Make the Case – Perris Valley Line Commuter Rail Extension

Project Sponsor: Riverside County Transportation Commission

The Perris Valley Line is a 23-mile extension of the Southern California Metrolink commuter rail system from the existing station in Riverside to communities to the east and southeast, including the rapidly growing cities of Moreno Valley and Perris.

Setting

The city of Riverside is one of the two principal eastern terminals of the current Metrolink system. The city is located 50 miles east of downtown Los Angeles and 30 miles northeast of central Orange County, the primary employment centers in the region.

Figure 1 provides a map of Riverside County and neighboring areas, plus the Metrolink lines and major highway facilities in the area. The principal markets for the project are in the Perris Valley, which includes the communities of Perris and Romoland along Interstate 215 (I-215) and Moreno Valley along State Route 60 (SR-60). Three Metrolink lines currently serve Riverside County: the Riverside Line connecting to Los Angeles Union Station via Pomona; the 91 Line connecting to Los Angeles Union Station via Fullerton; and the Inland Empire – Orange County (IEOC) Line connecting to Santa Ana, Irvine, and other locations in central and southern Orange County.

Purpose

The Perris Valley Line project will provide better access to the Metrolink system and the locations that it serves for residents of the Perris Valley, and help shape future land use patterns by using the new stations as focal points for development.

Figure 1. The Perris Valley Line Corridor & Metrolink Connections to Los Angeles and Orange Counties

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Current Conditions in the Corridor

As of 2001 (the modeling base year), there were approximately 342,000 residents and 98,000 jobs in the Perris Valley corridor, which includes the eastern portion of the City of Riverside, the cities of Moreno Valley and Perris, and surrounding unincorporated areas. (In 2007, population and employment are approximately 425,000 and 133,000.) An additional 318,000 residents (as of 2001, 450,000 in 2007) live in areas outside the Perris Valley such as Temecula and Murrieta to the south and Hemet and San Jacinto to the east, with many commuting through the Perris Valley corridor to reach jobs to the north and west. Low housing prices compared to Los Angeles and Orange Counties (25 – 35% less) have made Riverside County one of the fastest growing areas in the country, with 77,000 residents moving to the county from June 2004 to June 2005 (3.7% annual growth). By 2010, the Perris Valley corridor is expected to grow to 466,000 residents and 150,000 jobs, along with 513,000 residents in outlying areas.

One result of this residential growth is that commutes by Riverside County residents have grown to be the longest in Southern California, averaging 31 minutes in 2004 compared to 29 minutes for residents of Los Angeles County and 27 minutes for residents of Orange County. Every weekday, 18,000 commuters travel from their homes in the corridor to Los Angeles County, and another 30,000 commuters from the corridor travel to Orange County. Peak-hour travel by automobile on SR-60 from Riverside to downtown Los Angeles, for example, currently averages 100 minutes for the 54-mile trip, while travel to the city of Orange on State Route 91 (SR-91) averages 76 minutes for the 35-mile trip.

Congested roadways make Metrolink an attractive option for many of these longer-distance commuters. To serve these travel markets, Metrolink operates 37 trains per day (as of 2007) on 3 lines: the Riverside Line serving downtown Los Angeles via Pomona, the 91 Line serving downtown Los Angeles via Fullerton, and the Inland Empire – Orange County (IEOC) Line serving Orange County (up from 28 trains per day on the Riverside and IEOC Lines in 2001). These services are generally designed for commuters heading toward Los Angeles and Orange County in the morning and returning in the evening, with roughly 30-minute headways in the peak periods and peak directions and less frequent service for mid-day and reverse-commute travelers.

Riverside County is currently served by five Metrolink stations: Riverside Downtown, Riverside – La Sierra, Pedley, North Main Corona, and West Corona. The Riverside Downtown station, which acts as a main Metrolink access point for Perris Valley residents, served 2,300 passengers per day on average in 2001. Riders are generally residents of Riverside County (76 percent), traveling to or from work (84 percent) and traveling in the morning or evening peak periods (94 percent).

Riders from the Perris Valley represent 65 percent of all passengers using the Riverside Downtown station. Approximately 90 percent of them use an automobile to travel from their residences to the station. These auto-access Metrolink riders face increasingly congested conditions on I-215 and SR-60, with travel times for the 13 mile trip from Moreno Valley to Downtown Riverside averaging 22 minutes (at 35 mph). The average travel time for the 21 mile trip from South Perris to Downtown Riverside is about 32 minutes (at 39 mph). Of the other 10 percent of riders from the corridor who do not use autos to access the station, most use a bus connector service operated by the Riverside Transit Agency (RTA) along I-215. This line (the Route 208 CommuterLink) carries 108 passengers per day on average, with a typical trip taking 20 minutes from Moreno Valley, 40 minutes from Perris, and 90 minutes from Temecula.

Anticipated Conditions in 2030

By 2030, the Perris Valley population is projected to reach over 600,000 residents (a 76% percent increase compared to 2001) and corridor employment is projected to be 210,000 workers (a 115% percent increase). Combined with growth elsewhere in Southern California, these increases will expand the commuter travel markets from the corridor to central Los Angeles – from 18,000 work trips per day in

2001 to 24,000 work trips per day in 2030 – and to Orange County – from 30,000 to 46,000 trips per day.

These commuter trips will contribute to the large projected increases in traffic on highway routes to Los Angeles and Orange Counties: from 135,000 to 244,000 vehicles per day on State Route 60 (an 81% increase) and from 260,000 to 400,000 vehicles per day (a 54% increase) on State Route 91. Increased traffic will lengthen the periods of the day when heavy congestion substantially reduces average travel speeds, thereby making commuter rail options an increasingly attractive option for commuters in these travel markets.

Metrolink passenger volumes at the five Riverside County stations are projected to increase substantially from 2001 to 2030, rising 290 percent to 16,325 trips per day. The passengers have characteristics similar to current ridership: primarily travel by residents of Riverside County, largely work trips (78 percent), and largely in the morning/evening peak periods (89 percent). In response, Metrolink is projected to increase service on the three lines serving Riverside County from 28 trains per day in 2001 to 126 trains per day by 2030. Travelers from the Perris Valley corridor are expected to represent an growing share of Metrolink trips at all Riverside County stations, increasing from approximately 3,000 in 2001 to about 11,700 in 2030 (a 390 percent increase). This increase in ridership is a direct result of continued rapid growth in the Perris Valley corridor's population.

Access to the existing Riverside stations from the Perris Valley corridor will become substantially more difficult as congestion worsens. Traffic on I-215 approaching Riverside is expected to increase 61 percent from 186,000 to 300,000 vehicles per day, with severe congestion affecting longer segments of the highway. Major bottlenecks at the eastern I-215/SR-60 junction and at the I-215/SR-91/SR-60 interchange effectively make the addition of new highway capacity financially infeasible. As a result, peak-period automobile travel time for the 21 mile trip from South Perris to Riverside is expected to increase from the current 32 minutes to approximately 67 minutes by 2030. Consequently, Perris Valley residents will face substantially longer travel times to the Riverside station by either automobile or connecting buses.

The Case for the Perris Valley Line

One option to respond to the problems anticipated in the corridor by 2030 is a low-cost approach that would introduce new express bus service along I-215 between Perris and Riverside. (This approach represents the Transportation Systems Management (TSM) alternative.) Two parallel express routes along with modified local feeder buses serving six new stations near the freeway would increase Metrolink ridership from the corridor by 216 riders per day and would save existing and new transit riders 1207 hours per day. These limited benefits are the direct consequence of heavy traffic congestion that would limit the speeds of buses operating on I-215, the only high-capacity connection from the Perris Valley to Riverside. The low cost TSM approach, with buses running on the same congested highways that riders are attempting to bypass, would provide a very ineffective response to anticipated mobility problems in the corridor.

The proposed Perris Valley Line (PVL) Metrolink extension would provide significantly better transit options in the corridor and generate substantially higher benefits than the TSM alternative. The project extends Metrolink service 22.7 miles into the Perris Valley, and includes 6 new stations (5 with park and ride lots). Over 1,740 parking spaces will be located at stations when the extension opens in 2010, expanding to nearly 3,400 spaces by 2030 as demand grows with the area's population. With operating speeds averaging 35 mph over the full length of the extension, the trains will travel from South Perris to Riverside in 40 minutes compared to 89 minutes on a connector bus and 67 minutes in an automobile. Rail service along the Perris Valley Line would be an extension of the Metrolink 91 line, allowing for one-seat rides to downtown Los Angeles from the Perris Valley. This allows riders who park and ride at the PVL South Perris station to save 27 minutes in travel time to downtown Los Angeles compared to parking

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and riding from the existing Downtown Riverside station, and 130 minutes compared to driving all the way to downtown Los Angeles. Riders from the corridor traveling west from Riverside on the Riverside Line or into central and southern Orange County on the IEOC Line would have to transfer at the Riverside Downtown station – thereby incurring additional time and inconvenience that would offset some of their time savings. Riders who park/ride at South Perris and transfer to the IEOC Line would save 27 minutes in door-to-door travel to Irvine compared to their park/ride option at Downtown Riverside, and 120 minutes compared to driving the entire route to Irvine.

In response to these substantial service improvements, Metrolink ridership from the corridor is projected to increase by 8,777 riders per day over otherwise-anticipated 2030 levels: from 17,882 to 26,519 riders from the corridor on the 91 Line, 7,372 to 7,414 on the Riverside Line, and 7,752 to 7,850 on the Inland Empire Line. The Perris Valley Line will intercept passengers from Moreno Valley (with Alessandro Blvd station acting as the main access point), Perris (primarily focused on the Perris and Ramona Expressway Stations) and from communities further to the south (Temecula and Murrieta) and east (Hemet and San Jacinto) served by the South Perris station. Even though these access points are identical to the TSM alternative, the attracted passengers are better served by the commuter rail extension.

Overall, the proposed Metrolink extension through the Perris Valley is projected to save riders 3,131 hours per day, with 2,601 of those hours saved by travelers from the Perris Valley corridor. Eighty percent of the user benefits (2,485 hours) are for the Home-Based Work / Peak trip purpose, a figure typical of commuter rail lines. The principal travel markets that accrue these savings are (1) downtown Riverside, with 487 trips saving 413 hours – an average of 50 minutes each; (2) Orange County, with 1,382 trips saving 1,002 hours – an average of 44 minutes each; and (3) downtown Los Angeles, with 1,017 trips saving 698 hours – an average of 41 minutes each.

The capital cost of the project, which includes the cost to build the extension and its station areas plus the cost of additional Metrolink passenger coaches – is estimated at $180.5 million in 2007 dollars ($193.5 million in year-of-expenditure dollars). Compared to $13.3 million capital cost for the TSM alternative, the added capital costs of the project are equivalent to $12.5 million per year over the life of the project. With the added costs of operating and maintaining transit services, the proposed project would cost an equivalent of $13.9 million per year. The projected time savings of 3,131 hours per day in 2030 translates into nearly 850,000 hours per year. Overall, the project cost per hour of time savings is projected to be $22.43 per hour over the life of the project.

Uncertainties

Cost Uncertainties

As with any project, the Perris Valley Line project must address a few uncertainties as it moves forward to implementation. Every effort has been made to plan for cost increases, especially the commodities such as steel and concrete which make up about 40 percent of the hard construction costs. Other cost uncertainties, such as for right-of-way costs, are limited because the vast majority of the right-of-way required for the project (over 80%) is already owned by RCTC. The well-defined project footprint will also serve to mitigate the uncertainty of actual commodity needs. While rising commodity prices or a smaller pool of possible construction bidders could raise the price for construction of the PVL, individual contingencies (such as 26.5% on all commodities) and overall contingencies (such as a 6.5% unallocated contingency for all items) should be able to account for any cost increases.

The most significant cost uncertainty lies with establishing an agreement with one of two freight railroad companies to ensure a connection from the RCTC-owned San Jacinto Branchline to the existing Downtown Riverside station. This short (2.5 mile) connection could affect the actual location of the station north of UC Riverside. The overall cost of the project is expected to vary by less than 5% for

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most of the likely scenarios, with a best-case scenario in which the cost may actually be lower than currently estimated.

Benefit Uncertainties

The projected success of this project depends heavily on the continuation of population growth trends in Riverside County and the continued mobility needs of this population. Recent growth projections have confirmed the magnitude of population growth assumed for this project, with a 2007 State Department of Finance study projecting continued rapid growth in Riverside County, which is expected to reach 4.7 million residents and become the second most populous county in the state by 2050. With real estate prices for both residential and commercial development so much lower in the Perris Valley Corridor than Los Angeles and Orange Counties, the underlying driver of growth in the corridor should remain strong. Any significant adjustment to the expected population growth would require unforeseen developments such as a combination of redirection of development policy, an extended real estate downturn, or community opposition that could hinder business investment.

Many of the PVL project's benefits are also due to the projected heavy congestion on Perris Valley roads. The projected travel delays for autos already take into consideration the planned widening of both I-215 and I-15 and many significant improvements to nearby arterial roads, but average speeds are still expected to drop below 20 mph on I-215. Although more significant investments in the highway infrastructure in the area could lessen the projected delays somewhat, the PVL project, which, with a travel time of 40 minutes from South Perris to Riverside, is already competitive with automobile travel times, is likely to retain its advantage over congested roadways of the future.

A final source of uncertainty lies with the performance of the travel demand forecasting model used to estimate Perris Valley Line ridership and benefits. The sophisticated model used for the PVL project's forecasts incorporates demonstrated responses to modes that already exist in Southern California. This model has been improved to take into account the unique aspects of the Perris Valley Line project, and travel patterns on the Metrolink commuter rail system. The large number of existing Metrolink riders who live in the Perris Valley (1/3 of all Metrolink riders in the county) will ensure a large market for the service and a sound foundation for the ridership estimate for the proposed project.

Overall Implications of Uncertainty

The overall costs and benefits for the Perris Valley Line are expected to stay constant throughout the design, construction, and operations phases. The well-defined scope of the project, minimal amount of land that needs to be acquired, and large contingencies attached to all items should ensure that the costs remain close to the current estimate. The continued growth in the corridor, spreading congestion on the roadway network, and large pool of existing Metrolink riders from the Perris Valley provides a high level of certainty for the projects benefits.

Summary

The Perris Valley faces the major challenge of staying mobile as it expands at one of the fastest paces in the country (3.7% per year recently) and roads grow more congested. The Perris Valley Line will provide new transit options for the area, allowing for convenient trips within Riverside County as well as to regional destinations to the west. Alternatives to automobiles such as buses are still bound to the same congested roadway network, and cannot compete with the speed, reliability, and cost effectiveness of the Perris Valley Line. The PVL travel time to Riverside of 40 minutes compared to 67 minutes by auto and 89 minutes by bus will improve access for the already large reservoir of Metrolink riders in the Perris Valley, as well as draw new riders from the rapidly growing area. The actual construction process, which involves rehabilitating 22 miles of existing railroad and adding stations, is relatively simple and has been perfected by RCTC and Metrolink when building the nearly 40 miles of Metrolink track in the county and

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nearly 400 miles system-wide. This experience, as well as the small amount of uncertainty associated with the project's costs and benefits, should ensure a cost effective mobility solution for Perris Valley residents.

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