

Brightline West Cajon Pass Project Operating Assumptions

Memo

1.0 Purpose

This memo describes the high-speed rail operating plan including assumptions and inputs that were used in its development for the Brightline West (“BLW”) Cajon Pass Project (“Project”) between the Victor Valley and Rancho Cucamonga, CA.

2.0 Description of the Project

The Project spans 49 miles from Apple Valley, California to Rancho Cucamonga, California with a stop in between at Hesperia, California which is to accommodate local service from Hesperia to Rancho Cucamonga.

Two stations will be constructed, with three station tracks tapering to two main line tracks for the first three to five miles outside each station. Initially the corridor will be primarily single track, with one double track section approximately 5 miles long to facilitate rolling meets of two trains in opposite directions. The Rancho Cucamonga station will be located at the site of the current Rancho Cucamonga Metrolink station, providing the customer connectivity into Downtown LA and other areas of the Los Angeles Basin via existing public transportation. The Hesperia station will only be utilized for intercity rides to Rancho Cucamonga and not for interstate trips to Las Vegas; Brightline West will be enforcing coverage to ensure the correct ridership is accommodated.

The infrastructure and operating plan are aligned to provide consistent service at 45-minute headways for the first 10 years of operations. Each trainset in the fleet can be coupled to a second set, forming one double-length train (herein referred to as a “coupled train”). Station platform lengths will initially be constructed to be 1,400 ft long to accommodate coupled trains. A growth strategy (outlined below) has been developed involving the procurement of additional train sets that operate as coupled trains, growing passenger capacity while holding the train schedule for the first 10 years. In year 11, additional infrastructure is planned to facilitate 22.5-minute headways.

3.0 Description of Rolling Stock and Train Operations

Brightline West will operate the Project using a fleet of high-speed electric trainsets powered by overhead catenary. Each train set has a 7-car consist with a total of approximately 400 seats. As previously stated, each 7-car set can be attached to a second set of equal length to form a coupled train, doubling capacity as demand grows (see “Matrix of Operating Plan” below).

The target Project trip time is 40 minutes including a stop at Hesperia between Apple Valley and Rancho Cucamonga. Scheduled run time for the full system is to be 140 minutes in travel time. A minimum turnaround of 30 minutes is planned at the Rancho Cucamonga Station (specific turnaround time for a given train depends on schedule), allowing sufficient time for boarding and alighting of guests and baggage, performing a light cleaning, and restocking onboard services, while also providing additional buffer time to absorb delays.

4.0 Operating Assumptions

Brightline West will have hours of operations that are centered around first departure/last arrival from each station. The Rancho Cucamonga station and Victor Valley stations will operate from 6:00 am to 12:30 am. The Las Vegas station will operate from 5:30 am to 1:30 am. An initial schedule has been established for the corridor with trains departing every 45 minutes, for a total of 23 departures in each direction every day, for the first 10 years. Fleet size and configuration is intended to scale with demand such that in year 11, the schedule will be modified to increase daily trains up to 45 in each direction, with 22.5-minute headways.

Coupled 7-car trains allow the system to increase passenger capacity without adding to the rail infrastructure. BLW intends to begin operations coupling 1/3 of departures for the first 3 years of operations, then by coupling 2/3 of departures for the following 3 years, and then scaling up to 100% of departures with coupled trains by Year 7. Because the coupled trains need to make full roundtrips, the departures with coupled trains are evenly spread throughout the day.

The Operating Plan is informed by studies and analysis conducted by transportation and infrastructure consultancy firm, Steer (referred to as “Steer Analysis”)¹. The Steer Analysis estimates the current and future size of the “in-scope” market, a subset of trips made between Las Vegas and Southern California by travelers for whom high-speed rail service is a viable travel option (total demand); and then forecasts how much of this market high-speed rail can capture at a given fare (ridership estimates).

The travel market in this corridor is punctuated by days and times of the day with exceptionally high demand which exceed the railroad’s capacity to carry passengers. This is particularly important on the weekends, where BLW projects demand to ride the train to frequently surpass the capacity of each departure. This capacity constraint drives the logic for an additional modification to get to the total ridership projections. Alongside interstate travel ridership (i.e. Rancho Cucamonga to/from Las Vegas), Steer has provided intercity hourly ridership forecasts (i.e. Rancho Cucamonga to/from Hesperia). While Steer projected only years 2027, 2030, 2035, 2040, and 2045, BLW applied a percentage spread by hour to the missing years to achieve a full outlook encompassing the duration of this operating plan.

The Total Ridership for interstate travel combined with the projected intercity travel ridership yields a “Total Yearly Ridership” count including the ridership between Victor Valley and Las Vegas.

Specific operating plans have been developed for each year:

- Years 1-3

Beginning in Year 1, BLW expects to use coupled trains in 1/3 of the departures. Based on the modified forecast, in the first year of service, BLW expects to carry 6.0 million passengers. Ridership expands to 6.9 million by Year 3 without changing the fleet size. The Cajon Pass Project is expected to open in the middle of Year 1; thus, it will not be capturing a normalized years’ worth of customers.

- Years 4-6

¹ Confidential ridership data has been produced in two reports prepared in December 2019 and June 2020 by Steer with sufficient data to support the environmental analysis included in this report. FRA has reviewed the ridership methodology in the reports and confirmed it is based on reliable methods; and has accepted the analysis.

In Year 4, additional trains are added to the existing fleet to provide coupled trains for 2/3 of departures. In Year 4, ridership grows to 8.0 million and grows slightly to 8.1 million in Year 6.

- Years 7-10

Beginning in Year 7, additional trainsets are added to the existing fleet so that all trainsets operate as coupled trains in order to meet demand. Ridership grows from 8.9 million in Year 7 to 9.2 million in Year 10.

- Years 11-20

Beginning in Year 11, construction of additional track infrastructure is necessary in order to accommodate 22.5-minute headways. Ridership grows from 11.3 million in Year 11 to 12.3 million in Year 20.

A Matrix of Operating Plans and System Capacity for Years 1 to 20 as well as a daily time schedule for train trips are found on the following pages².

² Stringline charts for train trips located in Appendix B.

Matrix of Operating Plans and System Capacity (Years 1 to 10)³

Years	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Description of Service and Infrastructure	A train every 45 min in each direction, every day, single track with 4 passing siding track sections, 7-car trains, 1/3 of trains coupled	Idem	Idem	A train every 45 min in each direction, every day, single track with 4 passing siding track sections, 7-car trains, 2/3 of trains coupled	Idem	Idem	A train every 45 min in each direction, every day, single track with 4 passing siding track sections, 7-car trains, all trains coupled	Idem	Idem	Idem
Daily Runs	46	46	46	46	46	46	46	46	46	46
Weekly Runs	322	322	322	322	322	322	322	322	322	322
Annual Runs	16,790	16,790	16,790	16,790	16,790	16,790	16,790	16,790	16,790	16,790
Cars per train	7	7	7	7	7	7	7	7	7	7
Trainset Capacity	400	400	400	400	400	400	400	400	400	400
Coupled Trains	33%	33%	33%	67%	67%	67%	100%	100%	100%	100%
Steer Demand (one-way)	49,100,000	49,800,000	50,500,000	51,300,000	52,000,000	52,800,000	53,500,000	54,200,000	54,900,000	55,600,000
Induced Ridership (OW)	693,937	1,100,000	1,300,000	1,200,000	1,200,000	1,300,000	1,200,000	1,300,000	1,400,000	1,300,000
Total Captured Ridership	6,926,721	9,161,110	9,728,613	9,809,685	9,890,756	10,052,900	10,133,972	10,296,115	10,458,259	10,539,331
Capacity	8,932,280	8,932,280	8,932,280	11,215,720	11,215,720	11,215,720	13,432,000	13,432,000	13,432,000	13,432,000
Yearly LV-RC Ridership (excl. VV)	4,887,159	5,090,657	5,155,902	6,016,784	6,032,676	6,074,151	6,650,222	6,705,868	6,763,142	6,786,148
Yearly LV-VV-RC Ridership	5,642,151	6,379,108	6,482,985	7,533,376	7,562,909	7,621,750	8,351,399	8,428,022	8,504,214	8,542,209
Yearly HESP-RC Ridership	379,919	430,319	451,173	507,854	517,286	526,313	582,818	594,044	603,211	613,325
Total Yearly Ridership	6,022,070	6,809,427	6,934,158	8,041,230	8,080,195	8,148,063	8,934,217	9,022,066	9,107,425	9,155,534

³ Source: Steer Analysis, Brightline West

Matrix of Operating Plans and System Capacity (Years 11 to 20) ⁴

Years	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20
Description of Service and Infrastructure	A train every 22/23 min in each direction, every day, single track with 9 passing siding track sections, 7-car trains, all trains being coupled (double-unit trains)	Idem	Idem	Idem	Idem	Idem	Idem	Idem	Idem	Idem
Daily Runs	90	90	90	90	90	90	90	90	90	90
Weekly Runs	630	630	630	630	630	630	630	630	630	630
Annual Runs	32,850	32,850	32,850	32,850	32,850	32,850	32,850	32,850	32,850	32,850
Cars per train	7	7	7	7	7	7	7	7	7	7
Trainset Capacity	400	400	400	400	400	400	400	400	400	400
Coupled Trains	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Steer Demand (one-way)	56,400,000	57,100,000	57,900,000	58,700,000	59,400,000	60,200,000	60,900,000	61,600,000	62,400,000	63,100,000
Induced Ridership (OW)	1,400,000	1,400,000	1,400,000	1,400,000	1,500,000	1,400,000	1,500,000	1,500,000	1,500,000	1,500,000
Total Assumed Ridership	11,377,955	11,550,348	11,636,545	11,808,938	11,981,332	12,067,528	12,239,921	12,412,315	12,498,511	12,670,905
Capacity	26,864,000	26,864,000	26,864,000	26,864,000	26,864,000	26,864,000	26,864,000	26,864,000	26,864,000	26,864,000
Yearly LV-RC Ridership (excl. VV)	9,110,416	9,223,932	9,278,807	9,387,739	9,495,012	9,548,509	9,655,100	9,761,447	9,814,621	9,920,969
Yearly LV-VV-RC Ridership	10,567,539	10,699,344	10,763,101	10,889,789	11,014,819	11,077,194	11,201,541	11,325,645	11,387,698	11,511,802
Yearly Hes-RC Ridership	689,520	724,197	743,011	762,043	766,937	771,865	776,791	781,750	786,741	791,766
Total Yearly Ridership	11,257,059	11,423,541	11,506,112	11,651,832	11,781,756	11,849,058	11,978,332	12,107,395	12,174,439	12,303,567

⁴ Source: Steer Analysis, Brightline West

Train Schedule: Train every 45 min in each direction, every day, single track with 4 passing siding sections

Northbound	Train #	102	104	106	108	110	112	114	116	118	120	122	124	126
Rancho C.	<i>Dep</i>	6:33	7:18	8:03	8:48	9:33	10:18	11:03	11:48	12:33	13:18	14:03	14:48	15:33
Hesperia	<i>Arr</i>	6:56	7:41	8:26	9:11	9:56	10:41	11:26	12:11	12:56	13:41	14:26	15:11	15:56
Hesperia	<i>Dep</i>	6:58	7:43	8:28	9:13	9:58	10:43	11:28	12:13	12:58	13:43	14:28	15:13	15:58
Apple Valley	<i>Arr</i>	7:13	7:58	8:43	9:28	10:13	10:58	11:43	12:28	13:13	13:58	14:43	15:28	16:13
Apple Valley	<i>Dep</i>	7:16	8:01	8:46	9:31	10:16	11:01	11:46	12:31	13:16	14:01	14:46	15:31	16:16
Las Vegas	<i>Arr</i>	8:53	9:38	10:23	11:08	11:53	12:38	13:23	14:08	14:53	15:38	16:23	17:08	17:53
	Train #	128	130	132	134	136	138	140	142	144	146			
Rancho C.	<i>Dep</i>	16:18	17:03	17:48	18:33	19:18	20:03	20:48	21:33	22:18	23:03			
Hesperia	<i>Arr</i>	16:41	17:26	18:11	18:56	19:41	20:26	21:11	21:56	22:41	23:26			
Hesperia	<i>Dep</i>	16:43	17:28	18:13	18:58	19:43	20:28	21:13	21:58	22:43	23:28			
Apple Valley	<i>Arr</i>	16:58	17:43	18:28	19:13	19:58	20:43	21:28	22:13	22:58	23:43			
Apple Valley	<i>Dep</i>	17:01	17:46	18:31	19:16	20:01	20:46	21:31	22:16	23:01	23:46			
Las Vegas	<i>Arr</i>	18:38	19:23	20:08	20:53	21:38	22:23	23:08	23:53	0:38	1:23			

Southbound	Train #	101	103	105	107	109	111	113	115	117	119	121	123	125
Las Vegas	<i>Dep</i>	5:47	6:32	7:17	8:02	8:47	9:32	10:17	11:02	11:47	12:32	13:17	14:02	14:47
Apple Valley	<i>Arr</i>	7:24	8:09	8:54	9:39	10:24	11:09	11:54	12:39	13:24	14:09	14:54	15:39	16:24
Apple Valley	<i>Dep</i>	7:27	8:12	8:57	9:42	10:27	11:12	11:57	12:42	13:27	14:12	14:57	15:42	16:27
Hesperia	<i>Arr</i>	7:42	8:27	9:12	9:57	10:42	11:27	12:12	12:57	13:42	14:27	15:12	15:57	16:42
Hesperia	<i>Dep</i>	7:44	8:29	9:14	9:59	10:44	11:29	12:14	12:59	13:44	14:29	15:14	15:59	16:44
Rancho C.	<i>Arr</i>	8:07	8:52	9:37	10:22	11:07	11:52	12:37	13:22	14:07	14:52	15:37	16:22	17:07
	Train #	127	129	131	133	135	137	139	141	143	145			
Las Vegas	<i>Dep</i>	15:32	16:17	17:02	17:47	18:32	19:21	20:02	20:47	21:32	22:17			
Apple Valley	<i>Arr</i>	17:09	17:54	18:39	19:24	20:09	20:54	21:39	22:24	23:09	23:54			
Apple Valley	<i>Dep</i>	17:12	17:57	18:42	19:27	20:12	20:57	21:42	22:27	23:12	23:57			

Hesperia	Arr	17:27	18:12	18:57	19:42	20:27	21:12	21:57	22:42	23:27	0:12
Hesperia	Dep	17:29	18:14	18:59	19:44	20:29	21:14	21:59	22:44	23:29	0:14
Rancho C.	Arr	17:52	18:37	19:22	20:07	20:52	21:37	22:22	23:07	23:52	0:37

Train Schedule: Train every 22.5 mins in each direction, every day, single track with 9 passing siding track sections

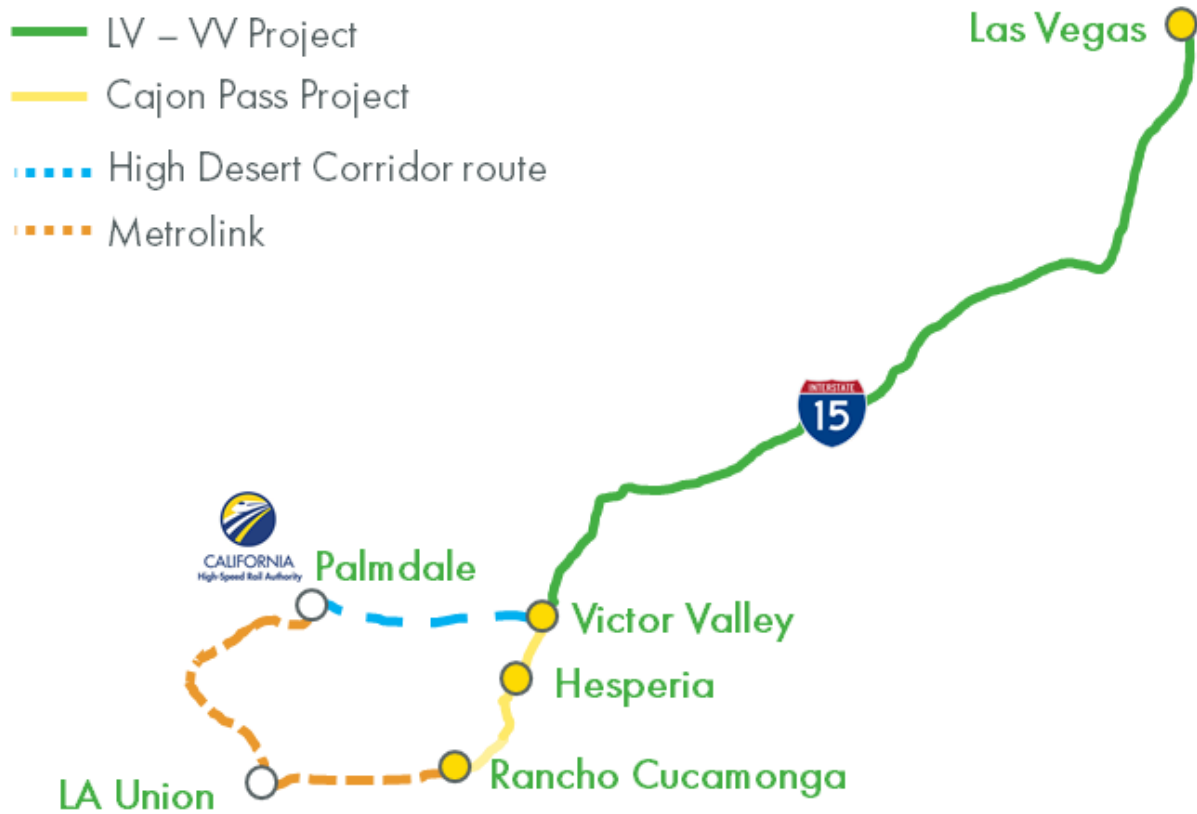
Northbound	Train #	102	104	106	108	110	112	114	116	118	120	122	124	126
Rancho C.	Dep	6:33	6:55	7:18	7:40	8:03	8:25	8:48	9:10	9:33	9:55	10:18	10:40	11:03
Hesperia	Arr	6:56	7:18	7:41	8:03	8:26	8:48	9:11	9:33	9:56	10:18	10:41	11:03	11:26
Hesperia	Dep	6:58	7:20	7:43	8:05	8:28	8:50	9:13	9:35	9:58	10:20	10:43	11:05	11:28
Victor Valley	Arr	7:13	7:35	7:58	8:20	8:43	9:05	9:28	9:50	10:13	10:35	10:58	11:20	11:43
Victor Valley	Dep	7:16	7:38	8:01	8:23	8:46	9:08	9:31	9:53	10:16	10:38	11:01	11:23	11:46
Las Vegas	Arr	8:53	9:15	9:38	10:00	10:23	10:45	11:08	11:30	11:53	12:15	12:38	13:00	13:23
	Train #	128	130	132	134	136	138	140	142	144	146	148	150	152
Rancho C.	Dep	11:25	11:48	12:10	12:33	12:55	13:18	13:40	14:03	14:25	14:48	15:10	15:33	15:55
Hesperia	Arr	11:48	12:11	12:33	12:56	13:18	13:41	14:03	14:26	14:48	15:11	15:33	15:56	16:18
Hesperia	Dep	11:50	12:13	12:35	12:58	13:20	13:43	14:05	14:28	14:50	15:13	15:35	15:58	16:20
Victor Valley	Arr	12:05	12:28	12:50	13:13	13:35	13:58	14:20	14:43	15:05	15:28	15:50	16:13	16:35
Victor Valley	Dep	12:08	12:31	12:53	13:16	13:38	14:01	14:23	14:46	15:08	15:31	15:53	16:16	16:38
Las Vegas	Arr	13:45	14:08	14:30	14:53	15:15	15:38	16:00	16:23	16:45	17:08	17:30	17:53	18:15
	Train #	154	156	158	160	162	164	166	168	170	172	174	176	178
Rancho C.	Dep	16:18	16:40	17:03	17:25	17:48	18:10	18:33	18:55	19:18	19:40	20:03	20:25	20:48
Hesperia	Arr	16:41	17:03	17:26	17:48	18:11	18:33	18:56	19:18	19:41	20:03	20:26	20:48	21:11
Hesperia	Dep	16:43	17:05	17:28	17:50	18:13	18:35	18:58	19:20	19:43	20:05	20:28	20:50	21:13
Victor Valley	Arr	16:58	17:20	17:43	18:05	18:28	18:50	19:13	19:35	19:58	20:20	20:43	21:05	21:28
Victor Valley	Dep	17:01	17:23	17:46	18:08	18:31	18:53	19:16	19:38	20:01	20:23	20:46	21:08	21:31
Las Vegas	Arr	18:38	19:00	19:23	19:45	20:08	20:30	20:53	21:15	21:38	22:00	22:23	22:45	23:08
	Train #	180	182	184	186	188	190							
Rancho C.	Dep.	21:10	21:33	21:55	22:18	22:40	23:03							
Hesperia	Arr	21:33	21:56	22:18	22:41	23:03	23:26							
Hesperia	Dep	21:35	21:58	22:20	22:43	23:05	23:28							
Victor Valley	Arr	21:50	22:13	22:35	22:58	23:20	23:43							

Victor Valley	Dep	21:53	22:16	22:38	23:01	23:23	23:46
Las Vegas	Arr	23:30	23:53	0:15	0:38	01:00	1:23

Southbound	Train #	101	103	105	107	109	111	113	115	117	119	121	123	125
Las Vegas	Dep	5:47	6:09	6:32	6:54	7:17	7:39	8:02	8:24	8:47	9:09	9:32	9:54	10:17
Apple Valley	Arr	7:24	7:46	8:09	8:31	8:54	9:16	9:39	10:01	10:24	10:46	11:09	11:31	11:54
Apple Valley	Dep	7:27	7:49	8:12	8:34	8:57	9:19	9:42	10:04	10:27	10:49	11:12	11:34	11:57
Hesperia	Arr	7:42	8:04	8:27	8:49	9:12	9:34	9:57	10:19	10:42	11:04	11:27	11:49	12:12
Hesperia	Dep	7:44	8:06	8:29	8:51	9:14	9:36	9:59	10:21	10:44	11:06	11:29	11:51	12:14
Rancho C.	Arr	8:07	8:29	8:52	9:14	9:37	9:59	10:22	10:44	11:07	11:29	11:52	12:14	12:37
	Train #	127	129	131	133	135	137	139	141	143	145	147	149	151
Las Vegas	Dep.	10:39	11:02	11:24	11:47	12:09	12:32	12:54	13:17	13:39	14:02	14:24	14:47	15:09
Apple Valley	Arr.	12:16	12:39	13:01	13:24	13:46	14:09	14:31	14:54	15:16	15:39	16:01	16:24	16:46
Apple Valley	Dep	12:19	12:42	13:04	13:27	13:49	14:12	14:34	14:57	15:19	15:42	16:04	16:27	16:49
Hesperia	Arr	12:34	12:57	13:19	13:42	14:04	14:27	14:49	15:12	15:34	15:57	16:19	16:42	17:04
Hesperia	Dep	12:36	12:59	13:21	13:44	14:06	14:29	14:51	15:14	15:36	15:59	16:21	16:44	17:06
Rancho C.	Arr	12:59	13:22	13:44	14:07	14:29	14:52	15:14	15:37	15:59	16:22	16:44	17:07	17:29
	Train #	153	155	157	159	161	163	165	167	169	171	173	175	177
Las Vegas	Dep.	15:32	15:54	16:17	16:39	17:02	17:24	17:47	18:09	18:32	18:54	19:17	19:39	20:02
Apple Valley	Arr.	17:09	17:31	17:54	18:16	18:39	19:01	19:24	19:46	20:09	20:31	20:54	21:16	21:39
Apple Valley	Dep	17:12	17:34	17:57	18:19	18:42	19:04	19:27	19:49	20:12	20:34	20:57	21:19	21:42
Hesperia	Arr	17:27	17:49	18:12	18:34	18:57	19:19	19:42	20:04	20:27	20:49	21:12	21:34	21:57
Hesperia	Dep	17:29	17:51	18:14	18:36	18:59	19:21	19:44	20:06	20:29	20:51	21:14	21:36	21:59
Rancho C.	Arr	17:52	18:14	18:37	18:59	19:22	19:44	20:07	20:29	20:52	21:14	21:37	21:59	22:22
	Train #	179	181	183	185	187	189							
Las Vegas	Dep.	20:24	20:47	21:09	21:32	21:54	22:17							
Apple Valley	Arr.	22:01	22:24	22:46	23:09	23:31	23:54							
Apple Valley	Dep	22:04	22:27	22:49	23:12	23:34	23:57							
Hesperia	Arr	22:19	22:42	23:04	23:27	23:49	0:12							
Hesperia	Dep	22:21	22:44	23:06	23:29	23:51	0:14							
Rancho C.	Arr	22:44	23:07	23:29	23:52	0:14	0:37							

Projected Corresponding Metrolink Schedule

Eastbound														
LAUS	<i>Dep</i>	5:07	5:37	6:33	7:07	8:07	8:37	9:37	10:07	11:07	11:37	12:37	13:07	14:07
Rancho C.	<i>Arr</i>	6:15	6:45	7:41	8:15	9:15	9:45	10:45	11:15	12:15	12:45	1:45	14:15	15:15
LAUS	<i>Dep</i>	14:37	15:37	16:07	17:10	17:37	18:37	19:07	19:37	20:37	21:37			
Rancho C.	<i>Arr</i>	15:45	16:45	17:15	18:18	18:45	19:45	20:15	20:45	21:45	22:45			
Westbound														
Rancho C.	<i>Dep</i>	8:14	9:14	9:44	10:44	11:14	12:14	12:44	13:44	14:14	15:14	15:44	16:44	17:14
LAUS	<i>Arr</i>	9:22	10:22	10:52	11:52	12:22	13:22	13:52	14:52	15:22	16:22	16:52	17:52	18:22
Rancho C.	<i>Dep</i>	18:14	18:44	20:14	21:14	22:14								
LAUS	<i>Arr</i>	19:22	19:52	21:22	22:22	23:22								

Map of Brightline West System Route

5.0 Assumed Mode of Transit

Rancho Cucamonga Station:

Rancho Cucamonga Traveler Types:

The Rancho Cucamonga Station sees two traveler types:

- 1) “Interstate Travelers” – People who travel between Rancho Cucamonga and the Las Vegas area
- 2) “Intercity Travelers” – People who travel between Rancho Cucamonga and Hesperia stations

Rancho Cucamonga Interstate Travelers:

The vast majority of interstate travelers who access the Rancho Cucamonga station originate their trip in Southern California (i.e. Southern California residents), travel to Las Vegas and return home. There are two modes for which a customer can travel to a station: by automobile or by rail. It is assumed the customer split between the two modes are as follows:

- 1) 77% of customers will access the station via automobile
- 2) 23% of customers will access the station via rail on Metrolink

Of the customers accessing the station via automobile, it is anticipated that the majority are driving private vehicles to the station. The assumption on number of people who drive private vehicles to the station is consistent with the assumption for the Victor Valley station in the previously permitted Victor Valley to Las Vegas submission (70% of passengers). The people who access the station via private vehicle are split into two categories:

- 1) “Self-Drive and Park” – these passengers drive, park at the available parking and leave their car until they return from their trip to Nevada
- 2) “Pick Up / Drop Off” – these passengers are transported to and from the station via an unpaid service (i.e. family or friend) whose car does not remain parked for an extended period of time at the station

Given that the customer base for this station stretches a great distance geographically, it is assumed that it is far more likely that a customer using a private car will have to “Self-Drive and Park” rather than access via “Pick Up / Drop Off” given that car drivers may have to drive a far distance simply to drop-off the traveler. Thus, “Pick Up / Drop Off” represents a small percentage of the projected 70% of people who get to the station via-private vehicle.

In addition to this, it is assumed that public transit and TNC / taxis options will split the remainder of the access options. The planned transit-hub in Rancho Cucamonga is expected to include the convergence of several bus and shuttle routes, the Metrolink service and an airport tunnel to Ontario International Airport. The assumption that 30% of the travelers access this station via modes that are not private cars is also consistent with the assumption for the Victor Valley station in the previously permitted Victor Valley to Las Vegas submission (30% of passengers split evenly between TNC at 15% and public transit / shuttles at 15%). It is anticipated that the ~20% of travelers who are expected to originate in the Las Vegas area will be frequent users of TNC/taxi, shuttle and public transit options (these are people who generally do not have personal cars in Southern California).

Mode Share Assumptions for Interstate Travelers at the Rancho Cucamonga Station:

77% of all customers will travel by the station via automobile while the remaining 23% are assumed to travel via Metrolink.

	HSR Passengers			
Mode of Transit	% Usage for passengers accessing station (Auto and Rail)	% Usage for passengers accessing station via automobile (77% of total)⁵	Average Vehicle Occupancy (AVO)	Passenger Car Equivalents (PCEs)
Self-Drive and Park	51%	66%	1.85 ⁶	1
Pick Up / Drop Off	3%	4%	1.85 ⁷	1
TNC (Uber, Lyft) / Taxi	11.5%	15%	1.85	1
Public transit / Shuttles	11.5%	15%	20	1.5
Access via Metrolink	23%			

Rancho Cucamonga Intercity Travelers:

Most of the demand for the Intercity Service originates in the Victor Valley area, boards at the Hesperia station in the morning, deboards in the Rancho Cucamonga station in the morning and then heads back to board at the Rancho Cucamonga station in the afternoon for the return to the Victor Valley area.⁸ Thus, the majority mode uses at the Rancho Cucamonga station will not involve parked cars but rather other modes such as TNC / taxis, Metrolink, bus or other shuttles. Private Pick Up / Drop Off (i.e. work related pick-ups) will also occur but not at the frequency as the other modes previously mentioned.

⁵ All figures in this column equal the column to the left, representing the percent usage for passengers assessing the station in total, multiplied by 77%, which represents the percentage of the people who access the station via automobile and removes those accessing via Metrolink.

⁶ Steer Analysis

⁷ AVOs does not include driver.

⁸ Steer Analysis

Mode Share Assumptions for Intercity Travelers at the Rancho Cucamonga Station:

Intercity Passengers			
Mode of Transit	% Usage	Average Vehicle Occupancy (AVO)	Passenger Car Equivalents (PCEs)
Self-Drive and Park	1%	1.18 ⁹	1
TNC (Uber, Lyft) / Taxi	50%	1.00	1
Pick Up / Drop Off	15%	1.00 ¹⁰	1
Public Transit / Shuttles	34%	20	1.5

Rancho Cucamonga Employee Access:

The analysis assumes that 100% of employees self-drive and park at the station with an average vehicle occupancy of 1.18 passengers/vehicle.¹¹

Employees			
Mode of Transit	% Usage	Average Vehicle Occupancy (AVO)	Passenger Car Equivalents (PCEs)
Private Vehicles	100% ¹²	1.18	1

Hesperia Station:Hesperia Traveler Types:

The Hesperia Station only sees a single traveler type: The “Intercity Traveler” going between the Hesperia and the Rancho Cucamonga stations.

Hesperia Intercity Passengers:

The Hesperia Station users are Intercity Travelers, the majority of whom originate in the Victor Valley region (thus, originate their journey at the Hesperia station). Due to this, BLW anticipates the majority of riders will drive private vehicles to the station. Private vehicle use is assumed to be at a slightly higher rate than assumed for “Interstate Service” at the Rancho Cucamonga station (70% of travelers vs. 66% for

⁹ Nationwide commute trip averages from National Household Travel Survey.

¹⁰ Pick Up/Drop Off occupancy does not include driver.

¹¹ Nationwide commute trip averages from National Household Travel Survey.

¹² 100% assumed to be self-drive + park.

Interstate Travel at the Rancho Cucamonga station). Additionally, it is projected that the likelihood of “Drop Offs” will be higher than for Interstate Travelers at the Rancho Cucamonga station as it is expected that the patron dropping off the traveler has a shorter average travel distance to the station for the Intercity Service.

While TNC/Taxi options are included in the analysis as a potential mode option at this station, it is not assumed to be highly utilized at this station given that the cost of the TNC/Taxi ride will be a high percentage of the overall travel cost for this trip (whereas the TNC/Taxi ride is a lower percentage of the overall trip cost for the Interstate Service). Public transit, such as public buses, will be more common as a lower cost option to access the station.

Hesperia Mode Share Assumptions:

<i>Intercity Passengers</i>			
Mode of Transit	% Usage	Average Vehicle Occupancy (AVO)	Passenger Car Equivalents (PCEs)
Self-Drive and Park	70%	1.18 ¹³	1
TNC (Uber, Lyft) / Taxi	5%	1.00	1
Pick Up / Drop Off	10%	1.00 ¹⁴	1
Public Transit / Shuttles	15%	20	1.5

Hesperia Employee Access:

The analysis assumes that 100% of employees self-drive and park at the station with an average vehicle occupancy of 1.18 passengers/vehicle.¹⁵

<i>Employees</i>			
Mode of Transit	% Usage	Average Vehicle Occupancy (AVO)	Passenger Car Equivalents (PCEs)
Private Vehicles	100% ¹⁶	1.18	1

¹³ Nationwide commute trip averages from National Household Travel Survey.

¹⁴ Pick Up/Drop Off occupancy does not include driver.

¹⁵ Nationwide commute trip averages from National Household Travel Survey.

¹⁶ 100% assumed to be self-drive + park.

6.0 Employees

Total Employees

While there are two stations for the Project, the Hesperia station is expected to serve local travelers only and will be built at a much smaller scale. The Rancho Cucamonga station will be similar to the station planned in Las Vegas on the northern end of the system. The added employees for the Project will be split into two types.

1. Station Employees
2. On-Train Employees

As a result of the Project, BLW expects to employ approximately 250 people in Year 1. With service ramping from opening year to Year 20, BLW expects total employee count to grow.

Given the station locations, it is expected that these employees will be Southern California based. Due to the nature of the Rancho Cucamonga station being the terminus and most trafficked, it is anticipated most station workers will be based at this station while the smaller number of workers will be based at the Victor Valley station. As mentioned above, it is assumed all employees arrive to work via private vehicle.

Approximately half of all on-board employees are assumed to be based in California with the other half based in Nevada. This means that half of the on-board employees will utilize either Rancho Cucamonga or Victor Valley station as their train entry point.

7.0 Induced Demand & Diversion from Other Modes of Travel

Steer forecasts ridership come from two subsets: 1) Captured Trips and 2) Induced Trips. Captured trips are rides from people who would have otherwise made the trip through a different available mode of transit (i.e. plane or automobile). Induced trips are defined as a trip which is not currently being made today (by any existing mode), but which is forecast to be made in the future as a result of the HSR infrastructure being in place. In the Steer Analysis, Induced Trips represented 9.9% of Total Trips. BLW uses this assumption as the basis for our expected split between captured trips and induced trips.¹⁷

Market	<u>A</u> % of Current	<u>B</u> % Captured vs. Induced ¹⁸	<u>A x B = C</u> Pro-Forma Split
Captured Demand ¹⁹	100%	90.1%	90.1%
Automobile	83%		74.8%
Plane	17%		15.3%
Induced Demand	0%	9.9%	9.9%
% Total	100%	100%	100%

¹⁷ Steer Analysis, Brightline West

¹⁸ Steer Analysis, Brightline West.

¹⁹ 17% of the "captured ridership" from existing air travel and 83% from automobile traffic (split between passenger cars and bus). Excludes passengers originating in Northern California and Intercity Transit trips.