

APPENDIX V

***I-710 Corridor Study, Caltrans and FHWA
Report on Locally Preferred Strategy,
Caltrans, September 2004***

DEPARTMENT OF TRANSPORTATION

District 7
120 South Spring Street, Los Angeles, California 90012



September 1, 2004

Gateway Cities Council of Governments
Attn: Richard R. Powers
16401 Paramount Boulevard
Paramount, CA 90723

Dear Mr. Powers,

Thank you for giving the State of California, Department of Transportation (Department) the opportunity to review the Locally-preferred Strategy developed by your consultant regarding the I-710 Long Beach Freeway corridor expansion study. The Department is continuing to enjoy the partnership with Gateway Cities Council of Governments, Los Angeles County Metropolitan Transportation Authority (LACMTA) and Southern California Association of Governments (SCAG) in this Major Corridor study.

Attached is the report, which has preliminary comments from both the Department and the Federal Highway Administration (FHWA).

Please be assured that as we continue this study further, you will have full cooperation from the Department in resolving these issues or any other issue that might arise during the course of this study. FHWA has assured the Department that they will work in resolving their concerns regarding the Project as more information flows in.

Should you have any additional questions, please contact Tad Teferi, Deputy District Director, Division of Program/Project Management at (213) 897-0362.

Sincerely,



Douglas R. Failing
District Director, District 7

**I-710 CORRIDOR STUDY
CALTRANS AND FHWA REPORT ON
LOCALLY PREFERRED STRATEGY (LPS)**

The proposed concept (parallel “trucks only” facility with limited access) will add capacity, remove certain conflicts between trucks and PC’s and concentrate these conflicts at certain locations. These concentrated conflict points require special treatments that exceed current geometric standards. For example, the merge and weaving length along the segment of W/B 91 immediately to the west of 710 will necessitate ramp braiding or removal of the local exit ramp. Other locations need case by case analysis.

Local Interchange Configurations: The decision to employ SPI’s requires HQ approval and will be strongly resisted if other configurations are viable. R/W requirements and traffic volumes will be key factors in the decision making process.

Ramps that feature the merge or diverge of truck-only and PC traffic will not operate adequately unless revisions are studied and implemented (in some cases it may not be possible to overcome the operational or safety issues).

A few locations could not be reviewed due to the limitations of the layout plans. Example: proposed improvements in the vicinity of Atlantic are too complex to understand, color coding may be necessary; Preliminary profiles of the existing and proposed facilities are needed (like the segment between Shoemaker bridge and PCH). This would allow to analyze vertical clearance, vertical sight distance and grades of the proposed facilities, and find out about additional non-standard features the need to be addressed. Also, a better assessment of the constructability of the new facilities could be done, especially at the interchange locations.

Shorter weaving distances should be increased to at least 500 meters. The considerable percentage of trucks in this corridor makes weaving movements more complex and constrained. Shorter weaving distances in this type of traffic may compromise safety and operations. Optional lanes instead of mandatory lane should also be looked into as a strategy to minimize and improve weaving movements.

Truck volumes on all freeway entrance ramps should be determined and Ramps with significant truck volumes should be provided with auxiliary lanes.

The project should ensure that adequate acceleration lanes are provided especially in areas where the truck volume is high. Provide at least 50:1 convergence at the merge areas.

Feasibility Study of Northern Terminus Area – Improvements proposed in the hybrid alternative do not extend all the way up to the northern terminus of I-710 Corridor Study, which would include the I-710/I-5 Interchange and other regionally significant infrastructure. As such, we request that the lead agency currently developing a scope of work for the feasibility study coordinate closely with the Department prior to finalizing the scope, as well as throughout the study.

Traffic Modeling Report (Appendix A) Observation: The report indicates that the projected 2025 Level of Service (LOS) is “D” or better south of I-405 reaching LOS “F” north of I-105 (5 MF + 2 TL each direction). The Transportation Concept Report (TCR updated in 1999) indicates that 7 MF + 1 HOV (in each direction) are needed to attain LOS “D” between I-405 and SR-91 in the year 2020. Similarly, 10 MF + 1 HOV (in each direction) are needed for the segment between SR-91 and I-105. This is a major discrepancy between the 2020 TCR data and the I-710 year 2025 Traffic Modeling Report.

The Traffic Modeling report, which underlines the details in sizing the freeway concept improvement is not detailed enough to check the corresponding values provided in the report. We require the full traffic modeling analysis to fully assess the resulting LOS with the proposed 5 MF lanes and 2 dedicated truck lanes. We also anticipate full coordination with the currently on-going SR-47 Truck Expressway Project also being prepared by Meyer Mohaddes Associates.

Constructability Analysis between PCH and Willow Street (Appendix B) – This analysis has additional related issues. It is believed that the depressed section would be placed below the ground water table. Not only would special construction techniques be required, but based on our experience with the I-105 Freeway, there would be very serious maintainability issues as a result of the groundwater impact. One of the construction assumptions

is that the shoulders could be eliminated and then the adjacent land lowered in grade without having an impact to the adjacent lanes, which would not maintain any shoulder width (K-rail on the right and in the median). This assumption is very optimistic, as some sort of shoring, or slope would be needed to support the roadway during construction. In addition, this location might have ground water contamination issues and would have to be addressed. Whenever the depressed section is more than 1000 linear feet, the section should be considered as a tunnel section. Air circulation, fire extinguishing and other tunnel related issues have to be considered.

In addition, Plan Sheet 1, Section F-F, shows a soundwall that is constructed at grade and extended to above the elevated roadway. The wall height shown is far in excess of the maximum wall height of 16 feet. Soundwalls must be able to withstand various horizontal forces such as wind loads and seismic forces, which would limit wall heights to 16 feet. Special design methods have to be adopted for walls taller than 16 feet in height.

The proposal to cut into the levee may have a serious impact on the flood protections by the levee and have a negative impact to the adjacent community and on the river environment. This requires coordination with the Los Angeles County Flood Control District and the Army Corps of Engineers.

Plan Sheets – Lack of station lines, curve data, profile grades, etc. make the review very impractical at certain locations, hence we are not able to make any determination at this time as to any “fatal flaws”. However, as mentioned earlier we are able to offer the following general comments:

- The cantilever section of the elevated truck facility between Rosecrans Avenue and Alondra Boulevard causes safety concerns for the traffic underneath the freeway. At a minimum, a special bridge rail design may be needed.
- Locations of soundwalls as shown adjacent to vacant lands are questionable. On other Caltrans projects, we have faced controversy, where soundwalls were shown on conceptual plans, but actual detailed studies showed that such walls were not justified.
- The use of “Diamond” type interchanges to preserve right-of-way has led to modification of the existing interchanges (removing the existing loop

ramps). This may have negative consequences for the mainline and the local arterial as various turn movements are eliminated. We require the traffic analysis to evaluate the operation at the modified interchanges.

Plan Sheet 1 – As stated above, we have serious concerns on the assumptions made in reconstructing the section of I-710 between PCH and Willow Street.

The concept of having the truck lane beneath the mixed flow lanes between PCH and Willow St. may have potential environmental, safety and operational impacts. Evaluation should be made on how to mitigate potential problems such as truck emissions, traffic diversion and incident management.

PCH SB on-ramp (for autos) connection to the mainline is not clearly laid out.

Anaheim St. divergence from the mainline is not clearly laid out.

The proposed project does not provide any connector between 405 and 710 truck lanes. Considering that Route 405 is also a major corridor for commerce and trade, the need to provide access to and from the truck lanes for this interchange should be considered.

Plan Sheet 2 – There is a strong concern that the various braided ramps, in the vicinity of Del Amo Boulevard, both to and from Del Amo Boulevard along with the truck lane connection, may have grade and constructability issues. For example, the northbound I-710 mainline to northbound I-710 truckway connector must provide adequate vertical clearances at all locations where it crosses above or beneath another roadway. First, the connector must cross above/beneath the truckway, then over the *new* Del Amo Boulevard northbound off ramp, and then over Del Amo Boulevard itself. After crossing Del Amo Boulevard, the connector must then cross over the *new* northbound Del Amo on-ramp and then connect to the I-710 truckway at the truckway's elevation. This connection occurs over a relatively short distance causing a great concern that the longitudinal grade exceeds the maximum allowable grade. In addition, in the same area, the southbound truckway to southbound I-710 mainline connector would intersect the highway at a large skew. This would need various outriggers because of the span lengths potentially

interfering with the already constrained right-of-way width and complex ramp configurations.

Please provide at least 50:1 convergence at merge areas for the following:

NB405 to NB 710 and SB 710 to NB 405 connectors.

Plan Sheet 3 – The traffic study should discuss and analyze reason for not providing a connector from WB 91 to NB 710 truck lane.

Plan Sheet 6 – The adequacy of storage should be evaluated for new Florance Ave. NB on-ramp and SB off-ramp; SB off-ramp to EB Slauson Ave; and NB off-ramp to WB Slauson Ave. Sight distance needs have to be considered.

Plan Sheets 7 and 7A – The environmental document should address the impact of closing the Washington Boulevard/ Interchange and its impact to both the adjacent interchanges, the freeway mainline and the local arterial system.

The southbound I-710 connector merges with the northbound I-710 truckway connector (to the BNSF Rail Yard) on the left. As stated in Section 504.2(1) of the Caltrans Highway Design Manual, all freeway entrances and exits, except for direct HOV connectors, shall connect to the right of through traffic (**mandatory design standard**). Consideration should be given to eliminate this left-hand merge.

There is also a concern about multiple level of ramps, truckway and mainline at the Atlantic/Bandini Interchange. Unfortunately, we are unable to determine if acceptable grades could be maintained for the various ramps and connectors without profiles or spot elevations. This is important because of the number of trucks that would be impacted.

FHWA COMMENTS:

These comments are preliminary, and are made with the understanding that additional work including profiles, design year traffic (including turning movements), etc. need to be developed to determine interchange type, design requirements, and overall ability to build the proposed design concept, etc.

1. Please clarify which of the existing moves in the vicinity of the 9th-10th-Pico-B(8th) will be removed, and those that will remain.
2. Why is the off-ramp from the 9th Street hook on-ramp to NB route 710 needed? Cannot this access be provided by the local street system?
3. The following weaves involving trucks with mixed traffic appear to be problematic at the following interchange off-ramps: NB @ Anaheim St., SB @ Anaheim St., and SB @ PCH.
4. The connector weave of NB 710 to SB 405 with SB 710 to SB 405 at Pacific slip off appears to be problematic; consideration should be given to closing the slip to Pacific, thus eliminating this weave (access provided at Long Beach Blvd).
5. It appears that the outer (5th) lane of NB and SB 710 are separated from the interior lanes by structure columns, is this true? Does this violate design standards or best practices? How can this be avoided?
6. It appears that the NB 405 to NB 710 connector needs to be designed with an auxiliary lane at the connection to 710.
7. The proposed SB Atlantic Ave. on-ramp to SB 710 violates policy (partial interchange) and should be removed. Access provided to 710 via Alondra Blvd. and at SR-91.
8. The connector merges (including truck connector) from both NB and SB 710 to WB 91 are problematic. Suggest standard designs for merges and braiding of WB 91 off-ramp to Long Beach Blvd.
9. The NB off-ramp to Artesia Blvd. from the NB710 to EB 91 branch connector is problematic (violates policy and standards for successive gore spacing) and should be removed. (Adequate assess provided from 710 at Long Beach Blvd. and Alondra Blvd. and from 91 at Long Beach Blvd. and Atlantic Ave.)

10. The SB on-ramp from Artesia Blvd. to SB 710 is problematic (violates policy and standards) and should be removed. (Adequate access provided from 710 at Long Beach Blvd. and Alondra Blvd. and from 91 at Long Beach Blvd. and Atlantic Ave.)
11. The removal of EB 91 off-ramp to Cherry Ave. is problematic (violates policy by creating a partial interchange). Need to evaluate operations and options required to keep this ramp.
12. Need to clearly indicate new ramps and connections being proposed within and near the 710/105 interchange complexes. The proposed slip off-ramp from the 105 to SB 710 branch connector violates policy and should be removed. (Access provided from 105 at Long Beach Blvd. and Cherry Ave.)
13. The ability to achieve vertical clearances between the Rosecrans Ave. loop on-ramp to NB 710 and the NB 710 to 105 branch connector, within standards, should be re-affirmed. Also, the ability to place substructure supports for both the 710 NB off-ramp to Rosecrans Ave. and the Rosecrans Ave. loop on-ramp to 710 should be re-affirmed.
14. The ability to place substructure supports for the Truck way above the NB lanes of the 710 freeway, north of the 105/710 branch connector to near the NB 710 off-ramp to Imperial Highway, should be re-affirmed.
15. A new interchange is being added on 710 at Slauson Ave. Justification must be provided for this interchange, and approval received from FHWA.
16. The remaining portions of the 710 modifications north of Washington Blvd. should be provided for our review as soon as possible.
17. Once traffic volumes are available, it will be necessary to provide analysis of the operations of the freeway and interchanges including the weaving and merging sections and the intersection designs including storage on the ramps and at intersections, including turning movements. Approval of the Truck way and freeway additions and

modifications are dependant on this subsequent analysis, and additional modifications may be required.

18. On SB I710 near the southern end of the project, the weave is too short between the Anaheim Street on ramp and the downstream off ramp.
19. On SB I-710 the wave is too short between Alondra Blvd on ramp and WB 91 off ramp.
20. A non standard ramp entrance is noted on the plan to at EB 91 to SB I710. Will they at least get AASHTO minimum distance between two successive on ramps?
21. Non-standard lane widths and shoulder widths are noted throughout the Route 91 interchange. How non-standard are they? They should show a typical section for this area. Same comment for through I-105 interchange.
22. The Rosecrans off ramp has been connected to the I-105 direct connector, just after a merge. The connection to the direct connector is undesirable, especially since it creates a weave section only 882 feet long.
23. Other weave areas, and the project in general will have to be checked for acceptability once the traffic volumes are available.