

# Closing the I-215

It took a whole lot of steel, a space-shuttle-carrying vehicle and partnership with a railroad to build 7.5 miles of carpool lanes on Interstate 215 through Riverside and San Bernardino counties. But in the end, the I-215 Bi-County High Occupancy Vehicle Project filled in the gap to provide 70 miles of continuous carpool lanes that stretch from State Route 210 in the city of San Bernardino to the Los Angeles County line.

Doing so required far more than simply adding pavement along the existing roadway.

Sure, the carpool lanes themselves were added by rebuilding the outside and inside freeway shoulders and restriping the lanes to allow for three general purpose lanes and the new carpool lane in each direction. But the project also demolished and rebuilt the Newport Avenue Bridge, widened I-215 over I-10 and the Santa Ana River, repaved 7.5 miles of highway and added hardscape aesthetics along the corridor. Six 1.1 million pound steel trusses were also constructed and put in place – by the same technology that transported the much-lighter space shuttle – creating the new railroad bridges for Burlington Northern Santa Fe Railroad.

The \$205 million project closed the gap between carpool lanes built north of Orange Show Road in San Bernardino and south of the 60/91/215 interchange in Riverside – a gap that existed three years since the previous lane extension was completed just to the north. The lanes

are designed to encourage ridesharing through carpools and vanpools and improve the efficiency, safety and operations of traffic moving between the two counties.

The Project Approval/Environmental Document phase of work required the completion of a number of technical studies. Engineering studies included traffic volumes, mapping, public utilities, geotechnical reports, material reports, drainage and storm water reports and right of way needs. Environmental studies were conducted to determine how the project may affect the area. These included studies of noise, air quality, hazardous materials, water quality, floodplains, community impacts, cultural and historic properties and sensitive plants and wildlife.

Noise studies helped determine whether residential sound walls needed to be built next to the freeway and residents near potential sound wall locations were asked to participate in the process. The results of these studies were used to prepare drawings of the improvements, develop cost estimates and prepare for each phase of the project – final design,



# Gap

## Project Adds 7.5 Miles of Carpool Lanes, Builds Rail Bridges

right of way acquisition and construction. All of this resulted in six sound walls built near schools and residential areas. The retaining walls, lined with red and brown river rock at the base, required less maintenance, coupled with concrete retaining walls that were etched with city icons – such as a train for the city of San Bernardino and mountains for the city of Grand Terrace (further down the road in Riverside, the walls contained images of oranges, old missions and the city library).

### Building Steel Bridges

When it came time to replace the Newport Avenue Bridge over I-215, the project's last structure, Caltrans partnered with Ames Construction Inc., Stinger Bridge & Iron, San Bernardino Associated Governments, Riverside County Transportation Commission, The Federal Highway Administration, Burlington Northern Santa Fe Railroad and the California Highway Patrol.

The bridge that was demolished was an old, side-metal railing, open-top structure. Its weathered-steel replacement, designed by Caltrans, is a truss with

a closed top and cross members joined together – and will require no painting. Typically, painted bridges require maintenance every five years.

Ames Construction alongside Stinger Bridge & Iron assembled and transported four steel railroad bridge trusses into place with minimal traffic impact to motorists. The 1.1 million-pound span trusses were assembled off-site – but only three-fourths of a mile away to limit the transport distance – in April 2014 in an operation nicknamed “Spring Sting.” The steel trusses, held together by 98,000 bolts, were then lifted and checked for logistic capabilities.

Finally, the 200-foot-long, 30-foot-high and 23-foot-wide steel trusses were transported into place using self-propelled modular transports – the same innovative technology used to transport the 150,000-pound space shuttle Endeavour to the California Science Center in Los Angeles. It was the first time a state transportation agency had attempted a move like this with such a large structure, said Senior Transportation Engineer Manny Yogarajah. The replacement had to be done in a 20-hour window because it required shutting down one track at a time to keep rail traffic moving.

The final bridge work, known as “Summer Sting,” was carried out in September 2014, putting the last two fabricated steel bridge trusses into place.

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## More Carpool Lanes Needed

Approximately 160,000 vehicles travel this section of I-215 daily, reaching as many as 10,000 per hour during peak commute times. By 2040, that number is expected to jump to an estimated 335,000 vehicles per day, and 21,000 per hour during peak commute hours. Forecasts also show a demand for carpool lane use by 97,000 vehicles per day by 2040. The new carpool lanes will encourage ridesharing through carpools and vanpools, and improve the efficiency, safety and operations of traffic moving between San Bernardino and Riverside counties.

The San Bernardino Associated Governments (SANBAG) has long-term plans to add a new northbound and southbound general purpose lane in this area by 2040. Two separate but related projects also are in the planning stages along this section of I-215 – reconstruction of the Mt. Vernon/Washington Street interchange in Colton and the Barton Road interchange in Grand Terrace.

Caltrans was the lead agency during construction, which wrapped up in May. SANBAG and the Riverside County Transportation Commission shared responsibilities and costs for the Project Approval/Environmental Document phase of the

project. Project funding was provided in part by Measure I (the half-cent sales tax for transportation improvements in San Bernardino County), Measure A (the half-cent sales tax for transportation improvements in Riverside County), as well as State and Federal funding. The project received nearly \$80 million of its funding from Proposition 1B

## Commuting and Traffic Data

Source: Caltrans and Southern California Association of Governments.

- 80 percent of San Bernardino County commuters and 79 percent of Riverside County commuters drive to work alone each day.
- San Bernardino County commuters spend an average of 43 minutes each way, traveling an average of 23.3 miles in each direction. Riverside County commuters spend slightly more time on the road – an average of 46 minutes each way, traveling 25.1 miles each way.
- Approximately 160,000 vehicles per day travel this section of I-215. An average of 10,000 vehicles per hour travel during peak commute times.
- Caltrans estimates the project will eliminate more than 14,571 hours of delays and improve air quality.
- By 2040, an estimated 335,000 vehicles per day are expected in this area, and average peak hour traffic counts are expected to grow to 21,000 per hour.
- Up to 18,000 trucks move freight through this area each day, with 34,000 projected daily by 2040.
- Forecasts show a demand for carpool lane use to increase by 97,000 vehicles per day by 2040.
- Traffic delays are common for northbound and southbound travelers during peak commute times, particularly for southbound motorists in the morning hours and northbound motorists in the late afternoon and evening hours. Delays are much greater on Friday evenings and holiday weekends.

### Awards

Caltrans Gold Partnering Award  
for Construction 2014 and 2015

Source: District 8

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A retaining wall on I-215 honors the San Bernardino area's longtime railroad history.

