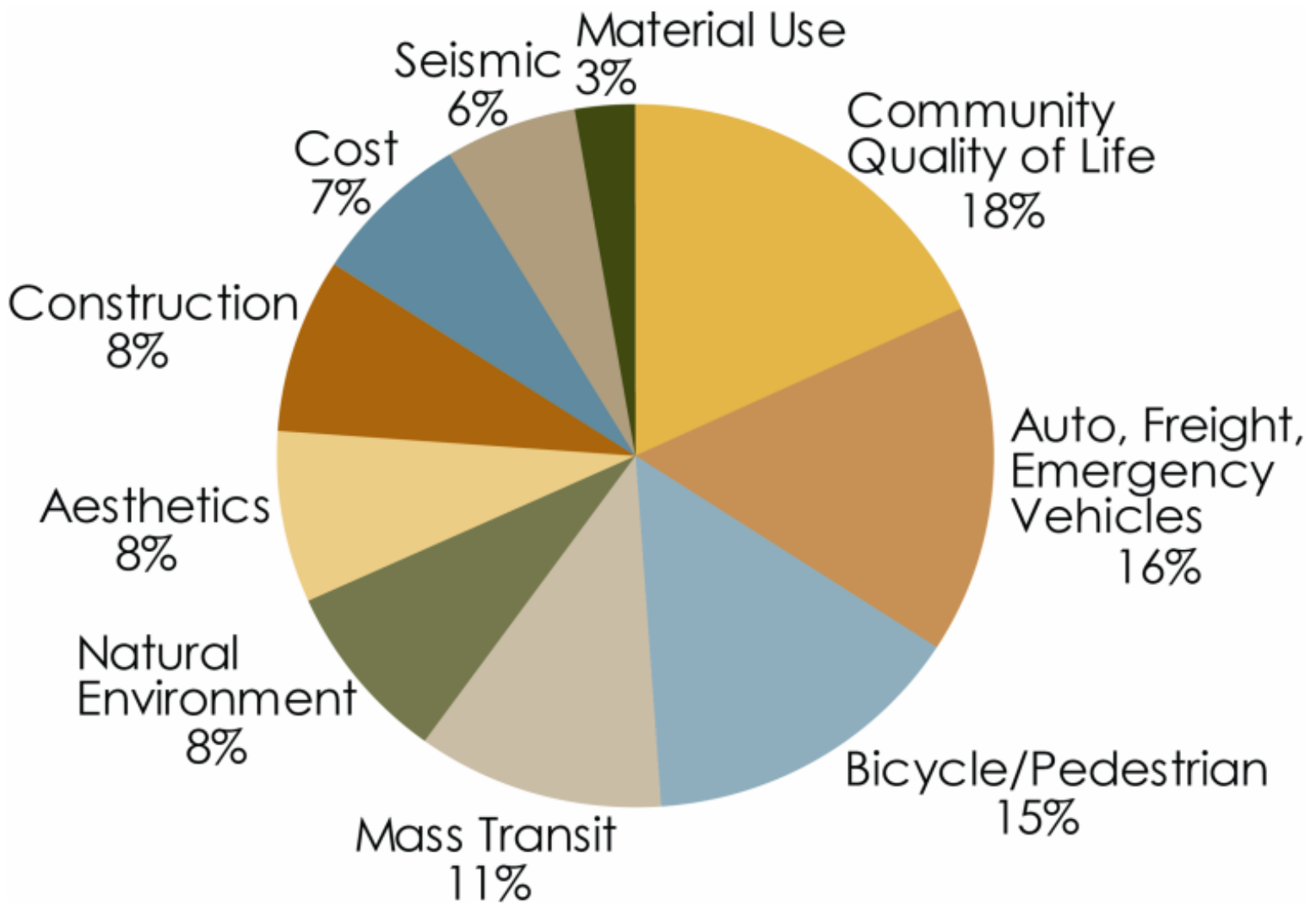


Alternatives Evaluation Overview

- 124 Alternatives were analyzed against the evaluation criteria
- Criteria and criteria weighting were set by the Community Task Force
- Ratings were quantitative and qualitative
- Total of over 4,500 individual scores!

Evaluation Criteria

- A total of 37 evaluation criteria were organized into 10 categories:



- The Community Task Force divided 100 points among the categories to reflect the relative importance of community values.

Highest Weighted Criteria: Community Quality of Life

How was it defined?

- Minimize cut-through traffic
- Achieve consistency with community plans
- Minimize residential relocations
- Preserve viability of businesses
- Minimize residential impacts
- Minimize noise
- Minimize business relocations
- Minimize recreational facility impacts
- Preserve historic resources



Interchange Choices for All Alternatives

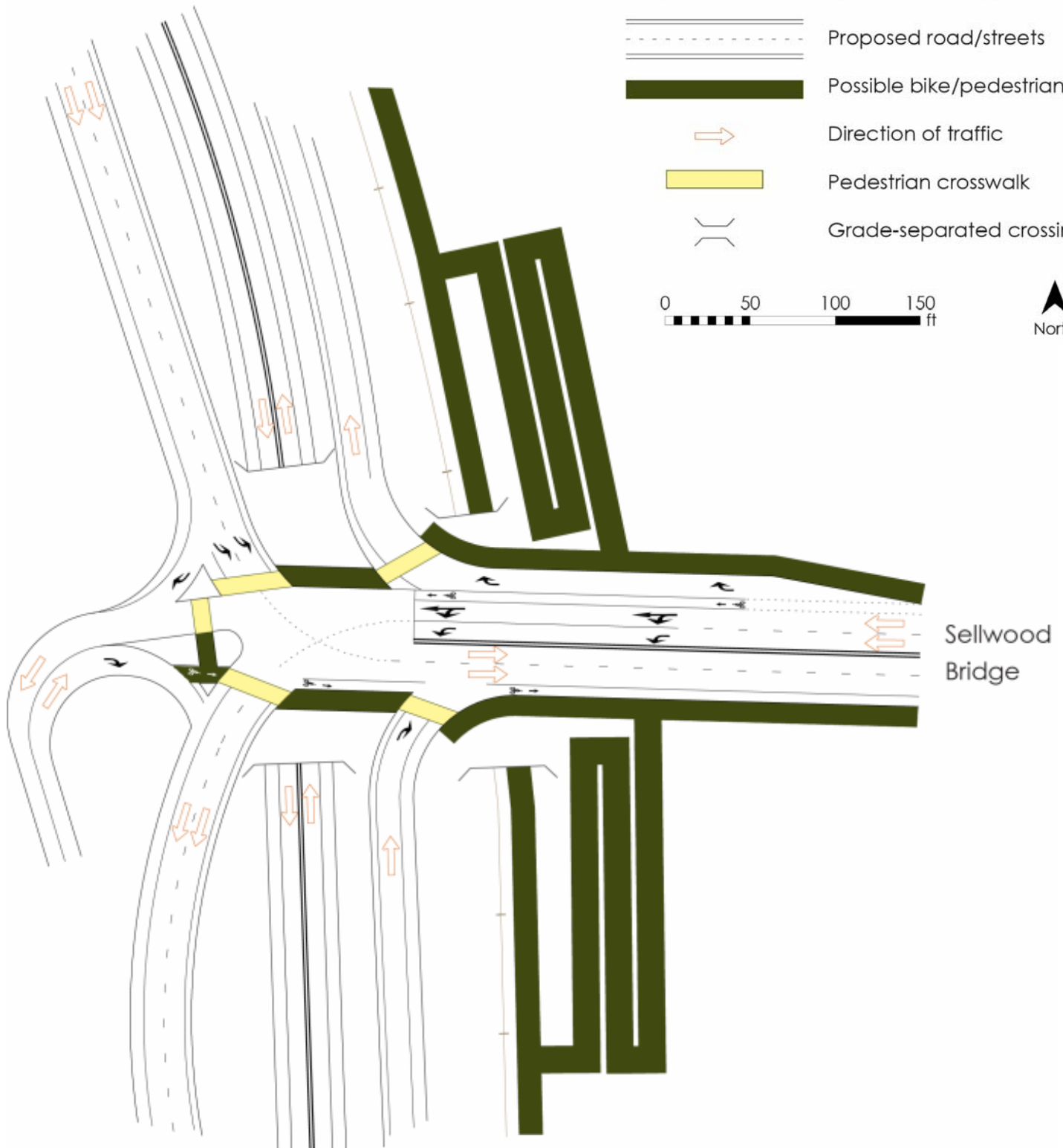
2-Level Signalized Interchange

Highway 43
Macadam Ave.

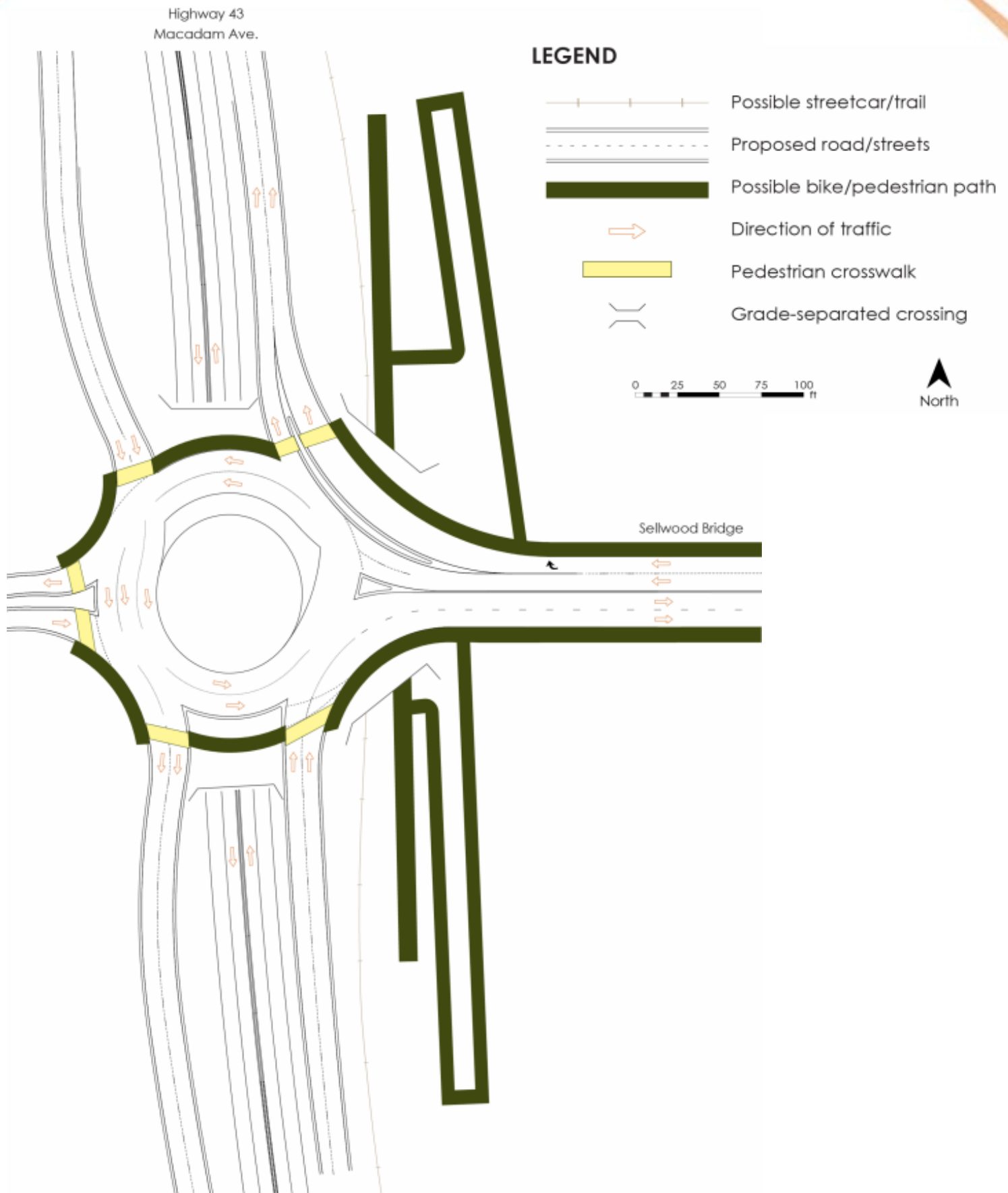
LEGEND

- Possible streetcar/trail
- Proposed road/streets
- Possible bike/pedestrian path
- Direction of traffic
- Pedestrian crosswalk
- Grade-separated crossing

0 50 100 150 ft



2-Level Roundabout



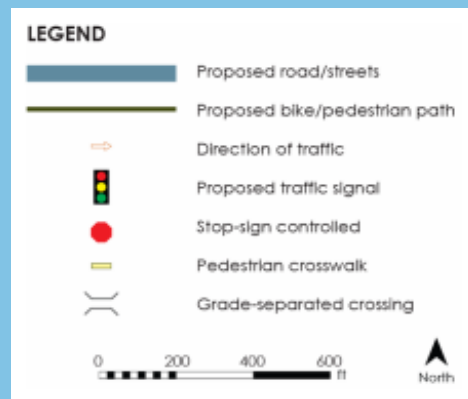
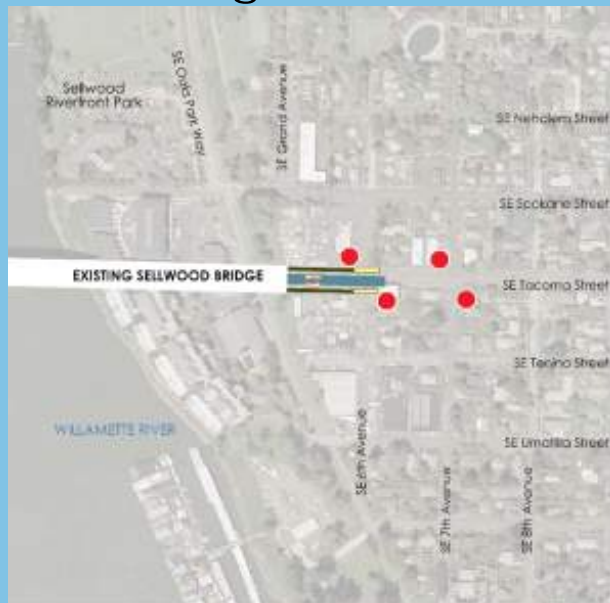
Interchange: Key Findings

- **Signalized** interchange performs better for Transit and Bicyclists/Pedestrians
 - Dedicated time for bicyclists/pedestrians to cross the roadway (safety)
 - More easily accommodates future streetcar
 - Greater opportunities for bus pullouts and transit signal priority
- **Roundabout** performs well for Aesthetics
 - Potential for landscaping in center
 - Potential gateway feature for community
- Interchange type was not a differentiator for several evaluation criteria

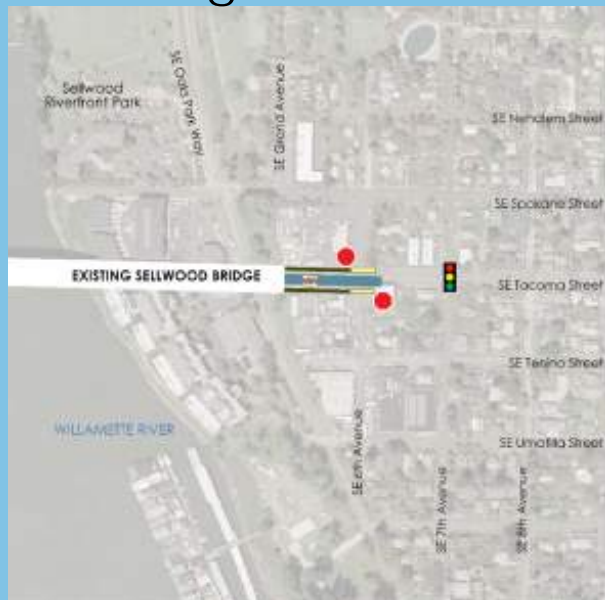
East Side Connection Ideas

- No change—leave as is
- Traffic signal at SE 7th Avenue
- SE Grand Avenue extension

No change



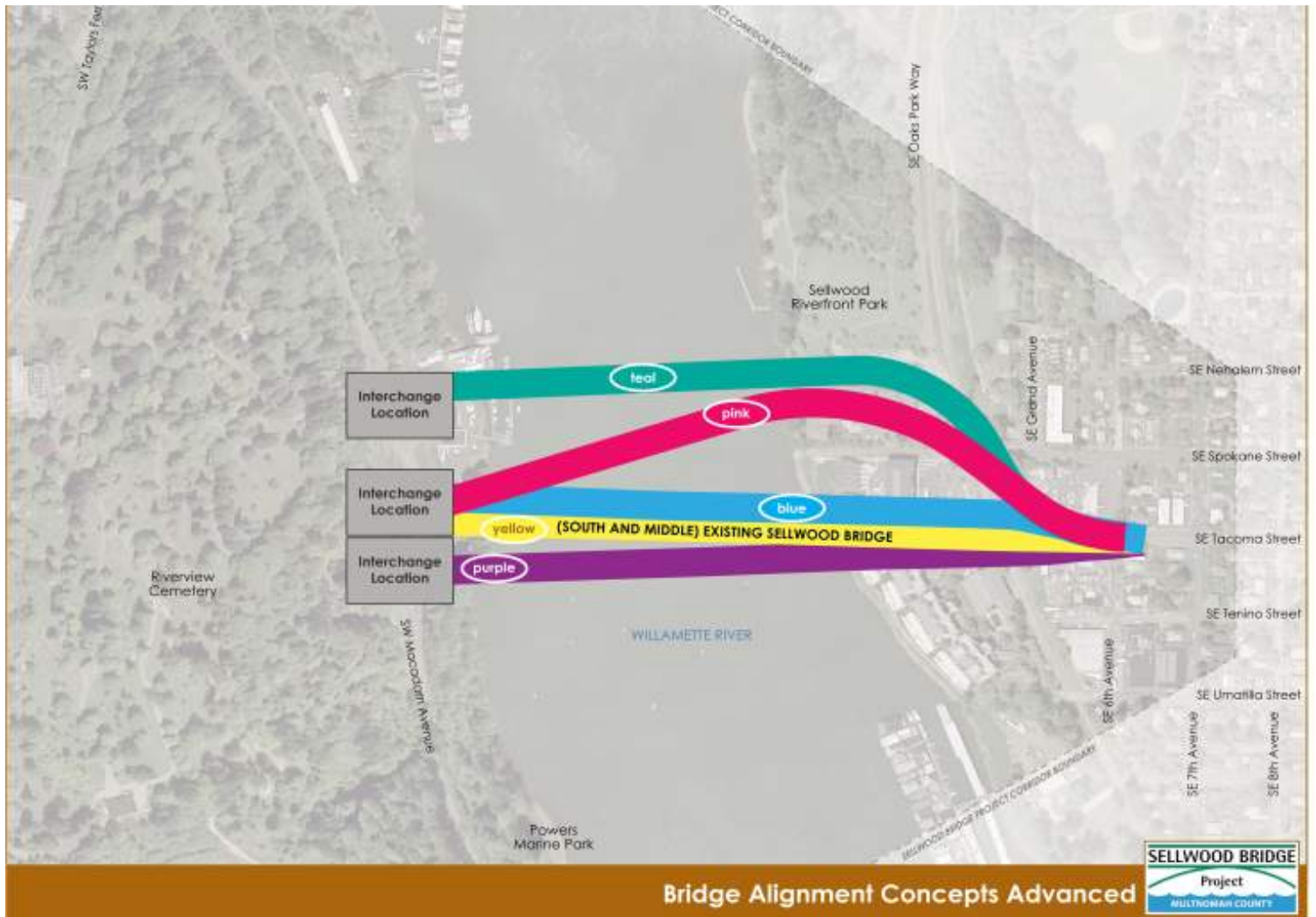
Traffic signal at 7th Ave



Grand Ave extension



Bridge Alignments Evaluated



Rehabilitate: Yellow

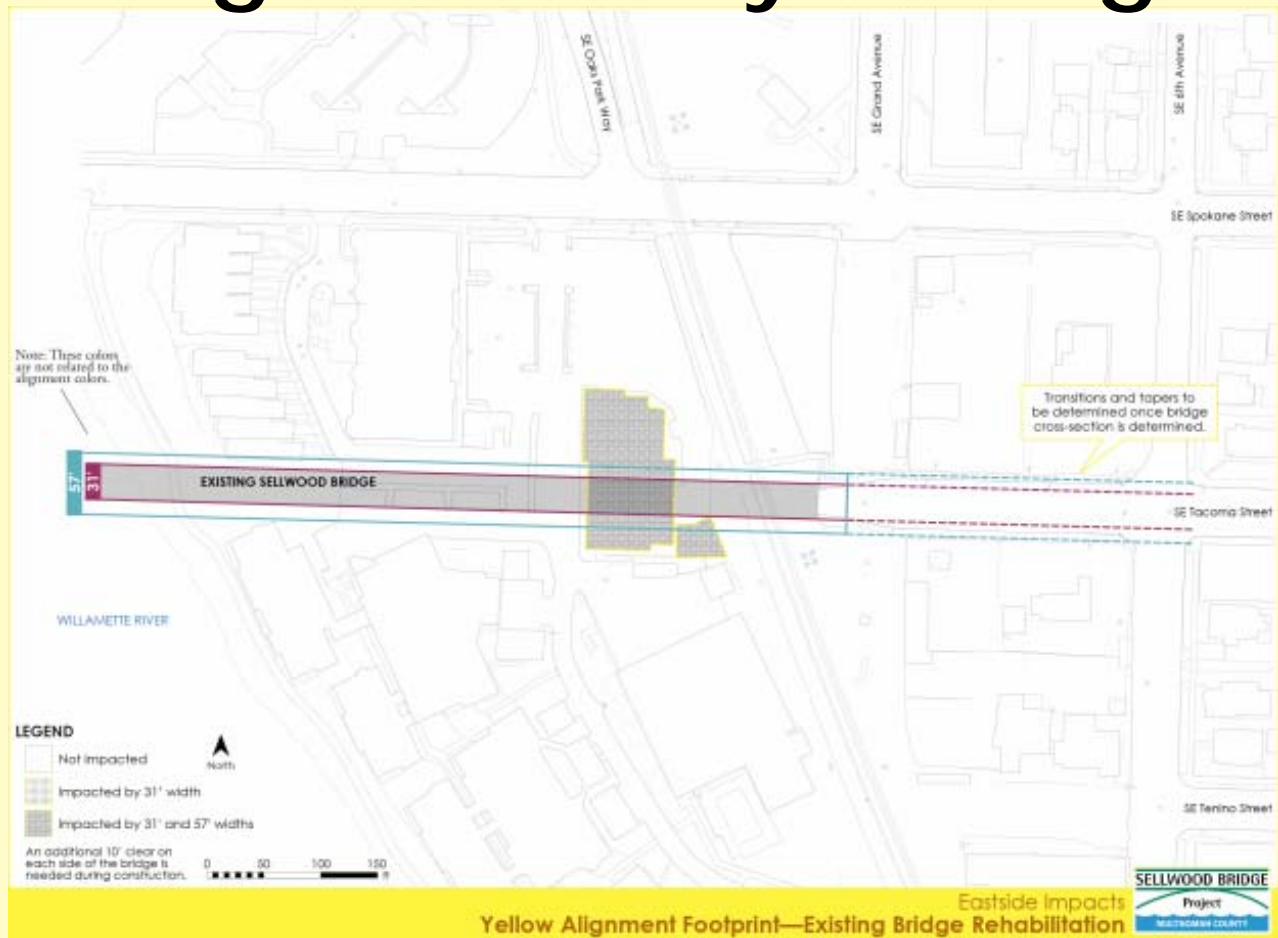
Replace: Teal, Pink, Blue, Yellow, and Purple
Combination (Rehab and Replace):

Existing bridge (Yellow) for bikes/peds
combined with a new bridge for autos, trucks,
and transit on Teal, Pink, Blue, or Purple



Rehabilitation Alternatives

Yellow Rehabilitation Alignment: Key Findings



Advantages:

- Minimizes impact to the natural environment
- Minimizes residential relocations
- Least impact to recreational and historic resources

Disadvantages:

- Least potential to accommodate autos, freight, emergency vehicles, and transit
- Least flexibility to respond to future needs
- Most closure time and travel impacts during construction (assuming no detour bridge)
- Highest noise impacts
- Less effective in seismic protection than a new bridge

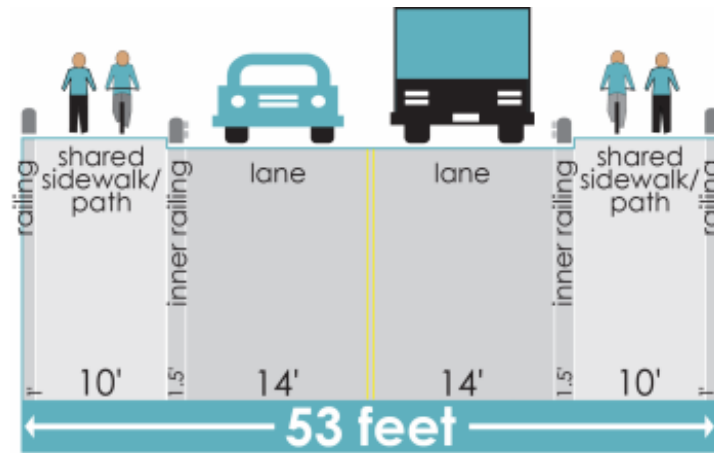
Detour Bridge

- If a **detour bridge** is included with a rehabilitation alternative, it would follow the Teal alignment to minimize residential and business relocations.
- A detour bridge would cost approximately \$35 million (in year 2012 dollars).

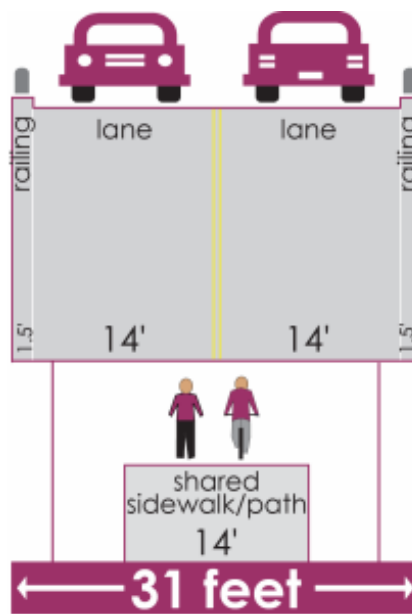


- If **no detour bridge** is built during construction, there will not be a bridge in the area for about **3 years**.
- A temporary **ferry option** during construction will be considered in the draft EIS.

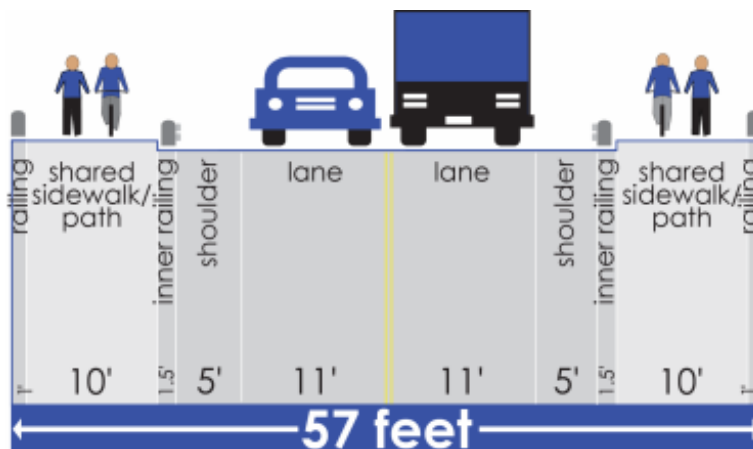
Rehabilitation Cross-Sections



A



I



L

Rehabilitation Cross-Sections

A, I, and L cross-sections were the poorest performers of all cross-sections

- Poorest for Transit and Auto, Freight, and Emergency Vehicles
- Least ability to respond to future needs
- As 2-lane cross-sections, performed well for Aesthetics, Community Quality of Life, Construction, and Natural Environment (but replacement 2-lane cross-sections performed better)

Rehabilitation Alternatives Summary

Rehabilitation alternatives performed worse than replacement alternatives

- Little or no cost saving over comparable replacement options
- Require about 3-year bridge closure during construction or a \$35 million detour bridge (in year 2012 dollars)
- Less able to meet functional requirements (autos, trucks, transit, bikes, and peds)
- Least flexibility for meeting future needs
- Least flexibility for bridge design
- Higher seismic risk



Replacement Alternatives

Teal Alignment: Key Findings



Advantages:

- Avoids relocation of existing residences
- Lowest noise impact
- Minimizes construction impacts (farther away from the existing bridge)
- Allows use of existing bridge for traffic during construction

Disadvantages:

- Higher impacts to natural environment, including impacts to riparian area, floodplain, and tree canopy
- Highest impact to historic resources
- Highest impact to recreational facilities

Pink Alignment: Key Findings



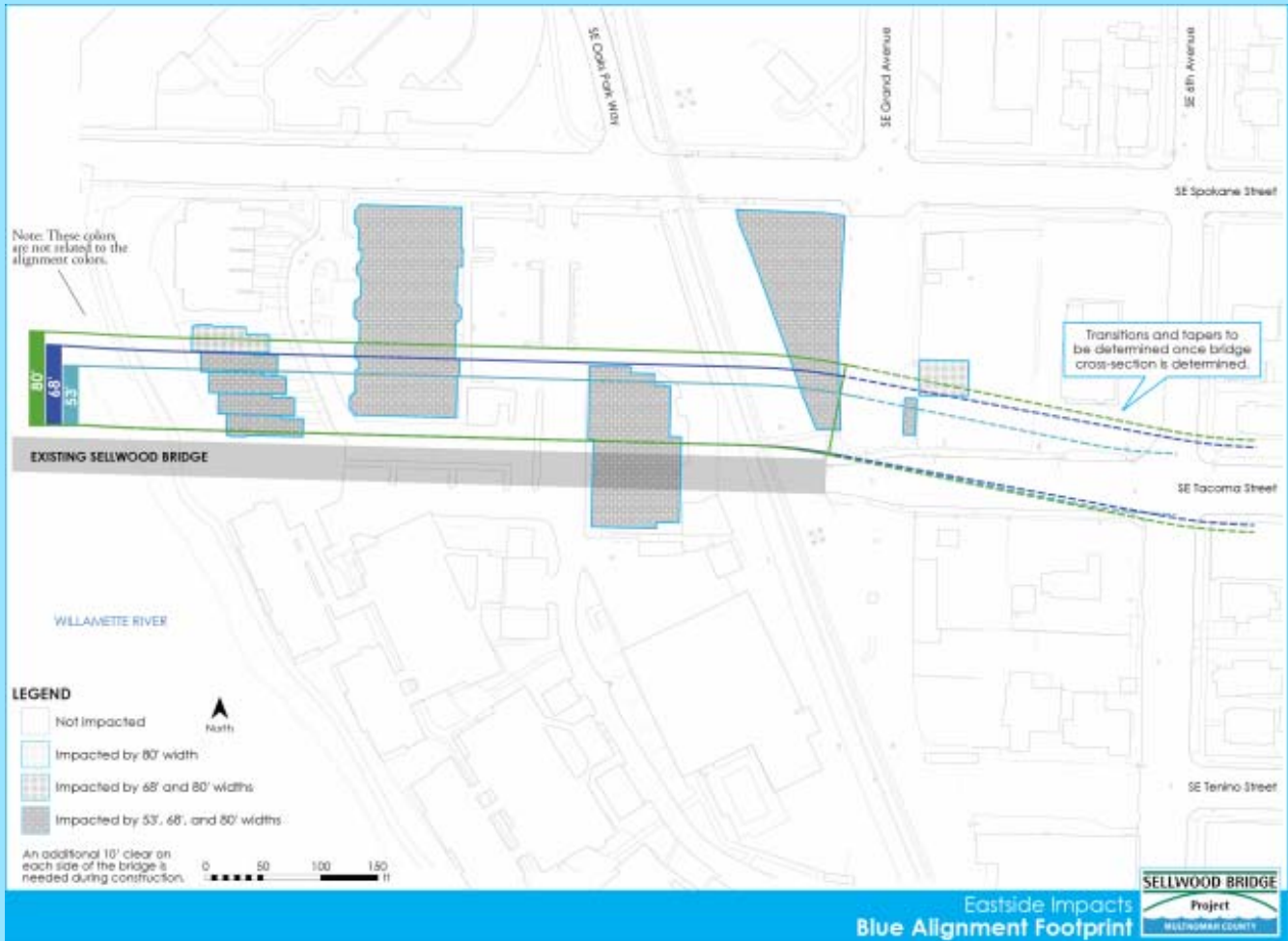
Advantages:

- Avoids relocation of existing residences
- Minimizes noise impact
- Minimizes construction impacts (farther away from the existing bridge)
- Allows use of existing bridge for traffic during construction

Disadvantages:

- Highest number of business relocations
- Natural environment impacts higher due to longer bridge span
- More historic and recreational facilities impacted

Blue Alignment: Key Findings



Advantages:

- Minimizes natural environment impacts (close to existing bridge)
- Least impact to recreational facilities
- Fewer noise impacts
- Allows use of existing bridge for traffic during construction

Disadvantages:

- Impacts condominiums north of bridge (highest number of residential relocations)
- High number of business relocations
- Construction impacts higher because alignment is close to existing bridge

Yellow South Replacement Alignment: Key Findings



- This alignment can be used for
 - a replacement bridge using 100% new construction
 - OR
 - a replacement bridge that reuses the existing steel truss (75% new construction)

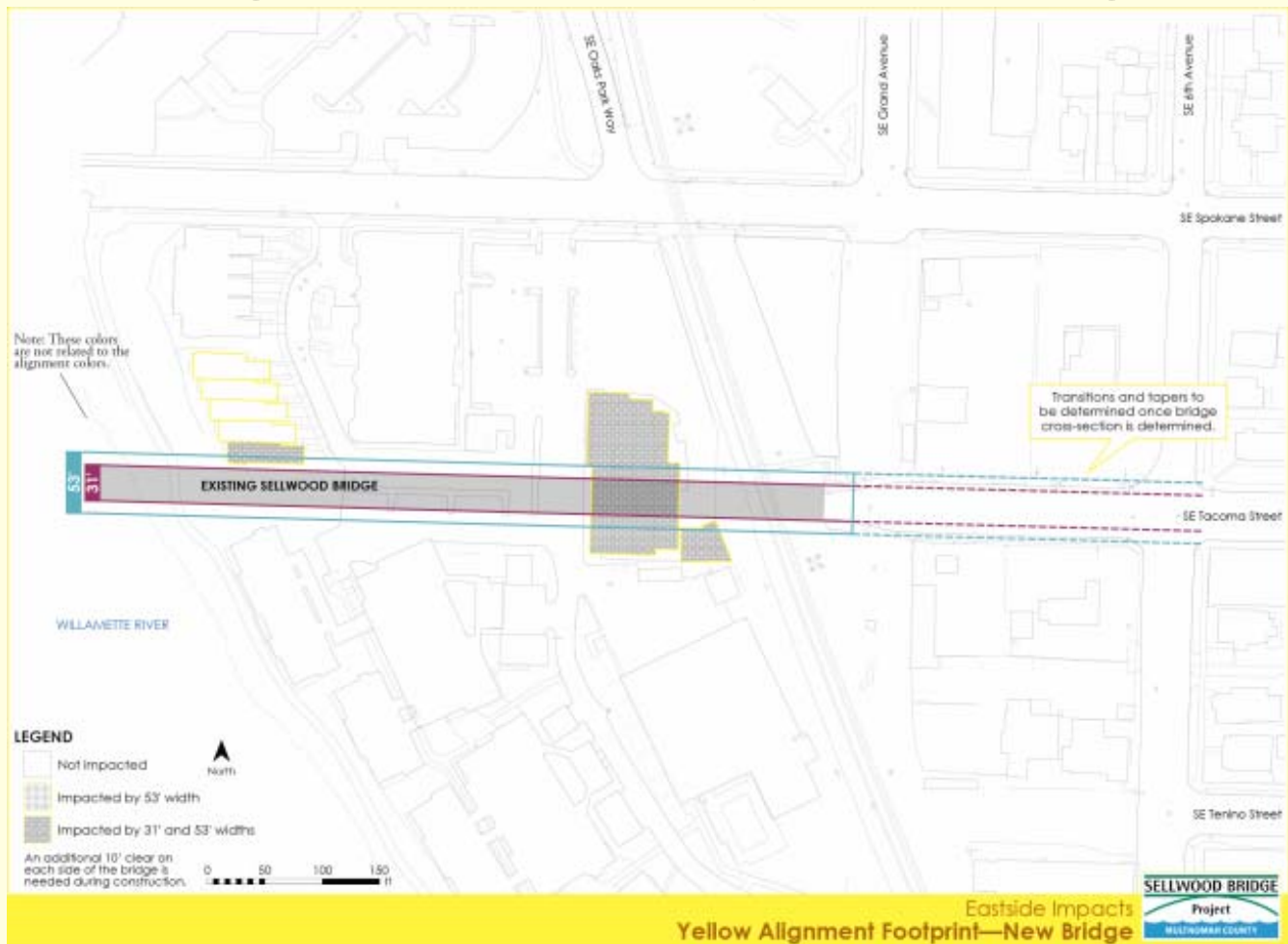
Advantages:

- Minimizes natural environment impacts (close to existing bridge—new bridge only)
- Least impact to recreational facilities
- Reuses existing materials (steel truss—replacement only)

Disadvantages:

- Impacts condominiums south of bridge
- Construction impacts higher because alignment is close to existing bridge
- Reusing the truss is significantly more expensive and has higher environmental impact (more piers in the water)

Yellow Center Replacement Alignment: Key Findings



Advantages:

- Minimizes impact to the natural environment
- Minimizes residential relocations
- Least impact to recreational and historic resources

Disadvantages:

- Least potential to accommodate autos, freight, emergency vehicles, bicyclists, pedestrians, and transit
- Most closure time and travel impacts during construction (assuming no detour bridge)
- Highest noise impacts

Purple Alignment: Key Findings



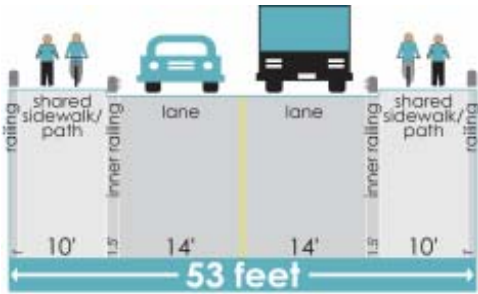
Advantages:

- Minimizes natural environment impacts (close to existing bridge)
- Least impact to recreational facilities
- Allows use of existing bridge for traffic during construction

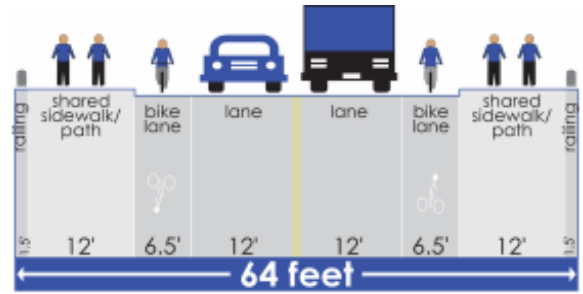
Disadvantages:

- Residential relocations (impacts condos south of bridge)
- Construction impacts higher because alignment is close to existing bridge

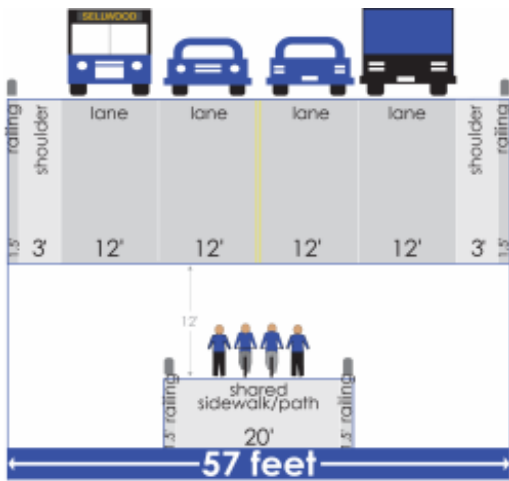
Replacement Cross-Sections



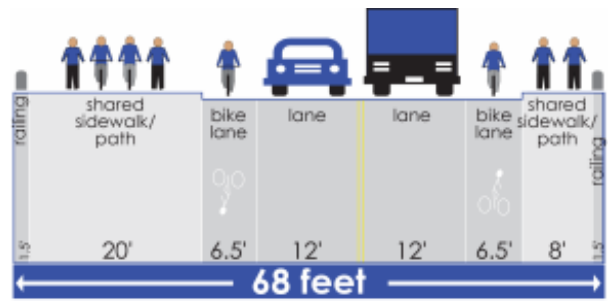
A'



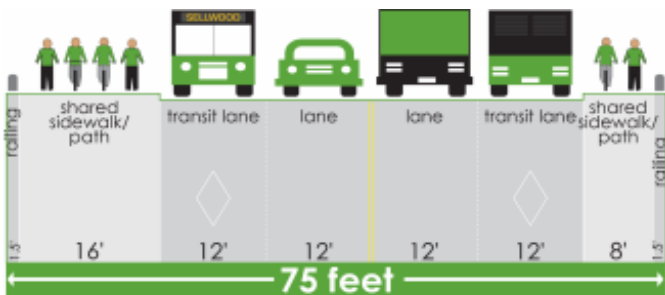
C



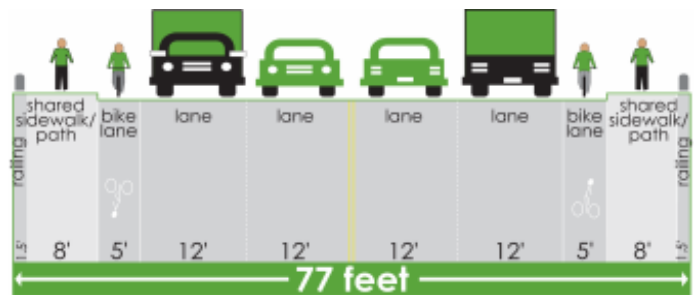
K



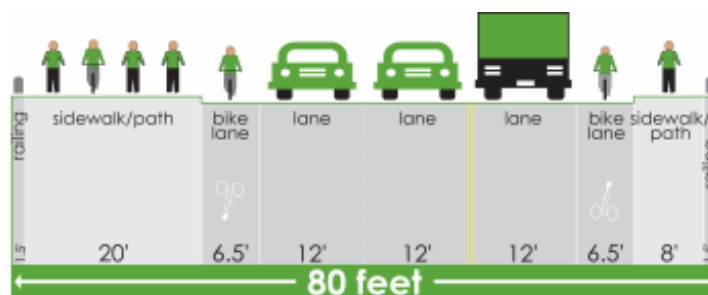
C'



D



E



F

Replacement Cross-Sections: Key Findings

Advantages:

- 2-lane sections rated high for Aesthetics, Community Quality of Life, Construction, and Natural Environment
 - Compatible with regional and community plans
 - Shorter construction schedules
 - Less impervious surface
- Wider cross-sections rated high for Automobile, Freight, and Emergency Vehicles
 - Added capacity for automobiles and freight
 - More space for emergency vehicles to navigate, and for traffic to move around disabled vehicles
 - Greater flexibility to respond to future transportation needs
 - Greatest opportunity to keep bridge open to traffic during periods of maintenance

Replacement Cross-Sections: Key Findings

Top performer was D

- 2-lane bridge with dedicated transit lanes
- Performed well for Transit; Community Quality of Life; Bicycle/Pedestrian; and Auto, Freight, and Emergency Vehicles

Other top performers were C, C', and K

- C and C' have dedicated bicycle lanes and multi-use paths, and performed well for Bicycle/Pedestrian, but also for Aesthetics and Community Quality of Life
- K is a 4-lane bridge with bicycle/pedestrian facilities beneath, and performed well for Auto, Freight, and Emergency Vehicles

Replacement Alternatives Summary

- Replacement alternatives performed better than rehabilitation or combination alternatives:
 - Greater flexibility to meet current and future needs of all modes and users
 - 2-lane replacement alternatives have comparable or lower cost than rehabilitation alternatives
 - Most alignments allow for movement of traffic on the existing bridge during construction; no need for separate detour bridge
 - Replacements perform better than rehabilitation for protection during earthquakes
- Note: Costs for replacement alternatives are for a mid cost range conventional bridge type, not a signature bridge such as cable stayed or arch. Costs are for the lifecycle (75 years) of each alternative in year 2012 dollars.



Combination Alternatives

Combination
(Rehab and
Replace)

=

Rehab
existing
bridge for
bikes/
peds only



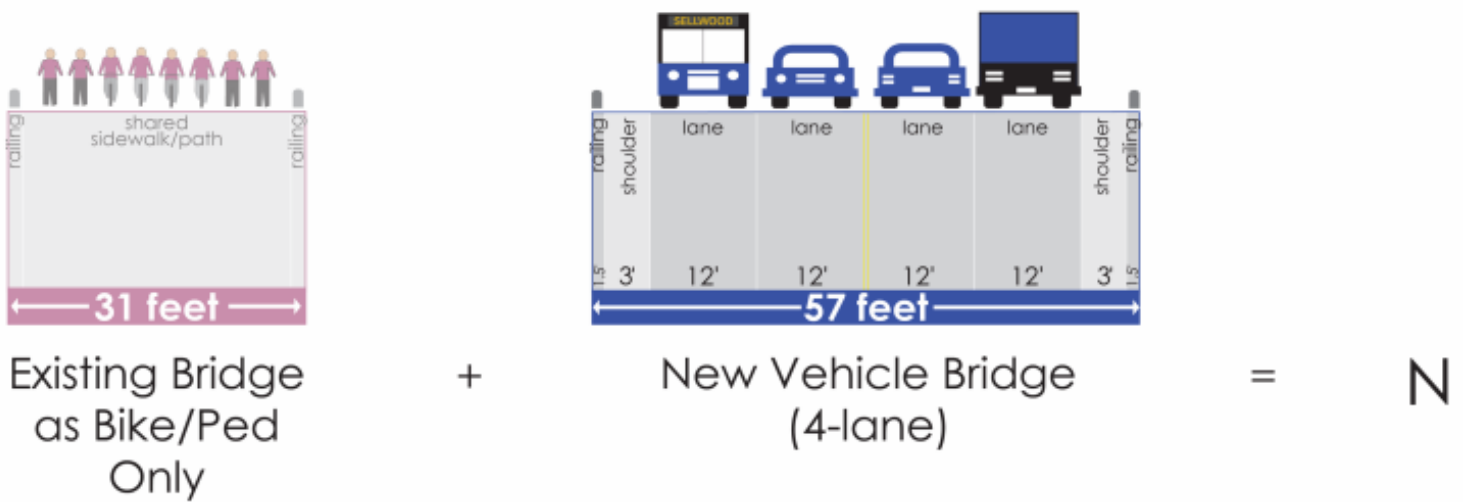
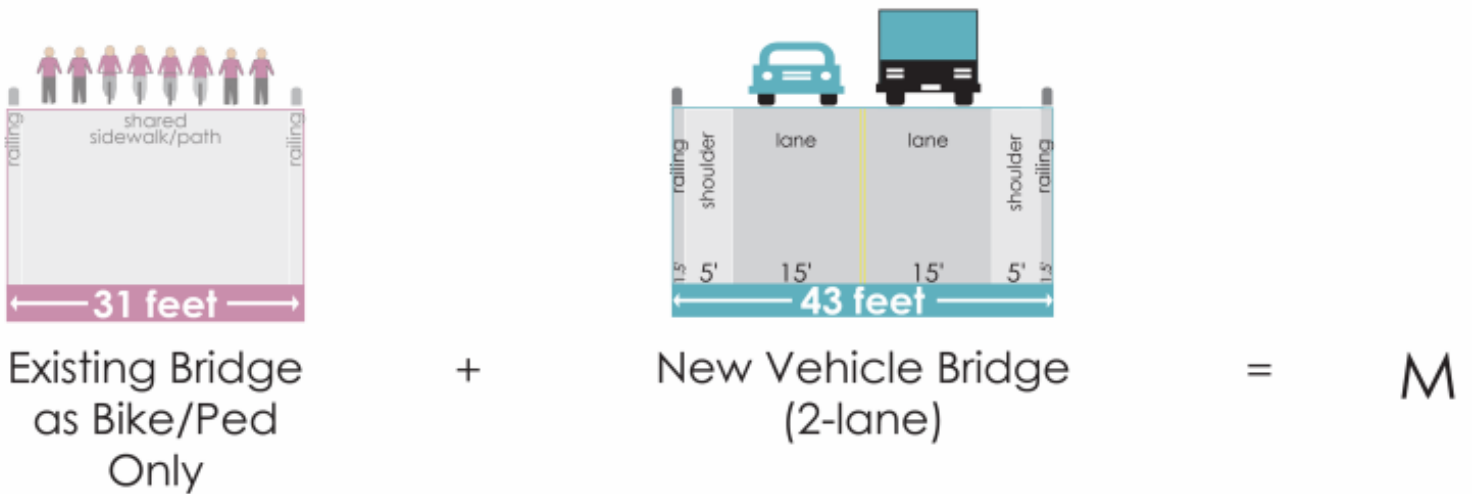
+

one of these

A new bridge
for autos,
trucks, and
transit



Combination Cross-Sections



Combination: Key Findings

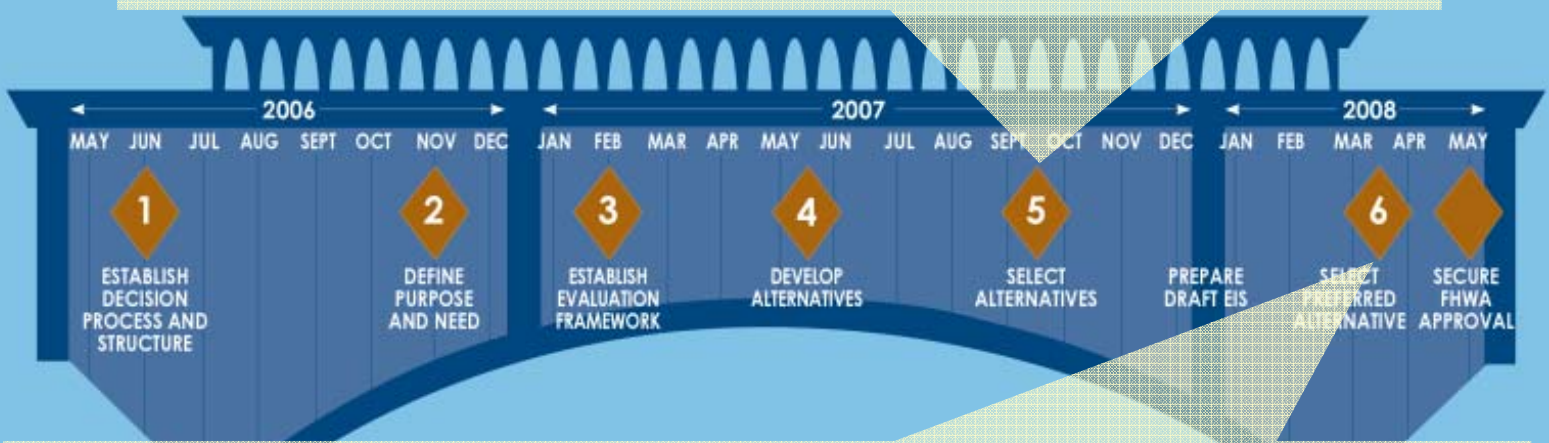
Combination rehabilitation/ replacement alternatives performed poorly in relation to “one bridge” alternatives

- Higher cost than other bridge replacement alternatives (because need to rehabilitate existing bridge *and* build new bridge)
- More impacts to natural resources (more piers)
- Complex connections for bikes and peds to street and trail networks (because of separation from roadway interchange)

Two Decision Points Remain

What alternatives will go into the EIS?

- Community Task Force considers public and technical feedback and recommends four alternatives plus the No-Build alternative for the Draft EIS.
- Policy Advisory Group of elected officials adopts alternatives for EIS.
- Public outreach on design concepts and finance strategies.
- Draft EIS document produced.



Which alternative will be selected?

- Public outreach collects input on preferred alternative.
- Community Task Force recommends preferred alternative.
- Policy Advisory Group adopts preferred alternative.
- Local/State agencies concur on preferred alternative.
- Federal Highway Administration approves preferred alternative.