



Memorandum

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To: Claudia Wade, P.E.
El Dorado County DOT

Cc: Steve Kooyman, P.E.
El Dorado County DOT

From: Michael Schmitt, AICP, PTP
Matt Weir, P.E., T.E., PTOE

Date: December 13, 2011

Subject: Technical Memorandum #3 – Traffic Forecast Workshop

In order to build consensus on a recommended approach for traffic forecasting for El Dorado County, a stakeholder working group meeting was held on November 29, 2011. At the workshop, Kimley-Horn staff summarized the results from Tasks 1 through 3 of the needs assessment, and presented their resulting recommendations for traffic forecasting in the County. The workshop included representation from the County and the El Dorado County Transportation Commission (EDCTC), all of whom had previously participated in interviews in support of this effort. Specifically, the following staff were present at the workshop:

- Steve Kooyman, El Dorado County Department of Transportation, Acting Deputy Director of Transportation Planning & Land Development (TP&LD)
- Paul Hom - El Dorado County Department of Transportation, Engineering Division
- Claudia Wade, El Dorado County Department of Transportation, TP&LD – Long Range Planning
- Jose Crummet , El Dorado County Surveyors Office (GIS)
- Shawna Purvines, El Dorado County Planning Services, Long Range Planning
- Peter Mauer, El Dorado County Planning Services, Long Range Planning
- Woodrow Deloria, El Dorado County Transportation Commission (EDCTC)

The draft recommendations developed in Tasks 1 through 3 and presented at this workshop were: (1) in response to specific topics identified in the scope of work of the contract between El Dorado County Department of Transportation and Kimley-Horn; and (2) those developed by Kimley-Horn based on findings developed over the course of the study.

The following sections provide the consensus recommendations that resulted from the Traffic Forecast Workshop.

Should the County continue to maintain its own model?

It is recommend that the County continue to maintain its own travel demand model. The only reasonable alternative to maintaining its own model is to utilize the SACOG model for traffic forecasts within the County. While the SACOG model is widely accepted as being a well developed and reasonable travel demand model, it is not considered ideal for the County's use for the following reasons:

- The SACOG model is at a much grosser scale than the existing El Dorado County model. It has only 126 Traffic Analysis Zones (TAZs) within the County and does not included coverage of the Tahoe Basin.
- SACOG traffic forecasts are not refined enough for County use. In particular, they appear to be low on some critical roadways within the County.
- The network is not curvilinear (stick figure), which does not make it ideal for presentation to the public or decision makers.
- SACOG is not planning to continue support of the SACMET model and the next generation SACSIM model may not be the best fit for County's needs due to its complexity.
- The SACOG model is not tasked with assisting in the determination of Traffic Impact Mitigation (TIM) Fees, which has implications to the model design, including which roadways are modeled and the size and shape of traffic analysis zones.

How best to resolve inconsistencies between agency models?

Based on a review of the SACOG SACMET and El Dorado County models, and our understanding of Caltrans model output, it is unlikely that the differences between the three models can be fully addressed. Historically, differences between the SACOG SACMET model and El Dorado County model have been rooted in land use assumptions. One example is the forecasts included in the *El Dorado County Land Use Forecasts for Draft General Plan*, EPS, March 5, 2002, which showed similar population forecasts for 2025 but significantly different employment estimates. The complexity of this issue is compounded by limitations imposed by regional control totals imposed on the SACOG model. Given that the employment differences are an important reflection of El Dorado County economic development policy, it is recognized that parity between the two models is likely not achievable. Accordingly, it is instead recommended that

the underlying methodologies be the general focus of any efforts to improve consistency between the models. Following are areas of focus for those efforts:

- The following elements of the SACOG model should be reviewed for their applicability in the El Dorado County model. It is important to note this recommendation does not suggest that they should necessarily be wholesale incorporations into a future version of the El Dorado County model, as there may likely need to be allowances made for the desired complexity of the model given the time and resources that the County has to maintain its model.
 - Trip generation function/data
 - External station data, particularly along US 50
 - 2008 Base TAZ Data for applicability (note that SACOG had indicated that they thought it would be helpful if the two models could use similar base data).
- To facilitate future comparisons, County TAZs should fit within existing SACOG TAZ borders.
- County staff responsible for maintaining the model should develop a regular rapport with SACOG staff in order to reduce duplication of effort and take advantage of future model updates and associated data collection efforts. County staff can also use this increased coordination as an opportunity to work with SACOG staff to better understand location of perceived inconsistencies in SACOG model output.
- The County should consider establishing policies to resolve inconsistencies in forecasts (SACOG, EDC, or Caltrans) particularly when they might result in differing levels of improvement.
- The County should document known differences between their model and SACOG, so that it can be clearly articulated when necessary to facilitate decision-making.

Should County staff or a consultant maintain the model?

It is recommended that County staff maintain the El Dorado County model, for the following reasons:

- There is universal support amongst County staff and stakeholders contacted during the course of this study.
- By maintaining the model in house, staff will be able to more easily coordinate model usage for County needs.
- Assuming the platform is also migrated to a Geographical Information System (GIS) base, other departments will be able to more easily share information related to model inputs and outputs.

- In general, a County maintained model should reduce the “black box” effect, which is commonly associated with the existing model. Over time, with an improved understanding of the model, County staff and stakeholders will likely increasingly perceive model output as trustworthy.

Recommendations related to software procurement and staff training?

Appropriate software selection and proper staff training will be key to developing a successful model-forecasting program. In support of this, the following recommendations are made:

- The next generation model should be based on a Geographical Information System (GIS) platform. The network and TAZs should be drawn with curvilinear lines based on actual locations. The advantages of this approach include:
 - Network will have a correct appearance (not a stick figure), which will facilitate the use of output by staff and others who do not have a modeling background.
 - Off the shelf GIS maps, including thematic mapping, can be easily prepared to analyze data and model results.
 - Improves ease and quality of data sharing between departments.
 - The ability to create high quality, true to life, graphics for decision makers, the public, and incorporation into future grant applications.
 - Ability to incorporate existing data more easily into model development and application (ie traffic count data, parcel data, etc.).
- It is recommended that the County select either TransCAD or CUBE as their software platform. Both products are well established in the United States, have a good track record on support, and have the requisite GIS capabilities suggested for the County’s next generation model. As noted during the workshop, TransCAD is a standalone GIS product while CUBE will require that it is binded to an ESRI product. Kimley-Horn and County staff plan to make a final recommendation during the process of finalizing this memorandum.
- Staff skills and availability should influence model development. It is important to recognize that limited County staff time will be available to manage the model; as such care should be taken to not develop an overly burdensome model. Additionally, it may be desirable that the model be able to be operated and understood by multiple staff, which would likely have additional implications to its overall design and user interface.

- It is recommend that County staff that is identified to operate the model, assuming they do not have the requisite experience, attend formal vendor software training. One of the significant benefits of attending vendor training in lieu of consultant training is that County staff will be able to develop a working relationship with the vendor and potentially users from other jurisdictions which, over the long term can prove to be very beneficial.
- It is recommended that consultant services be utilized for training related to specific model functions developed to meet El Dorado County's needs (not the basic software platform itself) or other specific needs as defined by the County.

Additional Recommendations

Following are the additional recommendations discussed and generally identified as having support during the course of the Traffic Forecast Workshop:

- Consideration should be given to incorporating the development of the updated land use forecast into this project. The updated land use forecast will need to be a critical path item if the model is to provide traffic forecasts in a timely fashion. Advantages of an integrated approach include:
 - Potential cost and time savings resulting from having GIS work completed by one consultant as a result of the need for reduced coordination.
 - Potential cost and time savings resulting from the ability to coordinate model needs on an as-needed basis.
 - It is worth noting that this recommendation is predicated on a coordinated land use forecast approach similar to that discussed during the workshop.
- It is recommended that a mode split model not be developed at this time. Given current transit usage, ridership can be reflected through a factoring approach (as was done in the existing model). This does not exclude a mode split model from being incorporated at a later date if desired.
- It is recommended that the following activities be undertaken to improve the 2010 TAZ structure:
 - Define the roadway network (prior to undertaking any further TAZ updates).
 - Review locations and size of TAZs to make sure they have reasonable access to the roadway network (TAZs should not serve as the conduit for other TAZs to connect to the network).
 - Review the number of TAZs to make sure they are appropriate given the overall model design.



- Review and consider reducing the number of zones outside of El Dorado County. Although the provision of zones outside of El Dorado County may be ideal from the standpoint of better understanding El Dorado County trip making characteristics, it adds complexity to the model and raises multiple policy questions regarding land use coordination with the City of Folsom (both regarding the source of initial forecasted land uses and the tracking and incorporation of any ongoing development that might exist or change). Reducing the number of outside zones does not preclude the excluded zones from being incorporated at a later date.
- It is recommended that as part of the model development process, an effort to educate staff, decision makers and the public be undertaken to improve their understanding of both the appropriate use of macroscopic models and their associated limitations.