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Background Information: Initial Concepts and Strategies

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Initial Concepts

- The Study Team developed a series of initial improvement concepts for I-70 and presented them at public meetings in September 2008 for review and comment.



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Initial Concepts

– What is an **initial concept**?

- A concept is a single idea for solving a transportation issue in the I-70 corridor.
- The next set of slides show the different types of initial concepts in four categories.

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Initial Concept: No-Build

- The No-Build concept consists of minimal improvements to address I-70's major safety and maintenance issues. Improvements include maintenance and funded projects only, including but not limited to:
 - Repair/replace bridges and pavement as needed
 - Continue existing bus service
 - Expand/promote park-and-ride opportunities
 - Use transportation tools that will reduce traffic and improve traffic movement

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Initial Concept: Fix the Bottlenecks

– What is a bottleneck?

- A section of a road where movement of traffic is limited by the road design. This is often a section of road with a fewer number of lanes, a sharp curve, or access points where traffic is entering or exiting the road. A bottleneck is the most vulnerable point for congestion in a road network and is also referred to as a chokepoint.

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Initial Concept: Fix the Bottlenecks

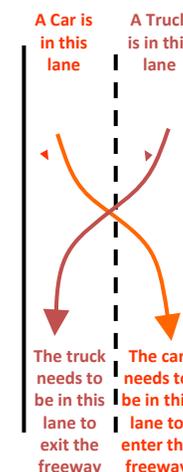
Reduced Speed Curves – Reduce locations where vehicles must reduce speed to safely drive curves.

Short Acceleration/Deceleration Lanes – Lengthen ramps that do not allow vehicles to enter or exit the road at a reasonable speed compared to the main flow of through traffic.

Poor Lane Balance – Eliminate the locations where the number of through lanes on the highway changes through an interchange, usually as a result of a lane drop.

Short Weave Areas - Lengthen the areas where on-ramps continue and become off-ramps or provide a separate lane for those movements to occur.

What is a weaving area?



The car and truck must cross the other traffic to get to the lane they want to be in.

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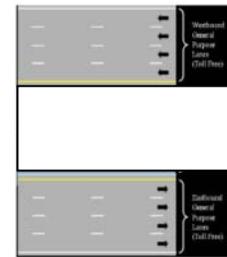
Initial Concept: Change Capacity

Add General Purpose Lanes – Widen I-70 by one, two, or three lanes in each direction.

Tunnel – Construct a six lane tunnel on existing alignment, between the northeast corner of the loop to the Benton Curve, or in the loop.

Elevated Lanes – Expand corridor capacity with elevated or stacked lanes.

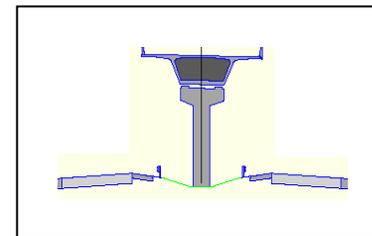
Add Lanes Options



Add Lanes with Tunnel



Elevated Lanes



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Initial Concept: Change Capacity

Bike and Pedestrian – Improve, expand, and enhance the ability of non-motorized modes to safely cross I-70.

Reduce Lanes – Remove one lane in each direction and create a Parkway for all or portions of the corridor.



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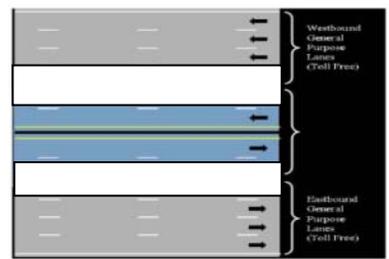
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Initial Concept: Specialty/Managed Lanes Concepts

HOV/HOT – Exclusive lanes for High Occupancy Vehicles and Buses or High Occupancy Toll which would also allow single occupant vehicles to use the exclusive lanes for a toll.

General Concept – HOV/HOT



Reversible Lanes – Exclusive reversible lanes for westbound travel towards downtown during the morning peak and eastbound travel away from downtown during the afternoon peak.

Reversible Lane



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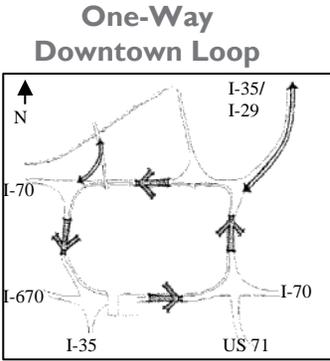


Initial Concept: Specialty/Managed Lanes Concepts

Bus Rapid Transit Corridor – exclusive lanes for buses only.

Light Rail/Commuter Rail – exclusive corridor for Light Rail or Commuter Rail options.

One-Way Downtown Loop – redirect traffic in a counter clockwise direction on all legs of the downtown loop.



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Initial Strategies

- What is a **strategy**?
 - A strategy is a series of potential improvement concepts and may include new lanes, specialized lanes, transit options, changes in the layout or access at interchanges, and improvements to make driving through the corridor safer and easier.
 - The Study Team developed initial strategies by picking and grouping logical combinations of the various concepts.

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Initial Strategies: 15 Strategy Packages

- After the public meetings in September 2008, the Study Team developed 15 initial strategy packages for improving I-70.
- A strategy package is a combination of concepts for improving I-70. The 15 initial strategy packages consisted of the 7 strategy packages from the previous I-70 Major Investment Study along with 8 additional packages.



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Initial Strategies: 15 Strategy Packages

- The initial strategy packages included a wide variety of freeway, interchange, transit, and non-motorized related transportation improvements. Public input and suggestions from the public meetings helped the Study Team put together the strategy packages.
- The next several slides will describe the 15 strategy packages.

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Initial Strategies: 15 Strategy Packages

– Seven Packages based on the I-70 Major Investment Study.

1. **No-Build** - Bridge and Pavement Maintenance, kclCON, Amendment 3 Improvements at I-70 and I-435.
2. **Fix Key Bottlenecks** - Improve Benton and Jackson curves, Potential downtown loop access consolidation, Add I-70 and I-435 lanes through the interchange, Interchange ramp improvements.
3. **Fix Key Bottlenecks plus High Occupancy Vehicle lanes** - Add high occupancy vehicle (High Occupancy Vehicle) lanes plus Strategy Package 2.

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Initial Strategies: 15 Strategy Packages

- Seven Packages based on the I-70 Major Investment Study.
 - 4. Fix Key Bottlenecks, High Occupancy Vehicle lanes, Unique Design Features** - Strategy Package 3 plus Unique Design Features (tunnel), Community Bridges.
 - 5. Add General Lane Capacity** - Add one additional general purpose lane in each direction .

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Initial Strategies: 15 Strategy Packages

- Seven Packages based on the I-70 Major Investment Study.
 - 6. Add Capacity (High Occupancy Vehicle lanes) and Transit Focus** - Add HOV lanes, Bus Rapid Transit, Transit Centers.
 - 7. Fix Key Bottlenecks plus Transportation Improvement Corridor** - Add Transportation Corridor from the Downtown Loop to U.S. 40/Blue Ridge, Add an additional general purpose lane from U.S. 40/Blue Ridge Boulevard to I-470.

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Initial Strategies: 15 Strategy Packages

- Eight Strategy Packages developed based on Study Team analysis and public and agency input.
 - 8. Transportation System Management (TSM)/Transportation Demand Management (TDM) Solutions with Bus Rapid Transit -** Convert lane to Bus Rapid Transit, Apply TSM and TDM activities such as ramp metering, signal improvements on parallel roads, carpooling and/or telecommuting.
 - 9. Unique Capacity Design (Stacked Lanes) -** Add lanes up on an elevated or stacked structure, Convert the downtown loop to one-way.

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Initial Strategies: 15 Strategy Packages

– Eight Strategy Packages developed based on Study Team analysis and public and agency input.

- 10. Rail Transit** - Light Rail in the I-70 right of way
- Unique Capacity Design (Stacked Lanes)** - Add lanes up on an elevated or stacked structure, Convert the downtown loop to one-way.
- 11. Freight Movement** - Add a truck only lane.
- 12. Collector Distributor Roads** - Add a collector distributor road system along the corridor.

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Initial Strategies: 15 Strategy Packages

– Eight Strategy Packages developed based on Study Team analysis and public and agency input.

13. Privatization - Privatize the construction and operation of the freeway.

14. Bus Transit Focus – Convert an existing lane to a bus only lane, Transit Centers.

15. Reduce Capacity - Convert I-70 into a parkway with intersections and signals.

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