

# Concept 1 Summary: Lane Continuity – Mainline

## DESCRIPTION

Concept 1 seeks to create lane continuity, eliminate left-hand exit ramps, and, where possible, improve horizontal curvature and vertical geometry. This concept endeavors to maintain the current alignment of I-84 and stay within the existing right-of-way to the greatest extent possible. The primary component of this concept is the addition of travel lanes to eastbound and westbound I-84 to provide at least three lanes of travel in each direction. Improvements are only proposed at Interchanges 3 and 7 on I-84. No improvements are proposed at the remaining interchanges on I-84. Other elements of Concept 1 include:

- Extension of acceleration and deceleration lanes for all on and off ramps.
- Improvement of the sharp horizontal curves on I-84 at Interchanges 3 and 7 to increase design speed.
- Increase in stopping sight distance for drivers.
- Shoulder improvements along the mainline i.e. widen shoulder width and upgrade guide rails.
- 4 new bridges, 29 existing bridges to be replaced, and 3 demolition.



## PROS

- Lane continuity is maintained within the study limits.
- Left-hand ramps are replaced with right-hand ramps.
- Peak hour delay is reduced.
- I-84 curve at Interchange 3 is increased from a 50 to 60 miles per hour design speed in the eastbound direction and meets design standards.
- I-84 curve at Interchange 7 is increased from a 65 to 70 miles per hour design speed in the westbound direction.
- Stopping sight distance is improved on the horizontal curves at Interchange 3 in the eastbound direction and at Interchange 7 in the westbound direction.
- Acceleration and deceleration lane lengths are improved at all interchanges.
- Typical construction methods could be used.
- The size of impact area is modest and largely occurs within previously disturbed areas.
- Relatively few property impacts occur.
- There are no impacts to known historic resources.
- There are no impacts to known 4(f) properties.

## CONS

- Lacks consistent design speed throughout the I-84 corridor.
- Does not propose improvements at interchanges 1, 2, 4, 5, 6, and 8.
- Interchange 6 remains a partial interchange.
- Weaving of traffic on I-84 eastbound at Interchange 4 is not corrected.
- Does not improve access to the Danbury Hospital.
- The improvements in this concept are located in close proximity to the natural gas transmission pipeline between Interchange 6 and Interchange 7.
- Modest increases in noise levels at some adjacent properties are anticipated.
- The highway will be closer to certain residential properties as compared to existing conditions, thus impacting aesthetics.
- Water resource impacts are anticipated near stream crossings associated with bridge modifications and replacements.

## RECOMMENDATION

This concept provides a partial solution. It improves congestion and mobility on the highway, but it does not address mobility adjacent to the highway. This concept is feasible from an engineering and constructability standpoint. This concept has a low probability of causing significant or irreparable harm to the natural or human environment.

It is recommended that this concept be advanced into the Concept Combination Screening process.

