SH 82
GRAND AVENUE BRIDGE

Welcome

SH 82 Grand Avenue Bridge Environmental Assessment

Public Open House*

April 4, 2012
4:30 P.M. to 7:00 P.M.

**Open House format. No formal presentation.*

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Purpose of Tonight's Public Open House

- Provide project background information.
- Explain the Purpose and Need for the project.
- Explain the Environmental Assessment process.
- Describe the responsibilities of the project working teams.
- Explain bridge issues and concerns.
- Describe the evaluation process.
- Describe the initial alternatives.
- Answer questions about right-of-way.
- Show how the public can participate in the process.
- Ask for public input on what is important about the elements of the initial alternatives.

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 will fully consider 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".*

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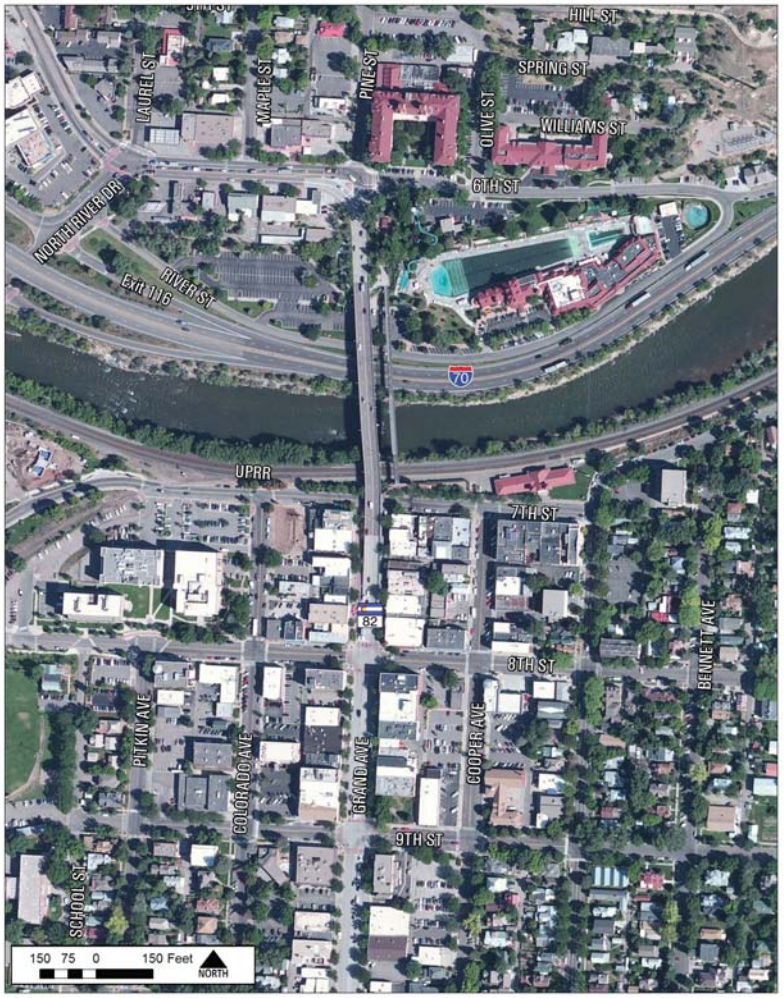
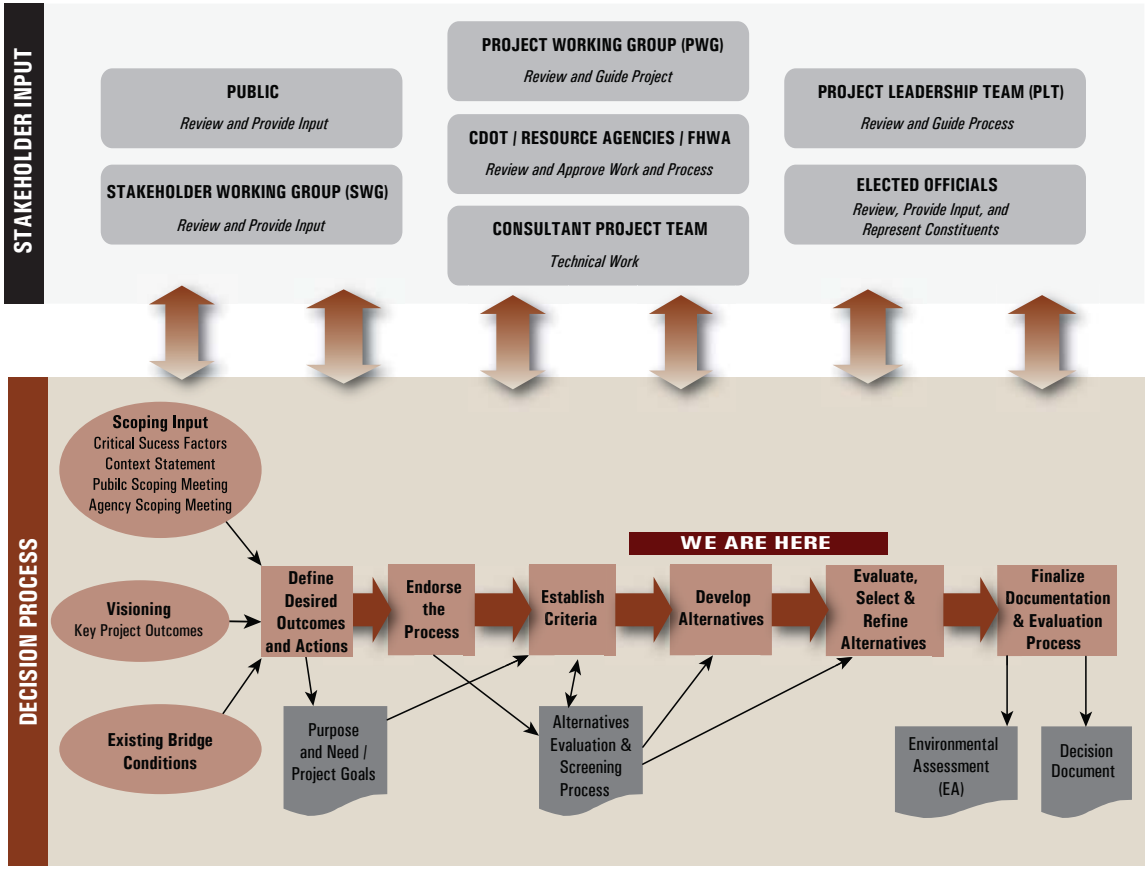
Vicinity Map



Stakeholder Input to Decision Process

Developing a Preferred Alternative involves input from various stakeholders and the decision process summarized below.



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Stakeholder Input - Roles and Responsibilities

Project Teams/Groups	Roles/Responsibilities
Project Leadership Team (PLT) Purpose: To guide the Environmental Assessment (EA) process by making sure the study team is following the right process to complete the study.	Meets monthly - 8 meetings held to date.
Multidisciplinary team of community representatives with backgrounds in planning, design, landscape, architecture, operations, environment, public process, and communication. **Members** • CDOT • FHWA • City of Glenwood Springs • Colorado Bridge Enterprise • Garfield County • Eagle County • Pitkin County • Glenwood Chamber of Commerce • Glenwood Hot Springs • Historic Preservation Commission • Downtown Development Authority	• Champion process • Identify actions and decisions to establish goals • Participate in Visioning Session • Assist in staffing of other teams as needed • Enable and facilitate decision-making • Implement steps needed to resolve issues • Facilitate formal actions required by Councils or Boards
Elected Officials Purpose: To provide input to the decision-making process and communicate project information to the agencies' constituents.	5 meetings held to date.
Members • Glenwood Springs City Council • Garfield County Board of County Commissioners • Elected Officials Transportation Commission • Others Boards, if necessary	• Evaluate and confirm recommendations • Provide City and County input into project • Provide opportunity for public to provide input
Project Working Group (PWG) Purpose: To execute the process by addressing the technical issues like the bridge condition, traffic analysis, and environmental analysis; also to make recommendations as alternatives are developed, evaluated, and screened.	Meets monthly - 6 meetings held to date.
Multidisciplinary technical team of agency representatives and consultant team. **Members** • CDOT • FHWA • City of Glenwood Springs • Colorado Bridge Enterprise • Consultant Team	• Execute process • Perform technical tasks • Perform environmental analysis • Conduct traffic analysis • Develop design • Provide required input at appropriate times • Document concurrence when achieved
Stakeholder Working Group (SWG) Purpose: To provide input and feedback on the EA process and the development of alternatives.	Visioning Workshop and 2 meetings held to date.
Diverse group of representatives of the community, businesses, and local agencies. Formed after the Visioning Workshop. **Members** • Community-based and varied as study progresses • PLT and PWG • Consultant team	• Provide input prior to project development milestones • Provide feedback to the study team on process

Project Teams/Groups	Roles/Responsibilities
General Public/Stakeholders Purpose: To provide input related to concerns and ideas about the project and alternatives development.	Public Scoping Meeting, Public Open House, and 14 stakeholder meetings held to date.
• General public • Business groups (Downtown Development Authority Glenwood Springs Chamber Resort Association, Downtown Partnership) • Special interest groups (rafting businesses) • Individual stakeholders • Other small group stakeholders	• Provide input • Raise issues
Resource Agencies Purpose: To provide scoping input and recommendations to the EA on specific resources that could be impacted by the project.	Agency Scoping Meeting and 2 (6 agencies) meetings held to date.
Agencies • Advisory Council on Historic Preservation (ACHP) • Bureau of Land Management (BLM) • CDOT Division of Transit and Rail • Colorado Department of Public Health and Environment (CDPHE) • Colorado Division of Natural Resources (CDNR) • Colorado Parks and Wildlife (formerly CDOW) • Colorado Historical Society (CHS) • Colorado Public Utilities Commission • Environmental Protection Agency (EPA) • Federal Railroad Administration (FRA) • Frontier Historical Society • Glenwood Springs Community Development Department • Glenwood Springs Fire Department • Glenwood Springs Parks and Recreation Department • State Historic Preservation Office (SHPO) • U.S. Army Corps of Engineers (USACE) • U.S. Fish and Wildlife Service (USFWS) • USDA Forest Service (USFS)	• Identify resources to be evaluated • Sign off on alternatives screening • Provide environmental clearances, such as historic property effects and effects to wetlands and waters of the US
Issues Task Forces Purpose: To provide input on specific issues as needed.	Visioning Workshop Planning Fask Force - 4 meetings held to date.
Multidisciplinary team(s) could be geothermal issues, downtown business impacts, historic resources, visioning **Members** • Affected stakeholders, technical experts, and Jacobs team	• Work through elements of an identified issue • Provide recommendations

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Context Statement
(Prepared by Project Leadership Team)

The Grand Avenue bridge over the Colorado River, Interstate 70 and the railroad tracks, connects north and south Glenwood Springs, I-70 and State Highway 82, and the historic districts of downtown and the Glenwood Hot Springs.

The bridge stands as a gateway to the city of Glenwood Springs, Glenwood Canyon, the Roaring Fork Valley, and Colorado's western slope communities. It serves local, regional and state travel, local commuters, emergency response, bicyclists and pedestrians.

The soaring walls of Glenwood Canyon; the rich history of Glenwood Springs, built at the confluence of the Colorado and Roaring Fork Rivers; mining; tourism and recreation define a splendid and vivid context for the Grand Avenue bridge.

Critical Success Factors

- Meet current design standards
- Safety
- Pedestrian, bicycle, and ADA access
- Iconic structure
- Promote appropriate speeds
- Connection to 6th St.
- Minimize construction impacts
- Solve problems into the future
- Provide for activities and vibrant St. life under the bridge
- Avoid and minimize environmental impacts
- Accommodate traffic flow and demand
- Design for sustainability
- Looks like it grew out of the history of Glenwood Springs
- Positive economic impact, short and long-term
- Invigorates activity on Wing St.
- Accommodates traffic flow on I-70
- Maintain and enhance recreation on the river
- Affordable
- Doesn't impact aquifer and hot springs
- Source of community pride
- Engaged public and community

Key Project Outcomes
(Developed at Visioning Workshop)

- Minimize impacts to businesses.
- Balance duration and extent of closures for construction.
- Gateway/view from all perspectives important.
- Bridge needs to be integrated into community fabric/ infrastructure.
- Incorporate human element—streetscape.
- Accommodate pedestrians and bikes.
- Harmonious with natural environment and local materials.
- Provide separated pedestrian experience.
- Minimize piers in river and impacts to I-70.
- Accommodate local and regional traffic.
- Create an attraction—long term and during construction.
- Provide strong information/media coverage – "open for business".
- Design to manage speed and livability and minimize noise.
- Consistent with local transportation and land use plans.
- Partner with City and Stakeholders to address impacts and explore opportunities.
- Look for opportunities to enhance areas at ends of bridge.
- Consider staging and construction traffic.
- Strive for the best design and value.

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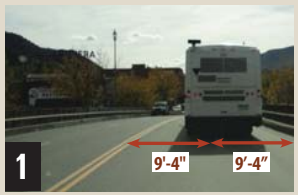
Existing Bridge Conditions

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.

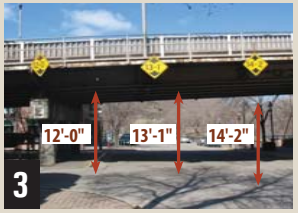
Geometric Deficiencies



The bridge is too narrow.*


Poor ADA and bike access to pedestrian bridge.

Vertical clearance to railroad.



Substandard vertical clearance at 7th St.*

Substandard horizontal clearance at I-70.*


Piers force I-70 to have narrow shoulders.

**Items that contribute to low sufficiency rating.*

Potential for Washout


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.

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Draft Project Purpose

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

Draft Project Needs

The Grand Avenue Bridge serves as a vital link of SH 82 across the Colorado River, I-70, and the Union Pacific Railroad, connecting downtown Glenwood Springs with the historic Hot Springs, Hotel Colorado, and I-70. The importance of the bridge to local and regional transportation underscores the following transportation needs:

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

   The Grand Avenue Bridge connects the Hot Springs pool and Hotel Colorado area to the core commercial corridor located south of the bridge along Grand Avenue. However, the bridge's condition impairs this connection for a variety of transportation users. For example, very substandard lane widths (9 feet, 4 inches) and the absence of shoulders across the bridge pose an issue for RFTA's existing bus service, emergency service vehicles, and other large vehicles, forcing these vehicles to use both lanes. In addition, the absence of shoulders on the bridge makes for unsafe bicycling. The lack of nearby alternate routes compounds these problems. Future traffic increases will worsen the bridge's ability to provide connectivity.

2. **Address the functional and structural deficiencies of the bridge to improve public safety, including emergency service response, and reliability as a critical transportation route.**

   The aging and poor condition of the bridge increases the risk of bridge closure. The location of some existing bridge piers adjacent to I-70 increases this risk, since these piers are vulnerable to large vehicle collisions. Any closure would have major consequences to the travelling public. Users of the bridge, which include local and through traffic, commuters, and emergency service vehicles, would be required to use lengthier alternative routes during bridge closure. Alternate routes range from approximately five miles for detours through West Glenwood, to 141 miles for an I-70 closure.

Draft Project Goals

Project goals supplement the project Purpose and Need. These goals help differentiate between the transportation improvements identified to meet the transportation needs and therefore help guide the alternatives development and screening process. While the needs must be addressed by the project, the goals provide a framework by which the proposed improvements can exceed those requirements. The goals identified for this project are to:

(a) Meet **design standards** as practical to improve connectivity between the south side of the Colorado River (downtown Glenwood Springs), and the north side of the river (historic Glenwood Hot Springs area and I-70).

(b) Maintain **consistency with city planning** regarding transportation and land use.

(c) Accommodate **multimodal transportation** including buses, pedestrians, and bicycles.

(d) Meet transportation **safety** needs of all users – auto, truck, bus, pedestrian, and bicycle.

(e) Reduce and **minimize construction impacts** to the businesses, transportation users, and visitors.

(f) Provide **effective access** for existing and future economic activity.

(g) **Avoid and minimize environmental impacts** to scenic, aesthetic, historic, and natural resources.

(h) Provide **practical and financially realistic** transportation improvements for the 2035 planning horizon and a structure that will be sound for a minimum of 30 years.

(i) Maintain or improve **transportation (traffic and ped/bike) operations** in the project area.

(j) Incorporate **sustainable** elements into the design.

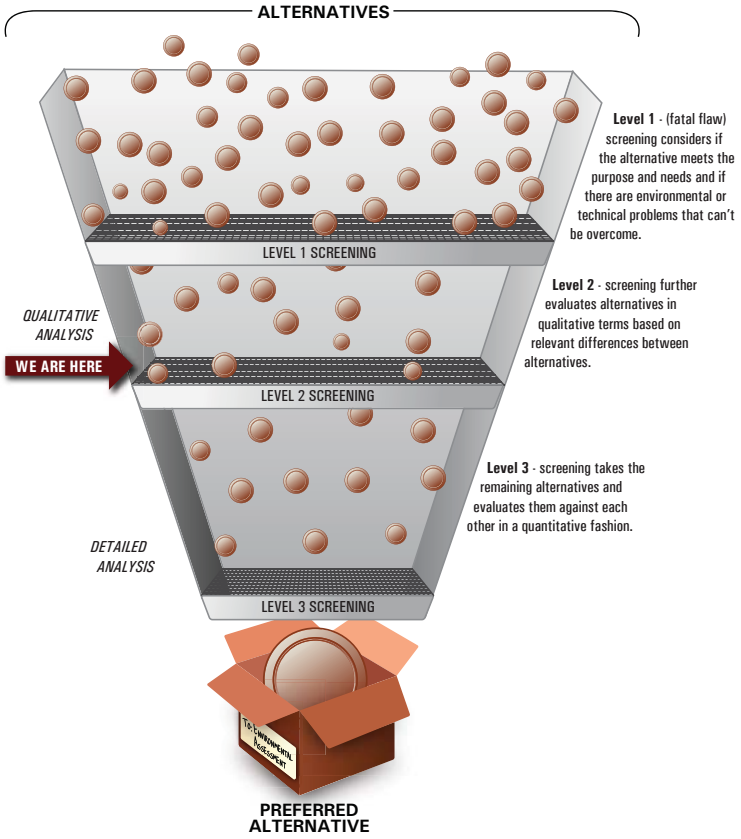
(k) Provide an **aesthetically appropriate** solution that is in harmony with the context of the natural and built environment.

(l) **Avoid or minimize proximity, economic and right-of-way impacts** and relocations to adjacent properties.

(m) Incorporate **Context Sensitive Solutions (CSS)** into the planning and design including community-based issues such as urban design and aesthetics.

Alternatives Screening Process

An alternatives development, evaluation and screening process will determine the Preferred Alternative. This process involves three levels of screening.



No-Action Alternative

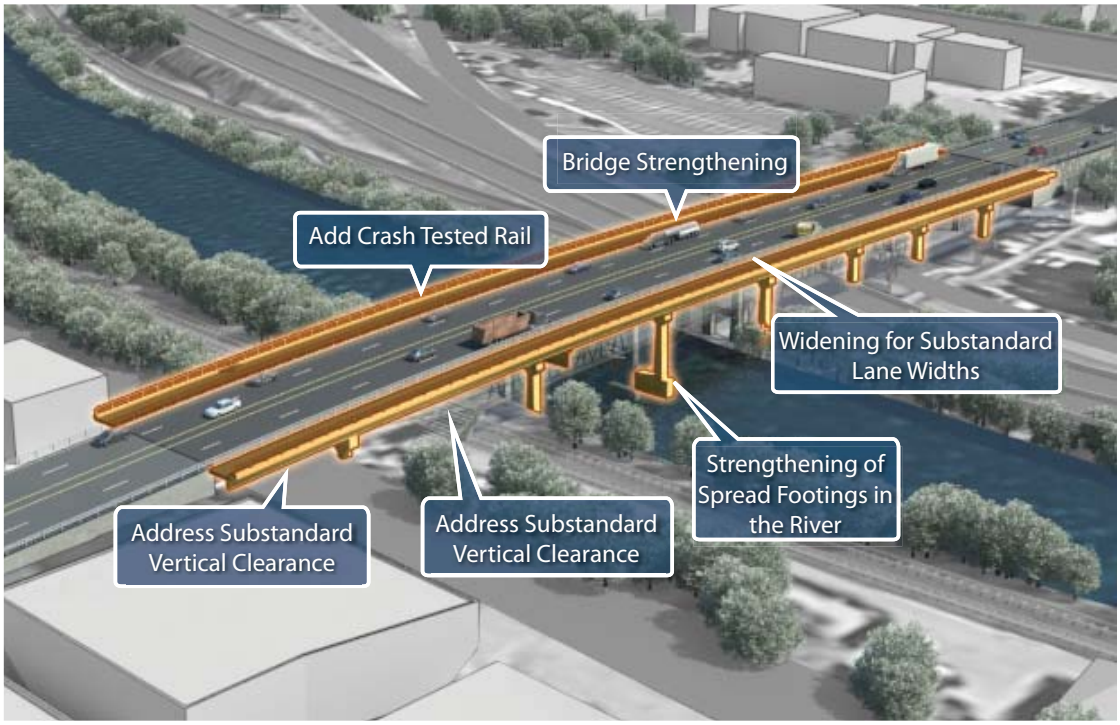
For the EA, the No-Action Alternative includes any future, programmed transportation improvements within and adjacent to the study area. These improvements would be made whether or not any improvements are made as part of this project.

Based on review of the following documents, there are no projects in the EA study area that currently have committed funding.

- CDOT, 2008 – *2013 State Transportation Improvement Program* (STIP)
- Intermountain Transportation Planning Region, *2035 Regional Transportation Plan*
- City of Glenwood Springs, *Glenwood Springs Comprehensive Plan*, adopted 2011

Because there are no additional projects to include in the No-Action Alternative for this EA, it will be represented as the existing transportation network. The No-Action Alternative will be fully evaluated as one of the alternatives in the EA process. In addition, the No-Action Alternative serves as a baseline transportation system to compare against any Build Alternatives as they are evaluated in terms of traffic volumes, safety, and capacity.

Rehabilitation Alternative



Rehabilitation would likely include the following elements to meet current engineering standards:

- Replacing the existing bridge deck.
- Replacing the existing bridge railings.
- Adding girders to provide wider lanes.
- Replacing at least 30% of the existing steel girders.
- Strengthening the remaining girders.
- Strengthening and widening the existing piers.
- Adding structural scour mitigation to the piers in the river.
- Raising the bridge to achieve vertical clearance requirements (raise about 400 feet of the length).
- Adding vehicular impact protection for the piers adjacent to I-70.
- Improving the pedestrian access to the pedestrian bridge on the southeast corner.

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Development of Replacement Alternatives

Families of Alternatives

To help develop, clarify, and screen differences between alternatives, the study team began with "families" of alternatives:

Alternative Alignments

Options for routing a bridge that connects that connects downtown Glenwood Springs across the Colorado River and I-70 to the historic Glenwood Hot Springs Area.

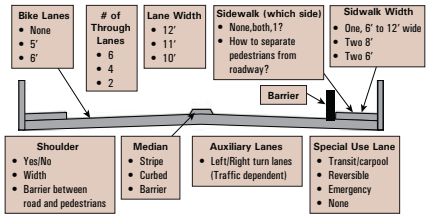
- Look at potential alignments exclusive of number of lanes and other cross-section elements.
- Vertical profile, intersection configuration, bridge type, and aesthetics are future considerations.

Cross-Section Elements

Items and dimensions that would be part of a replacement bridge cross-section.

- North of 7th (over railroad, river, I-70, etc.). More flexibility for additional width.
- South of 7th (between existing buildings). Less flexibility for additional items and width.

Cross Section Options



Vertical Alignment

Options to raise or lower vertical profile compared to existing.

- Elevate as much as possible to open up area under the bridge for public use.
- Cross the railroad at or below grade.

Future Considerations

These items will be added to alternatives and considered later in the screening process.

- Bridge Landing Points/Intersections
- Bridge Pier Locations
- Bridge Types
- Constructability/Phasing
- Environmental Considerations
- Urban Design
- Other Enhancements
- Other Design Details

Level 1 (Fatal Flaw) Screening Criteria

- Does the alternative meet the Purpose and Need?
  - Provides connectivity between downtown and historic Glenwood Hot Springs Area & I-70.
  - Provides safe, dependable route.
  - Provides connection for local and regional traffic.
  - Allows efficient emergency response.
- Are there environmental or technical problems that can't be overcome?

Level 1 Screening

Alignments Screened Out

- Alignments that don't connect to existing streets in downtown (i.e., that connect to alleys, create new alignments) because:
  - Does not meet Purpose and Need.
  - Would have excessive impacts.
- Alignments west of Colorado Ave. or east of Cooper Ave. because:
  - Does not meet Purpose and Need to connect downtown to Glenwood Hot Springs Area & I-70.
- Alignments that start at Exit 116 and go straight south because:
  - Does not meet Purpose and Need to connect downtown to Glenwood Hot Springs Area & I-70.
  - Not physically possible – cannot get from Exit 116 up and over railroad.
  - Excessive costs — would require rebuilding I-70 and ramps to create reasonable grades.

Cross-Sections Screened Out

- Cross-sections on SH 82 with only two through lanes because:
  - Does not meet Purpose and Need to improve connectivity.

Vertical Profiles Screened Out

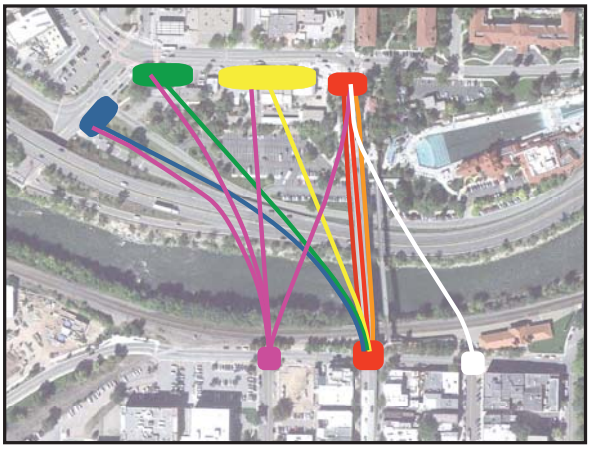
- Vertical alignments that cross the railroad at grade because:
  - Does not meet Purpose and Need to improve connectivity.
  - Safety issues at railroad crossing.
  - Delays on SH 82 would be subject to closure for trains.
  - Likely would not be allowed by railroad or by Colorado Public Utilities Commission.
- Vertical alignments that go below the railroad because:
  - Excessive costs and impacts.
  - Potential for flooding.

Level 2A Evaluation - Alignments

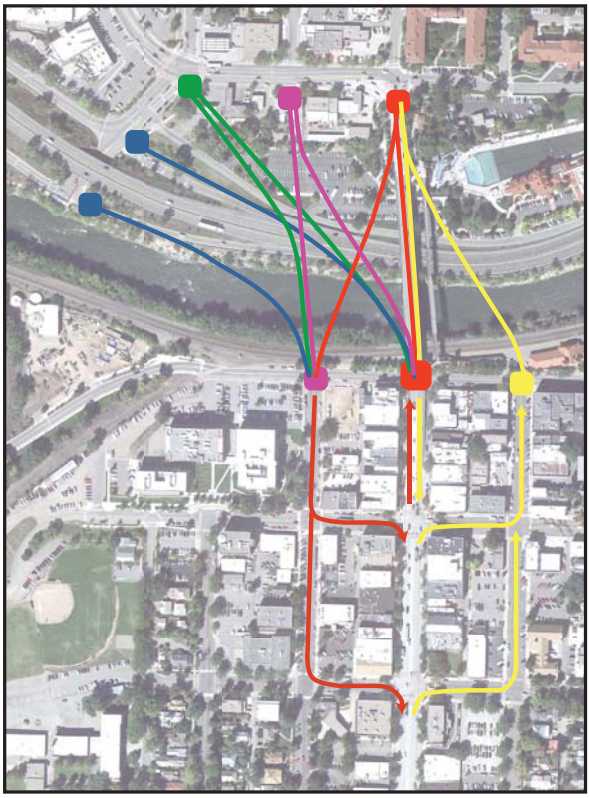
Alignments Evaluated

The alignments evaluated would connect logical points on the north and south sides of the river. They were either Single Bridges (one bridge structure with 2 lanes in each direction) or Couplets (two separate paired structures, each with 2 lanes in each direction).

Single Bridge



Couplets

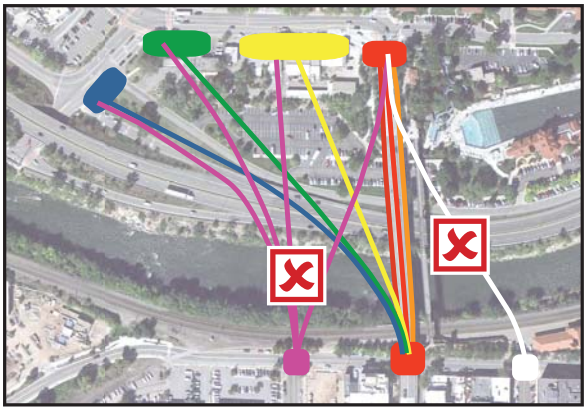


- Why are different alignments or couplets being considered?
  - Phasing, allows most of new bridge to be built away from existing.
  - May orient highest traffic flow to/ from I-70.
  - Couplets reduce by half or eliminate SH 82 traffic volume from Grand Ave. downtown.
  - Opportunity to redevelop areas of town based on new road alignments.
- What are issues with moving the bridge alignment or having couplets?
  - Changes traffic, parking, and access in project area.
  - May require right-of-way acquisition.
  - Couplets would move traffic closer to residential areas.

Level 2A Screening - Alignments

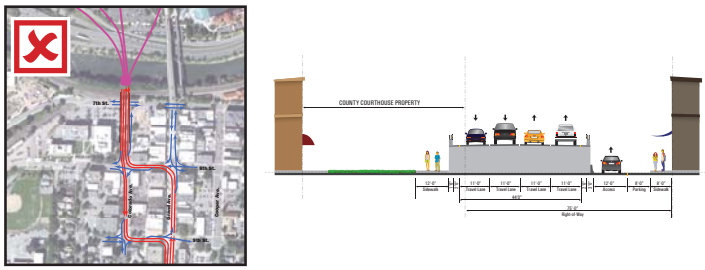
Alignments Screened Out

Single Bridge

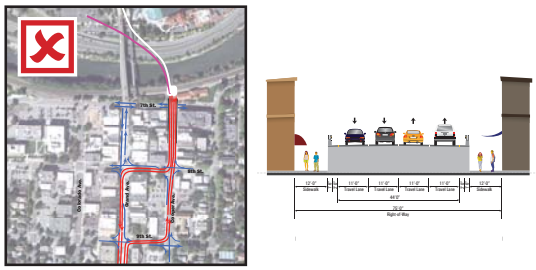


- Single bridges using Cooper Ave. or Colorado Ave. because:
  - 75 feet of existing right-of-way on Cooper Ave. and Colorado Ave. is narrower than on Grand Ave. (100 ft).
  - All SH 82 traffic making multiple turns reduces traffic capacity.

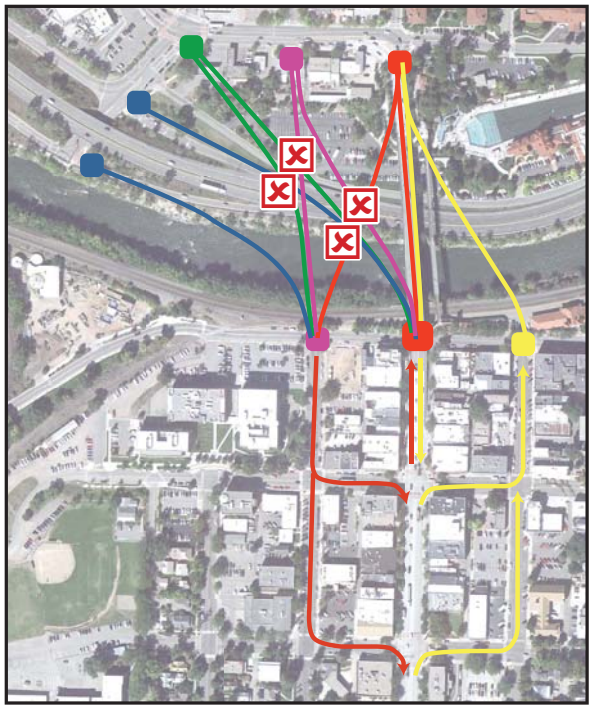
Colorado Ave. Alignment and Cross Section - Screened Out



Cooper Ave. Alignment and Cross Section - Screened Out



Couplets



- Couplet pairs that "criss-cross" each other because:
  - Cannot be achieved vertically.
- Couplets that pair Grand Ave. southbound plus Cooper Ave. northbound because:
  - Comparatively worse impacts to Cooper Ave. businesses.
  - Comparatively worse impacts to historic properties.

Level 2A Screening - Cross-Sections South of 7th

Cross-Section Elements Screened Out and Why

Lane Width
- 12′
- 11′
- [x] 10′

Screening Results:
- 10′ Lanes do not meet design criteria.
- Existing Grand Avenue lanes at least 11′.

Bike Lanes
- None
- [x] 5′
- [x] 6′

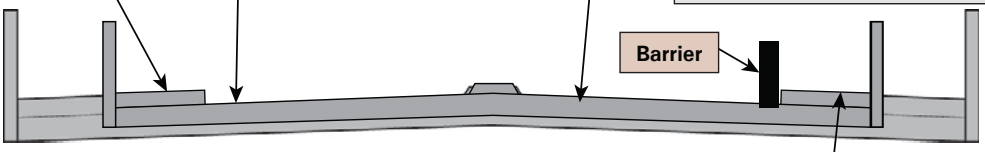
Screening Results:
- There are no bike lanes currently on Grand Avenue or on the north side of bridge, none planned.
- The additional width would cause other impacts downtown.

Shoulder
- Yes/No
- Width
- Barrier between road and pedestrians

Screening Results:
- 2′ minimum recommended, curve design, safety, sight distance requirements, defer to later.

Special Use Lane
- Transit/carpool [x]
- Emergency
- Reversible
- None

Screening Results:
- None existing or none planned on either end of bridge.



# of Through Lanes
- [x] 6
- 4
- [x] 2

Screening Results:
- 2 Lanes would not improve connectivity.
- 6 lanes does not match cross section at either end.
- No committed plans to continue 6 lanes through town.

Median
- Stripe
- Curbed
- [x] Barrier

Screening Results:
- Median barrier inconsistent with context and other urban segments of SH 82.
- May be sight distance issue on curved bridge.
- Low speed does not require barrier separation.

Sidewalk
- None
- One, 6′ to 12′ wide
- [x] Two 8′
- [x] Two 6′

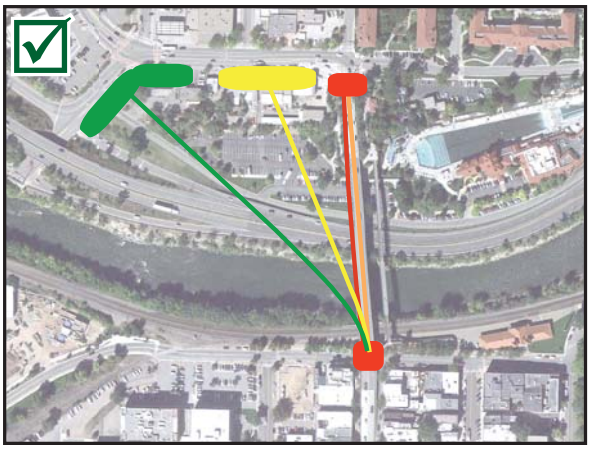
Screening Results:
- The additional width would cause. other impacts downtown and displace room for other improvements.

Level 2A Screening - Alignments

Alignments to be Evaluated for Level 2B

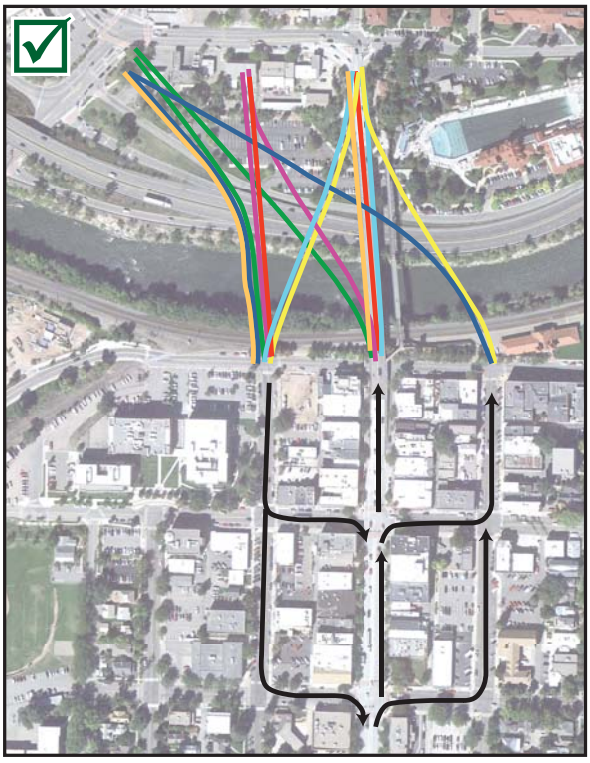
After Level 2A Screening, 11 alignment alternatives were carried forward with the No-Action and Rehabilitation Alternatives.

4-Lane Two-Way Bridge Alternatives



- Alternative 1 — Align to Pine
- Alternative 2 — Align to Maple
- Alternative 3 — Align to Exit 116 / Laurel / 6th
- Alternative 4 — Align to Laurel & Pine (2 bridges)

One-Way Couplet (Paired) Alternatives



Grand Ave. and Colorado Ave.

- Alternative 5 — Colorado & Laurel - Grand & Pine
- Alternative 6 — Align Colorado & Grand with Pine
- Alternative 7 — Align Colorado & Grand with Maple
- Alternative 8 — Colorado & Maple - Grand & Pine
- Alternative 9 — Align Colorado & Grand with Laurel

Cooper Ave. and Colorado Ave.

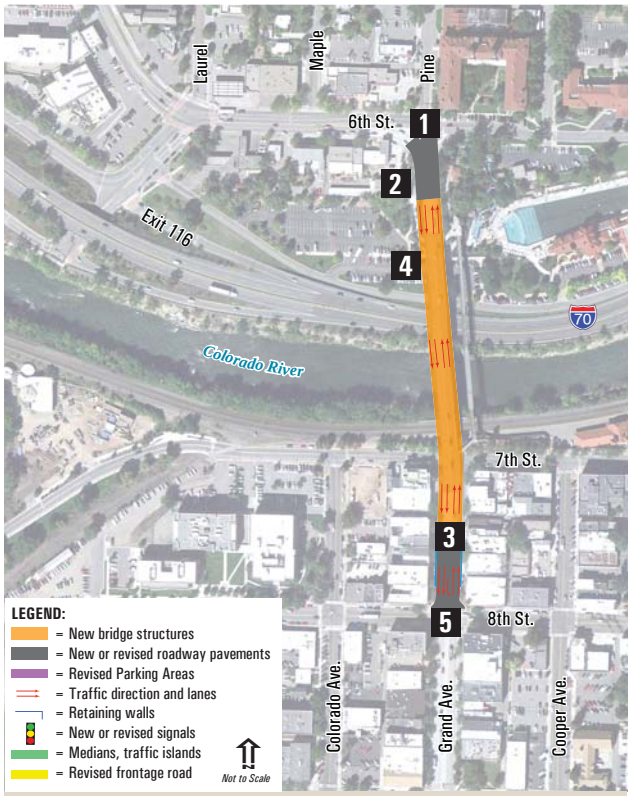
- Alternative 10 — Align Colorado & Cooper with Pine
- Alternative 11 — Align Colorado & Cooper with Laurel

SH 82
GRAND AVENUE BRIDGE

Level 2B Alternatives - Alignments

4-Lane Bridge on the South End of Grand Ave.

Alternative 1
Align to Pine



1. Keep existing intersection at 6th & Pine, possible minor improvements.
2. Potential for no or minimal right-of-way acquisition at north end.
3. See potential 4-Lane Grand Ave. Cross-Section options.
4. Enough clearance for pool parking to remain under structures.
5. Would need 5th lane southbound near 8th Street for left turns.

Alternative 2
Align to Maple

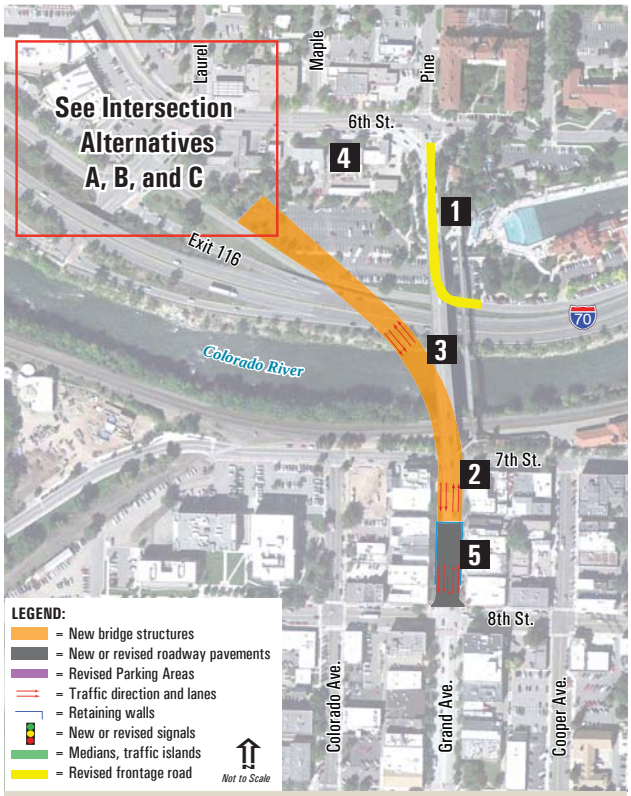
1. Potential realignment of North River Drive in location of existing bridge.
2. New intersection at Maple would replicate existing intersection at 6th and Pine.
3. Would likely require minimum of two business acquisitions near Maple.
4. See potential 4-Lane Grand Ave. Cross-Section options.
5. Curve would require widening of bridge for shoulder/sight distance.
6. Enough clearance for pool parking to remain under structures.
7. Would need 5th lane southbound near 8th Street for left turns.

SH 82
GRAND AVENUE BRIDGE

Level 2B Alternatives - Alignments

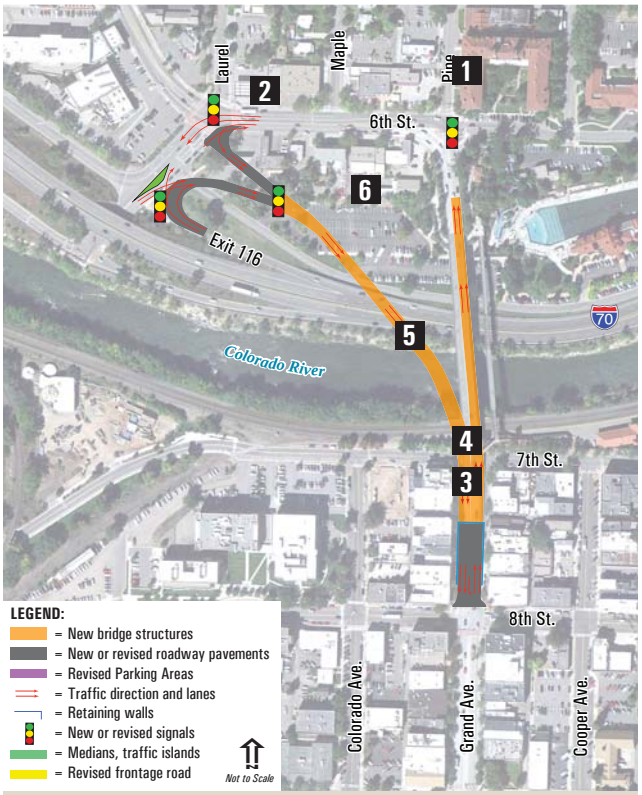
4-Lane Bridge on the South End of Grand Ave.

Alternative 3
Align to Exit 116 / Laurel / 6th



1. Potential realignment of North River Drive in location of existing bridge.
2. See potential 4-Lane Grand Ave. Cross-Section options.
3. Curve would require widening of bridge for shoulder/sight distance.
4. Enough clearance for pool parking to remain under structures.
5. Would need 5th lane southbound near 8th Street for left turns.

Alternative 4
Align to Laurel & Pine (2 Bridges)



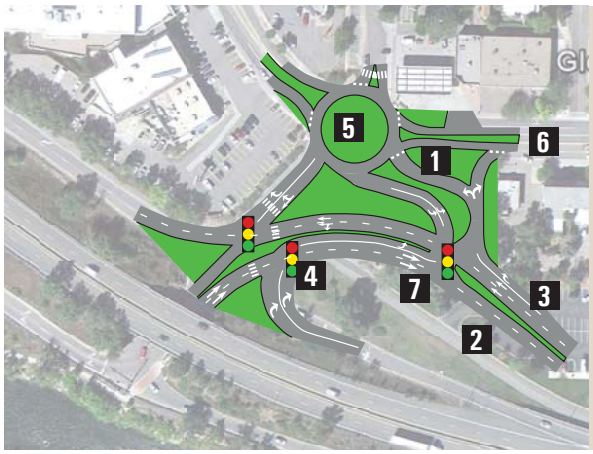
1. Keep existing intersection at 6th and Pine with possible minor improvements.
2. Would likely require acquisition of Shell station.
3. See potential 4-Lane Grand Ave. Cross-Section options.
4. Would need 5th lane southbound near 8th Street for left turns.
5. Curve would require widening of bridge for shoulder/sight distance.
6. Enough clearance for pool parking to remain under structures.

SH 82
GRAND AVENUE BRIDGE

Level 2B Alternatives

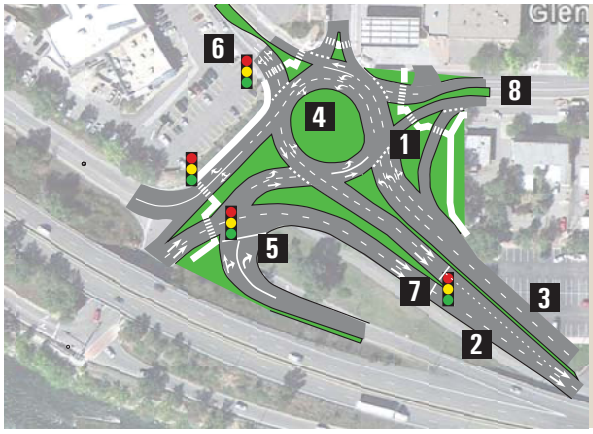
Alternative 3 - Intersection Options

Intersection Alternative A – Two Signals, SH 82 Through



1. Would require acquisition of Shell station.
2. 6% up-grade leaving intersection.
3. 6% down-grade approaching intersection.
4. Right turn on green arrow only.
5. Single-lane roundabout for local traffic movements.
6. Potential to reduce this segment of 6th Street to 3 lanes.
7. SH 82 traffic would become a through movement rather than requiring left/right turns.

Intersection Option B – Large Roundabout



1. Would require acquisition of Shell station.
2. 6% up-grade leaving intersection.
3. 6% down-grade approaching intersection.
4. 2030 traffic volume would likely require 3 lanes; 2 lanes may be adequate for 10+ years.
5. Right turn on green arrow only.
6. Pedestrians crossing two lanes at roundabout would require pedestrian signal.
7. Metering signal controls would merge going onto bridge.
8. Potential to reduce this segment of 6th Street to 3 lanes.

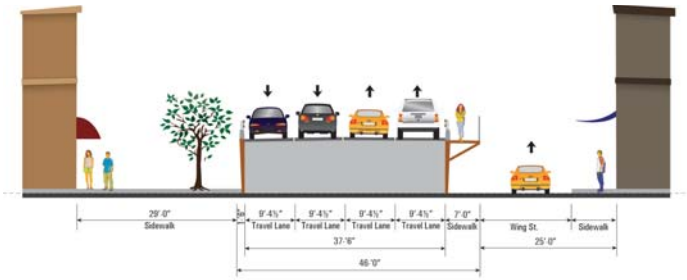
Intersection Alternative C – Westbound Traffic to I-70 on Overpass Ramp

1. Would require acquisition of Shell station.
2. 6% up-grade leaving intersection.
3. Left-hand exit for local traffic going to 6th Street.
4. Right turn on green arrow only.
5. Signal for pedestrian crossing.
6. Single-lane roundabout for local traffic movements.
7. Potential to reduce this segment of 6th Street to 3 lanes.
8. SH 82 traffic would become a through movement rather than requiring left/right turns.
9. Westbound ramp to I-70 would stay on structure and passes over entire intersection area.
10. Enough clearance for pool parking to remain under structures.

Level 2B Alternatives - Cross-Sections Options

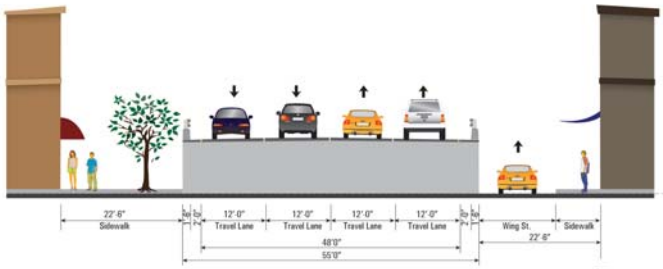
4-Lane Bridge on the South End of Grand Ave.

Existing Grand Ave.

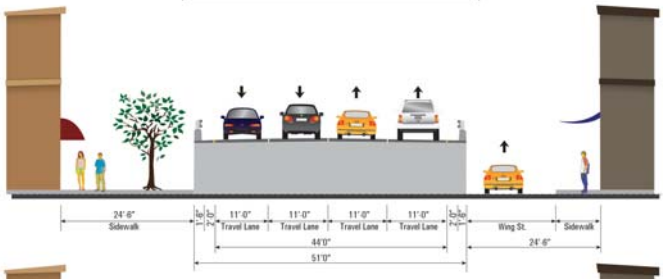


4-Lane Grand Ave. Options

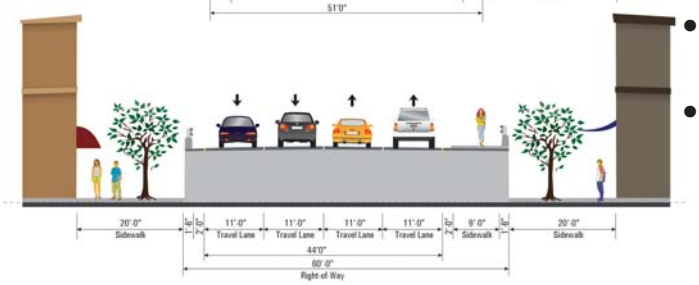
Various options, examples below.



- Four 12′ lanes on bridge, no sidewalk on bridge (requires ramps or elevator to connect to pedestrian facilities over river).
- 22′ sidewalks on each side along Grand Ave. businesses, or consider keeping “Wing St.” on east side.

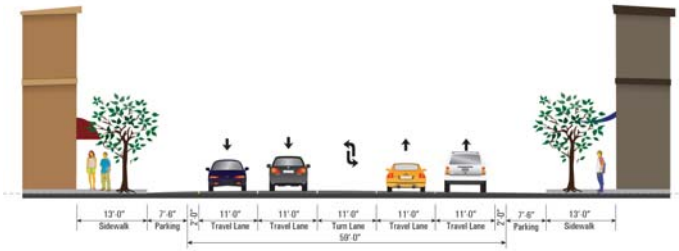


- Four 11′ lanes on bridge, no sidewalk on bridge (requires ramps or elevator to connect to pedestrian facilities over river).
- 24′ sidewalks on each side along Grand Ave. businesses, or consider keeping “Wing St.” on east side.



- Four 11′ lanes on bridge, plus 9′ sidewalk on east side of new bridge.
- 20′ sidewalks on each side along Grand Ave. businesses.

5-Lane Grand Ave. Option



- Need to add 5th lane near 8th Street to allow left turns to 8th.
- 19′ sidewalks on each side along Grand Ave. businesses.
- If sidewalk is attached to bridge, reduce ground-level sidewalk to 14′-15′

Note: Other options include a turn lane on 8th St. and different widths of street, sidewalk, ets.

SH 82
GRAND AVENUE BRIDGE

Level 2B Alternatives - Alignments

Couplets Using Grand Ave. and Colorado Ave.

Alternative 5
Colorado & Laurel - Grand & Pine

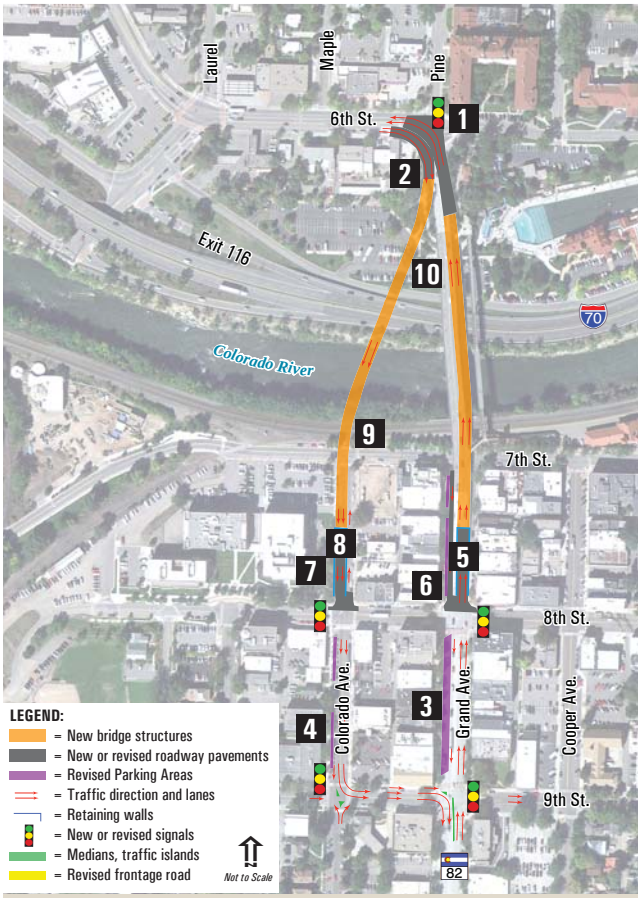
1. Keep existing intersection at 6th and Pine with possible minor improvements.
2. Would likely require acquisition of Shell station.
3. Potential parking revision—diagonal parking on Grand Ave.
4. Parking revision between 8th and 9th—convert diagonal to parallel parking on Colorado Ave.
5. See potential 2-Lane Grand Ave. Cross-Section Option.
6. One lane southbound on Grand Ave. to access parking, local circulation.
7. Remove parking on west side of Colorado Ave. from 7th to 8th.
8. See potential 2-Lane Colorado Ave. Cross-Section Option.
9. Curve requires widening of bridge for shoulder/sight distance.
10. Enough clearance for pool parking to remain under structures.

SH 82
GRAND AVENUE BRIDGE

Level 2B Alternatives - Alignments

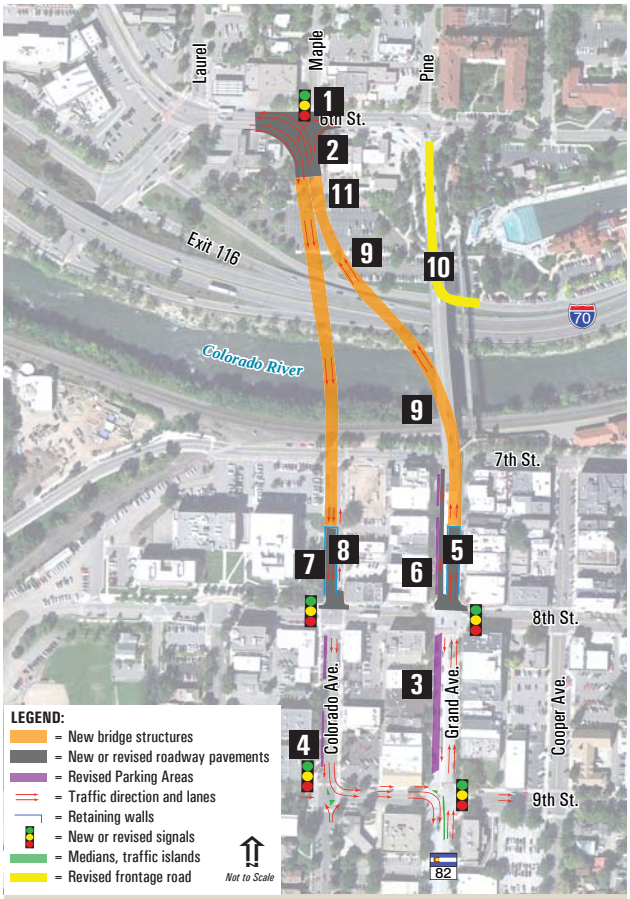
Couplets Using Grand Ave. and Colorado Ave.

Alternative 6
Align Colorado & Grand with Pine



1. Keep existing intersection at 6th and Pine with possible minor improvements.
2. Potential for no or minimal right-of-way acquisition at north end.
3. Potential parking revision—diagonal parking on Grand Ave.
4. Parking revision between 8th and 9th—convert diagonal to parallel parking on Colorado Ave.
5. See potential 2-Lane Grand Ave. Cross-Section Option.
6. One lane southbound on Grand Ave. to access parking, local circulation.
7. Remove parking on west side of Colorado Ave. from 7th to 8th.
8. See potential 2-Lane Colorado Ave. Cross-Section Option.
9. Curve would require widening of bridge for shoulder/sight distance.
10. Enough clearance for pool parking to remain under structures.

Alternative 7
Align Colorado & Grand with Maple



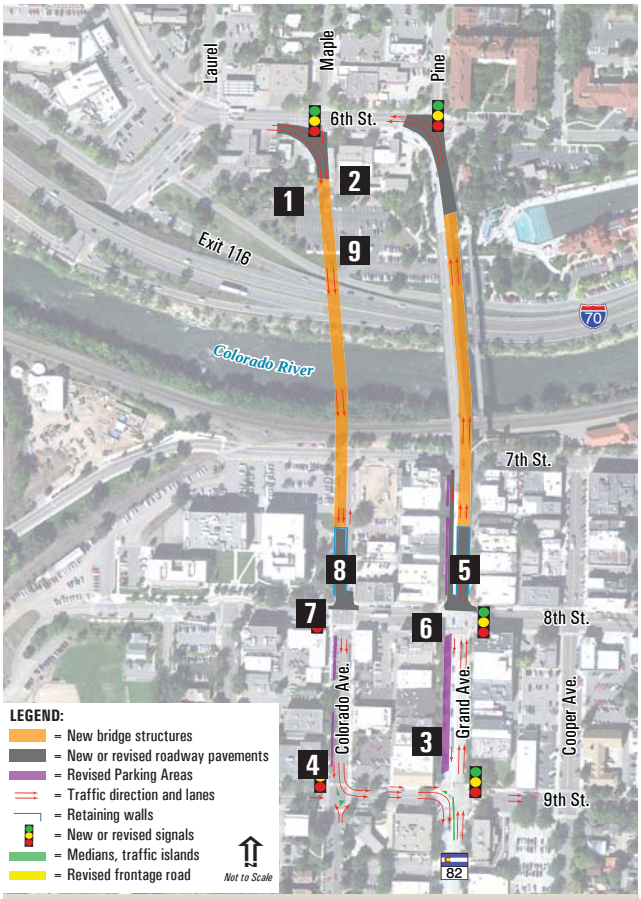
1. New intersection at Maple would replicate existing intersection at 6th and Pine.
2. Would likely require minimum of two business acquisitions near Maple.
3. Potential parking revision—diagonal parking on Grand Ave.
4. Parking revision between 8th and 9th—convert diagonal to parallel parking on Colorado Ave.
5. See potential 2-Lane Grand Ave. Cross-Section Option.
6. One lane southbound on Grand Ave. to access parking, local circulation.
7. Remove parking on west side of Colorado from 7th to 8th.
8. See potential 2-Lane Colorado Ave. Cross-Section Option.
9. Curve would require widening of bridge for shoulder/sight distance.
10. Potential North River Drive realignment in location of existing bridge (under replacement bridge).
11. Enough clearance for pool parking to remain under structures.

SH 82
GRAND AVENUE BRIDGE

Level 2B Alternatives - Alignments

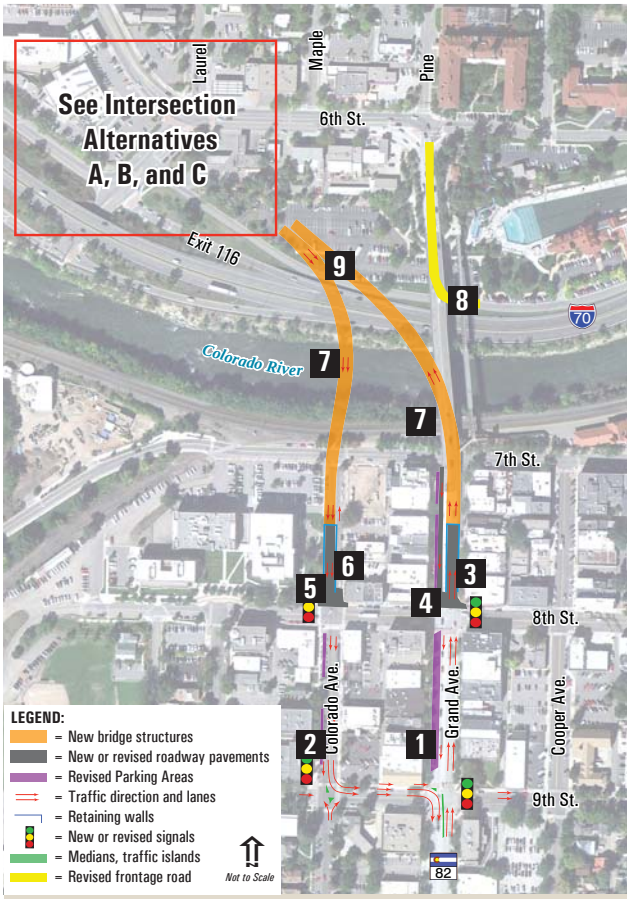
Couplets Using Grand Ave. and Colorado Ave.

Alternative 8
Colorado & Maple – Grand & Pine



1. Add double-rights at Maple (similar to existing at Pine).
2. Would likely require minimum of two business acquisitions near Maple.
3. Potential parking revision—diagonal parking on Grand Ave.
4. Parking revision between 8th and 9th—convert diagonal to parallel parking on Colorado Ave.
5. See potential 2-Lane Grand Ave. Cross-Section Option.
6. One lane southbound on Grand Ave. to access parking, local circulation.
7. Remove parking on west side of Colorado Ave. from 7th to 8th.
8. See potential 2-Lane Colorado Ave. Cross-Section Option.
9. Enough clearance for pool parking to remain under structures.

Alternative 9
Align Colorado & Grand with Laurel

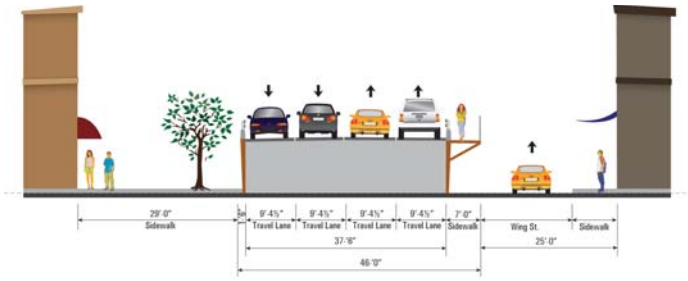


1. Potential parking revision—diagonal parking on Grand Ave.
2. Parking revision between 8th and 9th—convert diagonal to parallel parking on Colorado Ave.
3. See potential 2-Lane Grand Ave. Cross-Section Option.
4. One lane southbound on Grand Ave. to access parking, local circulation.
5. Remove parking on west side of Colorado from 7th to 8th.
6. See potential 2-Lane Colorado Ave. Cross-Section Option.
7. Curve would require widening of bridge for shoulder/sight distance.
8. Potential North River Drive realignment in location of existing bridge (under replacement bridge).
9. Enough clearance for pool parking to remain under structures.

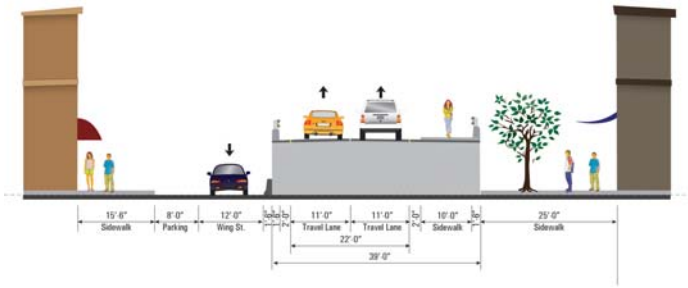
Level 2B Alternatives - Cross-Sections

Couplets Using
Grand Ave. and Colorado Ave.

Existing Grand Ave.

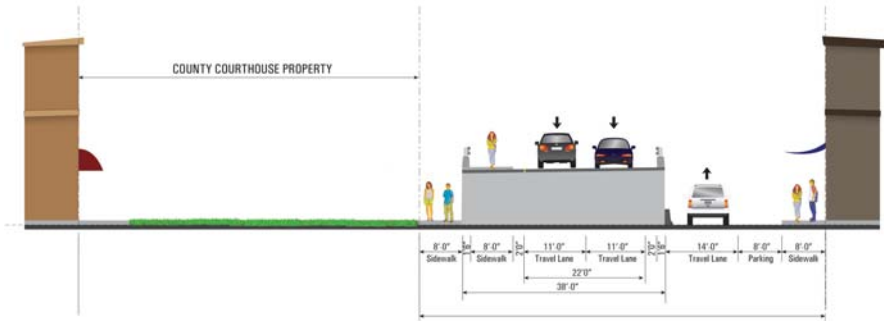


2-Lane Grand Ave. Option



- Two 11′ Lanes plus one 10′ sidewalk on bridge.
- 15′6″ sidewalk plus parking & access lane plus 25′ sidewalk on other side.

2-Lane Colorado Ave. Option



- Two 11′ Lanes on southbound half of bridge connecting to Colorado Ave., plus potential 8′ sidewalk.
- 8′ sidewalk and parking lane with access lane along the east side of the bridge.

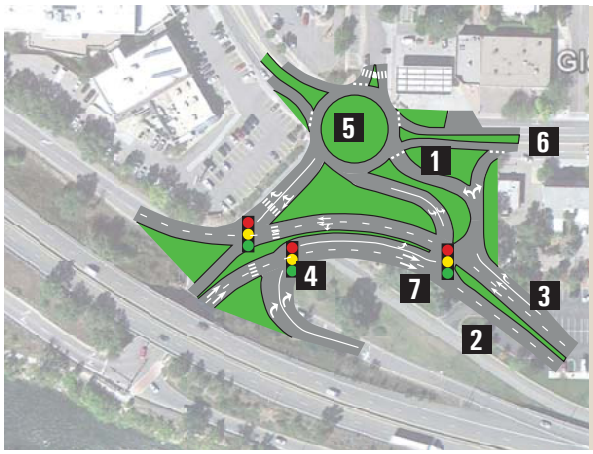
Note: There are options in addition to these shown.

SH 82
GRAND AVENUE BRIDGE

Level 2B Alternatives

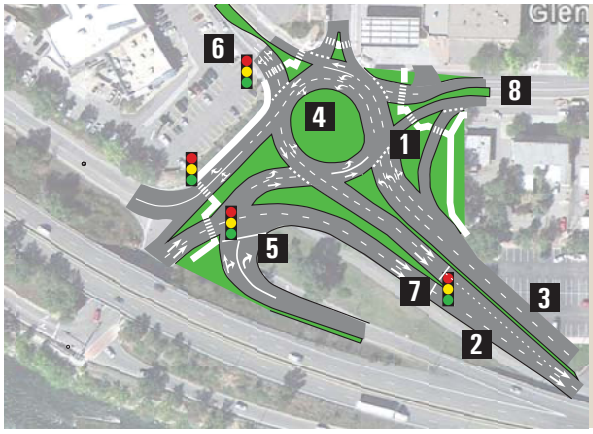
Alternative 9 - Intersection Options

Intersection Alternative A – Two Signals, SH 82 Through



1. Would require acquisition of Shell station.
2. 6% up-grade leaving intersection.
3. 6% down-grade approaching intersection.
4. Right turn on green arrow only.
5. Single-lane roundabout for local traffic movements.
6. Potential to reduce this segment of 6th Street to 3 lanes.
7. SH 82 traffic would become a through movement rather than requiring left/right turns.

Intersection Option B – Large Roundabout



1. Would require acquisition of Shell station.
2. 6% up-grade leaving intersection.
3. 6% down-grade approaching intersection.
4. 2030 traffic volume would likely require 3 lanes; 2 lanes may be adequate for 10+ years.
5. Right turn on green arrow only.
6. Pedestrians crossing two lanes at roundabout would require pedestrian signal.
7. Metering signal controls would merge going onto bridge.
8. Potential to reduce this segment of 6th Street to 3 lanes.

Intersection Alternative C – Westbound Traffic to I-70 on Overpass Ramp

1. Would require acquisition of Shell station.
2. 6% up-grade leaving intersection.
3. Left-hand exit for local traffic going to 6th Street.
4. Right turn on green arrow only.
5. Signal for pedestrian crossing.
6. Single-lane roundabout for local traffic movements.
7. Potential to reduce this segment of 6th Street to 3 lanes.
8. SH 82 traffic would become a through movement rather than requiring left/right turns.
9. Westbound ramp to I-70 would stay on structure and passes over entire intersection area.
10. Enough clearance for pool parking to remain under structures.

U.S. Department of Transportation Federal Highway Administration

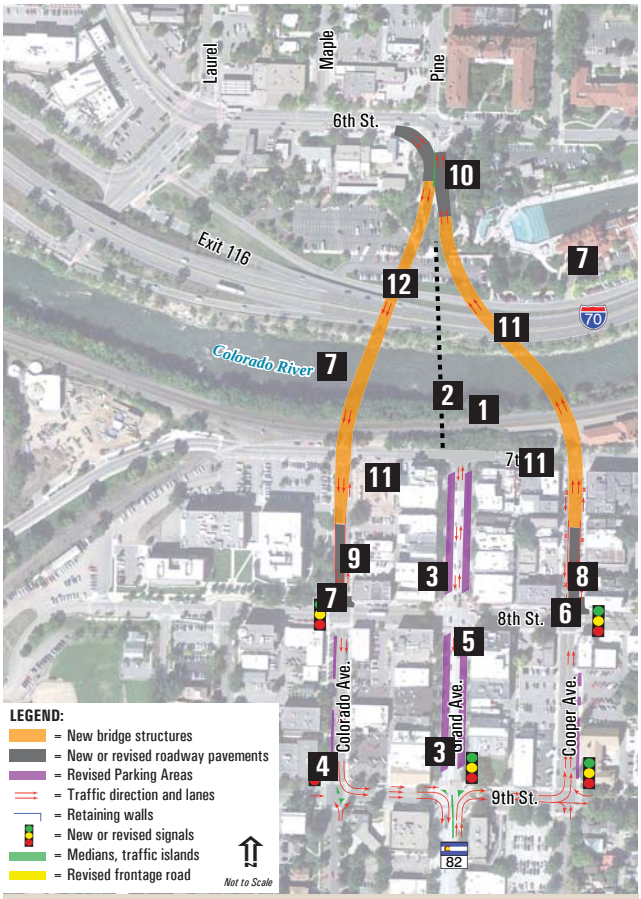
DOT Department of Transportation

SH 82
GRAND AVENUE BRIDGE

Level 2B Alternatives - Alignments

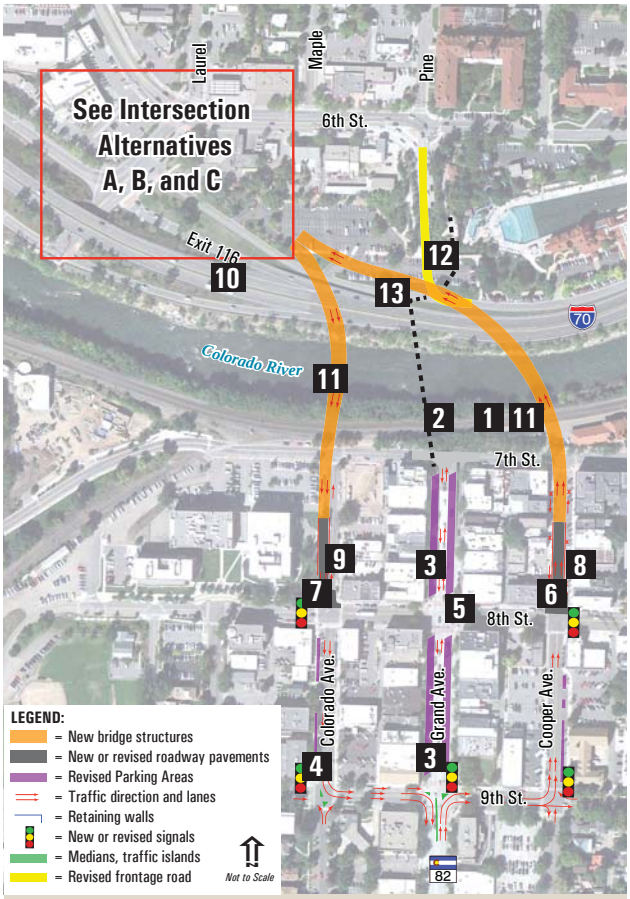
Couplets Using Cooper Ave. and Colorado Ave.

Alternative 10
Align Colorado & Cooper with Pine



1. Requires removal of existing pedestrian bridge.
2. Build a new pedestrian bridge near Grand Ave. or have all pedestrians/bicycles use sidewalks on new structures?
3. Potential parking revision—diagonal parking on Grand Ave.
4. Parking revision between 8th and 9th—convert diagonal to parallel parking on Colorado Ave.
5. See potential 2-Lane Grand Avenue Cross-Sections Options.
6. Remove parking on 7th-8th block of Cooper.
7. Remove parking on west side of Colorado Ave. from 7th to 8th.
8. See potential 2-Lane Cooper Avenue Cross-Section Option.
9. See potential 2-Lane Colorado Avenue Cross-Section Option.
10. Match to existing intersection at 6th and Pine, possible minor improvements.
11. Curve would require widening of bridge for shoulder/sight distance.
12. Enough clearance for pool parking to remain under structures.

Alternative 11
Align Colorado & Cooper with Laurel



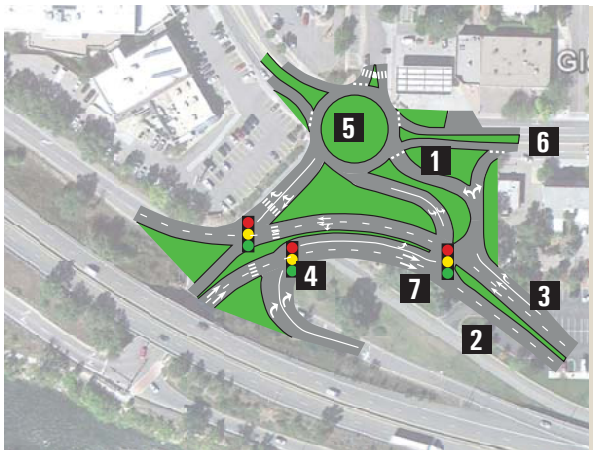
1. Requires removal of existing pedestrian bridge.
2. Build a new pedestrian bridge near Grand Ave. or have all pedestrians/bicycles use sidewalks on new structures?
3. Potential parking revision—diagonal parking on Grand Ave.
4. Parking revision between 8th and 9th—convert diagonal to parallel parking on Colorado Ave.
5. See potential 2-Lane Grand Avenue Cross-Sections Options.
6. Remove parking on 7th-8th block of Cooper.
7. Remove parking on west side of Colorado Ave. from 7th to 8th.
8. See potential 2-Lane Cooper Avenue Cross-Section Option.
9. See potential 2-Lane Colorado Avenue Cross-Section Option.
10. See Intersection Alternatives A, B, C for Exit 116/Laurel/6th intersection.
11. Curve would require widening of bridge for shoulder/sight distance.
12. Potential North River Drive realignment in location of existing bridge (under replacement bridge).
13. Enough clearance for pool parking to remain under structures.

SH 82
GRAND AVENUE BRIDGE

Level 2B Alternatives

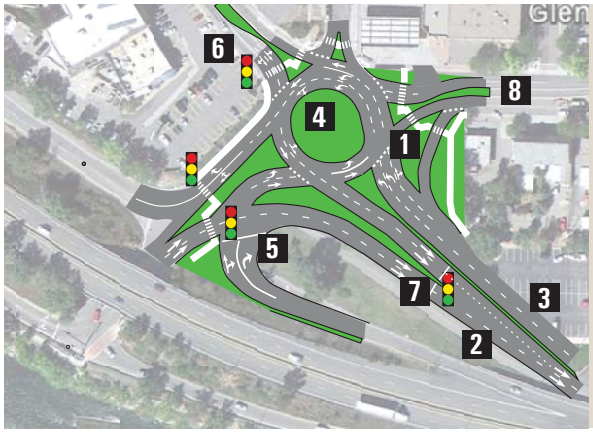
Alternative 11 - Intersection Options

Intersection Alternative A – Two Signals, SH 82 Through



1. Would require acquisition of Shell station.
2. 6% up-grade leaving intersection.
3. 6% down-grade approaching intersection.
4. Right turn on green arrow only.
5. Single-lane roundabout for local traffic movements.
6. Potential to reduce this segment of 6th Street to 3 lanes.
7. SH 82 traffic would become a through movement rather than requiring left/right turns.

Intersection Option B – Large Roundabout



1. Would require acquisition of Shell station.
2. 6% up-grade leaving intersection.
3. 6% down-grade approaching intersection.
4. 2030 traffic volume would likely require 3 lanes; 2 lanes may be adequate for 10+ years.
5. Right turn on green arrow only.
6. Pedestrians crossing two lanes at roundabout would require pedestrian signal.
7. Metering signal controls would merge going onto bridge.
8. Potential to reduce this segment of 6th Street to 3 lanes.

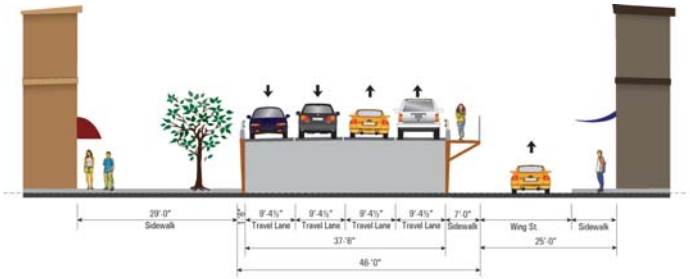
Intersection Alternative C – Westbound Traffic to I-70 on Overpass Ramp

1. Would require acquisition of Shell station.
2. 6% up-grade leaving intersection.
3. Left-hand exit for local traffic going to 6th Street.
4. Right turn on green arrow only.
5. Signal for pedestrian crossing.
6. Single-lane roundabout for local traffic movements.
7. Potential to reduce this segment of 6th Street to 3 lanes.
8. SH 82 traffic would become a through movement rather than requiring left/right turns.
9. Westbound ramp to I-70 would stay on structure and passes over entire intersection area.
10. Enough clearance for pool parking to remain under structures.

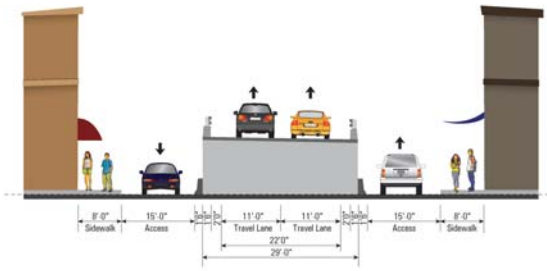
Level 2B Alternatives - Cross-Sections

Couplets Using Cooper Ave. and Colorado Ave.

Existing Grand Ave.

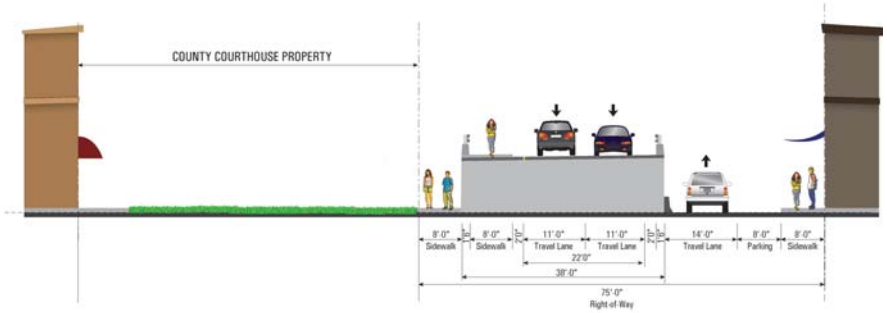


2-Lane Cooper Ave. Option



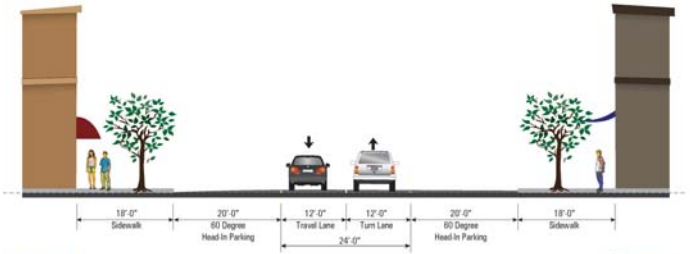
- Two 11′ lanes on bridge, no room for sidewalk on bridge from 7th to 8th.
- All on-street parking is removed from Cooper Ave. between 7th and 8th.
- Sidewalk and access lane on either side of bridge within 75 ft. right-of-way.

2-Lane Colorado Ave. Option

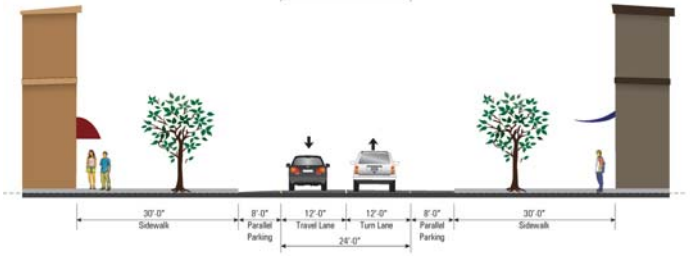


- Two 11′ southbound lanes connecting to Colorado Ave., plus potential 8′ sidewalk.
- 8 ft. sidewalk and parking lane with access lane along the east side of the bridge.

2-Lane Grand Ave. Options



- 60-degree angle parking to maximize available parking and still have wider-than-existing sidewalks.
- Approximately 25 parking spaces per side-per block (100 total) with angled parking between 7th & 9th. Net increase of 20 spaces downtown.



- Parallel parking would maximize sidewalk width while still allowing vehicles and parking.
- Approximately 12-13 parking spaces per side-per block (50 total) with parallel parking between 7th & 9th. Net decrease of 30 spaces downtown.

Note: There are various options in addition to these shown.

SH 82 GRAND AVENUE BRIDGE

What is an Environmental Assessment?

A transportation-related Environmental Assessment (EA) is a specific level of documentation required under the National Environmental Policy Act (NEPA). An EA includes:

- Definition of the Purpose and Need for the project.
- Description of a range of reasonable transportation improvements alternatives.
- Evaluation of potential social, economic, historical, and environmental impacts of proposed improvements. Definition of measures to avoid, minimize or mitigate negative impacts.
- Description of public involvement and input to decision-making.

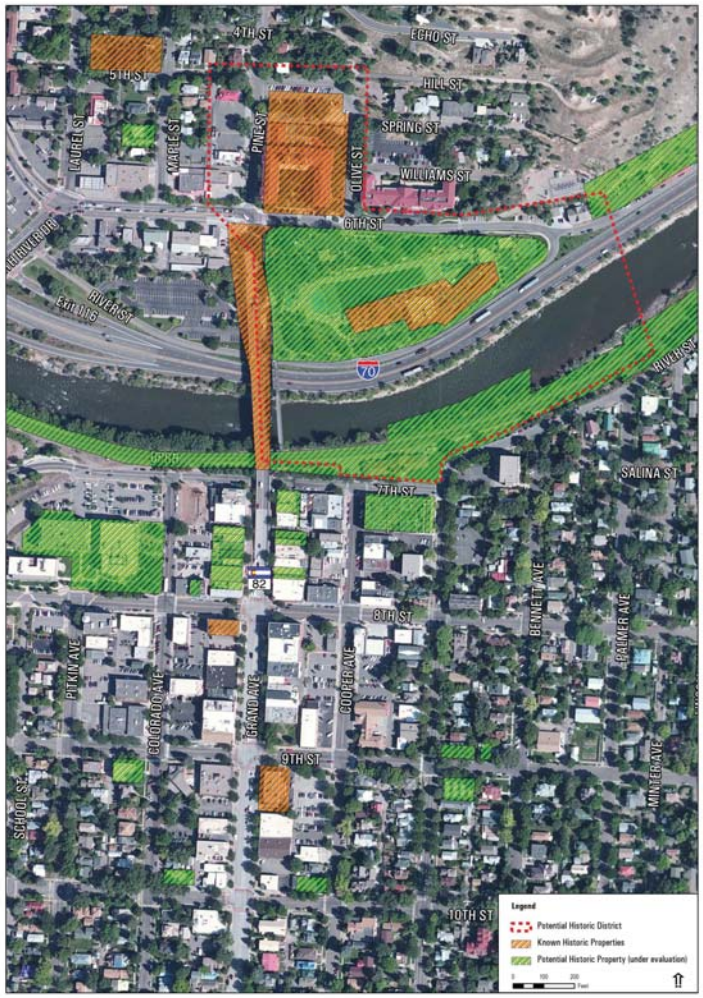
Environmental Assessment Categories

- Land Use
- Social
- Environmental Justice
- Economic
- Bicycle and Pedestrian
- Visual
- Right-of-Way
- Parks and Recreation
- Hazardous Materials
- Noise
- Wetlands
- Vegetation & Noxious Weeds
- Wildlife and Fisheries
- Threatened and Endangered Species
- Floodplains
- Water Quality
- Historical & Archaeological Resources
- Paleontological Resources
- Section 4(f) and 6(f) Resources
- Construction Impacts
- Cumulative Impacts

Environmental Assessment Process

Steps in the Process	Activities
Scoping & Initial Data Collection	• Public & agency meetings • Collect environmental data • Identify existing traffic conditions • Identify issues and concerns
Develop Purpose and Need	• Define future land use • Develop future traffic projections • Collect data on roadway deficiencies • Document need for improvements
Define & Evaluate Alternatives (We are Here in the Process)	• Develop evaluation criteria • Develop measures of effectiveness • Define initial alternatives • Screen initial alternatives • Define remaining alternatives
Prepare Environmental Assessment	• Document alternatives considered • Evaluate impacts of reasonable alternatives • Identify preferred alternative • Document the process followed • Identify mitigation measures
Environmental Assessment For Review	• Provide EA to public & agencies • Conduct Public Hearing • Receive comments
Prepare Decision Document	• Provide basis for decision • Commit to mitigation for impacts • Document decision • Address public and agency comments • Signed by CDOT and FHWA

Historic Resources



U.S. Department of Transportation Federal Highway Administration

CDOT Department of Transportation

Funding **A**dvancement for **S**urface **T**ransportation and **E**conomic **R**ecovery & the **C**olorado **B**ridge **E**nterprise






Description of FASTER/CBE

FASTER legislation was passed in 2009 in order to generate revenue necessary to improve highway safety and replace or repair "poor" bridges across the state. The Colorado Bridge Enterprise (CBE) was created as part of the FASTER legislation with the purpose to finance, repair, reconstruct and replace bridges designated as structurally deficient or functional obsolete, and rated as "poor". It operates as a government-owned business within the Colorado Department of Transportation.

In order to accomplish this goal, a bridge safety surcharge ranging from $13 to $32 has been imposed on vehicle registration based upon vehicle weight. Revenues from the bridge safety surcharge fee were phased in over a three-year period, and are estimated to generate approximately $100 million in annual funding.

Your registration fees are being applied here:
SH 82 Grand Avenue Bridge

Funding: $35 to $49 million

Issues:

- Geometric Deficiencies
- Potential for Washout
- Bridge Structural Condition
- Load Carrying Capacity
- Functional Obsolescence

Schedule:

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

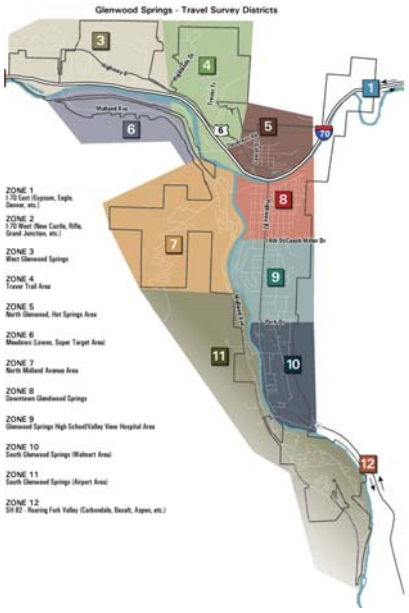
CDOT DEPARTMENT OF TRANSPORTATION **Taking care to get you there**

Find out more at: http://www.coloradodot.info/programs/BridgeEnterprise

SH 82
GRAND AVENUE BRIDGE

Help Us With the Glenwood Springs Travel Survey

- Tell us about your most recent trip through Glenwood Springs—driving, walking, biking, or traveling by bus.
- Visit www.travel82.com (or scan the code below with your smart phone) and complete the on-line survey, between April 3 and May 1, 2012.
- After fully completing the survey and providing your email address, you are entered in a prize drawing.



What is the purpose of the Travel Survey?

- The Glenwood Springs Travel Survey will be used to understand travel characteristics in and through Glenwood Springs.
- This information will be used to help develop solutions for fixing or replacing the SH 82 Grand Avenue Bridge as part of the ongoing Environmental Assessment process. See www.SH82GrandAvenueBridge.com for more information.

Eligibility Rules to Win Prizes

- There are ten $100 gift cards to local merchants to be awarded.
- To be eligible for the chance to win, you **must complete the entire survey** and enter a valid email address. This email address will only be used to notify winners of the prize drawing.
- Only one entry per person.
- After the survey is closed, the winners will be chosen at random from the fully completed surveys with valid email addresses.
- The winners will be notified by email by May 15, 2012.

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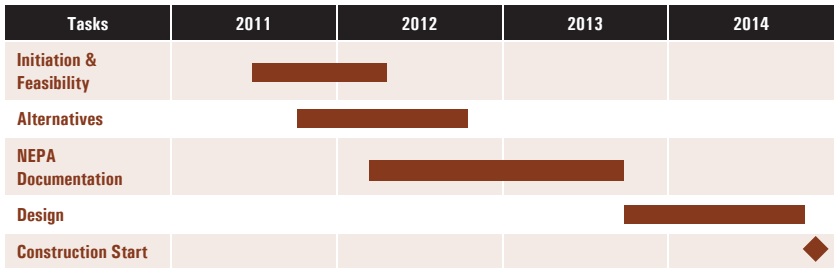
SH 82
GRAND AVENUE BRIDGE

Project Schedule

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



Next Steps for the Study Team

- Finalize Level 2 screening
- Stakeholder Working Group meetings (April, June, July)
- Value Engineering (June)
- Level 3 Screening (July & August)
- Public Open House (August)
- Recommended alternative (August)
- Ongoing outreach to civic groups and organizations

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.SH82grandavenuebridge.com or 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 to Joe Elsen via the project website: www.SH82grandavenuebridge.com or www.coloradodot.info/projects/sh82grandavenuebridge.

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