



# COMMUNITY DEVELOPMENT AGENCY

## LONG RANGE PLANNING

---

2850 Fairlane Court, Placerville, CA 95667  
Phone (530) 621-4650, Fax (530) 642-0508

February 4, 2014

TO: Board of Supervisors

FROM: David Defanti, Assistant Director

**Subject:** Special Meeting Regarding General Plan Travel Demand Model

---

On December 10, 2013, the Board of Supervisors (Board) directed staff to return on February 24, 2014 to provide an in-depth discussion regarding the El Dorado County (EDC) Travel Demand Model (TDM) and address how the County implements Measure Y. Based on this direction, this report will address three major topics:

- Provide information on EDC's TDM (Sections 1 and 2 of this report).
- Discuss and request direction on the 20-Year growth forecast to be used for the Major Five-Year Capital Improvement Program (CIP) and Traffic Impact Mitigation (TIM) Fee Updates (Section 3 of this report).
- Describe how the County implements General Plan Policy TC-Xa (aka Measure Y) and associated General Plan Policies TC-Xb through TC-Xi (Section 4 of this report).

The format of this report is as follows:

1. What a TDM is and why it is needed.
2. Why and how the County updated the TDM.
3. Need for 20-Year growth forecast, options and recommendation.
4. How EDC implements General Plan Policy TC-Xa (aka Measure Y) and associated General Plan Policies TC-Xb through TC-Xi.
5. Staff recommendation.
6. Next steps.

### 1. What a TDM is and why it is needed

#### Summary

TDMs are used to forecast future trips on transportation facilities (e.g., roadways) and predict a transportation system's performance on roadways as a result of vehicular, transit, bicycle and pedestrian traffic. TDMs provide an objective look at the transportation system, and help policy-makers, planners, engineers and other

stakeholders make informed transportation investment decisions.<sup>1</sup> TDMs are one of many tools used by EDC and others to generate information that helps inform the Board in the decision-making process.

Traffic modeling dates back to the 1950's. Since that time, TDMs have become sophisticated analytical tools used at all levels of government, by educational and research organizations, and by the private sector. Modern TDMs are capable of:

- Showing effects of road improvements (i.e., road widening, etc.), the addition of new roads, and intersection and interchange improvements on traffic patterns and overall transportation system performance.
- Showing impacts of proposed land development projects.
- Forecasting roadway volumes.
- Estimating traffic patterns and impacts based on alternative land use plans.
- Providing inputs for micro simulation analysis which can show individual vehicle movements at intersections and roadway segments.
- Providing inputs for California Environmental Quality Act (CEQA) analysis, such as air quality and noise impacts resulting from traffic.

The underlying assumptions for any TDM include:

- Models are a statistical replication of human behavior that assumes...
  - travel behavior in aggregate is predictable
  - demographic forecasts are reasonable
  - existing conditions are accurately reflected
  - external factors are known and under our control
  - As things change model will be updated
- TDMs do not take into account personal values, the political process, and other non-mathematical considerations.

TDMs are not static - they must be maintained, updated, and improved over time to maintain their usefulness and relevance as planning tools. For example, they must be routinely updated to incorporate new traffic volumes, roadway conditions (such as improvements and new facilities) and land uses. The TDM software itself is also regularly updated to improve performance and add additional features and capabilities.

#### *TDM Use by Federal, State, Regional and Local Governments*

TDMs are widely used by federal, state, regional and local governments in the land use and transportation planning process. However, TDMs are used to respond to different policy questions unique to each jurisdiction or agency. As an example, below is a summary of how the Sacramento Area Council of Governments (SACOG), Caltrans and EDC use similar TDMs in somewhat different ways

---

<sup>1</sup> Thurston Regional Planning Council, "Traffic Modeling"  
<http://www.trpc.org/regionalplanning/transportation/projects/Pages/TrafficModeling.aspx>

depending on the types of information needed to support their respective planning mandates and initiatives.

- **SACOG:** SACOG is the association of local governments in the six-county Sacramento Region (see Attachment B for a SACOG fact sheet and map of their area). SACOG's main purpose for modeling is to provide the emission analysis for the regional transportation plan and program. This analysis is required to qualify roadway projects for state and federal funding. SACOG has two TDMs: SACSIM (Sacramento Activity Based Travel Simulation Model) and SACMET (Sacramento Regional Travel Demand Model). In 2007, SACOG switched from their SACMET model to the SACSIM model. SACSIM was created by SACOG to more finely model regional traffic and emission impacts. However, the SACMET model is still widely used by SACOG's member agencies, since it is an easier model to use as compared to the very data intensive SACSIM. Caltrans uses both the SACMET and SACSIM models at this time.

SACOG's land use and roadway network assumptions are somewhat general, which is appropriate for regional analysis, but does not allow for detailed analysis in EDC without significant modification. Given SACOG's mission, SACOG's TDMs and assumptions are appropriate for regional modeling.

- **Caltrans.** Caltrans uses TDMs to evaluate, manage and plan improvements for more than 50,000 miles of California's highway and freeway lanes. Caltrans often uses SACOG's models as an initial base for studies within the SACOG region. Much like SACOG, Caltrans' studies often encompass very large areas (e.g., multiple counties). Therefore, the general land use and roadway network assumptions found in SACOG's models are appropriate for such studies. Caltrans also uses micro simulation for the more refined analysis needed to evaluate operational improvements and for certain planning and new facilities studies.

Attachment C summarizes key differences between Caltrans' and EDC's use of TDM output.

- **El Dorado County.** EDC's TDM is specifically tailored to the County. The EDC TDM consists of 625 Traffic Analysis Zones (TAZ) (497 within EDC and 128 in Sacramento and Placer County<sup>2</sup>). This superior zonal resolution (more than seven times that of SACMET) enables a much more detailed analysis of County roadways. In addition, future land uses in EDC's TDM more accurately reflect the County's adopted General Plan land use categories as

---

<sup>2</sup> TAZs were included outside the County line to capture more accurate information of traffic entering/passing through EDC

well as overall land use growth control totals. This is not the case for the SACMET/SACSIM models developed and maintained by SACOG. For example, SACMET's land use identified the El Dorado Hills Business Park as "retail", whereas EDC's TDM more accurately depicts its uses as "industrial" and "office." SACMET also showed golf courses, churches, and storage facilities in EDC as retail. Since retail uses result in higher trip generation rates than industrial, office, golf course and church uses, these discrepancies could lead to differences in roadway impacts if not corrected. While these land use variations can lead to significant differences for county-specific modeling, they are less of a concern for more general, large-scale regional modeling.

Since EDC's TDM more accurately represents existing and planned land uses and roadways in the County, it is considered the most appropriate analysis tool to use for the County's planning needs, including but not limited to:

- Complying with CEQA and National Environmental Protection Act (NEPA) requirements, including determining transportation-related impacts of a proposed development project in EDC and identifying methods or ways to reduce or eliminate such impacts.
- Implementing General Plan goals and policies that require the County to create and routinely update a 10-Year CIP, a 20-Year CIP and a TIM Fee Program. The TDM is used to update the CIP and TIM fee annually (minor update) and every five years (major update). The annual updates ensure that the appropriate infrastructure is included (i.e. Diamond Springs Parkway), the infrastructure is appropriately sized (e.g., two lanes vs. four lanes), and the project schedule and funding is up to date. The General Plan also requires a comprehensive update to the CIP and TIM Fee Programs every five years based on changes in growth forecasts. See Attachment D for the update cycles.
- Implementing Measure Y and evaluating traffic impacts of land development proposals (See Section 4 for more details).
- Analyzing General Plan and Zoning Ordinance updates and amendments.

This summary introduces what a TDM is and illustrates how public agencies use TDMs in different ways to meet their planning and policy needs. For meeting EDC planning objectives, development of the EDC TDM update and refinement of land use and roadway network assumptions consistent with the County's adopted General Plan is an important achievement. Given that the EDC TDM meets all applicable State/Federal guidelines for accuracy, SACOG and Caltrans have also both endorsed its use and potential application for future regional and statewide planning efforts.

## 2. Why and how the County updated the TDM

### Background

On December 19, 2011, the Board received a TDM Needs Assessment that reviewed the prior TDM and highlighted areas where it could be improved. The Needs Assessment determined that an updated TDM was required because:

- The former TDM was originally created in 1998 and was becoming dated. The TDM software used was no longer available, and therefore software updates were no longer available.
- New software packages have many updated features, including the opportunity to more easily model modal split (e.g., public transit vs. vehicle vs. bicycle), Geographic Information Systems (GIS) capabilities, and thematic mapping. Thematic mapping takes advantage of GIS and can provide graphical representations of roadway conditions, future housing densities, etc., which are useful for public information and illustrations.
- The former TDM had a 2025 planning horizon. A 2035 horizon is currently necessary to meet the need of a 20-Year CIP.
- Both County staff and the public voiced concern regarding the age of the former TDM baseline model and the need to update necessary data in several key areas of the County.

### Project Initiation and Implementation

On January 24, 2012, the Board of Supervisors authorized the TDM update and a contract with Kimley-Horn and Associates, Inc. (KHA). As part of this contract, KHA was directed to decline traffic analysis for land development projects in EDC in order to ensure there would be no conflict of interest in the development of the TDM.

The original scope of work for the TDM update included the following components:

- Component 1: Update the TDM to use 2010 traffic data as the “baseline” for existing traffic conditions.
- Component 2: Model the traffic impacts for the Targeted General Plan Amendment and Zoning Ordinance Update Environmental Impact Report.
- Component 3: Update the growth forecast through 2035 for use in the TDM (provide two forecast scenarios for the County’s consideration).

Several meetings were held with Caltrans, SACOG, and other groups, such as the engineering subcommittee of the Community and Economic Development Advisory Committee (CEDAC), to review the draft scope of work.

Additional concerns related to the appropriate growth forecast scenarios were brought up by the public. The TDM scope of work was later amended on March 5, 2013 to include a fourth component:

- Component 4: Provide a third growth forecast scenario for the County’s consideration.

KHA began developing the TDM in early 2012. The basic steps to update the TDM were as follows:

1. Collect 2010 land use and socio-economic data.
2. Update the roadway network to include changes through 2010.
3. Update the TAZ<sup>3</sup> Structures (as discussed during the June 26, 2012 Board presentation).
4. Collect traffic count and transit ridership data.
5. Determine trip generation and trip distribution (as discussed during the March 25, 2013 Board presentation).
6. Develop the modal choice component (vehicular, bicycle, pedestrian, and transit) throughout EDC (as explained in the March 25, 2013 Board presentation)
7. Model calibration/validation.
8. Development of future growth forecast scenarios (discussed further in Section 3 of this report).

Data sources used to update the TDM include, but were not limited to:

- 2008 El Dorado County Housing Element
- 2010 Living Units database
- 2010 EDC parcel shapefile
- 2010 US Census data and shapefiles
- 2000 Sacramento Area Household Travel Survey: Final Report
- 2008 SACOG Small Area Data Set
- 2008 SACOG TAZs
- 2008 Model Update Report: SACMET 07
- El Dorado County adopted 2013 CIP
- El Dorado County GIS database information
- El Dorado County Land Management Information System data
- El Dorado County Traffic Count information
- Bay Area Urban Economics report
- El Dorado County 2004 Adopted General Plan

As development of the TDM progressed, various updates were brought before the Board to get input during this process. See Attachment E for the dates and topics of updates. SACOG and Caltrans were involved throughout the entire TDM update process, and have provided comments during the major steps, including those related to finalizing the 2010 Baseline, analyzing the roadway network, revising the TAZs, and determining the basic methodology used in the development of the forecast.

---

<sup>3</sup> A TAZ is a basic unit for converting spatial area data into tabular data for use by the TDM. A TAZ displays information related to land use, employment, population, socio-economic, and other data.

In April 2013, the County contracted with Kittelson & Associates, Inc. (Kittelson) to provide a peer review of the EDC's TDM. Kittelson does not perform developer-related traffic engineering within EDC, and as such, was identified as the most neutral third party available to conduct an impartial peer review. The purpose of the peer review was to provide an expert overview of model inputs, assumptions, and outputs to verify the model's optimization of the integration of land use and roadway network relating to baseline (existing as of 2010) and forecast conditions. A copy of Kittelson's comments can be found as Attachment F. EDC also provided comments on their documentation and coordinated with Kittelson and Kimley-Horn to address the comments and incorporate the necessary changes to the TDM. Kimley-Horn's response to comments to Kittelson and EDC are included in Attachment F.

The draft TDM was completed in May 2013. On May 30, 2013, staff began to release the TDM data (2010 Baseline and Draft 2035 Growth Forecast) on May 30, 2013, to the public, traffic consultants and others upon request. Prior to release of the data, the requester must sign a disclaimer acknowledging that the model data was still draft. A new TDM web page was launched on August 16, 2013. The web page is available at: <http://www.edcgov.us/Government/Planning/TDM/TDM.aspx>

As a result of close coordination with SACOG and Caltrans throughout the TDM update process, both agencies have provided letters concurring with the methodology used to develop EDC's TDM (Attachment G).

Both agencies have expressed interest in using EDC's TDM and/or its data in their future regional and statewide planning efforts.

*Concerns Regarding Validation/Calibration and General Plan Amendment Projects*

Members of the public recently raised two concerns regarding the TDM: 1) how the TDM was validated and calibrated; and 2) how the TDM addresses proposed General Plan Amendment projects. These issues are addressed below.

1. **TDM Validation/Calibration.** The validation and calibration process begins once the 2010 Baseline data is entered into the model. The goal of validation/calibration is to fine tune the model so that it accurately produces current conditions, and in turn provides good information for future conditions.

Model calibration and validation is an iterative process as illustrated in Figure 1. Adjustments are made to the data in the mode ("Model Estimation") until the model replicates observed patterns and behavior.

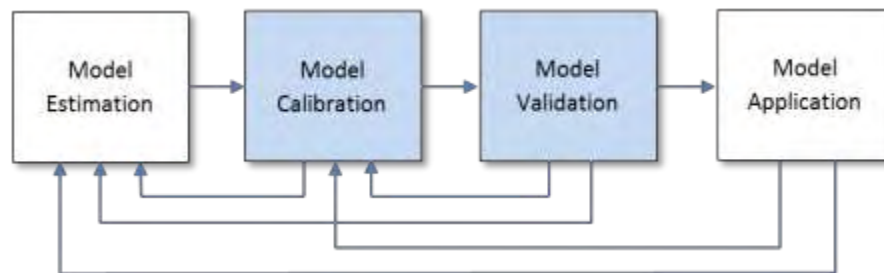


Figure 1: Travel Demand Model Development and Application Process

The results of EDCs TDM validation/calibration is provided in Attachment H. The TDM validates/calibrates to both the Federal Highway Administration (FHWA) and the State Travel Forecasting Guidelines (Caltrans November, 1992). Based on these state and national guidelines, the EDC TDM meets all the applicable criteria for generating reasonable travel forecasts for EDC.

To properly gauge model performance, it is important to note that different roadways are assigned different allowable percentages of deviation from actual counts per State/Federal guidelines. The more traveled a roadway the less acceptable error can be tolerated. Conversely, the less traveled a roadway – more error is acceptable. The acceptable percent deviation has an inverse relationship with traffic volume (i.e., the acceptable percent deviation increases as traffic volumes decrease).<sup>4</sup> In other words, TDMs are expected to validate and forecast more accurately for larger and/or more significantly travelled roadways, and less accurately for smaller or less travelled roadways.

As an example, the initial TDM output (i.e., the “raw data”) presented in Attachment H shows that EDC’s TDM validates very closely for major roadways like Highway 50 west of Latrobe (actual traffic count was 36,909 and forecast was 39,931). However, low volume roadways in rural areas have larger allowable deviations, as described in the State/FHWA guidelines. These deviations can be attributed to several factors, including:

- TAZs are often larger in rural areas due to lower density of development, and larger TAZs can present challenges when loading traffic volumes.
- Low volume roadways in rural areas are more difficult to model since many small roads (e.g., dirt roads) have multiple unidentified access points (e.g., unmarked driveways).

---

<sup>4</sup> The percent error and percent Root Mean Square of Error (RMSE) targets by roadway classifications shown in Exhibit 4 in Attachment H are based on the FHWA guidelines. The Percent Root Mean Square Error (percent RMSE) is a statistical measure of accuracy that calculates the standard deviation of the errors, or differences between the volumes predicted by the model and the actual counts. A higher percent RMSE value suggests that there is increasing variability between the model volume and the actual count.



- Land uses in rural areas often generate trips differently as compared to other areas. Trips generated from rural houses and jobs are more difficult to predict given greater variations in socio-economic conditions and the effect that distance begins to have on trip making characteristics. Additionally, some rural homes may be second or vacation homes which do not have typical trip generation characteristics.

The raw data in Attachment H is used as part of the calibration and validation process. However, this raw data is not the final product. A post-processing step is still required before model outputs are considered suitable as inputs for engineering and planning applications.

Post-Processing is the practice of adjusting TDM output for the forecast year based on known errors from the 2010 base year model. Post-processing adjusts for deviations between the 2010 base year results and actual traffic counts. The model calibration/validation process, as well as the post-processing, would result in adjusting for errors, such as discrepancies in actual traffic counts vs. forecasts for low volume roadways in rural areas.

2. **Proposed General Plan Amendment Projects.** Concerns were raised that the TDM assumes or includes several pending General Plan Amendment projects. To clarify, only existing General Plan land use designations were used as the basis for the TDM. No proposed development projects were included. The pending General Plan Amendment projects require their own processes, including their own specific Traffic Impact Study (TIS), environmental analysis, and other studies in order to be considered for approval or denial by the Board. If the Board were to adopt a change to General Plan land uses, the TDM would be updated to reflect this change.

### **3. Need for 20-Year growth forecast, options and recommendation**

The TDM uses 2010 traffic data as a “baseline” for existing traffic conditions. In order to forecast future traffic and roadway conditions, a land use “growth forecast” must be input into the model. This growth forecast is an assumption of the levels of housing and employment the County is anticipated to accommodate over the next 20 years and an assumption of where these homes and employment uses will generally be located. Choosing a growth forecast does not approve or deny any new development. However, the growth forecast is a key assumption that feeds into forecasting future traffic conditions and planning future roadway improvements. For example, new homes bring new residents who bring more traffic/trips that must be accommodated. In addition, new employment created in the County may reduce the length of the trips on highways and local roadways by reducing the amount of commute traffic travelling to Sacramento County.

The update of the 20-year growth forecast is required by EDC's General Plan. The forecast is needed to update the CIP and TIM Fee programs, as well as to move forward on projects the Board has identified as priorities (e.g., Diamond Springs Parkway and the Missouri Flat Master Circulation and Funding Plan [MC&FP] Phase II). Forecasting growth is an iterative and ongoing process – forecasts are verified annually (as part of the annual CIP and TIM fee updates) as well as updated every five years (as part of the Major Five-Year CIP and TIM Fee program updates). Routinely verifying and updating growth forecasts allows the County to account for new information and adjust its assumptions and plans accordingly.

Three growth forecast scenarios are provided below for the Board's consideration:

- Scenario 1: Historical growth rate (1.03%) with historical growth distribution (approximately 62% within Community Regions and approximately 38% in Rural Centers/Regions). The Regional Housing Needs Allocation (RHNA) is accommodated in this scenario.
- Scenario 2: Existing + Entitled + RHNA (approximately 50% within Community Regions and approximately 50% in Rural Centers/Regions).
- Scenario 3: Historical growth rate (1.03%) with General Plan-consistent growth distribution (approximately 75% within Community Regions and approximately 25% in Rural Centers/Regions). RHNA is accommodated in this scenario.

The discussion below provides the following for each scenario:

- A description of the scenario.
- A draft TDM output showing roadway impacts if the scenario is chosen as the 20-year growth forecast.
- An approximate program cost.

*Scenario 1: Historical growth rate (1.03%) with historical growth distribution (approximately 62% within Community Regions and approximately 38% in Rural Centers/Regions)*

On January 31, 2013, the California Department of Finance (DOF) projected that Countywide population will increase by about 67,700 people between 2010 and 2035, an average annual growth rate of 1.28 percent. This includes growth in the unincorporated area of the Tahoe basin and the cities of Placerville and South Lake Tahoe. This equates to approximately 26,500 new residential housing units.

With the adoption of SACOG's 2012 Metropolitan Transportation Plan (MTP), SACOG projected that the population of the West Slope of the County (not including the City of Placerville) will increase by approximately 26,700 people between 2010 and 2035, an average annual growth rate of 0.72 percent. This equates to approximately 10,500 new residential housing units.

As shown in the BAE Urban Economics Report dated March 14, 2013 (Attachment I), EDC's residential growth projection is based on a continuation of the County's

historic West Slope residential growth trend over the 2010 to 2035 time period, yielding an average annual growth rate of 1.03 percent. This rate is based on building permit data compiled by EDC. This growth trend seems reasonable to project residential growth through 2035, as the estimate falls in the middle of the DOF and SACOG projections.

Scenario 1 forecasts that 62% of this growth will occur within current Community Regions with public sewer and water service areas and 38% will occur within Rural Centers/Regions. This growth distribution is reflective of past growth patterns. Note that this scenario does not forecast full build-out of all approved plans (specific plans, tentative maps, and parcel maps) by 2035. This scenario also accommodates RHNA. RHNA is defined as parcels/units the County must accommodate to meet state requirements. Each jurisdiction is required by state law to ensure that sufficient land with appropriate zoning is available to accommodate its fair share of the region's future housing needs for all income groups for the 2013-2021 planning period. SACOG is the agency tasked with identifying housing needs for each jurisdiction, consistent with state-approved regional forecast totals. As a result of this exercise, the total RHNA allocation for the West Slope of El Dorado County for the next eight-year planning period (excluding South Lake Tahoe) is 3,948 units for the planning period (January 1, 2013, through October 31, 2021).

This scenario and preliminary TDM results were presented to the Board on July 30, 2013, and the information was posted on the County website.

Attachment J provides a summary of TDM results for Scenario 1, including Level of Service (LOS) information on the County roadway network and a rough estimate of the cost of roadway improvements.

*Scenario 2: Existing + Entitled + Regional Housing Needs Allocation (RHNA) (approximately 50% within Community Regions and approximately 50% in Rural Centers/Regions)*

On August 26, 2013, some members of the public requested a scenario that analyzes the build-out of all existing parcels, entitled properties, and parcels identified to accommodate the RHNA, as adopted by SACOG and as required by the state.

*Existing* is defined as parcels that can be developed by obtaining a building permit.

*Entitled* is defined as all approved specific plans, tentative maps, and parcel maps. Examples of entitled properties include the following:

- Serrano Specific Plan
- Bass Lake Hills Specific Plans
- West Valley View Specific Plan
- Promontory Specific Plan
- Carson Creek

- Additional approved tentative maps and parcel maps

Attachment K provides a summary of TDM results for Scenario 2, including LOS information on the County roadway network and a rough estimate of the cost of roadway improvements.

*Scenario 3: Historical growth rate (1.03%) with General Plan-consistent growth distribution (approximately 75% within Community Regions and approximately 25% in Rural Centers/Regions)*

Scenarios 1 and 3 are very similar – both include a 1.03% growth forecast, which is consistent with historical growth rates observed within the County. However, Scenario 1 forecasts that 62% of this growth will occur within current Community Regions and 38% will occur within in Rural Centers/Regions, which is reflective of past growth patterns. Scenario 3 forecasts that 75% of this growth will occur within Community Regions with public sewer and water service areas, (excluding the Camino/Pollock Pines Community Regions) and 25% will occur within Rural Centers/Regions, which is consistent with the adopted General Plan and Board identified goals and objectives. This scenario also accommodates RHNA.

It should be noted that Scenario 1 does not forecast full build-out of all approved plans (specific plans, tentative maps, and parcel maps) by 2035, while Scenario 3 forecasts near full build-out of approved plans by 2035.

Attachment L provides a summary of TDM results for Scenario 3, including LOS information on the County roadway network and a rough estimate of the cost of roadway improvements.

*Recommendation*

The three proposed scenarios all forecast approximately the same number of new residential units through 2035: Scenarios 1 and 3 forecast approximately 17,500 new units; and Scenario 2 forecasts approximately 18,500 new units. Scenarios 1 and 3 forecast the units to be built over a 20-year period. Scenario 2 assumes build out of the units independent of time.

The primary difference between the three scenarios is the distribution of the new units. Scenario 3 distributes most of the new units to areas with access to public water and sewer services and within closer proximity to U.S. 50, and the least amount of new units to rural areas. Scenario 2 assumes the least amount of new units within areas with access to public water and sewer services and within closer proximity to U.S. 50, and the most amount of growth in rural areas.

Since all three Scenarios forecast approximately the same amount of growth, the distribution of this growth is the factor that will have the greatest effect on the CIP and TIM Fee program. See Attachment M for a summary of differences among the three Scenarios.

Staff recommends the Board select Scenario 3 as the starting point for initiating the major Five-Year CIP and TIM Fee updates. Of the three scenarios presented, this is the most consistent with the adopted General Plan goals and policies, and Board-identified objectives for the General Plan 5-year review, including creating jobs, reducing sales tax leakage, reducing constraints to the development of affordable housing, and preserving and protecting agriculture and natural resource lands. Scenario 3 also provides the best opportunity for using existing infrastructure capacity while assuming the least amount of growth in the rural areas of the County.

Once the Board adopts a 20-year growth forecast, the TDM can be run to determine what roadway infrastructure is needed to accommodate the forecast according to its intensity and distribution. While the TDM data is a first step, a more finite analysis is required to get to the level of detail as discussed in Section 2 of this document. Several parameters can be used to refine what the County envisions its 2035 roadway infrastructure to look like. Such parameters include design standards, turn movements, restricted access, number of access points, etc. (See Attachment N for methods the County can consider to preserve rural two-lane roadways).

**4. How EDC implements General Plan Policy TC-Xa (aka Measure Y) and associated General Plan Policies TC-Xb through TC-Xi**

EDC County Counsel has provided a memorandum (Attachment O) that includes background discussion of General Plan Policy TC-Xa (Measure Y) and related General Plan policies TC-Xb through TC-Xi. It also provides a response to the Board's question regarding whether or not a proposed subdivision project can be considered for approval if a Traffic Impact Study (TIS) shows that Highway 50 is currently at LOS F. The simple answer is yes, as long as the impacts are mitigated consistent with applicable General Plan policies. The County cannot approve a proposed project if its impacts cannot be mitigated as required by the General Plan.

The following discussion illustrates how the County implements General Plan Policy TC-Xa and related policies (TC-Xb through TC-Xi) at the project level.

*Implementation at Project Level*

When the Transportation Division receives an application for a proposed development project, the application is reviewed for consistency with General Plan policies, paying particular attention to General Plan Policy TC-Xa (Measure Y). The first step in this review is to determine if the proposed project requires a TIS. If the project "triggers" General Plan Policy TC-Xa and/or TC-Xe, a TIS is required. An example of a proposed project that would trigger these policies and require a TIS is a subdivision of five or more parcels that could result in or worsen LOS F. "Worsen" is defined in TC-Xe as projects that would increase traffic during the a.m. peak hour, p.m. peak hour, or daily traffic by two percent; add 100 or more daily trips; or add 10 or more trips during the a.m. peak hour or the p.m. peak hour. Peak hours include 6:00 a.m. – 9:00 a.m. and 3:00 p.m. – 6:00 p.m.

If it is determined that a TIS is required, the County (and/or its consultant) provides a scope of work for the TIS to the project applicant. The project applicant's traffic consultant then prepares a TIS. The draft TIS is reviewed by County staff and/or the County's consultant. This review process is often iterative, with staff providing questions, comments and revisions to the project applicant's consultant, and the project applicant's consultant revising the TIS accordingly. Once the County ultimately approves a TIS, it is used to make the following determinations (See Attachment P for an abbreviated flow chart):

- For residential subdivision projects of five lots or more, if a required roadway improvement (mitigation) identified in the project's TIS is included in the **10-Year CIP** to begin construction, the developer may pay TIM fees to mitigate the project's impacts. The TIM fees collected are used to construct projects identified in the CIP. If the County determines that the roadway improvement must be constructed prior to occupancy and is needed before the County plans to construct the roadway, the developer may be required to construct the required roadway improvement. The same is true for commercial, offices, and multi-family projects, with the exception that if their required roadway improvement is included in the **20-Year CIP**, the developer may pay the TIM fees to mitigate the project's impacts. Again, the TIM fees collected are used to construct projects identified in the CIP.
- If the proposed roadways through the project are public, the applicant must dedicate right-of-way and construct or fund improvements necessary to mitigate the effects of traffic from the project. The project applicant's responsibility for such requirements is often ratified as "conditions of approval" for the project.
- For road improvements that provide significant benefit to other developments, the County may allow a project to fund its fair share of improvement costs through TIM fees, or receive reimbursement from TIM fees for construction of improvements beyond the project's fair share. The amount and timing of reimbursements is determined by the County.

#### Implementation through CIP and TIM Fee Programs

In order to maintain the integrity of the County's roadway network, the County is required to implement General Plan Policy TC-Xb and Implementation Measures TC-A and TC-B. These measures require the development of a 10- and 20-Year CIP as well as a 20-Year TIM Fee program. These policies require the TIM fee and CIP be updated annually to evaluate and revise (if necessary) both the growth forecast (using current and projected building permit activity) and costs associated with labor, material, and land. This annual update is often referred to as the "Minor" update. In addition, these policies require the TIM Fee and CIP, to be updated every five years to revise growth forecasts and comprehensively re-evaluate the programs. The update that occurs every five years is often referred to as the "Major" update. Both Minor and Major TIM updates must demonstrate the nexus requirements per Assembly Bill 1600. TDMs are the primary analysis tools for demonstrating the

nexus and proportionality (i.e., fair share) between the costs to improve deficient roadways caused by future development. Attachment D provides graphics illustrating the update cycles.

## **5. Staff recommendation**

Staff recommends the Board approve Scenario 3 as the 20-Year growth forecast as the starting point for initiating the Major five-Year CIP and TIM Fee updates.

## **6. Next steps**

Upon approval of the recommended action, staff will:

- a. Issue a request for proposal (RFP) for the Major Five-Year CIP and TIM Fee updates.
- b. Issue an RFP for the Missouri Flat Circulation and Financing Plan Phase II.
- c. Proceed with Diamond Springs Parkway Project Study Report.