



Traffic Forecast Working Session

“essentially all models are wrong, but some are useful”
-George E. P. Box

El Dorado County
November 29, 2011



Agenda

- Why update the model?
 - Modeling 101
 - Overall project and phase 1 tasks
 - Model “tour”
 - Findings from tasks
 - Land use forecast
 - Major recommendations
- 

Why Update the Model?

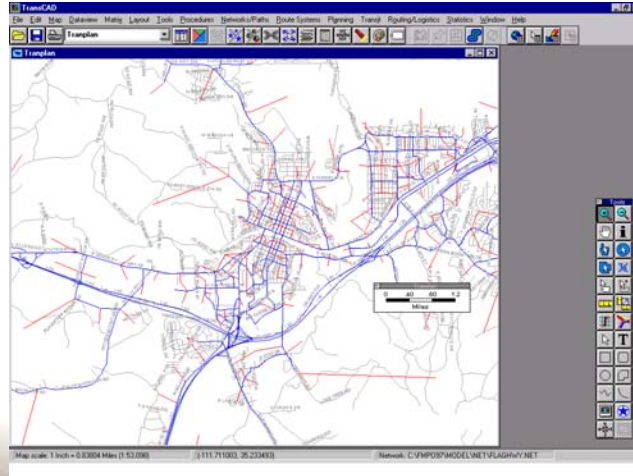
- Latest model version developed in 1998
- New software packages are available
- Planning horizon has changed
- Development patterns have changed
- Doesn't maximize the use of GIS
- Concern about output



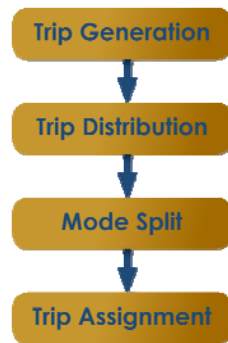
Modeling 101 – Macro vs. Micro



Modeling 101 – Macro vs. Micro



Modeling 101 - "Four Step" Model

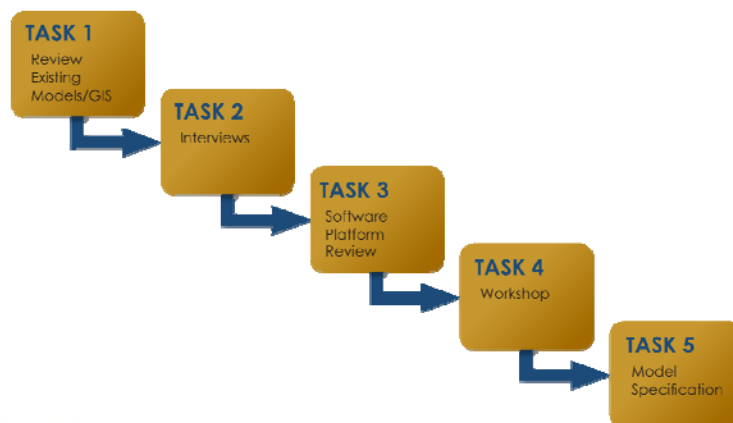


Overall Project

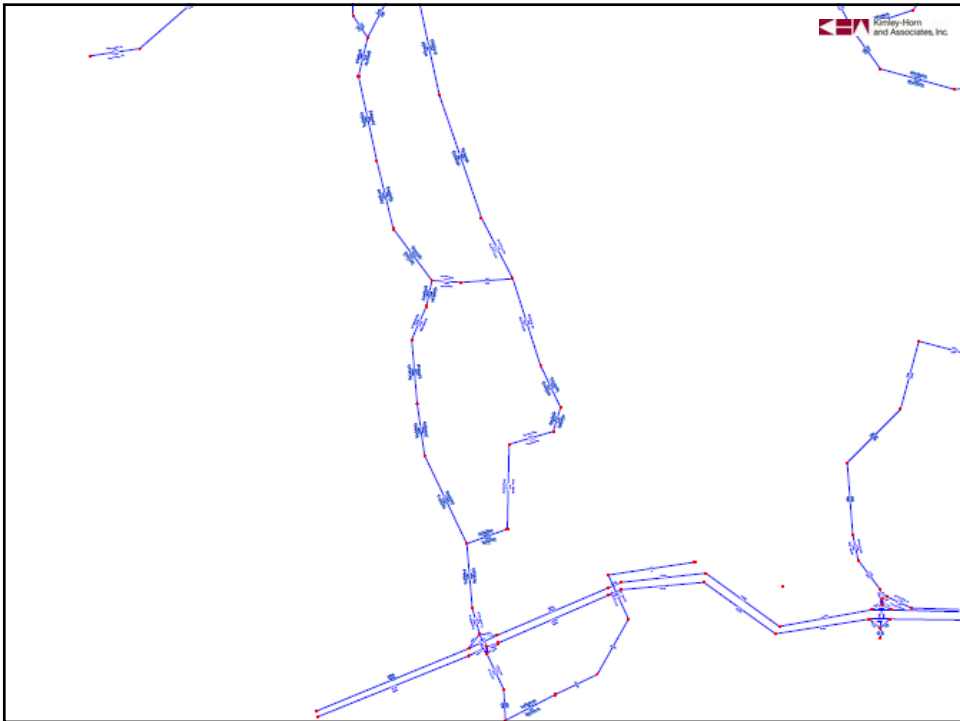
- Two phases
 - Phase 1: Needs assessment
 - Phase 2: Develop model
- Phase 1 Objectives:
 - Review County's options for traffic forecasting
 - Gather input from stakeholders
 - Leverage existing resources
 - Increase availability of traffic forecasts and supporting data

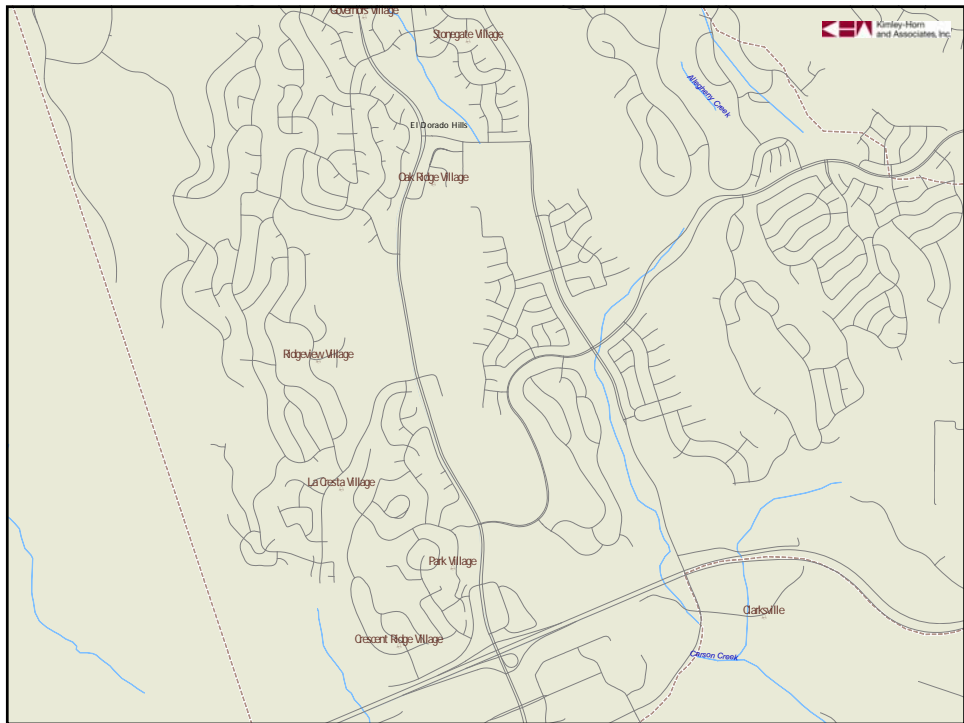
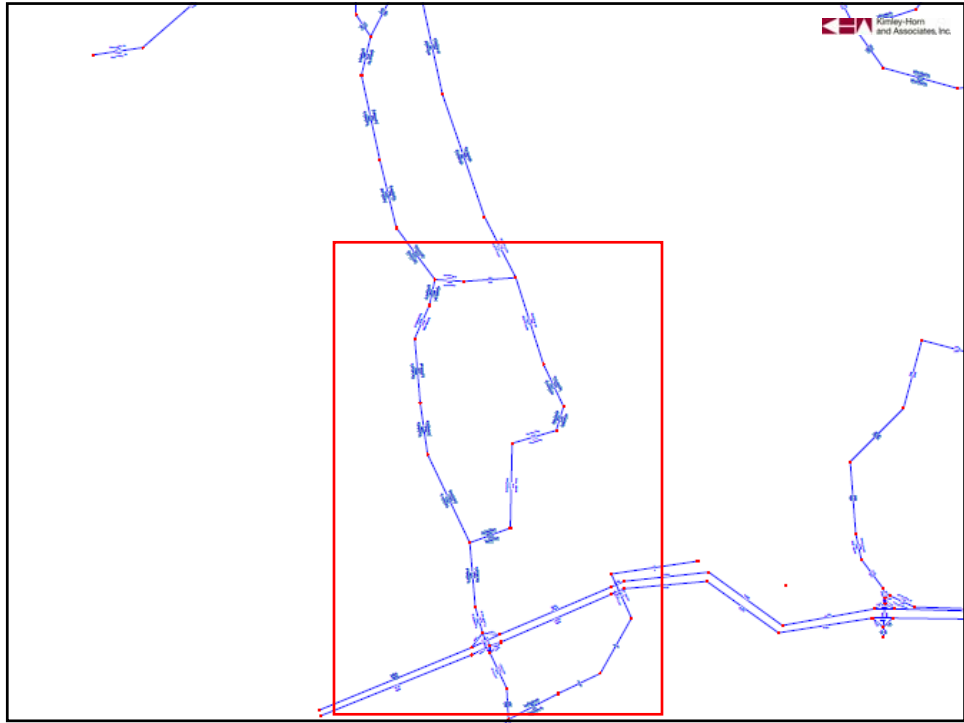


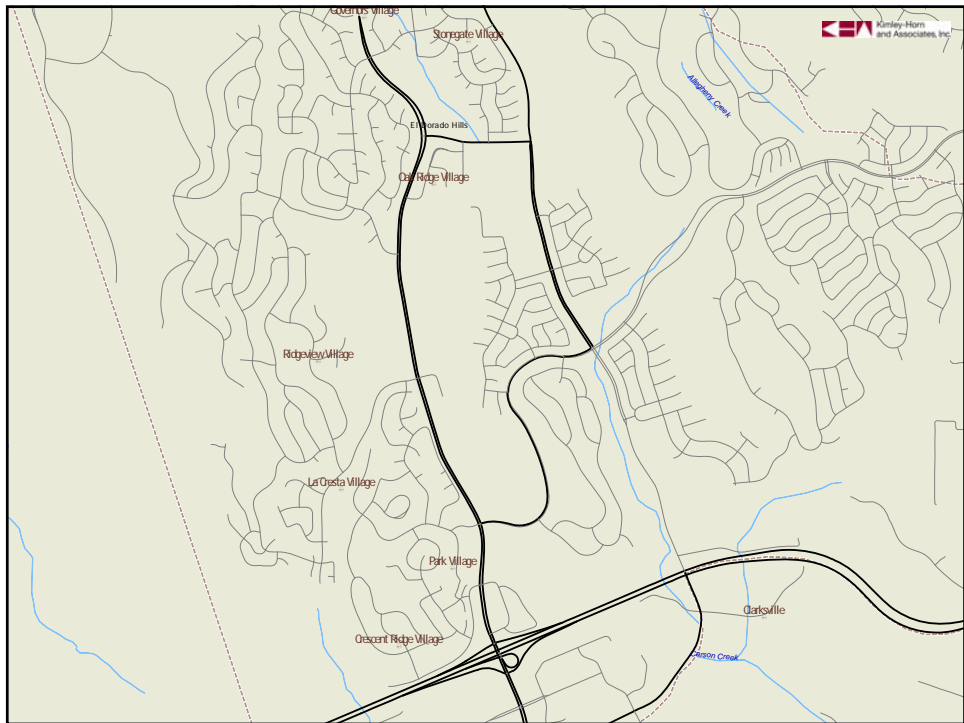
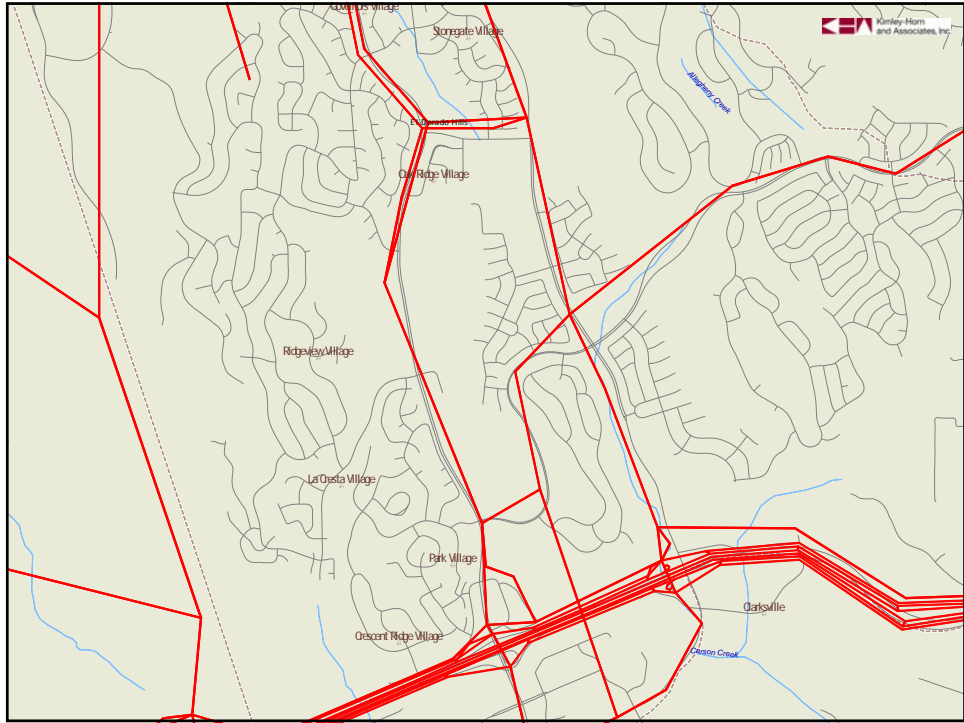
Phase 1 Tasks

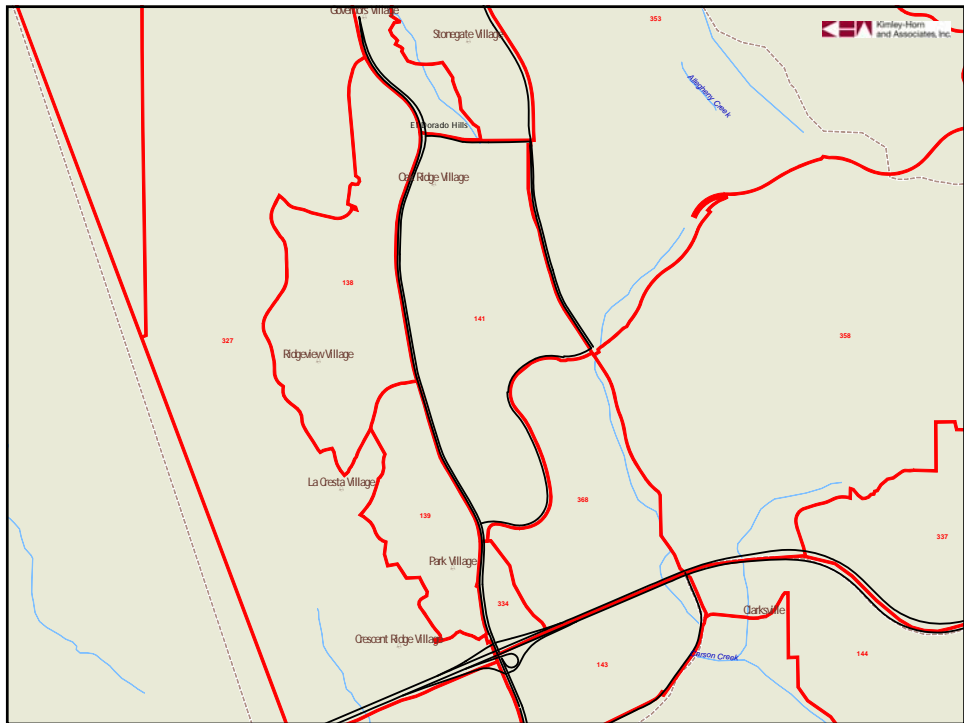
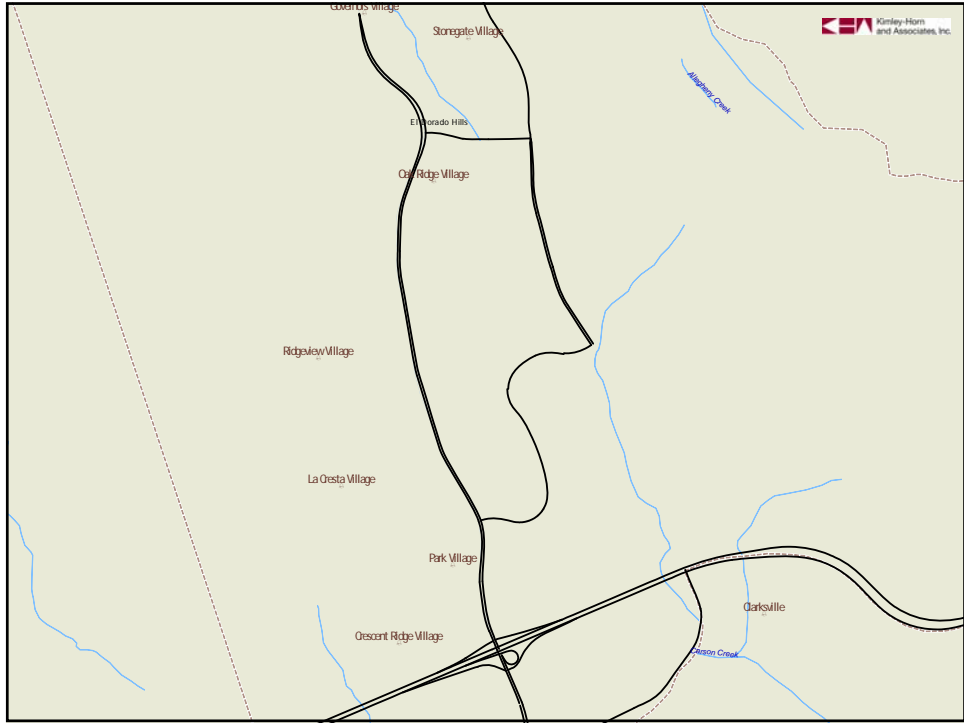


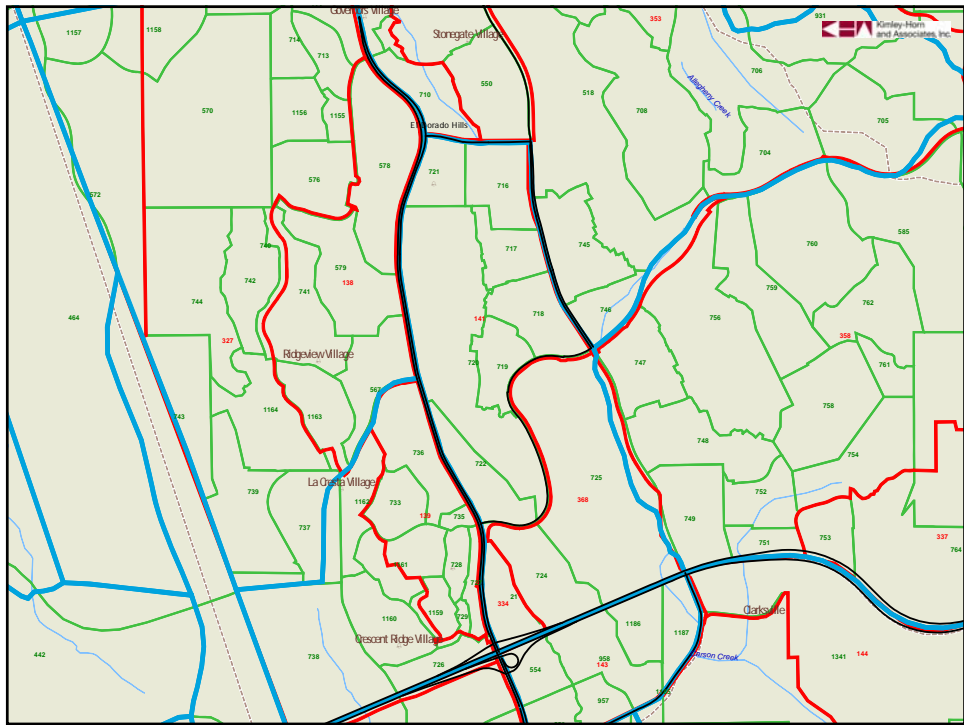
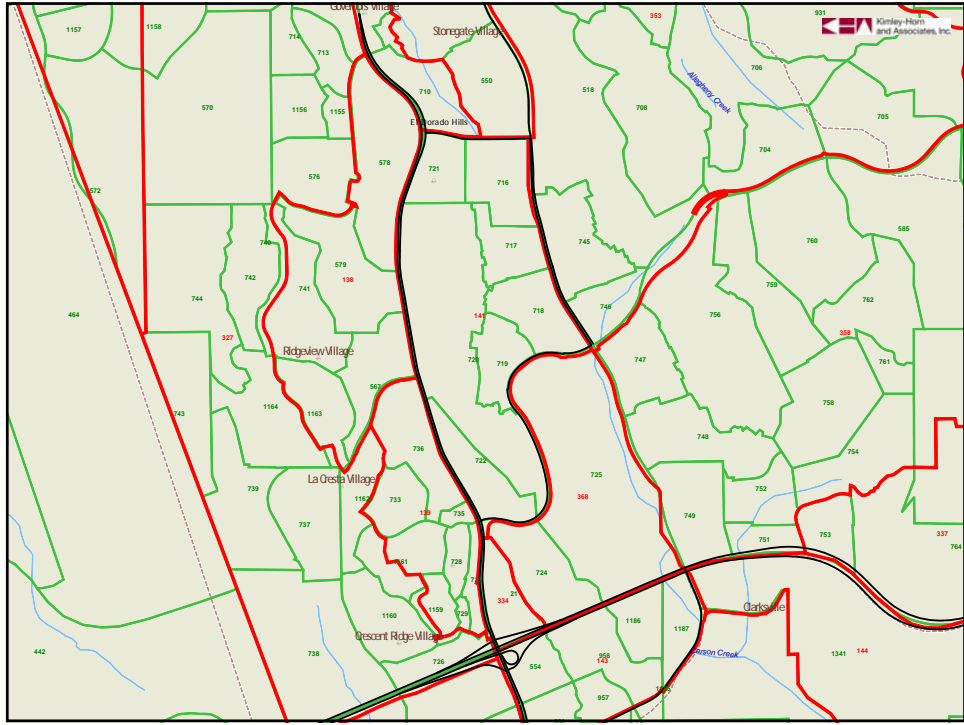
Model "Tour"

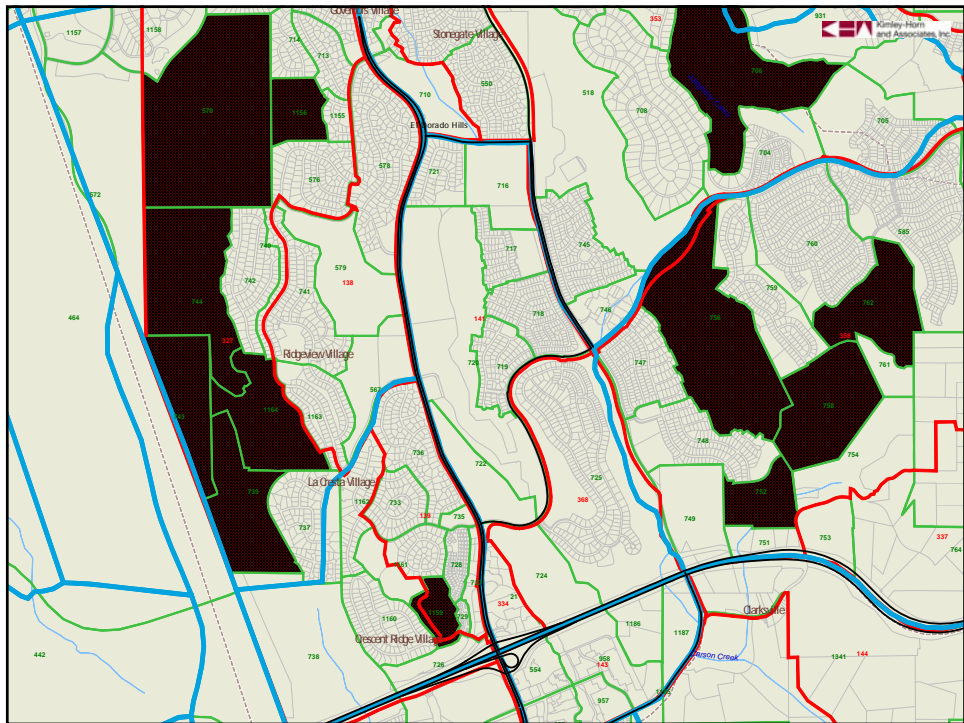
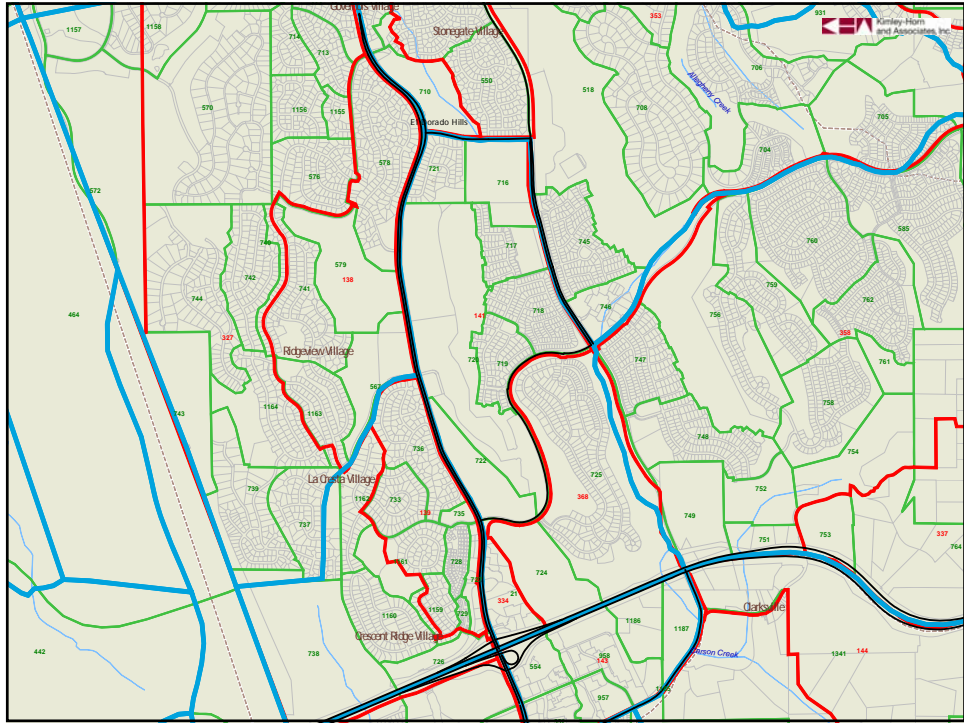












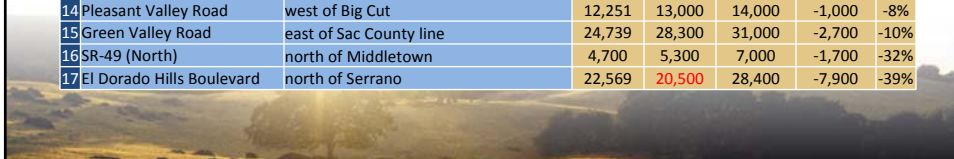
Task 1 - EDC and SACOG Models

	El Dorado County	SACOG SACMET
Software Platform	MINUTP	CUBE
GIS Compatibility	No	Yes
# of TAZs in EDC	319	126
Trip Generation	<ul style="list-style-type: none"> ▪ 2 residential ▪ 3 non-residential ▪ 3 trip purposes 	<ul style="list-style-type: none"> ▪ Multi step cross classification model for Residential ▪ 5 non-residential ▪ 8 trip purposes
Trip Distribution	Gravity model	Primarily gravity model
Mode Split Model	No	Yes
Trip Assignment	Standard MINUTP function	User-equilibrium



Task 1 - EDC and SACOG Forecasts

Road	Location	Count	EDC	SACOG SACMET	EDC/SACOG Dif	
		2010	2025	2025	Absolute	%
1 Bass Lake Road	south of Serrano	9,832	12,800	5,100	7,700	60%
2 Salmon Falls Road	north of Lakehills	2,707	6,000	2,700	3,300	55%
3 Missouri Flat Road	between Green Valley and El Dorado	7,442	6,400	3,300	3,100	48%
4 Silva Valley Parkway	south of Green Valley	7,308	10,200	5,300	4,900	48%
5 Cameron Park Drive	south of Meder	16,720	20,800	13,700	7,100	34%
6 Pleasant Valley Road	east of Greenstone	6,630	13,100	9,100	4,000	31%
7 US-50	east of Greenstone	46,000	70,200	52,000	18,200	26%
8 Latrobe Road	south of White Rock	8,075	57,300	42,600	14,700	26%
9 Green Valley Road	between Bass Lake and Cambridge	10,458	21,300	15,900	5,400	25%
10 White Rock Road	east of Sac County line	8,072	7,900	5,900	2,000	25%
11 US-50	east of Bass Lake	62,000	123,500	103,300	20,200	16%
12 SR-49 (South)	south of Pleasant Valley	9,600	9,900	9,200	700	7%
13 US-50	west of EDH/Latrobe	93,000	131,200	123,000	8,200	6%
14 Pleasant Valley Road	west of Big Cut	12,251	13,000	14,000	-1,000	-8%
15 Green Valley Road	east of Sac County line	24,739	28,300	31,000	-2,700	-10%
16 SR-49 (North)	north of Middletown	4,700	5,300	7,000	-1,700	-32%
17 El Dorado Hills Boulevard	north of Serrano	22,569	20,500	28,400	-7,900	-39%



Task 1 - EDC GIS

- GIS data is current
- Existing servers and network meet functional requirements for accommodating new model
- There are about 35 active licenses for ESRI software
- Transportation layers



Task 2 - Interviews

- Primary source of EDC Model challenges:
 - Network access
 - Future land uses
- Universal support for in-house model
- Opportunities for GIS
- Lack of 2030 land use forecast is a critical issue
- “Black box”



Task 3 – Software Platform Review

- 4 major packages (Emme, TransCAD, CUBE, VISUM)
- Reviewed 27 capabilities
- cursory review of literature on agency model selections



Task 3 – Software Platform Findings

- All software compatible with existing EDC network/system
- Differences are more subtle than they were a decade ago
- Movement to suite of products
- CUBE and TransCAD are the most used in the US
- “Available” literature and our experience that indicate CUBE and TransCAD continue to be most popular

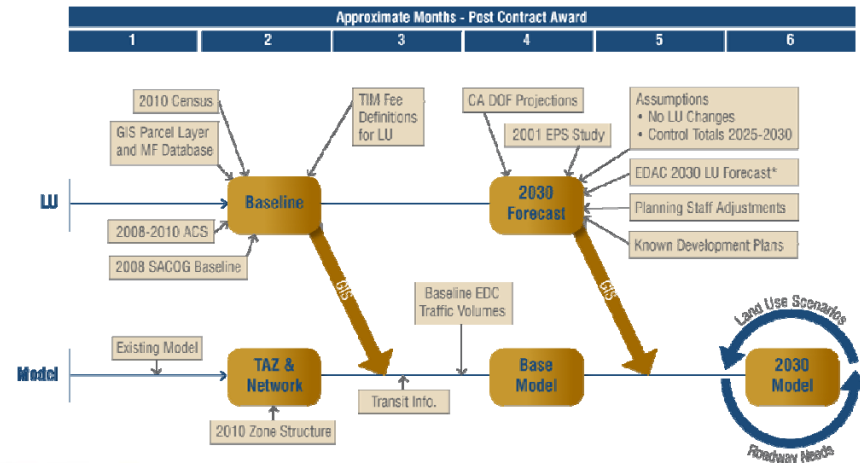


Task 3 – CUBE vs. TransCAD

- Personal preference
- TransCAD is only true GIS product
- CUBE is used by SACOG
- Local consultant user base of CUBE
- CUBE will require that staff learn two products (GIS and CUBE) vs TransCAD being just one
- TransCAD has better known micro model
- Next steps



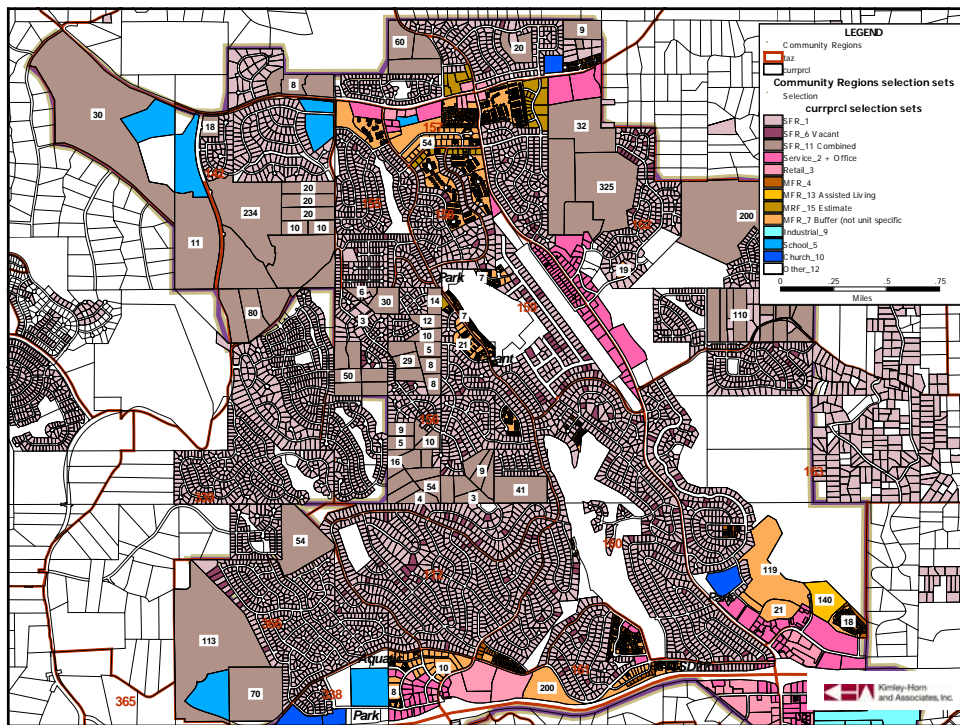
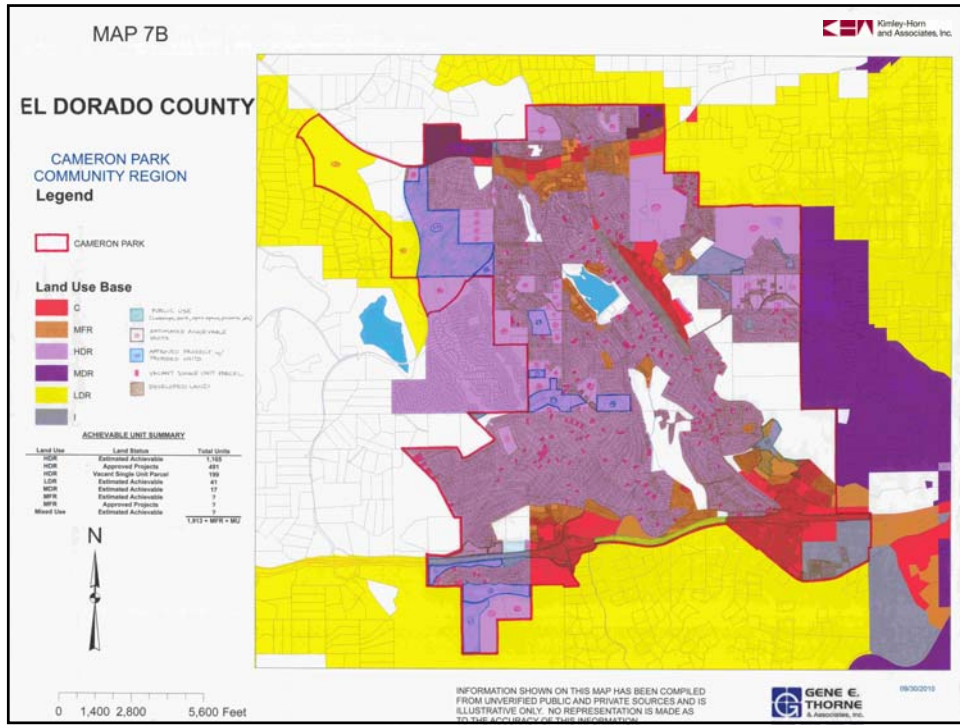
Integrating Land Use



*For discussion purposes only - not a final recommendation.

**Note that 2030 EDAC Must be: 1) Converted to GIS; 2) Developed from buildout; 3) Multi-Family and commercial quantified





Specific Questions

- Should County continue to maintain its own model?
- Inconsistencies between agency models?
- Staff or Consultant management of model?
- Software procurement/staff training/cost?
- Recommended changes to processes?
- Traffic forecasts prior to the a new model?



Should County Continue to Maintain its Own Model?

- Recommend that County maintains its own model
 - The SACOG model is more gross in scale
 - SACOG traffic forecasts are not as refined
 - The network is not curvilinear
 - SACOG is not planning to continue support of SACMET
 - SACOG model not tasked with TIM Fee



Inconsistencies between Agency Models

- Consider elements of the SACOG model
 - Trip generation
 - External station data
 - Review 2008 base data
 - TAZs
- Increase coordination with SACOG
- Establish policies on which forecast locations
- Document differences in model and why



Staff or Consultant Management of Model?

- Recommend that staff manage the model
- Consultants for limited support



Software Procurement/Staff Training/Cost?

- GIS based
- Recommend TransCAD or CUBE
- Identify or hire a Transportation Planner or Traffic Engineer
- Vendor software training
- Consultant training



Other Major Recommendations

- 2010 TAZ Structure should be further refined
 - Network first
 - Aggregate zones
- Long term strategy
 - Increased coordination with EDCTC and SACOG
 - Enhance model over time
- Education
 - Clarify the limits of its accuracy
 - It is a planning tool
 - Reduce confusion with micro analysis
- Incorporate land use forecast

