

environmental impacts. The proposed alternatives are Build Alternative 1 – Full Standard Improvements, Build Alternative 2 – Non-Standard Improvements and Alternative 3 – No Build.

In general, the SR-57 Northbound Widening improvements propose to add one northbound through lane from the Orangethorpe Avenue exit ramp to the Lambert Road entrance ramp. Auxiliary lanes would also be added between interchanges. Geometrically, the two build alternatives are very similar. All northbound entrance and exit ramps would be modified to accommodate the widened configuration of the freeway.

### 1.4.1 Alternatives

#### *Build Alternative 1 – Full Standard Improvements*

Build Alternative 1 – Full Standard Improvements, also known as the Locally Preferred Alternative, would generally re-establish conformance with the Department’s standards, including lane and shoulder widths. Detailed Figures are located in Appendix A. Details of the proposed improvements are as follows:

- Orangethorpe Avenue Exit Ramp to Orangethorpe Avenue Entrance Ramp: The existing facility provides (1) HOV lane and (5) mixed-flow lanes. The project will add (1) mixed-flow lane. The proposed facility will provide (1) HOV lane and (6) mixed-flow lanes.
- Orangethorpe Avenue Entrance Ramp to Chapman Avenue Exit Ramp: The existing facility provides (1) HOV lane, (4) mixed-flow lanes and (1) auxiliary lane. The project will add (1) mixed-flow lane. The proposed facility will provide (1) HOV lane, (5) mixed-flow lanes, (1) auxiliary lane and a two-lane exit ramp to Chapman Avenue.
- Chapman Avenue Exit Ramp to Nutwood Avenue Entrance Ramp: The existing facility provides (1) HOV lane and (4) mixed-flow lanes. The project will add (1) mixed-flow lane. The proposed facility will provide (1) HOV lane and (5) mixed-flow lanes.
- Nutwood Avenue Entrance Ramp to Yorba Linda Boulevard Exit Ramp: The existing facility provides (1) HOV lane, (4) mixed-flow lanes and (1) auxiliary lane. The project will add (1) mixed-flow lane. The proposed facility will provide (1) HOV lane, (5) mixed-flow lanes and (1) auxiliary lane.
- Yorba Linda Boulevard Exit Ramp to Yorba Linda Boulevard North Entrance Ramp: The existing facility provides (1) HOV lane and (4) mixed-flow lanes. The project will add (1) mixed-flow lane. The proposed facility will provide (1) HOV lane and (5) mixed-flow lanes.
- Yorba Linda Boulevard North Entrance Ramp to Rolling Hills Drive: The existing facility provides (1) HOV lane and (4) mixed-flow lanes. The project will add (1)

mixed-flow lane. The proposed facility will provide (1) HOV lane and (5) mixed-flow lanes.

- Rolling Hills Drive to Imperial Highway Exit Ramp: The existing facility provides (1) HOV lane and (4) mixed-flow lanes. The project will add (1) mixed-flow lane, (1) auxiliary lane and the Imperial Highway exit ramp will be reconfigured from a one-lane exit to a two-lane exit. The proposed facility will provide (1) HOV lane, (5) mixed-flow lanes, (1) auxiliary lane and a two-lane exit ramp to Imperial Highway.
- Imperial Highway Exit Ramp to Imperial Highway South Entrance Ramp: The existing facility provides (1) HOV lane and (4) mixed-flow lanes. The project will add (1) mixed-flow lane. The proposed facility will provide (1) HOV lane and (5) mixed-flow lanes.
- Imperial Highway South Entrance Ramp to Imperial Highway North Entrance Ramp: The existing facility provides (1) HOV lane and (4) mixed-flow lanes. The project will add (2) mixed-flow lanes. The proposed facility will provide (1) HOV lane and (6) mixed-flow lanes.
- Imperial Highway North Entrance Ramp to Lambert Road Exit Ramp: The existing facility provides (1) HOV lane and (4) mixed-flow lanes. The project will add (1) mixed-flow lane and (1) auxiliary lane. The proposed facility will provide (1) HOV lane, (5) mixed-flow lanes, (1) auxiliary lane and a two-lane exit ramp to Lambert Road.
- Lambert Road Exit Ramp to Lambert Road Entrance Ramp: The existing facility provides (1) HOV lane and (4) mixed-flow lanes. The project will add (1) mixed-flow lane. The proposed facility will provide (1) HOV lane and (5) mixed-flow lanes.

### Infrastructure and Project Components

Build Alternative 1 includes the following infrastructure and project components to accommodate the widening of the northbound SR-57:

- Widen the northbound mainline freeway by adding a through lane and auxiliary lanes between interchanges;
- Widen northbound side of grade separation structures;
- Reconfigure northbound entrance and exit ramps;
- Construct retaining walls, sound walls, and combination sound walls on retaining walls;
- Right of way acquisition – including Temporary Construction Easements, partial fee acquisitions, and permanent wall easements;
- Extend and improve the existing storm water drainage system due to freeway widening;
- Relocate utilities in conflict with the freeway widening;

- Implement temporary and permanent Best Management Practices (BMP's) for storm water quality management;
- Modify highway planting and irrigation systems;
- Modify highway lighting systems;
- Provide structure aesthetic treatments;
- Implement Transportation Management Plan to mitigate construction related traffic impacts; and
- Temporary construction impacts including soil excavations, construction material staging areas, construction noise and reduced lane/shoulder widths on northbound freeway.

### Construction Cost & Right of Way

Alternative 1 costs approximately \$117.2 million and requires approximately 4,965 meters<sup>2</sup> (m<sup>2</sup>) (53,443 feet<sup>2</sup> [ft<sup>2</sup>]) of right of way acquisition affecting a total of twenty-seven parcels. Of the required acquisitions, 3,353 m<sup>2</sup> (36,091 ft<sup>2</sup>) is for Temporary Construction Easements (TCE's), 974 m<sup>2</sup> (10,484 ft<sup>2</sup>) is for partial fee takes, 360 m<sup>2</sup> (3,875 ft<sup>2</sup>) is for permanent wall easements, and 278 m<sup>2</sup> (2,992 ft<sup>2</sup>) is for aerial railroad easements.

### Grade Separation Structures

Fifteen existing grade separation structures within the project limits will be affected. Ten of these are undercrossings, where it will be necessary to widen the structure to add one northbound lane (and in three locations, also an auxiliary lane), and increase the width of the inside (median) shoulder to satisfy present Department standards. Eight of these undercrossing structures are single-span<sup>1</sup> bridges, with open ends; one (at Orangethorpe Avenue [55-459]) is a two-span bridge, also with open ends and supporting columns in the median of the street. The structure at Placentia Avenue (55-460) is a sharply skewed four-span undercrossing with open ends and supporting columns in the median and along the outer edges of the sidewalks, which parallel the street.

Three structures are three-span bridges with supporting columns and open ends. These structures are the South Placentia Overhead (55-450) and the Placentia Overhead (55-449), owned by OCTA, and the Brea Overhead (55-482), owned by the Union Pacific Railroad (UPRR), where the railroad recently was abandoned. Contacts were made with the owners of these three facilities. Existing vertical clearances at these three overheads are acceptable. No reduction in existing vertical clearances is proposed with the project. Two structures are

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<sup>1</sup> The extent or measure of space between two points or extremities or the section between two intermediate supports of a bridge.

overcrossings, Yorba Linda Boulevard (55-468) and Imperial Highway (55-469), where it will be necessary to cut back the fill under the easterly end of the bridge and use a retaining wall (or a tie-back wall if required) to create space for one additional northbound lane and widening of the inside (median) shoulder.

### Construction Limits and Schedule

Limits of construction extend approximately from 0.3 km (0.2 mi) south of Orangethorpe Avenue in the City of Placentia to 0.2 km (0.1 mi) north of Lambert Road in the City of Brea. Construction would occur over a length of 7.9 km (4.9 mi) through the cities of Placentia, Fullerton and Brea. Construction is anticipated to commence in 2009 and be completed by 2011. The southbound lanes of the freeway would not be altered. During construction, it is anticipated that mainline freeway lane and shoulder widths would be reduced to accommodate construction activities. It is not anticipated that long-term ramp closures would be required.

### *Build Alternative 2 – Non-Standard Improvements*

Build Alternative 2 – Non-Standard Improvements also proposes widening northbound SR-57 by one through lane. Auxiliary lanes would also be added between interchanges. However, Build Alternative 2 differs from Build Alternative 1 in the following respects: Under Build Alternative 2, the existing non-standard median shoulder width (generally 0.6 m [1.9 ft] in width) and the existing non-standard 3.35 m (10.9 ft) lane widths would remain throughout the project. Traffic operations of the two build alternatives are nearly identical. Build Alternative 2 includes the same infrastructure and project components as Build Alternative 1.

### Construction Cost & Right of Way

Alternative 2 costs approximately \$87.7 million and requires approximately 1,618 m<sup>2</sup> (17,416 ft<sup>2</sup>) of right of way acquisition affecting a total of nine parcels. Of the required acquisitions, 1,096 m<sup>2</sup> (11,797 ft<sup>2</sup>) is for Temporary Construction Easements (TCE's), 24 m<sup>2</sup> (258 ft<sup>2</sup>) is for partial fee takes, 347 m<sup>2</sup> (3,735 ft<sup>2</sup>) is for permanent wall easements and 151 m<sup>2</sup> (1,624 ft<sup>2</sup>) is for aerial railroad easements.

### *Alternative 3 – No Build*

The No Build Alternative undertakes no widening improvements along SR-57, but rather maintains the existing freeway geometry. The purpose of describing and analyzing a No Build Alternative is to allow decision-makers to compare the impacts of approving the proposed project with the impacts of not approving the proposed project. The No Build Alternative serves as the baseline against which to evaluate the effects of the proposed build alternatives. The traffic analysis demonstrates the following with respect to the No Build Alternative: