LOS ANGELES COUNTY METROPOLITAN TRANSPORTATION AUTHORITY

Diesel Multiple Unit (DMU) Technical Feasibility Analysis

Contract No. PS4370-2064

Task 2.5.5

Candidate Corridors Operational Capacity and DMU Implementation Plan Report

F I N A L

LTK Engineering Services

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1.0 Introduction

This report discusses three elements related to the implementation of FRA compliant DMUs in Year 2010 on Metro owned lines in Los Angeles County as an overlay to existing Metrolink operations. These are: the effectiveness of capacity enhancements needed to the lines to ensure fluid passenger and freight train operations; order-of-magnitude ridership forecasts for the DMU service; and risk and liability issues attendant with implementation of DMU service.

2.0 Corridor Capacity Analysis

To test the capacity improvements needed to add DMU service to the Ventura County, Antelope Valley and San Bernardino Lines, the study team performed an operations simulation.

The operations simulation used the Rail Traffic Controller (RTC) program from Berkeley Simulation Software. RTC is considered the industry standard for operations simulation of mainline operations. This program is used by UP, BNSF and Metrolink.

RTC routes trains over track in the same way a human dispatcher would from a remote location. Where there are conflicts; that is, where two trains are approaching each other from opposite directions on single track, RTC directs one train to take a siding. The meet-pass logic for resolving conflicts is prioritized. For example, passenger trains have priority over freight trains. Thus, if there were a passenger train-freight train conflict on single track, the freight train would take the siding and the passenger train would hold to the mainline.

2.1 Base Case

The Base Case, or the simulation of existing conditions, included all current passenger and freight service operating on the Ventura County, Antelope Valley and San Bernardino Lines. The passenger trains include Metrolink, Amtrak *Pacific Surfliner*, and Amtrak Coast Starlight trains on the Ventura County Line. Freight trains included UP through and local trains on the Ventura County and Antelope Valley Lines; UP local trains on the San Bernardino Line west of Pomona, and BNSF local trains on the San Bernardino Line east of Pomona.

Also included in the simulation are non-revenue moves for Metrolink between LAUS and the Central Maintenance Facility (CMF) at Taylor Yard, and for Metrolink Burbank Turn trains between the CMF and Burbank Bob Hope Airport.

Operating patterns for the passenger trains were taken from Metrolink and Amtrak summer 2008 schedules. Operating patterns for freight trains were based on various sources, including the 2008 Metro-sponsored Multi-County Goods Movement Action Plan, comments received from Metrolink, and on the professional knowledge of study team members.

The specifics of passenger and freight operations on the Ventura County, Antelope Valley and San Bernardino Lines are discussed in Task 2.2, *Technical Definition of Three Candidate Corridors.*

The study team input the rail infrastructure for the three lines per track charts (engineering drawings) developed and maintained by Metrolink. These track charts show all track, structures and signals, as well as fiber optic cable, pipelines and crossings for the three lines.

The operations simulation was run for a simulated seven days. The results appear in the Table 1 below, by subdivision. A subdivision is a route segment. The study area is comprised of four Metrolink Subdivisions. Subdivision definitions are as follows:

- *Ventura Subdivision:* From Burbank Junction to Moorpark, a distance of 37.9 miles. Operating over this subdivision are Metrolink Ventura County Line and Burbank Turn trains; Amtrak *Pacific Surfliner* and *Coast Starlight* trains; and UP freight trains.

- *Valley Subdivision:* From CP Taylor (between Los Angeles Union Station and Glendale) to Lancaster, a distance of 63.1 miles. Operating over this subdivision are Metrolink Ventura County Line trains, Antelope Valley Line trains and Burbank Turn trains; Amtrak Pacific Surfliner and Coast Starlight trains; and UP freight trains.
- *San Gabriel Subdivision:* From River Subdivision East Bank Line (east of LA Union Station) to San Bernardino, a distance of 32.2 miles. Operating here are Metrolink San Bernardino Line trains and UP and BNSF local trains. Occasionally, an Amtrak Southwest Chief is routed over the subdivision from Bassett (near El Monte) to LAUS.
- *River Subdivision*: CP Taylor to Redondo Junction)West Bank Line connection to BNSF's San Bernardino Subdivision / Ninth Street) (East Bank Line connection to UP's Los Angeles Subdivision). Distances on the lines are short; the lines provide connections for Metrolink Lines to Los Angeles Union Station. The River Subdivision lines connect to LAUS. Operating here are Metrolink Ventura County Line, Antelope Valley Line, San Bernardino Line, Burbank Turn and other trains*;* Amtrak *Sunset Limited, Coast Starlight,* and *Southwest Chief* long distance trains and Amtrak *Pacific Surfliner* trains; and UP freight trains.

Table 1: LA DMU Operation Simulation Results for a Seven Day Simulation

Subdivision	Distance	Train Type	Base Case			DMU 1			DMU 2		
			No. of Trains	*Avg. Speed MPH*	*Delay %*	*No. of Trains*	*Avg. Speed MPH*	*Delay %*	*No. of Trains*	*Avg. Speed MPH*	*Delay %*
Ventura	37.9 miles	Commuter	176	27.3	4.9	308	24.3	14.0	308	26.3	0.8
		Total	338	26.4	13.4	470	23.9	27.4	470	26.4	5.9
Valley	63.1 miles	Commuter	323	29.6	2.6	499	28.2	3.1	499	28.6	1.2
		Total	511	25.6	9.8	687	25.3	10.0	687	25.6	8.1
San Gabriel	32.2 miles	Commuter	246	30.2	5.1	286	29.9	5.0	286	30.0	5.2
		Total	292	25.7	7.1	336	25.9	5.7	333	25.8	6.7
River	17.61 miles on Ventura subdivision	Commuter	1,009	8.5	1.9	1,225	8.4	2.9	1,225	8.4	4.0
	3.5 miles on Valley subdivision	Total	1,417	9.6	5.5	1,633	9.4	5.9	1,633	9.4	7.0
	0.9 miles on San Gabriel subdivision										

The results given in Table 1 are identified for commuter trains (Metrolink trains) and also for all trains, including commuter, Amtrak, and freight trains. Two specific simulation results are cited: the average speed by train type and the amount of delay time of trains as a percent of their total run time over a subdivision. For example, if a commuter train experiences 5 minutes of delay over its theoretically achievable run time (plus "dwell", that is, station stops and movements to and from its layover facility) of 50 minutes, it experiences 10 percent delay.

2.2 Alternative Case: DMU 1

This simulation included the addition of DMUs as an overlay to the existing Metrolink service. The DMUs were added to the current Metrolink schedules to fill in the timetable gaps, providing for at least hourly bi-directional service on each line during weekdays. Schedules for the DMUs

along with the Metrolink and Amtrak trains appear in Appendix A to this report. In all, there are 46 DMU runs.

- 16 DMU runs were added to the Ventura County Line service between Los Angeles Union Station and Chatsworth.
- 6 DMU runs were added to the Ventura County Line service between Burbank Bob Hope Airport and Chatsworth.
- 16 DMU runs were added to the Antelope Valley Line service between Los Angeles Union Station and Via Princessa.
- 8 DMU runs were added to the San Bernardino Line service between Los Angeles Union Station and Claremont.

Outer DMU termini at Chatsworth and Claremont were selected, as these stations are the furthest stations on the Ventura County Line and San Bernardino Line, respectively, which are still within Los Angeles County. Via Princessa was selected as the outer DMU terminus on the Antelope Valley Line, as population densities become significantly less north of this station.

The simulation included a Burbank Turn north of Burbank Bob Hope Airport. That is, these DMUs are envisioned to operate in separate runs between Chatsworth and the Burbank Airport only, in the same way that Metrolink operates trains between LAUS and Burbank Airport only. The rationale for this portion of the DMU overlay is the same as for the existing Burbank Turn trains: to realize better equipment and crew utilization. For example, a DMU emanating from Los Angeles Union Station and terminating in Chatsworth will reverse direction for a round trip to Burbank Airport before heading back to Los Angeles Union Station from Chatsworth.

Not included in the simulation are DMU non-revenue moves to and from a maintenance facility, as the manner in which DMUs are to be maintained has not been determined. For the simulation, this omission is not material, as such moves would occur in off-peak periods when train volumes on the lines are comparatively light and these moves would not strain line capacity.

Also not included are weekend DMU operations. Any impact of these trains on overall line capacity would not be important, as Metrolink operations either do not occur or are reduced relative to weekday service. Thus there would be no strain on capacity with weekend DMUs.

The only infrastructure improvements added to support these new trains were those related to layover DMU facilities at Chatsworth, Via Princessa, and Claremont. These are apart from any existing Metrolink layover facilities. Almost all trains layover long enough at outer termini such that they must make utilize layover facility to keep the mainline clear for through traffic.

As given in Table 1, the DMU 1 simulation reveals the negative impact of adding DMUs to lines with no mainline capacity increases. On all three subdivisions, speeds of commuter trains decrease relative to the Base Case, while delay percentages increase. This result indicates that capacity increases to support the new train volumes on the lines would be beneficial. Speeds are impacted the most on the Ventura Subdivision relative to the Base Case, in that dwell times for the Burbank Turns west of the airport are a higher percentage of overall run time than for the longer LAUS-Chatsworth runs, resulting in slower average line speeds.

2.3 Alternative Case: DMU 2

This simulation included various infrastructure improvements designed to enhance capacity and increase timetable reliability; that is, produce faster speeds and reduced delays. The improvements included the following:

- Ventura Subdivision
  - Double tracking the 6.4 mile single track section between CP Raymer and CP Bernson
  - A second (north) platform at the Northridge Station
  - A second (north) platform at the Van Nuys Station
  - A universal crossover at CP Raymer west of the Van Nuys Station

- Valley Subdivision
  - Extension of Newhall Siding to Saugus Siding, making for 2.4 miles of new double track
  - Removal of Glendale Siding to provide for an island platform at Glendale Station, accessed by a pedestrian bridge
  - Glendale platform improvements: widened center platform and pedestrian bridge

- River Subdivision
  - New storage tracks south of Glendale Station, replacing Glendale siding trackage.
  - New northern access to the CMF. This improvement will facilitate non-revenue moves from the CMF to Burbank Airport ("deadhead" moves positioning equipment for the Burbank Turn southbound from the airport). Currently, trains making this trip must move south out of the CMF, and then reverse direction to the airport.

- San Gabriel Subdivision
  - No improvements beyond the layover facility-related improvements were indicated for the San Gabriel Subdivision.

- Other Improvements

Various improvements that would likely be helpful to train operations but were not material to the operational analysis were not included in the simulation. These include:

- Ventura Subdivision
  - Relocated freight track to the north side of the mainline south of CP Bernson between Mason Avenue and Winnetka Avenue.
  - Relocated freight track to the north side of the mainline south of the new north platform at Van Nuys to Parthenia Street.

- Valley Subdivision
  - Reversing the universal crossover at CP Taylor.

Per Table 1, the DMU 2 simulation shows the positive impact on mainline capacity. On the Ventura and Valley Subdivisions, the delay experienced by commuter trains drops noticeably relative to both the Base Case and DMU 1.

3.0 Ridership Forecast

A rough order-of-magnitude ridership forecast was developed to estimate the average ridership of a DMU trainset. These trainsets would be operating as an overlay to Metrolink commuter rail service, which is peak period and peak direction oriented. The DMUs, on the other hand, will be mostly oriented towards the off-peak periods. Existing Metrolink off-peak and reverse commute service will continue. A few DMUs would operate in the peak period, serving reverse commutes.

In order to identify the potential DMU trainset ridership, the study team utilized output from a spreadsheet ridership model developed for the SCRRA Strategic Assessment, the Metrolink strategic planning exercise completed in 2007. That model included a ridership forecast for Metrolink Ventura County Line, Antelope Valley Line and San Bernardino Line peak period trains in 2010.

The forecast for off-peak ridership for these lines was factored from the peak period ridership. The factors were developed by comparative analysis of off-peak ridership as a percent of peak ridership on Metrolink and Caltrain, the commuter rail service on the San Francisco Peninsula. The analysis predicted that off-peak ridership would be 25 percent of peak ridership with the deployment of 20 or more off-peak trains.

Table 2 shows the anticipated Metrolink and DMU off-peak ridership in 2010, assuming a minimum service level of 20 off-peak trains in that year on the three candidate corridors.

Table 2: Weekday Off-peak Riders in 2010 with DMU Implementation

Candidate Corridor	Trains		Riders		
	Metrolink	DMU	Metrolink	DMU	Per Train
Ventura County Line	6	14	309	720	51
Antelope Valley Line	9	11	555	678	62
San Bernardino Line	13	7	906	488	70

The off-peak period comprises the seven mid-day hours between 9 AM and 4 PM, and the three evening hours between 7 PM and 10 PM. These periods total 10 hours. Assuming there were a minimum of hourly bi-directional service during these periods, there would be a total of 20 trains. The Metrolink train count is from the 2007 Metrolink study. The DMU train count is simply the difference between that and the 20 train minimum per corridor. The schedules developed for the Implementation Plan provide for more or less this level of service.

Shown in Table 2 is the 2010 off-peak Metrolink and DMU ridership increased by one-third to account for greater than anticipated growth. This was done as ridership levels anticipated by the earlier study for 2010 are being achieved today[1]. Given the higher prices of gasoline, it is reasonable to assume more commuters in the future will ride trains. The off-peak ridership is divided by the minimum number of trains anticipated in the off-peak period. The results are rough order-of-magnitude, conceptual figures for the average number of riders per trains per line – Metrolink and DMU. The figures themselves average to about 60 riders per train.

In all, the Implementation Plan anticipates a total of 46 DMU trains on the candidate corridors per day. Assuming an estimated 60 riders per DMU, conceptual average weekday ridership would total to about 2,800.

4.0 Liability and Insurance Concerns

Commuter rail agencies in all cases are required to indemnify host railroads against any claims resulting from the operation of a proposed commuter rail service extension. This indemnification will protect these entities from liability for damage claims from employees, passengers, and others suffering loss due to operation of the proposed service.

The case under study is different. Here, a public agency, Metro, either owns outright or owns a part of the tracks over which it seeks to deploy FRA compliant DMUs. These tracks are shared

[1] The 2007 study forecasts for 2010, 2015, 2020 and 2030 were actually developed in the 2005-2006 timeframe, well before the recent spike in gasoline prices and resultant ridership surges on Metrolink.

with Metrolink, Amtrak, UP and BNSF freight trains. It is likely that the DMUs would be operated as part of the Metrolink system, filling in service gaps for fuller coverage during the day. Presumably, these operations would fall under Metrolink's insurance program.

Still, a review of insurance and liability issues pertaining to operating trains on a host railroad (freight or passenger) may be instructive.

4.1 Insurance and Liability

The settlement of insurance and liability issues between the commuter rail and the freight railroads can be categorized into two major groupings: transit operator maintains the insurance, holding freight harmless; or insurance liability is shared by both parties according to trackage agreement or service contract. In a recent industry survey conducted by the General Accounting Office (GAO) regarding insurance regarding insurance[2], about 75 percent of the 16 valid answers received indicated that transit agencies bear the risks or insurances.

For example, a representative of the Southeastern Pennsylvania Transportation Authority (SEPTA), which operates commuter trains on Amtrak, CSX Transportation (CSX), and Norfolk Southern Railway (NS) tracks in the Philadelphia area, said that the operators bear all the risks, i.e., an operator indemnifies its host railroad of liability. A representative of MARC, the commuter rail service operated by the Maryland Transit Administration operating on tracks belonging to CSX and Amtrak, mentioned, "MARC holds CSX harmless; whereas Amtrak is only responsible for 'gross negligence.'"

Some systems have detailed insurance requirements between the two parties. For instance, GO Transit, which operates commuter trains in Toronto over the Canadian National Railway, covers $150 million and is liable everywhere except in the hub terminal, which it owns. The insurance amount for Tri-Rail commuter operation in south Florida, operating commuter trains on the CSX, is $125 million; for the Sounder Commuter Rail, operating on the BNSF north and south of Seattle, the insurance cap is $200 million; and for Metra, operating on UP lines in the Chicago area, the insurance cap is between $250 and $500 million. A representative of West Coast Express, operating commuter trains on the Canadian Pacific Railway in Vancouver, said, "This is a complex question, but in general, on the liability side, the railway requires us to carry a $100 million liability policy."

A representative from Caltrain in California, which hosts UP freight trains on its tracks between San Jose and San Francisco, said, "Each party covers liability for property damage by and personal injury of its invitees, up to $25 million/year; after $25 million/year, UP will pay the share of Caltrain liabilities. Caltrain and UP must each carry insurance for at least $100,000 per incident." Caltrain also operates its trains on UP tracks south of San Jose to Gilroy.

In regard to the accidents that occurred as a result of joint operation, the GAO survey did not specify a time span, so the data collected in the survey included all the accidents that ever happened that are related to joint operations. All the accidents involved property damage. The damage amount ranged from $6,600 to $25 million. Only two systems answered how they deal with trespasser accidents. A representative of SEPTA said, "operators will be responsible". The responses of a representative of the Long Island Rail Road, which subcontracts its freight operation to a short line railroad, indicated all the operating parties on the shared asset would share the responsibilities.

Some systems use a combination of self-insured retention and commercial insurance. For example, Massachusetts General Laws limits the Massachusetts Bay Transportation Authority's (MBTA) exposure for its commuter rail operations to $75 million. MBTA self-insures for the first $7.5 million (and shares that exposure on a 50/50 basis with its contract operator, MBCR, for

[2] *Commuter Rail: Information and Guidance Could Help Facilitate Commuter and Freight Rail Access Negotiations*, GAO, January 2004.

the first $5 million), then purchases a combination of layers of insurance to the $75 million level. This coverage includes employee claims, passenger claims, third party claims, trespasser claims, and vehicular collisions at grade crossings. In short, the insurance covers anything that may happen due to the operation of the rail service.

VRE has a similar plan in place, though its threshold is set at $200 million.

The Trinity Railway Express (TRE), operating on its own line in the Dallas-Fort Worth area, has its threshold capped at $125 million by Texas Law and manages its insurance needs through a similar combination of self-insurance and purchased insurance.

It is worth noting that Congress mandated a cap of $200 million for damages in any railroad crash, including crashes by Amtrak and Metrolink, and every other commuter rail operation. This was one of the areas of contention which kept the Central Florida Commuter Rail Project, planned for operation between Tampa and Orlando, from receiving legislative approval this year. CSX has been planning on selling the track to the Florida Department of Transportation (FDOT) for a future commuter rail operation, while retaining the freight rights. As a provision of the sale, CSX did not want any liability for crashes of its freight trains with commuter trains on FDOT owned commuter tracks.

4.2 Metrolink Insurance Update

On September 12, 2008, near Chatsworth on a single track segment of the Ventura County Line, a westbound Metrolink commuter train and an eastbound UP freight train collided head-on. This accident, the worst rail accident in California in 50 years (per the Los Angeles Times), could be the first test of a $200 million federally imposed cap on damages associated with train accidents. In addition to the 25 persons killed, dozens were hospitalized, and a total of 135 passengers and crew members were injured.

As a result of the accident, Metrolink has filed a lawsuit against their contract operator, Veolia Transportation. Metrolink officials stated that they "feel strongly they have to protect Metrolink's interest [and] ability to have resources" to continue to fully operate (Los Angeles Times).

Should the $200 million cap be broken, a precedent will be set for commuter rail operators, irrespective of the type of equipment they operate, leading to higher insurance costs.

4.3 Typical Insurance Costs

Premiums with a $75 Million Liability Cap

- $75 Million in Coverage: cost of $75 million based on multiple layers of coverage by different insurers and assuming a statutory limit on liability of $75 million:
  - Self-insured retention of $2 million
  - $3 million in coverage premium = $100,000
  - $20 million additional premium = $100,000
  - $50 million additional premium = $175,000
  - $75 million coverage premium = $375,000 plus $2 million self-insurance

Premiums without a Liability Cap

- $500 Million in Coverage: Class I railroads typically require $500 million in coverage for commuter rail operations that use privately held right-of-way. In the event that there is no liability cap, the following additional premiums would likely apply in addition to the $375,000 required for the first $75 million in coverage:
  - $125 million above first $75 million premium = $350,000
  - $300 million above first $200 million premium = $700,000
  - $500 million coverage premium = $1,425,000 plus $2 million self-insurance

4.4 Insurance and DMU Service

The mixed use operating environment – compliant DMU with freight and passenger trains – is not a new concept. FRA compliant DMUs have been operating on Tri Rail in South Florida and are planned for operation in Portland, Oregon, in 2009. Compliant DMU equipment has been treated for the most part similar to standard commuter rail equipment in terms of insurance costs.

In terms of the usual regulatory concerns associated with passenger rail equipment, DMUs are categorized as locomotives by the FRA. The utilization of DMU equipment in the FRA's view is not differentiated between locomotive-hauled consists and independent self-propelled cars coupled into consists. This regulatory categorization offers an important consideration when liability costs are being assessed on DMU equipment.

The real issue that will impact insurance liability costs is the communication/signal infrastructure that will support the traffic density of the operating environment where the DMU equipment will be deployed. Utilizing the latest advances in modern signal and control systems (positive train control) can help minimize concerns raised by the risk assessors and provide an enhanced level of safer co-mingled service.

Ultimately, the key factors that will dictate the insurance costs for the DMU operation will be the length of time involved for the now legislatively mandated communication and signal enhancements as well as the outcome of litigation resulting from the recent September 12 Metrolink-UP accident.

APPENDIX A Passenger Schedule (including DMU Overlay Service)
INBOUND TO LOS ANGELES, WEEKDAYS
60 MINUTE LOCAL SERVICE

Train	301	200	100	303	900	305	202	102	307	309	204	104	311	206	313	106	315	208	902	108	768	110	317	1400	210
Goleta	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	6 30	--	--	--	--
Santa Barbara	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	6 46	--	--	--	--
Carpinteria	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	7 01	--	--	--	--
Ventura	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	7 23	--	--	--	--
Montalvo	--	--	--	--	--	--	--	5 27	--	--	--	6 05	--	--	--	6 44	--	--	--	--	--	--	--	--	--
Oxnard	--	--	--	--	--	--	--	5 42	--	--	--	6 20	--	--	--	6 59	--	--	--	--	7 37	--	--	--	--
Camarillo	--	--	--	--	--	--	--	5 52	--	--	--	6 30	--	--	--	7 09	--	--	--	--	7 48	--	--	--	--
Moorpark	--	--	5 07	--	--	--	--	6 03	--	--	--	6 41	--	--	--	7 20	--	--	--	--	8 06	8 26	--	--	--
Simi Valley	--	--	5 19	--	--	--	--	6 15	--	--	--	6 53	--	--	--	7 32	--	--	--	--	8 22	8 39	--	--	--
Chatsworth	--	--	5 30	--	--	--	--	6 26	--	--	--	7 04	--	--	--	7 43	--	--	--	8 25	8 35	8 51	--	9 15	--
Northridge	--	--	5 36	--	--	--	--	6 32	--	--	--	7 10	--	--	--	7 49	--	--	--	8 31	--	8 58	--	9 21	--
Van Nuys	--	--	5 44	--	--	--	--	6 40	--	--	--	7 18	--	--	--	7 57	--	--	--	8 39	8 50	9 05	--	9 29	--
Burbank Airport	--	--	5 51	--	--	--	--	6 47	--	--	--	7 25	--	--	--	8 04	--	--	8 35	8 46	8 58	9 13	--	9 36	--
Lancaster	--	4 00	--	--	--	--	5 10	--	--	--	5 50	--	--	6 23	--	--	--	6 55	--	--	--	--	--	--	--
Palmdale	--	4 09	--	--	--	--	5 19	--	--	--	5 59	--	--	6 32	--	--	--	7 04	--	--	--	--	--	--	--
Vincent Grade/Acton	--	4 20	--	--	--	--	5 30	--	--	--	6 10	--	--	6 43	--	--	--	7 15	--	--	--	--	--	--	--
Via Princessa	--	4 52	--	--	--	--	6 02	--	--	--	6 42	--	--	7 15	--	--	--	7 47	--	--	--	--	--	--	8 47
Santa Clarita	--	4 58	--	--	--	--	6 08	--	--	--	6 48	--	--	7 21	--	--	--	7 53	--	--	--	--	--	--	8 53
Newhall	--	5 05	--	--	--	--	6 15	--	--	--	6 55	--	--	7 28	--	--	--	8 00	--	--	--	--	--	--	9 00
Sylmar San Fernando	--	5 18	--	--	--	--	6 28	--	--	--	7 10	--	--	7 41	--	--	--	8 13	--	--	--	--	--	--	9 13
Sun Valley	--	5 25	--	--	--	--	6 35	--	--	--	7 17	--	--	7 48	--	--	--	8 20	--	--	--	--	--	--	9 20
Burbank Downtown	--	5 31	5 55	--	6 16	--	6 41	6 51	--	--	7 23	7 30	--	7 54	--	8 08	--	8 26	8 39	8 50	--	9 17	--	--	9 26
Glendale	--	5 37	6 01	--	6 22	--	6 47	6 57	--	--	7 29	7 36	--	8 00	--	8 14	--	8 32	8 45	8 56	9 14	9 23	--	--	9 32
San Bernardino	4 18	--	--	4 54	--	5 34	--	--	5 54	6 14	--	--	6 34	--	6 54	--	7 14	--	--	--	--	--	8 14	--	--
Rialto	4 24	--	--	5 00	--	5 40	--	--	6 00	6 20	--	--	6 40	--	7 00	--	7 20	--	--	--	--	--	8 20	--	--
Fontana	4 29	--	--	5 05	--	5 45	--	--	6 05	6 25	--	--	6 45	--	7 05	--	7 25	--	--	--	--	--	8 25	--	--
Rancho Cucamonga	4 36	--	--	5 13	--	5 53	--	--	6 13	6 33	--	--	6 53	--	7 13	--	7 33	--	--	--	--	--	8 33	--	--
Upland	4 43	--	--	5 20	--	6 00	--	--	6 20	6 40	--	--	7 00	--	7 20	--	7 40	--	--	--	--	--	8 40	--	--
Montclair	4 48	--	--	5 25	--	6 05	--	--	6 25	6 45	--	--	7 05	--	7 25	--	7 45	--	--	--	--	--	8 45	--	--
Claremont	4 51	--	--	5 28	--	6 08	--	--	6 28	6 48	--	--	7 08	--	7 28	--	7 48	--	--	--	--	--	8 48	--	--
Pomona North	4 55	--	--	5 32	--	6 12	--	--	6 32	6 52	--	--	7 12	--	7 32	--	7 52	--	--	--	--	--	8 52	--	--
Covina	5 04	--	--	5 41	--	6 21	--	--	6 41	7 01	--	--	7 21	--	7 41	--	8 01	--	--	--	--	--	9 01	--	--
Baldwin Park	5 10	--	--	5 47	--	6 27	--	--	6 47	7 07	--	--	7 27	--	7 47	--	8 07	--	--	--	--	--	9 07	--	--
El Monte	5 19	--	--	5 56	--	6 36	--	--	6 56	7 16	--	--	7 36	--	7 56	--	8 16	--	--	--	--	--	9 16	--	--
Cal State LA	5 29	--	--	6 07	--	6 47	--	--	7 07	7 27	--	--	7 47	--	8 07	--	8 27	--	--	--	--	--	9 27	--	--
Los Angeles	5 40	5 53	6 15	6 20	6 35	7 00	7 03	7 12	7 20	7 40	7 45	7 50	8 00	8 16	8 20	8 28	8 40	8 48	9 00	9 10	9 25	9 37	9 40	--	9 50

Train	1100	1301	212	112	1200	1303	774	114	1202	1402	319	214	1102	1305	1204	321	1104	323	1404	216	116	904	218	325	906	784	908	1206	327	1106
Goleta	--	--	--	--	--	--	9 03	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1 45	--	--	--	--
Santa Barbara	--	--	--	--	--	--	9 20	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2 00	--	--	--	--
Carpinteria	--	--	--	--	--	--	9 35	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2 16	--	--	--	--
Ventura	--	--	--	--	--	--	9 57	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2 41	--	--	--	--
Montalvo	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Oxnard	--	--	--	--	--	--	10 11	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2 58	--	--	--	--
Camarillo	--	--	--	--	--	--	10 22	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	3 09	--	--	--	--
Moorpark	--	--	--	--	--	--	--	11 05	--	--	--	--	--	--	--	--	--	--	--	--	2 30	--	--	--	--	3 21	--	--	--	--
Simi Valley	--	--	--	--	--	--	10 51	11 17	--	--	--	--	--	--	--	--	--	--	--	--	2 42	--	--	--	--	3 37	--	--	--	--
Chatsworth	9 45	--	--	10 45	--	--	11 04	11 28	--	12 15	--	--	12 45	--	--	--	1 45	--	2 15	--	2 53	--	--	--	--	3 50	--	--	--	4 45
Northridge	9 51	--	--	10 51	--	--	--	11 34	--	1221	--	--	12 51	--	--	--	1 51	--	2 21	--	2 59	--	--	--	--	--	--	--	--	4 51
Van Nuys	9 59	--	--	10 59	--	--	11 18	11 42	--	1229	--	--	12 59	--	--	--	1 59	--	2 29	--	3 07	--	--	--	--	4 16	--	--	--	4 59
Burbank Airport	10 06	--	--	11 06	--	--	11 26	11 49	--	1236	--	--	1 06	--	--	--	2 06	--	2 36	--	3 14	3 37	--	--	4 15	4 25	4 50	--	--	5 06
Lancaster	--	--	8 55	--	--	--	--	--	--	--	--	11 27	--	--	--	--	--	--	--	1 40	--	--	--	--	--	--	--	--	--	--
Palmdale	--	--	9 04	--	--	--	--	--	--	--	--	11 36	--	--	--	--	--	--	--	1 49	--	--	--	--	--	--	--	--	--	--
Vincent Grade/Acton	--	--	9 15	--	--	--	--	--	--	--	--	11 47	--	--	--	--	--	--	--	2 00	--	--	--	--	--	--	--	--	--	--
Via Princessa	--	--	9 47	--	10 47	--	--	--	11 47	--	--	12 19	--	--	1 47	--	--	--	--	2 32	--	--	3 17	--	--	--	--	4 17	--	--
Santa Clarita	--	--	9 53	--	10 53	--	--	--	11 53	--	--	12 25	--	--	1 53	--	--	--	--	2 38	--	--	3 23	--	--	--	--	4 23	--	--
Newhall	--	--	10 01	--	11 00	--	--	--	12 00	--	--	12 33	--	--	2 00	--	--	--	--	2 45	--	--	3 30	--	--	--	--	4 30	--	--
Sylmar San Fernando	--	--	10 14	--	11 13	--	--	--	12 13	--	--	12 46	--	--	2 13	--	--	--	--	2 58	--	--	3 43	--	--	--	--	4 43	--	--
Sun Valley	--	--	10 21	--	11 20	--	--	--	12 20	--	--	12 53	--	--	2 20	--	--	--	--	3 05	--	--	3 50	--	--	--	--	4 50	--	--
Burbank Downtown	10 10	--	10 27	11 10	11 26	--	--	11 53	12 26	--	--	12 58	1 10	--	2 26	--	2 10	--	--	3 11	3 18	3 41	3 55	--	4 19	--	4 54	4 56	--	5 10
Glendale	10 16	--	10 33	11 16	11 32	--	11 39	11 59	12 32	--	--	1 04	1 16	--	2 32	--	2 16	--	--	3 17	3 24	3 47	4 01	--	4 25	4 38	5 00	5 02	--	5 16
San Bernardino	--	--	--	--	--	--	--	--	--	--	11 00	--	--	--	--	1 00	--	2 00	--	--	--	--	--	3 00	--	--	--	--	4 00	--
Rialto	--	--	--	--	--	--	--	--	--	--	11 06	--	--	--	--	1 06	--	2 06	--	--	--	--	--	3 06	--	--	--	--	4 06	--
Fontana	--	--	--	--	--	--	--	--	--	--	11 11	--	--	--	--	1 11	--	2 11	--	--	--	--	--	3 11	--	--	--	--	4 11	--
Rancho Cucamonga	--	--	--	--	--	--	--	--	--	--	11 19	--	--	--	--	1 19	--	2 19	--	--	--	--	--	3 19	--	--	--	--	4 19	--
Upland	--	--	--	--	--	--	--	--	--	--	11 26	--	--	--	--	1 26	--	2 26	--	--	--	--	--	3 26	--	--	--	--	4 26	--
Montclair	--	--	--	--	--	--	--	--	--	--	11 31	--	--	--	--	1 31	--	2 31	--	--	--	--	--	3 31	--	--	--	--	4 31	--
Claremont	--	9 48	--	--	--	10 48	--	--	--	--	11 34	--	--	12 34	--	1 34	--	2 34	--	--	--	--	--	3 34	--	--	--	--	4 34	--
Pomona North	--	9 52	--	--	--	10 52	--	--	--	--	11 38	--	--	12 39	--	1 38	--	2 38	--	--	--	--	--	3 38	--	--	--	--	4 38	--
Covina	--	10 01	--	--	--	11 01	--	--	--	--	11 47	--	--	12 48	--	1 47	--	2 47	--	--	--	--	--	3 47	--	--	--	--	4 47	--
Baldwin Park	--	10 07	--	--	--	11 07	--	--	--	--	11 53	--	--	12 53	--	1 53	--	2 53	--	--	--	--	--	3 53	--	--	--	--	4 53	--
El Monte	--	10 16	--	--	--	11 16	--	--	--	--	12 02	--	--	1 02	--	2 02	--	3 02	--	--	--	--	--	4 12	--	--	--	--	5 21	--
Cal State LA	--	10 27	--	--	--	11 27	--	--	--	--	12 13	--	--	1 13	--	2 13	--	3 13	--	--	--	--	--	4 36	--	--	--	--	5 36	--
Los Angeles	10 30	10 44	10 49	11 30	11 50	11 44	12 10	12 20	12 50	--	12 30	1 20	1 30	1 30	2 50	2 30	2 30	3 30	--	3 33	3 40	400	4 19	4 50	4 40	4 55	5 15	5 20	5 50	5 30

Train	910	220	118	329	1208	1108	1307	798	222	331	1110	1210	333	796	1212	1112	1214	1114	Train
Goleta	--	--	--	--	--	--	--	4 16	--	--	--	--	--	6 45	--	--	--	--	Goleta
Santa Barbara	--	--	--	--	--	--	--	4 31	--	--	--	--	--	6 59	--	--	--	--	Santa Barbara
Carpinteria	--	--	--	--	--	--	--	4 46	--	--	--	--	--	7 15	--	--	--	--	Carpinteria
Ventura	--	--	--	--	--	--	--	5 08	--	--	--	--	--	7 37	--	--	--	--	Ventura
Montalvo	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	Montalvo
Oxnard	--	--	--	--	--	--	--	5 22	--	--	--	--	--	7 51	--	--	--	--	Oxnard
Camarillo	--	--	--	--	--	--	--	--	--	--	--	--	--	8 02	--	--	--	--	Camarillo
Moorpark	--	--	4 57	--	--	--	--	6 15	--	--	--	--	--	--	--	--	--	--	Moorpark
Simi Valley	--	--	5 09	--	--	--	--	6 31	--	--	--	--	--	8 35	--	--	--	--	Simi Valley
Chatsworth	--	--	5 24	--	--	6 15	--	6 44	--	--	7 45	--	--	8 47	--	9 45	--	10 45	Chatsworth
Northridge	--	--	5 30	--	--	6 21	--	--	--	--	7 51	--	--	--	--	9 51	--	10:51	Northridge
Van Nuys	--	--	5 48	--	--	6 30	--	6 57	--	--	7 59	--	--	9 04	--	9 59	--	10 59	Van Nuys
Burbank Airport	5 05	--	5 55	--	--	6 36	--	7 05	--	--	8 06	--	--	9 12	--	10 06	--	11 06	Burbank Airport
Lancaster	--	--	--	--	--	--	--	--	5 50	--	--	--	--	--	--	--	--	--	Lancaster
Palmdale	--	--	--	--	--	--	--	--	5 59	--	--	--	--	--	--	--	--	--	Palmdale
Vincent Grade/Acton	--	--	--	--	--	--	--	--	6 08	--	--	--	--	--	--	--	--	--	Vincent Grade/Acton
Via Princessa	--	--	--	--	5 57	--	--	--	6 49	--	--	7 47	--	--	8 47	--	9 47	--	Via Princessa
Santa Clarita	--	5 15	--	--	6 03	--	--	--	6 55	--	--	7 53	--	--	8 53	--	9 53	--	Santa Clarita
Newhall	--	5 22	--	--	6 10	--	--	--	7 02	--	--	8 00	--	--	9 00	--	10 00	--	Newhall
Sylmar San Fernando	--	5 35	--	--	6 23	--	--	--	7 19	--	--	8 13	--	--	9 13	--	10 13	--	Sylmar San Fernando
Sun Valley	--	5 42	--	--	6 30	--	--	--	7 26	--	--	8 20	--	--	9 20	--	10 20	--	Sun Valley
Burbank Downtown	5 10	5 48	5 59	--	6 36	6 40	--	--	7 32	--	8 10	8 26	--	--	9 26	10 10	10 26	11 10	Burbank Downtown
Glendale	5 15	5 54	6 05	--	6 42	6 46	--	7 18	7 38	--	8 16	8 32	--	9 25	9 32	10 16	10 32	11 16	Glendale
San Bernardino	--	--	--	5 00	--	--	--	--	--	6 10	--	--	7 15	--	--	--	--	--	San Bernardino
Rialto	--	--	--	5 05	--	--	--	--	--	6 16	--	--	7 21	--	--	--	--	--	Rialto
Fontana	--	--	--	5 10	--	--	--	--	--	6 21	--	--	7 26	--	--	--	--	--	Fontana
Rancho Cucamonga	--	--	--	5 18	--	--	--	--	--	6 28	--	--	7 34	--	--	--	--	--	Rancho Cucamonga
Upland	--	--	--	5 24	--	--	--	--	--	6 39	--	--	7 41	--	--	--	--	--	Upland
Montclair	--	--	--	5 30	--	--	--	--	--	6 50	--	--	7 46	--	--	--	--	--	Montclair
Claremont	--	--	--	5 33	--	--	6 10	--	--	6 53	--	--	7 51	--	--	--	--	--	Claremont
Pomona North	--	--	--	5 37	--	--	6 15	--	--	6 57	--	--	7 55	--	--	--	--	--	Pomona North
Covina	--	--	--	5 52	--	--	6 24	--	--	7 06	--	--	8 04	--	--	--	--	--	Covina
Baldwin Park	--	--	--	5 58	--	--	6 29	--	--	7 12	--	--	8 10	--	--	--	--	--	Baldwin Park
El Monte	--	--	--	6 20	--	--	6 38	--	--	7 26	--	--	8 22	--	--	--	--	--	El Monte
Cal State LA	--	--	--	6 31	--	--	6 49	--	--	7 36	--	--	8 32	--	--	--	--	--	Cal State LA
Los Angeles	5 30	6 10	6 20	6 45	7 00	7 00	7 06	7 40	7 50	7 50	8 30	8 50	8 50	9 45	9 50	10 30	10 50	11:30	Los Angeles

	Blue indicates Amtrak Service
	Green indicates Metrolink Service
	White indicates Supplemental DMU Service
5 55	Boldface indicates PM Times

APPENDIX A Passenger Schedule (including DMU Overlay Service)
OUTBOUND FROM LOS ANGELES, WEEKDAYS
60 MINUTE LOCAL SERVICE

Train	901	300	1101	201	101	1300	103	203	799	903	1302	1103	1201	905	105	302	763	205	107	1304	1203	1105	1401
Los Angeles	5 48	6 05	6 10	6 35	6 50	7 05	7 15	7 37	7 30	8 00	8 05	8 10	8 20	8 25	8 50	9 03	9 05	9 20	9 50	10 05	10 20	1040	--
Cal State LA	--	6 16	--	--	--	7 16	--	--	--	--	8 16	--	--	--	--	9 13	--	--	--	10 16	--	--	--
El Monte	--	6 25	--	--	--	7 25	--	--	--	--	8 25	--	--	--	--	9 30	--	--	--	10 25	--	--	--
Baldwin Park	--	6 34	--	--	--	7 34	--	--	--	--	8 34	--	--	--	--	9 38	--	--	--	10 34	--	--	--
Covina	--	6 42	--	--	--	7 42	--	--	--	--	8 42	--	--	--	--	9 45	--	--	--	10 42	--	--	--
Pomona North	--	6 53	--	--	--	7 53	--	--	--	--	8 53	--	--	--	--	9 55	--	--	--	10 53	--	--	--
Claremont	--	6 57	--	--	--	8 01	--	--	--	--	9 01	--	--	--	--	9 59	--	--	--	11 01	--	--	--
Montclair	--	7 00	--	--	--	--	--	--	--	--	--	--	--	--	--	10 02	--	--	--	--	--	--	--
Upland	--	7 09	--	--	--	--	--	--	--	--	--	--	--	--	--	10 07	--	--	--	--	--	--	--
Rancho Cucamonga	--	7 16	--	--	--	--	--	--	--	--	--	--	--	--	--	10 14	--	--	--	--	--	--	--
Fontana	--	7 31	--	--	--	--	--	--	--	--	--	--	--	--	--	10 23	--	--	--	--	--	--	--
Rialto	--	7 36	--	--	--	--	--	--	--	--	--	--	--	--	--	10 29	--	--	--	--	--	--	--
San Bernardino	--	7 45	--	--	--	--	--	--	--	--	--	--	--	--	--	10 40	--	--	--	--	--	--	--
Glendale	5 58	--	6 20	6 45	7 00	--	7 25	7 47	7 43	8 10	--	8 20	8 30	8 35	9 01	--	9 18	9 30	10 00	--	10 30	1050	--
Burbank Downtown	6 06	--	6 26	6 51	7 06	--	7 31	7 53	--	8 16	--	8 26	8 36	8 41	9 07	--	--	9 36	10 06	--	10 36	1056	--
Sun Valley	--	--	--	6 57	--	--	--	7 59	--	--	--	--	8 42	--	--	--	--	9 42	--	--	10 42	--	--
Sylmar San Fernando	--	--	--	7 04	--	--	--	8 06	--	--	--	--	8 49	--	--	--	--	9 49	--	--	10 49	--	--
Newhall	--	--	--	7 17	--	--	--	8 19	--	--	--	--	9 02	--	--	--	--	10 02	--	--	11 02	--	--
Santa Clarita	--	--	--	7 26	--	--	--	8 26	--	--	--	--	9 09	--	--	--	--	10 09	--	--	11 09	--	--
Via Princessa	--	--	--	7 32	--	--	--	8 37	--	--	--	--	9 22	--	--	--	--	10 15	--	--	11 22	--	--
Vincent Grade/Acton	--	--	--	8 06	--	--	--	--	--	--	--	--	--	--	--	--	--	10 47	--	--	--	--	--
Palmdale	--	--	--	8 15	--	--	--	--	--	--	--	--	--	--	--	--	--	10 56	--	--	--	--	--
Lancaster	--	--	--	8 30	--	--	--	--	--	--	--	--	--	--	--	--	--	11 13	--	--	--	--	--
Burbank Airport	--	--	6 31	--	7 10	--	7 35	--	7 58	8 25	--	8 31	--	8 50	9 12	--	9 30	--	10 11	--	--	11 01	11:31
Van Nuys	--	--	6 39	--	7 22	--	7 42	--	8 08	--	--	8 39	--	--	9 21	--	9 40	--	10 19	--	--	11 09	11:39
Northridge	--	--	6 46	--	7 30	--	7 55	--	--	--	--	8 46	--	--	9 28	--	--	--	10 26	--	--	11 16	11:46
Chatsworth	--	--	6 56	--	7 36	--	8 05	--	8 24	--	--	8 56	--	--	9 35	--	9 53	--	10 36	--	--	11 26	11:56
Simi Valley	--	--	--	--	7 51	--	--	--	8 45	--	--	--	--	--	9 47	--	10 05	--	--	--	--	--	--
Moorpark	--	--	--	--	8 05	--	--	--	8 57	--	--	--	--	--	10 02	--	--	--	--	--	--	--	--
Camarillo	--	--	--	--	--	--	--	--	9 10	--	--	--	--	--	--	--	10 27	--	--	--	--	--	--
Oxnard	--	--	--	--	--	--	--	--	9 21	--	--	--	--	--	--	--	10 40	--	--	--	--	--	--
Montalvo	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Ventura	--	--	--	--	--	--	--	--	9 35	--	--	--	--	--	--	--	10 54	--	--	--	--	--	--
Carpinteria	--	--	--	--	--	--	--	--	9 57	--	--	--	--	--	--	--	11 16	--	--	--	--	--	--
Santa Barbara	--	--	--	--	--	--	--	--	10 15	--	--	--	--	--	--	--	11 40	--	--	--	--	--	--
Goleta	--	--	--	--	--	--	--	--	10 27	--	--	--	--	--	--	--	11 55	--	--	--	--	--	--

Train	304	207	1107	1205	306	769	1207	109	308	1403	209	1109	310	1306	775	1209	907	312	111	211	314	1405	213	316	113	1211	909
Los Angeles	11 20	11 35	11 40	**12 20**	**12 20**	**12 30**	**100**	**1 10**	**1 20**	--	**1 50**	**2 10**	**2 20**	**2 50**	**2 55**	**3 00**	**3 05**	**3 20**	**3 35**	**3 45**	**3 50**	--	**4 10**	**4 20**	**4 26**	**4 30**	**4 33**
Cal State LA	11 30	--	--	--	**12 30**	--	--	--	**1 30**	--	--	--	**2 30**	**3 01**	--	--	--	**3 30**	--	--	**4 00**	--	--	**4 30**	--	--	--
El Monte	11 40	--	--	--	**12 40**	--	--	--	**1 40**	--	--	--	**2 40**	**3 10**	--	--	--	**3 40**	--	--	**4 10**	--	--	**4 40**	--	--	--
Baldwin Park	11 48	--	--	--	**12 48**	--	--	--	**1 48**	--	--	--	**2 48**	**3 19**	--	--	--	**3 48**	--	--	**4 18**	--	--	**4 48**	--	--	--
Covina	11 55	--	--	--	**12 55**	--	--	--	**1 55**	--	--	--	**2 55**	**3 27**	--	--	--	**3 55**	--	--	**4 25**	--	--	**4 55**	--	--	--
Pomona North	**12 05**	--	--	--	**1 05**	--	--	--	**2 05**	--	--	--	**3 05**	**3 38**	--	--	--	**4 05**	--	--	**4 35**	--	--	**5 05**	--	--	--
Claremont	**12 09**	--	--	--	**1 09**	--	--	--	**2 09**	--	--	--	**3 09**	**3 46**	--	--	--	**4 09**	--	--	**4 39**	--	--	**5 09**	--	--	--
Montclair	**12 12**	--	--	--	**1 12**	--	--	--	**2 12**	--	--	--	**3 12**	--	--	--	--	**4 12**	--	--	**4 42**	--	--	**5 12**	--	--	--
Upland	**12 17**	--	--	--	**1 17**	--	--	--	**2 17**	--	--	--	**3 17**	--	--	--	--	**4 17**	--	--	**4 47**	--	--	**5 17**	--	--	--
Rancho Cucamonga	**12 24**	--	--	--	**1 24**	--	--	--	**2 24**	--	--	--	**3 24**	--	--	--	--	**4 24**	--	--	**4 54**	--	--	**5 24**	--	--	--
Fontana	**12 33**	--	--	--	**1 33**	--	--	--	**2 33**	--	--	--	**3 33**	--	--	--	--	**4 33**	--	--	**5 03**	--	--	**5 33**	--	--	--
Rialto	**12 39**	--	--	--	**1 39**	--	--	--	**2 39**	--	--	--	**3 39**	--	--	--	--	**4 39**	--	--	**5 09**	--	--	**5 39**	--	--	--
San Bernardino	**12 50**	--	--	--	**1 50**	--	--	--	**2 50**	--	--	--	**3 50**	--	--	--	--	**4 50**	--	--	**5 20**	--	--	**5 50**	--	--	--
Glendale	--	11 45	11 50	**12 30**	--	**12 43**	**1 10**	**1 20**	--	--	**2 00**	**2 20**	--	--	**3 08**	**3 10**	**3 15**	--	**3 45**	**3 55**	--	--	**4 20**	--	**4 36**	**4 40**	**4 43**
Burbank Downtown	--	11 51	11 56	**12 36**	--	--	**1 16**	**1 26**	--	--	**2 06**	**2 26**	--	--	--	**3 16**	**3 21**	--	**3 51**	**4 01**	--	--	**4 26**	--	**4 42**	**4 46**	**4 49**
Sun Valley	--	11 57	--	**12 42**	--	--	**1 22**	--	--	--	**2 12**	--	--	--	--	**3 22**	--	--	--	**4 07**	--	--	**4 32**	--	--	**4 52**	--
Sylmar San Fernando	--	**12 04**	--	**12 49**	--	--	**1 29**	--	--	--	**2 19**	--	--	--	--	**3 29**	--	--	--	**4 14**	--	--	**4 39**	--	--	**4 59**	--
Newhall	--	**12 17**	--	**1 02**	--	--	**1 42**	--	--	--	**2 32**	--	--	--	--	**3 42**	--	--	--	**4 27**	--	--	**4 52**	--	--	**5 12**	--
Santa Clarita	--	**12 31**	--	**1 09**	--	--	**1 49**	--	--	--	**2 43**	--	--	--	--	**3 49**	--	--	--	**4 33**	--	--	**5 05**	--	--	**5 19**	--
Via Princessa	--	**12 37**	--	**1 22**	--	--	**2 02**	--	--	--	**2 55**	--	--	--	--	**4 02**	--	--	--	**4 39**	--	--	--	--	--	**5 32**	--
Vincent Grade/Acton	--	**1 09**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**5 11**	--	--	--	--	--	--	--
Palmdale	--	**1 18**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**5 20**	--	--	--	--	--	--	--
Lancaster	--	**1 30**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**5 35**	--	--	--	--	--	--	--
Burbank Airport	--	--	**12 01**	--	--	**12 55**	--	**1 30**	--	**2 01**	--	**2 31**	--	--	**3 20**	--	**3 27**	--	**3 55**	--	--	**4 20**	--	--	**4 46**	--	**4 57**
Van Nuys	--	--	**12 09**	--	--	**1 05**	--	**1 37**	--	**2 09**	--	**2 39**	--	--	**3 30**	--	--	--	**4 02**	--	--	**4 28**	--	--	**4 53**	--	--
Northridge	--	--	**12 16**	--	--	--	--	**1 44**	--	**2 16**	--	**2 46**	--	--	--	--	--	--	**4 09**	--	--	**4 35**	--	--	**5 01**	--	--
Chatsworth	--	--	**12 26**	--	--	**1 18**	--	**1 50**	--	**2 26**	--	**2 56**	--	--	**3 43**	--	--	--	**4 16**	--	--	**4 45**	--	--	**5 07**	--	--
Simi Valley	--	--	--	--	--	**1 30**	--	**2 01**	--	--	--	--	--	--	**3 59**	--	--	--	**4 28**	--	--	--	--	--	**5 18**	--	--
Moorpark	--	--	--	--	--	**1 43**	--	**2 20**	--	--	--	--	--	--	--	--	--	--	**4 45**	--	--	--	--	--	**5 30**	--	--
Camarillo	--	--	--	--	--	**1 56**	--	--	--	--	--	--	--	--	**4 22**	--	--	--	--	--	--	--	--	--	**5 43**	--	--
Oxnard	--	--	--	--	--	**2 07**	--	--	--	--	--	--	--	--	**4 35**	--	--	--	--	--	--	--	--	--	**5 55**	--	--
Montalvo	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**6 10**	--	--
Ventura	--	--	--	--	--	**2 21**	--	--	--	--	--	--	--	--	**4 49**	--	--	--	--	--	--	--	--	--	--	--	--
Carpinteria	--	--	--	--	--	**2 45**	--	--	--	--	--	--	--	--	**5 11**	--	--	--	--	--	--	--	--	--	--	--	--
Santa Barbara	--	--	--	--	--	**3 10**	--	--	--	--	--	--	--	--	**5 33**	--	--	--	--	--	--	--	--	--	--	--	--
Goleta	--	--	--	--	--	**3 20**	--	--	--	--	--	--	--	--	**5 45**	--	--	--	--	--	--	--	--	--	--	--	--

Train	318	320	215	115	322	324	217	117	326	219	119	785	328	221	1111	330	1213	1113	332	223	1115	1215	Train
Los Angeles	**4 40**	**5 00**	**5 00**	**5 10**	**5 20**	**5 40**	**5 40**	**5 47**	**6 00**	**6 30**	**6 40**	**7 00**	**7 00**	**7 35**	**7 40**	**8 00**	**8 20**	**8 40**	**9 00**	**900**	**9 40**	**10 00**	Los Angeles
Cal State LA	**4 50**	**5 10**	--	--	**5 30**	**5 50**	--	--	**6 10**	--	--	--	**7 10**	--	--	**8 10**	--	--	**9 10**	--	--	--	Cal State LA
El Monte	**5 00**	**5 20**	--	--	**5 40**	**6 00**	--	--	**6 20**	--	--	--	**7 20**	--	--	**8 20**	--	--	**9 20**	--	--	--	El Monte
Baldwin Park	**5 08**	**5 28**	--	--	**5 48**	**6 08**	--	--	**6 28**	--	--	--	**7 28**	--	--	**8 28**	--	--	**9 28**	--	--	--	Baldwin Park
Covina	**5 15**	**5 35**	--	--	**5 55**	**6 15**	--	--	**6 35**	--	--	--	**7 35**	--	--	**8 35**	--	--	**9 35**	--	--	--	Covina
Pomona North	**5 25**	**5 45**	--	--	**6 05**	**6 25**	--	--	**6 45**	--	--	--	**7 45**	--	--	**8 45**	--	--	**9 45**	--	--	--	Pomona North
Claremont	**5 29**	**5 49**	--	--	**6 09**	**6 29**	--	--	**6 49**	--	--	--	**7 49**	--	--	**8 49**	--	--	**9 49**	--	--	--	Claremont
Montclair	**5 32**	**5 52**	--	--	**6 12**	**6 32**	--	--	**6 52**	--	--	--	**7 52**	--	--	**8 52**	--	--	**9 52**	--	--	--	Montclair
Upland	**5 37**	**5 57**	--	--	**6 17**	**6 37**	--	--	**6 57**	--	--	--	**7 57**	--	--	**8 57**	--	--	**9 57**	--	--	--	Upland
Rancho Cucamonga	**5 44**	**6 04**	--	--	**6 24**	**6 44**	--	--	**7 04**	--	--	--	**8 04**	--	--	**9 04**	--	--	**10 04**	--	--	--	Rancho Cucamonga
Fontana	**5 53**	**6 13**	--	--	**6 33**	**6 53**	--	--	**7 13**	--	--	--	**8 13**	--	--	**9 13**	--	--	**10 13**	--	--	--	Fontana
Rialto	**5 59**	**6 19**	--	--	**6 39**	**6 59**	--	--	**7 24**	--	--	--	**8 19**	--	--	**9 19**	--	--	**10 19**	--	--	--	Rialto
San Bernardino	**6 09**	**6 35**	--	--	**6 50**	**7 11**	--	--	**7 35**	--	--	--	**8 30**	--	--	**9 30**	--	--	**10 30**	--	--	--	San Bernardino
Glendale	--	--	**5 10**	**5 20**	--	--	**5 50**	**5 57**	--	**6 40**	**6 50**	**7 13**	--	**7 45**	**7 50**	--	**8 30**	**8 50**	--	**9 10**	**9 50**	**10 10**	Glendale
Burbank Downtown	--	--	**5 16**	**5 26**	--	--	**5 56**	**6 03**	--	**6 46**	**6 56**	--	--	**7 51**	**7 56**	--	**8 36**	**8 56**	--	**9 16**	**9 56**	**10 16**	Burbank Downtown
Sun Valley	--	--	**5 22**	--	--	--	**6 02**	--	--	**6 52**	--	--	--	**7 57**	--	--	**8 42**	--	--	**9 22**	--	**10 22**	Sun Valley
Sylmar San Fernando	--	--	**5 30**	--	--	--	**6 10**	--	--	**7 00**	--	--	--	**8 04**	--	--	**8 49**	--	--	**9 29**	--	**10 29**	Sylmar San Fernando
Newhall	--	--	**5 43**	--	--	--	**6 23**	--	--	**7 13**	--	--	--	**8 17**	--	--	**9 02**	--	--	**9 42**	--	**10 42**	Newhall
Santa Clarita	--	--	**5 50**	--	--	--	**6 30**	--	--	**7 20**	--	--	--	**8 23**	--	--	**9 19**	--	--	**9 48**	--	**10 49**	Santa Clarita
Via Princessa	--	--	**5 56**	--	--	--	**6 36**	--	--	**7 26**	--	--	--	**8 29**	--	--	**9 22**	--	--	**9 54**	--	**11 02**	Via Princessa
Vincent Grade/Acton	--	--	**6 32**	--	--	--	**7 10**	--	--	**8 00**	--	--	--	**9 01**	--	--	--	--	--	**10 26**	--	--	Vincent Grade/Acton
Palmdale	--	--	**6 41**	--	--	--	**7 19**	--	--	**8 09**	--	--	--	**9 10**	--	--	--	--	--	**10 35**	--	--	Palmdale
Lancaster	--	--	**6 55**	--	--	--	**7 35**	--	--	**8 25**	--	--	--	**9 28**	--	--	--	--	--	**10 52**	--	--	Lancaster
Burbank Airport	--	--	--	**5 30**	--	--	--	**6 08**	--	--	**7 00**	**7 25**	--	--	**8 01**	--	--	**9 01**	--	--	**10 01**	--	Burbank Airport
Van Nuys	--	--	--	**5 37**	--	--	--	**6 17**	--	--	**7 07**	**7 35**	--	--	**8 09**	--	--	**9 09**	--	--	**10 09**	--	Van Nuys
Northridge	--	--	--	**5 45**	--	--	--	**6 24**	--	--	**7 15**	--	--	--	**8 16**	--	--	**9 16**	--	--	**10 16**	--	Northridge
Chatsworth	--	--	--	**5 51**	--	--	--	**6 30**	--	--	**7 21**	**7 48**	--	--	**8 26**	--	--	**9 26**	--	--	**10 26**	--	Chatsworth
Simi Valley	--	--	--	**6 02**	--	--	--	**6 41**	--	--	**7 32**	**8 00**	--	--	--	--	--	--	--	--		--	Simi Valley
Moorpark	--	--	--	**6 14**	--	--	--	**6 57**	--	--	**7 44**	--	--	--	--	--	--	--	--	--		--	Moorpark
Camarillo	--	--	--	**6 27**	--	--	--	--	--	--	**7 55**	**8 27**	--	--	--	--	--	--	--	--		--	Camarillo
Oxnard	--	--	--	**6 39**	--	--	--	--	--	--	**8 14**	**8 38**	--	--	--	--	--	--	--	--		--	Oxnard
Montalvo	--	--	--	**6 55**	--	--	--	--	--	--	**8 35**	--	--	--	--	--	--	--	--	--		--	Montalvo
Ventura	--	--	--	--	--	--	--	--	--	--	--	**8 57**	--	--	--	--	--	--	--	--		--	Ventura
Carpinteria	--	--	--	--	--	--	--	--	--	--	--	**9 19**	--	--	--	--	--	--	--	--		--	Carpinteria
Santa Barbara	--	--	--	--	--	--	--	--	--	--	--	**9 45**	--	--	--	--	--	--	--	--		--	Santa Barbara
Goleta	--	--	--	--	--	--	--	--	--	--	--	**9 55**	--	--	--	--	--	--	--	--		--	Goleta

	Blue indicates Amtrak Service
	Green indicates Metrolink Service
	White indicates Supplemental DMU Service
5 55	Boldface indicates PM Times