

---

To Barrow Emerson, SamTrans  
Melissa Reggiardo, SamTrans

Date  
10/1/2014

---

Copies

Reference number

---

From Corey Wong, Arup  
Steve Crosley, Fehr + Peers

File reference

---

Subject ECR BRT Phasing Plan – Ridership and Productivity

---

## 1 Introduction

---

This memo presents the forecast ridership as well as productivity for the various service concepts proposed in the previous memos. Forecast ridership was modelled by the Santa Clara Valley Transportation Authority (VTA) for the SamTrans Bus Rapid Transit (BRT) Phasing Study in the summer of 2014. Revenue vehicle hour and operating costs referenced in this memo and used to calculate service productivity are from the August 31, 2014 *Operating Plan Memo – Draft v1* and the September 13, 2014 *ECR BRT Phasing Plan – O&M Costs Memo*, respectively. Detailed stop-by-stop ridership forecasts are included in Appendix A.

## 2 Forecast Ridership and Fare Revenues

---

This section presents total ridership for each service concept, as well as several other statistics, including the total increase in corridor ridership, the total increase in system ridership, and the total number of new transit riders (i.e., those that previously used another non-transit mode to travel). Table 1 presents the forecast corridor-level ridership (by service tier) as well as the system-level ridership (and associated changes from the 2020 Base Case (Concept 1)). Figure 1 presents the daily corridor ridership and percentage growth over the 2020 Base Case (Concept 1).

Key findings are as follows:

- **Daily Tier-Level Ridership**
  - Among concepts with Rapid and ECR service, Concept 2 (2020 Full Rapid) generates the highest daily ridership at 10,600, compared to about 8,100 for Concept 3 (2020 Truncated Rapid (DC-RC)). Concept 4 (2020 Truncated (SB-RC)) generates half the ridership of Concept 2 at 5,000 daily riders. Concept 7 (2020 Peak Rapid) generates slightly more riders at 5,500 daily riders.
  - Daily ridership for Hybrid-only concepts ranges from 17,700 to 22,500. Concept 9 (2020 Hybrid B (50 Stops – 7.5 Min)) generates the highest daily ridership at 22,500, closely followed by Concept 8 (2020 Hybrid A (76 Stops – 10 Min)) at 21,200. Concept 5 (2020 Hybrid B (76 Stops – 12 Min)) produces daily ridership of 19,500. Concept 6, (2020 Hybrid B (50 Stops – 12 Min)), with the fewest stops and the

# Memorandum

longest headway among the Hybrid-only concepts, generates over 17,700 daily riders.

- Concept 10 (2040 BRT) generates about 20,800 riders, so nearly double that of Concept 2 (2020 Full Rapid).

## • Daily Corridor-Level Ridership

- Corridor-level ridership includes all routes that operate along El Camino Real Blvd. – thus the Rapid (or Peak Rapid), Hybrid, and ECR services. Daily corridor-level ridership for Concept 1 (2020 Base Case) is about 16,600 riders.
- Among 2020 service concepts with Rapid and ECR, corridor totals run from about 19,700-22,200 daily riders, representing an increase of between 19-34% over Concept 1 (2020 Base Case). Concept 2 (2020 Full Rapid) generates the highest daily ridership at 22,200, while Concept 4 (2020 Truncated (SB-RC) generates the lowest at 19,700.
- For 2020 service concepts with Hybrid-only operations, total corridor daily ridership ranges from 17,700-22,500 riders. This represents an increase of between 6-35% over Concept 1 (2020 Base Case). Concept 9 (2020 Hybrid B (50 Stops – 7.5 Min)) generates the highest ridership at 22,500 riders, compared to Concept 6 (2020 Hybrid B (50 Stops – 12 Min), which generates the lowest ridership at 17,700.
- Concept 10 (2040 BRT) generates about 33,700 daily riders in the corridor, or about a 103% increase over Concept 1 (2020 Base Case).

## • Daily System-Level Ridership

- System-level ridership includes not only bus services along El Camino Real Blvd., but also that on other SamTrans-operated bus services within the SamTrans operating jurisdiction. Daily system-level ridership for Concept 1 (2020 Base Case) is about 57,600 riders.
- Among 2020 service concepts with Rapid and ECR, system totals run from about 63,000-65,000 daily riders, representing an increase of between 10-13% over Concept 1 (2020 Base Case). Concept 2 (2020 Full Rapid) generates the highest system ridership at 65,000 daily riders or 13% more than Concept 1 (2020 Base Case), while Concept 4 (2020 Truncated (SB-RC) generates the lowest system ridership at 63,200.
- For 2020 service concepts with Hybrid-only operations, total system ridership ranges from 59,000-62,000 riders. This represents an increase of between 2-8% over Concept 1 (2020 Base Case). Concept 9 (2020 Hybrid B (50 Stops – 7.5 Min)) generates the highest ridership at 62,300 riders, compared to both 12-minute Hybrid concepts (Concepts 5 and 6) at roughly 58,800.
- Concept 10 (2040 BRT) generates about 91,000 daily riders in the system, or about a 58% increase over Concept 1 (2020 Base Case).

# Memorandum

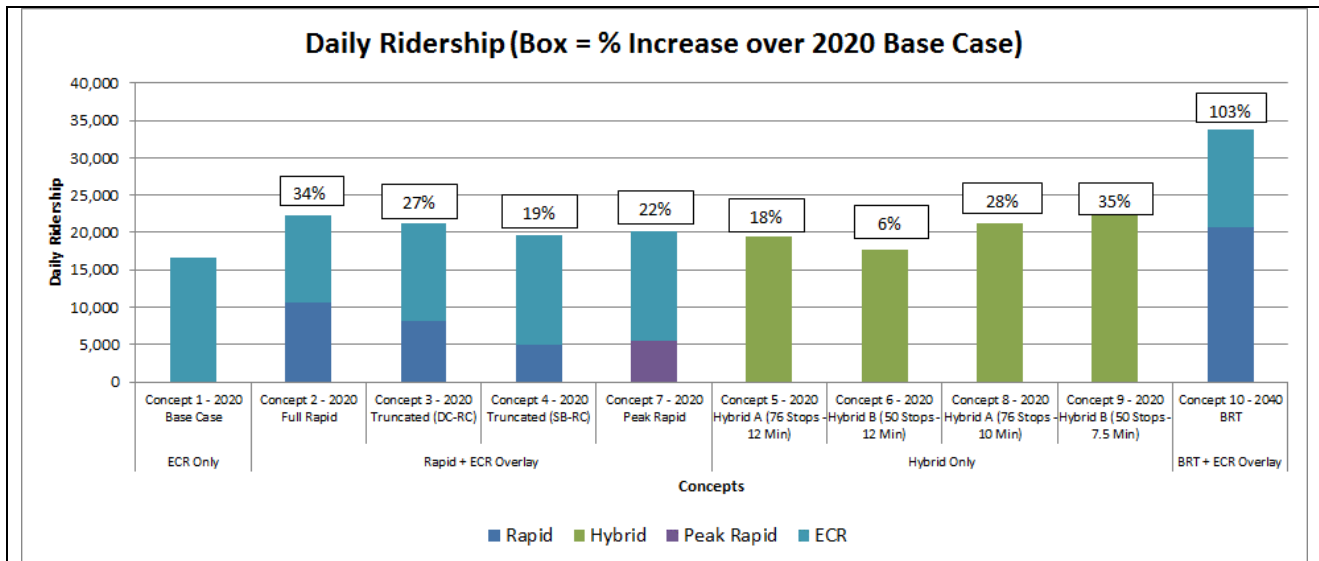


**Table 1: Daily Corridor and System-Level Ridership by Service Concept (Ordered by Service Tier)**

Tier	Service Concept	Daily Corridor-Level Ridership							Daily System-Level Ridership		
		Rapid	Peak Rapid	Hybrid	ECR	Total Corridor	Increase vs. 2020 ECR	% Increase vs. 2020 ECR	Riders	Increase vs. 2020 ECR	% Increase vs. 2020 ECR
ECR Only	Concept 1 - 2020 Base Case	0	0	0	16,598	16,598	-	-	57,613	-	-
Rapid + ECR Overlay	Concept 2 - 2020 Full Rapid	10,581	0	0	11,623	22,204	5,606	34%	64,975	7,362	13%
	Concept 3 - 2020 Truncated (DC-RC)	8,148	0	0	13,008	21,156	4,558	27%	64,183	6,570	11%
	Concept 4 - 2020 Truncated (SB-RC)	5,031	0	0	14,655	19,686	3,088	19%	63,152	5,539	10%
	Concept 7 - 2020 Peak Rapid	0	5,460	0	14,745	20,205	3,607	22%	63,343	5,730	10%
Hybrid Only	Concept 5 - 2020 Hybrid A (76 Stops - 12 Min)	0	0	19,513	0	19,513	2,915	18%	58,769	1,156	2%
	Concept 6 - 2020 Hybrid B (50 Stops - 12 Min)	0	0	17,675	0	17,675	1,077	6%	58,833	1,220	2%
	Concept 8 - 2020 Hybrid A (76 Stops - 10 Min)	0	0	21,238	0	21,238	4,640	28%	60,220	2,607	5%
	Concept 9 - 2020 Hybrid B (50 Stops - 7.5 Min)	0	0	22,468	0	22,468	5,870	35%	62,326	4,713	8%
BRT + ECR Overlay	Concept 10 - 2040 BRT	20,755	0	0	12,977	33,732	17,134	103%	90,968	33,355	58%

Source: VTA, 2014.

Figure 1: Corridor-Level Daily Ridership Forecast by Service Concept



### 3 Service Productivity

This section assesses service productivity of the service concepts using three typical metrics: (i) farebox recovery; (ii) subsidy per passenger; and (iii) incremental cost per new passenger. Note – operating costs used for service productivity calculations are based on “service” O&M costs or those costs to operate the vehicles and not costs to maintain fixed infrastructure.

#### 3.1 Corridor Farebox Recovery

Farebox recovery measures how much of the operating costs can be paid for through fare revenues. Thus, farebox recovery is estimated by dividing fare revenues by operating costs. A higher farebox recovery rate means that a service concept is able to recoup more of its operating costs from fare revenues than another concept.

Using operating costs already developed from the noted Operating Cost Memo (with revenue vehicle hour costs at \$210/hour) and assuming fare revenues are simply the product of the average fare per customer (\$1.37/rider based on SamTrans information) and daily ridership, Table 2 presents the daily corridor-level fare revenues and estimated farebox recovery rate. It is noted that the operating costs used in this calculation are the “service” O&M costs and not any fixed infrastructure related O&M costs.

Key corridor findings (i.e., only those routes operating on El Camino Real Blvd.) are as follows:

- Concept 1 (2020 Base Case) generates a corridor 32% farebox recovery rate.
- All 2020 service concepts generate slightly lower corridor farebox recovery rates (between 27-31%), except for Concept 5 (2020 Hybrid A (76 Stops – 12 Min) with a 33% farebox recovery rate. Among service concepts with both Rapid and ECR service, Concept 7 (2020 Peak Rapid) generates the highest recovery rate at 29%. Among service concepts with Hybrid-only service, the noted Concept 5 generates the highest recovery at 32%.
- Concept 10 (2040 BRT) generates a farebox recovery rate of 45%.

# Memorandum

**Table 2: Corridor-Level Fare Revenues and Farebox Recovery Rate**

Tier	Service Concept	Corridor Fare Revenue	Corridor Service O&M Cost	Corridor Farebox Recovery Rate
ECR Only	Concept 1 - 2020 Base Case	\$23,000	\$71,000	32%
Rapid + ECR Overlay	Concept 2 - 2020 Full Rapid	\$31,000	\$113,000	27%
	Concept 3 - 2020 Truncated (DC-RC)	\$29,000	\$106,000	27%
	Concept 4 - 2020 Truncated (SB-RC)	\$27,000	\$96,000	28%
	Concept 7 - 2020 Peak Rapid	\$28,000	\$95,000	29%
Hybrid Only	Concept 5 - 2020 Hybrid A (76 Stops - 12 Min)	\$27,000	\$83,000	33%
	Concept 6 - 2020 Hybrid B (50 Stops - 12 Min)	\$25,000	\$77,000	32%
	Concept 8 - 2020 Hybrid A (76 Stops - 10 Min)	\$30,000	\$94,000	32%
	Concept 9 - 2020 Hybrid B (50 Stops - 7.5 Min)	\$31,000	\$107,000	29%
BRT + ECR Overlay	Concept 10 - 2040 BRT	\$47,000	\$104,000	45%

Source: VTA, 2014.

Note: Corridor revenues and costs are rounded up to the nearest \$0,000.

## 3.2 Corridor O&M Costs per Passenger and Incremental Cost per New Corridor Passenger

Farebox recovery can be a misleading evaluation of a new service. In the case of an existing corridor, the fluctuations in revenue and operating costs are sometimes too minute to discern significant differences in performance. Two additional metrics are often used to help differentiate the viability of different service concepts:

- **Subsidy per Passenger** – Subsidy is the difference between operating costs and fare revenues (thus the amount that cannot be covered by fare revenues and must be paid for by the public). This metric measures the subsidy required to transport one passenger (calculated by dividing total subsidy by total passengers in the corridor). A lower subsidy per passenger indicates that a service concept is more self-sustaining than another.
- **Incremental Cost per New Passenger** – This metric measures what the marginal cost is (above what service costs to operate now) in order to capture and service a new passenger. Incremental costs are determined by subtracting expected O&M service costs from those O&M costs for Concept 1 (2020 Base Case). This incremental cost is then divided by the volume of new passengers (i.e., forecast passengers subtracted from the 2020 Base Case demand). A lower incremental cost per new passenger means that the service concept can generate and carry new riders at a lower cost than another concept.

Table 3 and Figure 2 presents the average subsidy per passenger and incremental cost per new passenger within the ECR corridor. Key findings are as follows:

- **Subsidy per Passenger**
  - Concept 1 (2020 Base Case) has a subsidy per passenger of \$2.89.
  - Future 2020 service concepts require subsidies per passenger of between \$2.87-\$3.69. Hybrid-only concepts appear to generate lower subsidies per passenger figures, likely due to the lower operating costs from running a single service on the corridor (instead of the Rapid and ECR combination concepts).

# Memorandum

- Among these 2020 concepts, Concept 5 (2020 Hybrid A (76 Stops – 12 Min)) requires a subsidy of \$2.87, which is the only concept with a figure lower than that of Concept 1. Concept 2 (2020 Full Rapid) performs the worst at \$3.69/passenger.
- The Full 2040 concept (Concept 10) has a subsidy of \$1.69/passenger, which is the lowest of any of the 2020 service concepts and about 40% less than Concept 1 (2020 Base Case).

- **Incremental Cost per New Passenger**

- Future 2020 service concepts generate incremental costs per new passenger of between \$4.12-\$8.10 approximately. Hybrid-only concepts appear to generate lower incremental costs per new passenger, which is likely due to the lower operating costs from running a single service in the corridor (instead of the Rapid and ECR combination concepts).
- Among these 2020 concepts, Concept 5 (2020 Hybrid A (76 Stops – 12 Min)) performs the best with an incremental cost of \$4.12 per new passenger. Concept 4 (2020 Truncated (SB-RC)) performs the worst at \$8.10 per new passenger, likely due to the fact that this concept does not serve higher ridership stops north of San Bruno BART Station, but still provides substantial amounts of service throughout the day in the corridor (with both a truncated Rapid and ECR).
- The Full 2040 concept (Concept 10) has an incremental cost per new passenger of \$1.93, which is half as much as that for any of the 2020 concepts.

**Table 3: Corridor-Level Subsidy per Passenger and Incremental Cost per New Passenger**

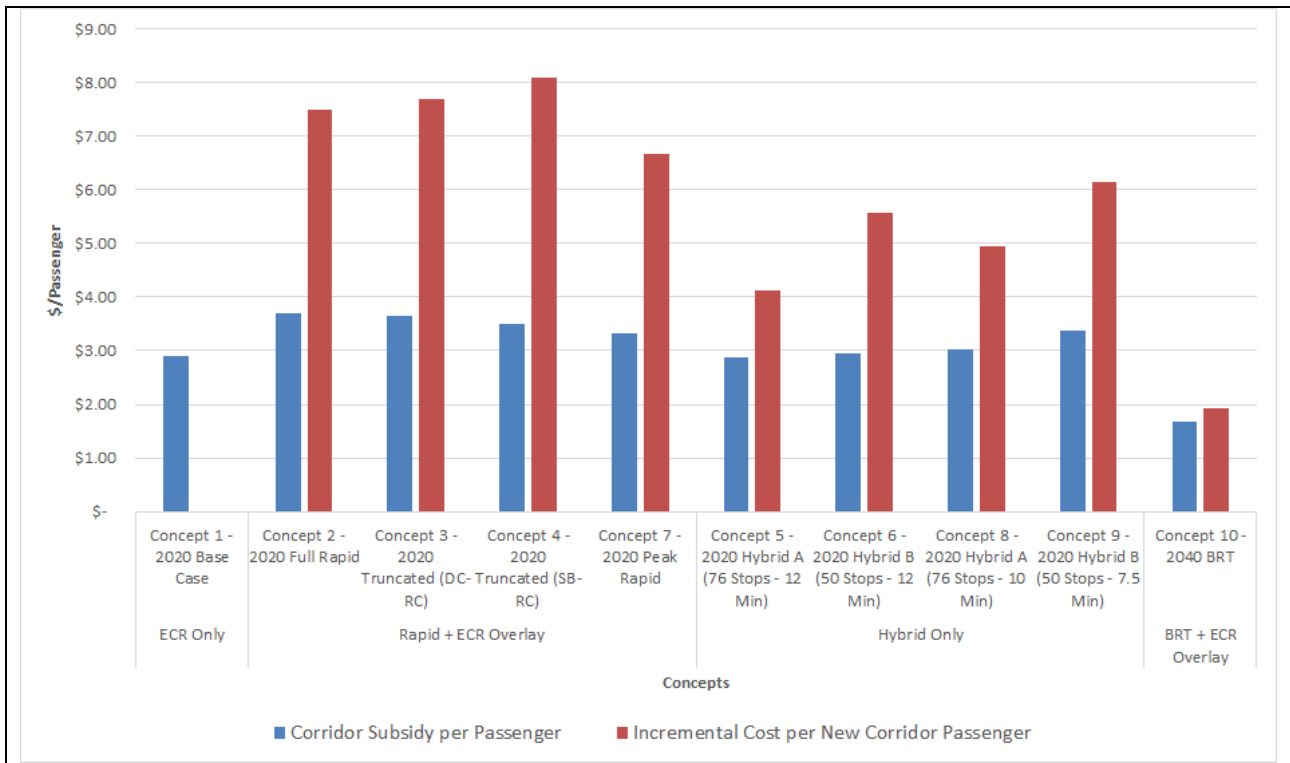
Tier	Service Concept	Subsidy per Passenger	Incremental Cost per New Corridor Passenger
ECR Only	Concept 1 - 2020 Base Case	\$2.89	-
Rapid + ECR Overlay	Concept 2 - 2020 Full Rapid	\$3.69	\$7.49
	Concept 3 - 2020 Truncated (DC-RC)	\$3.64	\$7.68
	Concept 4 - 2020 Truncated (SB-RC)	\$3.51	\$8.10
	Concept 7 - 2020 Peak Rapid	\$3.32	\$6.65
Hybrid Only	Concept 5 - 2020 Hybrid A (76 Stops - 12 Min)	\$2.87	\$4.12
	Concept 6 - 2020 Hybrid B (50 Stops - 12 Min)	\$2.94	\$5.57
	Concept 8 - 2020 Hybrid A (76 Stops - 10 Min)	\$3.01	\$4.96
	Concept 9 - 2020 Hybrid B (50 Stops - 7.5 Min)	\$3.38	\$6.13
BRT + ECR Overlay	Concept 10 - 2040 BRT	\$1.69	\$1.93

Source: VTA, 2014.

Note: Corridor revenues and costs are rounded up to the nearest \$0,000.

# Memorandum

**Figure 2: Corridor-Level Subsidy per Passenger and Incremental Cost per New Passenger**



## 4 Next Steps

The ridership and productivity metrics presented in this memo will be used in the detailed evaluation of the service concepts.

# Memorandum

## 5 Appendix A – Rapid/Hybrid/BRT Ridership by Station by Service Concept

---

Ridership by station by service concept (in terms of total boardings) are presented below for Rapid/Hybrid/BRT services only (stop-level ECR boardings are not presented in this memo). It is also noted that:

- Stop locations indicated in the tables below are approximate and may not match the exact stop name used in previous memos; and
- Ridership estimates presented earlier in this memo may not match cumulative stop-level boardings in the tables below due to rounding.



# Memorandum

**Table 4: Total Rapid Boardings – Concept 2 - 2020 Full Rapid**

Node	Stop Name	Total Boardings	Peak Boardings	Off-Peak Boardings
25492	Daly City BART	546	293	253
25481	John Daly/Mission Blvd	462	259	203
25485	ECR/School Street/Mission	255	181	74
11744	Colma BART	144	86	58
55336	ECR/McClellan	128	119	9
25395	ECR/Arroyo	122	62	60
25256	ECR/Orange	151	100	51
25370	ECR/Brentwood	305	169	136
25264	ECR/Sneath	568	220	348
25262	San Bruno Ave	546	270	276
55261	ECR/Jenevein	272	121	151
12172	ECR/Park Pl	234	114	120
12523	ECR/Silva	148	59	89
25311	Millbrae Intermodal	734	352	382
12165	ECR/Trousdale	85	33	52
25323	ECR/Broadway	156	106	50
12503	ECR/Burlingame	49	46	3
25194	ECR/Poplar	231	112	119
11684	ECR/El Cerrito	216	105	111
11679	ECR/W. 2nd	346	150	196
55028	ECR/4th San Mateo	104	48	56
55562	ECR/17th	249	147	102
12391	ECR/20th	268	121	147
25144	ECR/25th	156	69	87
25146	ECR/Hillsdale Blvd	655	398	257
25147	ECR/41st	142	65	77
24966	ECR/Ralston Ave	301	147	154
24945	ECR/San Carlos Caltrain	294	152	142
24956	ECR/Brittan	55	45	10
24915	ECR/Edgewood	118	57	61
24914	ECR/James	0	0	0
12566	Redwood City Caltrain	614	302	312
24905	ECR/Lincoln	350	215	135
12528	ECR/Center Street	222	96	126
24785	ECR/5th	146	78	68
12357	ECR/Atherton	8	3	5
24763	Menlo Park Caltrain/Oakgrove	179	105	74
8916	Palo Alto Caltrain	752	454	298
<b>Total</b>		<b>10,311</b>	<b>5,459</b>	<b>4,852</b>

Source: VTA, 2014.

# Memorandum

**Table 5: Total Rapid Boardings – Concept 3 - 2020 Truncated (DC-RC)**

Node	Stop Name	Total Boardings	Peak Boardings	Off-Peak Boardings
25492	Daly City BART	491	268	223
25481	John Daly/Mission Blvd	396	227	169
25485	ECR/School Street/Mission	302	177	125
11744	Colma BART	156	83	73
55336	ECR/McClellan	237	117	120
25395	ECR/Arroyo	125	59	66
25256	ECR/Orange	228	98	130
25370	ECR/Brentwood	335	161	174
25264	ECR/Sneath	469	217	252
25262	San Bruno Ave	497	265	232
55261	ECR/Jenevein	216	118	98
12172	ECR/Park Pl	219	110	109
12523	ECR/Silva	124	56	68
25311	Millbrae Intermodal	689	336	353
12165	ECR/Trousdale	60	31	29
25323	ECR/Broadway	198	89	109
12503	ECR/Burlingame	109	44	65
25194	ECR/Poplar	228	103	125
11684	ECR/El Cerrito	196	96	100
11679	ECR/W. 2nd	324	143	181
55028	ECR/4th San Mateo	103	43	60
55562	ECR/17th	265	135	130
12391	ECR/20th	217	115	102
25144	ECR/25th	152	63	89
25146	ECR/Hillsdale Blvd	661	352	309
25147	ECR/41st	130	60	70
24966	ECR/Ralston Ave	239	129	110
24945	ECR/San Carlos Caltrain	224	121	103
24956	ECR/Brittan	66	38	28
24915	ECR/Edgewood	97	52	45
24914	ECR/James	0	0	0
12566	Redwood City Caltrain	393	198	195
<b>Total</b>		<b>8,146</b>	<b>4,104</b>	<b>4,042</b>

Source: VTA, 2014.

# Memorandum

**Table 6: Total Rapid Boardings – Concept 4 - 2020 Truncated (SB-RC)**

Node	Stop Name	Total Boardings	Peak Boardings	Off-Peak Boardings
25264	ECR/Sneath	430	206	224
25262	San Bruno Ave	330	169	161
55261	ECR/Jenevein	158	86	72
12172	ECR/Park Pl	163	82	81
12523	ECR/Silva	94	42	52
25311	Millbrae Intermodal	668	323	345
12165	ECR/Trousdale	40	20	20
25323	ECR/Broadway	192	84	108
12503	ECR/Burlingame	94	37	57
25194	ECR/Poplar	204	91	113
11684	ECR/El Cerrito	181	89	92
11679	ECR/W. 2nd	292	126	166
55028	ECR/4th San Mateo	88	36	52
55562	ECR/17th	246	123	123
12391	ECR/20th	202	108	94
25144	ECR/25th	139	57	82
25146	ECR/Hillsdale Blvd	594	309	285
25147	ECR/41st	122	57	65
24966	ECR/Ralston Ave	216	115	101
24945	ECR/San Carlos Caltrain	197	106	91
24956	ECR/Brittan	42	21	21
24915	ECR/Edgewood	74	40	34
24914	ECR/James	0	0	0
12566	Redwood City Caltrain	254	115	139
24905	ECR/Lincoln	0	0	0
12528	ECR/Center Street	0	0	0
24785	ECR/5th	0	0	0
12357	ECR/Atherton	0	0	0
24763	Menlo Park Caltrain/Oakgrove	0	0	0
8916	Palo Alto Caltrain	0	0	0
<b>Total</b>		<b>5,020</b>	<b>2,442</b>	<b>2,578</b>

# Memorandum

**Table 7: Total Hybrid Boardings – Concept 5 - 2020 Hybrid A (76 Stops - 12 Min)**

Node	Stop Name	Total Boardings	Peak Boardings	Off-Peak Boardings
25492	Daly City BART	830	490	340
25481	John Daly/Mission Blvd	663	382	281
25485	ECR/School Street	501	310	191
25472		535	262	273
11744	Colma BART	361	162	199
55336	SSF BART	479	248	231
25395	ECR/Westborough	183	94	89
25256	ECR/Orange	518	236	282
25370	ECR/Brentwood	609	282	327
25264	San Bruno/Sneath	780	359	421
55292	Hwy 380	148	78	70
25262	San Bruno Ave	723	385	338
12303	Angus Ave	110	46	64
55261	ECR/Jenevein	362	193	169
12065	Crystal Springs	173	99	74
12520	San Felipe	72	29	43
12172	ECR/Park Pl	189	106	83
12517	Capuchino	133	57	76
11691	Center/Millbrae	218	100	118
12523	Meadow Glen	338	153	185
25309	Silva / Taylor	111	43	68
25311	Millbrae BART	1,076	532	544
25315	Murchison	176	91	85
25205	Trousdale	22	7	15
11688	Ray	43	20	23
25324	Adeline	123	56	67
11649	Hillside / Easton	235	106	129
25323	Broadway	134	59	75
12508	Sanchez	122	57	65
25016	Arc Way	57	25	32
11677	Oak Grove / Bellevue	450	200	250
12503	Burlingame Ave	72	31	41
25195	Howard	127	54	73
12500	Warren	1	1	-1
12457	W. Bellevue	312	137	175
25194	W Poplar	222	97	125
11684	El Cerrito	338	162	176
11679	W 2nd	580	248	332
55028	W 4th	54	24	30
55175	W 9th	84	32	52
31814	Hobart	100	45	55
55563		143	80	63
55562	W 17th	376	178	198
12391	W 20th	372	194	178
25144	W 25th	166	65	101
31823	W 27th	142	58	85
55378	W 31st	319	125	195
25146	Hillsdale	799	455	344
12499	37 <sup>th</sup> / 39 <sup>th</sup>	241	102	139
25147	41 <sup>st</sup>	154	72	82

# Memorandum

Node	Stop Name	Total Boardings	Peak Boardings	Off-Peak Boardings
12378	43 <sup>rd</sup>	139	63	76
31788	Davey Glen	14	7	7
24966	Ralston	428	221	207
12032	Harbor Blvd	205	91	114
12527	5th Ave/Belmont	54	20	34
12302	Hull Drive	47	19	28
24945	San Carlos Ave / Arroyo Ave	530	267	263
24956	Brittan	16	6	10
55426	Belmont	267	140	127
25093	Eaton	66	33	33
12367	Edgewood	84	55	29
24915	Hopkins	403	245	158
11859	Brewster	198	93	105
24914	RWC Caltrain	722	475	247
31804	Jefferson	49	21	28
24909	Lincoln	275	151	124
24907	Oak Grove	71	32	39
24905	ECR/Pine	225	141	84
55656		230	118	112
24791		65	40	25
12528	ECR/Center Street	334	169	165
24785	ECR/5th	157	85	72
12357	Atherton	38	14	24
24763	Menlo Park Caltrain	355	154	201
8916	Palo Alto Caltrain	1,164	612	552
<b>Total</b>		<b>21,195</b>	<b>10,697</b>	<b>10,498</b>

Source: VTA, 2014.

# Memorandum

**Table 8: Total Hybrid Boardings – Concept 6 - 2020 Hybrid B (50 Stops - 12 Min)**

Node	Stop Name	Total Boardings	Peak Boardings	Off-Peak Boardings
25492	Daly City BART	1,017	600	417
25485	ECR/School Street	404	245	159
25472		1,110	572	538
11744	Colma BART	1,044	536	508
55336	SSF BART	504	253	251
25395	ECR/Westborough	235	119	116
25256	ECR/Orange	466	205	261
25370	ECR/Brentwood	709	335	374
25264	San Bruno/Sneath	867	392	475
25262	San Bruno Ave	859	466	394
12303	Angus Ave	117	48	70
12065	Crystal Springs	424	230	194
12172	ECR/Park Pl	520	260	260
12523	Meadow Glen	428	199	229
25309	Silva	126	50	77
25311	Millbrae BART	1,085	535	550
25315	Murchison	186	97	90
25205	Trousdale	58	24	34
25323	Broadway	538	253	285
12503	Burlingame Ave	486	218	268
25195	Howard	144	63	81
25194	W Poplar	509	228.5	281
11684	El Cerrito	410	195	215
11679	W 2nd	568	246	322
55175	W 9th	219	101	118
31814	Hobart	130	63	67
55562	W 17th	447	209	238
12391	W 20th	395	201	194
25144	W 25th	312	125.5	186
55378	W 31st	367	141	226
25146	Hillsdale	852	485	368
12499	37th	254	110	144
25147	41st	251	115	137
24966	Ralston	479	238.5	240
12032	Harbor Blvd	215	95	120
24945	San Carlos Ave	349	178	171
24956	Brittan	250	138	112
24915	Hopkins	465	279	187
24914	RWC Caltrain	914	563	351
31804	Jefferson	71	31	40
24909	Lincoln	181	106	75
24906	Center	173	103	70
24905	ECR/Pine	215	131	84
24791		237	116	122
12528	ECR/Center Street	352	177	175
24785	ECR/5th	222	131	91
24763	Menlo Park Caltrain	677	380	298
8916	Palo Alto Caltrain	1,454	807	647
<b>Total</b>		<b>22,281</b>	<b>11,382</b>	<b>10,899</b>

Source: VTA, 2014.

# Memorandum

**Table 9: Total Rapid Boardings – Concept 7 - 2020 Peak Rapid**

Node	Stop Name	Total Boardings	Peak Boardings	Off-Peak Boardings
25492	Daly City BART	293	293	
25481	John Daly/Mission Blvd	259	259	
25485	ECR/School Street/Mission	181	181	
11744	Colma BART	86	86	
55336	ECR/McClellan	119	119	
25395	ECR/Arroyo	62	62	
25256	ECR/Orange	100	100	
25370	ECR/Brentwood	169	169	
25264	ECR/Sneath	220	220	
25262	San Bruno Ave	270	270	
55261	ECR/Jenevein	121	121	
12172	ECR/Park Pl	114	114	
12523	ECR/Silva	59	59	
25311	Millbrae Intermodal	353	353	
12165	ECR/Trousdale	33	33	
25323	ECR/Broadway	106	106	
12503	ECR/Burlingame	46	46	
25194	ECR/Poplar	112	112	
11684	ECR/El Cerrito	105	105	
11679	ECR/W. 2nd	150	150	
55028	ECR/4th San Mateo	48	48	
55562	ECR/17th	147	147	
12391	ECR/20th	121	121	
25144	ECR/25th	69	69	
25146	ECR/Hillsdale Blvd	398	398	
25147	ECR/41st	65	65	
24966	ECR/Ralston Ave	147	147	
24945	ECR/San Carlos Caltrain	152	152	
24956	ECR/Brittan	45	45	
24915	ECR/Edgewood	57	57	
24914	ECR/James	0	0	
12566	Redwood City Caltrain	303	303	
24905	ECR/Lincoln	215	215	
12528	ECR/Center Street	96	96	
24785	ECR/5th	78	78	
12357	ECR/Atherton	3	3	
24763	Menlo Park Caltrain/Oakgrove	105	105	
8916	Palo Alto Caltrain	454	454	
<b>Total</b>		<b>5,461</b>	<b>5,461</b>	

Source: VTA, 2014.

# Memorandum

**Table 10: Total Hybrid Boardings – Concept 8 - 2020 Hybrid A (76 Stops - 10 Min)**

Node	Stop Name	Total Boardings	Peak Boardings	Off-Peak Boardings
25492	Daly City BART	706	410	297
25481	John Daly/Mission Blvd	604	348	256
25485	ECR/School Street	399	243	156
25472		468	226	242
11744	Colma BART	311	136	175
55336	SSF BART	428	214	215
25395	ECR/Westborough	159	79	80
25256	ECR/Orange	487	221	266
25370	ECR/Brentwood	569	264	306
25264	San Bruno/Sneath	721	332	389
55292	Hwy 380	141	73	68
25262	San Bruno Ave	674	363	311
12303	Angus Ave	102	43	60
55261	ECR/Jenevein	336	182	155
12065	Crystal Springs	167	97	71
12520	San Felipe	69	27	42
12172	ECR/Park Pl	182	102	80
12517	Capuchino	128	55	73
11691	Center/Millbrae	211	96	115
12523	Meadow Glen	320	145	176
25309	Silva / Taylor	105	41	64
25311	Millbrae BART	1,004	496	508
25315	Murchison	167	87	80
25205	Trousdale	21	7	14
11688	Ray	42	20	22
25324	Adeline	117	53	65
11649	Hillside / Easton	218	99	119
25323	Broadway	125	55	70
12508	Sanchez	114	53	61
25016	Arc Way	51	23	28
11677	Oak Grove / Bellevue	414	184	230
12503	Burlingame Ave	68	29	39
25195	Howard	119	51	68
12500	Warren	1	1	0
12457	W. Bellevue	298	131	168
25194	W Poplar	205	90	115
11684	El Cerrito	314	149	165
11679	W 2nd	529	223	306
55028	W 4th	51	23	28
55175	W 9th	80	31	49
31814	Hobart	92	42	51
55563		135	76	60
55562	W 17th	352	167	185
12391	W 20th	349	177	172
25144	W 25th	156	62	95
31823	W 27th	134	54	80
55378	W 31st	298	118	180
25146	Hillsdale	730	414	317
12499	37th	229	97	132
	39th			



# Memorandum

Node	Stop Name	Total Boardings	Peak Boardings	Off-Peak Boardings
25147	41st	149	70	79
12378	43rd	130	58	72
31788	Davey Glen	12	6	6
24966	Ralston	396	203	193
12032	Harbor Blvd	193	85	108
12527	5th Ave/Belmont	51	19	32
12302	Hull Drive	45	18	27
24945	San Carlos Ave / Arroyo Ave	498	248	250
24956	Brittan	16	6	10
55426	Belmont	255	134	121
25093	Eaton	64	32	32
12367	Edgewood	80	53	27
24915	Hopkins	386	237	149
11859	Brewster	169	80	90
24914	RWC Caltrain	646	414	232
31804	Jefferson	45	19	27
24909	Lincoln	205	99	106
24907	Oak Grove Center	66	30	36
24905	ECR/Pine	216	136	81
55656		220	113	107
24791		63	39	24
12528	ECR/Center Street	320	163	158
24785	ECR/5th	144	79	65
12357	Atherton	35	13	22
24763	Menlo Park Caltrain	318	136	183
8916	Palo Alto Caltrain	1,072	562	510
<b>Total</b>		<b>19,472</b>	<b>9,740</b>	<b>9732</b>

Source: VTA, 2014.

# Memorandum

**Table 11: Total Hybrid Boardings – Concept 9 - 2020 Hybrid B (50 Stops - 7.5 Min)**

Node	Stop Name	Total Boardings	Peak Boardings	Off-Peak Boardings
25492	Daly City BART	808	473	336
25485	ECR/School Street	280	171	109
25472		378	183	195
11744	Colma BART	337	165	173
55336	SSF BART	377	196	182
25395	ECR/Westborough	164	87	77
25256	ECR/Orange	416	183	233
25370	ECR/Brentwood	599	285	314
25264	San Bruno/Sneath	743	346	397
25262	San Bruno Ave	745	406	339
12303	Angus Ave	104	43	61
12065	Crystal Springs	381	211	170
12172	ECR/Park Pl	483	247	236
12523	Meadow Glen	382	180	203
25309	Silva	111	43	68
25311	Millbrae BART	944	464	480
25315	Murchison	170	90	80
25205	Trousdale	53	22	31
25323	Broadway	475	226	250
12503	Burlingame Ave	426	196	230
25195	Howard	125	54	71
25194	W Poplar	458	206	252
11684	El Cerrito	339	164	175
11679	W 2nd	476	203	273
55175	W 9th	192	88	104
31814	Hobart	107	51	56
55562	W 17th	393	187	207
12391	W 20th	363	189	175
25144	W 25th	264	110	155
55378	W 31st	305	120	186
25146	Hillsdale	707	412	296
12499	37th	218	91	127
25147	41st	213	97	116
24966	Ralston	412	207	206
12032	Harbor Blvd	182	81	101
24945	San Carlos Ave	296	148	148
24956	Brittan	222	123	99
24915	Hopkins	408	245	163
24914	RWC Caltrain	882	462	421
31804	Jefferson	52	21	31
24909	Lincoln	125	61	64
24906	Center	156	94	62
24905	ECR/Pine	198	123	75
24791		213	105	109
12528	ECR/Center Street	327	167	160
24785	ECR/5th	150	82	68
24763	Menlo Park Caltrain	381	176	206
8916	Palo Alto Caltrain	1,103	585	518
<b>Total</b>		<b>17,630</b>	<b>8,855</b>	<b>8,775</b>

Source: VTA, 2014.

# Memorandum

**Table 12: Total Rapid Boardings – Concept 10 - 2040 BRT**

Node	Stop Name	Total Boardings	Peak Boardings	Off-Peak Boardings
25492	Daly City BART	1,090	657	434
25481	John Daly/Mission Blvd	1,056	661	395
25485	ECR/School Street/Mission	438	259	179
11744	Colma BART	287	156	131
55336	ECR/McClellan	193	127	66
25395	ECR/Arroyo	241	130	111
25256	ECR/Orange	329	166	163
25370	ECR/Brentwood	607	303	305
25264	ECR/Sneath	1,387	721	667
25262	San Bruno Ave	1,136	634	503
55261	ECR/Jenevein	455	267	188
12172	ECR/Park Pl	542	292	250
12523	ECR/Silva	0	0	0
25311	Millbrae Intermodal	779	359	420
12165	ECR/Trousdale	359	248	111
25323	ECR/Broadway	464	251	214
12503	ECR/Burlingame	156	63	93
25194	ECR/Poplar	391	188	203
11684	ECR/El Cerrito	377	198	179
11679	ECR/W. 2nd	621	272	349
55028	ECR/4th San Mateo	229	102	127
55562	ECR/17th	631	335	297
12391	ECR/20th	545	302	244
25144	ECR/25th	334	152	182
25146	ECR/Hillsdale Blvd	1,507	855	652
25147	ECR/41st	233	107	127
24966	ECR/Ralston Ave	579	320	259
24945	ECR/San Carlos Caltrain	658	367	291
24956	ECR/Brittan	147	80	67
24915	ECR/Edgewood	409	249	161
24914	ECR/James	0	0	0
12566	Redwood City Caltrain	1,507	826	681
24905	ECR/Lincoln	738	433	305
12528	ECR/Center Street	388	207	181
24785	ECR/5th	253	135	118
12357	ECR/Atherton	13	6	7
24763	Menlo Park Caltrain/Oakgrove	284	145	139
8916	Palo Alto Caltrain	1,327	771	557
<b>Total</b>		<b>20,681</b>	<b>11,333</b>	<b>9,349</b>

Source: VTA, 2014.