



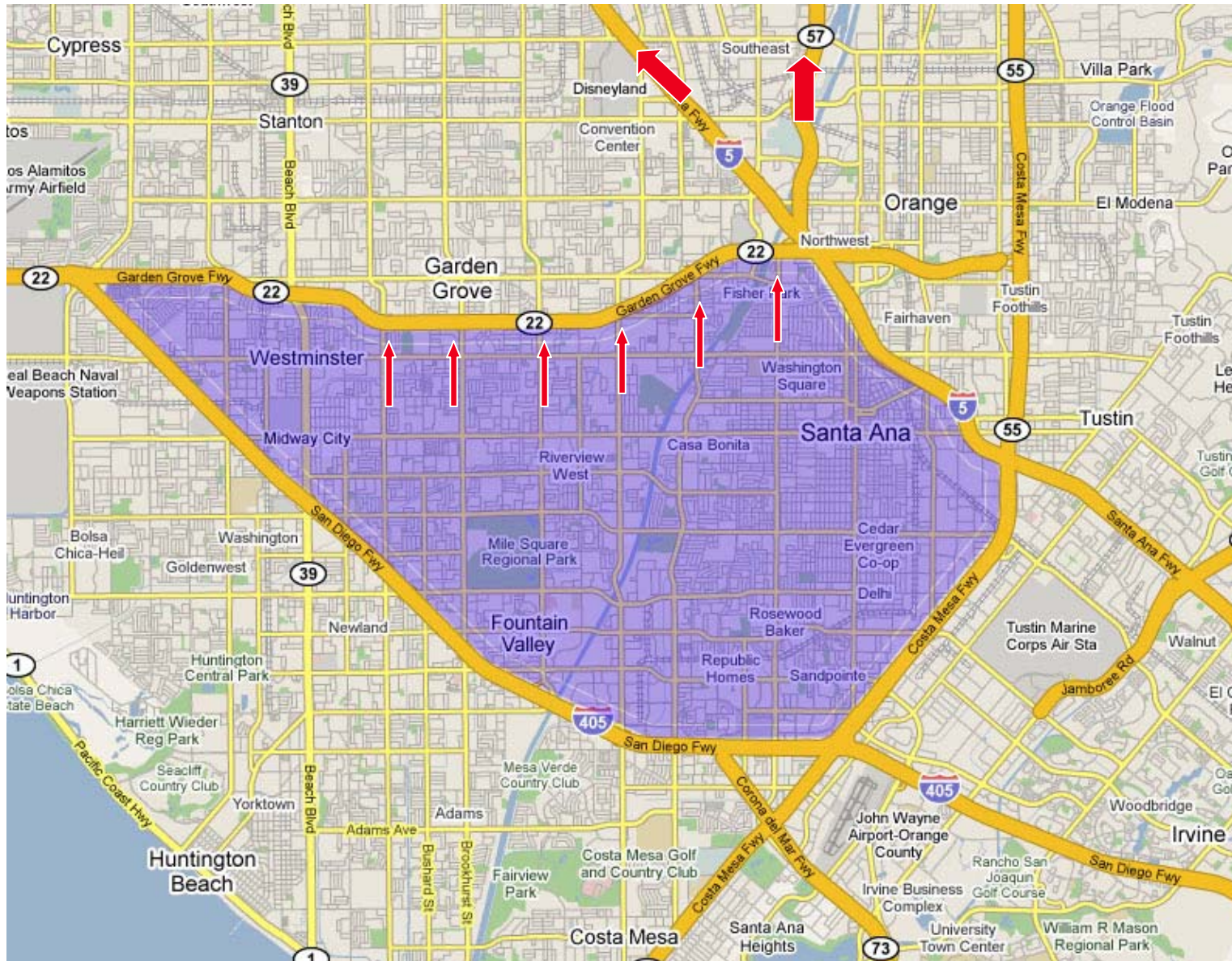
Address Congestion on the Garden Grove Freeway (State Route 22) Collector Distributor Road

Prepared by: California Department of Transportation
Divisions of Operations and Planning

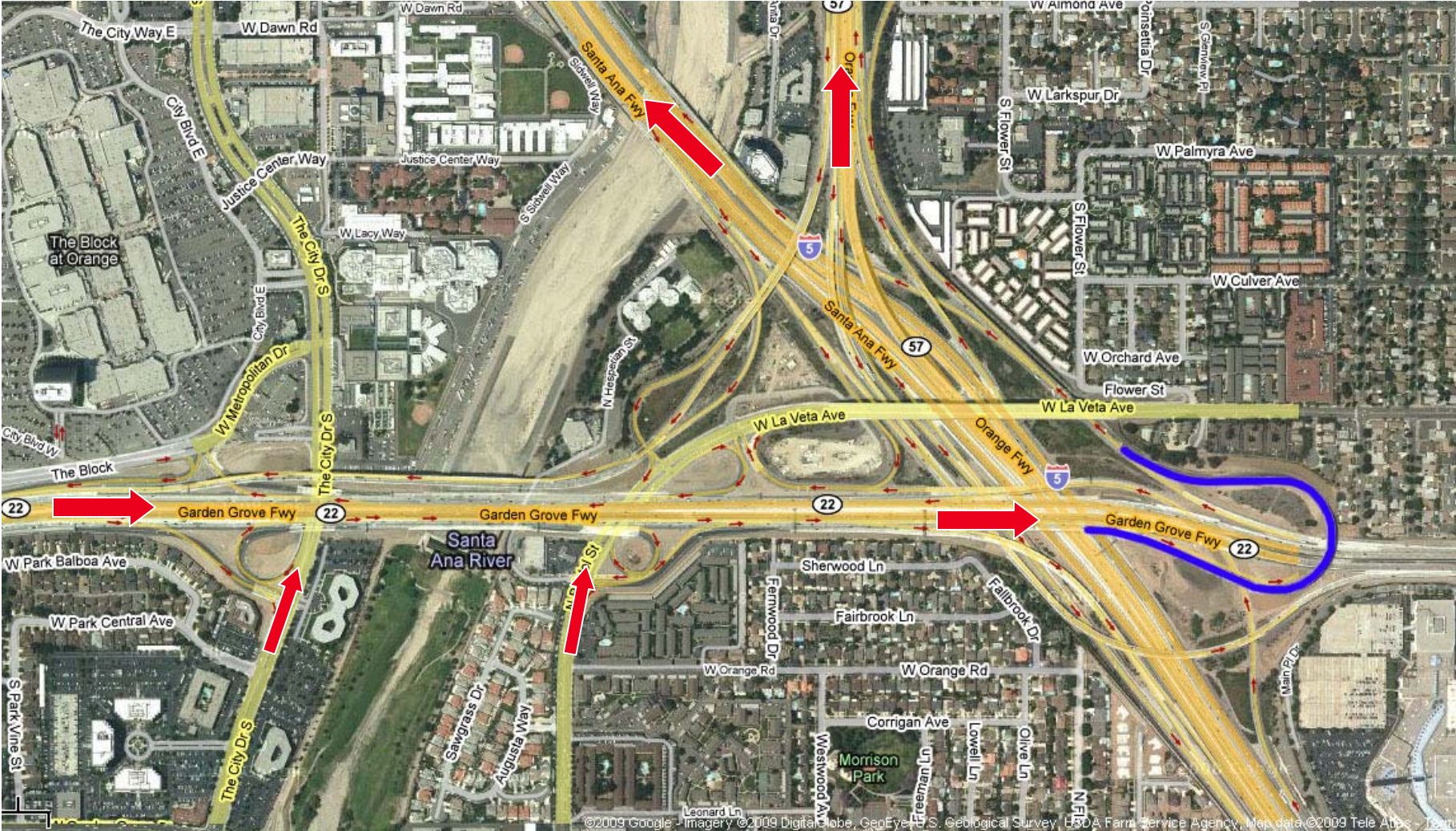
Presented by: James Pinheiro

Orange County Transportation Board of Directors Meeting July 13, 2009

The Challenge

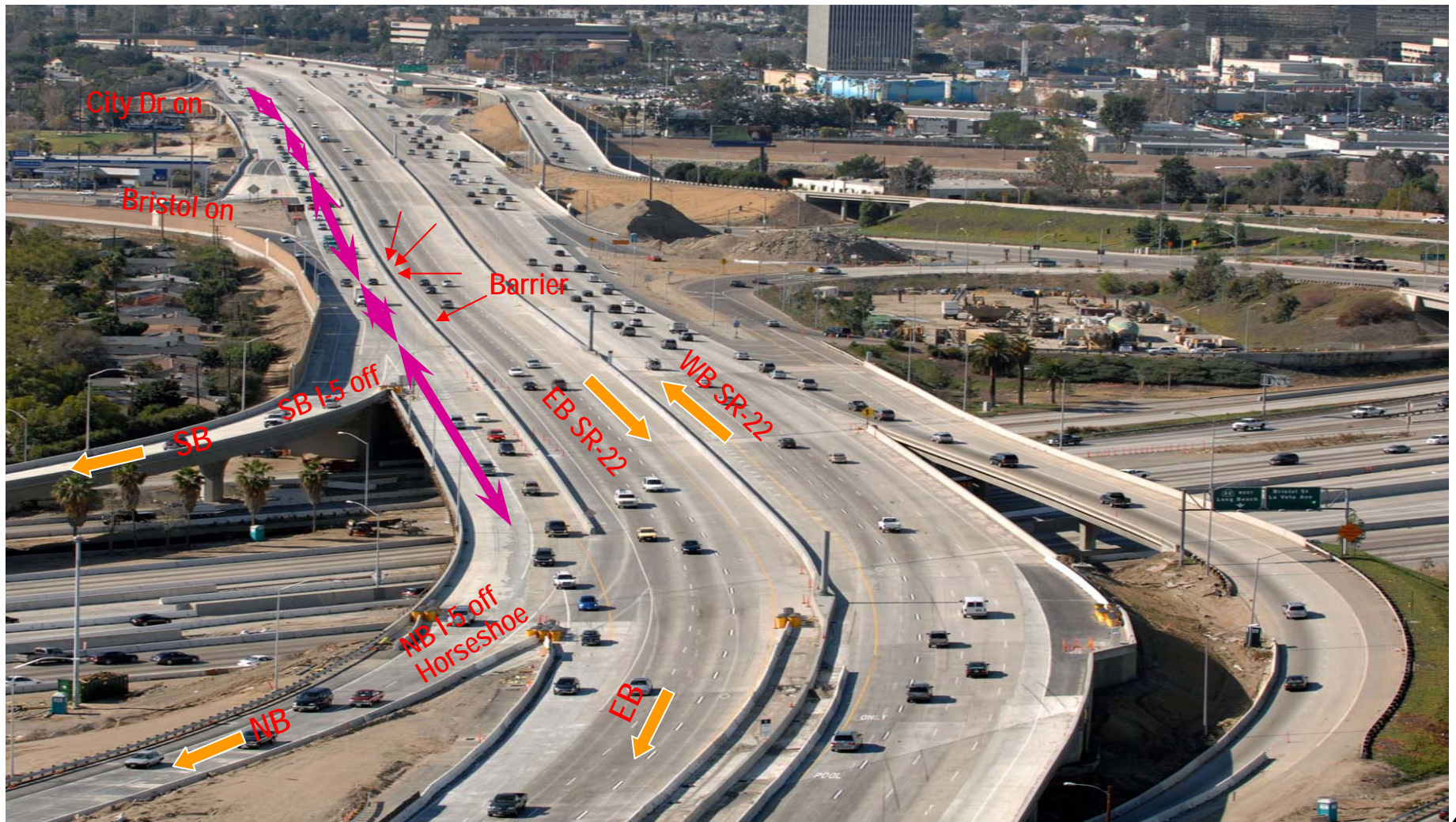


Horseshoe Connector



Existing CD Road Channelization

- ◆ Separates Horseshoe traffic from mainline
- ◆ Minimizes traffic impacts from close ramp spacing
- ◆ Controls surface water



Project Study

Challenges

- ◆ Current demand on Horseshoe connector exceeds capacity
- ◆ Closely spaced local interchanges increase congestion

Purpose of study

- ◆ Evaluate options to reduce existing congestion

Study Alternatives

Operational Improvements

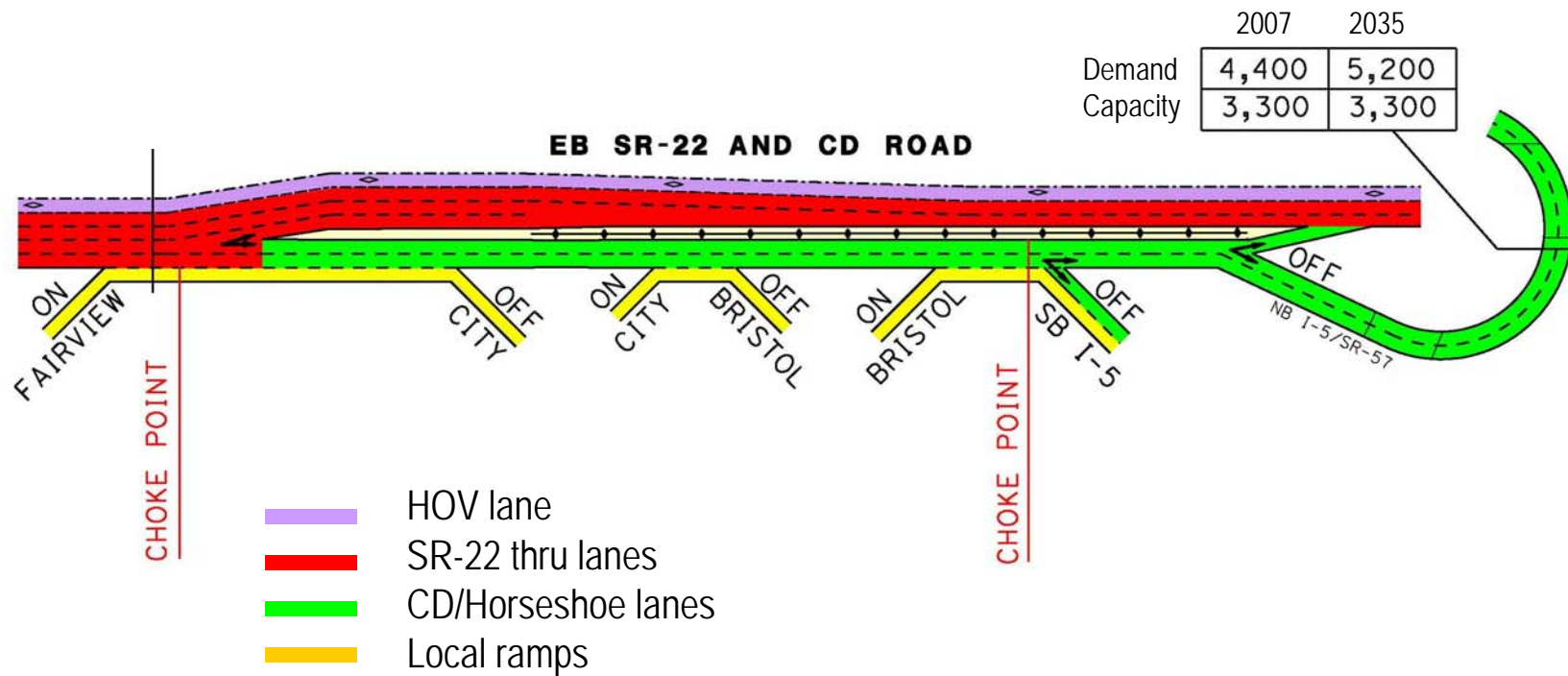
- ◆ Lower cost, no additional right of way
- ◆ Alternatives 1, 2, & 3

Major Interchange Reconstruction

- ◆ Higher cost, may require right of way
- ◆ Alternative 4

Alternative 1

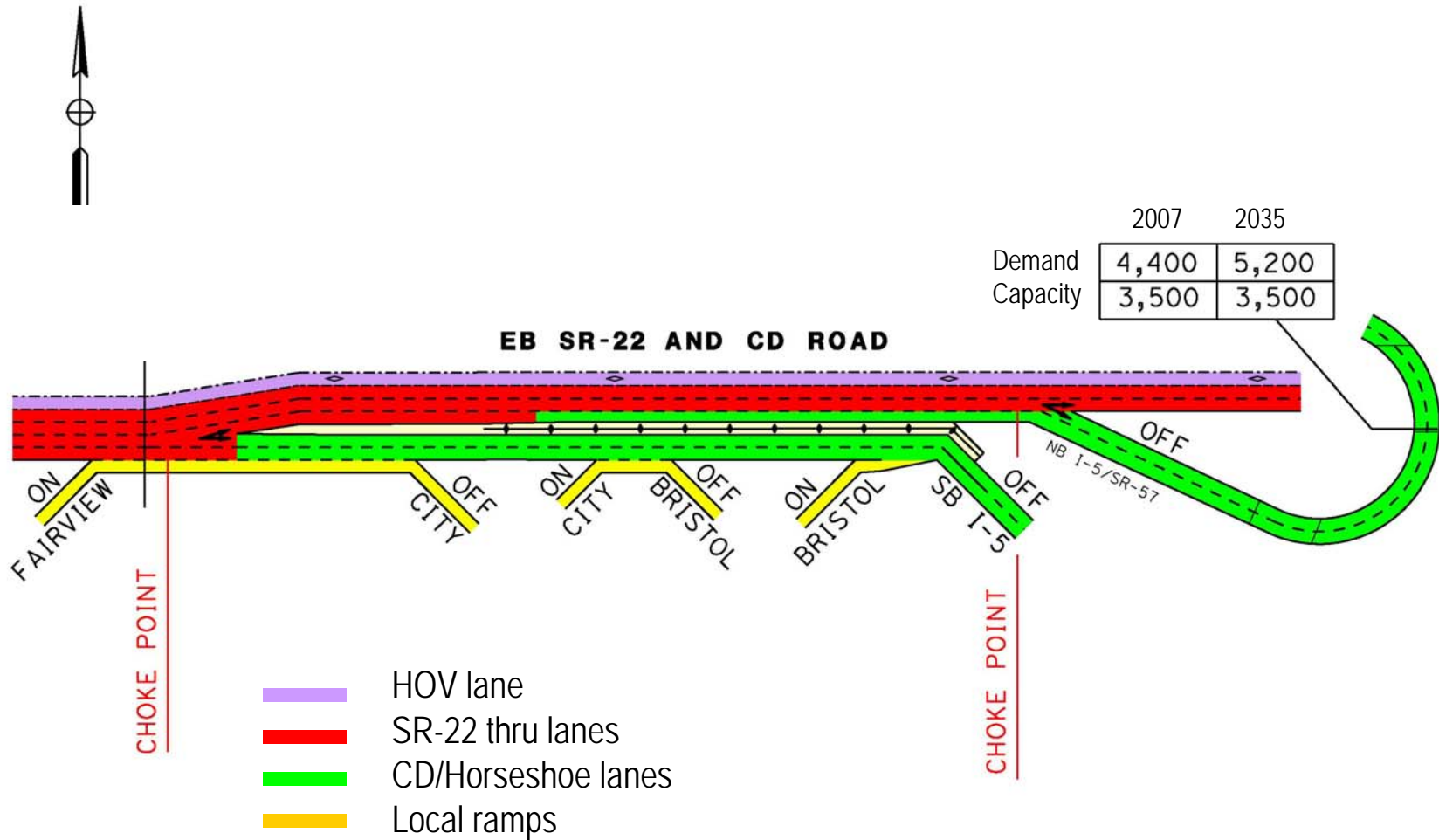
Existing Conditions



Alternative 2



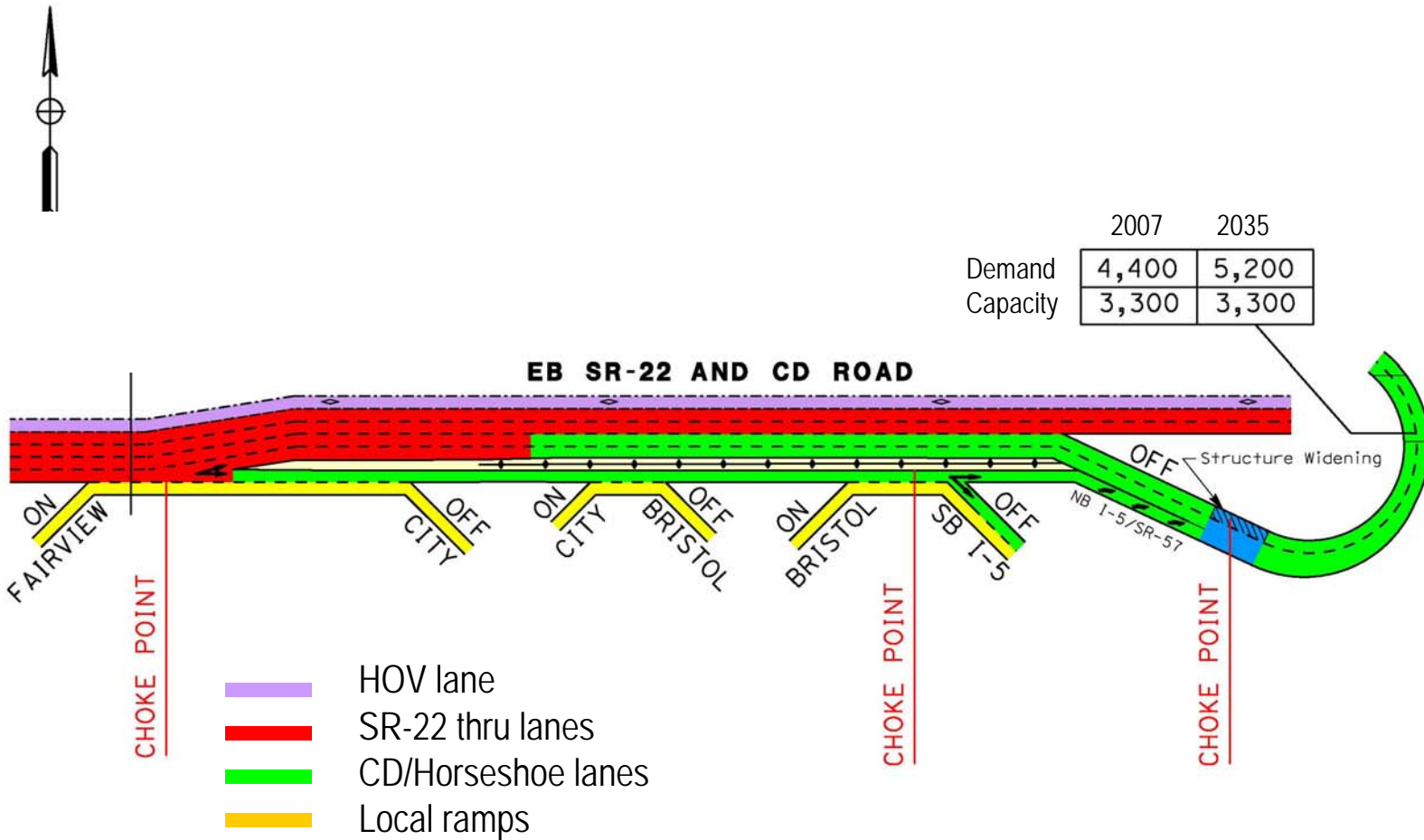
Traffic Shift; CD - SB Access Only



Alternative 3



Traffic Shift; CD - SB & NB Access



Comparison of Alternatives

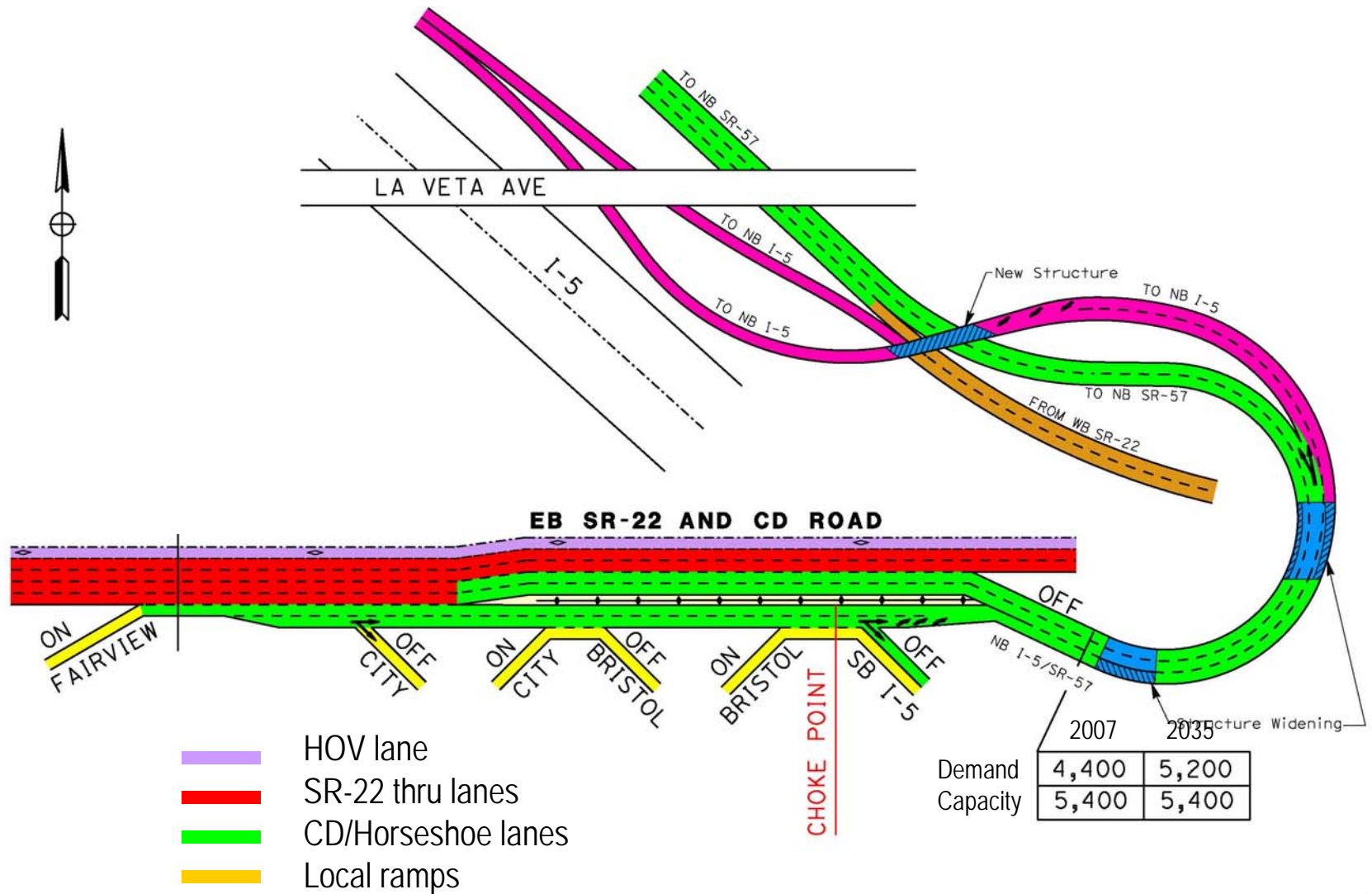
Alternative	Cost (million)	Delay time* (minute)
1	\$0	19
2	\$20 - \$25	13
3	\$15 - \$20	15

*Measured between Magnolia and beginning of Horseshoe connector (approximately 6 miles), at current traffic volumes

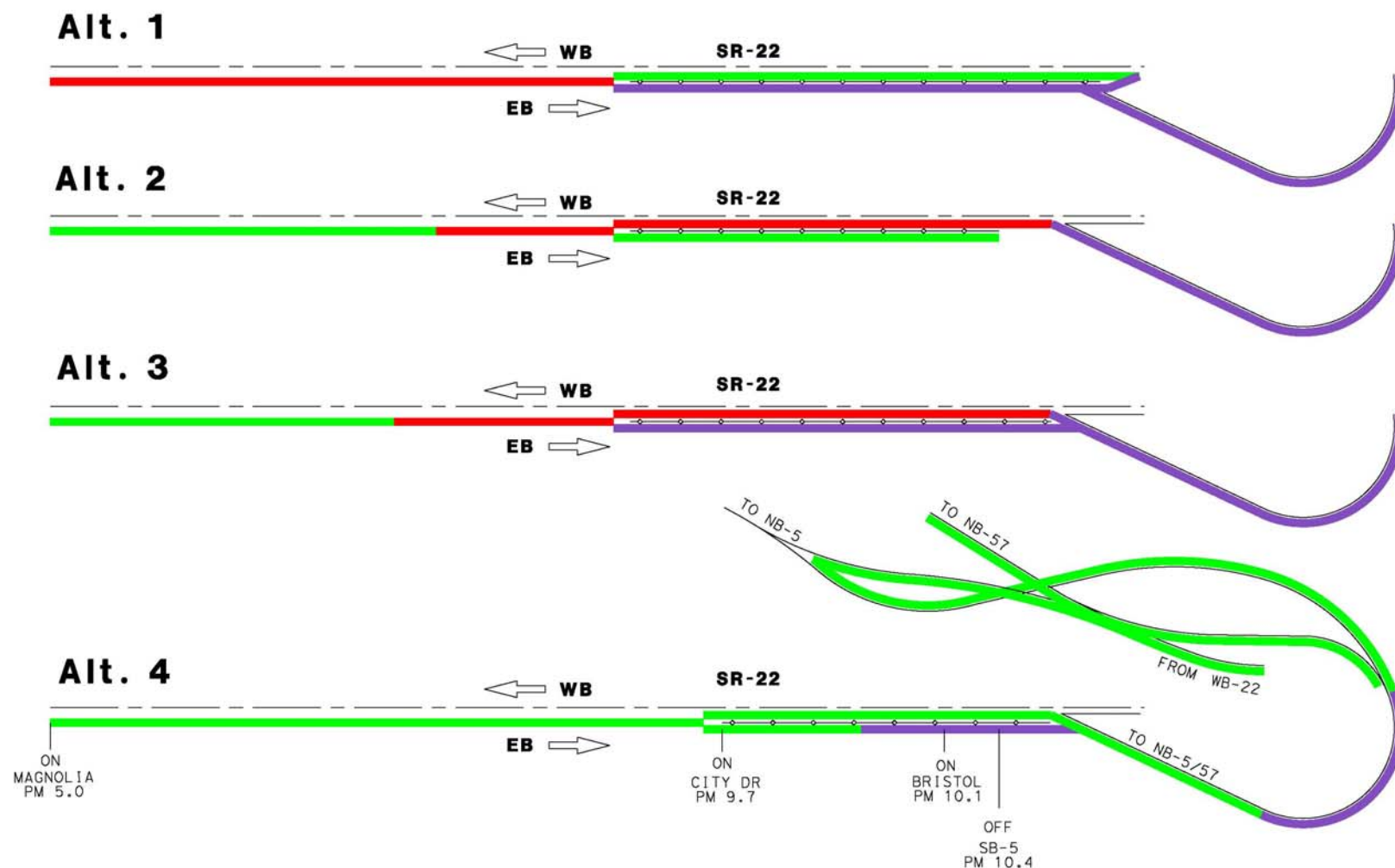
Alternative 4



Major Interchange Reconstruction

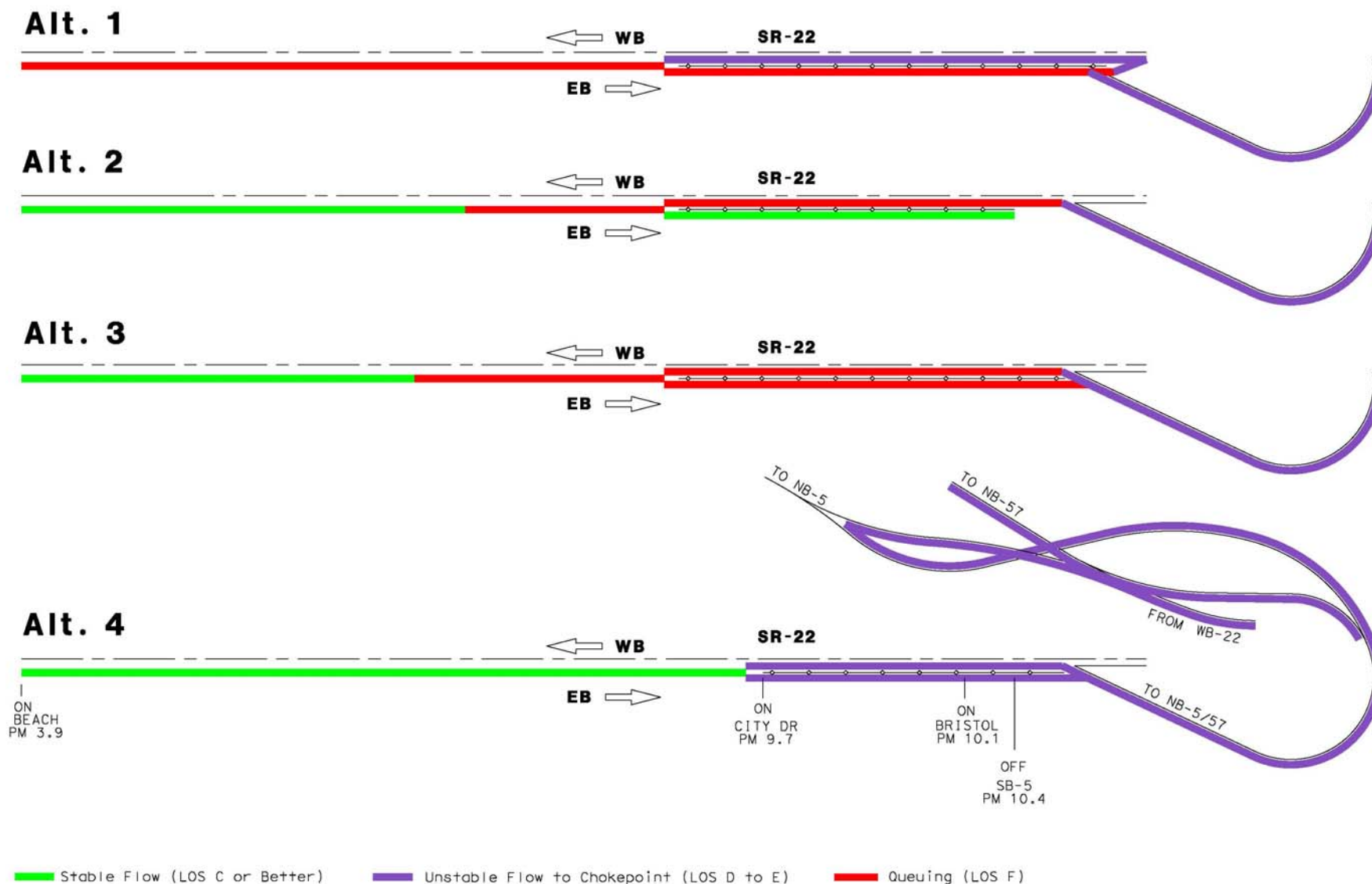


Level of Service – 2007



█ Stable Flow (LOS C or Better)
 █ Unstable Flow to Chokepoint (LOS D to E)
 █ Queuing (LOS F)

Level of Service – 2035



Comparison of Alternatives

Alternative	Cost (million)	Delay time* (minute)
4	\$70 - \$100	0-5

*Measured between Magnolia and beginning of Horseshoe connector (approximately 6 miles), at current traffic volumes

Conclusion:

- ◆ Lower cost operational improvements provide little congestion relief
- ◆ Higher cost major interchange reconstruction needed to address current and future demand

Next Step:

- ◆ Include consideration of major interchange reconstruction in the Central County MIS