

**NORTH COUNTY CORRIDOR  
EXPRESSWAY TRANSPORTATION AUTHORITY**

**ITEM: 4b**

**SUBJECT: Year 2030 Land Use Allocation for the North County Corridor Project**

Fehr & Peers has developed the attached memorandum to gain consensus from the County and the Cities of Modesto, Oakdale, and Riverbank for one of the four options presented for opening year (2030) conditions.

**STAFF RECOMMENDATIONS:**

By motion, determine the option to bring forward to the NCC TEA Board.

**FISCAL IMPACT:**

There is no fiscal impact associated with this item.

## MEMORANDUM

Date: February 12, 2009

To: Carlos Yamzon, Stanislaus Council of Governments

Cc: Kris Balaji, Jacobs Carter Burgess

From: Eddie Barrios, Fehr & Peers

**Subject: Year 2030 Land Use Allocation for the North County Corridor Project**

WC08-2575

The year 2050 land use projections for the North County Corridor (NCC) Project were presented in a memorandum entitled *Final Year 2050 Land Use Projections for the North County Corridor Project* (Year 2050 Land Use Memorandum) dated November 25, 2008. As you will recall, the scope of work for the NCC technical analysis calls for an evaluation of both year 2050 and year 2030 (opening year) conditions. This new memorandum focuses on the options to develop Year 2030 land use projections by jurisdiction. The options presented in this memorandum assume that the year 2030 demographic forecasts (year 2030 land use control totals) presented in the 2007 StanCOG Regional Transportation Plan (2007 RTP) should remain unchanged.

### YEAR 2030 and 2050 LAND USE PROJECTIONS

Table 1 summarizes the demographic forecasts in Stanislaus County based on information presented in the 2007 RTP and the Year 2050 Land Use Memorandum. As shown in Table 1 the per-household employment rate is estimated to decline slightly through year 2030 and then increase after year 2030.

| TABLE 1<br>DEMOGRAPHIC FORECASTS IN STANISLAUS COUNTY <sup>1</sup> |           |           |           |
|--|-----------|-----------|-----------|
|  | Year 2000 | Year 2030 | Year 2050 |
| Population   | 446,997   | 821,963   | 1,191,344 |
| Single-Family Households   | 106,846   | 191,300   | 276,900   |
| Multi-Family Households  | 38,300    | 72,500    | 104,941   |
| Total Households   | 145,146   | 263,800   | 381,841   |
| Persons per Household  | 3.08      | 3.12      | 3.12      |
| Employment   | 174,066   | 296,940   | 473,483   |
| Employment per Household   | 1.2       | 1.13      | 1.24      |

<sup>1</sup> Based on information provided in the 2007 StanCOG RTP and *Final Year 2050 Land Use Projections for the North County Corridor Project*, 2008.

## YEAR 2030 LAND USE PROJECTIONS BY JURISDICTION

There are four typical approaches that could be used to develop year 2030 land use projections by jurisdiction. Each is discussed below along with its advantages and disadvantages; our recommendation is to follow Approach #4.

### Approach #1

The first approach is to use the land use projections directly from the year 2030 traffic demand model developed for the regional transportation plan. These projections along with the 2008 and 2050 land use estimates are presented in Table 2.

| Jurisdiction                | Year 2008 <sup>1</sup> |                | Year 2030 <sup>2</sup> |                    |                |                    | Year 2050 <sup>3</sup> |                    |                |                    |
|-----------------------------|------------------------|----------------|------------------------|--------------------|----------------|--------------------|------------------------|--------------------|----------------|--------------------|
|                             | Homes                  | Jobs           | Homes                  |                    | Jobs           |                    | Homes                  |                    | Jobs           |                    |
|                             |                        |                | Number                 | Annual Growth Rate | Number         | Annual Growth Rate | Number                 | Annual Growth Rate | Number         | Annual Growth Rate |
| Modesto                     | 79,588                 | 113,980        | 116,048                | 2.1%               | 141,524        | 1.1%               | 186,041                | 3.2%               | 255,115        | 2.9%               |
| Oakdale                     | 9,538                  | 8,593          | 19,433                 | 4.7%               | 18,331         | 5.2%               | 21,239                 | 2.9%               | 19,006         | 2.9%               |
| Riverbank                   | 6,447                  | 3,739          | 11,811                 | 3.8%               | 7,477          | 4.5%               | 17,613                 | 4.1%               | 10,059         | 4.0%               |
| Salida                      | 4,348                  | 5,776          | 5,063                  | 0.7%               | 2,610          | -2.5%              | 9,343                  | 2.7%               | 29,355         | 9.7%               |
| Rest of County <sup>4</sup> | 55,854                 | 67,503         | 111,445                | 4.5%               | 126,998        | 4.0%               | 147,605                | 3.9%               | 159,948        | 3.3%               |
| <b>Total</b>                | <b>155,775</b>         | <b>199,591</b> | <b>263,800</b>         | <b>3.2%</b>        | <b>296,940</b> | <b>2.2%</b>        | <b>381,841</b>         | <b>3.5%</b>        | <b>473,483</b> | <b>3.3%</b>        |

<sup>1</sup> Based on the base year model developed for NCC.  
<sup>2</sup> Based on the year 2030 model for regional transportation plan.  
<sup>3</sup> Based on information in the *Final Year 2050 Land Use Projections for the North County Corridor Project, 2008*.  
<sup>4</sup> Includes the cities of Ceres, Hughson, Newman, Patterson, Turlock, Waterford and the unincorporated areas in Stanislaus County.

### Advantages:

1. There would be complete consistency with the land use assumptions by traffic analysis zone (TAZ) used for the StanCOG Regional Transportation Plan.

### Disadvantages:

1. The annual growth rates in the four major jurisdictions along the North County Corridor (i.e. Modesto, Oakdale, Riverbank, and Salida) are generally not in line with the annual growth rates necessary to achieve the ultimate year 2050 land use projections. There are some fairly large discrepancies between the 2030 RTP totals and the 2050 projections based on relevant General Plans. The largest discrepancy occurs in Salida, where the RTP shows a decline in jobs between 2008 and 2030, while the Salida Community Plan projects substantial increases in local employment for the next several decades. On the flip side, the RTP shows substantial job growth in Oakdale, with that community achieving almost all of the employment expected by 2050 within the first 20 years of the planning horizon, leaving

almost no growth to occur between 2030 and 2050. This situation may result in opening year traffic projections that are relatively unbalanced along the corridor, with traffic patterns that bear little resemblance to the patterns that are likely to come from the 2050 projections..

**Approach #2**

The second approach is to assume that the four major jurisdictions would grow at a constant growth rate between 2008 and 2050. Therefore, under this approach the year 2030 land use in the four primary jurisdictions would be estimated by linear interpolation between 2008 and 2050 conditions. The land use projections for the rest of the county would be estimated by subtracting the land use estimates for the four jurisdictions from the countywide control totals from the RTP. These projections along with the 2008 and 2050 land use estimates are presented in Table 3.

| <b>Table 3<br/>Year 2030 Land Use Allocation Under Approach #2</b> |                        |                |                        |                    |                |                    |                        |                    |                |                    |
|--|------------------------|----------------|------------------------|--------------------|----------------|--------------------|------------------------|--------------------|----------------|--------------------|
| Jurisdiction   | Year 2008 <sup>1</sup> |                | Year 2030 <sup>2</sup> |                    |                |                    | Year 2050 <sup>3</sup> |                    |                |                    |
|  | Homes                  | Jobs           | Homes                  |                    | Jobs           |                    | Homes                  |                    | Jobs           |                    |
|  |                        |                | Number                 | Annual Growth Rate | Number         | Annual Growth Rate | Number                 | Annual Growth Rate | Number         | Annual Growth Rate |
| Modesto  | 79,588                 | 113,980        | 135,349                | 3.2%               | 187,908        | 2.9%               | 186,041                | 3.2%               | 255,115        | 2.9%               |
| Oakdale  | 9,538                  | 8,593          | 15,667                 | 2.9%               | 14,047         | 2.9%               | 21,239                 | 2.9%               | 19,006         | 2.9%               |
| Riverbank  | 6,447                  | 3,739          | 12,296                 | 4.1%               | 7,049          | 4.0%               | 17,613                 | 4.1%               | 10,059         | 4.0%               |
| Salida   | 4,348                  | 5,776          | 6,964                  | 2.7%               | 18,127         | 9.7%               | 9,343                  | 2.7%               | 29,355         | 9.7%               |
| Rest of County <sup>4</sup>  | 55,854                 | 67,503         | 93,524                 | 3.1%               | 69,809         | 0.2%               | 147,605                | 3.9%               | 159,948        | 3.3%               |
| <b>Total</b>   | <b>155,775</b>         | <b>199,591</b> | <b>263,800</b>         | <b>3.2%</b>        | <b>296,940</b> | <b>2.2%</b>        | <b>381,841</b>         | <b>3.5%</b>        | <b>473,483</b> | <b>3.3%</b>        |

<sup>1</sup> Based on the base year model developed for NCC.  
<sup>2</sup> Based on the year 2030 model for regional transportation plan.  
<sup>3</sup> Based on information in the *Final Year 2050 Land Use Projections for the North County Corridor Project*, 2008.  
<sup>4</sup> Includes the cities of Ceres, Hughson, Newman, Patterson, Turlock, Waterford and the unincorporated areas in Stanislaus County.

Advantages:

1. The year 2030 land use control totals would remain the same as those used for the regional transportation plan.
2. The land use growth rates for the four major jurisdictions would be consistent with the growth rates necessary to achieve the ultimate year 2050 land use projections. This assumption would help avoid undersizing the facility in the opening year and provides the most conservative basis for identifying project impacts in the opening year.

Disadvantages:

1. The constant growth rates used for the four major jurisdictions mean that those four jurisdictions would absorb almost all of the countywide job growth, with a very small net increase of only 2,306 jobs in the rest of the county. This is almost certainly unrealistic and may run the risk of allowing substantive arguments about the growth-inducing nature of the NCC facility or about the potential for the project evaluation to be unrealistically skewed due to the high level of growth assumed along the corridor.

**Approach #3**

The third approach is to assume that every jurisdiction in the county grows at the same pace between 2008 and 2030. These projections along with the 2008 and 2050 land use estimates are presented in Table 4.

| <b>Table 4<br/>Year 2030 Land Use Allocation Under Approach #3</b> |                        |                |                        |                    |                |                    |                        |                    |                |                    |
|--|------------------------|----------------|------------------------|--------------------|----------------|--------------------|------------------------|--------------------|----------------|--------------------|
| Jurisdiction   | Year 2008 <sup>1</sup> |                | Year 2030 <sup>2</sup> |                    |                |                    | Year 2050 <sup>3</sup> |                    |                |                    |
|  | Homes                  | Jobs           | Homes                  |                    | Jobs           |                    | Homes                  |                    | Jobs           |                    |
|  |                        |                | Number                 | Annual Growth Rate | Number         | Annual Growth Rate | Number                 | Annual Growth Rate | Number         | Annual Growth Rate |
| Modesto  | 79,588                 | 113,980        | 134,780                | 3.2%               | 169,573        | 2.2%               | 186,041                | 3.2%               | 255,115        | 2.9%               |
| Oakdale  | 9,538                  | 8,593          | 16,152                 | 3.2%               | 12,784         | 2.2%               | 21,239                 | 2.9%               | 19,006         | 2.9%               |
| Riverbank  | 6,447                  | 3,739          | 10,918                 | 3.2%               | 5,563          | 2.2%               | 17,613                 | 4.1%               | 10,059         | 4.0%               |
| Salida   | 4,348                  | 5,776          | 7,363                  | 3.2%               | 8,593          | 2.2%               | 9,343                  | 2.7%               | 29,355         | 9.7%               |
| Rest of County <sup>4</sup>  | 55,854                 | 67,503         | 94,587                 | 3.2%               | 100,427        | 2.2%               | 147,605                | 3.9%               | 159,948        | 3.3%               |
| <b>Total</b>   | <b>155,775</b>         | <b>199,591</b> | <b>263,800</b>         | <b>3.2%</b>        | <b>296,940</b> | <b>2.2%</b>        | <b>381,841</b>         | <b>3.5%</b>        | <b>473,483</b> | <b>3.3%</b>        |

<sup>1</sup> Based on the base year model developed for NCC.  
<sup>2</sup> Based on the year 2030 model for regional transportation plan.  
<sup>3</sup> Based on information in the *Final Year 2050 Land Use Projections for the North County Corridor Project, 2008*.  
<sup>4</sup> Includes the cities of Ceres, Hughson, Newman, Patterson, Turlock, Waterford and the unincorporated areas in Stanislaus County.

Advantages:

1. The year 2030 land use control totals would remain the same as those used for the regional transportation plan.
2. Every jurisdiction in the County is assumed to grow at the same pace which helps eliminate any unrealistic overloading of land use along the project alignment to help justify its need.

Disadvantages:

1. This approach effectively assumes a moderate growth rate between 2008 and 2030, followed by a very aggressive growth rate between 2030 and 2050. The modest growth between 2008 and 2030 could result in undersizing of the North County Corridor in the opening year leading to a facility that would operate at unacceptable service levels.

**Approach #4**

The first three are the most straightforward and common approaches that could be used to allocate the year 2030 land use, but each has relatively serious disadvantages. We recommend a hybrid of Approach #2 and #3 as the best method to prepare land use projections that are reasonably realistic while still maintaining consistency with the RTP control totals. Under Approach #4, the year 2030 land use for each of the four major jurisdictions would be estimated by averaging the results of Approach #2 and #3. The land use projections for the rest of the county would be estimated by subtracting the estimates for the four jurisdictions from the 2030 control totals. These projections along with the 2008 and 2050 land use estimates are presented in Table 5.

| Jurisdiction                | Year 2008 <sup>1</sup> |                | Year 2030 <sup>2</sup> |                    |                |                    | Year 2050 <sup>3</sup> |                    |                |                    |
|-----------------------------|------------------------|----------------|------------------------|--------------------|----------------|--------------------|------------------------|--------------------|----------------|--------------------|
|                             | Homes                  | Jobs           | Homes                  |                    | Jobs           |                    | Homes                  |                    | Jobs           |                    |
|                             |                        |                | Number                 | Annual Growth Rate | Number         | Annual Growth Rate | Number                 | Annual Growth Rate | Number         | Annual Growth Rate |
| Modesto                     | 79,588                 | 113,980        | 135,065                | 3.2%               | 178,741        | 2.6%               | 186,041                | 3.2%               | 255,115        | 2.9%               |
| Oakdale                     | 9,538                  | 8,593          | 15,910                 | 3.0%               | 13,416         | 2.6%               | 21,239                 | 2.9%               | 19,006         | 2.9%               |
| Riverbank                   | 6,447                  | 3,739          | 11,607                 | 3.6%               | 6,306          | 3.1%               | 17,613                 | 4.1%               | 10,059         | 4.0%               |
| Salida                      | 4,348                  | 5,776          | 7,164                  | 2.9%               | 13,360         | 6.0%               | 9,343                  | 2.7%               | 29,355         | 9.7%               |
| Rest of County <sup>4</sup> | 55,854                 | 67,503         | 94,056                 | 3.1%               | 85,118         | 1.2%               | 147,605                | 3.9%               | 159,948        | 3.3%               |
| <b>Total</b>                | <b>155,775</b>         | <b>199,591</b> | <b>263,800</b>         | <b>3.2%</b>        | <b>296,940</b> | <b>2.2%</b>        | <b>381,841</b>         | <b>3.5%</b>        | <b>473,483</b> | <b>3.3%</b>        |

<sup>1</sup> Based on the base year model developed for NCC.  
<sup>2</sup> Based on the year 2030 model for regional transportation plan.  
<sup>3</sup> Based on information in the *Final Year 2050 Land Use Projections for the North County Corridor Project, 2008*.  
<sup>4</sup> Includes the cities of Ceres, Hughson, Newman, Patterson, Turlock, Waterford and the unincorporated areas in Stanislaus County.

**NEXT STEPS**

We would appreciate your input on these approaches, and look forward to receiving direction from you by February 17, 2009 so the forecasting process may proceed. If there are any questions or comments, please contact me at (925) 930-7100.