



SH 82

GRAND AVENUE BRIDGE



Stakeholders Working Group Workshop

Grand Avenue Bridge
November 21, 2013



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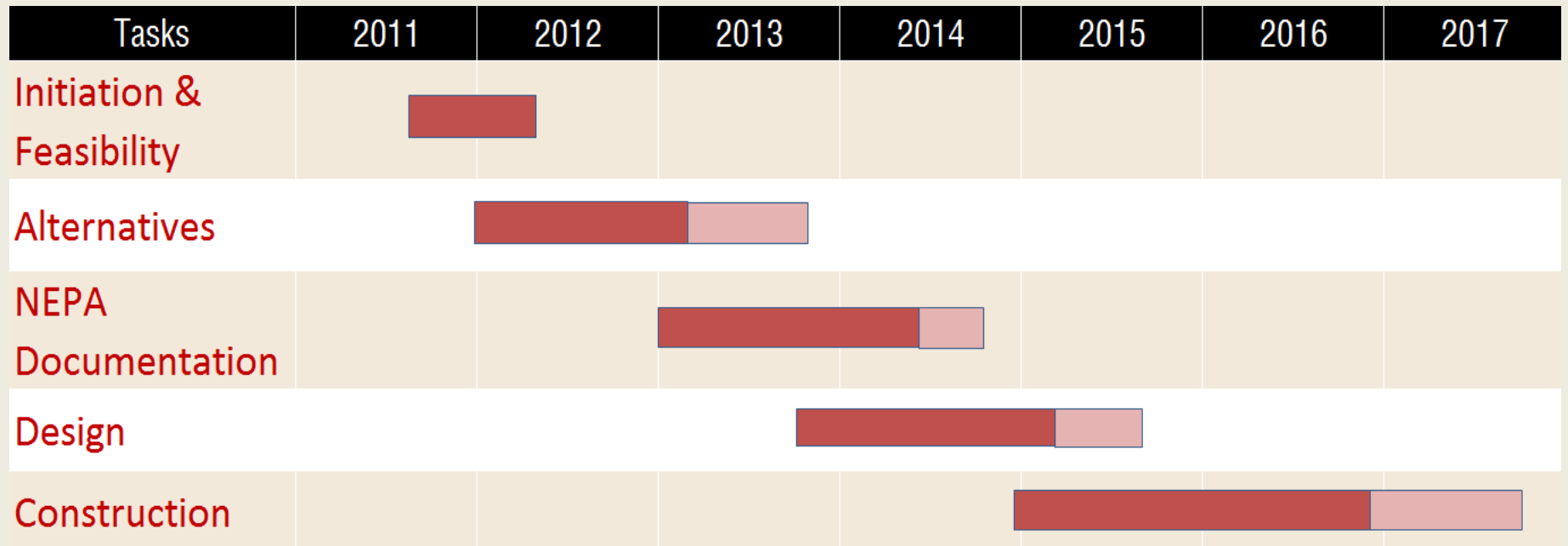
Where we are in the process, what decisions have been made and how were they made:

- EA Update
- New recommendations and decisions
 - Pedestrian bridge
 - Grand Avenue bridge type
 - Pier locations across river
 - Piers downtown
 - Roadway
 - 6th and Laurel
 - Construction detours
 - Pedestrian/bike connections
- Next steps

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Project Schedule



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EA Update

- Review process
- Chapters
- Technical Reports
- Public Hearing
- Decision Document



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Preferred Alternative (non-detour)



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Pedestrian Bridge layout



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Selected Pedestrian Bridge Type



CSS Process led to bridge type,
architectural elements, need for pedestrian
bridge and Grand Avenue Bridge type

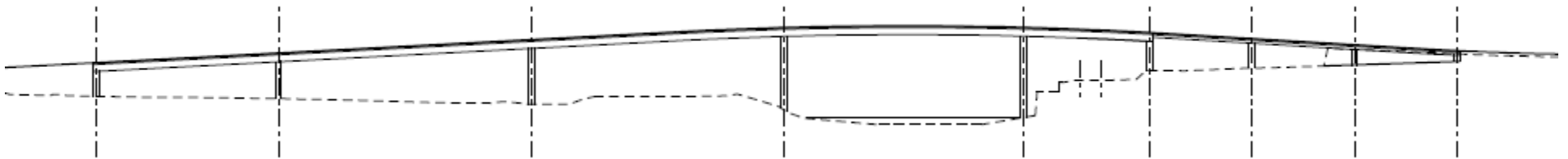
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Engineering Bridge Type Evaluation – vehicular bridge

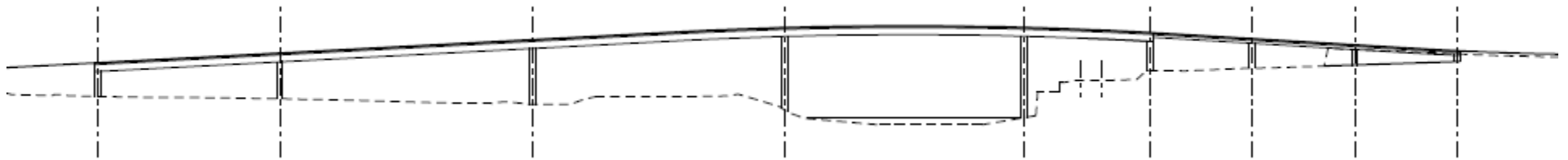
- **Bridge Forms**
 - Tied Arch
 - Three Span Box Girder Bridge
 - Four Span Box Girder Bridge
 - **Five Span Box Girder Bridge**
 - Three Span Extradosed Box Girder Bridge
 - Four Span Extradosed Box Girder Bridge

**NEPA/ CSS Process
led to bridge
alignment, pier
locations, &
bridge type**



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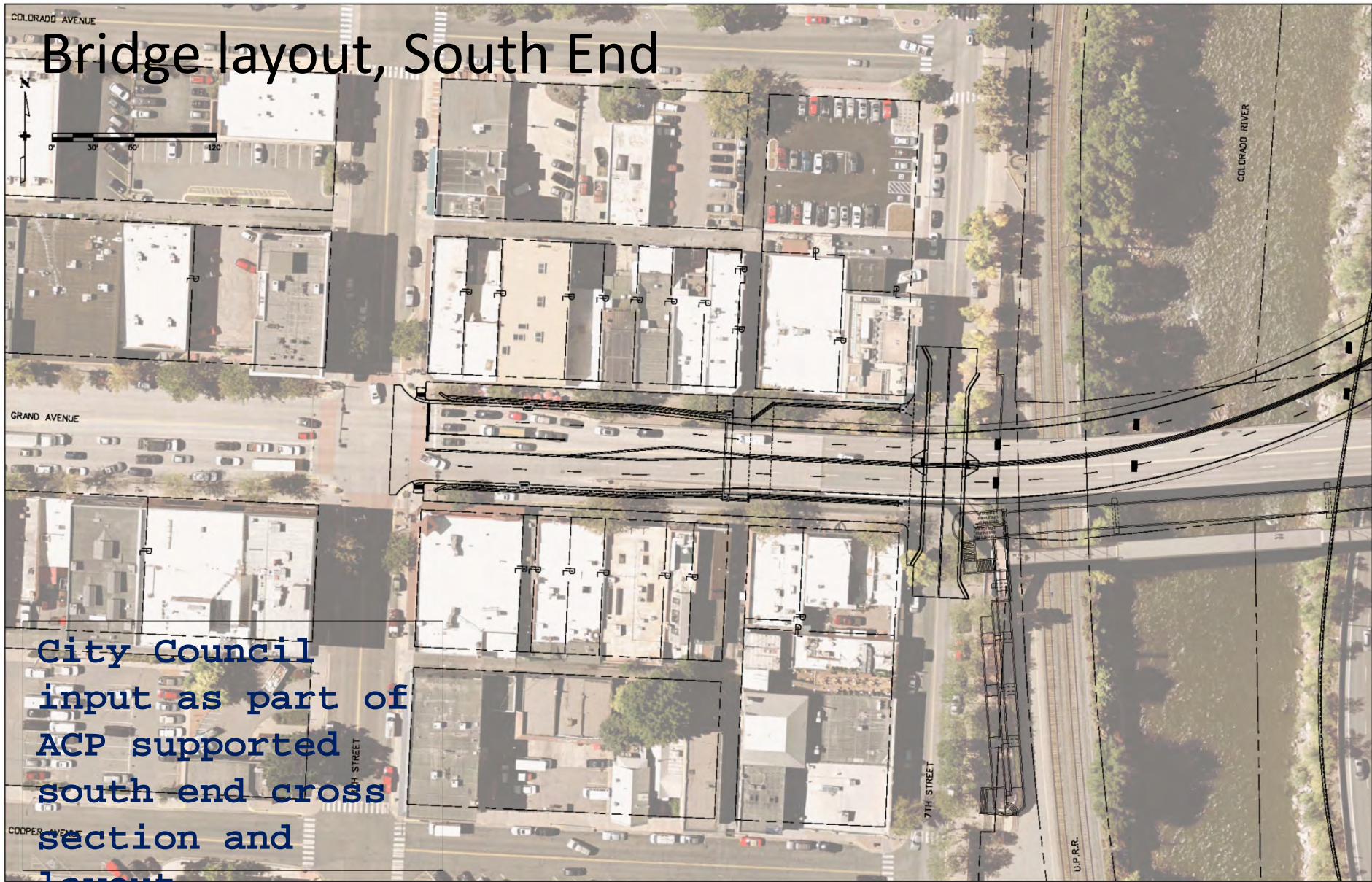


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Grand Avenue Bridge layout



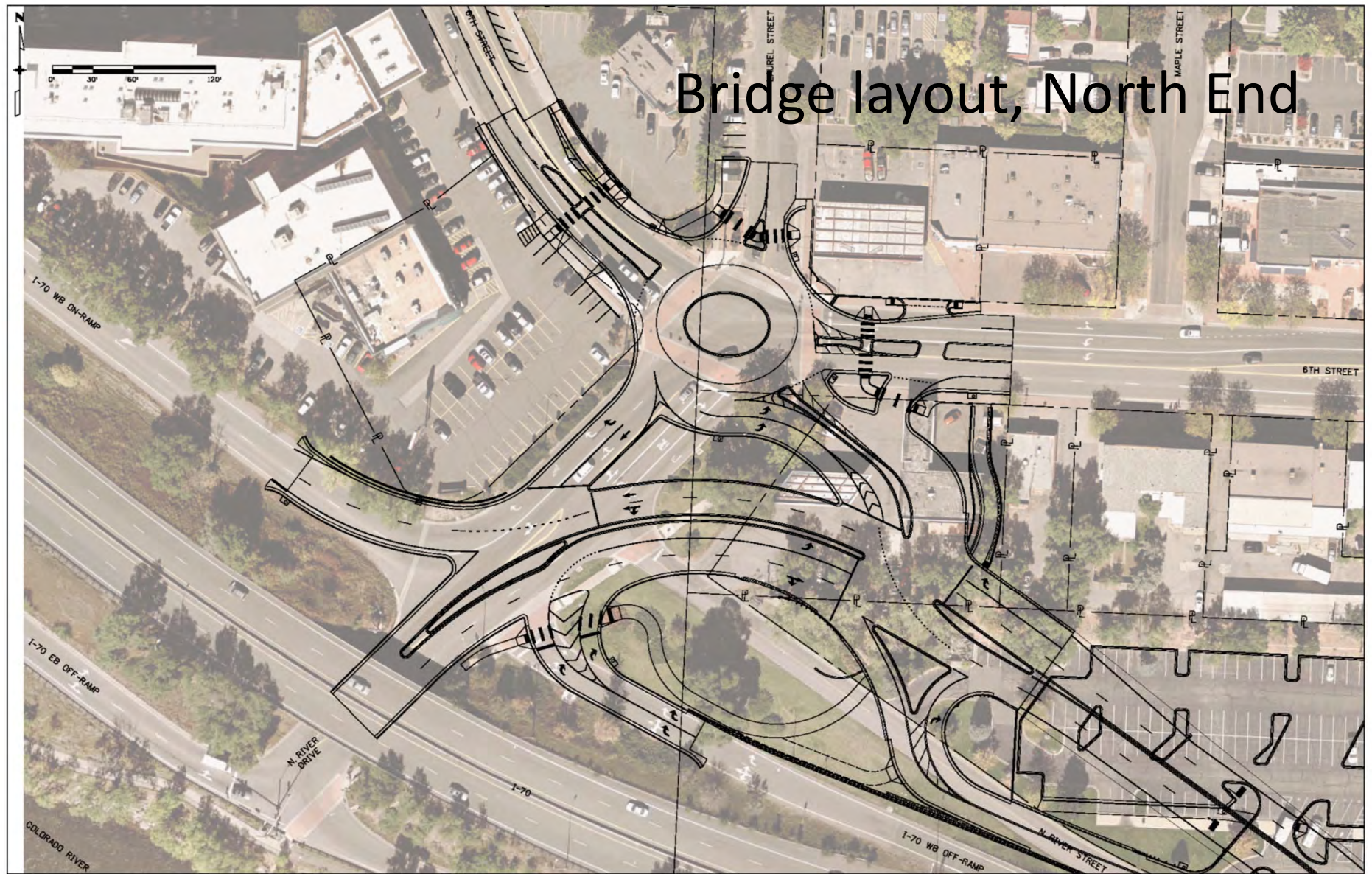
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Bridge layout, South End

City Council
input as part of
ACP supported
south end cross
section and
layout

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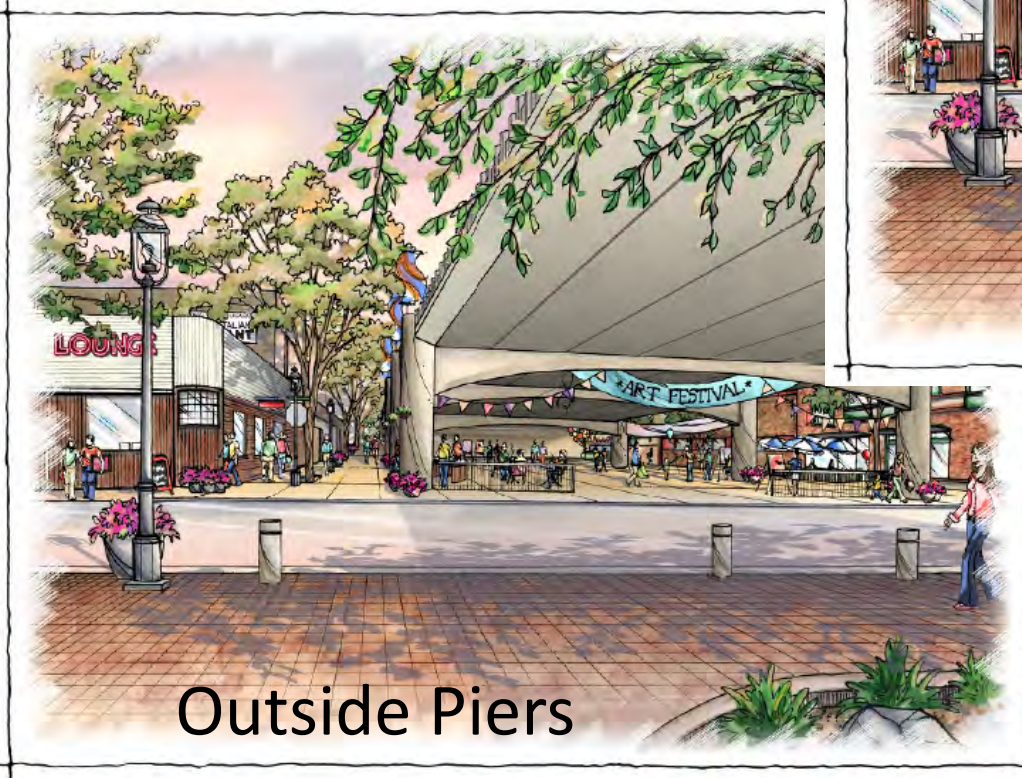
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Under the new Bridge Downtown



Inside Piers



Outside Piers

DDA input,
Citizen input,
SWG input 5/30,
Council input.

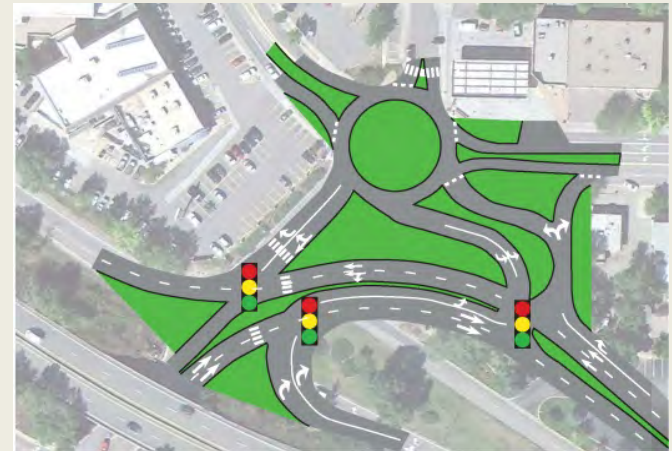
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Roadway Improvements



6th and Laurel Roundabout

- In May 2013, a revised roundabout option was recommended by the PWG as the preferred configuration
- Project team looked at range of options including:
 - 3 legged roundabouts
 - 4 legged roundabouts
 - 5 legged roundabouts
 - Signalized intersections
 - A “T” intersection off the Grand Avenue Bridge
 - Flyovers
 - “Diverging diamond” interchanges
 - 4—way stop intersection
 - Others



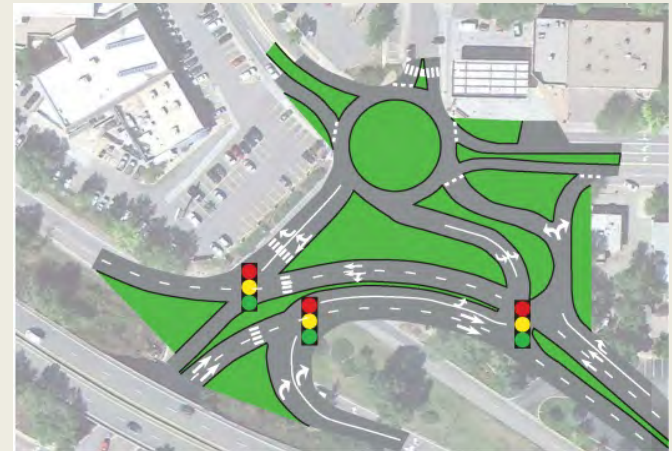
Intersection Option A,
Roundabout, April 4, 2012
public meeting

6th and Laurel Roundabout

Three options presented to public at an April 4, 2013 Open House

Based on public input two of these were eliminated from further consideration:

- A large roundabout carrying all SH 82 traffic
- A small roundabout paired with a flyover for SH 82 traffic



Intersection Option A,
Roundabout, April 4, 2012
public meeting –

Recommended due to:

- More efficient
- Fewer construction impacts

6th and Laurel Roundabout

Next set of options developed for June 6, 2012

Public Open house included:

3A – modified smaller roundabout

3E – signalized intersection

3D – T intersection with Grand Avenue Bridge



After Alignment 3 was recommended in September 2012, these 2 options were further refined.

6th and Laurel Roundabout

Option 3E (signalized intersection) was recommended by project team after additional evaluation:

- Better for pedestrians
- Less confusing,
- Fewer construction impacts
- Less expensive to build



6th and Laurel Roundabout

But this was not the end of the discussion:

- Still sentiment from public and stakeholders that design was still confusing, required property acquisition to at least 2 businesses and did not maximize 6th Street area targeted for potential redevelopment, and would not lend itself to gateway treatments



Based on this input the signalized intersection and roundabout options were both revised to best address these concerns.

6th and Laurel Roundabout

The revised roundabout was determined to respond to stakeholder concerns and overall to be the better of the revised configurations. Benefits:

- Removes separate “T” intersection with 6th Street.
- Creates longer stretch on 6th Street for parking and frontage to businesses.
- Requires only 1 acquisition, not 2



- Refines locations of sidewalks north of roundabout with lower traffic volumes.

6th and Laurel Roundabout

Evaluation matrix:

Project Criteria and Measures of Effectiveness	Comparative Analysis	
	Signalized Intersection(3E)	Roundabout (Revised 3A)
Minimize environmental impacts to scenic, aesthetic, historic, and natural resources.	Comparatively worse	Comparatively better
Be in harmony with the community.	Comparatively worse	Comparatively better
Be practical and financially realistic.	Equal	Equal
Reduce and minimize construction impacts to the businesses, transportation users, and visitors.	Comparatively better	Comparatively worse
Minimize private property impacts.	Comparatively worse	Comparatively better
Safely accommodate transportation users.	Equal	Equal
Maintain and improve multimodal connections for buses, pedestrians, and bicycles.	Comparatively worse	Comparatively better
Provide an alternative that is consistent with City planning.	Comparatively worse	Comparatively better
Incorporate sustainable elements into the design.	Comparatively worse	Comparatively better
Maintain or improve transportation operations in the project area.	Comparatively worse	Comparatively better

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Detours

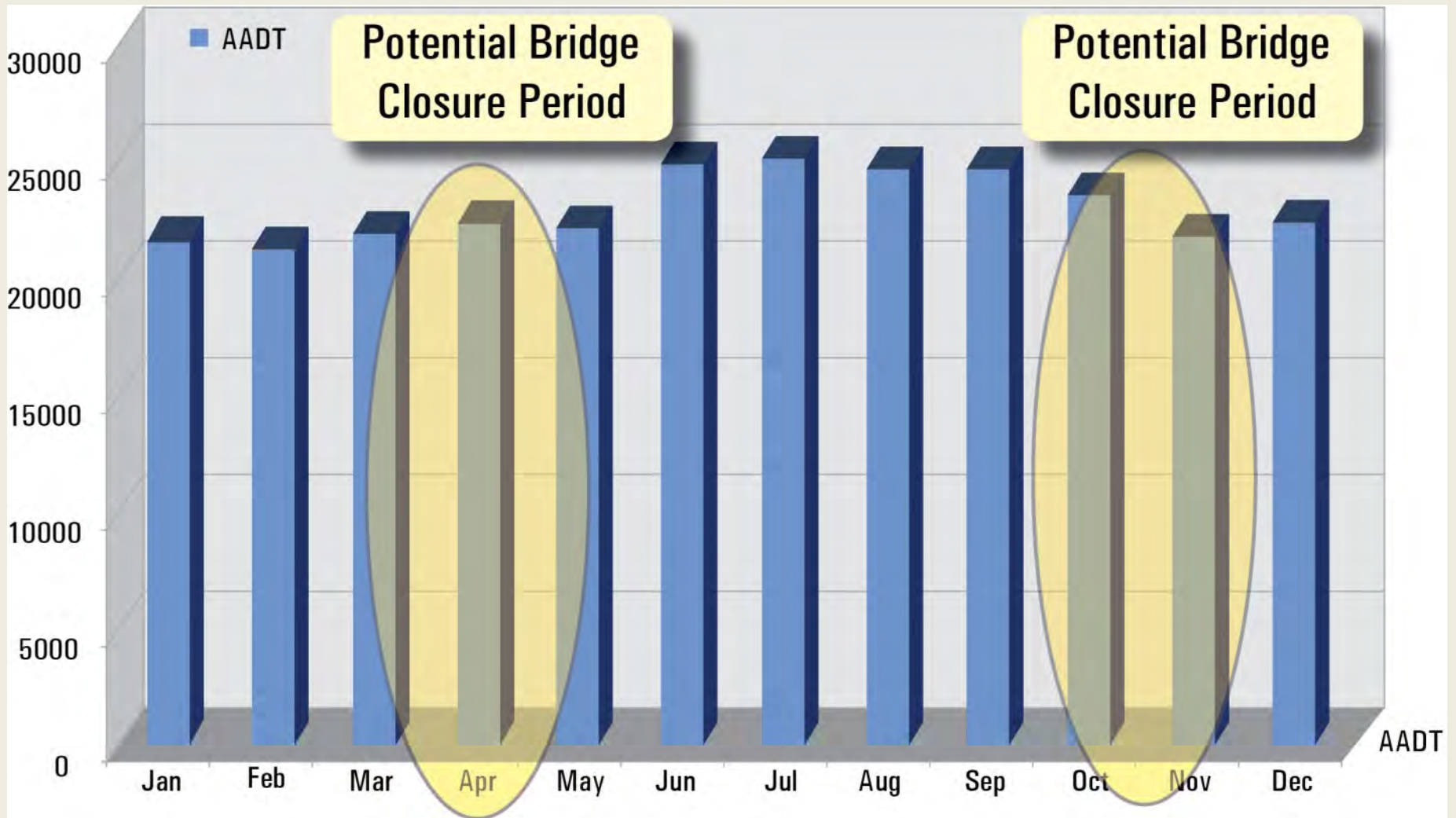
- Less than 2 months
 - Midland,
 - 7th, or
 - 8th
- I-70
 - For bridge demolition and girder erection



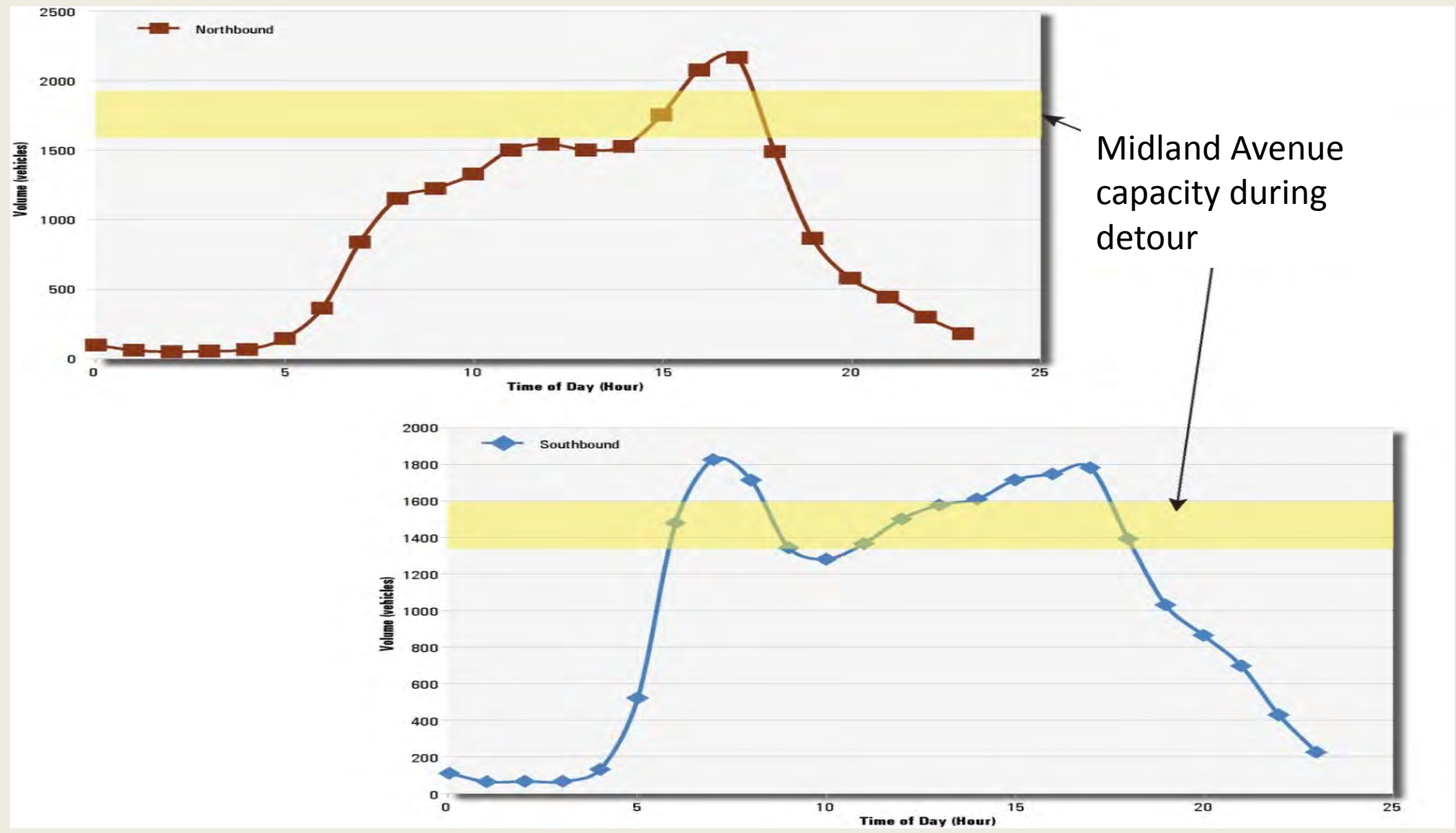
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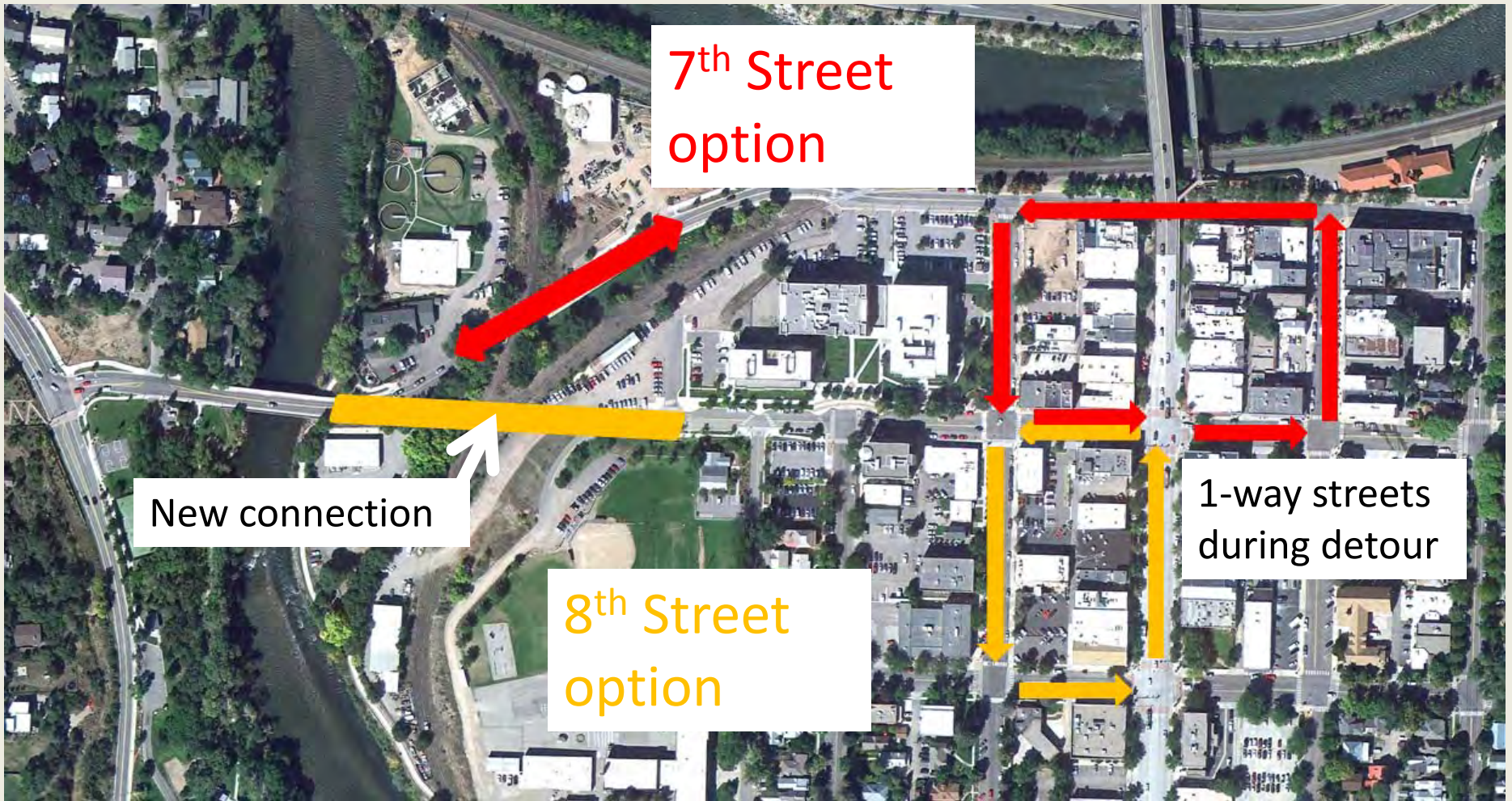
Detour Demand Management



Detour Demand Management

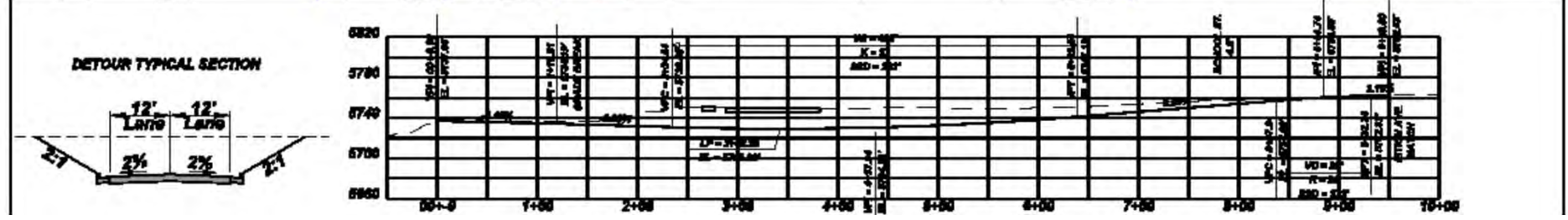
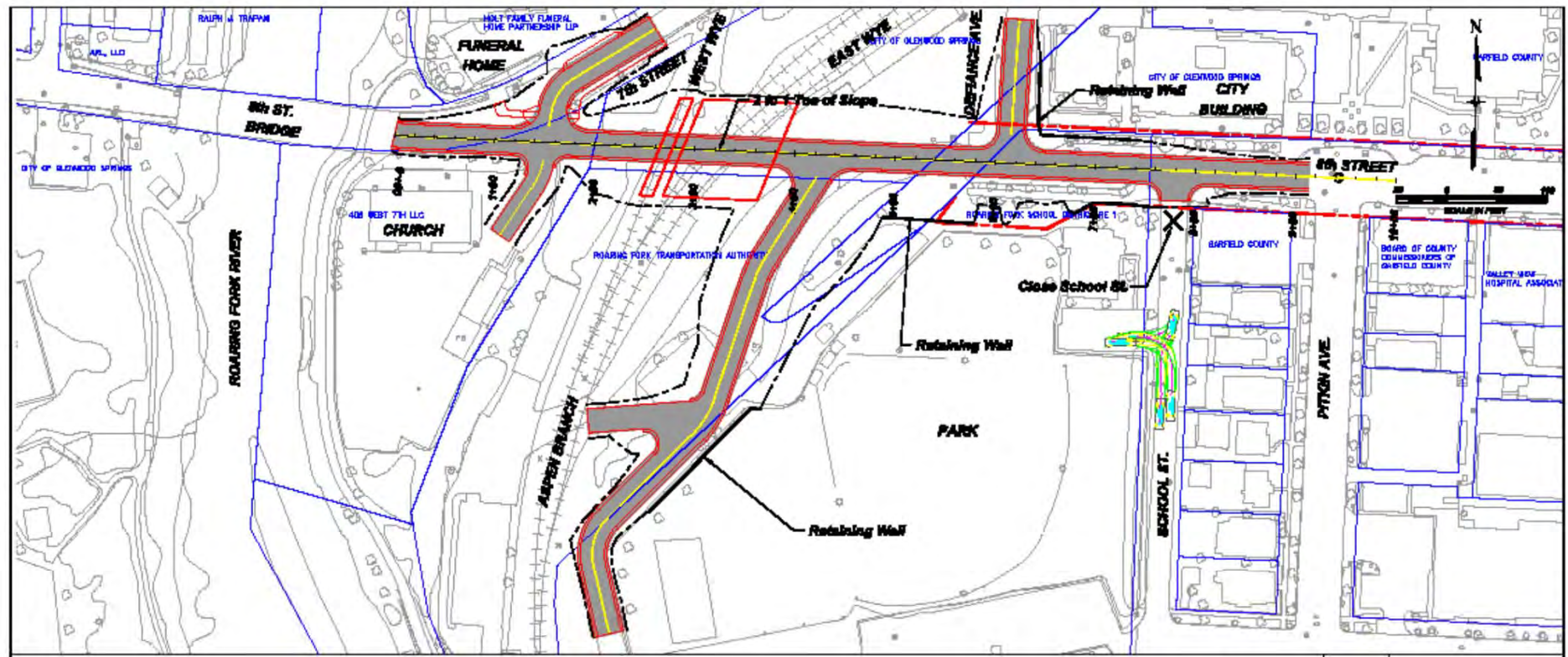


7th and 8th Street Detour Options



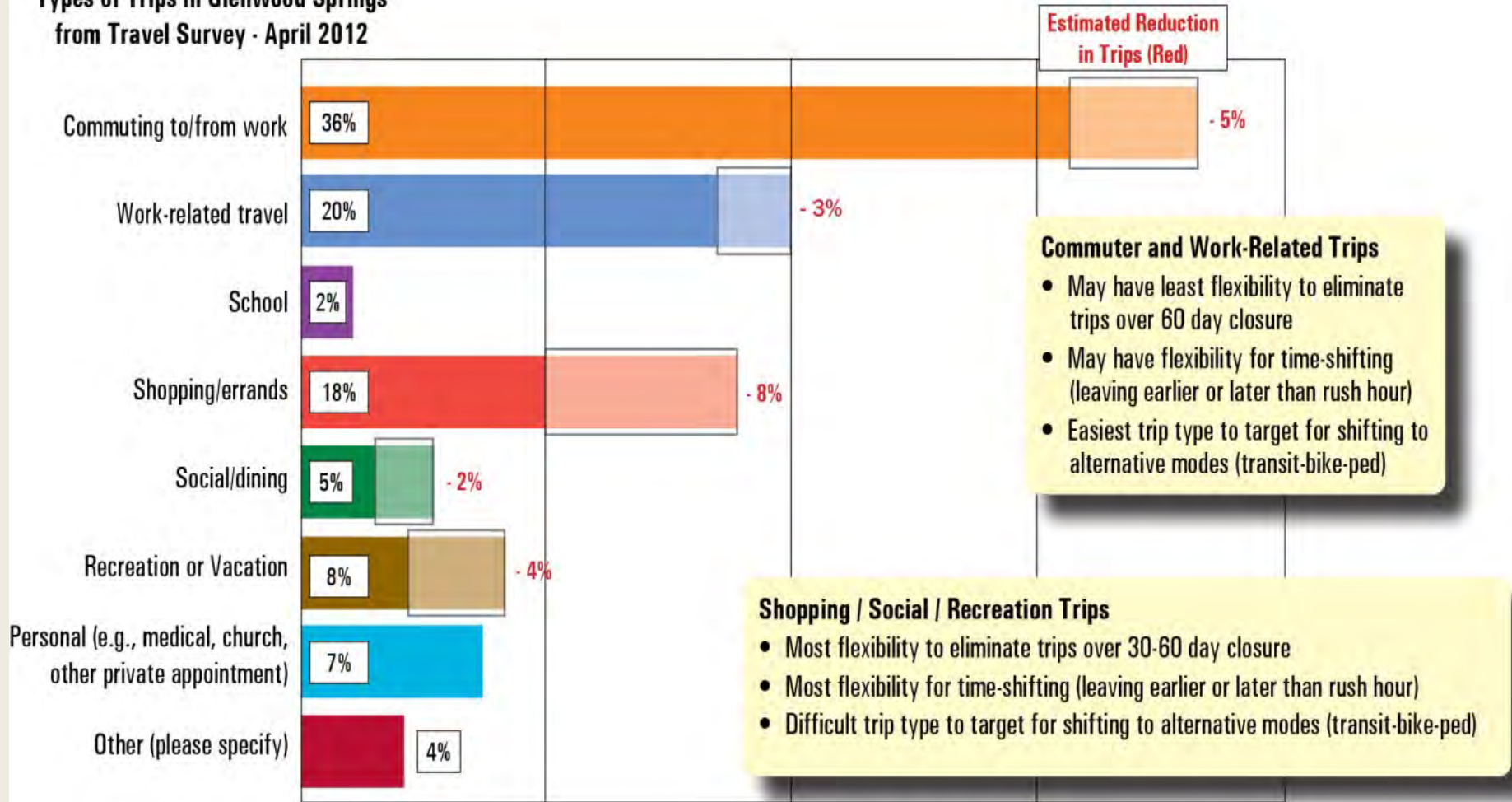
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8th Street Detour Option



Detour Demand Management

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

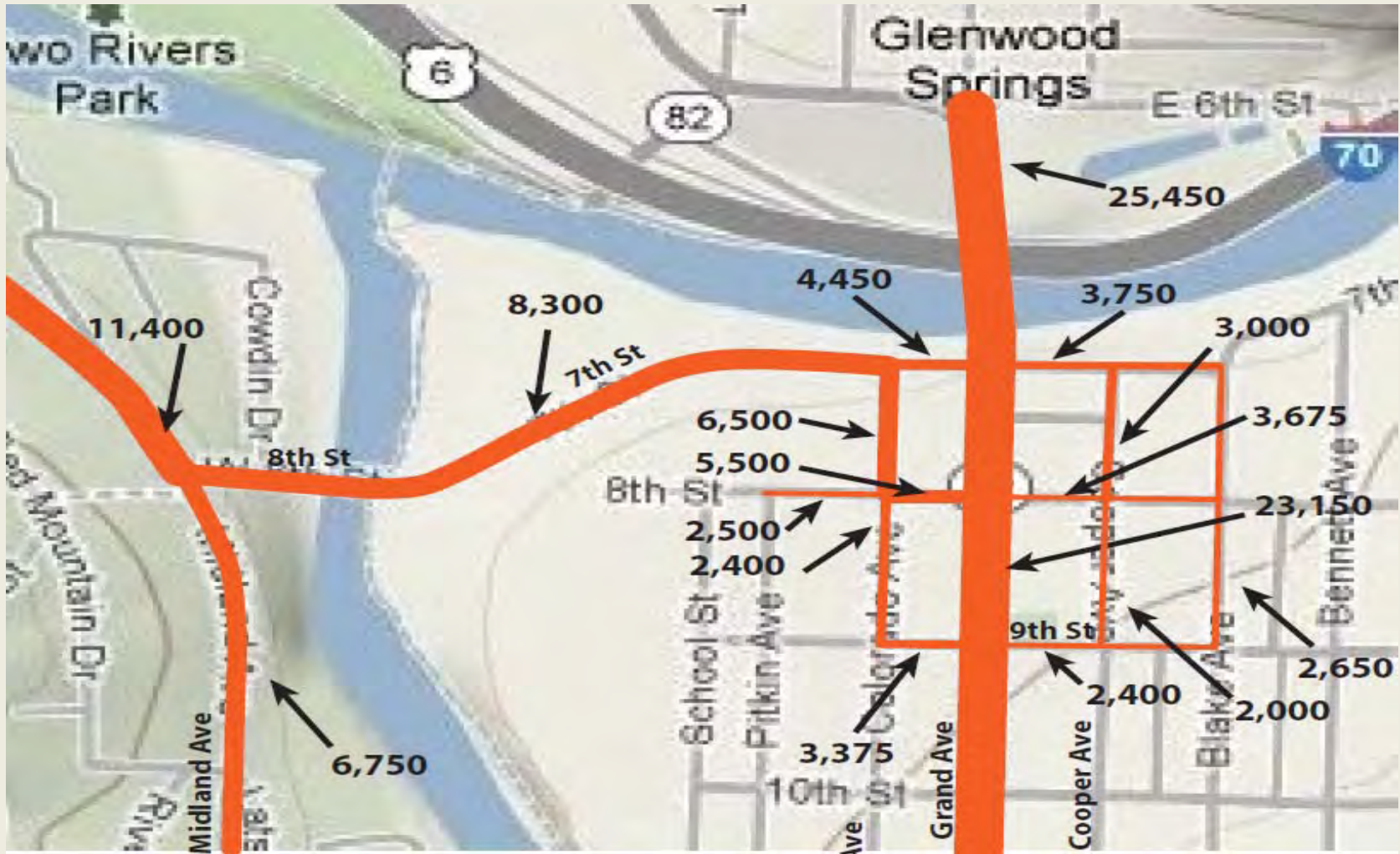


Detour Demand Management Techniques

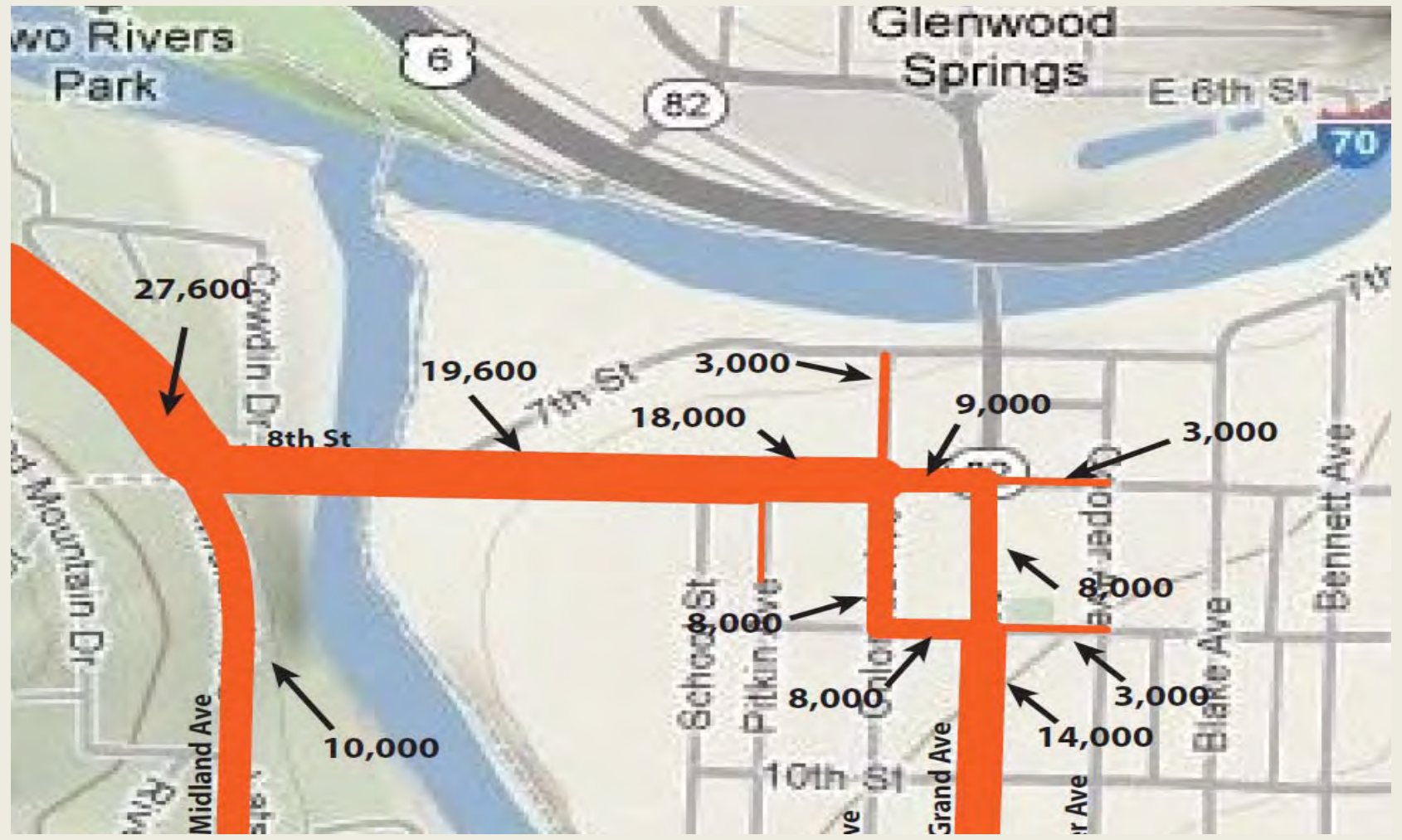
- Ride share
- Transit priority
- Increased transit service
- New transit routes
- Guaranteed ride home
- VMS (Variable Message Signs)
- Rush hour radio reports
- Telecommute
- Variable work hours
 - Flextime and compressed work weeks
- Wayfinding and multi-modal navigational tools
- Special event transport management
- Bike Share program
- New and emerging information technologies
 - Travel congestion apps
 - Push notifications
 - Real time traffic conditions
- Enhanced pedestrian/bicycle facilities
- Transportation access guide
 - Route map
 - Transit information
 - Fares, routes, contact information
 - Travel times
 - Travel options
 - Multi-modal facilities
 - Parking availability

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Existing Daily Traffic – Without Detour



Existing Daily Traffic – With Detour



Exit 114 Improvements



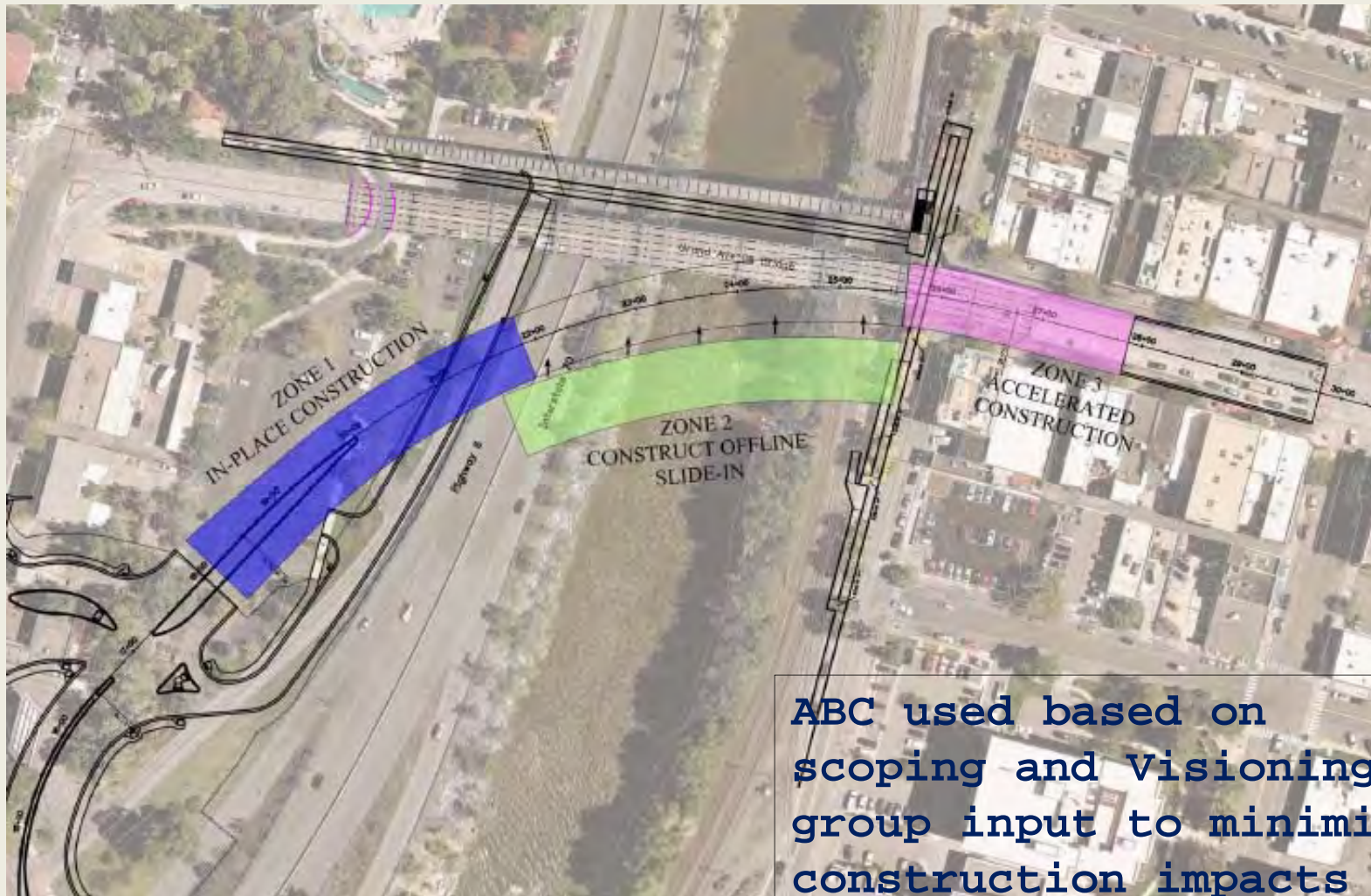
I-70 Temporary Detour



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Accelerated Bridge Construction (ABC)



ABC used based on scoping and Visioning group input to minimize construction impacts to downtown businesses

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ADA Access South Side of Pedestrian Bridge



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ADA Access South Side of Pedestrian Bridge



ADA Access South Side of Pedestrian Bridge

Option A

FEATURES: ELEVATOR, STAIR, NO RAMP



ADA Access South Side of Pedestrian Bridge

Option B

ELEVATOR, STAIR, SHORT RAMP



ADA Access South Side of Pedestrian Bridge

Option C

ELEVATOR, STAIR, LONG RAMP



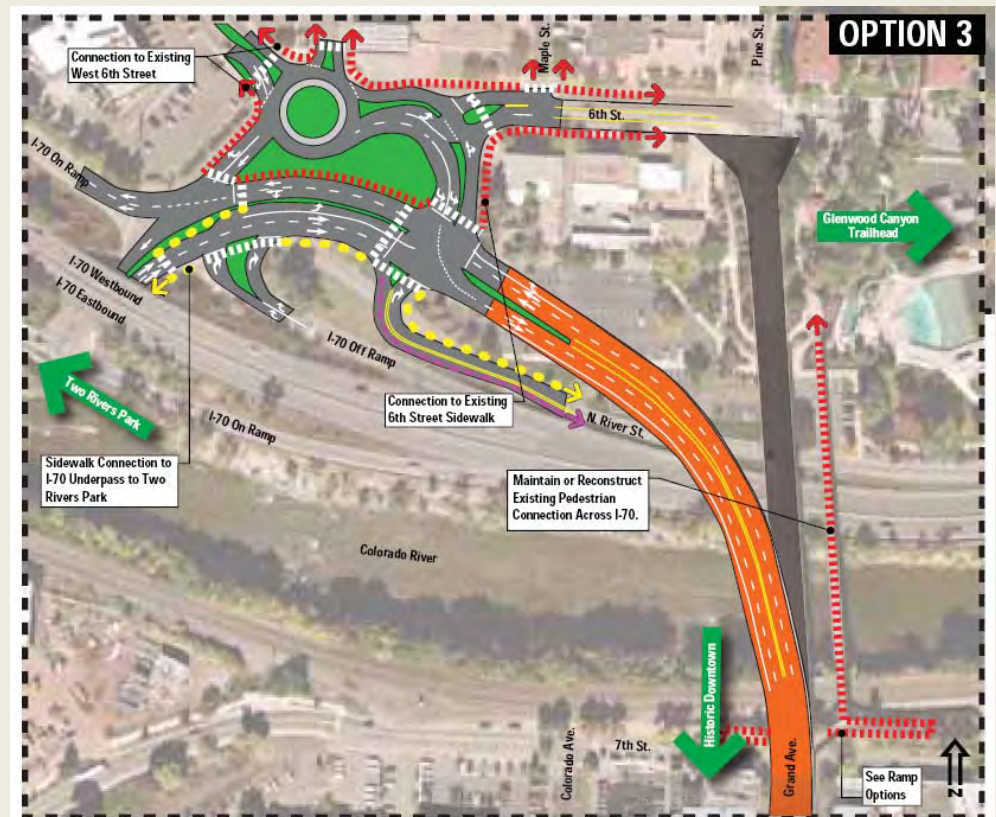
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New Trail Underpass, North Side

August 22, 2012 Public
Open House

- Presented options for pedestrian / bike connections. Most favored Option 3.



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New Trail Underpass, North Side

Jan. 9, 2012 Public Open House

- Most favored providing connections to Two Rivers Park Trail
- Several challenges noted with option shown at meeting
- Resulted in brainstorming meeting on Feb. 25, 2013 with River Commission, City of Glenwood Springs, Glenwood Hot Springs, Downtown Development Authority and CDOT.



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New Trail Underpass, North Side

Feb. 25, 2013 Brainstorming Meeting

- Suggested trail underpass at abutment of Grand Avenue Bridge
- Several drawbacks were noted:
 - Sidewalk would need to be raised 8 feet above parking lot
 - Sharp corners at abutment
 - Bridge would need to be lengthened



New Trail Underpass, North Side

Further refinement from
Brainstorming meeting

- More direct trail connection
- Better grades
- No sharp corners
- Better visibility from ramp area and 6th Street
- Approximately 150' long, 14 to 16 feet wide and 8 to 9 feet high



(Replace with better graphic from EA)



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- Next steps and what types of decisions will be made in the next few months.
- Further details on:
 - Grand Avenue Bridge piers and superstructure
 - Bridge rails
 - Lighting
 - Monumentation
 - Other urban design and landscaping features.