



## MEMORANDUM

Date: October 24, 2008

To: Kris Balaji, Jacobs Carter Burgess

From: Eddie Barrios, Fehr & Peers

**Subject: Year 2050 Land Use Projections for the North County Corridor Project**  
WC08-2575

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The design year for the North County Corridor Project has been determined to be 2050. The horizon year for the regional land use projections used in the Stanislaus Council of Government's (StanCOG) 2007 *Regional Transportation Plan* (RTP) is 2030. This memorandum presents the method used to estimate the total number of households and jobs in Stanislaus County by 2050 and presents a recommended approach to developing year 2050 traffic forecasts.

### YEAR 2050 LAND USE PROJECTIONS

Year 2050 land use projections can be developed based on data presented in the 2007 RTP and data prepared by the Demographic Research Unit of the California Department of Finance. The following sections present the step-by-step approach used to develop year 2050 land use projections.

#### ***Population Projections from the Demographic Research Unit***

The Demographic Research Unit of the California Department of Finance (DOF) is designated as the single official source of demographic data for state planning and budgeting (<http://www.dof.ca.gov/HTML/DEMOGRAP/ReportsPapers/ReportsPapers.php>). Population projections are made for the State and the counties for a period of approximately 50 years into the future. Currently, population projections are prepared that extend to the year 2050. Information on existing housing units, vacancies, and average household size are also provided. The data are used in determining the annual appropriations limit for all California jurisdictions, to distribute State subventions to cities and counties, to comply with various State codes, and for research and planning purposes by federal, State and local agencies, the academic community and the private sector.

The DOF estimates that in 2008 there was a population of 518,103 in Stanislaus County with a total of 170,036 occupied households. This translates to about 3.05 persons per household. The DOF estimates a population of 857,893 by Year 2030 and 1,191,344 by Year 2050 in Stanislaus County.

#### ***Projected Households and Employment Based on 2007 StanCOG RTP***

Table 1 summarizes the demographic forecasts in Stanislaus County based on information presented in the 2007 RTP. The horizon year is 2030. As shown in Table 1, the estimated persons per household in 2000 is fairly consistent with the 2008 estimate from the DOF. Furthermore, the 2007 RTP indicates that the number of persons per household is anticipated to

remain relatively constant through the Year 2030. For purposes of developing Year 2050 land use projections it will be assumed that household size remains constant at 3.12 persons per household.

<b>TABLE 1 DEMOGRAPHIC FORECASTS IN STANISLAUS COUNTY<sup>1</sup></b>				
	<b>Year 2000</b>	<b>Horizon Year 2030</b>	<b>% Change</b>	<b>% Change per Year</b>
Population	446,997	821,963	+84%	+2.8%
Single-Family Households	106,846	191,300	+79%	+2.6%
Multi-Family Households	38,300	72,500	+89%	+3.0%
Total Households	145,146	263,800	+82%	+2.7%
Persons per Household	3.08	3.12	+1.3%	<.1%
Employment	174,066	296,940	+71%	+2.4%
Employment per Household	1.2	1.13	-5.8%	-0.2%

<sup>1</sup> Based on information provided in the 2007 StanCOG RTP and Fehr & Peers, 2008.

***Projected Population, Households, and Employment in Year 2050***

As noted earlier, the DOF estimates a county-wide population of 857,893 by 2030. This represents approximately a 4% difference when compared to the StanCOG 2030 population projections of 821,963, and indicates that the DOF projections are reasonably consistent with those prepared by the regional planning agency.

The DOF estimates a county-wide population of 1,191,344 by the year 2050. Applying an assumed household size of 3.12 persons per household results in an estimated 381,841 households. Assuming a similar split of single-family and multi-family household as in the StanCOG projections results in 276,900 single-family households and 104,941 multi-family households in year 2050.

Based on the 2007 RTP the employment to household ratio is estimated to be 1.13 in Year 2030. Assuming this ratio remains constant through year 2050 results in 431,480 jobs in Stanislaus County.

Table 2 summarizes the projected population, households, and employment in 2030 and 2050.

	<b>Year 2030<sup>1</sup></b>	<b>Year 2050<sup>2</sup></b>	<b>% Change</b>	<b>% Change per Year</b>
Population	821,963	1,191,344	+45%	+2.3%
Single-Family Households	191,300	276,900	+45%	+2.3%
Multi-Family Households	72,500	104,941	+45%	+2.3%
Total Households	263,800	381,841	+45%	+2.3%
Persons per Household	3.12	3.12	+0%	0%
Employment	296,940	431,480	+45%	+2.3%
Employment per Household	1.13	1.13	0%	0%

1 Based on information presented in the 2007 RTP and Fehr & Peers, 2008.  
 2 Based on data prepared by the Demographic Research Unit of DOF and Fehr & Peers, 2008.

**RECOMMENDED APPROACH TO ALLOCATE FUTURE GROWTH BY TAZ**

Traffic analysis zones (TAZs) are the basic geographic unit for inventorying demographic data and land use within a study area. StanCOG currently estimates 2030 traffic volumes through the use of a travel demand forecasting model that uses the 2030 land use projections (households and employment) presented in Table 1 as inputs. These projections have been allocated to each TAZ in the model based on current applications for land development, specific plans and/or general plans, and areas of anticipated growth.

As presented in Table 2, the land use projections that will be used to develop year 2050 traffic forecasts are 381,841 households and 431,480 jobs. The primary challenge in developing 2050 traffic forecasts will be determining the geographic distribution of that projected growth. There are three main approaches that can be employed to allocate the projected growth, each with varying degrees of confidence and level of effort required. All of the approaches start from the 2030 land use information by TAZ available from the StanCOG model, and use different techniques for extending that data to the year 2050. The approaches are presented below:

**Approach #1**

Under Approach #1, the number of households and jobs in every TAZ would be increased at a flat rate of 2.3% per year for 20 years, to reflect growth from 2030 to 2050. This technique is simple to apply and may be reasonably accurate for short-term extrapolations, but when it is applied over long time periods the accuracy is limited by the lack of sensitivity to geographic differences.

Confidence Level – Low

Schedule to Complete - 1 week

### ***Approach #2***

Under Approach #2, the land use growth between 2030 and 2050 in each TAZ would be based on input from the jurisdictions in our study area (Stanislaus County, Modesto, Riverbank, and Oakdale). We would meet with representatives from the planning and community development departments of the four jurisdictions, explain the information we need, provide them with guidance on the total number of households and jobs that may be absorbed by their jurisdictions by the 2050 timeframe, and ask them to provide us with estimates of growth in each TAZ. Each jurisdiction would be given a limited time (probably about two weeks) to provide this information to us. We would take the information provided by each jurisdiction, check it for reasonableness, make minor adjustments to ensure that the desired county-wide total for households and jobs is maintained, and input this data into the model.

Confidence Level – Medium to High

Schedule to Complete - 6 weeks

### ***Approach #3***

In Approach #3, the quality and accuracy of the land use projections would be enhanced by asking each jurisdiction to perform land use absorption and market studies to determine the likely location and magnitude of development that could occur between 2030 and 2050.

Confidence Level – Highest

Schedule – 4 to 6 months

### ***Recommended Approach***

The North County Corridor Route Adoption studies are under very strict deadlines and the approach selected needs to allow the traffic analysis to be completed in the Spring of 2009.

Although Approach #1 requires the least effort, it is not recommended because it is the most inaccurate, potentially leading to gross errors in the traffic forecasts.

Although Approach #3 provides the highest confidence that the number and location of the land use growth would be properly allocated, it requires a significant amount of time and would not allow the overall project schedule to be achieved.

The recommended approach is #2 because it provides relatively high confidence about the land use projections and incorporates direct input from the local jurisdictions. The process can be completed within the available schedule, as long as appropriate staff resources from the four jurisdictions are made available in a timely manner.

### **NEXT STEPS**

This memorandum should be forwarded to the Joint Powers Authority (JPA) and Caltrans. If the JPA and Caltrans approve the recommended approach then we will need the following:

- 1) Formal acceptance (via memo or e-mail) to proceed with the recommended approach.

- 2) Assistance in setting up a meeting with appropriate staff representatives from each of the four jurisdictions. To maintain the schedule, this meeting should be held during the first week of November.

If the JPA and/or Caltrans do not agree with the recommended approach, then we would like Jacobs Carter Burgess to schedule a meeting during the first week of November to begin the process of reaching consensus on a preferred approach.

If there are any questions or comments, please contact me at (925) 930-7100.