

Concept 7 Summary: Tunnel

DESCRIPTION

Concept 7 seeks to provide a tunnel and open-cut section on the west side of the project corridor. This concept straightens the current horizontal alignment of I-84 in the vicinity of Interchanges 2 and 4. The new alignment of I-84 will have two lanes of travel in each direction. The existing section of I-84 between Interchanges 2 and 4 (I-84 spur) will remain to serve Route 7 and Lake Avenue. Elements of Concept 7 include:

Base improvements include:

- Horizontal alignment is straightened in the vicinity of Interchanges 2 and 4.
- I-84 will have two lanes of travel in each direction.
- I-84 will be on a new alignment between Interchanges 2 and 4.
- All entrance and exit ramps to/from the new I-84 alignment and the I-84 spur will be designed to current standards (right-hand side).
- Acceleration and deceleration lane lengths at the I-84/I-84 spur interchanges will meet design standards.
- Lane continuity will be achieved within the limits of this concept.
- Stopping sight distance will meet design standards.
- Shoulders will meet design standards.

C7-1 will include base improvements plus:

- Tunnel will be approximately one-half mile in length and the remainder of the realigned I-84 will be an open-cut section.
- 6 new bridges and 7 existing bridges will be replaced.

C7-2 will include the base improvements plus:

- Entire re-aligned I-84 is an open-cut section.
- 7 new bridges and 7 existing bridges will be replaced.



PROS

- Lane continuity is maintained within the concept limits.
- Higher design speed can be achieved in the west section.
- Involves off-line construction.
- Maintenance and protection of traffic impacts will be minimal.
- Tunnel can be constructed with typical tunnel construction methods.
- Stopping sight distance is improved on the proposed alignment.
- No impacts to cemetery, historic, or 4(f) properties.

CONS

- Does not reduce congestion or improve mobility on I-84 during the weekday peak hour periods.
- Does not address the weaving condition between Interchanges 3 and 4 and Interchanges 7 and 8.
- Does not address the left-hand entrance and exit ramp at Interchange 7.
- Does not propose changes to the existing interfaces to local streets at all interchanges.
- Significant earth and rock excavation and deep open cuts are anticipated.
- Special construction methods will be required to construct open-cut sections.
- Significant right-of-way and property impacts.
- Concerns with safety/emergency response and ventilation.
- Introduces the operation and maintenance of a tunnel on a long-term basis.
- Relocation of West Lake Treatment Facility on Westville Avenue & displacement of fire house.
- Property Impacts, with 47 full takes, a majority of which are residential and all within an EJ community.
- EJ neighborhoods character impacts due to visible and audible highway where there is none today.
- Disruption of community cohesion, with neighborhood between existing and new highway physically separated from the rest of the community

RECOMMENDATION

The C7 concept will achieve a higher design speed in the west section of the project corridor but does not reduce congestion or improve mobility on the highway. This concept will have constructability challenges. It will impact many properties within an EJ community. In addition, safety, operations, and maintenance are a concern.

As a result of the screening process, it is recommended that this concept be dismissed for further consideration.