



METROPOLITAN  
TRANSPORTATION  
COMMISSION

Joseph P. Bort MetroCenter  
101 Eighth Street  
Oakland, CA 94607-4700  
TEL 510.817.5700  
TDD/TTY 510.817.5769  
FAX 510.817.5848  
E-MAIL [info@mtc.ca.gov](mailto:info@mtc.ca.gov)  
WEB [www.mtc.ca.gov](http://www.mtc.ca.gov)

## *Memorandum*

TO: Air Quality Conformity Task Force  
FR: Harold Brazil  
RE: Adjustments to Draft Conformity Report

DATE: June 25, 2013

W.I.:

### **Background**

#### *Housing and Jobs Distribution*

ABAG has made minor modifications have been made to the housing and employment distributions in the Draft Plan Bay Area (“Draft Plan”). Specifically, the modifications reflect: (1) corrections to datasets that were used to develop the jobs and housing distributions in the Draft Plan; (2) adjustments to ensure consistency with Regional Housing Needs Allocation (RHNA); and (3) adjustments to local jurisdictions growth based on corrections to how the distribution methodology was applied. The changes are minor and do not impact any of the regional significance findings in the Draft Environmental Impact Report, nor do they impact the Air Quality Conformity findings. See *Attachment A* for more details on the housing and employment distributions.

#### *EPA Approved Version of EMFAC2011*

EMFAC2011 is the new version of CARB’s emission model and provides planners a tool for assessing emissions under different forecast scenarios. This includes conformity analyses of transportation plans and programs with the State Implementation Plans (SIPs) required by federal law, SIP inventories, alternative growth scenarios associated with regional transportation planning for greenhouse gas reductions (SB375), and regional transportation plan, environmental impact report (EIR) emission inventories.

The most important improvement in EMFAC2011 is the integration of the new data and methods to estimate emissions from diesel trucks and buses. EMFAC2011 uses the same diesel truck and bus vehicle populations, miles traveled and other emissions-related factors developed for the Truck and Bus Rule approved by CARB in 2010. The model includes the emissions benefits of the Truck and Bus Rule and the previously adopted rules for other on-road diesel equipment. Also, the impacts of the recession on emissions that were quantified as part of the truck and bus rulemaking are included.

In July 2012, ARB staff identified a typographical error in the EMFAC2011-LDV module code that incorrectly assigned trips in gasoline powered school buses, urban t transit buses, other buses, motorcycles, and motorhomes in Santa Clara County. These trips were overestimated as a result, which led to an overestimate of ROG emissions in the Bay Area and for the statewide total. The EMFAC2011-LDV module has been corrected and re-released. New input files to SG were generated for Santa Clara

County. The module code and algorithms in the EMFAC2011-SG module were not otherwise affected by this change.

The United States Environmental Protection Agency (USEPA) approved of the EMFAC2011 emissions model for SIP and conformity purposes is effective March 6, 2013. EMFAC2011 must be used for all new regional emissions analyses and CO, PM<sub>10</sub> and PM<sub>2.5</sub> hotspot analyses that are started on or after September 6, 2013.

<b>Plan Bay Area and the 2013 Transportation Improvement Program Conformity Analysis Results</b>						
<b><u>BEFORE</u> Adjustments to Draft Report</b>						
	2008	2014	2015	2020	2030	2040
	<i>Baseline Yr</i>	<i>Attainment Yr</i>	<i>Project</i>	<i>Project</i>	<i>Project</i>	<i>Project</i>
Vehicles in Use	4,596,718	4,707,480	4,746,969	4,908,292	5,171,295	5,463,760
Daily Vehicle Miles Traveled (VMT)	166,041,242	168,767,442	170,400,786	176,711,880	185,913,103	196,927,122
Engine Starts	30,816,234	31,485,254	31,745,858	32,829,751	34,437,713	36,362,648
ROG	N/A	N/A	62.35	46.87	37.56	36.53
NOx (Summertime)	N/A	N/A	111.39	74.60	49.60	48.51
CO	1,030.65	601.47	550.13	375.03	272.50	266.47
PM <sub>2.5</sub>	7.64	5.51	5.26	5.04	5.30	5.64
NOx (Wintertime)	218.80	136.82	124.72	83.35	55.17	53.71
<b>Plan Bay Area and the 2013 Transportation Improvement Program Conformity Analysis Results</b>						
<b><u>AFTER</u> Adjustments to Draft Report</b>						
	2008	2014	2015	2020	2030	2040
	<i>Baseline Yr</i>	<i>Attainment Yr</i>	<i>Project</i>	<i>Project</i>	<i>Project</i>	<i>Project</i>
Vehicles in Use	4,596,718	4,710,130	4,740,063	4,900,323	5,168,834	5,463,106
Daily Vehicle Miles Traveled (VMT)	166,041,242	168,861,102	170,151,969	176,429,204	185,830,407	196,911,394
Engine Starts	29,321,651	29,964,074	30,140,124	31,121,589	32,631,760	34,443,678
ROG	N/A	N/A	55.56	40.81	31.67	30.24
NOx (Summertime)	N/A	N/A	110.50	73.80	48.91	47.81
CO	1,007.29	579.63	526.93	352.02	248.56	240.98
PM <sub>2.5</sub>	7.63	5.51	5.25	5.03	5.30	5.64
NOx (Wintertime)	217.85	136.04	123.71	82.44	54.38	52.91

<b>Plan Bay Area and the 2013 Transportation Improvement Program Conformity Analysis Numerical Differences <i>AFTER</i> Adjustments to Draft Conformity Report</b>						
	2008	2014	2015	2020	2030	2040
	<i>Baseline Yr</i>	<i>Attainment Yr</i>	<i>Project</i>	<i>Project</i>	<i>Project</i>	<i>Project</i>
Vehicles in Use	0	2,650	-6,907	-7,969	-2,462	-654
Daily Vehicle Miles Traveled (VMT)	0	93,661	-248,817	-282,676	-82,697	-15,728
Engine Starts	-1,494,583	-1,521,180	-1,605,734	-1,708,161	-1,805,952	-1,918,970
ROG	N/A	N/A	-6.78	-6.07	-5.89	-6.29
NOx (Summertime)	N/A	N/A	-0.89	-0.80	-0.69	-0.71
CO	-23.35	-21.85	-23.20	-23.00	-23.94	-25.50
PM <sub>2.5</sub>	-0.01	0.00	-0.01	-0.01	0.00	0.00
NOx (Wintertime)	-0.95	-0.78	-1.01	-0.91	-0.79	-0.80
<b>Plan Bay Area and the 2013 Transportation Improvement Program Conformity Analysis Percentage Differences <i>AFTER</i> Adjustments to Draft Conformity Report</b>						
	2008	2014	2015	2020	2030	2040
	<i>Baseline Yr</i>	<i>Attainment Yr</i>	<i>Project</i>	<i>Project</i>	<i>Project</i>	<i>Project</i>
Vehicles in Use	0.00%	0.06%	-0.15%	-0.16%	-0.05%	-0.01%
Daily Vehicle Miles Traveled (VMT)	0.00%	0.06%	-0.15%	-0.16%	-0.04%	-0.01%
Engine Starts	-4.85%	-4.83%	-5.06%	-5.20%	-5.24%	-5.28%
ROG	N/A	N/A	-10.88%	-12.94%	-15.67%	-17.21%
NOx (Summertime)	N/A	N/A	-0.80%	-1.07%	-1.39%	-1.46%
CO	-2.27%	-3.63%	-4.22%	-6.13%	-8.79%	-9.57%
PM <sub>2.5</sub>	-0.11%	0.01%	-0.20%	-0.18%	-0.06%	-0.04%
NOx (Wintertime)	-0.44%	-0.57%	-0.81%	-1.09%	-1.42%	-1.50%

## **Draft Plan Bay Area Housing and Employment Distribution Revisions**

Minor modifications have been made to the housing and employment distributions in the Draft Plan Bay Area (“Draft Plan”). These modifications take into account the considerable local input received on the land use plan to date. Specifically, the modifications reflect: (1) corrections to datasets that were used to develop the jobs and housing distributions in the Draft Plan; (2) adjustments to ensure consistency with Regional Housing Needs Allocation (RHNA); and (3) adjustments to local jurisdictions growth based on corrections to how the distribution methodology was applied. These modifications are described in more detail below. These minor modifications do not affect the conclusions of regional significance in the Draft Environmental Impact Report, nor do they impact the regional modeling results in a significant way.

### **Description of Modifications**

#### **1) Corrections to Data Sets**

Several errors in the data used to develop the employment and housing distributions were identified both by ABAG staff and local jurisdictions. These include: errors in the number of jobs in specific jurisdictions within the National Establishment Time Series (NETS) data set that was used to develop the job distribution, errors in the U.S. Census housing data used to develop the housing distribution, and errors in local plan data that was used to develop the housing distribution.

##### *NETS Corrections*

The correction to the NETS base data was made for five jurisdictions including Hayward, Lafayette, Hillsborough, Unincorporated San Mateo County (specifically the San Francisco Airport area), Saratoga and Los Altos Hills. The corrections to the data set included a reduction of 2010 jobs for Hayward, Lafayette, Hillsborough, Saratoga and Los Altos Hills, and an increase in 2010 jobs for the San Francisco Airport.. The NETS data set is used to calculate the proportion of jobs by sector within each county for 2010. The 2010 county job totals remain the same, so corrections to the NETS data set are contained within each county (reductions in one city mean a proportional increase in 2010 jobs for other cities within the county). This modified base data was then used to recalculate 2040 jobs, resulting in shifts in the 2040 job distribution for all jurisdictions throughout the region. However, the bulk of the shifts were contained within the counties in which the corrections were made. At the regional level, the overall shift of jobs is negligible.

The specific changes to the NETS data set, by Sub-regional Study Area (SSA) and Priority Development Area (PDA), are detailed in Attachment A. The final modifications to 2010 employment for the jurisdictions noted above are detailed in Attachment B.

##### *U.S. Census Corrections*

Two fixes were made to the U.S. Census 2010 housing unit and household data set that was used in the housing distribution. These include a reduction in the 2010 housing numbers for Colma, per a statement of correction from the U.S. Census Department, and a fix to the split of housing units and households within and outside Orinda’s PDA. The result of the first correction was an increase of 2010 units to the Unincorporated San Mateo County area adjacent to Colma. The result of the second is a change only in the 2040 housing figures for Orinda’s PDA. In both cases, housing growth for these jurisdictions was not modified. These housing modifications are detailed in Attachment B.

### *Corrections to local plan data*

A change was made to Cupertino's "local plan feedback" number, used to develop the housing distribution, to correct an error found after adoption of the Jobs-Housing Connection Strategy in May of 2012. The result of this fix was a reduction of housing growth in Cupertino. This housing modification is detailed in Attachment B.

## **2) Adjustments to ensure consistency with RHNA**

Upon development of the Regional Housing Needs Allocation, ABAG found that the eight-year RHNA housing allocation for two jurisdictions, Clayton and Los Altos Hills, was higher than the housing growth for these jurisdictions in the thirty-year Plan Bay Area housing distribution. These jurisdictions received additional housing growth in the Plan Bay Area distribution so that total growth is equivalent to the RHNA number. These housing modifications are detailed in Attachment B.

## **3) Adjustments based on corrections to the application of the distribution methodology**

The formal public comment period for both documents closed on May 16, 2013. A number of jurisdictions commented on the levels of employment and housing growth allocated in the Draft Plan as being too high, too low, or overly concentrated in their cities' PDAs. Twenty jurisdictions requested adjustments to their job number, sixteen requested adjustments to their housing number, and five requested shifts in growth from their PDAs to other areas within their city.

The distribution of employment and housing growth in the Draft Plan takes into account a variety of factors—including input from jurisdictions, level of transit service, Vehicle Miles Travelled by Household, in-commuting by low-wage workers, housing values, existing employment base, and concentration of knowledge-based economic activity, among others. ABAG staff thoroughly reviewed each request for modification and the overall methodology assigning job and housing growth to each jurisdiction. Staff acknowledged that the application of the distribution methodologies in certain instances was not appropriate. Several modifications for a small number of areas are noted below.

For all other jurisdictions, staff deemed that the distribution methodology was applied appropriately and consistently. Employment and housing growth in these jurisdictions was found to be consistent with and comparable to similarly-sized cities, and that this growth could be reasonably accommodated over the thirty-year time-frame of the Draft Plan.

### *Job Adjustments*

Upon review of the employment methodology and employment figures for Dublin and Livermore, additional job growth was assigned to these cities. Staff found that the employment distribution methodology is slightly under-allocating certain sectors of employment growth in these cities, given that the model bases growth largely on cities' existing jobs base and does not account well for current and anticipated employment growth rates. Dublin and Livermore are currently small job centers but have growing jobs in the knowledge-based sector. These cities were assigned proportionately fewer jobs than cities with larger current job bases but less capacity and slower expected rates of growth, such as Hayward and Unincorporated Alameda County. Growth in Hayward and Unincorporated Alameda County was reduced commensurate to the increases in Dublin and Livermore.

### *Housing Adjustments*

Housing growth for the portion of the El Camino Real Priority Development Area (PDA) in Burlingame was reduced. This is a reduction of the growth that was assigned to the Burlingame El Camino Real PDA as part of the additional housing growth allocation to several key job centers and locations along the core transit network in the Jobs-Housing Connection Strategy<sup>1</sup>. Staff found that this PDA was inappropriately assigned this additional housing growth given its close proximity to the San Francisco Airport. The balance of housing from this adjustment was distributed to all other cities and towns within the region per the growth distribution methodology.

Housing growth in the Plan was deemed to be quite low for Brentwood. The level of housing was adjusted upward to reflect a more reasonable rate of growth considering current development rates. The increase in housing growth in Brentwood is commensurate with the decrease in Cupertino.

Housing growth in the PDAs was reduced for the following jurisdictions: Lafayette, Walnut Creek, San Mateo, and Sunnyvale. In the case of Lafayette and Walnut Creek, staff acknowledges that a portion of the housing growth allocated to these jurisdictions' PDAs, given their small size, could be accommodated in the transit-accessible areas adjacent to the PDAs. In the case of San Mateo and Sunnyvale, it was recognized that housing growth was somewhat over-concentrated in the cities' PDAs in relation to the regional concentration of growth in the PDAs. Growth in San Mateo's PDAs was adjusted to achieve a lower concentration of growth, down from 81% to 77% of total city growth, and for Sunnyvale, growth in the PDAs was adjusted down from 83% to 79% of total city growth. The total growth for all four of these cities was not modified.

These housing and employment modifications are detailed in Attachment B.

### **Conclusions**

These changes do not affect the regional significance conclusions in the Draft Environmental Impact Report, nor do they result in significant changes in the regional modeling results, including the conclusion that the Draft Plan achieves the greenhouse gas emissions reduction targets.

### **Attachments**

Attachment A: Employment and Housing Revision Requests by Jurisdiction and Final Modifications

---

<sup>1</sup> [http://onebayarea.org/pdf/Draft\\_Plan\\_Bay\\_Area/Draft\\_PBA\\_Forecast\\_of\\_Jobs\\_Population\\_and\\_Housing.pdf](http://onebayarea.org/pdf/Draft_Plan_Bay_Area/Draft_PBA_Forecast_of_Jobs_Population_and_Housing.pdf), p. 39

Table 1: Employment and Housing Modifications by Jurisdiction

County	City	PDA or sub-area	Housing Unit Modification		Job Modification		Shifted to/from	Rationale
			2010	2040	2010	2040		
Alameda	Oakland	Downtown			-72		to Clayton and Los Altos Hills	Adjustment to ensure that Clayton and Los Altos Hills RHNA growth from 2014-2022 does not exceed total 30- year growth
Alameda	Dublin					2300	swap jobs to Dublin from City of Hayward and Livermore Lab in unincorporated area	Response to comment from City of Dublin. Expect greater job growth in certain sectors than jobs distribution model predicts (model based largely on existing concentrations of jobs which are currently small in this city in comparison to other job centers)
Alameda	Livermore					1500	swap jobs to Livermore from City of Hayward and Livermore Lab in unincorporated area	Response to comment from City of Dublin. Expect greater job growth in certain sectors than the jobs distribution model predicts (model based largely on existing concentrations of jobs which are currently small in this city in comparison to other job centers)
Alameda	Hayward	Downtown			-961	-1000		Correction to NETS. Response to comment from City of Hayward that employment growth is too high. Already fairly densely-built and areas of growth are limited.
Alameda	Alameda County	Unincorporated				-2800	swap jobs to Dublin and Livermore from Lab in unincorporated area	Response to comment from County of Alameda. Expect lower job growth in certain sectors than the jobs distribution model predicts.
Contra Costa	Brentwood			1040			from Cupertino	Response to comment from City of Brentwood. Expect greater housing growth than housing distribution allocates; increased growth rate to more closely align with local plans.
Contra Costa	Clayton			37			from Oakland	Adjustment to ensure that Clayton RHNA growth from 2014-2022 does not exceed total 30- year growth.
Contra Costa	Walnut Creek	West Downtown		-436			to rest of WC	Response to City of Walnut Creek comment that too much of city's growth in the PDA. PDA is small, so growth can be shifted to downtown core area surrounding PDA.
Contra Costa	Walnut Creek	rest of city		436			from West Downtown PDA	Response to City of Lafayette comment that too much of city's growth in the PDA. Slight adjustment of units to areas outside of PDA. Correction to NETS.
Contra Costa	Lafayette	Downtown		-35	-702		to rest of Lafayette from Downtown Lafayette PDA	Correction to housing data set. Prior PDA Housing unit figures did not match households and vacancy rates. Adjustment made to housing units, but households remain the same
Contra Costa	Lafayette	rest of city		35				Response to City of San Mateo comment that that city's growth is overconcentrated in the PDA. Shifted PDA level of growth from 81% to 77% of overall city growth, to achieve level closer to regional concentration of growth in PDAs.
Contra Costa	Orinda	Downtown	114					Response to City of Burlingame comment that city's growth is overconcentrated in PDA. Corrected application of housing distribution methodology to increase housing growth in key job centers and locations along core transit network, given limited room for growth and intensification in a PDA in close proximity to SFO.
Contra Costa	Orinda		-114					Correction to 2010 Census Data. Housing level appropriate but 2010 number reduced so 2040 total will be reduced.
San Mateo	San Mateo	Rail Corridor			-368		to rest of San Mateo	Correction to NETS
San Mateo	San Mateo	rest of city			368		from Rail Corridor	Correction to NETS
San Mateo	Burlingame	El Camino Real			-844			Adjustment to ensure that Los Altos Hills RHNA growth from 2014-2022 does not exceed total 30- year growth. Correction to NETS.
San Mateo	Colma	El Camino Real - South San Francisco		-152				Response to City of Sunnyvale comment that that city's growth overconcentrated in the PDAs. Shifted PDA level of growth from 83% to 79% of overall city growth, closer to regional concentration of growth in PDAs.
San Mateo	Unincorporated Daily City	El Camino Real - Daily City		153				Correction to NETS
San Mateo	Unincorporated Daily City	Unincorporated Daily City		-1				Correction to NETS
San Mateo	Hillsborough				-338			Correction to NETS
San Mateo	San Francisco Airport				6222			Correction to NETS
Santa Clara	Los Altos Hills						from Oakland	Adjustment to ensure that Los Altos Hills RHNA growth from 2014-2022 does not exceed total 30- year growth. Correction to NETS.
Santa Clara	Sunnyvale	Lawrence Station			35		to rest of Sunnyvale	Response to City of Sunnyvale comment that that city's growth overconcentrated in the PDAs. Shifted PDA level of growth from 83% to 79% of overall city growth, closer to regional concentration of growth in PDAs.
Santa Clara	Sunnyvale			-786				Correction to NETS
Santa Clara	Sunnyvale			786			from Lawrence Station	Correction to NETS
Santa Clara	Cupertino			-1040			to Brentwood	Correction to NETS
Santa Clara	Saratoga				-1959			Correction to NETS
Santa Clara	Los Altos Hills				-1521			Correction to NETS

Note: NETS corrections involved the identification of incorrect or misplaced data in the NETS dataset. Any corrections to NETS 2010 base year data will change both the 2010 distribution of jobs and the share of growth allocated for these areas. Unless a housing unit correction is a direct swap between two areas, any corrections to housing units are distributed among all other areas in the region.

Table 2: Revision Requests from all other Jurisdictions

County	City	PDA or sub-area	Housing Unit Modification		Job Modification		Request and Rationale
			2010	2040	2010	2040	
Alameda	Livermore			none			Requested lower housing growth. No adjustment as housing growth appropriate and reasonable given level of job growth.
Alameda	Oakland			none		none	Desired regional distribution of housing more closely aligned with EIR Alternative 4 ("EEJ"), and greater concentration of employment along core transit in Inner East Bay, but did not specify specific adjustments to city levels of growth. No large-scale regional adjustments to growth distribution were made.
Contra Costa	Anitoch					none	Requested higher employment growth. No adjustment as no trends support more job growth here.
Contra Costa	Brentwood					none	Requested higher employment growth. No adjustment as no trends support more job growth here.
Marin	Belvedere					none	Requested lower employment growth. No adjustment as job growth is appropriate given expected growth in population, and therefore need for population-serving jobs, and reasonable capacity to accommodate this growth.
Marin	Corte Madera					none	Requested lower employment growth. No adjustment as job growth is appropriate given expected growth in population, and therefore need for population-serving jobs, and reasonable capacity to accommodate this growth.
Marin	Larkspur					none	Requested lower employment growth. No adjustment as job growth is appropriate given expected growth in population, and therefore need for population-serving jobs, and reasonable capacity to accommodate this growth.
Marin	Marin Unincorporated					none	Requested lower employment growth. No adjustment as job growth is appropriate given expected growth in population, and therefore need for population-serving jobs, and reasonable capacity to accommodate this growth.
Marin	Novato					none	Requested lower employment growth. No adjustment as job growth is appropriate given expected growth in population, and therefore need for population-serving jobs, and reasonable capacity to accommodate this growth.
Marin	San Rafael					none	Requested lower employment growth. No adjustment as job growth is appropriate given expected growth in population, and therefore need for population-serving jobs, and reasonable capacity to accommodate this growth.
Santa Clara	Gilroy					none	Requested higher employment growth. No adjustment as High Speed Rail outcome is unclear.
Santa Clara	Los Altos			none			Requested lower housing growth. No adjustment as housing growth appropriate given similarly sized cities with similar transit, employment and housing characteristics. Reasonable capacity to accommodate growth in downtown and other areas of city.
Santa Clara	Los Gatos			none		none	Requested lower employment and housing growth. No adjustment as employment growth appropriate given the size of the existing employment base in comparison to similarly sized cities in the county, as well as the base of knowledge-sector employment. Housing growth also appropriate given similarly sized cities with similar transit, employment and housing characteristics. Growth could be reasonably accommodated.
Santa Clara	Palo Alto			none		none	Requested lower employment and housing growth. No adjustment as growth is appropriate given population and existing employment base, in comparison to similarly-sized cities such as Redwood City. Reasonable capacity to accommodate growth within city, such as along El Camino Real.
Santa Clara	Santa Clara	PDAs				none	Requested lower housing and employment growth, and lower concentration of growth in PDAs. Employment growth appropriate in comparison to similarly sized cities (population and employment base) and given existing concentration of employment. Capacity to accommodate jobs in PDAs, specifically locations along El Camino and the VTA Corridor PDA. Housing growth appropriate in comparison to similarly sized cities with similar employment levels and can be reasonably accommodated in PDAs. In terms of PDA concentration: Downtown/Santa Clara Station Area growth is no more than locally-planned level of growth; El Camino could see redevelopment so Plan growth reasonable and appropriate. City also incorrectly cites concentration of growth in PDAs as 77% and 66% for housing, jobs respectively; However, it is only 61% & and 29% in the Plan, so no adjustment to PDA concentration provided.
Sonoma	Windsor	PDA		none		none	Requested less concentration of employment and housing growth in PDA. No adjustment as there is reasonable capacity to accommodate growth in the PDA.