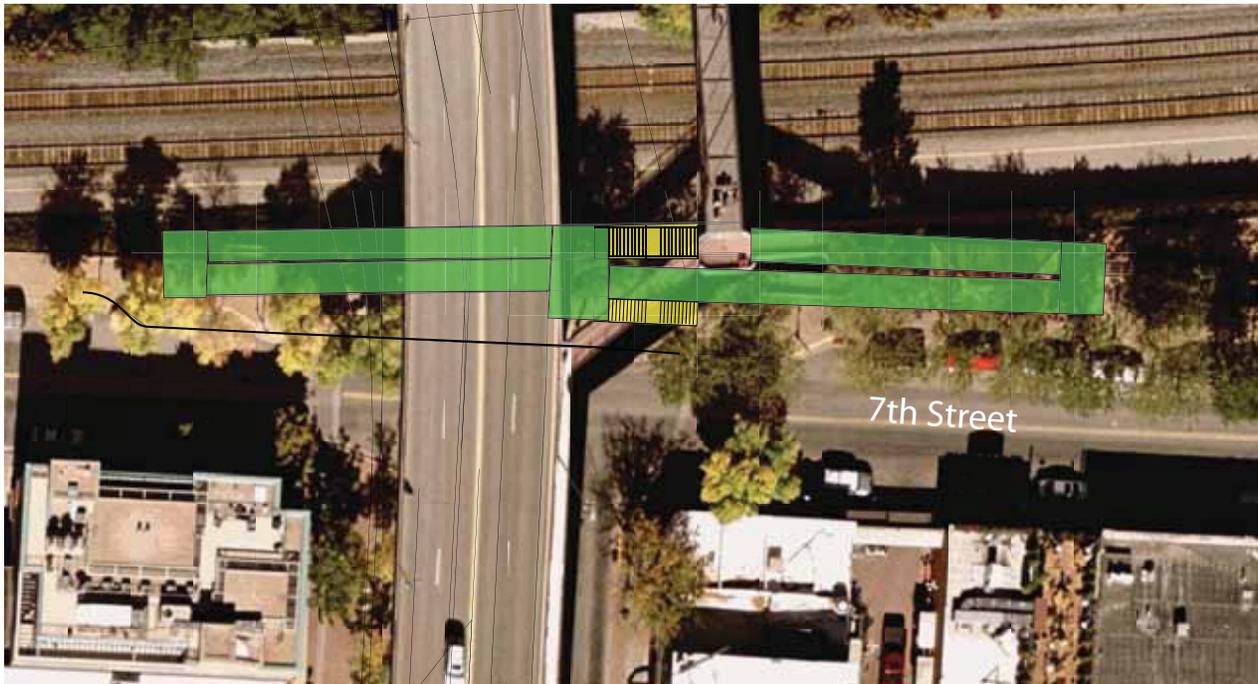
- Minimal widening without sidewalk on new bridge.



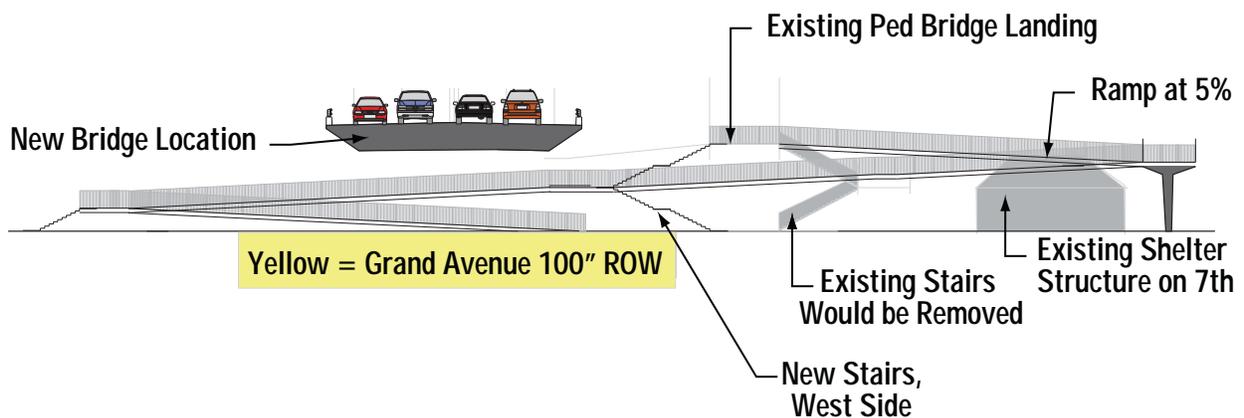
- Minimal widening with 12-foot sidewalk on new bridge (sidewalk width options range from 10 to 12 feet).

South Side Pedestrian Bridge Ramp Option for Alternatives 1 and 3

Plan View of Potential Ramp



Profile of Potential Ramp



View from Downtown

Alternative 1-A



Alternative 1-B

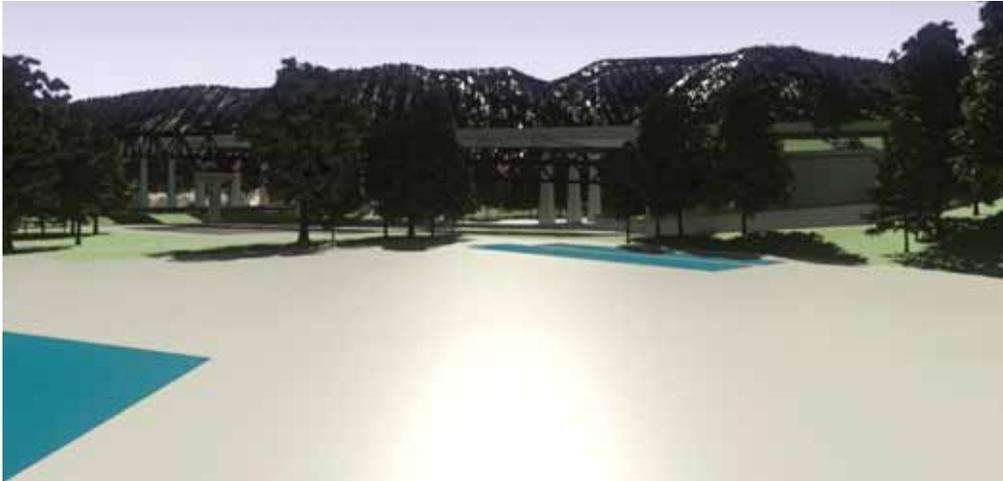


Alternative 3-A

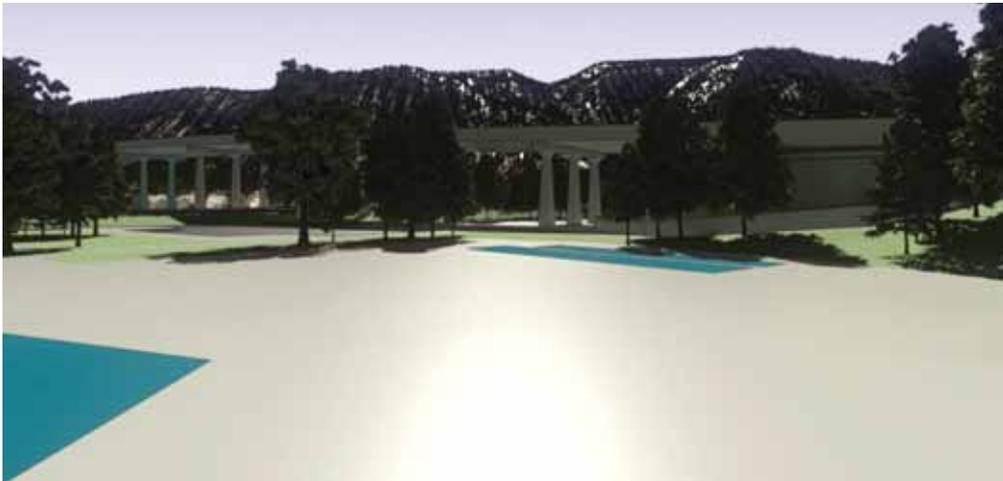


View from Hot Springs (Alternative 1)

Alternative 1-A

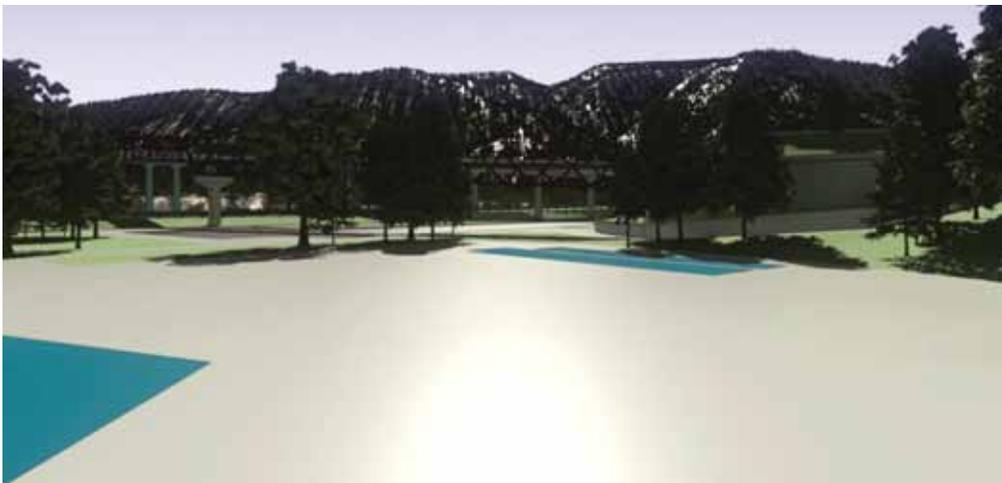


Alternative 1-B

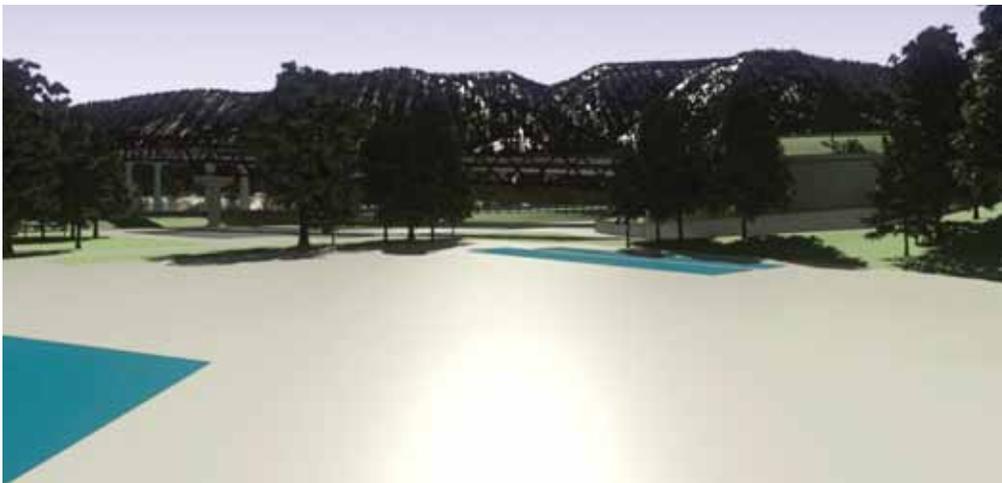


View from Hot Springs (Alternative 3)

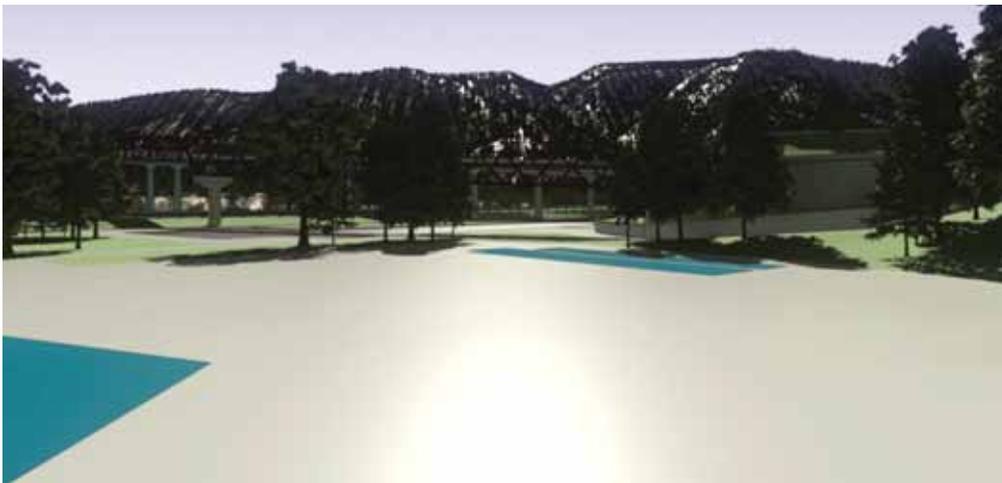
Alternative 3-A



Alternative 3-D



Alternative 3-E



Views from I-70 (Alternative 1)

Alternative 1-A



Alternative 1-B



Views from I-70 (Alternative 3)

Alternative 3-A



Alternative 3-D

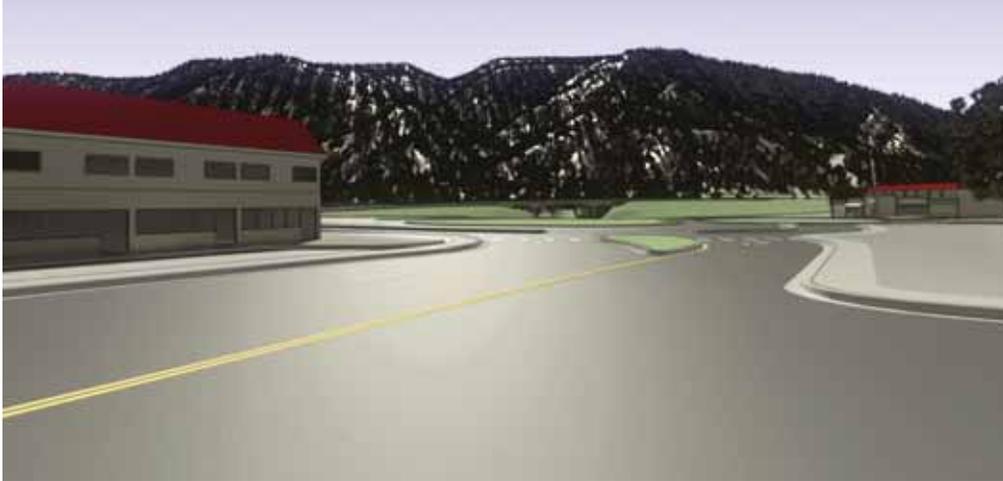


Alternative 3-E



Views from 6th Street

Alternative 3-A



Alternative 3-D



Alternative 3-E



Views from 7th Street (Alternative 1)

Alternative 1-A



Alternative 1-B



Views from 7th Street (Alternative 3)

Alternative 3-A



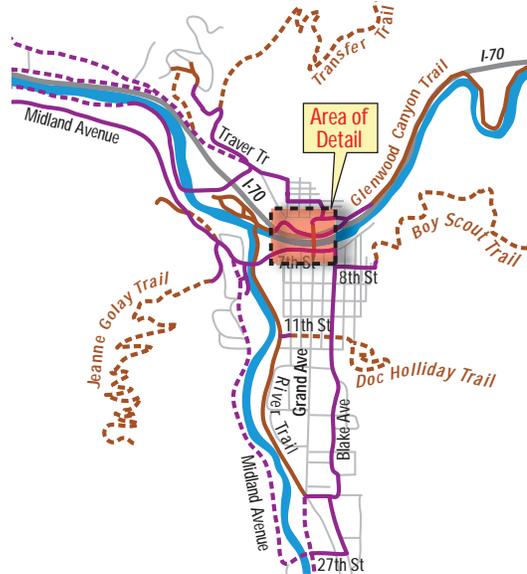
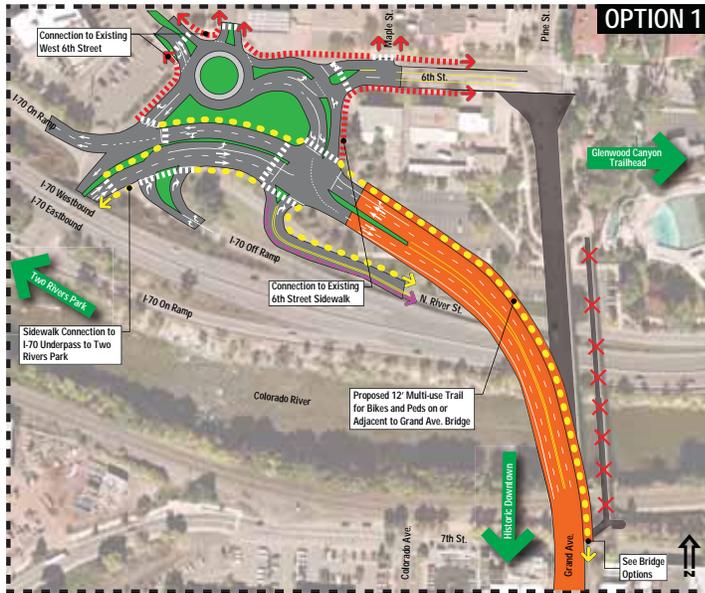
Alternative 3-D



Alternative 3-E



Alternative 3-A Bicycle / Pedestrian Options

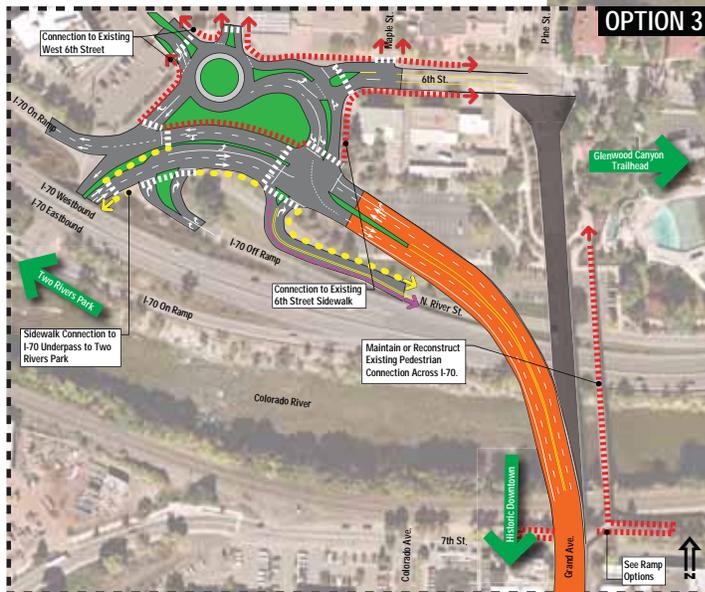
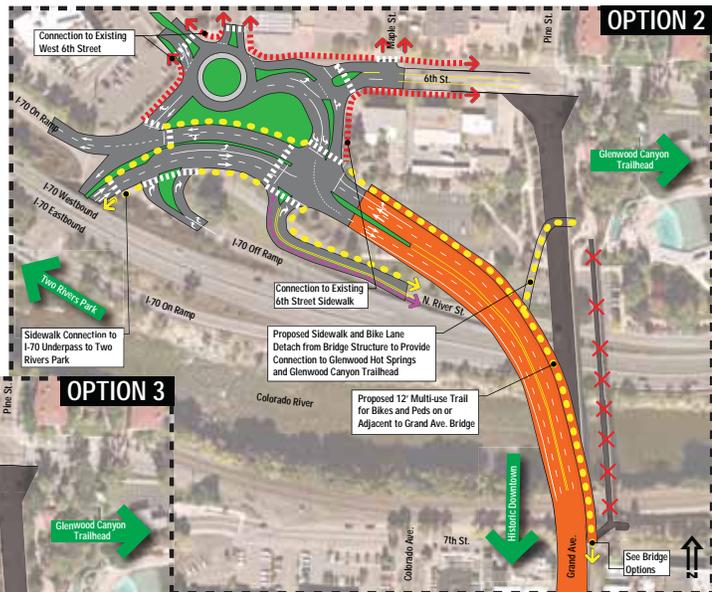


City's Bicycle/Pedestrian Plan
Source: Glenwood Springs Bike & Trail Map

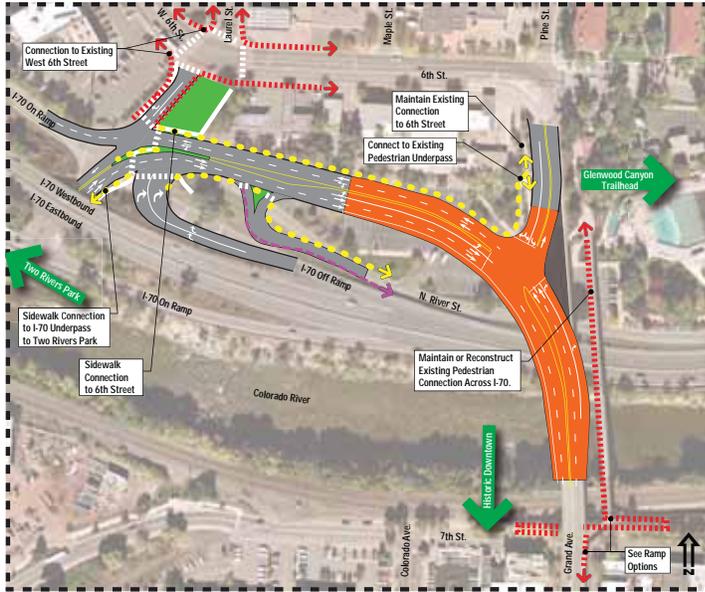
Connections Legend

- Crosswalk
- Pedestrian
- Bicycle Route
- Shared Use Path (Bicycle/Pedestrian)
- Connection to Existing Sidewalk or Trail
- Urban Design Opportunities

* Note: Some Facilities Existing or Planned by City

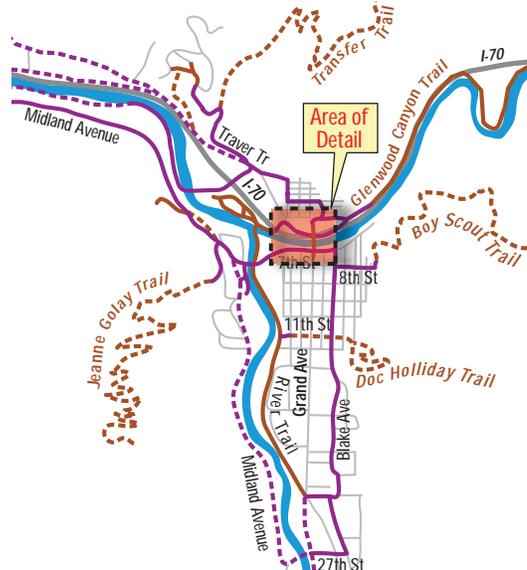


Alternative 3-D Bicycle / Pedestrian Options



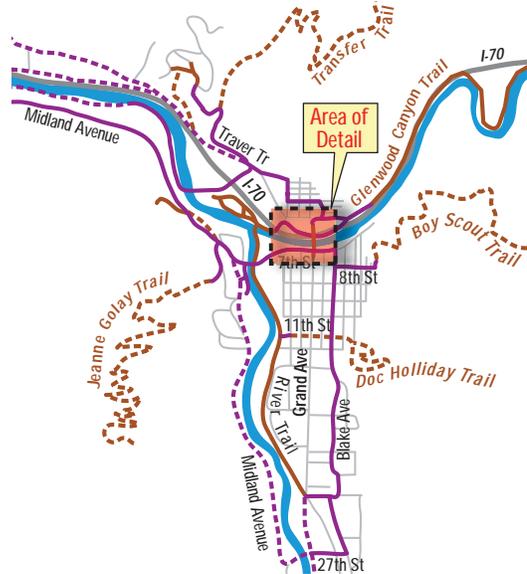
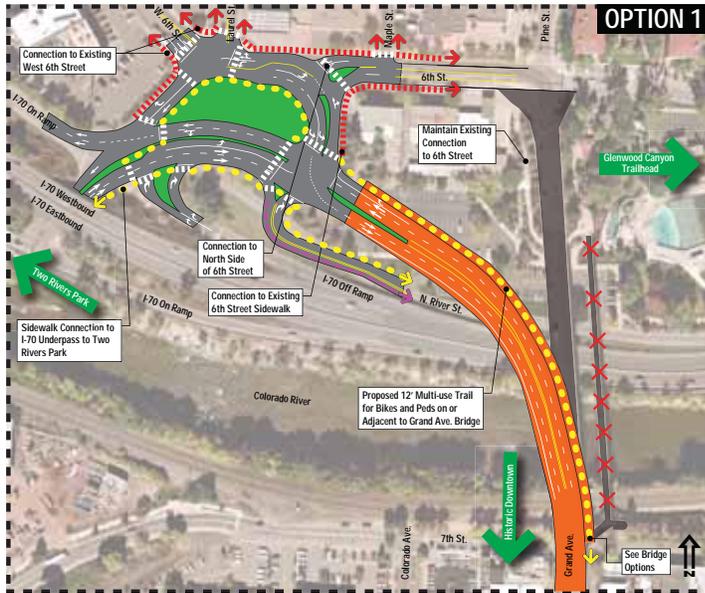
Connections Legend	
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	Pedestrian
	Bicycle Route
	Shared Use Path (Bicycle/Pedestrian)
	Connection to Existing Sidewalk or Trail
	Urban Design Opportunities

** Note: Some Facilities Existing or Planned by City*



City's Bicycle/Pedestrian Plan
 Source: Glenwood Springs Bike & Trail Map

Alternative 3-E Bicycle / Pedestrian Options

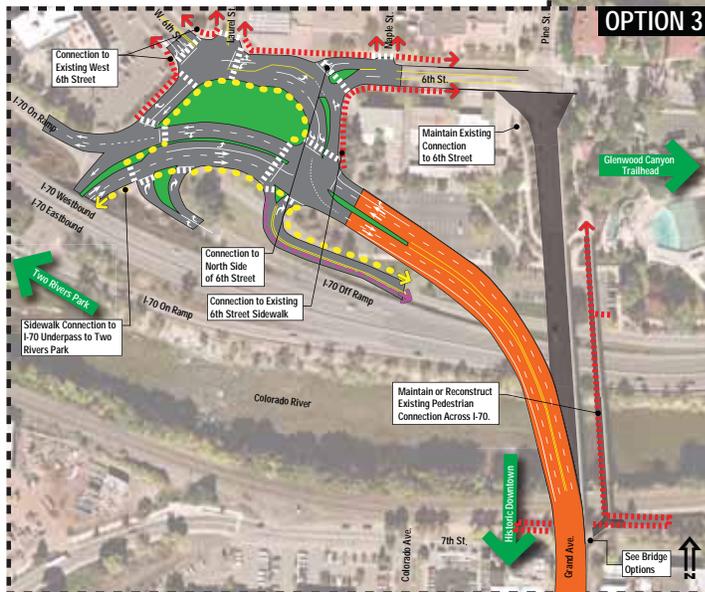
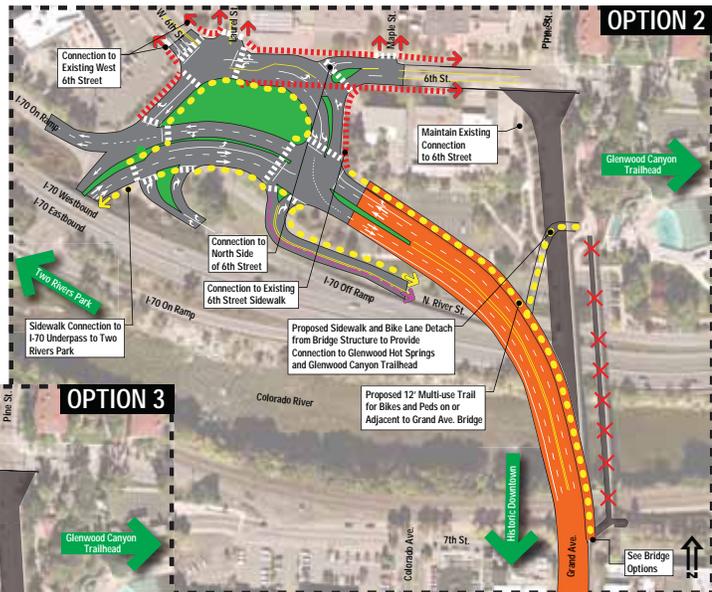


City's Bicycle/Pedestrian Plan
Source: Glenwood Springs Bike & Trail Map

Connections Legend

- Crosswalk
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- Connection to Existing Sidewalk or Trail
- Urban Design Opportunities

* Note: Some Facilities Existing or Planned by City



Other Considerations

Alternative 1-A

- Fewer right-of-way needs
- Likely lowest cost
- Keeps existing traffic patterns
- Keeps existing pedestrian patterns

Alternative 1-B

- Fewer right-of-way needs
- Keeps existing traffic patterns
- Likely lower cost
- Provides better opportunity for bridge aesthetics

Alternative 3-A

- Improved traffic flow near Exit 116
- Best opportunity to improve 6th Street pedestrian connections from US 6 hotels to pool and to downtown
- Reduced construction impacts to traffic and businesses
- Improved turning movements for through SH 82 traffic
- SH 82 and US 6 traffic routed away from 6th Street businesses
- Better long-term redevelopment opportunities for 6th Street area
- Reduced effects to Hot Springs Pool (a historic property)
- Roundabout at 6th and Laurel provides lower traffic delay than Alternative 3-E

Other Considerations

Alternative 3-D

- Improved traffic flow near Exit 116
- Good opportunity to improve 6th Street pedestrian connection
- Reduced construction impacts to traffic and businesses
- Improved turning movements for through SH 82 traffic
- SH 82 traffic routed away from 6th Street businesses
- Better long-term redevelopment opportunities for 6th Street area
- More out of direction travel for connections between I-70 and US 6/West Glenwood
- Reduced effects to Hot Springs Pool (a historic property)
- New intersection on bridge has more visual impacts from Hot Springs area than Alternatives 3-A and 3-E.

Alternative 3-E

- Improved traffic flow near Exit 116
- Best opportunity to improve 6th Street pedestrian connections from US 6 hotels to pool and to downtown
- Reduced construction impact to traffic
- Improved turning movements for through SH 82 traffic
- SH 82 and US 6 traffic routed away from 6th Street businesses
- Better long-term redevelopment opportunities for 6th Street area
- Reduced effects to Hot Springs Pool (a historic property)
- Pedestrian signal at 6th and Laurel provides separate walk signal for pedestrians compared to Alternative 3-A.

We still need your feedback!

The Environmental Assessment process is still ongoing. We will continue to gather input from the public to help the project team define what type of bridge will be built, how it will be built to minimize impacts, and how it should fit into the context of Glenwood Springs





SH 82 GRAND AVENUE BRIDGE

Project Schedule

If the project receives the federally required approvals, construction could begin in late 2014.

Tasks	2011	2012	2013	2014
Initiation & Feasibility	■			
Alternatives	■			
NEPA Documentation		■		
Design			■	
Construction Start				◆

Next Steps for the Project Team

- Preferred Alignment (early September)
- Bridge type and construction phasing with public input (September-December)
- Agency Review of Environmental Assessment (Spring 2013)
- Public Hearing (March-April 2013)
- Decision Document (October 2013)
- Design (approximately 1 year after Decision Document)
- Anticipated construction start (late 2014)

How You Can Keep Informed

- Get on the project contact list (sign in tonight).
- Look for information in the newspaper.
- Visit the project website:
www.coloradodot.info/projects/sh82grandavenuebridge.
- Sign up for GovDelivery updates on the project website.
- Attend future public meetings.
- Sign up for a group presentation (at sign-in table).



Please Give Us Your Comments

- Talk with project staff.
- Fill in a comment form (tonight) or mail to project team - address on comment form:
Joe Elsen, Program Engineer
Colorado Department of Transportation
202 Centennial St.
Glenwood Springs, CO 81601
- Fax your comments to:
Joe Elsen
Fax: 970.947.5133
- E-mail your comments to: Joseph.Elsen@dot.state.co.us
- Submit your comments via the project website:
www.coloradodot.info/projects/sh82grandavenuebridge.





SH 82 GRAND AVENUE BRIDGE

Q. Why doesn't CDOT build a bypass or reroute SH 82 traffic away from the bridge?

A. A bypass would not solve the existing issues on the poor-rated bridge.

The purpose of this current project—and the dedicated funding it will receive—is to repair or replace this poor-rated bridge. Taking traffic off the bridge does nothing to fix the bridge.

The idea of a SH 82 bypass in Glenwood Springs, or rerouting SH 82 traffic from Grand Avenue, has been talked about for years. A bypass would divert so-called 'through' traffic away from the Grand Avenue Bridge—and downtown Grand Avenue. Regardless of whether a bypass or alternate route is constructed in the future, though, the Grand Avenue Bridge—both a vital link and a gateway—requires replacement or repair.

CDOT initiated the SH 82 Grand Avenue Bridge project after funding was allocated from the Colorado Bridge Enterprise to specifically fix the problems with the bridge that led to its "poor" rating. Therefore, the purpose and scope of this particular project is limited to identifying the best solution to provide a safe, secure, and effective connection from downtown Glenwood Springs and SH 82 across the Colorado River and I-70 to the historic Glenwood Hot Springs area and I-70.

The ultimate solution to fix the bridge, either by repair or replacement, will not preclude development of a bypass or alternate route option in the future. CDOT is supportive of, and has participated in, exploring ways to include SH 82 improvements or relocation as part of the local community's long-range plans, and looks forward to working with the City to address mobility improvements and incorporate them into the Statewide Transportation Improvement Plan (STIP).

As further background into the bypass project, A bypass or relocation of SH 82 project has been most recently studied in the SH 82 Corridor Optimization Plan (COP). This is a separate project from the SH 82, Grand Avenue Bridge Replacement project, which is funded with Colorado Bridge Enterprise money. CDOT and the City have worked together on the SH 82 COP, which is focused on SH 82 mobility and has looked into alternatives such as a bypass or relocation of SH 82. The future steps on that project will require an Environmental Impact Study or an Environmental Assessment, and a separate public process.

Along those lines, the City of Glenwood Springs has a recently adopted a Comprehensive Plan that includes the following language:

"Continue Planning for a Relocated Route for SH 82"

"Work with CDOT on the Replacement of the Grand Avenue Bridge"

SH 82

GRAND AVENUE BRIDGE

Thank You
for Attending the
Public Open House

