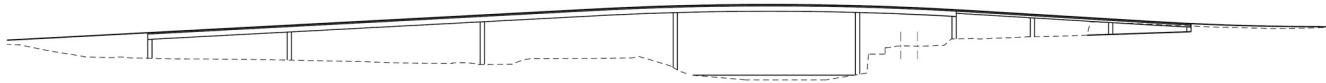


# Visual and Aesthetics Bridge Types



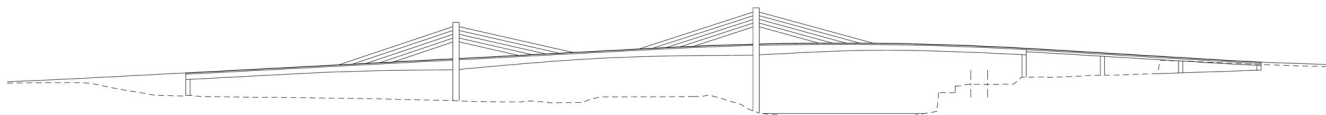
**5 Span Constant Depth**



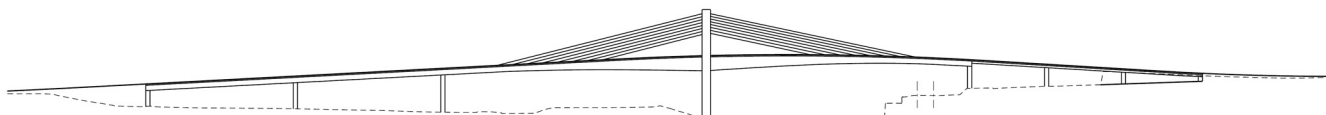
**3 Span Haunched**



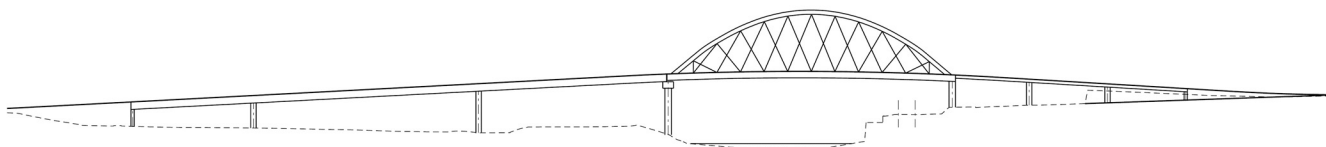
**5 Span Haunched**



**3 Span Extradosed**



**4 Span Extradosed**



**Tied Arch**



## Visual and Aesthetics

### 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.

SH 82

# GRAND AVENUE BRIDGE

## Visual and Aesthetics

### Photos of Bridge

North



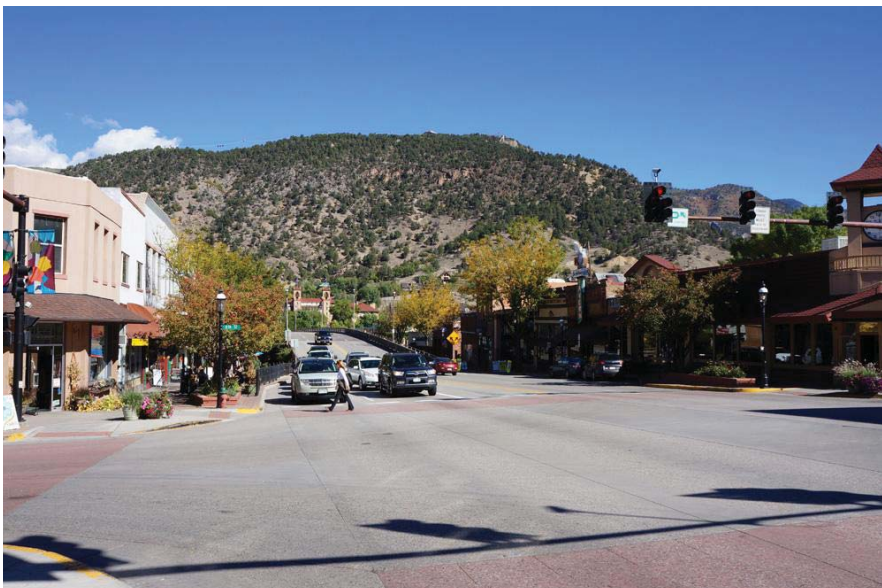
East



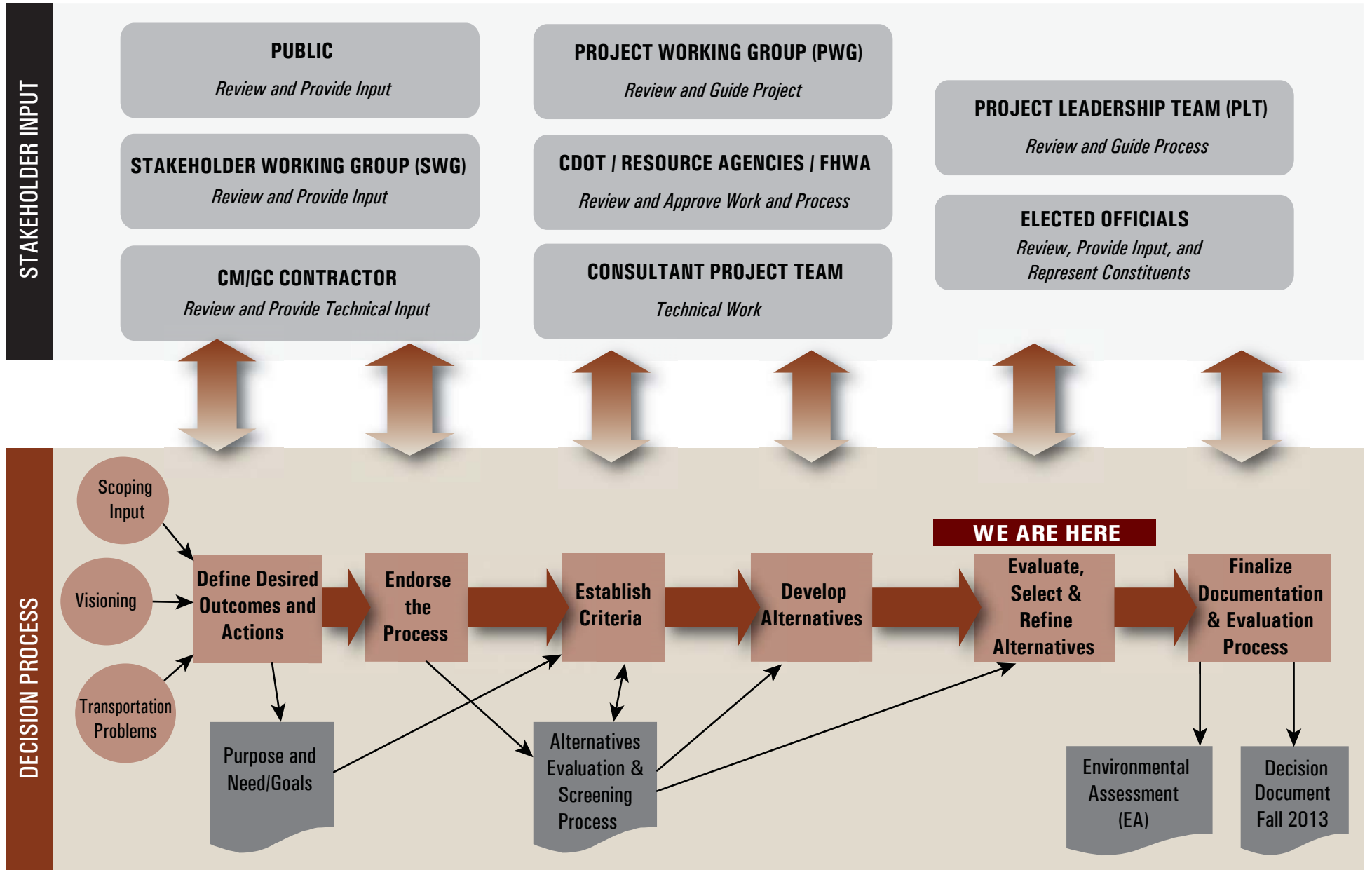
South



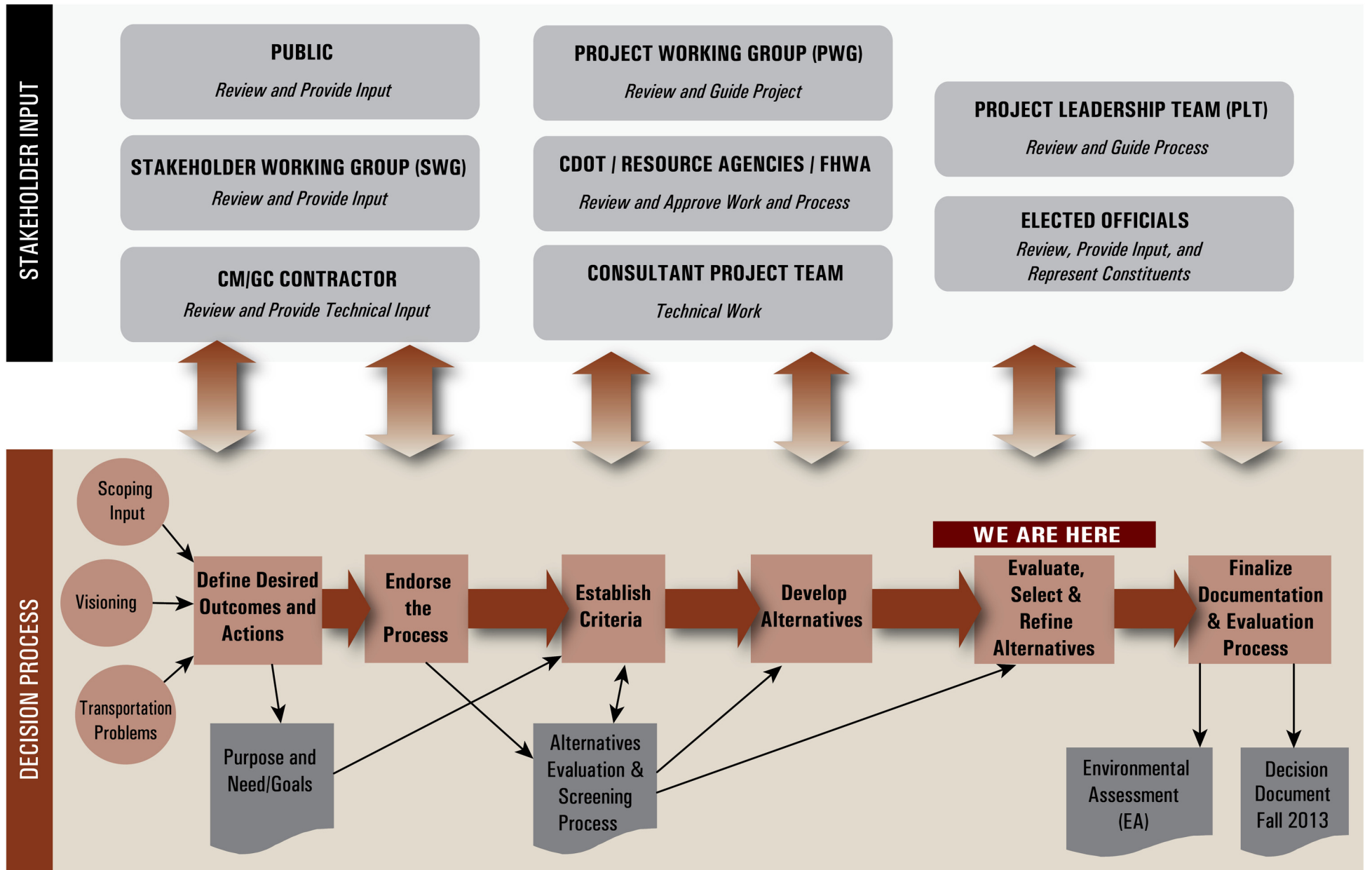
West



## Stakeholder Input to Decision Process

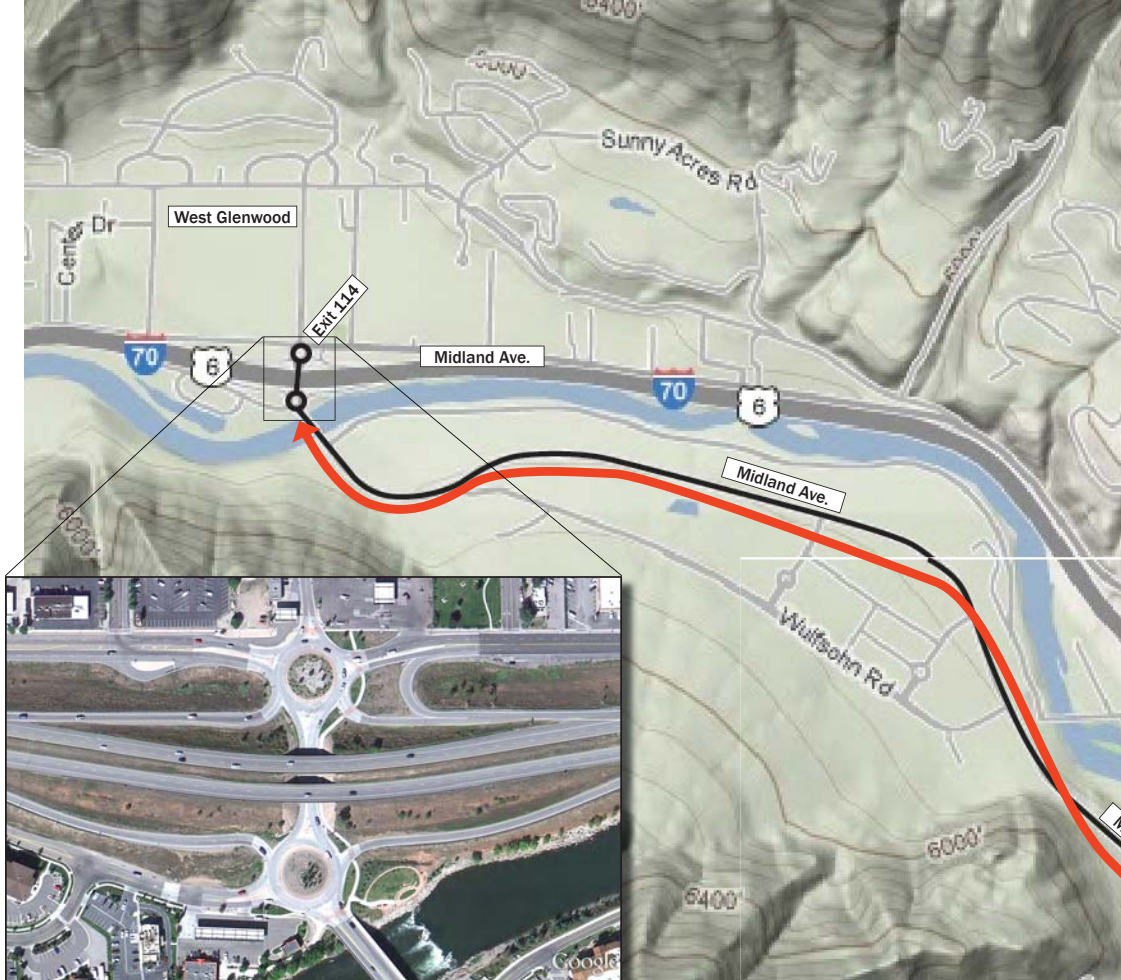
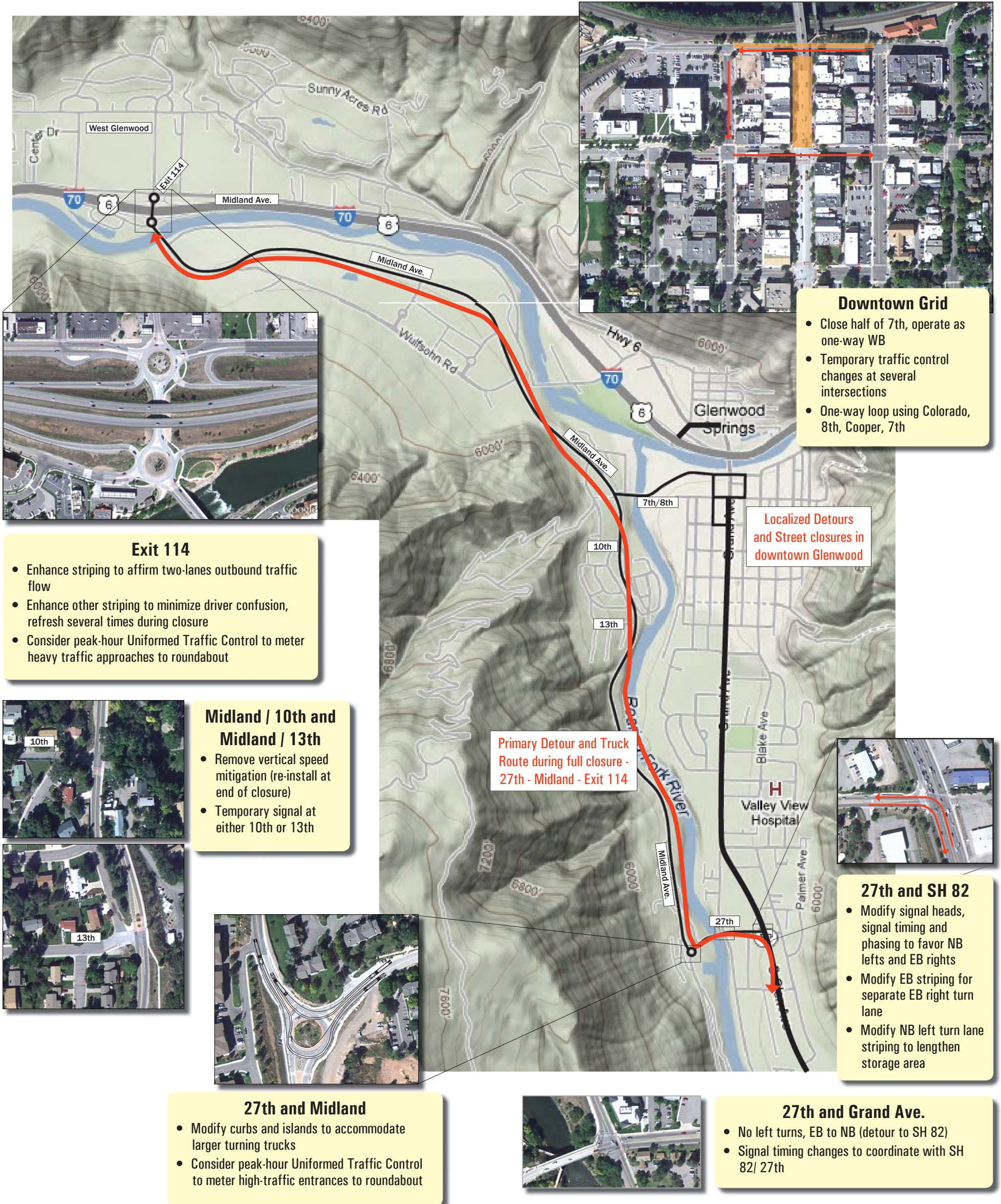


## Stakeholder Input to Decision Process



# Constructability and Impacts

## Full Closure - Detour Route and Modifications



**Downtown Grid**

- Close half of 7th, operate as one-way WB
- Temporary traffic control changes at several intersections
- One-way loop using Colorado, 8th, Cooper, 7th



**Exit 114**

- Enhance striping to affirm two-lanes outbound traffic flow
- Enhance other striping to minimize driver confusion, refresh several times during closure
- Consider peak-hour Uniformed Traffic Control to meter heavy traffic approaches to roundabout



Localized Detours and Street closures in downtown Glenwood

Primary Detour and Truck Route during full closure - 27th - Midland - Exit 114



**Midland / 10th and Midland / 13th**

- Remove vertical speed mitigation (re-install at end of closure)
- Temporary signal at either 10th or 13th



**27th and Midland**

- Modify curbs and islands to accommodate larger turning trucks
- Consider peak-hour Uniformed Traffic Control to meter high-traffic entrances to roundabout



**27th and SH 82**

- Modify signal heads, signal timing and phasing to favor NB lefts and EB rights
- Modify EB striping for separate EB right turn lane
- Modify NB left turn lane striping to lengthen storage area

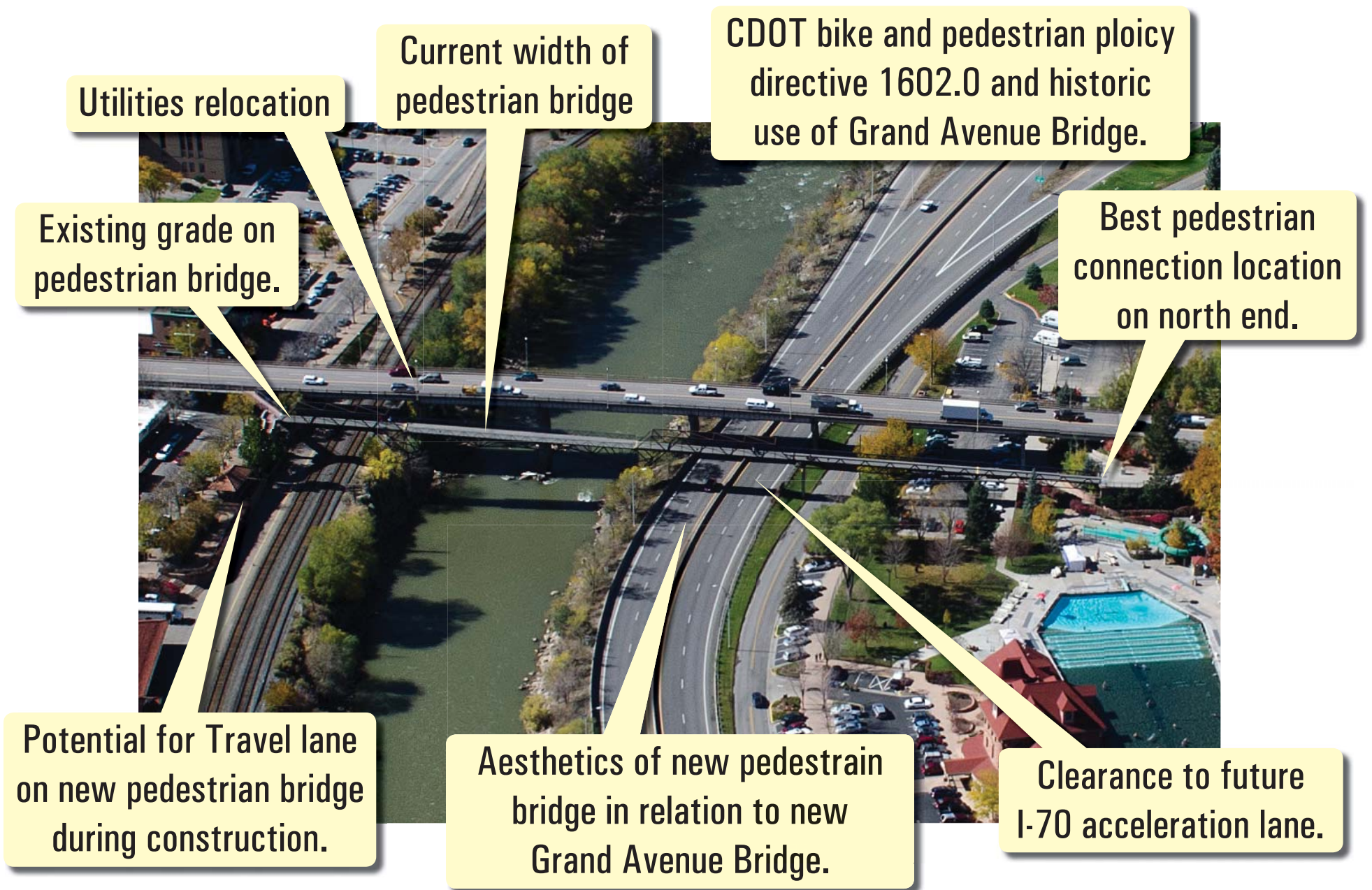


**27th and Grand Ave.**

- No left turns, EB to NB (detour to SH 82)
- Signal timing changes to coordinate with SH 82/ 27th

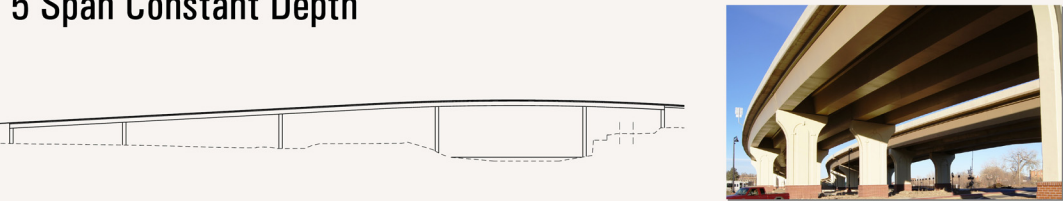
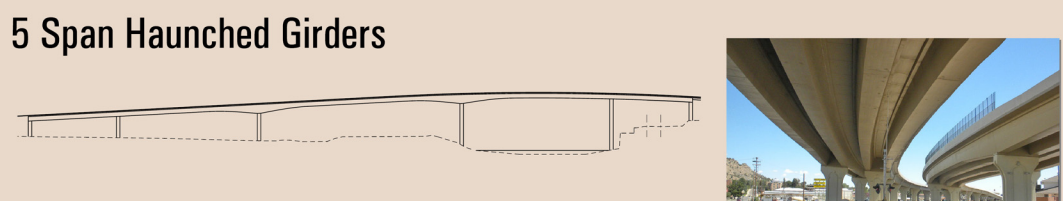
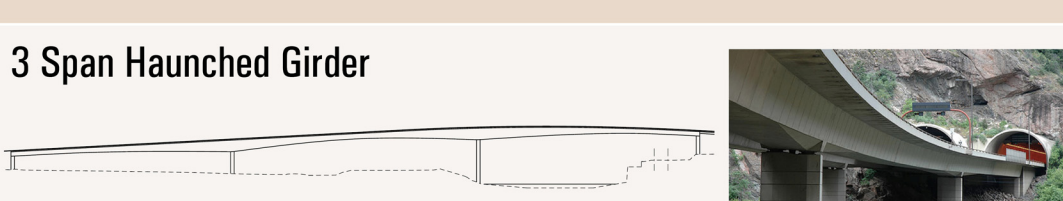
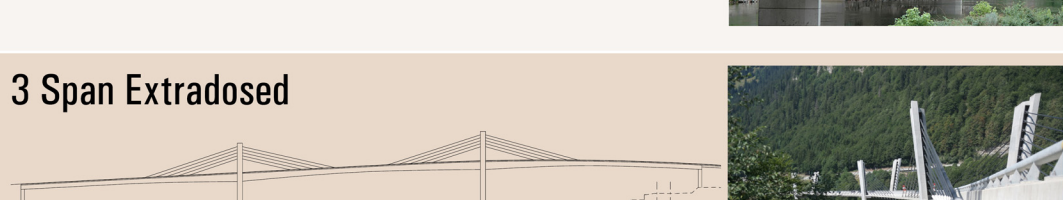
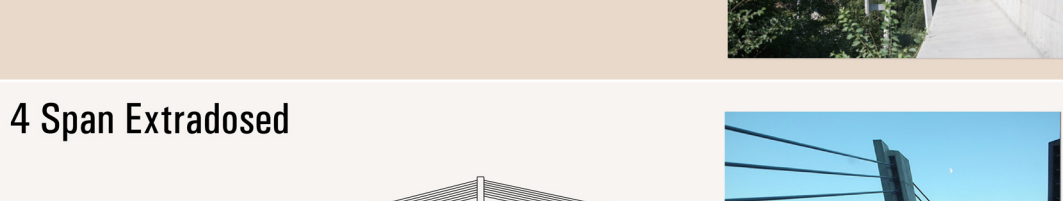


# Pedestrian Bridge

## 8 factors that may Affect Potential Reconstruction of Existing Pedestrian Bridge



# Constructability and Impacts

## Construction Duration Variations by Bridge Form

Bridge Form		Relative Bridge Closure Duration (1)	Relative Accelerated Construction Risk (2)	Relative I-70 Closure Duration (3)
<b>North Segment</b>				
5 Span Constant Depth		Medium duration	Medium risk	Short duration
5 Span Haunched Girders		Medium duration	Medium risk	Short duration
3 Span Haunched Girder		Medium duration	Medium risk	Short duration
3 Span Extradosed		Medium to long duration	Medium to high risk	Short duration
4 Span Extradosed		Medium to long duration	Medium to high risk	Short duration
4 Span Tied Arch		Medium duration	Medium risk	Short duration
<b>South Segment</b>				
3 Span Thin		Medium to long duration	Medium risk	N/A

**Notes:**

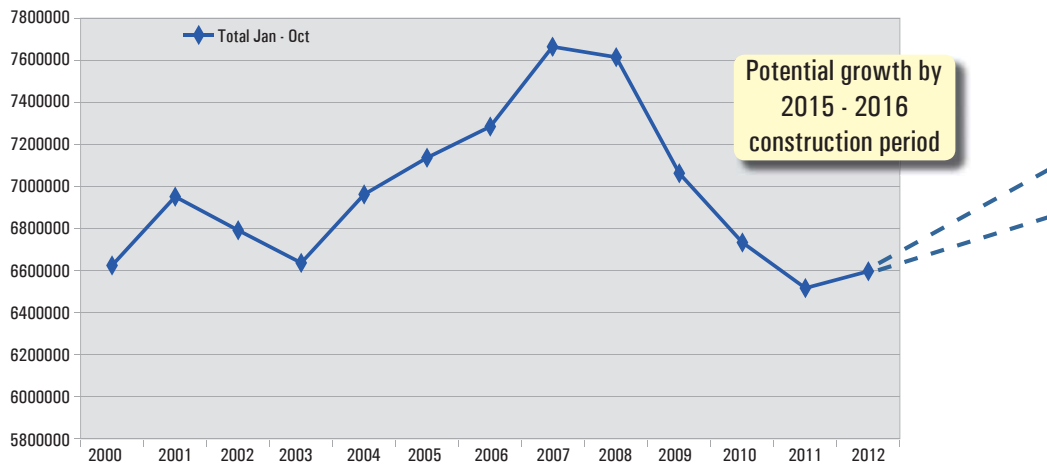
- (1) – Full Bridge closure construction option anticipated for up to 60 days during off-season
- (2) – Risk of schedule delays
- (3) – I-70 Closures anticipated as nighttime limited duration closures



## Grand Avenue Bridge Full Closure - Traffic Information

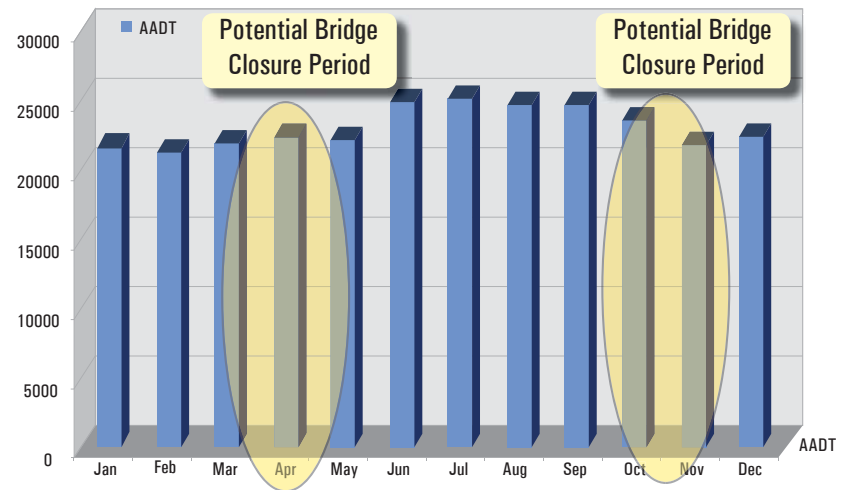
### SH 82 Yearly Traffic Information

SH 82 South of 27th, Total Yearly Traffic, 2000 - 2012



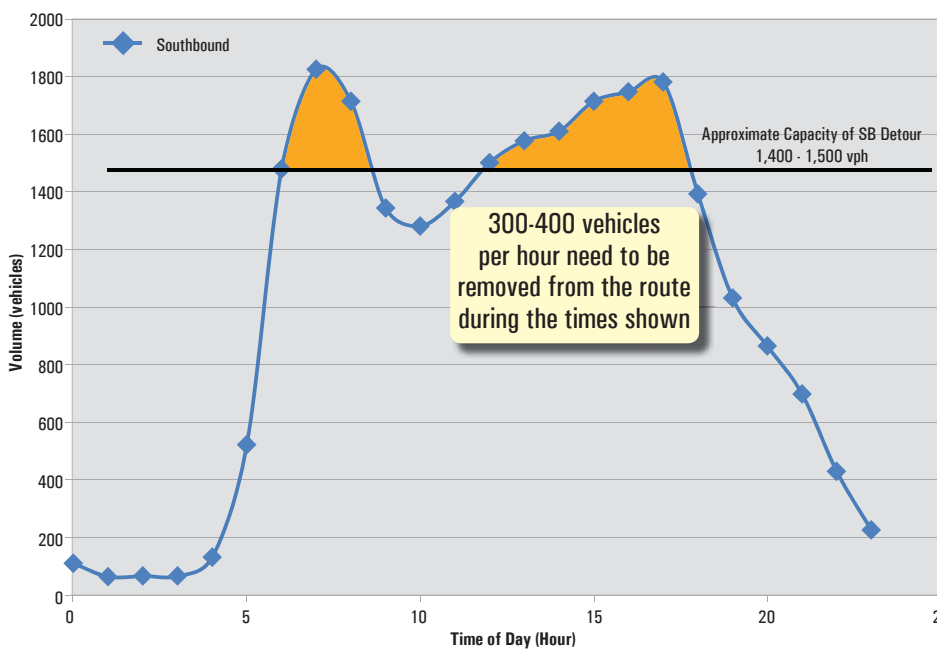
### SH 82 Monthly Traffic Patterns

2011 Weekday AADT

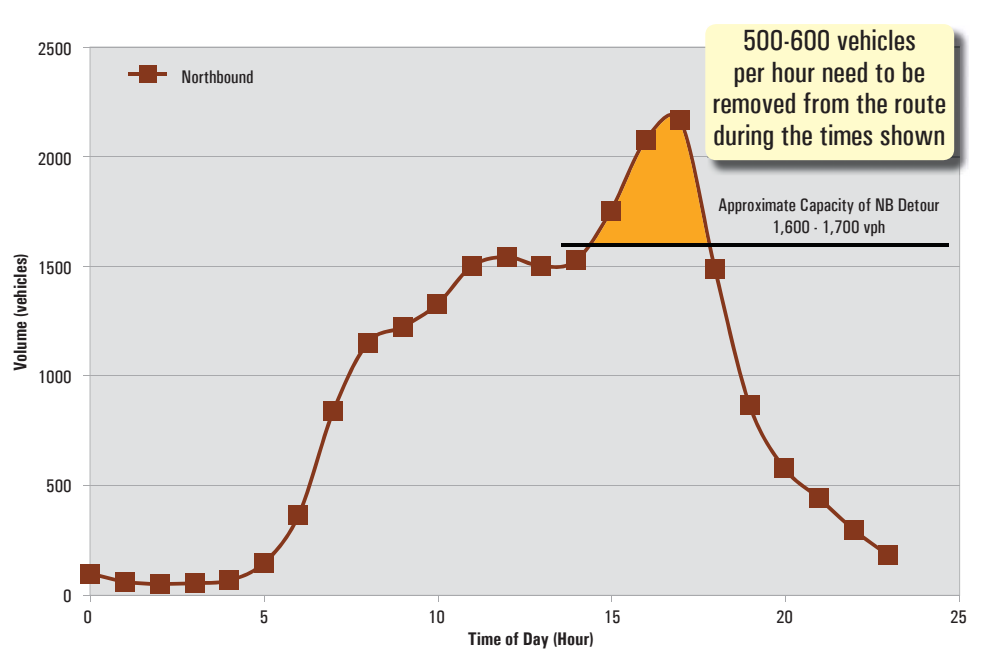


### Northbound and Southbound Peak Traffic

Southbound hourly traffic demand on Midland during closure



Northbound hourly traffic demand on Midland during closure



### Trip Types - How to Reduce Vehicle Trips by 20%-25% During Full Closure

(Pedestrian bridge would be open during the vehicle bridge closure)

Types of Trips in Glenwood Springs from Travel Survey - April 2012

