

Forecast Demand Allocation Methodology

June 2010

Prepared for
Metropolitan Transportation Commission
Regional Airport System Plan Analysis Phase 2

Aviation System Consulting, LLC
805 Colusa Avenue
Berkeley, CA 94707-1838

Table of Contents

	Page
Table of Contents	ii
Introduction	1
Analysis Zones	2
Assignment of Air Passenger Trips to Zones	6
Forecast Demand by Analysis Zone	9
Demand Allocation to Airports and Rail Stations under Each Scenario	10
Summary and Conclusions	15
 Attachments	
A. Forecast Demand Assignment to Superdistricts and External Zones – 2007	A-1
B. Forecast Demand Assignment to Superdistricts and External Zones - 2020	B-1
C. Forecast Demand Assignment to Superdistricts and External Zones – 2035	C-1

Introduction

In order to analyze forecast future traffic levels at individual airports in the San Francisco Bay Area and the surrounding region as part of Phase 2 of the current Regional Airport System Plan Analysis update, it was necessary to define a methodology to allocate the forecast regional demand to each airport in the system and, in the case of system development scenarios involving diversion of air travel to high-speed rail, to high-speed rail stations. This technical memorandum documents the demand allocation methodology adopted and presents the resulting demand allocation for 2007, 2020 and 2035 for the Baseline and system development scenarios defined for the Target Analysis undertaken as part of the mid-point scenario screening in the study.

Although 2007 is considered the base year for both the demand forecasts and demand allocation and the actual airport passenger traffic counts are available for 2007, assigning those passenger trips to regional analysis zones requires the application of the demand allocation methodology because survey data on the distribution of the ground origins of air passenger trips is only available for earlier years, as discussed below. For this reason, even the base case distribution of regional air passenger trip ends is considered a demand allocation.

The allocation of forecast demand to airports and high-speed rail stations involved two steps: (1) distributing the actual or forecast total regional air passenger traffic to analysis zones; and (2) the allocation of the air passenger trips from each zone to the regional airports or stations. In order to keep the distinction between these two processes clear in the following discussion, the first steps is referred to as *assigning* the regional demand to analysis zones while the second step is referred to as *allocating* the resulting zonal demand to airports or rail stations. It should be noted that both steps involve assumptions, since there is only limited data on the past distribution of the ground origins of air passenger trips.

The primary purpose of assigning air passenger demand to regional analysis zones and then allocating the air passenger trips from each zone to airports and rail stations is to estimate the number of ground access and egress trips and the associated vehicle-miles of travel (VMT), emissions from the vehicles making those trips, and air passenger access and egress travel times, distances, and costs for use in the Target Analysis undertaken as part of the study. This requires data on the number of air passenger trips between each analysis zone and each airport or rail station. Therefore the demand allocation methodology addresses those air passenger trips that begin or end with a ground access or egress trip in the Bay Area or the larger surrounding

Northern California region. These passengers are referred to as origin and destination (O&D) passengers, as distinct from *connecting* passengers, who arrive and depart at the airport by air and only use the airport to change flights. Thus the total air passenger trips allocated to a given airport in the regional demand allocation analysis will not add up to the total passenger traffic at that airport, the difference being the connecting passengers.

Apart from the estimation of ground access and egress trips resulting from a given system development scenario, the distribution of regional air passenger demand by analysis zone is also needed to estimate the number of air passenger trips that might be attracted to air service at secondary airports within the region or improved air service at airports outside the region, since proximity to those airports is an important factor in determining how much of the regional demand might be attracted to each airport.

Although a given O&D passenger may begin the airport access trip for their departing flight at a different place from where they end the egress trip from their arriving flight (for example if a Bay Area resident begins their air trip from their workplace but on returning goes directly home), it is assumed for simplicity that in the aggregate the process is symmetrical and thus the analysis only considers ground access trips and doubles the resulting measures of ground travel.

The approach used to allocate air passenger trips to airports was based on calculating the number of forecast air passenger trips that are closest to each airport in the region. In the case of air passengers allocated to potential new secondary airports in the region, where the level of air service is likely to be quite limited, the number of forecast air passenger trips with trip ends closer to any given secondary airport was adjusted to reflect the likely potential air service at that airport.

Analysis Zones

An initial analysis was undertaken to determine the proportion of the regional air passenger demand that had (or will have) ground access trip ends closest to a given airport in 2006, 2020 and 2035. This analysis focused on domestic O&D air trips, since it is expected that the vast majority of the international O&D air trips would continue to use San Francisco International Airport.

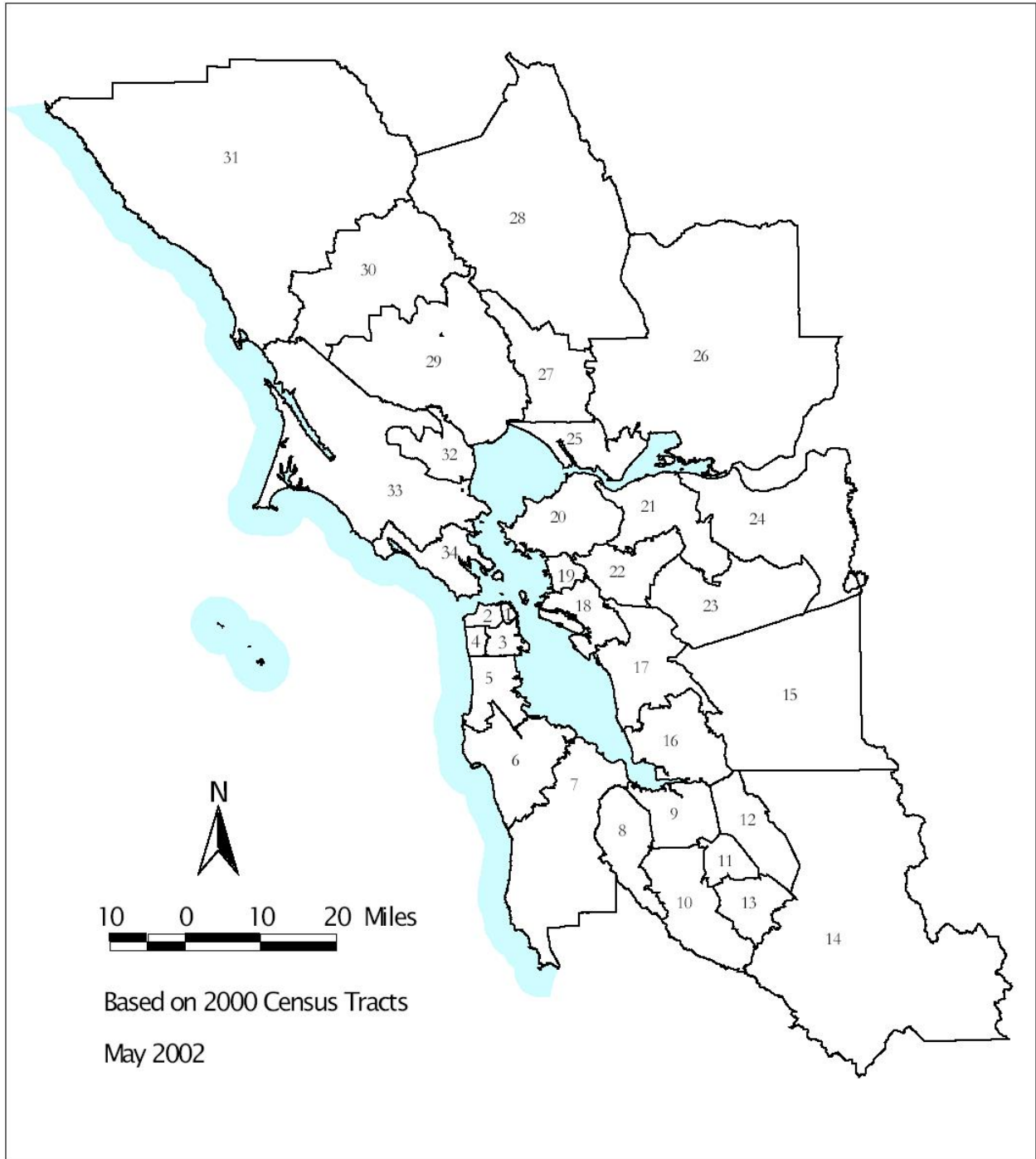
In order to determine the closest airport to each air passenger trip end, the region was divided into a system of analysis zones and the closest airport to each zone determined, as discussed below. All air passenger trips with trip ends in a given zone were assumed to have the same closest airport. For the initial demand allocation to the three primary commercial service airports, Oakland International Airport (OAK), San Francisco International Airport (SFO) and Mineta San José International Airport (SJC), the analysis zones were based on the 34 Metropolitan Transportation Commission (MTC) travel analysis superdistricts, as shown in Figure 1. The closest airport to each superdistrict was determined based on the average 2006 a.m. peak highway travel time from the zone to each airport. In most cases this can be easily determined by inspection. In a few cases where the average highway travel time from a given zone to two airports was fairly similar (less than 10 minutes), the air passenger trips with trip ends in the zone were divided equally between the two airports.

In the case of existing or potential new secondary airports within the region (termed the Internal Secondary Airports Scenario), the size of the superdistricts is too large for effective analysis, since some air passenger trips with trip ends in the superdistricts surrounding or near each secondary airport will be closer to the secondary airport, while others will be closer to one of the primary commercial service airports. Therefore service areas for the secondary airports were defined based on the 1,454 MTC travel analysis zones (TAZs) that are closer to the secondary airport than any of the primary commercial service airports.

For the purpose of this more detailed analysis, the closeness to each airport was based on the forecast TAZ to TAZ a.m. peak highway travel times for 2035 developed by the MTC regional travel demand analysis model using the *Projections 2007* regional socioeconomic forecasts prepared by the Association of Bay Area Governments (ABAG).¹

A significant number of air passenger trips using the three primary commercial service airports (about 9 percent of O&D trips) have trip ends outside the nine-county Bay Area. In order to account for these external trips, a set of external zones were defined, based on the counties surrounding the Bay Area and groups of counties further away, as shown in Table 1.

¹ Metropolitan Transportation Commission, *Superdistrict and County Summaries of ABAG's Projections 2007: 2000-2035 – Data Summary*, Oakland, California, August 2007.



Source: Metropolitan Transportation Commission

Figure 1. Bay Area Travel Analysis Superdistricts

Table 1. External Travel Analysis Zones

Zone	Name	Counties
111	Lake County	
112	Mendocino County	
113	Merced County	
114	Monterey County	
115	Sacramento County	
116	San Benito County	
117	San Joaquin County	
118	Santa Cruz County	
119	Stanislaus County	
120	Yolo County	
131	Northern California	Butte, Colusa, Del Norte, Glenn, Humboldt, Lassen, Modoc, Plumas, Shasta, Sutter, Tehama, Trinity, Yuba
132	Sierra	Alpine, Amador, Calaveras, El Dorado, Inyo, Mariposa, Mono, Nevada, Placer, Sierra, Tuolumne
133	Central Valley	Fresno, Kern, Kings, Madera, Tulare
134	Central Coast	San Luis Obispo, Santa Barbara
135	Southern California	Imperial, Los Angeles, Orange, Riverside, San Bernardino, San Diego, Ventura

A number of TAZs and external zones in the north and east of the region are closer to Sacramento International Airport (SMF) than to the various potential secondary airports. Since it is unlikely that the future air service at any of the secondary airports in the markets likely to be served from those airports would be better than the air service available at SMF in those markets, the service area for the secondary airports in the initial analysis excluded those zones (TAZs or external zones) that are closer to SMF. These service areas were subsequently reduced further, as discussed below.

Since the external zones are not part of the nine-county Bay Area, their highway network is not included in the MTC highway network data used to determine travel times and distances in the analysis. Therefore travel times and distances from each zone to the three primary Bay Area airports, and other Bay Area airports or planned high-speed rail stations where needed, were obtained from the online trip-planning tool Mapquest by selecting a representative city or town within each of the external zones as the trip origin.

Assignment of Regional Air Passenger Trips to Zones

It was assumed that the future distribution of regional air travel demand for each forecast year would vary from the 2007 baseline based on changes in the forecast regional distribution of population, households and income. In order to calculate the proportion of the forecast regional air travel demand in a given future year that have trip ends within a given analysis zone, trip generation models were developed that could forecast the number of air passenger trips from each analysis zone as a function of the zone socioeconomic characteristics.

Separate trip generation models were developed for O&D air trips in domestic and international markets. For the purpose of allocating forecast demand to internal secondary airports, an assignment of air trips to TAZs was only required for domestic air trips, since it was assumed that air service at the internal secondary airports would only be provided in a limited number of domestic markets. However, an assignment of forecast international air trips to TAZs was required to analyze the number of ground access trips to each airport under the various scenarios, since this analysis was performed at the TAZ level and the ground access trips to the three primary airports include international air trips. Although the majority of international air trips will continue to use SFO, there is already a small amount of international air service at OAK and SJC, and this is forecast to increase in the future (about a five-fold increase at each airport from 2007 to 2035, although both airports together will only account for about 7 percent of the total regional international passengers in 2035). Therefore an assignment of both domestic and international trips was performed at the TAZ level.

The trip generation model considered the following four market segments:

- Resident trips from home origins
- Resident trips from non-home origins
- Visitor trips from home origins
- Visitor trips from non-home origins

The first step in developing the trip generation procedure was to identify the distribution of domestic and international O&D air passenger trips by analysis zone in 2006. In the case of air passenger trips using OAK and SFO, this was obtained directly from the results of the MTC 2006 Airline Passenger Survey. However, SJC was not included in the 2006 survey and the most recent air passenger survey for SJC was performed for MTC in 2001/2002. It was assumed that the geographic distribution of trip ends of air passenger trips using SJC did not change

significantly from 2001/2002 to 2006, although of course the total number of such trips changed. The results of the air passenger surveys at each airport were factored up to the total number of domestic O&D passengers at each airport in 2006 in each of the four market segments and summed to give the regional total of air passenger trip ends in 2006 by market segment in each analysis zone.

A trip generation model for domestic home-origin resident trips was then estimated from the observed 2006 superdistrict trip ends and the 2006 superdistrict socioeconomic characteristics obtained from the MTC summary of *ABAG Projections 2007* by superdistrict cited above, giving the following relationship:

$$\text{Pax/Pop} = 5.651 - 156.1 / (\text{AHHI} - 10)$$

where Pax = Air passenger trips from zone
Pop = Zone population
AHHI = Average household income in zone (in thousand 1989 dollars²)

While the estimated model coefficients were statistically significant, the data showed a wide degree of scatter about the estimated relationship. Some of this scatter is due to limitations of the survey sample size as well as the procedure for combining the results from the three surveys, while the remainder of the scatter may be due to factors not included in the model. Further investigation of these possible factors was beyond the scope of the study. In order to reduce the effect of the scatter, an adjustment factor was computed for each superdistrict that corrected the model results to the observed (i.e. the survey) distribution of trip ends.

The trip generation model was then applied using the projected socioeconomic data for each superdistrict to calculate the number of resident home-origin trips in 2035 (or other future year) in each superdistrict. The total number of regional home-origin trips in 2035 was calculated from the forecast number of domestic resident O&D passengers, assuming that the percentage of resident trips with home origins remained unchanged from 2006. It was further assumed that the proportion of resident trips from external zones also remained unchanged from 2006. The resident home-origin trips from each of the 34 superdistricts projected by the trip generation model were then scaled to agree with the total number of resident home-origin trips forecast for the region.

² Note that ABAG reports household income in constant 2005 dollars in its reports on *Projections 2007*, but MTC converts these values to constant 1989 dollars for consistency with its travel demand models.

It was assumed that the geographic distribution of resident trips from non-home origins remained unchanged from 2006, since these trips are largely those originating from businesses, colleges, and similar locations and there is no basis for projecting how the distribution of such trip ends might change in the future.

The geographic distribution of home-origin visitor trips (i.e. visitors staying at the homes of residents of the region) was projected by applying the ratio of visitor home-origin trips to resident home-origin trips observed in 2006 for each superdistrict to the forecast number of resident home-origin trips by superdistrict in 2035. The resulting number of projected visitor home-origin trips was then scaled to agree with the regional total of such trips in the same way as for resident home-origin trips.

Finally, the number of visitor trips from non-home origins in each superdistrict was projected by assuming that the geographical distribution of such trips remained unchanged from 2006. These trips largely originate from hotels, with a smaller number from businesses and other types of locations, and as with resident non-home origin trips, there is no basis for projecting how the distribution of such trip ends might change in the future.

A similar process was followed to develop projections of air passenger trips by TAZ. The number of resident home-based trips in each TAZ was projected using the trip generation model with the projected population and average household income for the TAZ³ and the relevant superdistrict adjustment factor. An additional adjustment factor was calculated to ensure that the total projected trips for the TAZs in each superdistrict summed to the superdistrict total. The TAZ share of the superdistrict resident trips from non-home origins and visitor home-origin and non-home-origin trips was calculated for each TAZ from the 2006 and 2001/2002 survey data, and then used to distribute the forecast superdistrict trips to TAZs.

When the resident home-origin trip generation model was applied at the TAZ level, the average household income in some TAZs was low enough to give a negative value of trips per person for the zone. Therefore a minimum value of 0.2 air passenger trips per person was used for these zones. The adjustment factor for total superdistrict trips ensured that the effect of this was only to change the distribution of trips between TAZs within the superdistrict.

³ Obtained from an unpublished MTC data file allocating the ABAG *Projections 2007* socio-economic data to TAZs.

Since no socioeconomic projections were available for the external zones, the forecast trips from each external zone in 2035 were calculated assuming that each zone generated the same proportion of total regional resident and visitor trips as in 2006.

A similar process was followed for international trips. The corresponding trip generation model for international home-origin resident trips was estimated from the observed 2006 superdistrict trip ends and the 2006 superdistrict socioeconomic characteristics, giving the following relationship:

$$\text{Pax/Pop} = 0.96 - 35.1 / \text{AHHI}$$

where the variables were defined as in the model for domestic trips. Superdistrict adjustment factors were calculated as for domestic trips, and the allocation of the four market segments followed the same procedure as for domestic trips.

Forecast Demand by Analysis Zone

The results of the foregoing process for the Baseline Scenario Base Case Forecast are shown in the attachments for the MTC superdistricts and external zones. Attachment A presents the demand assignment for 2007, Attachment B presents the demand assignment for 2020, while Attachment C presents the demand assignment for 2035.

(Note: The corresponding demand assignment tables by TAZ each comprises 1,454 rows and are too lengthy to include.)

It should be noted that the apparent precision of the values for a given zone is a consequence of the allocation and expansion process, and should be interpreted with caution. The accuracy of the estimated assignment of annual air passenger trips to zones is constrained by the sample size of the air passenger survey data upon which the assignment procedure is based. The fact that some zones have no trips assigned to them in a particular sub-category does not mean that in reality there would be no such trips from that zone, only that there were none reported in the air passenger survey. Similarly, some zones may have more trips assigned to them than others only because there happened to be more survey responses from those zones, or the air parties from those zones in the survey happened to have more passengers in them, not because in reality those zones generate more air passenger trips.

The expansion factor from survey responses to annual air passenger trips varies somewhat by category of trip from about 3,200 for visitor domestic trips to about 5,400 for

resident international trips, with an overall expansion factor across all trip types of about 3,800. Thus the estimated number of annual trips from a given zone could easily vary from the actual number by over 11,000 trips (equivalent to three survey responses with an average air party size).

Demand Allocation to Airports and Rail Stations under Each Analysis Scenario

Once the actual or forecast regional demand in a given year was assigned to each of the analysis zones, it was then necessary to allocate the passenger demand from each zone to the regional airports considered in each Target Analysis scenario, and in the case of the High-Speed Rail Scenario to allocate the air passenger demand diverted to high-speed rail to the relevant high-speed rail stations.

Baseline Scenario

The allocation of the demand from a given zone to each airport in the Baseline Scenario was performed as follows:

1. The number of passenger trips from each superdistrict and external zone using a given airport was initially calculated from the observed share of passenger trips using that airport in the most recent air passenger surveys. Since the surveys at each airport used different sampling rates and were performed in different years, the survey results from each airport were factored up to the total O&D traffic at that airport in 2006 before calculating the airport shares. Separate airport shares were calculated for the following four trip types:
 - Resident domestic trips
 - Visitor domestic trips
 - Resident international trips
 - Visitor international trips

The same airport shares for a given trip type were used for trips from home origins and other origins since the survey sample size was not large enough to support separate airport shares for the different origin types and

it seems reasonable to assume that the airport choice of a passenger of a given trip type from a given zone would not be greatly influenced by the type of the trip origin.

2. The resulting number of passenger trips from each zone to each airport by trip type and trip origin type (home origins and other origins) was then factored to give the correct total number of O&D passengers forecast for that airport, with separate adjustment factors calculated for domestic and international trips (the demand forecasts did not distinguish between residents trips and visitor trips).
3. The passenger trips from each TAZ to each airport for a given trip type and trip origin type were then calculated by assuming that the TAZ share of the relevant superdistrict total number of trips to that airport remained constant.

This approach was then tailored for each of the other scenarios to reflect the factors specific to that scenario, as discussed in the following sections.

Demand Redistribution Scenario

This scenario assumes that some demand is redistributed from SFO to OAK and SJC. The forecast projections of the change in air passenger traffic at each airport for this scenario did not consider where in the region those passenger trips originated or whether the diverted trips were drawn proportionately from each type of trip or trip origin. Therefore it was assumed that the resulting passenger trips at OAK and SJC were distributed across the analysis zones in proportion to the distribution for the Baseline Scenario. This implicitly assumes that trips from analysis zones that had a higher use of OAK or SJC in the Baseline Scenario were more likely to be diverted to those airports in the Redistribution Scenario, which seems intuitively reasonable.

Internal Secondary Airports Scenario

This scenario assumes that air service would be introduced or expanded at three secondary airports in the region: Buchanan Field in Concord, Charles M. Schultz Sonoma County Airport, and a joint use airport at Travis Air Force Base (AFB) in Solano County. At present commercial air service is only available at Sonoma County Airport. As part of preparing

regional demand forecasts for each of the Target Analysis scenarios, projections were made of the number of air passenger trips attracted to each of the internal secondary airports considered in this scenario from each of the three primary Bay Area airports, as well as trips that would use SMF in the Baseline Scenario that would be attracted to air service at Travis AFB (termed *recaptured trips*).

Passenger diversion for the internal secondary airports was based on an analysis of potential high-density short-haul markets and regional airline connecting hubs that could support future service based on forecast passenger demand. Future catchment area demand for the internal secondary airports was based on the Base Case forecast of passengers in ground zones with a drive time advantage of at least 30 minutes over the closest primary Bay Area airport or SMF. The forecasts of potential air passengers at each secondary airport were then translated into passenger diversion from the primary airports based on current primary airport usage patterns.

The demand allocation for the internal secondary airports scenario involved three steps.

1. The catchment area for each secondary airport was defined in terms of the TAZs at least 30 minutes closer to the secondary airport than any of the primary airports or SMF and closer to the secondary airport in question than to any other secondary airport. In addition, the catchment area for Sonoma County Airport includes the two external zones (Lake County and Mendocino County) that are closer to that airport than any primary or other secondary airport. The travel times to an airport from a given zone were based on the forecast TAZ to TAZ a.m. peak highway travel times for 2035 developed by the MTC regional travel demand analysis model, as discussed above. The total number of domestic air passenger trips from each catchment area to each of the primary airports in the Baseline Scenario was then calculated and the diversion rate for each primary airport determined from the forecast number of domestic air passenger trips diverted from that airport to the relevant secondary airport. It was assumed in the absence of any more detailed analysis that the diversion rate for each catchment area was the same for all TAZs within the

catchment area. It was further assumed that the same diversion rate would apply to all types of domestic trips.

2. The residual trips at the three primary airports were distributed across the analysis zones by adjusting the distribution in the Baseline Scenario by the number of diverted trips from each TAZ or external zone, calculated using the appropriate diversion rate.
3. The number of trips from each analysis zone to the relevant secondary airport was then calculated by applying the appropriate diversion rate to the number of trips from the zone to each primary airport in the Baseline Scenario. The diverted trips were then summed across the three primary airports.

No demand allocation was performed for the trips from SMF recaptured by Travis AFB since these trips were not counted in the Baseline Scenario.

External Airports Scenario

This scenario assumes that air service improves at three airports outside the region, Sacramento International Airport (SMF), Stockton Metropolitan Airport (SCK), and Monterey Peninsula Airport (MRJ), and reduces the number of trips from the external zones served by those airports that use the Bay Area airports. As part of preparing regional demand forecasts for each of the Target Analysis scenarios, projections were made of the number of air passenger trips using each of the three primary Bay Area airports in the Baseline Scenario that would be recaptured by each of the three external airports.

The estimates of passenger recapture for the external airports were based on data and studies collected from each of the external airports. The airports provided a range of data and studies including market demand studies, passenger leakage analyses, air passenger surveys, airport forecasts, and air service development targets. These data provided the basis for forecasts of new nonstop services at the external airports and estimates of how many passengers the new services could recapture from the primary Bay Area airports.

It could be expected that the passengers recaptured by the external airports would have trip origins in the external zones served by those airports, and thus would simply reduce the

number of trips from those zones to each airport. However, the forecasts of passengers recaptured from OAK by SMF exceeded the number of trips to OAK from the external zones served by SMF, while the forecasts of passengers recaptured from OAK by MRY accounted for almost all the trips to OAK from the external zones served by MRY, which seems unlikely. Therefore it was assumed that the new services at SMF would draw some trips from the Solano County superdistrict closest to SMF (superdistrict 26) and the new services at MRY would draw some trips from the southernmost Santa Clara County superdistrict (superdistrict 14).

Using the forecast number of recaptured passengers, recapture rates were calculated from the total number of domestic passenger trips from the assumed service area for each external airport to each of the Bay Area primary airports in the Baseline Scenario. In the absence of any more detailed analysis, the same recapture rates were applied to all trip types and each analysis zone in the assumed service area. These recapture rates were then used to reduce the number of domestic passenger trips to each primary Bay Area airport from each external zone (or TAZ within the two superdistricts assumed to form part of the service areas for SMF and MRY respectively in the case of OAK).

High-Speed Rail Scenario

This scenario assumes that some of the air passenger demand in the Baseline Scenario would be diverted to the planned California High-Speed Rail (HSR) System. As part of preparing regional demand forecasts for each of the Target Analysis scenarios, projections were made of the number of air passenger trips using each of the three primary Bay Area airports in the Baseline Scenario that would be diverted to the high-speed rail service. These projections were based on the regional-level ridership forecasts prepared for the California High-Speed Rail Authority and assumed that the diversion rate of air passenger trips using OAK in the Baseline Scenario would be only 75 percent of that of air passenger trips using SFO and SJC, due to the greater accessibility of the high-speed rail stations for the majority of passengers using SFO and SJC compared to the majority of passengers using OAK.

The approach to the demand allocation for the HSR Scenario follows that for the Internal Secondary Airports Scenario. Diversion rates of domestic air passenger trips to HSR were calculated for each airport and then used to reduce the number of air passenger trips from each analysis zone to each airport from the levels in the Baseline Scenario. In the absence of more

detailed analysis, the same diversion rate was applied to all types of domestic trips and all analysis zones for each airport.

The number of passengers diverted from each analysis zone to each HSR station was then calculated by assigning each TAZ or external zone to the closest HSR station, where the distance from a given zone to each HSR station was based on the MTC highway network distance for free-flow conditions in 2000. The number of trips from each analysis zone to each airport that were projected to be diverted to HSR were then allocated to the closest HSR station and the total number of trips from each zone to each station summed across the three airports.

It should be noted that this allocation process results in a varying overall diversion rate for each zone since the diversion rates for trips from the same zone to each airport are different, as are the proportions of trips from each zone using each airport. This is not unreasonable, given the assumptions of the analysis, since the relative accessibilities of the three airports and the high-speed rail stations vary for each zone, as do the proportions of the trips from a given zone to each airport that are in markets that would be served by the HSR system (since the share of total domestic O&D trips at each airport that are in markets served by the HSR system are different). A more detailed analysis would need to be based on a zone-by-zone analysis of expected diversion rates, which was considered to be beyond the scope of the study.

New Air Traffic Control Technologies and Demand Management Scenarios

Neither of these two scenarios involves any redistribution of demand between the three primary airports, and so the demand allocation is the same as for the Baseline Scenario.

Summary and Conclusions

The forecast demand allocation methodology adopted for the Regional Airport System Plan Analysis update is based on the use of a trip generation model for resident home-origin trips that expresses the number of annual air passenger trips from a given zone as a function of the zonal population and average household income in the zone. Visitor home-origin trips are then projected based on the observed ratio of visitor home-origin trips to resident home-origin trips in the most recent air passenger surveys. Resident and visitor air passenger trips from non-home origins were assumed to account for the same proportion of total regional resident to visitor trips,

with the same geographical distribution in the region, as observed in the most recent air passengers surveys.

Once the forecast regional air passenger demand has been distributed to analysis zones, the demand from each zone was then allocated to each of the regional airports on the basis of the current (2006) pattern of airport use and the proximity of the zone to each of the airports based on average highway travel times, with appropriate adjustments for differences in air service in the case of the internal secondary airports.

Although the forecast demand allocation methodology can account for future changes in the regional distribution of population and household incomes on air passenger trips from home origins, it assumes that the regional geographical distribution of trips from non-home origins remains unchanged over time. This assumption should be examined and refined if necessary as part of future work.

The proposed approach to calculating the future traffic at each airport for each of the airport system development scenarios, particularly the Internal Secondary Airports Scenario, (and the air trips diverted to high-speed rail at each rail station for the High-Speed Rail Scenario) also assumes that the regional geographical distribution of air passenger trips is the same for all air markets. This assumption should also be examined and refined if necessary as part of future work.

Attachment A

Forecast Demand Assignment to Superdistricts and External Zones

Baseline Scenario Base Case Forecast – 2007

Superdistrict	Domestic Trips		International Trips		Total
	Resident	Visitor	Resident	Visitor	
1	1,072,549	5,998,173	118,630	1,319,707	8,509,058
2	1,042,961	963,900	194,630	107,811	2,309,302
3	1,122,638	419,855	123,494	62,853	1,728,839
4	487,578	147,248	91,000	13,426	739,253
5	803,441	777,555	116,727	257,855	1,955,578
6	844,752	727,471	162,739	86,241	1,821,203
7	644,497	455,542	112,242	43,358	1,255,640
8	951,567	707,259	190,158	71,698	1,920,681
9	1,078,188	937,478	248,889	95,767	2,360,322
10	617,310	372,182	158,930	51,485	1,199,908
11	885,145	1,041,910	94,493	58,289	2,079,836
12	382,350	185,474	144,373	24,939	737,135
13	700,355	227,243	92,069	27,916	1,047,583
14	279,661	257,730	34,006	13,917	585,315
15	766,750	526,158	68,551	14,806	1,376,265
16	621,671	425,858	178,504	46,061	1,272,095
17	588,935	315,906	157,028	29,649	1,091,517
18	1,497,138	1,249,305	169,588	40,704	2,956,735
19	966,677	576,790	111,915	89,528	1,744,910
20	422,953	187,672	65,654	7,145	683,424
21	508,103	311,312	71,583	23,100	914,097
22	613,603	324,102	125,559	44,115	1,107,379
23	459,643	212,312	32,705	17,649	722,309
24	359,698	117,642	82,413	1,056	560,809
25	263,206	98,509	39,923	59,050	460,689
26	156,097	74,013	41,295	6,936	278,341
27	146,607	247,123	27,095	32,096	452,921
28	66,501	200,040	53,720	24,287	344,548
29	394,382	286,014	59,451	17,591	757,438
30	489,016	307,462	70,427	10,624	877,530
31	133,585	124,941	21,771	0	280,296
32	180,152	63,848	21,565	3,381	268,945
33	366,135	266,510	37,583	20,438	690,666
34	354,882	256,524	53,244	3,339	667,989
Total Bay Area	20,268,725	19,391,063	3,371,952	2,726,815	45,758,555
External Zones	1,879,911	1,555,985	847,348	159,962	4,443,205
Total	22,148,636	20,947,048	4,219,299	2,886,777	50,201,760

Forecast Demand Assignment to Superdistricts and External Zones (cont.)

Baseline Scenario Base Case Forecast – 2007

External Zone		Domestic Trips		International Trips		Total
		Resident	Visitor	Resident	Visitor	
111	Lake County	21,308	15,732	27,114	7,209	71,363
112	Mendocino County	107,918	51,908	8,061	0	167,886
113	Merced County	42,596	20,047	0	527	63,170
114	Monterey County	252,024	509,917	43,797	62,382	868,120
115	Sacramento County	205,199	104,408	302,475	39,775	651,858
116	San Benito County	51,465	24,646	12,100	1,866	90,077
117	San Joaquin County	199,700	79,218	118,538	17,516	414,972
118	Santa Cruz County	514,916	353,276	65,907	18,718	952,817
119	Stanislaus County	171,718	91,854	90,155	2,392	356,120
120	Yolo County	0	5,514	554	0	6,068
131	Northern California	65,751	25,787	43,969	0	135,508
132	Sierra	154,804	87,941	104,427	3,973	351,145
133	Central Valley	55,582	70,237	27,481	0	153,300
134	Central Coast	25,285	25,283	1,108	0	51,676
135	Southern California	11,643	90,218	1,662	5,603	109,126
Total		1,879,911	1,555,985	847,348	159,962	4,443,205

Domestic Trips

Baseline Scenario Base Case Forecast – 2007

Superdistrict	Resident Trips		Visitor Trips		Total
	Home Origins	Other Origins	Home Origins	Other Origins	
1	472,459	600,089	295,734	5,702,439	7,070,722
2	963,646	79,314	418,718	545,182	2,006,861
3	979,011	143,627	322,554	97,301	1,542,493
4	414,128	73,450	119,853	27,395	634,826
5	671,854	131,586	172,060	605,495	1,580,996
6	760,958	83,794	267,521	459,951	1,572,223
7	577,770	66,727	213,009	242,533	1,100,040
8	833,352	118,216	291,324	415,935	1,658,826
9	725,739	352,450	261,545	675,933	2,015,666
10	559,040	58,270	230,872	141,310	989,493
11	642,535	242,609	345,163	696,747	1,927,054
12	300,152	82,198	117,015	68,459	567,824
13	631,253	69,102	172,313	54,930	927,598
14	218,049	61,612	129,470	128,261	537,391
15	682,692	84,058	216,314	309,844	1,292,907
16	553,005	68,666	245,617	180,241	1,047,529
17	528,090	60,845	168,304	147,602	904,840
18	1,151,823	345,315	438,729	810,577	2,746,443
19	831,661	135,016	257,651	319,139	1,543,467
20	390,495	32,458	82,467	105,204	610,625
21	467,948	40,154	126,820	184,492	819,415
22	525,599	88,004	183,540	140,562	937,705
23	434,267	25,376	95,827	116,486	671,955
24	341,794	17,905	95,540	22,102	477,340
25	236,154	27,052	57,410	41,099	361,716
26	136,857	19,239	30,458	43,555	230,110
27	137,236	9,371	48,712	198,411	393,731
28	62,653	3,848	28,034	172,006	266,541
29	347,867	46,515	117,621	168,393	680,396
30	419,414	69,602	95,775	211,687	796,479
31	118,193	15,391	62,689	62,252	258,525
32	151,541	28,611	37,182	26,666	244,000
33	310,249	55,886	127,848	138,662	632,646
34	330,120	24,763	121,040	135,484	611,406
Total Bay Area	16,907,603	3,361,122	5,994,727	13,396,336	39,659,788
External Zones	1,479,028	400,883	716,327	839,658	3,435,896
Total	18,386,631	3,762,005	6,711,054	14,235,994	43,095,684

Domestic Trips (cont.)

Baseline Scenario Base Case Forecast – 2007

External Zones		Resident Trips		Visitor Trips		Total
		Home Origins	Other Origins	Home Origins	Other Origins	
111	Lake County	17,460	3,848	2,522	13,209	37,040
112	Mendocino County	89,175	18,742	36,270	15,638	159,826
113	Merced County	33,225	9,371	15,684	4,363	62,643
114	Monterey County	211,744	40,280	165,153	344,764	761,941
115	Sacramento County	135,256	69,943	38,717	65,691	309,607
116	San Benito County	49,067	2,398	24,646	0	76,111
117	San Joaquin County	186,481	13,219	45,459	33,759	278,918
118	Santa Cruz County	470,994	43,922	196,210	157,065	868,192
119	Stanislaus County	133,737	37,982	55,064	36,790	263,572
120	Yolo County	0	0	0	5,514	5,514
131	Northern California	16,723	49,028	11,327	14,460	91,538
132	Sierra	103,603	51,201	26,647	61,294	242,744
133	Central Valley	18,097	37,485	11,485	58,752	125,819
134	Central Coast	4,684	20,602	16,557	8,726	50,568
135	Southern California	8,782	2,861	70,586	19,632	101,861
Total		1,479,028	400,883	716,327	839,658	3,435,896

International Trips

Baseline Scenario Base Case Forecast – 2007

Superdistrict	Resident Trips		Visitor Trips		Total
	Home Origins	Other Origins	Home Origins	Other Origins	
1	107,083	11,546	65,869	1,253,838	1,438,336
2	183,638	10,992	49,841	57,970	302,441
3	123,494	0	37,346	25,507	186,347
4	91,000	0	13,426	0	104,427
5	100,239	16,488	27,167	230,688	374,582
6	162,739	0	31,898	54,343	248,979
7	111,688	554	17,575	25,783	155,600
8	188,496	1,662	13,199	58,499	261,855
9	220,300	28,589	45,877	49,890	344,655
10	147,384	11,546	25,427	26,058	210,415
11	87,290	7,203	29,050	29,239	152,782
12	131,718	12,654	16,903	8,036	169,311
13	92,069	0	9,618	18,298	119,985
14	33,452	554	5,882	8,036	47,923
15	68,551	0	7,046	7,760	83,357
16	178,504	0	31,368	14,694	224,566
17	157,028	0	18,836	10,814	186,677
18	164,091	5,496	24,037	16,667	210,292
19	111,915	0	57,088	32,441	201,443
20	65,654	0	7,145	0	72,799
21	60,590	10,992	22,824	276	94,682
22	120,063	5,496	36,906	7,209	169,674
23	32,705	0	6,836	10,814	50,354
24	82,413	0	1,056	0	83,469
25	28,931	10,992	59,050	0	98,974
26	41,295	0	6,936	0	48,231
27	27,095	0	13,776	18,320	59,190
28	31,735	21,985	13,474	10,814	78,007
29	59,451	0	6,778	10,814	77,042
30	64,931	5,496	3,415	7,209	81,051
31	10,779	10,992	0	0	21,771
32	16,069	5,496	3,381	0	24,945
33	37,583	0	16,833	3,605	58,021
34	53,244	0	3,339	0	56,583
Total Bay Area	3,193,216	178,736	729,197	1,997,618	6,098,767
External Zones	637,940	209,408	90,396	69,566	1,007,309
Total	3,831,156	388,143	819,593	2,067,184	7,106,076

International Trips (cont.)

Baseline Scenario Base Case Forecast – 2007

External Zone		Resident Trips		Visitor Trips		Total
		Home Origins	Other Origins	Home Origins	Other Origins	
111	Lake County	27,114	0	0	7,209	34,323
112	Mendocino County	8,061	0	0	0	8,061
113	Merced County	0	0	527	0	527
114	Monterey County	43,797	0	17,474	44,907	106,179
115	Sacramento County	198,048	104,427	39,775	0	342,251
116	San Benito County	12,100	0	1,866	0	13,966
117	San Joaquin County	107,545	10,992	17,516	0	136,054
118	Santa Cruz County	54,915	10,992	2,371	16,347	84,625
119	Stanislaus County	84,104	6,050	2,392	0	92,547
120	Yolo County	554	0	0	0	554
131	Northern California	32,977	10,992	0	0	43,969
132	Sierra	65,954	38,473	3,973	0	108,400
133	Central Valley	0	27,481	0	0	27,481
134	Central Coast	1,108	0	0	0	1,108
135	Southern California	1,662	0	4,500	1,102	7,265
Total		637,940	209,408	90,396	69,566	1,007,309

Attachment B

Forecast Demand Assignment to Superdistricts and External Zones

Baseline Scenario Base Case Forecast – 2020

Superdistrict	Domestic Trips		International Trips		Total
	Resident	Visitor	Resident	Visitor	
1	1,366,766	7,201,519	209,833	1,973,662	10,751,780
2	1,053,238	1,069,753	248,485	147,728	2,519,204
3	1,257,983	478,354	176,010	89,464	2,001,811
4	520,002	159,443	122,283	17,494	819,221
5	922,437	918,794	171,055	380,942	2,393,228
6	896,763	830,529	218,972	122,262	2,068,526
7	669,872	508,749	146,930	60,570	1,386,121
8	1,017,864	805,131	257,282	104,128	2,184,405
9	1,312,505	1,131,443	393,818	144,424	2,982,190
10	660,208	414,949	216,002	72,179	1,363,338
11	1,311,764	1,386,216	187,230	99,204	2,984,413
12	456,357	223,221	221,674	37,091	938,343
13	770,809	255,516	129,000	40,221	1,195,545
14	366,939	329,332	58,780	21,783	776,834
15	895,903	623,659	102,396	21,721	1,643,679
16	669,907	478,777	243,342	63,269	1,455,295
17	700,509	378,068	237,139	43,629	1,359,345
18	1,907,728	1,542,362	277,898	62,927	3,790,915
19	1,125,339	682,166	165,645	130,072	2,103,222
20	568,116	238,166	112,234	11,843	930,360
21	595,554	369,528	107,515	33,649	1,106,245
22	638,882	356,146	164,262	57,515	1,216,805
23	492,820	241,723	44,587	25,084	804,214
24	464,309	151,431	136,089	1,691	753,520
25	400,964	139,540	79,963	114,683	735,150
26	247,284	102,312	85,917	13,993	449,505
27	181,809	297,184	42,950	48,361	570,305
28	68,779	233,590	70,782	33,262	406,412
29	446,316	334,064	85,590	25,509	891,478
30	590,850	369,209	108,644	15,806	1,084,509
31	158,307	149,176	32,935	0	340,418
32	203,389	73,813	30,986	4,710	312,898
33	396,320	302,614	51,522	27,725	778,181
34	350,992	280,347	66,498	4,043	701,881
Total Bay Area	23,687,581	23,056,824	5,004,248	4,050,643	55,799,296
External Zones	2,215,935	1,852,957	1,257,532	233,318	5,559,743
Total	25,903,517	24,909,781	6,261,780	4,283,961	61,359,039

Forecast Demand Assignment to Superdistricts and External Zones (cont.)

Baseline Scenario Base Case Forecast – 2020

External Zone		Domestic Trips		International Trips		Total
		Resident	Visitor	Resident	Visitor	
111	Lake County	25,125	18,717	40,239	10,698	94,779
112	Mendocino County	127,257	61,860	11,963	0	201,080
113	Merced County	50,207	23,897	0	758	74,862
114	Monterey County	297,230	606,985	64,998	91,788	1,061,001
115	Sacramento County	241,571	124,301	448,898	57,238	872,008
116	San Benito County	60,764	29,399	17,958	2,685	110,806
117	San Joaquin County	235,740	94,370	175,920	25,207	531,236
118	Santa Cruz County	607,726	420,824	97,811	27,671	1,154,033
119	Stanislaus County	202,396	109,432	133,797	3,443	449,068
120	Yolo County	0	6,557	822	0	7,379
131	Northern California	77,094	30,707	65,254	0	173,055
132	Sierra	182,261	104,674	154,978	5,718	447,631
133	Central Valley	65,217	83,566	40,784	0	189,567
134	Central Coast	29,627	30,126	1,645	0	61,397
135	Southern California	13,720	107,543	2,467	8,112	131,842
Total		2,215,935	1,852,957	1,257,532	233,318	5,559,743

Domestic Trips

Baseline Scenario Base Case Forecast – 2020

Superdistrict	Resident Trips		Visitor Trips		Total
	Home Origins	Other Origins	Home Origins	Other Origins	
1	664,943	701,823	420,300	6,781,219	8,568,285
2	960,477	92,761	421,434	648,319	2,122,991
3	1,090,007	167,976	362,645	115,708	1,736,337
4	434,100	85,902	126,865	32,578	679,445
5	768,543	153,894	198,752	720,042	1,841,231
6	798,763	98,000	283,566	546,963	1,727,292
7	591,832	78,040	220,333	288,415	1,178,621
8	879,607	138,257	310,509	494,621	1,822,995
9	900,304	412,201	327,637	803,806	2,443,948
10	592,059	68,149	246,906	168,043	1,075,157
11	1,028,024	283,739	557,659	828,556	2,697,979
12	360,224	96,133	141,811	81,410	679,578
13	689,992	80,817	190,194	65,321	1,026,325
14	294,882	72,057	176,808	152,525	696,272
15	797,594	98,308	255,200	368,460	1,519,562
16	589,600	80,308	264,439	214,339	1,148,684
17	629,349	71,160	202,543	175,525	1,078,577
18	1,503,872	403,856	578,442	963,920	3,450,090
19	967,433	157,906	302,653	379,513	1,807,505
20	530,155	37,961	113,060	125,107	806,283
21	548,592	46,962	150,134	219,394	965,081
22	535,958	102,924	188,993	167,153	995,028
23	463,141	29,678	103,201	138,522	734,543
24	443,369	20,940	125,148	26,283	615,740
25	369,326	31,638	90,665	48,875	540,504
26	224,783	22,501	50,517	51,795	349,596
27	170,849	10,960	61,237	235,947	478,993
28	64,279	4,500	29,044	204,546	302,369
29	391,915	54,401	133,814	200,250	780,379
30	509,447	81,402	117,476	251,733	960,059
31	140,306	18,001	75,148	74,028	307,483
32	169,928	33,461	42,102	31,711	277,202
33	330,959	65,361	137,720	164,894	698,934
34	322,032	28,961	119,232	161,115	631,339
Total Bay Area	19,756,645	3,930,936	7,126,187	15,930,636	46,744,405
External Zones	1,747,091	468,845	854,454	998,503	4,068,893
Total	21,503,736	4,399,781	7,980,642	16,929,139	50,813,298

Domestic Trips (cont.)

Baseline Scenario Base Case Forecast – 2020

External Zones		Resident Trips		Visitor Trips		Total
		Home Origins	Other Origins	Home Origins	Other Origins	
111	Lake County	20,625	4,500	3,009	15,708	43,842
112	Mendocino County	105,338	21,920	43,263	18,597	189,118
113	Merced County	39,247	10,960	18,708	5,188	74,104
114	Monterey County	250,121	47,109	196,998	409,986	904,215
115	Sacramento County	159,770	81,801	46,182	78,118	365,872
116	San Benito County	57,960	2,805	29,399	0	90,163
117	San Joaquin County	220,280	15,460	54,225	40,145	330,110
118	Santa Cruz County	556,358	51,368	234,045	186,779	1,028,550
119	Stanislaus County	157,975	44,421	65,682	43,750	311,828
120	Yolo County	0	0	0	6,557	6,557
131	Northern California	19,753	57,340	13,511	17,196	107,801
132	Sierra	122,380	59,881	31,785	72,889	286,935
133	Central Valley	21,377	43,840	13,699	69,867	148,784
134	Central Coast	5,533	24,094	19,750	10,376	59,753
135	Southern California	10,373	3,346	84,197	23,346	121,263
Total		1,747,091	468,845	854,454	998,503	4,068,893

International Trips

Baseline Scenario Base Case Forecast – 2020

Superdistrict	Resident Trips		Visitor Trips		Total
	Home Origins	Other Origins	Home Origins	Other Origins	
1	192,697	17,136	112,973	1,860,688	2,183,494
2	232,171	16,313	61,701	86,027	396,213
3	176,010	0	51,611	37,852	265,474
4	122,283	0	17,494	0	139,777
5	146,585	24,470	38,603	342,340	551,997
6	218,972	0	41,617	80,645	341,235
7	146,108	822	22,308	38,261	207,500
8	254,816	2,467	17,316	86,812	361,410
9	351,390	42,428	70,388	74,036	538,242
10	198,867	17,136	33,508	38,670	288,181
11	176,540	10,689	55,813	43,391	286,434
12	202,894	18,780	25,166	11,925	258,765
13	129,000	0	13,067	27,154	169,221
14	57,958	822	9,858	11,925	80,563
15	102,396	0	10,205	11,516	124,117
16	243,342	0	41,464	21,805	306,611
17	237,139	0	27,582	16,047	280,768
18	269,741	8,157	38,194	24,734	340,825
19	165,645	0	81,931	48,142	295,717
20	112,234	0	11,843	0	124,077
21	91,201	16,313	33,240	409	141,164
22	156,106	8,157	46,817	10,698	221,777
23	44,587	0	9,037	16,047	69,671
24	136,089	0	1,691	0	137,780
25	63,650	16,313	114,683	0	194,647
26	85,917	0	13,993	0	99,910
27	42,950	0	21,174	27,187	91,312
28	38,155	32,627	17,215	16,047	104,043
29	85,590	0	9,462	16,047	111,099
30	100,487	8,157	5,108	10,698	124,450
31	16,621	16,313	0	0	32,935
32	22,829	8,157	4,710	0	35,696
33	51,522	0	22,376	5,349	79,247
34	66,498	0	4,043	0	70,541
Total Bay Area	4,738,989	265,258	1,086,189	2,964,454	9,054,890
External Zones	946,754	310,778	130,083	103,235	1,490,851
Total	5,685,743	576,036	1,216,272	3,067,689	10,545,741

International Trips (cont.)

Baseline Scenario Base Case Forecast – 2020

External Zone		Resident Trips		Visitor Trips		Total
		Home Origins	Other Origins	Home Origins	Other Origins	
111	Lake County	40,239	0	0	10,698	50,937
112	Mendocino County	11,963	0	0	0	11,963
113	Merced County	0	0	758	0	758
114	Monterey County	64,998	0	25,146	66,642	156,787
115	Sacramento County	293,920	154,978	57,238	0	506,136
116	San Benito County	17,958	0	2,685	0	20,643
117	San Joaquin County	159,606	16,313	25,207	0	201,126
118	Santa Cruz County	81,498	16,313	3,413	24,259	125,483
119	Stanislaus County	124,818	8,979	3,443	0	137,240
120	Yolo County	822	0	0	0	822
131	Northern California	48,940	16,313	0	0	65,254
132	Sierra	97,881	57,097	5,718	0	160,696
133	Central Valley	0	40,784	0	0	40,784
134	Central Coast	1,645	0	0	0	1,645
135	Southern California	2,467	0	6,476	1,636	10,579
Total		946,754	310,778	130,083	103,235	1,490,851

Attachment C

Forecast Demand Assignment to Superdistricts and External Zones

Baseline Scenario Base Case Forecast – 2035

Superdistrict	Domestic Trips		International Trips		Total
	Resident	Visitor	Resident	Visitor	
1	1,829,687	9,069,176	405,003	3,337,614	14,641,478
2	1,178,815	1,272,255	371,544	235,515	3,058,130
3	1,560,421	589,927	294,553	148,864	2,593,765
4	609,395	186,137	191,223	27,033	1,013,788
5	1,101,435	1,132,638	273,821	635,492	3,143,386
6	979,616	984,974	317,374	194,924	2,476,888
7	747,637	600,239	217,220	96,791	1,661,887
8	1,147,501	959,027	384,756	171,255	2,662,540
9	1,724,422	1,440,496	713,384	250,226	4,128,528
10	747,925	483,908	327,224	115,049	1,674,105
11	1,975,495	1,906,732	393,523	188,729	4,464,479
12	584,615	282,963	386,968	63,420	1,317,966
13	923,516	306,342	208,408	66,424	1,504,689
14	462,872	412,140	100,651	36,690	1,012,352
15	1,125,322	778,270	173,698	36,429	2,113,719
16	796,350	577,199	387,508	101,835	1,862,893
17	903,240	479,058	413,256	74,424	1,869,978
18	2,685,003	2,035,559	540,078	114,851	5,375,491
19	1,423,852	854,486	283,550	219,369	2,781,257
20	752,088	305,252	200,869	20,945	1,279,154
21	735,509	457,699	179,153	55,420	1,427,781
22	717,689	414,734	243,818	86,620	1,462,861
23	553,453	287,112	66,846	40,314	947,725
24	632,862	202,577	251,859	3,092	1,090,389
25	510,311	175,614	138,311	196,019	1,020,255
26	347,082	135,762	165,716	26,670	675,229
27	224,746	369,763	71,696	80,547	746,752
28	74,476	286,388	102,567	51,576	515,008
29	528,029	405,880	135,817	41,763	1,111,490
30	735,250	459,310	182,131	26,413	1,403,104
31	196,343	184,782	55,118	0	436,243
32	241,094	88,559	49,291	7,404	386,348
33	447,491	356,900	77,089	42,059	923,539
34	369,947	323,777	92,849	5,579	792,152
Total Bay Area	29,573,488	28,805,635	8,396,872	6,799,354	73,575,350
External Zones	2,789,416	2,315,731	2,110,075	388,915	7,604,136
Total	32,362,904	31,121,367	10,506,947	7,188,269	81,179,487

Forecast Demand Assignment to Superdistricts and External Zones (cont.)

Baseline Scenario Base Case Forecast – 2035

External Zone		Domestic Trips		International Trips		Total
		Resident	Visitor	Resident	Visitor	
111	Lake County	31,637	23,387	67,519	17,951	140,494
112	Mendocino County	160,251	77,322	20,073	0	257,646
113	Merced County	63,196	29,871	0	1,257	94,325
114	Monterey County	374,341	758,509	109,063	153,517	1,395,431
115	Sacramento County	303,722	155,336	753,227	94,907	1,307,192
116	San Benito County	76,610	36,755	30,133	4,451	147,949
117	San Joaquin County	297,160	117,948	295,184	41,795	752,088
118	Santa Cruz County	765,929	525,957	164,123	46,364	1,502,372
119	Stanislaus County	254,757	136,775	224,504	5,709	621,745
120	Yolo County	0	8,192	1,380	0	9,572
131	Northern California	96,554	38,376	109,493	0	244,423
132	Sierra	229,175	130,803	260,045	9,481	629,503
133	Central Valley	81,736	104,416	68,433	0	254,585
134	Central Coast	37,081	37,655	2,759	0	77,495
135	Southern California	17,265	134,431	4,139	13,483	169,318
Total		2,789,416	2,315,731	2,110,075	388,915	7,604,136

Domestic Trips

Baseline Scenario Base Case Forecast – 2035

Superdistrict	Resident Trips		Visitor Trips		Total
	Home Origins	Other Origins	Home Origins	Other Origins	
1	952,854	876,832	596,970	8,472,206	10,898,862
2	1,062,923	115,892	462,269	809,986	2,451,070
3	1,350,558	209,863	445,366	144,562	2,150,348
4	502,072	107,323	145,435	40,701	795,532
5	909,165	192,270	233,043	899,594	2,234,073
6	857,179	122,438	301,618	683,356	1,964,590
7	650,137	97,500	239,904	360,336	1,347,876
8	974,768	172,733	341,066	617,962	2,106,529
9	1,209,433	514,989	436,251	1,004,245	3,164,918
10	662,783	85,142	273,961	209,947	1,231,833
11	1,621,002	354,493	871,564	1,035,168	3,882,227
12	464,510	120,105	181,252	101,711	867,578
13	822,546	100,969	224,732	81,610	1,229,858
14	372,846	90,025	221,581	190,559	875,011
15	1,002,499	122,823	317,930	460,340	1,903,592
16	696,017	100,333	309,412	267,787	1,373,550
17	814,335	88,905	259,764	219,294	1,382,298
18	2,180,440	504,563	831,272	1,204,287	4,720,562
19	1,226,571	197,282	380,336	474,150	2,278,338
20	704,661	47,427	148,948	156,304	1,057,340
21	676,837	58,672	183,596	274,102	1,193,208
22	589,100	128,589	205,899	208,835	1,132,423
23	516,374	37,079	114,047	173,065	840,565
24	606,700	26,162	169,739	32,837	835,438
25	470,783	39,527	114,552	61,062	685,925
26	318,970	28,112	71,051	64,711	482,843
27	211,053	13,693	74,980	294,783	594,509
28	68,854	5,622	30,836	255,552	360,865
29	460,063	67,967	155,696	250,184	933,910
30	633,549	101,701	144,804	314,506	1,194,560
31	173,853	22,490	92,294	92,488	381,124
32	199,289	41,805	48,941	39,618	329,653
33	365,831	81,660	150,888	206,013	804,391
34	333,765	36,182	122,486	201,291	693,724
Total Bay Area	24,662,320	4,911,168	8,902,483	19,903,153	58,379,123
External Zones	2,203,658	585,757	1,068,238	1,247,493	5,105,147
Total	26,865,979	5,496,925	9,970,721	21,150,646	63,484,270

Domestic Trips (cont.)

Baseline Scenario Base Case Forecast – 2035

External Zone		Resident Trips		Visitor Trips		Total
		Home Origins	Other Origins	Home Origins	Other Origins	
111	Lake County	26,015	5,622	3,762	19,625	55,024
112	Mendocino County	132,866	27,386	54,088	23,234	237,573
113	Merced County	49,504	13,693	23,389	6,482	93,068
114	Monterey County	315,485	58,856	246,287	512,222	1,132,850
115	Sacramento County	201,523	102,199	57,737	97,598	459,057
116	San Benito County	73,106	3,504	36,755	0	113,365
117	San Joaquin County	277,845	19,315	67,792	50,156	415,108
118	Santa Cruz County	701,751	64,178	292,603	233,354	1,291,886
119	Stanislaus County	199,259	55,498	82,115	54,660	391,532
120	Yolo County	0	0	0	8,192	8,192
131	Northern California	24,916	71,639	16,892	21,484	134,930
132	Sierra	154,362	74,813	39,738	91,065	359,978
133	Central Valley	26,964	54,772	17,127	87,289	186,152
134	Central Coast	6,978	30,102	24,691	12,964	74,736
135	Southern California	13,084	4,181	105,262	29,168	151,696
Total		2,203,658	585,757	1,068,238	1,247,493	5,105,147

International Trips

Baseline Scenario Base Case Forecast – 2035

Superdistrict	Resident Trips		Visitor Trips		Total
	Home Origins	Other Origins	Home Origins	Other Origins	
1	376,250	28,753	215,474	3,122,140	3,742,616
2	344,171	27,373	91,167	144,349	607,059
3	294,553	0	85,350	63,514	443,417
4	191,223	0	27,033	0	218,256
5	232,761	41,060	61,063	574,429	909,313
6	317,374	0	59,606	135,318	512,298
7	215,840	1,380	32,591	64,201	314,011
8	380,617	4,139	25,589	145,666	556,011
9	642,192	71,192	125,997	124,229	963,610
10	298,471	28,753	50,162	64,887	442,273
11	375,587	17,936	115,921	72,808	582,252
12	355,456	31,512	43,411	20,010	450,388
13	208,408	0	20,860	45,563	274,832
14	99,271	1,380	16,681	20,010	137,341
15	173,698	0	17,106	19,323	210,127
16	387,508	0	65,247	36,588	489,344
17	413,256	0	47,498	26,926	487,680
18	526,391	13,687	73,349	41,502	654,929
19	283,550	0	138,590	80,779	502,918
20	200,869	0	20,945	0	221,814
21	151,780	27,373	54,734	686	234,573
22	230,132	13,687	68,669	17,951	330,438
23	66,846	0	13,388	26,926	107,160
24	251,859	0	3,092	0	254,951
25	110,938	27,373	196,019	0	334,330
26	165,716	0	26,670	0	192,386
27	71,696	0	34,928	45,619	152,243
28	47,820	54,746	24,650	26,926	154,143
29	135,817	0	14,837	26,926	177,580
30	168,445	13,687	8,462	17,951	208,544
31	27,745	27,373	0	0	55,118
32	35,605	13,687	7,404	0	56,695
33	77,089	0	33,083	8,975	119,147
34	92,849	0	5,579	0	98,428
Total Bay Area	7,951,783	445,090	1,825,152	4,974,203	15,196,227
External Zones	1,588,605	521,469	215,691	173,224	2,498,990
Total	9,540,388	966,559	2,040,843	5,147,426	17,695,216

International Trips (cont.)

Baseline Scenario Base Case Forecast – 2035

External Zone		Resident Trips		Visitor Trips		Total
		Home Origins	Other Origins	Home Origins	Other Origins	
111	Lake County	67,519	0	0	17,951	85,470
112	Mendocino County	20,073	0	0	0	20,073
113	Merced County	0	0	1,257	0	1,257
114	Monterey County	109,063	0	41,695	111,823	262,581
115	Sacramento County	493,183	260,045	94,907	0	848,134
116	San Benito County	30,133	0	4,451	0	34,584
117	San Joaquin County	267,811	27,373	41,795	0	336,980
118	Santa Cruz County	136,749	27,373	5,658	40,705	210,486
119	Stanislaus County	209,438	15,066	5,709	0	230,213
120	Yolo County	1,380	0	0	0	1,380
131	Northern California	82,119	27,373	0	0	109,493
132	Sierra	164,239	95,806	9,481	0	269,526
133	Central Valley	0	68,433	0	0	68,433
134	Central Coast	2,759	0	0	0	2,759
135	Southern California	4,139	0	10,738	2,745	17,622
Total		1,588,605	521,469	215,691	173,224	2,498,990