EL Dorado County
General Plan Travel Demand Model Workshop

Community Development Agency
Long Range Planning

February 24, 2014

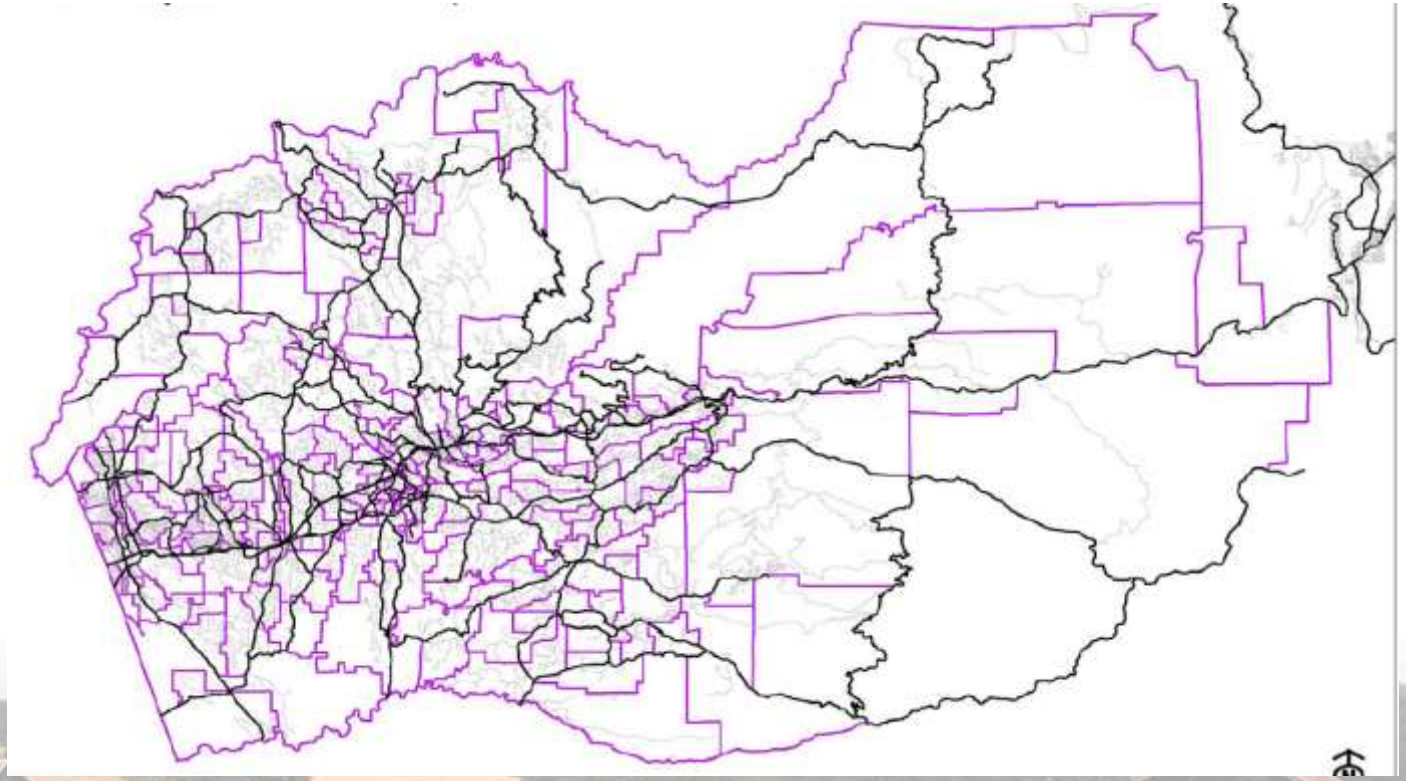
Agenda

Part One
General Plan
Travel Demand Model

Part Two
Adopt 20-Year Growth Forecast

Part Three
Interpretation of General Plan TC-X Policies

Part One
General Plan
Travel Demand Model



What is a travel demand model?

- Forecasts trips onto transportation facilities, roadways, highways, etc.
- Tool used by most public agencies
- Part of the planning process
- CEQA Support
- Fair Share for Impact Fees (AB 1600)

Part One Agenda

- Why, what, how?
- EDC model overview
- Public and agency involvement
- Model validation
- Post Processing
- SACOG and EDC Model Differences
- Kittelson Peer Review

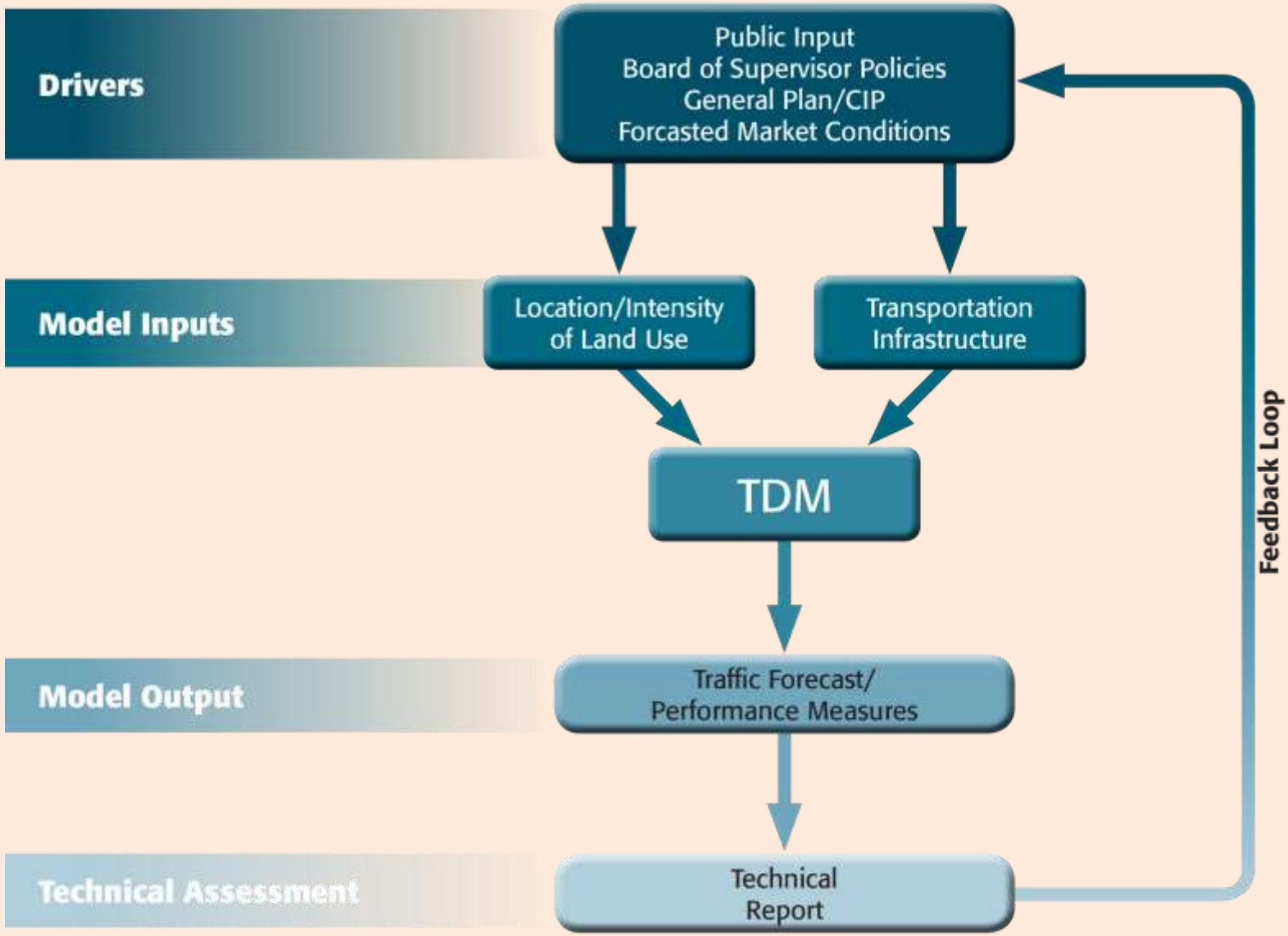
Purpose

- What is the value of the TDM?
- Is the TDM model valid?

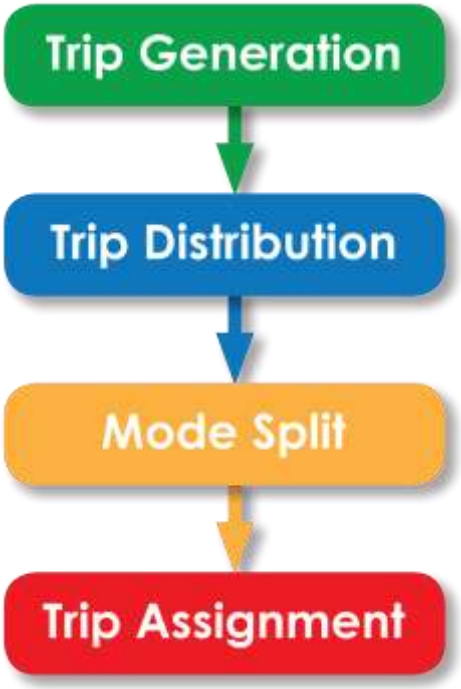
Why update the EDC model?

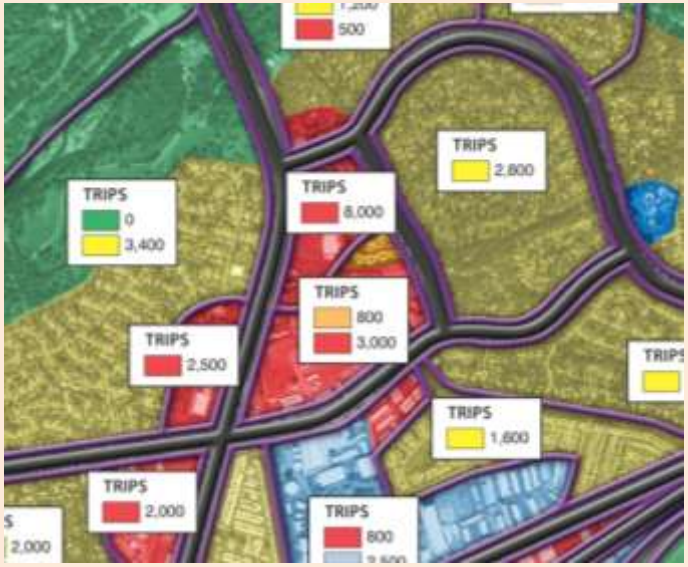
- Latest model version developed in 1998
- New software packages are available
- Planning horizon has changed
- Development patterns have changed
- Doesn’t maximize the use of GIS
- Interest in greater detail

TDM and Planning Process



“Four Step” Model





Trip Generation

Trip Distribution

Mode Split

Trip Assignment

How the macro model can help

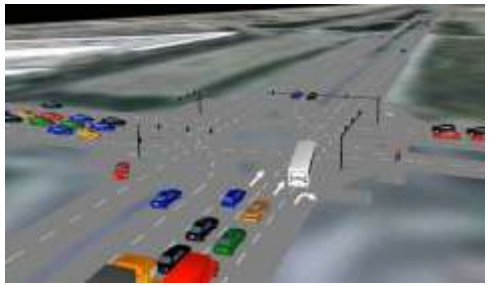
Road Widening

New Interchanges

Transportation Plans

Proposed developments

Major Roadways



Input for Microsimulation

Alternative Land Use Plans

TDM Underlying Assumptions

- 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

EDC model data sources

- 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 Traffic Analysis Zones
- 2008 Model Update Report: SACMET 07
- Capital Improvement Program

EDC model inputs

Residential

- Persons per household
- Workers per household
- Auto ownership

Non-residential

- Manufacturing employees
- Office employees
- Medical employees
- Education employees
- Other employees
- K-12 enrollment
- College enrollment

EDC model transportation modes

Drive Alone

HOV 2+ Occupants

Park and Rides

Transit, Walk Access

Walk

Bicycle

Volume/Capacity

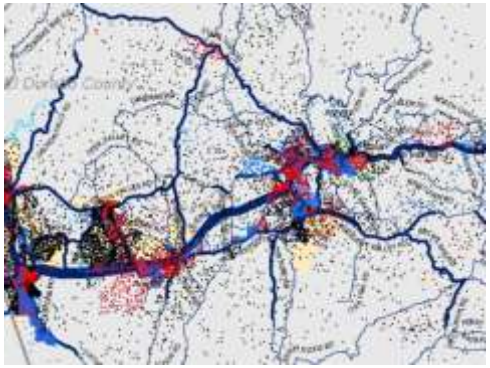
Functional Classification

AM Peak Hour Speed

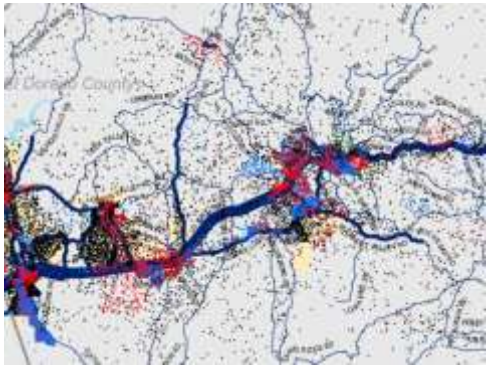
PM Peak Hour Speed

Output Options

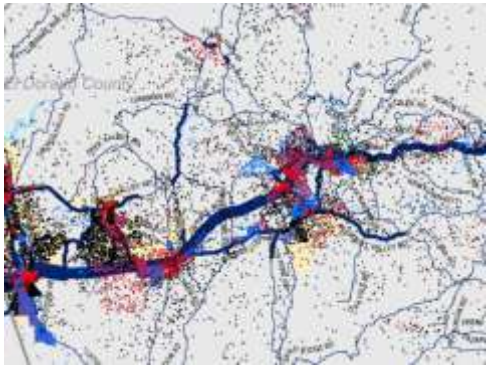
- Capacity
- Vehicle Miles Traveled
- Vehicle Hours Traveled
- AM Peak Hour V/C
- PM Peak Hour V/C
- AM Turn Movements
- PM Turn Movements
- Change in volume
- Select Link
- Select Zone
- Dot-Density
- Thematic Mapping
- Other



Daily Volume and LU



PM Peak Hour and LU



AM Peak Hour and LU

Achievable Development

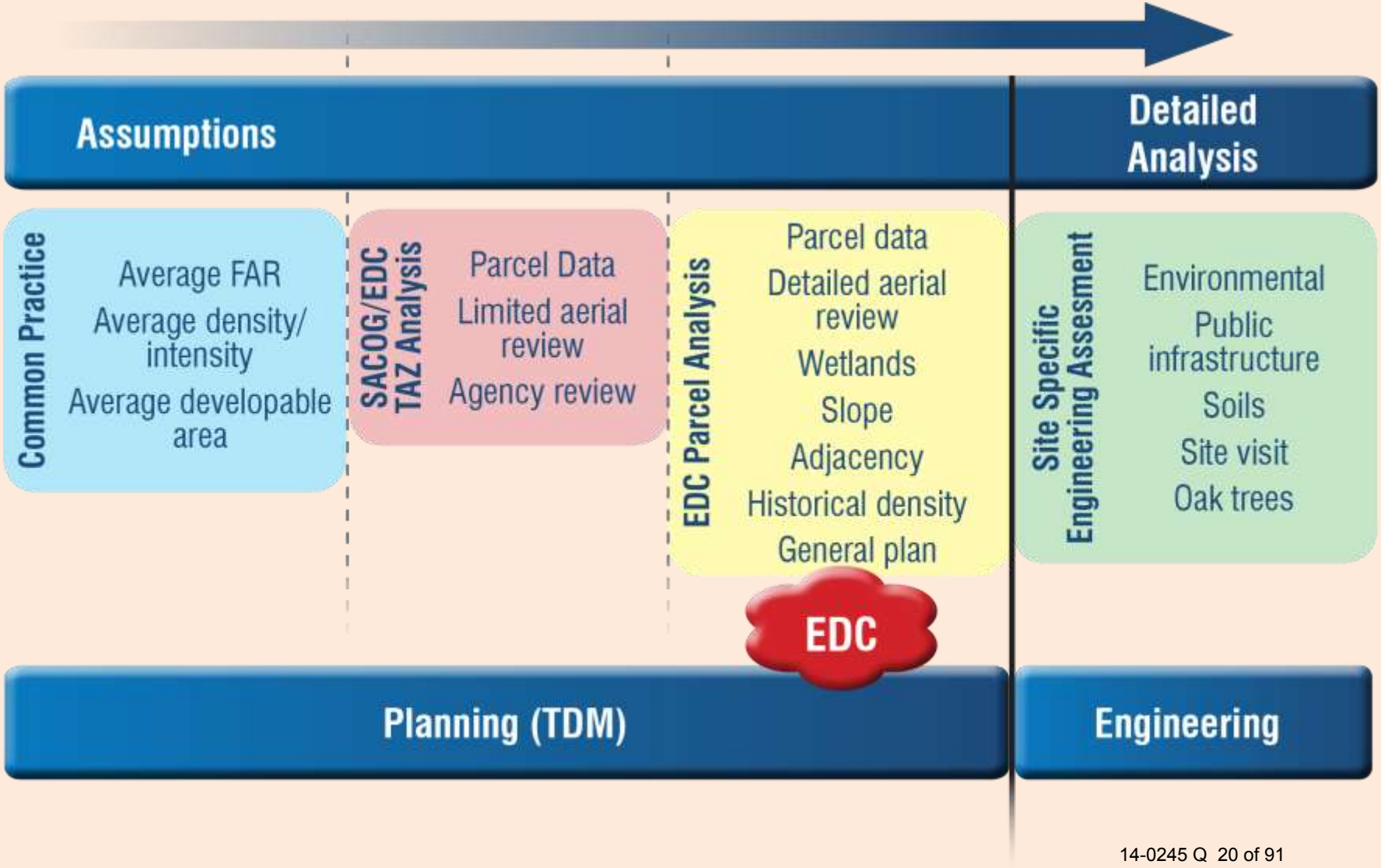
Achievable Development is an estimate of the reasonably expected intensity of development that is anticipated for a particular land use or parcel given known opportunities, constraints, and assumptions.

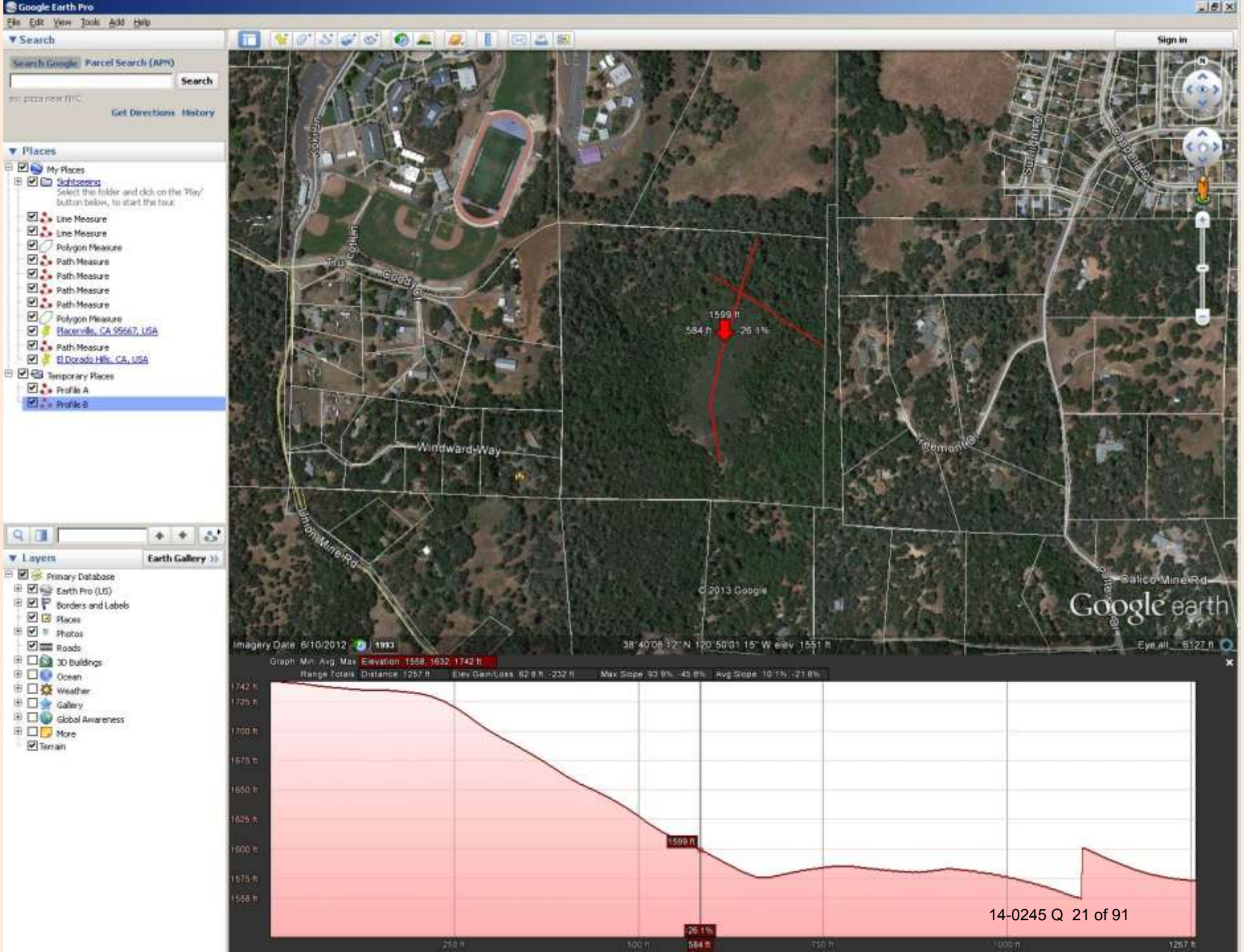
Achievable Development

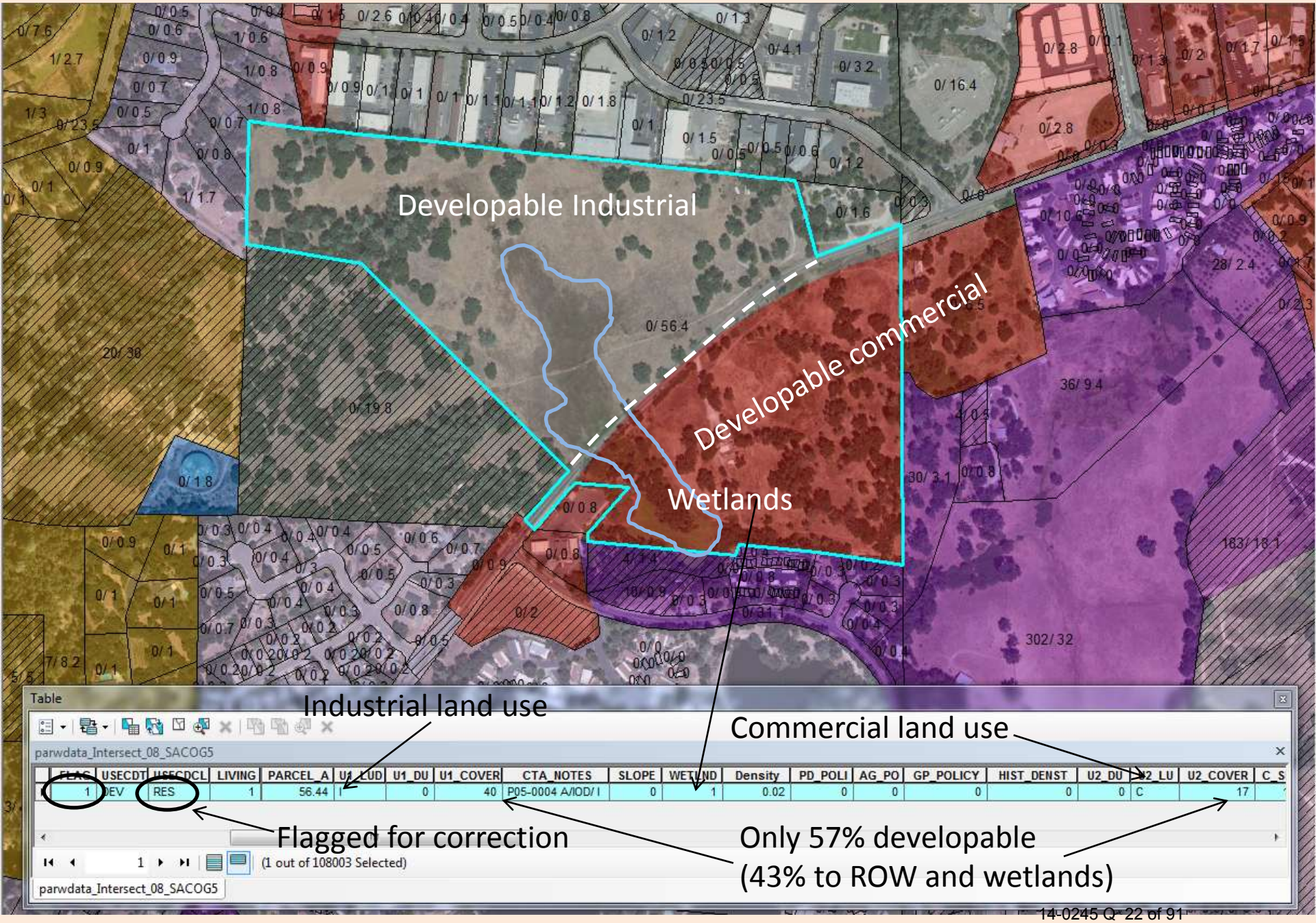
Model data development

Project

Land Use Analysis




Google Earth Pro
File Edit View Tools Add Help
Search
Search Google Parcel Search (APN)
Search
Get Directions History
Places
My Places
Sightseeing
Select this folder and click on the 'Play' button below, to start the tour.
Line Measure
Line Measure
Polygon Measure
Path Measure
Path Measure
Path Measure
Path Measure
Polygon Measure
Placerville, CA 95667, USA
Path Measure
El Dorado Hills, CA, USA
Temporary Places
Profile A
Profile B
Layers
Earth Gallery
Primary Database
Earth Pro (US)
Borders and Labels
Places
Photos
Roads
3D Buildings
Ocean
Weather
Gallery
Global Awareness
More
Terrain
Sign in
1599 ft
584 ft
26.1%
Windward Way
Union Mine Rd
Tremont
Ralico Mine Rd
© 2013 Google
Google earth
Imagery Date 6/10/2012
38°40'08.12" N 120°50'01.15" W elev 1551 ft
Eye alt 6127 ft
Graph: Min, Avg, Max Elevation 1558, 1632, 1742 ft
Range Totals: Distance 1257 ft
Elev Gain/Loss 62.8 ft, -232 ft
Max Slope 93.9% -45.8%
Avg Slope 10.1% -21.8%
1742 ft
1725 ft
1700 ft
1675 ft
1650 ft
1625 ft
1600 ft
1575 ft
1558 ft
1599 ft
26.1%
584 ft
250 ft
500 ft
750 ft
1000 ft
1257 ft


Developable Industrial
Developable commercial
Wetlands
Table
parwdata_Intersect_08_SACOG5
FLAG | USECDT | USECDCL | LIVING | PARCEL_A | U1_LUD | U1_DU | U1_COVER | CTA_NOTES | SLOPE | WETLND | Density | PD_POLI | AG_PO | GP_POLICY | HIST_DENST | U2_DU | U2_LU | U2_COVER | C_S
1 | DEV | RES | 1 | 56.44 | I | 0 | 40 | P05-0004 A/IOD/ I | 0 | 1 | 0.02 | 0 | 0 | 0 | 0 | 0 | C | 17
(1 out of 108003 Selected)
parwdata_Intersect_08_SACOG5
Industrial land use
Commercial land use
Flagged for correction
Only 57% developable
(43% to ROW and wetlands)

KHA Public and agency involvement

- BOS Presentations previous to project
- BOS Land Use – 4/16/12
- Engineering Subcommittee – 6/27/12
- Public Meeting – 6/28/12
- BOS TAZ – 7/24/12
- Training Workshop – 1/28/13
- EDC Staff Workshop – 2/21/13
- BOS Overview – 4/1/13
- Agency Meeting – 6/13/13

What is Validation?

- Techniques for determining the model is reasonably accurate
- Simply
  - TDM forecasts 2010 volumes
  - Obtain actual 2010 traffic counts
  - Compare the two using statistical methods
- If valid in 2010, assumed to be valid for future

Validation Criteria Sources

Caltrans

U.S. Department of Transportation
Federal Highway Administration

STATE OF CALIFORNIA
CALIFORNIA TRANSPORTATION COMMISSION

NCHRP
NATIONAL COOPERATIVE HIGHWAY RESEARCH PROGRAM

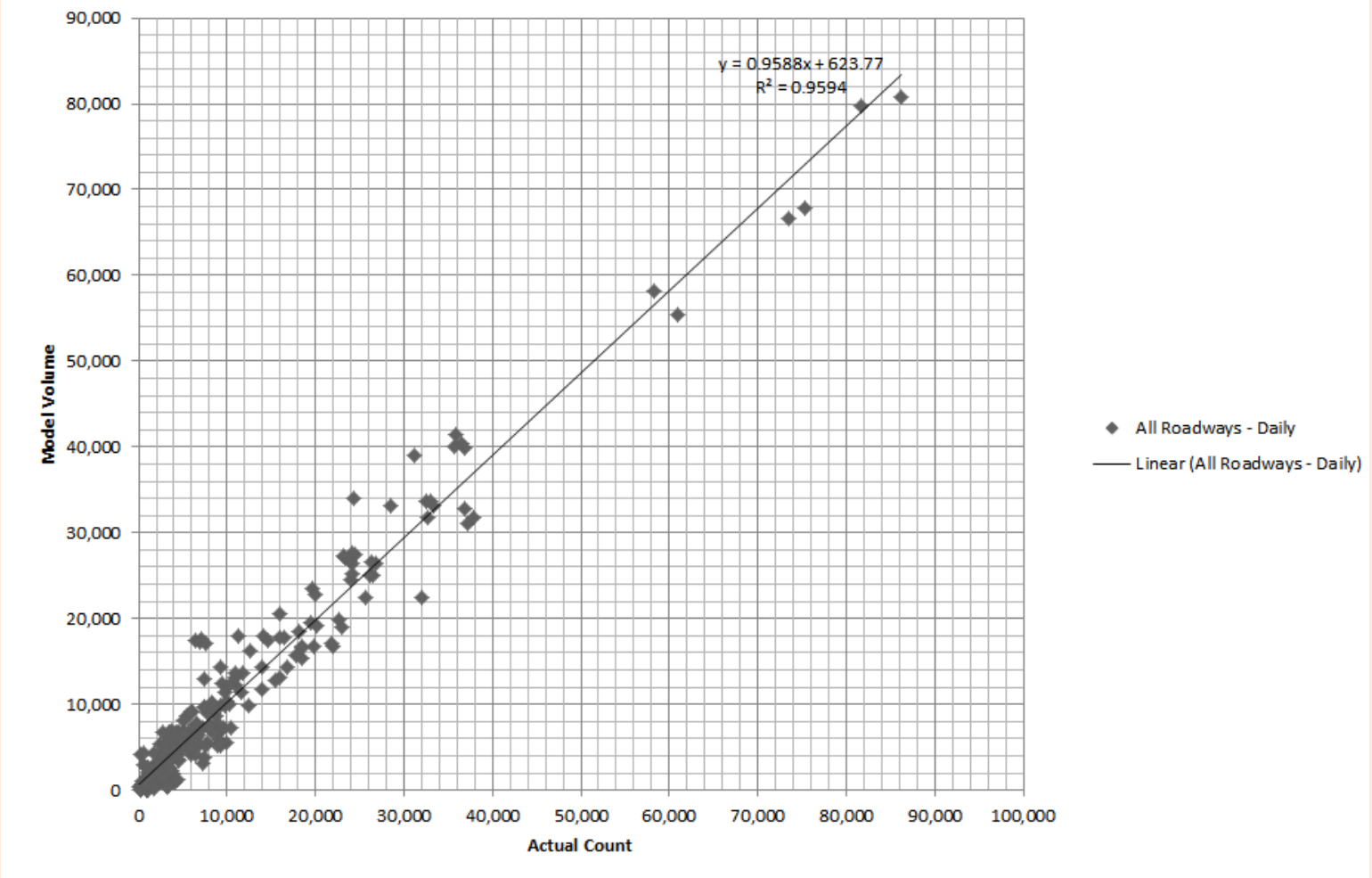
Model Validation Criteria

Validation Criteria	Question
Correlation coefficient	Is the model a good predictor in total?
Percent Error	Do we have the right amount of total traffic on roadways?
Percent root mean square error (RMSE)	Are total model errors within a reasonable range?
Screenline Analysis	Are the traffic flows between areas reasonable?
Roadway Link Validation	Are individual roadway volumes reasonable?
Peak Period Validation	Considers just the highest 4 hour periods.
Peak Hour Validation	Considers just the highest 1 hour periods.
Dynamic Validation	Is the model sensitive to change?

Validation tests are interrelated

Is the model a good predictor in total?

(Model correlation coefficient)



Yes - 0.96 against 0.88 goal

Do we have the right amount of total traffic on roadways?

(Percent error by roadway class)

Roadway Classification	# Counts	Model	Observed	Difference	Percent Error	Target
Freeways	36	1,221,003	1,182,057	38,946	3.3%	+/- 7%
Major Arterials	24	417,193	432,498	-15,305	-3.5%	+/- 10%
Minor Arterials	15	142,199	148,257	-6,058	-4.1%	+/- 15%
Rural Arterials	105	619,699	544,410	75,289	13.8%	+/- 15%
Collectors	45	109,031	119,627	-10,596	-8.9%	+/- 25%
Ramps	65	201,777	210,374	-8,597	-4.1%	+/- 25%
All	290	2,710,902	2,637,223	73,679	2.8%	+/- 10%

Yes - All Classes within Targets

Is total model error reasonable?

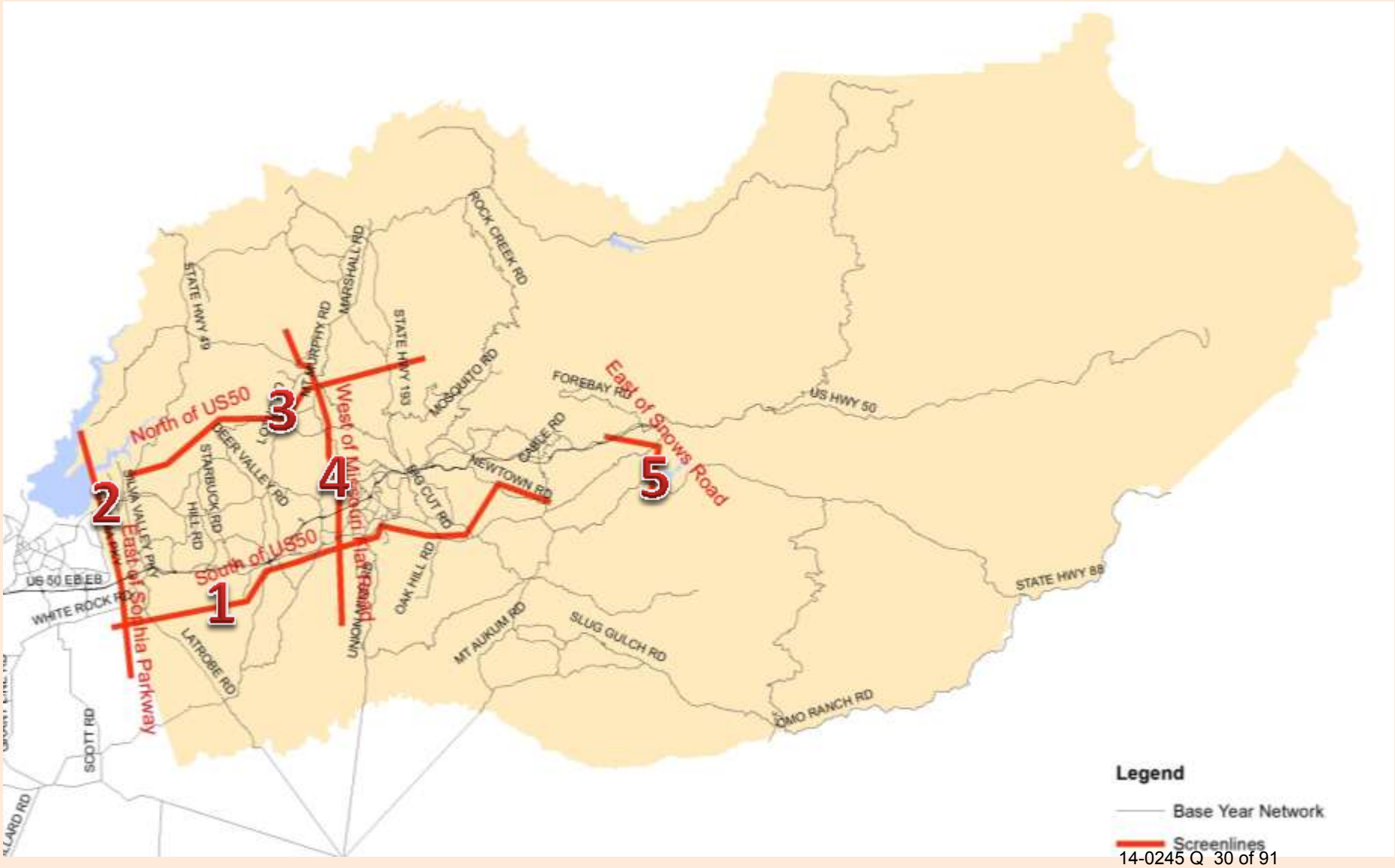
(Percent RMSE by roadway class)

Roadway Classification	# of Counts	Percent RMSE	Target	RMSE
Freeways	36	10%	15%	3349.07
Major Arterials	24	24%	40%	4279.10
Minor Arterials	15	27%	40%	2675.45
Rural Arterials	105	33%	40%	1714.72
Collectors	45	43%	50%	1144.10
Ramps	65	38%	50%	1245.97
All	290	28%	35%	2523.05

Error is exaggerated by squaring (X^2) as part of method

Yes - All Classes within Targets

Screenlines



Are the traffic flows between areas reasonable? Number graphic

(Screenline validation)

Screenline	Description	Model Volume	Observed	Percent Error	NCHRP 255 Limit
1	S/O US-50	52,210	45,127	15.70%	±32.58%
2	E/O Sophia Parkway	134,535	128,951	4.33%	±22.58%
3	N/O US-50	22,471	16,945	32.61%	±45.87%
4	W/O Missouri Flat Rd	87,230	80,430	8.45%	±26.63%
5	E/O Snows Rd	35,192	27,946	25.93%	±38.52%

Yes - All Screenlines within acceptable limit

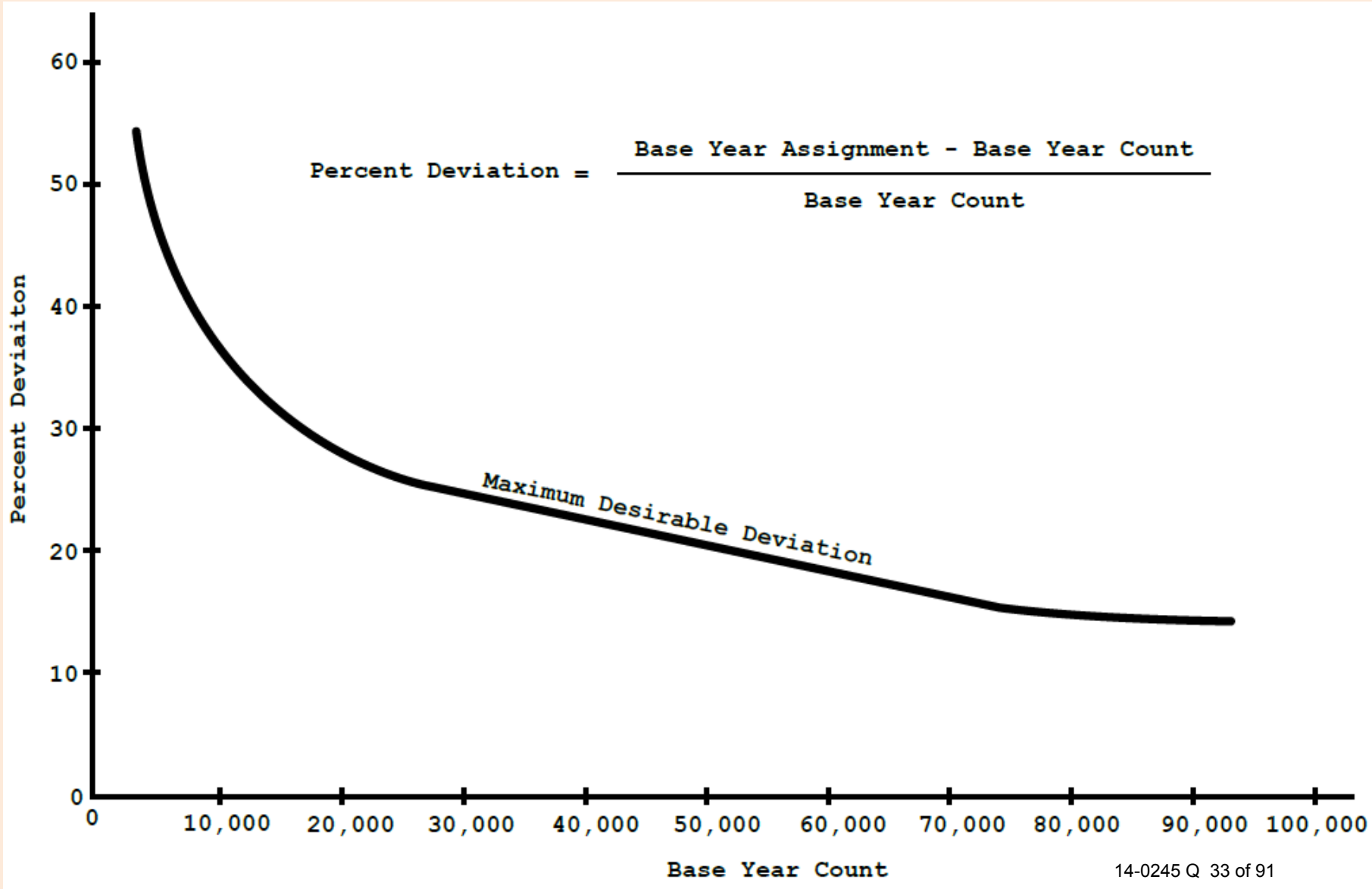
Are individual roadway volumes reasonable?

(Roadway link validation)

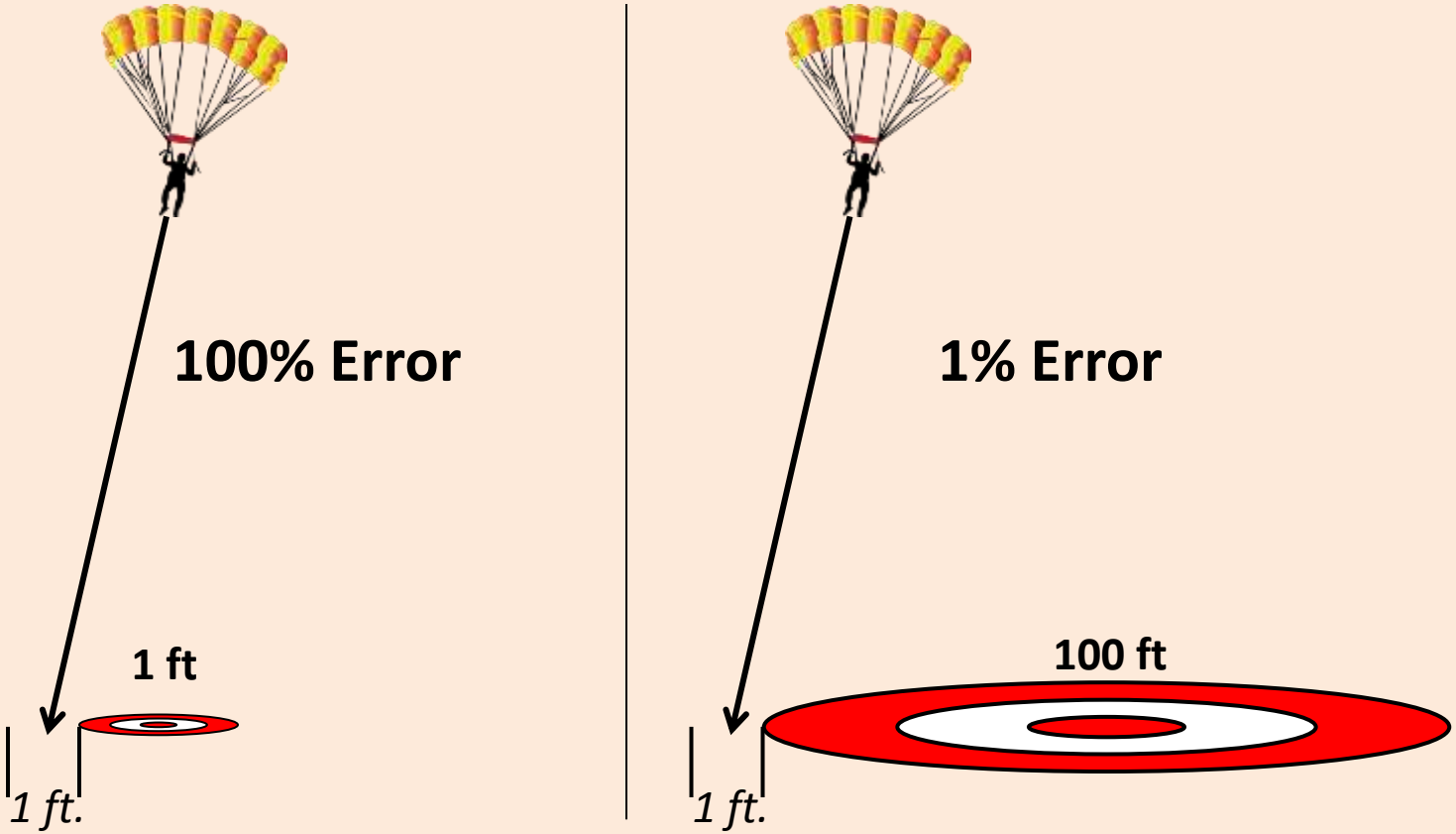
Classification	Roadway	Location	Traffic Count	Model Volume	Percent Error	NCHRP 255 Limit	Within Limit?
Freeways	US50 - EB GP	W. of Latrobe	35,922	41,359	15.14%	±23.7%	YES
Freeways	US50 - WB GP	W. of Latrobe	36,909	39,931	8.19%	±23.4%	YES
Freeways	US50 - EB HOV	W. of Latrobe	10,908	12,243	12.24%	±35.3%	YES
Freeways	US50 - WB HOV	W. of Latrobe	10,908	13,122	20.30%	±35.3%	YES
Freeways	US50 - EB GP	W. of Bass Lake	35,639	40,077	12.45%	±23.7%	YES
Freeways	US50 - WB GP	W. of Bass Lake	36,492	40,365	10.61%	±23.5%	YES
Freeways	US50 - EB GP	W. of Cameron Park	32,734	31,785	-2.90%	±24.4%	YES
Freeways	US50 - WB GP	W. of Cameron Park	32,563	33,633	3.29%	±24.4%	YES
Freeways	US50 - EB GP	W. of Ponderosa	33,013	33,708	2.11%	±24.3%	YES
Freeways	US50 - WB GP	W. of Ponderosa	33,272	33,230	-0.13%	±24.3%	YES
Freeways	US50 - EB GP	W. of Shingle Springs	26,750	26,470	-1.05%	±25.5%	YES
Freeways	US50 - WB GP	W. of Shingle Springs	26,270	26,562	1.11%	±25.7%	YES
Freeways	US50 - EB GP	W. of Greenstone	24,491	27,418	11.95%	±26.3%	YES
Freeways	US50 - WB GP	W. of Greenstone	24,240	27,639	14.02%	±26.4%	YES
Freeways	US50 - EB GP	Greenstone	24,210	26,504	9.47%	±26.5%	YES
Freeways	US50 - WB GP	Greenstone	23,760	26,704	12.39%	±26.6%	YES
Freeways	US50 - EB GP	Missouri Flat	23,325	27,125	16.29%	±26.8%	YES
Freeways	US50 - WB GP	Missouri Flat	23,197	27,317	17.76%	±26.9%	YES
Freeways	US50 - EB GP	W. of Placerville	19,672	23,433	19.12%	±28.5%	YES
Freeways	US50 - WB GP	W. of Placerville	20,051	22,736	13.39%	±28.3%	YES

Yes - 81% are within limit (75% goal)

Error for Link Volumes



Absolute vs. Relative Error



Both missed by 1 ft

Roadway examples

Low Volume

Actual Count = 1,000

Target Error = 84%

Medium Volume

Actual Count = 15,000

Target Error = 31%

High Volume Road

Actual Count = 75,000

Target Error = 15%

Before Post Processing

10 locations least consistent with actual counts

Ten Best	Classification	Roadway	Location	Traffic Count	Model Volume	Percent Error	NCHRP 255 Limit	Within Limit?
1	Ramps	US50 - WB off-ramp	Sawmill	10	327	3170.00%	±447.2%	NO
2	Rural Arterial	Mt Murphy Rd	200 yds N of SR 49	302	4,230	1300.66%	±129.8%	NO
3	Rural Arterial	Salmon Falls Rd	200 yds S of Rattlesnake Bar Rd	539	4,416	719.29%	±105.2%	NO
4	Rural Arterial	Marshall Rd	300 yds S of Lower Main St	643	2,977	362.99%	±98.7%	NO
5	Ramps	US50 - EB on-ramp	E. Camino	520	1,778	241.92%	±106.6%	NO
6	Collector	South Shingle Rd	0.5 mi E of Latrobe Rd	899	2,629	192.44%	±87.4%	NO
7	Rural Arterial	Salmon Falls Rd	400 yds S of Pedro Hill Rd	1,673	4,416	163.96%	±69.8%	NO
8	Collector	Barkley Rd	50 ft N of Carson Rd	1,056	2,641	150.09%	±82.4%	NO
9	Rural Arterial	Salmon Falls Rd	At New York Creek Bridge	2,707	6,718	148.17%	±58.6%	NO
10	Ramps	US50 - WB off-ramp	Newtown Rd.	200	490	145.00%	±150.8%	YES

Low Volume Roadways

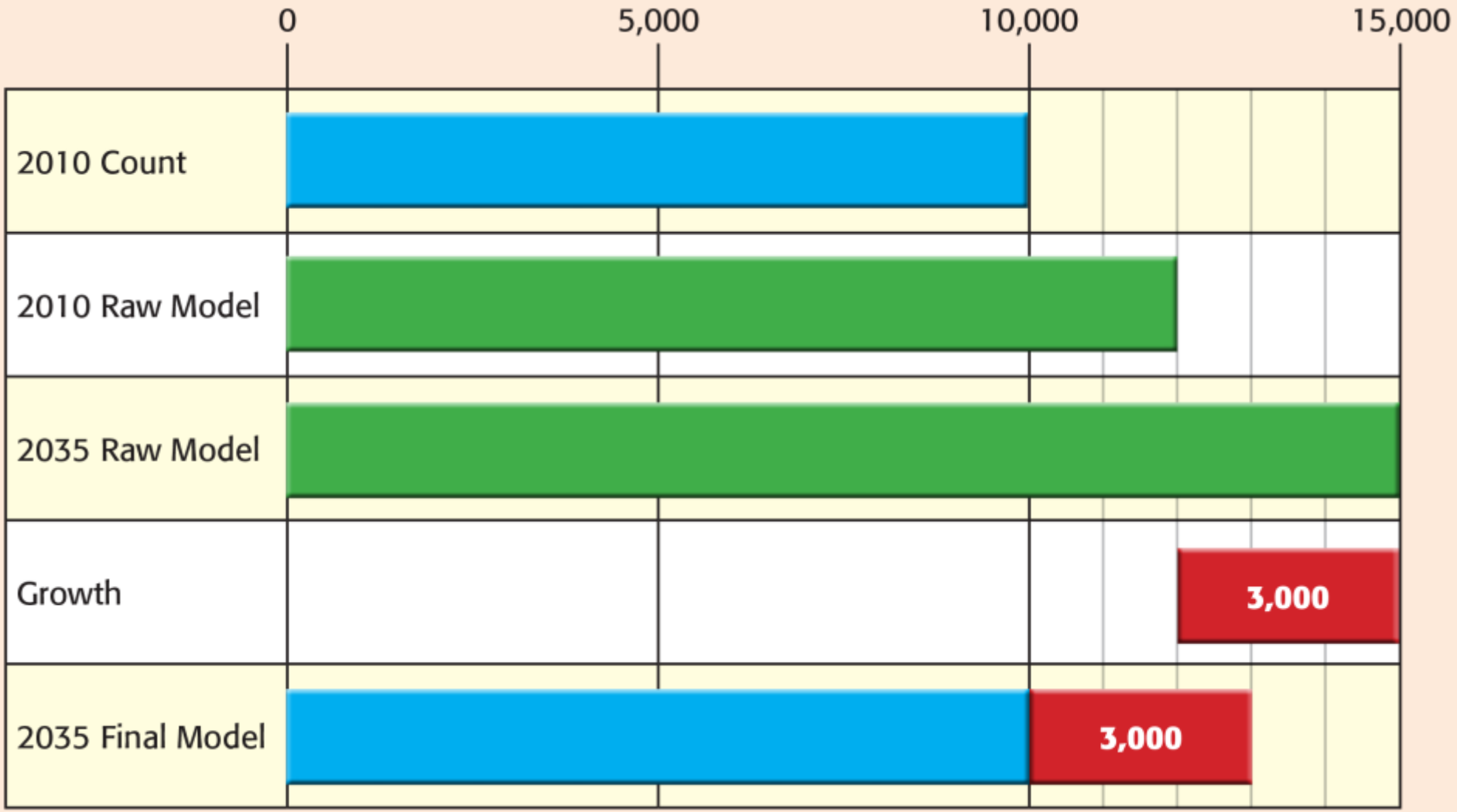
- +/- 290 total counts (increasing)
- 54 outside of limits (19%)
- 20 are on roadway > 5,000 ADT (7%)
- 34 outside of limit are < 5,000 ADT (12%)
- 153 count locations less than 5,000 ADT
- 119 of these are within limits
- Median error on <5000 ADT is +/- 36.7%

Before Post Processing

Post Processing Overview

- Volumes should never be used without a reasonableness review
- It’s standard practice
- Either part of the model or done afterwards

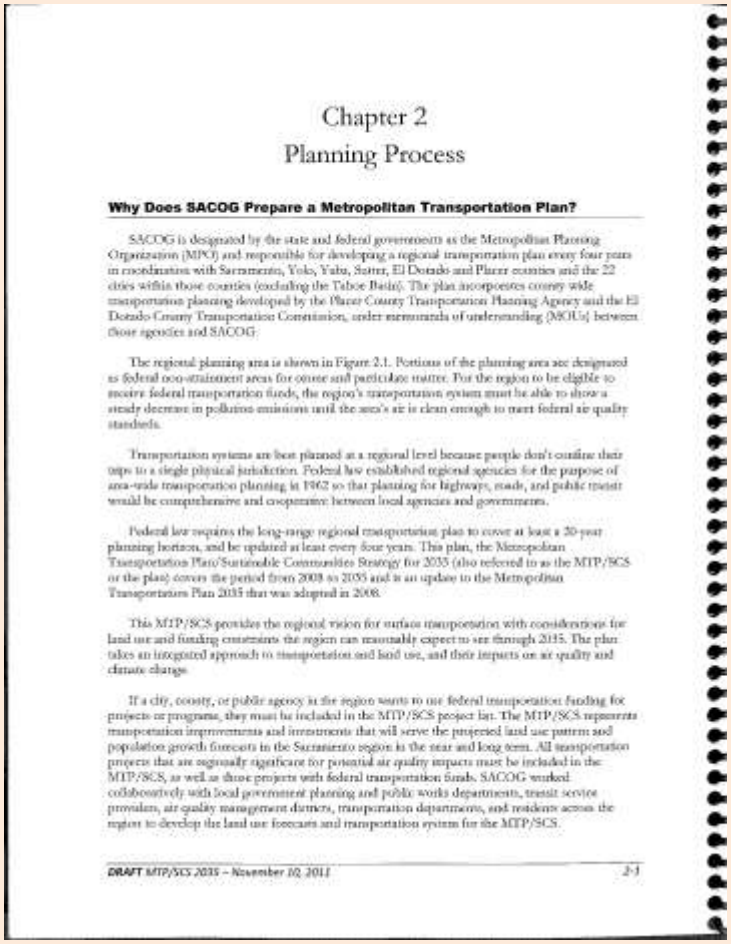
Post Processing



SACOG and EDC Modeling Differences

- Purpose
- Conformance with EDC GP
- Network and Traffic Analysis Zones
- Land Use Analysis

SACOG Purpose



Chapter 2

Planning Process

Why Does SACOG Prepare a Metropolitan Transportation Plan?

SACOG is designated by the state and federal governments as the Metropolitan Planning Organization (MPO) and responsible for developing a regional transportation plan every four years in coordination with Sacramento, Yolo, Yuba, Sutter, El Dorado and Placer counties and the 22 cities within those counties (excluding the Tahoe Basin). The plan incorporates county wide transportation planning developed by the Placer County Transportation Planning Agency and the El Dorado County Transportation Commission, under memoranda of understanding (MOUs) between those agencies and SACOG.

The regional planning area is shown in Figure 2.1. Portions of the planning area are designated as federal non-attainment areas for ozone and particulate matter. For the region to be eligible to receive federal transportation funds, the region's transportation system must be able to show a steady decrease in pollution emissions until the area's air is clean enough to meet federal air quality standards.

Transportation systems are best planned at a regional level because people don't confine their trips to a single physical jurisdiction. Federal law established regional agencies for the purpose of area-wide transportation planning in 1962 so that planning for highways, roads, and public transit would be comprehensive and cooperative between local agencies and governments.

Federal law requires the long-range regional transportation plan to cover at least a 20-year planning horizon, and be updated at least every four years. This plan, the Metropolitan Transportation Plan/Sustainable Communities Strategy for 2035 (also referred to as the MTP/SCS or the plan) covers the period from 2008 to 2035 and is an update to the Metropolitan Transportation Plan 2035 that was adopted in 2008.

This MTP/SCS provides the regional vision for surface transportation with considerations for land use and funding constraints the region can reasonably expect to see through 2035. The plan takes an integrated approach to transportation and land use, and their impacts on air quality and climate change.

If a city, county, or public agency in the region wants to use federal transportation funding for projects or programs, they must be included in the MTP/SCS project list. The MTP/SCS represents transportation improvements and investments that will serve the projected land use pattern and population growth forecasts in the Sacramento region in the near and long term. All transportation projects that are regionally significant for potential air quality impacts must be included in the MTP/SCS, as well as those projects with federal transportation funds. SACOG worked collaboratively with local government planning and public works departments, transit service providers, air quality management districts, transportation departments, and residents across the region to develop the land use forecasts and transportation system for the MTP/SCS.

DRAFT MTP/SCS 2035 – November 10, 2011 2-1

SACOG represents many interests.

"….Sacramento, Yolo, Yuba, Sutter, El Dorado, and Placer Counties and the 22 cities within those counties (excluding the Tahoe Basin).."

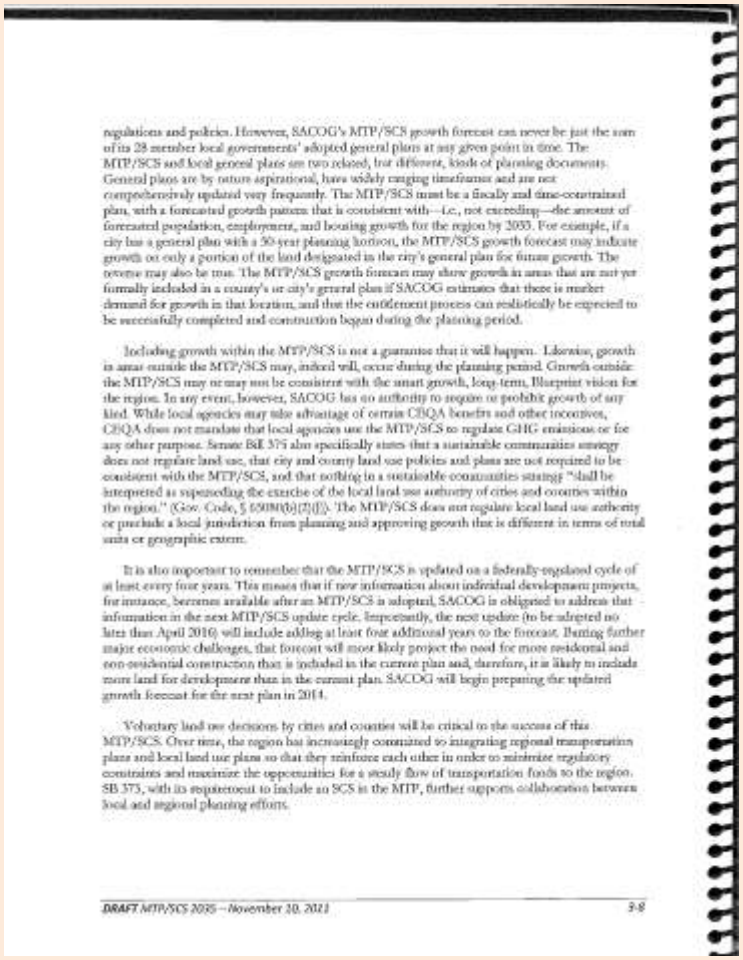
SACOG has a federal mandated mission and schedule.

"Federal law require the long-range regional transportation plan to cover at least a 20-year planning horizon, and be updated at least every four years."

SACOG is tasked with air quality improvement.

"Portions of the planning area are designated not-attainment areas for ozone and particulate matter. For the region to be eligible to receive federal funds… must show a steady decrease in pollution emissions…."

Conformance with EDC General Plan



regulations and policies. However, SACOG's MTP/SCS growth forecast can never be just the sum of its 28 member local governments' adopted general plans at any given point in time. The MTP/SCS and local general plans are two related, but different, kinds of planning documents. General plans are by nature aspirational, have widely ranging timeframes and are not comprehensively updated very frequently. The MTP/SCS must be a fiscally and time-constrained plan, with a forecasted growth pattern that is consistent with—i.e., not exceeding—the amount of forecasted population, employment, and housing growth for the region by 2035. For example, if a city has a general plan with a 50-year planning horizon, the MTP/SCS growth forecast may indicate growth on only a portion of the land designated in the city's general plan for future growth. The reverse may also be true. The MTP/SCS growth forecast may show growth in areas that are not yet formally included in a county's or city's general plan if SACOG estimates that there is market demand for growth in that location, and that the entitlement process can realistically be expected to be successfully completed and construction begun during the planning period.

Including growth within the MTP/SCS is not a guarantee that it will happen. Likewise, growth in areas outside the MTP/SCS may, indeed will, occur during the planning period. Growth outside the MTP/SCS may or may not be consistent with the smart growth, long-term, Blueprint vision for the region. In any event, however, SACOG has no authority to require or prohibit growth of any kind. While local agencies may take advantage of certain CEQA benefits and other incentives, CEQA does not mandate that local agencies use the MTP/SCS to regulate GHG emissions or for any other purpose. Senate Bill 375 also specifically states that a sustainable communities strategy does not regulate land use, that city and county land use policies and plans are not required to be consistent with the MTP/SCS, and that nothing in a sustainable communities strategy "shall be interpreted as superseding the exercise of the local land use authority of cities and counties within the region." (Gov. Code, § 65080(b)(2)(I)). The MTP/SCS does not regulate local land use authority or preclude a local jurisdiction from planning and approving growth that is different in terms of total units or geographic extent.

It is also important to remember that the MTP/SCS is updated on a federally-required cycle of at least every four years. This means that if new information about individual development projects, for instance, becomes available after an MTP/SCS is adopted, SACOG is obligated to address that information in the next MTP/SCS update cycle. Importantly, the next update (to be adopted no later than April 2016) will include adding at least four additional years to the forecast. During further major economic challenges, that forecast will most likely project the need for more residential and non-residential construction than is included in the current plan and, therefore, it is likely to include more land for development than in the current plan. SACOG will begin preparing the updated growth forecast for the next plan in 2014.

Voluntary land use decisions by cities and counties will be critical to the success of this MTP/SCS. Over time, the region has increasingly committed to integrating regional transportation plans and local land use plans so that they reinforce each other in order to minimize regulatory constraints and maximize the opportunities for a steady flow of transportation funds to the region. SB 375, with its requirement to include an SCS in the MTP, further supports collaboration between local and regional planning efforts.

SACOG can't use every agency's forecast given control totals.

"…..SACOG's MTP/SCS growth forecast can never be just the sum of its 28 local government's general plans….."

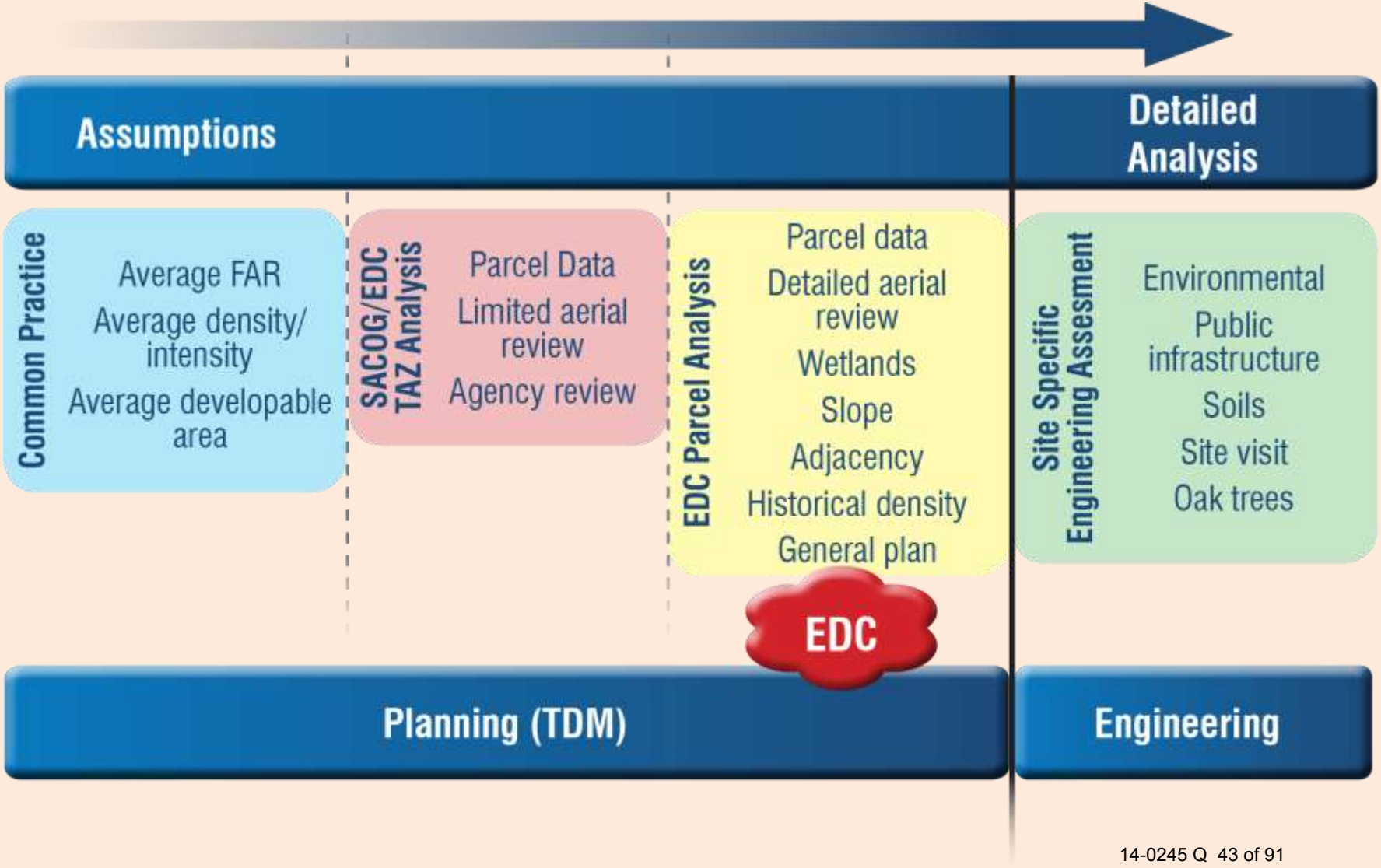
SACOG isn't bound by General Plans.

"The MTP/SCS growth forecast may show growth in areas that are not yet formally included in a county's or city's general plan…."

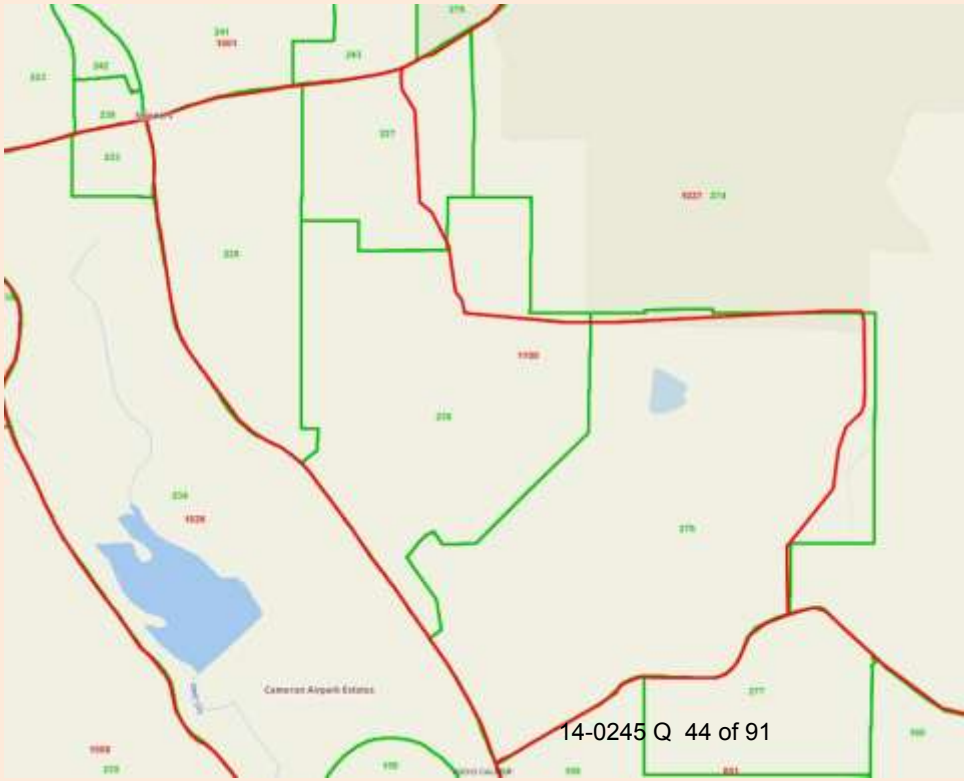
EDC isn't bound by SACOG.

"….city and county land use polices and plans are not required to be consistent with the MTP/SCS….."

Land Use Analysis



Network and Traffic Analysis Zones



Kittelson & Associates Inc. (KAI): Model Peer Review

- Specialize in Travel Demand Modeling
  - City/County or Regional
  - Model Development
  - Model Application
- Leaders of State/National Research & Guidance Development On Modeling
- KAI – Ample experience with the predecessor El Dorado County DOT travel demand model and SACOG's SACMET and SACSIM models
- Have worked for the EDC since 2005 providing on-call traffic engineering and planning support.
- We are an independent contractor providing an objective set of eyes
- We do not contract with private developers in El Dorado County

Model Peer Review

- Land Use Summary Check;
- External traffic growth assumption check;
- Trip Purpose and Trip Generation check (productions and attractions);
- Verify person trip vs. vehicle trip Origin-Destination (OD) matrix;
- 5-D Application assessment;
- Zone connector checks;
- Check/verify network coding conventions – check against County's CIP list;
- Check logical link volume growth;
- Volume comparisons for key facilities relative to past forecasts; and,
- Check and verify static validation statistics (if available and documented);

Model Peer Review

- Peer Review Findings submitted to EDC DOT and Caltrans (provided as part of staff report)
- EDC DOT worked with KHA and KAI to resolve identified concerns
- All issues of concern were addressed.
- Responses to KAI Peer Review circulated to Caltrans
- Model endorsed by both Caltrans and SACOG

Conclusions

- What is the value of the TDM?
  - Provides objective input into the planning process
  - Its specific to EDC's General Plan
  - More detailed EDC coverage than other models
- Is the model valid?
  - It meets applicable standards
  - Has been reviewed by SACOG, Caltrans, Kittelson, and others
  - EDCTC has used it on a Caltrans grant project

Part One
Questions & Comments

Part Two

Adopt a 20-Year Growth Forecast

Why is a 20-Year Growth Forecast Needed

- Move from a 2025 Horizon to a 2035 Horizon
- General Plan Policy TC-Xb requires a CIP specifying expenditures for the next 20 years
- General Plan Policy TC-Xb requires a TIM Fee Program specifying expenditures for the next 20 years
- General Plan Implementation Measure TC-A requires the adoption of a 10-Year CIP
- General Plan Implementation Measure TC-B requires the update of the TIM Fee Program every 5 years with revised growth forecasts
- Move forward on projects such as Diamond Springs Parkway and MC&FP Phase II

20-Year Growth Forecast Scenarios for Consideration

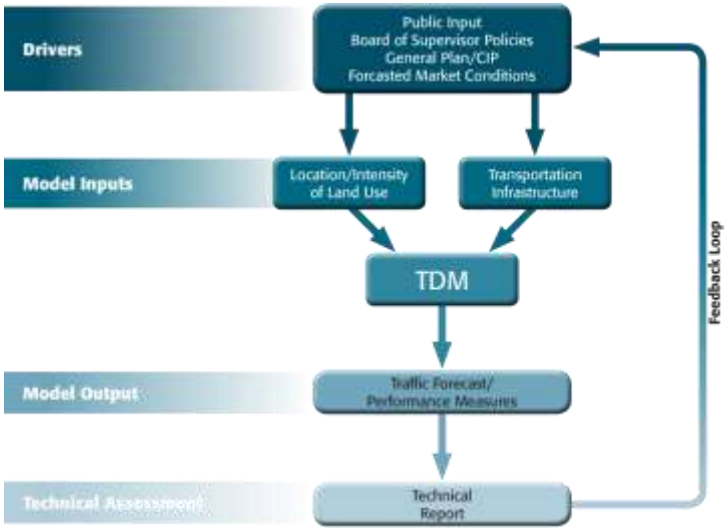
Scenario 1: Historical Growth Rate with Historical Distribution

Scenario 2: Existing + Entitled

Scenario 3: Historical Growth Rate with General Plan Distribution

*Note all three scenarios include the Regional Housing Needs Allocation (RHNA) as mandated by the State.

Next Steps to Finish



START HERE

Growth Forecast

Distribution

Impacts

Mitigation (How and When)

Costs

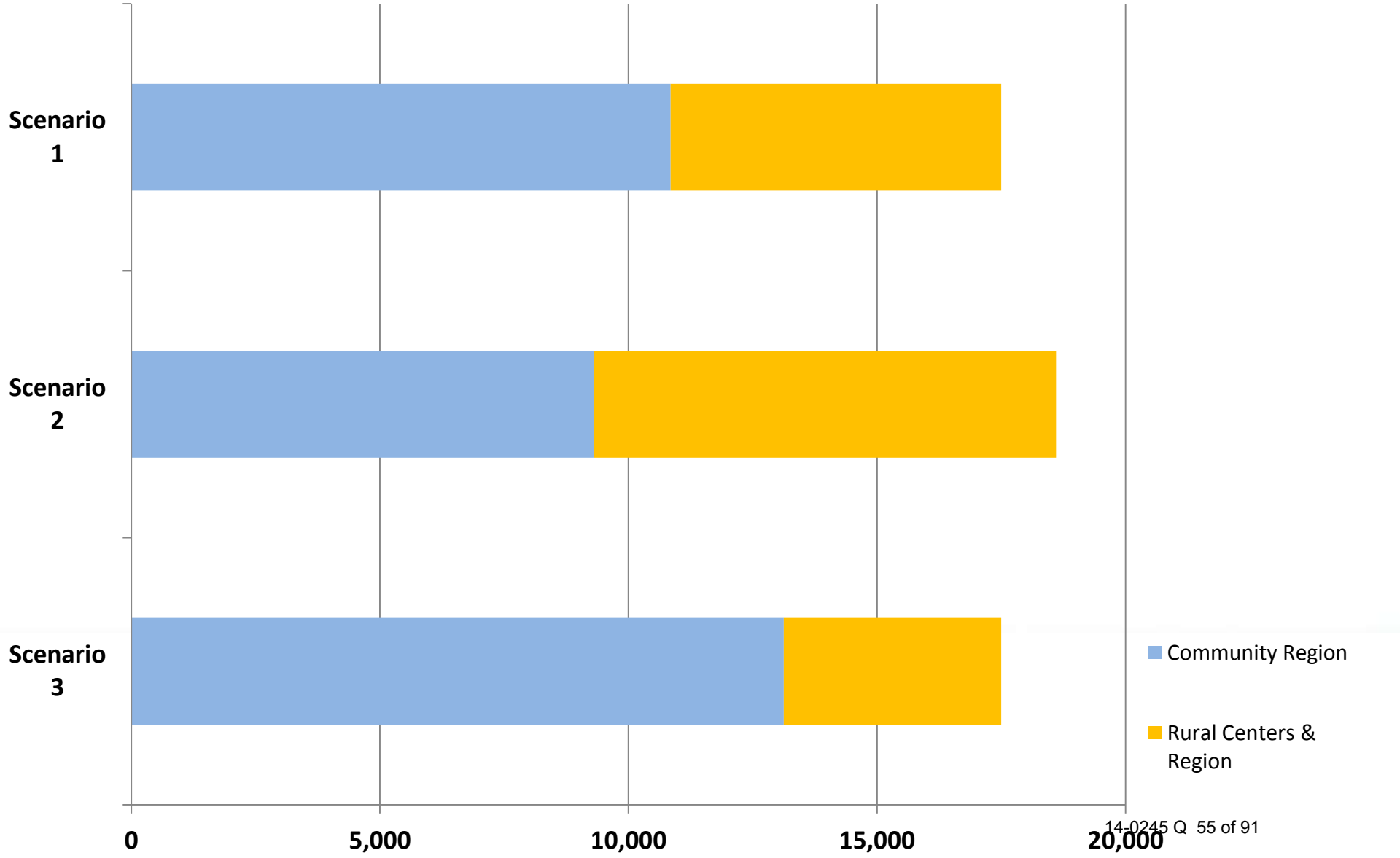
Fee Program

Assumptions for all Scenarios (includes RHNA)

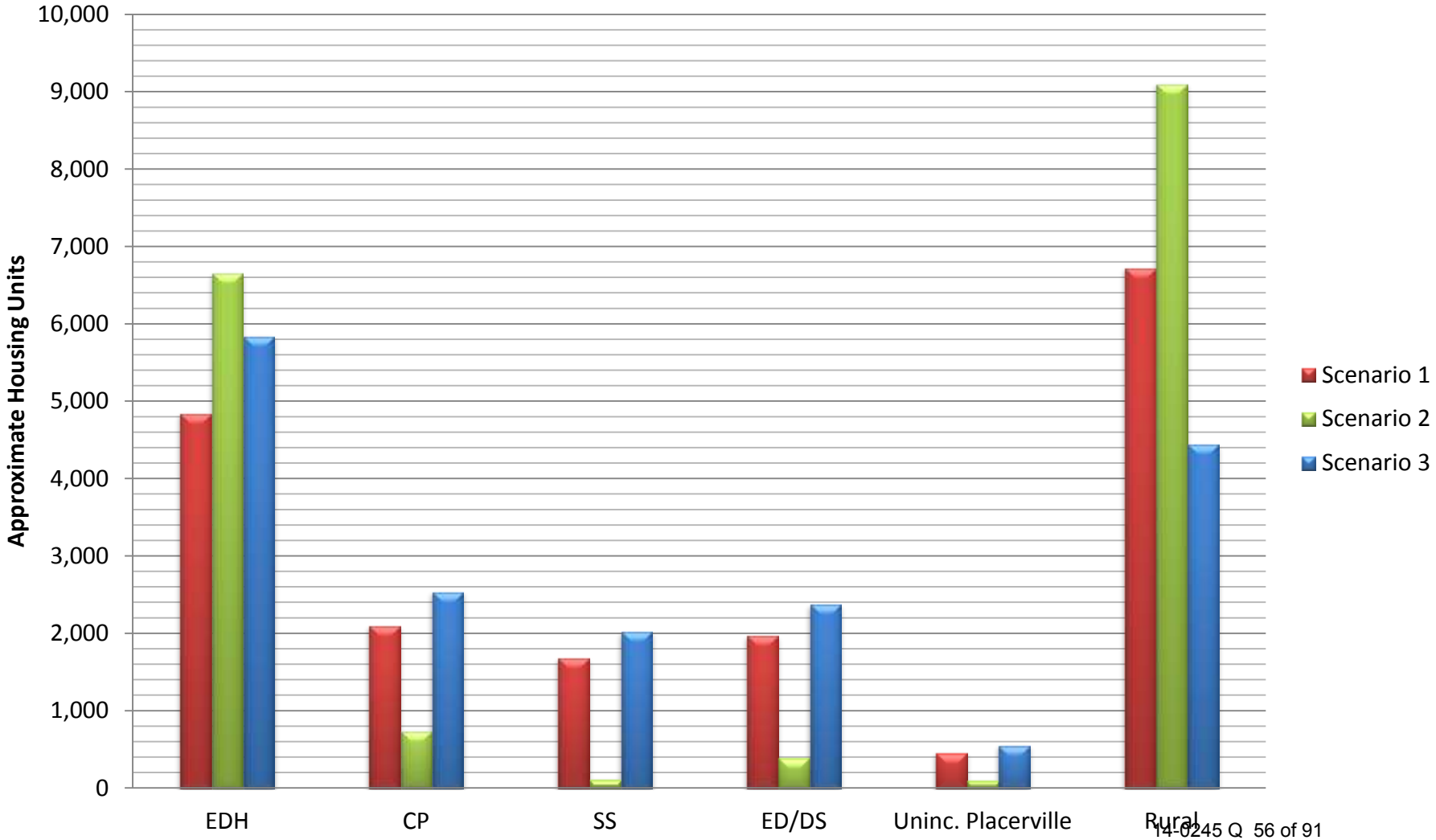
	Historical Growth Rate w/Historical Distribution	Existing + Entitled	Historical Growth Rate w/General Plan Distribution
Growth Rate through 2035	Approx. 1%	Approx. 1%	Approx. 1%
Community Region/Rural Region Distribution	62/38	50/50	75/25
Specific Plan Build Out Assumptions	Approx.60%	100%	Approx. 80%
Approximate 2035 Projected homes	17,500	18,602	17,500
Rough Ball Park Cost of Additional CIP Projects that may be needed **w/o buildout of 2013 CIP**	$56.6M	$264.6M	$83.5M
Rough Ball Park Cost of Additional CIP Projects that may be needed **with buildout of 2013 CIP**	$47.2M	$46.1M	$34.6M

- The draft estimated costs shown are very rough ballpark estimates. These estimates were created using the methodology used for the 2004 General Plan TIM Fee update, with lane-mile costs updated to reflect costs used in the County's 2013 CIP for projects in the 10- and 20-year CIP. These ballpark estimates do not take into account project-level details that are unknown at this time, including but not limited to: damages as a result of right-of-way acquisition (e.g. required purchase/displacement of homes, businesses, drainage or utility structures), the requirement of additional drainage facilities, retaining walls, etc. This draft information is being provided simply to allow for a comparison of potential outcomes relative to the growth forecast scenarios. Significant additional analysis is required to determine detailed roadway infrastructure needs and associated costs for the Major Five Year Capital Improvement Program (CIP) and Traffic Impact Mitigation (TIM) Fee updates.
- Existing Commitments on projects are approximately $325M. Some of the projects or portions thereof listed for the 3 scenarios may be included as a part of the $325M

Approximate Projected Residential Growth Distribution with Scenarios 1, 2, and 3



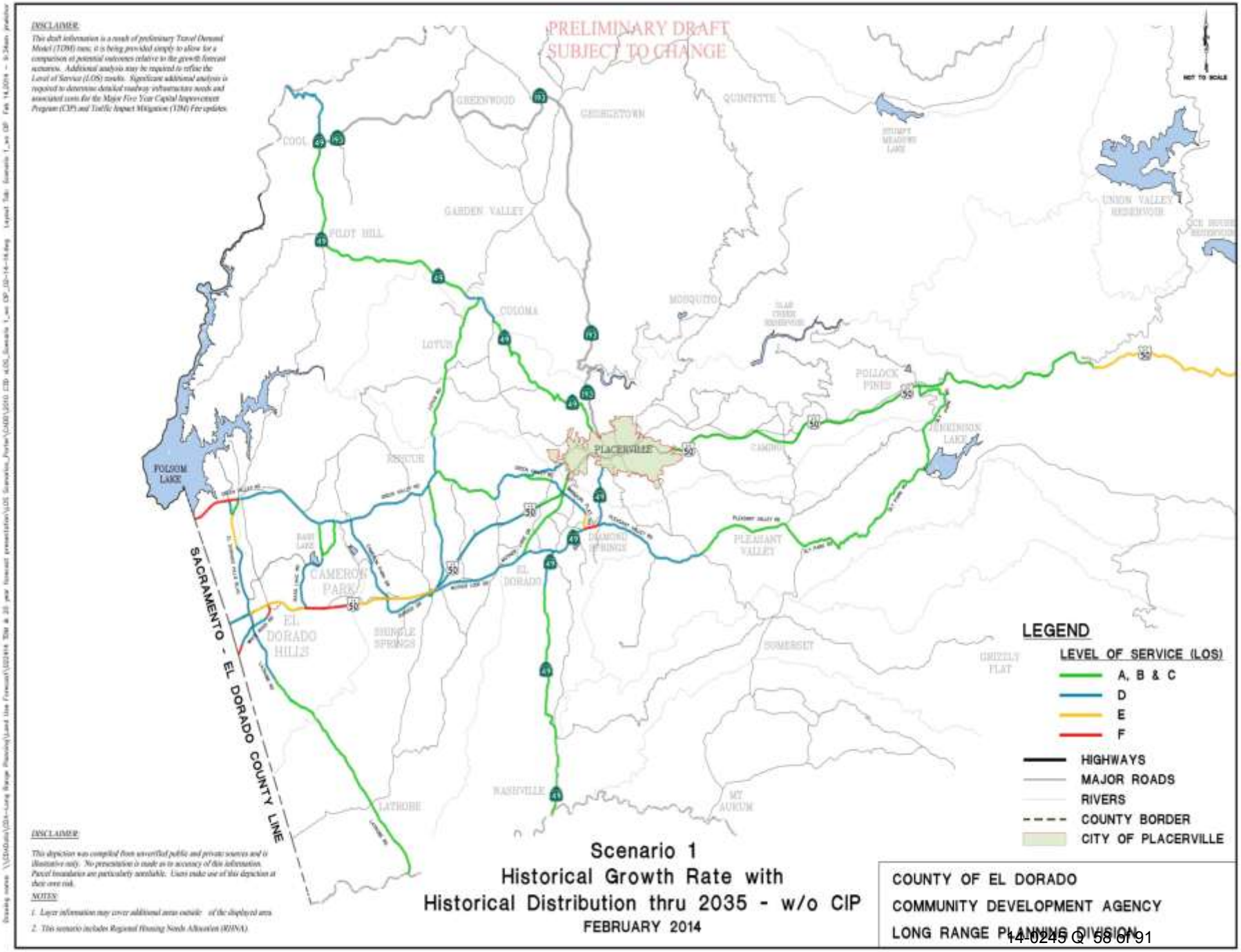
Approximate Distribution of Housing Units Through 2035



Initial Criteria for Determining Future Potential Road Improvements

- For each scenario, the model was used to analyze future Level of Service (LOS) in two ways:
  1. No buildout of 2013 CIP
  2. Buildout of 2013 CIP

- Applied GP standards to determine what potential road improvements may be needed:
  - TC-X Policies (Measure Y)
  - Policy 5.1.2.2: Minimum LOS D in Rural Centers/Regions
  - Policy 5.1.2.2: Minimum LOS E in Community Regions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NOT TO SCALE
GREENWOOD
GEORGETOWN
QUINTETTE
COOL
GARDEN VALLEY
PILOT HILL
COLOMA
LOTUS
MOSQUITO
POLLOCK PINES
PLACERVILLE
RESCUE
CAMINO
JENKINSON LAKE
POLSOM LAKE
SACRAMENTO - EL DORADO COUNTY LINE
CAMERON PARK
EL DORADO HILLS
SHINGLE SPRINGS
EL DORADO
DIAMOND SPRINGS
PLEASANT VALLEY
SOMERSET
GRIZZLY FLAT
LATROBE
WASHINGTON
MT AUBURN
LEGEND
LEVEL OF SERVICE (LOS)
A, B & C
D
E
F
HIGHWAYS
MAJOR ROADS
RIVERS
COUNTY BORDER
CITY OF PLACERVILLE
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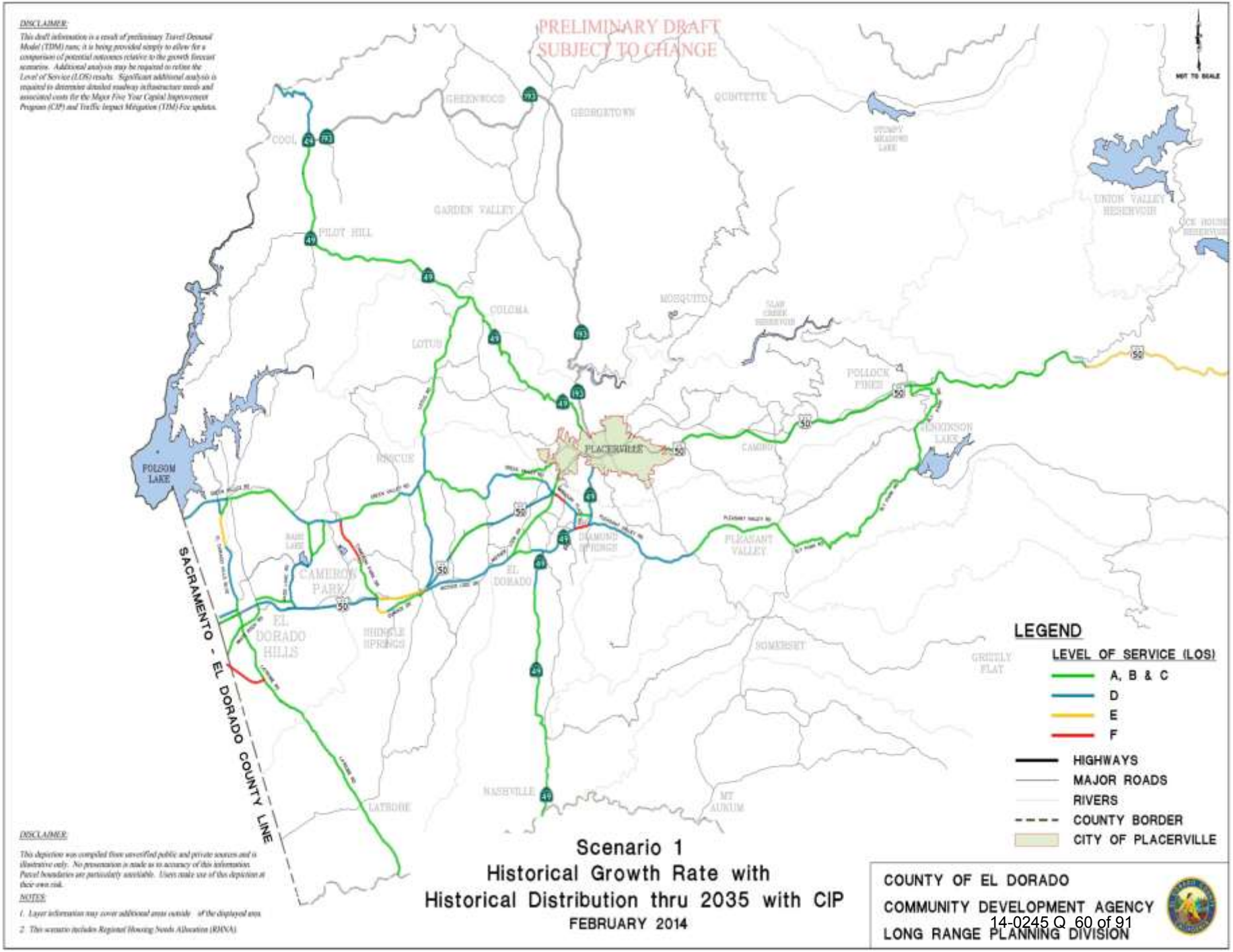
NOTES:
1. Layer information may cover additional areas outside of the displayed area.
2. This scenario includes Regional Housing Needs Allocation (RHNA).
Scenario 1
Historical Growth Rate with
Historical Distribution thru 2035 - w/o CIP
FEBRUARY 2014
COUNTY OF EL DORADO
COMMUNITY DEVELOPMENT AGENCY
LONG RANGE PLANNING DIVISION

Draft TDM Results - Scenario 1 Summary

Historical Growth Rate with Historical Distribution (approximately 62% within Community Regions and approximately 38% in Rural Centers/Regions)

Summary of Potential Improvements Needed if Improvements identified in the 2013 Capital Improvements Program <u>are not</u> constructed

ROAD NAME	SEGMENT	Gen. Plan Max LOS	Road Classification	Community Region (CR), Rural Center (RC), Rural Region (RR)	Year 2035 WKDY AM PK HR LOS (Using HCM2010)	Year 2035 WKDY PM PK HR LOS (Using HCM2010)	Potential Improvements Needed[5]	Rough Estimated Cost of Improvements (in millions)[6]	Comment
LOCAL ROADS									
GREEN VALLEY ROAD	County Line to Francisco Dr	E	2A	CR	F	F	4AD - 4 lane divided	$0.0	To be constructed by City of Folsom
	Francisco Dr to Salmon Falls Rd	E	2A	CR	F	F	4AD - 4 lane divided	$3.4	
WHITE ROCK ROAD	County Line to Manchester Dr.	E	2A	CR	D	F	4AD - 4 lane divided	$19.1	
	Latrobe Rd to Silva Valley Pkwy	E	2A	CR	D	F	4AD - 4 lane divided	$3.3	
U.S. 50									
EB	Silva Valley Parkway to Bass Lake Road	D	2FA	RR	B	E	Truck Climbing Lane with possible Interchange Work	$10.2	Cost only includes the Truck Climbing Lane, not potential interchange work
EB	Bass Lake To Cambridge	D/E	2FA	RR	D	F	Auxiliary Lane	$15.30	
SR 49									
S.R. 49	Missouri Flat Rd to Pleasant Valley Rd	E	2A	CR	F	F	4AD - 4 lane divided	$5.3	Not needed with construction of Diamond Springs Parkway'
							TOTAL	**$56.6**	**M**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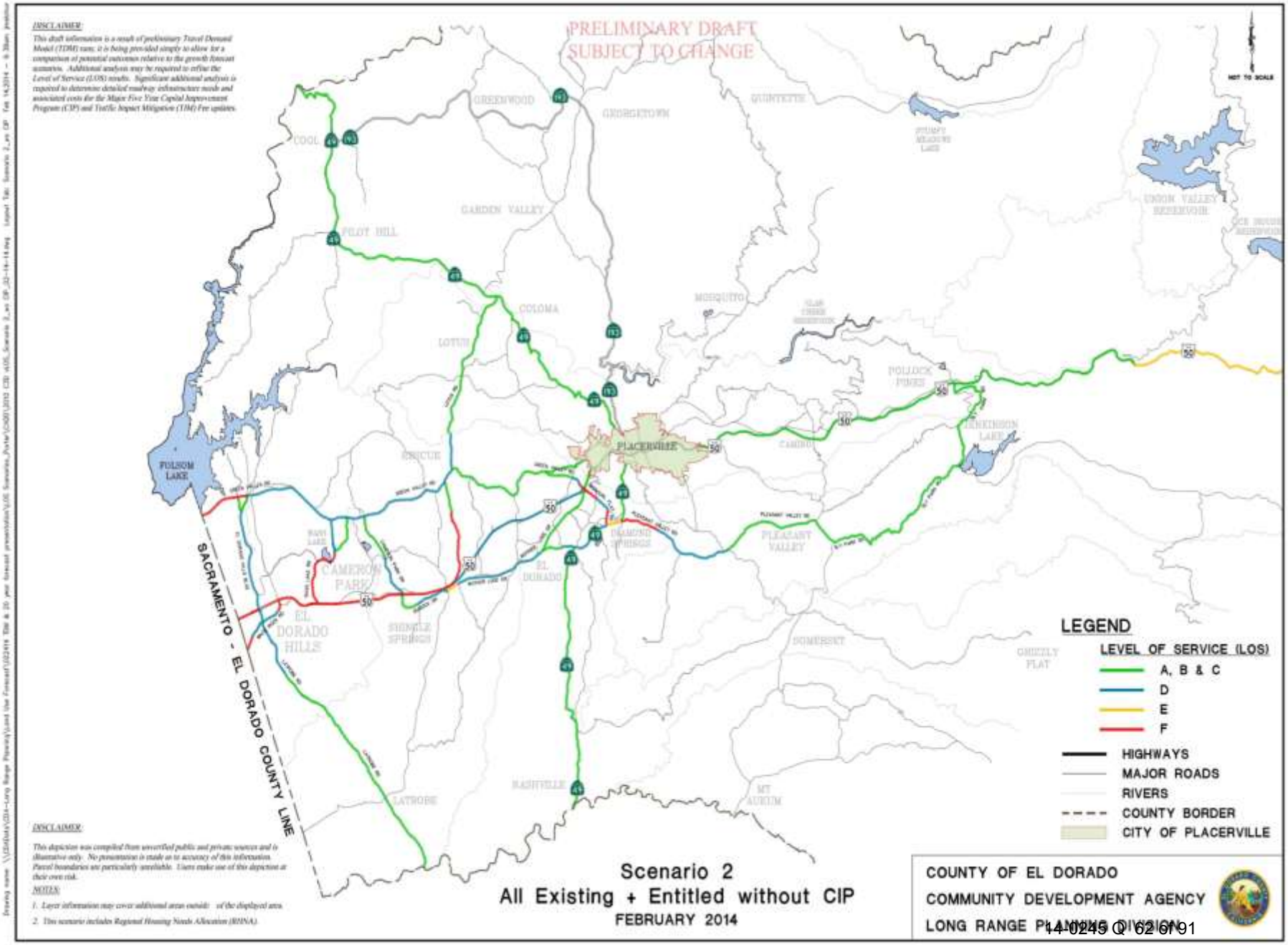
Scenario 1
Historical Growth Rate with
Historical Distribution thru 2035 with CIP
FEBRUARY 2014
COUNTY OF EL DORADO
COMMUNITY DEVELOPMENT AGENCY
LONG RANGE PLANNING DIVISION

Draft TDM Results - Scenario 1 Summary

Historical Growth Rate with Historical Distribution (approximately 62% within Community Regions and approximately 38% in Rural Centers/Regions)

Summary of Potential Improvements Needed if Improvements identified in the 2013 Capital Improvements Program <u>are</u> Constructed

ROAD NAME	SEGMENT	Gen. Plan Max LOS	Road Classification	Community Region (CR), Rural Center (RC), Rural Region (RR)	Year 2035 WKDY AM PK HR LOS (Using HCM2010)	Year 2035 WKDY PM PK HR LOS (Using HCM2010)	Potential Improvements Needed[5]	Rough Estimated Cost of Improvements (in millions)[b]	Comment
LOCAL ROADS									
CAMERON PARK DRIVE	Oxford Rd to Green Valley Rd	E	2A	CR	E	F	4AU - 4 lane undivided	$12.8	
SUNCAST LANE EXTENSION (LATROBE CONNECTION)	White Rock Rd to Latrobe Rd	E	2A	CR	F	F	4AU - 4 lane undivided	$29.30	Increase from 2 lane to 4 lane from 2013 CIP description
SR 49									
S.R. 49	Missouri Flat Rd to Pleasant Valley Rd	E	2A	CR	F	F	4AD - 4 lane divided	$5.1	New CIP Project
							TOTAL	$47.2	M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Scenario 2
All Existing + Entitled without CIP
FEBRUARY 2014
COUNTY OF EL DORADO
COMMUNITY DEVELOPMENT AGENCY
LONG RANGE PLANNING DIVISION

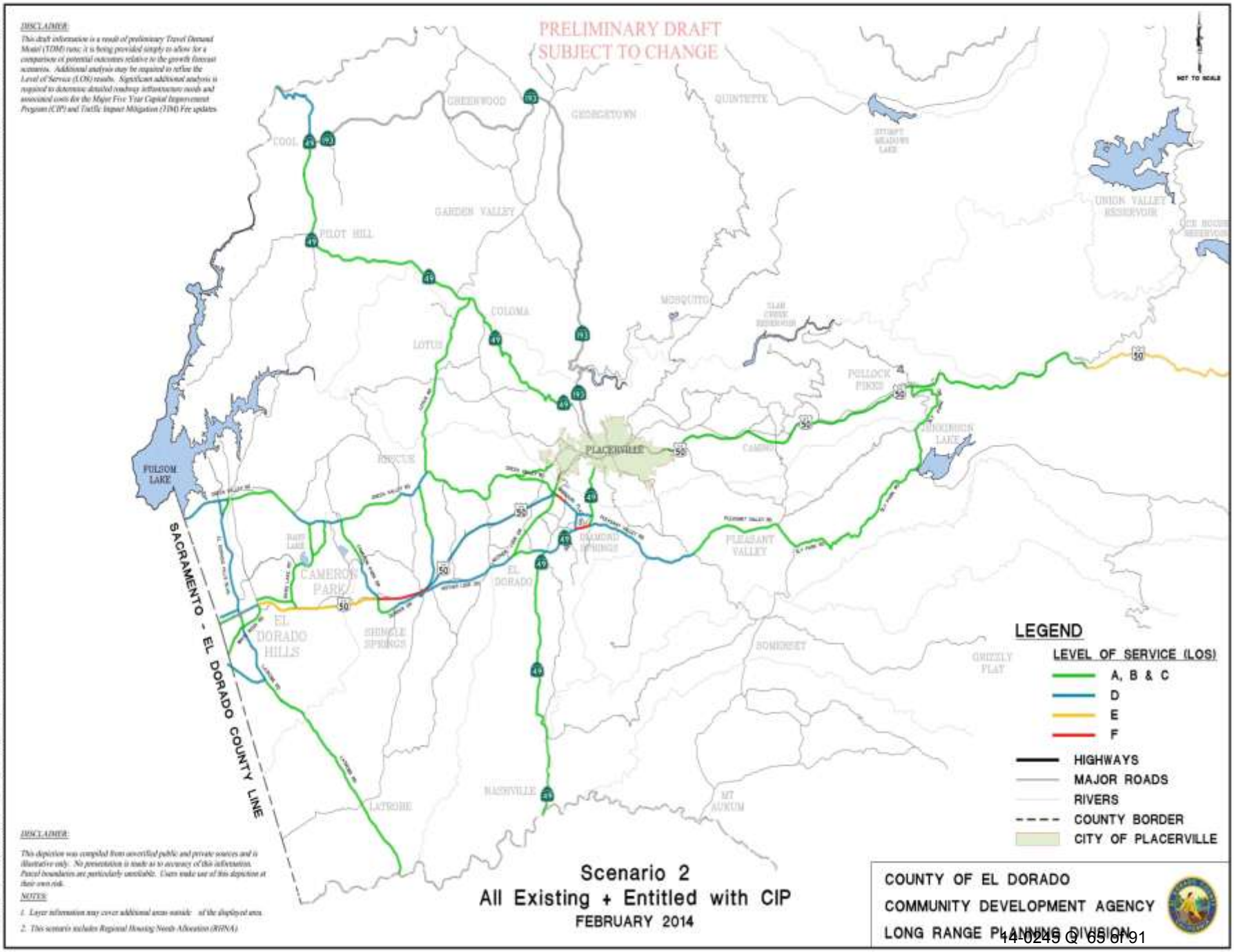
Draft TDM Results - Scenario 2 Summary

Existing + Entitled (approximately 50% within the Community Regions and approximately 50% within the Rural Centers/Regions)

Summary of Potential Improvements Needed if Improvements identified in the 2013 Capital Improvements Program are not constructed

ROAD NAME	SEGMENT	Gen. Plan Max LOS	Road Classification	Community Region (CR), Rural Center (RC), Rural Region (RR)	Year 2035 WKDY AM PK HR LOS (Using HCM2010)	Year 2035 WKDY PM PK HR LOS (Using HCM2010)	Potential Improvements Needed[4]	Rough Estimated Cost of Improvements (in millions)[5]	Comment
LOCAL ROADS									
BASS LAKE ROAD	Country Club Dr to Bass Lake (Silver Springs Prkwy)	D	2A	RR/CR	F	F	4AU - 4 lane undivided arterial	$42.4	
GREEN VALLEY ROAD	County Line to Francisco Dr to Francisco	E	2A	CR	F	F	6AD - 6 lane divided arterial	$12.9	
	Francisco Dr to Salmon Falls Rd	E	2A	CR	F	F	6AD - 6 lane divided arterial	$4.9	
MISSOURI FLAT ROAD	Headington Rd to US 50	E	2A	CR	D	F	4AD - 4 lane divided arterial	$1.3	
	China Garden Rd to SR 49	E	2A	CR	F	F	4AU - 4 lane undivided arterial	$3.8	Not needed with construction of Diamond Springs Parkway, New CIP Project
NORTH SHINGLE	Tennessee Dr to Green Valley Rd	D	2A	RR/CR	F	F	4AU - 4 lane undivided arterial	$12.4	New CIP Project
PLEASANT VALLEY ROAD	SR 49 (N) to Big Cut Rd	E	2A	CR	E	F	4AU - 4 lane undivided arterial	$9.1	New CIP Project
WHITE ROCK ROAD	Latrobe Rd to Silva Valley Pkwy	E	2A	CR	D	F	4AU - 4 lane undivided arterial	$19.1	
	County Line to Manchester Dr	E	2A	CR	D	F	4AD - 4 lane divided arterial	$3.3	
U.S. 50									
WB	County Line to EDH Blvd/Latrobe Rd	E	2F	CR	F	D			
WB	EDH Blvd/Latrobe Rd to Bass Lake Rd (Silva Valley Parkway after 2015)	E	2F	CR	F	C	Interchange and Auxiliary Lanes	$10.2	
Bass Lake Interchange	Interchange	D	N/A	RR			Interchange and Auxiliary Lane Improvements	$36.0	
WB	Bass Lake Rd to Cambridge Rd	D/E	2F	RR/CR	F	C			
EB		D/E	2F	RR/CR	B	F			
Cambridge Interchange	Interchange						Interchange and Auxiliary Lane Improvements	$21.2	
WB	Cambridge Rd to Cameron Park Dr	E	2F	CR	F	C			
EB		E	2F	CR	B	F			

ROAD NAME	SEGMENT	Gen. Plan Max LOS	Road Classification	Community Region (CR), Rural Center (RC), Rural Region (RR)	Year 2035 WKDY AM PK HR LOS (Using HCM2010)	Year 2035 WKDY PM PK HR LOS (Using HCM2010)	Potential Improvements Needed[4]	Rough Estimated Cost of Improvements (in millions)[5]	Comment
Cameron Park Interchange	Interchange						Interchange and Auxiliary Lane Improvements	$59.5	
WB	Cameron Park Dr to Ponderosa Rd	E	2F	CR	F	D			
EB		E	2F	CR	C	F			
Ponderosa interchange	Interchange						Interchange Improvements	$28.5	
							TOTAL	**$264.6**	**M**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PLACERVILLE
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Scenario 2
All Existing + Entitled with CIP
FEBRUARY 2014
COUNTY OF EL DORADO
COMMUNITY DEVELOPMENT AGENCY
LONG RANGE PLANNING DIVISION

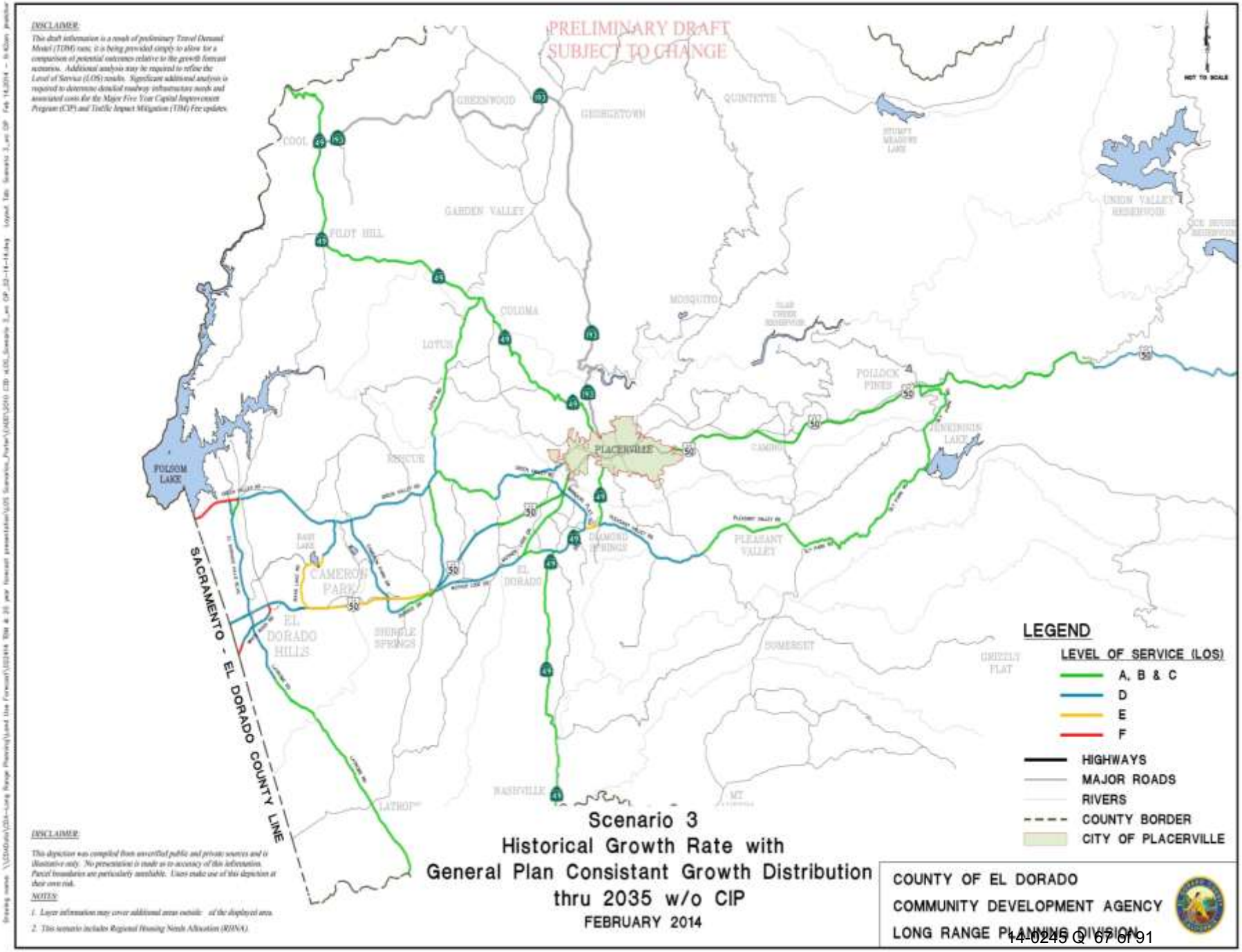
Draft TDM Results - Scenario 2 Summary

Existing + Entitled (approximately 50% within the Community Regions andapproximately 50% within the Rural Centers/Regions)

Summary of Potential Improvements Needed if Improvements identified in the 2013 Capital Improvements Program <u>are</u> Constructed

ROAD NAME	SEGMENT	Gen. Plan Max LOS	Road Classification	Community Region (CR), Rural Center (RC), Rural Region (RR)	Year 2035 WKDY AM PK HR LOS (Using HCM2010)	Year 2035 WKDY PM PK HR LOS (Using HCM2010)	Potential Improvements Needed[4]	Rough Estimated Cost of Improvements (In millions)[5]	Comment
LOCAL ROADS									
No Additional Local Road Improvement Required									
U.S. 50									
EB	Silva Valley Parkway to Bass Lake Rd	D	2FA	RR	B	E	Truck Climbing Lane with possible Interchange Work	$10.2	Cost only includes the Truck Climbing Lane, not potential interchange work
WB	Bass Lake Rd to Cambeidge Rd	D/E	2FA	RR/CR	E	C	Auxiliary Lane	$15.3	
WB	CameronPark Dr to Pondrosa Rd	E	2F	CR	F	D	Auxiliary Lane	$15.3	
SR 49									
SR 49	Missouri Flat Rd to Pleasant Valley Rd	E	2A	CR	D	F	4AU - 4 lane undivided	$5.3	New CIP Project

Total **$46.1 M**



Scenario 3
Historical Growth Rate with General Plan Consistant Growth Distribution thru 2035 w/o CIP

FEBRUARY 2014

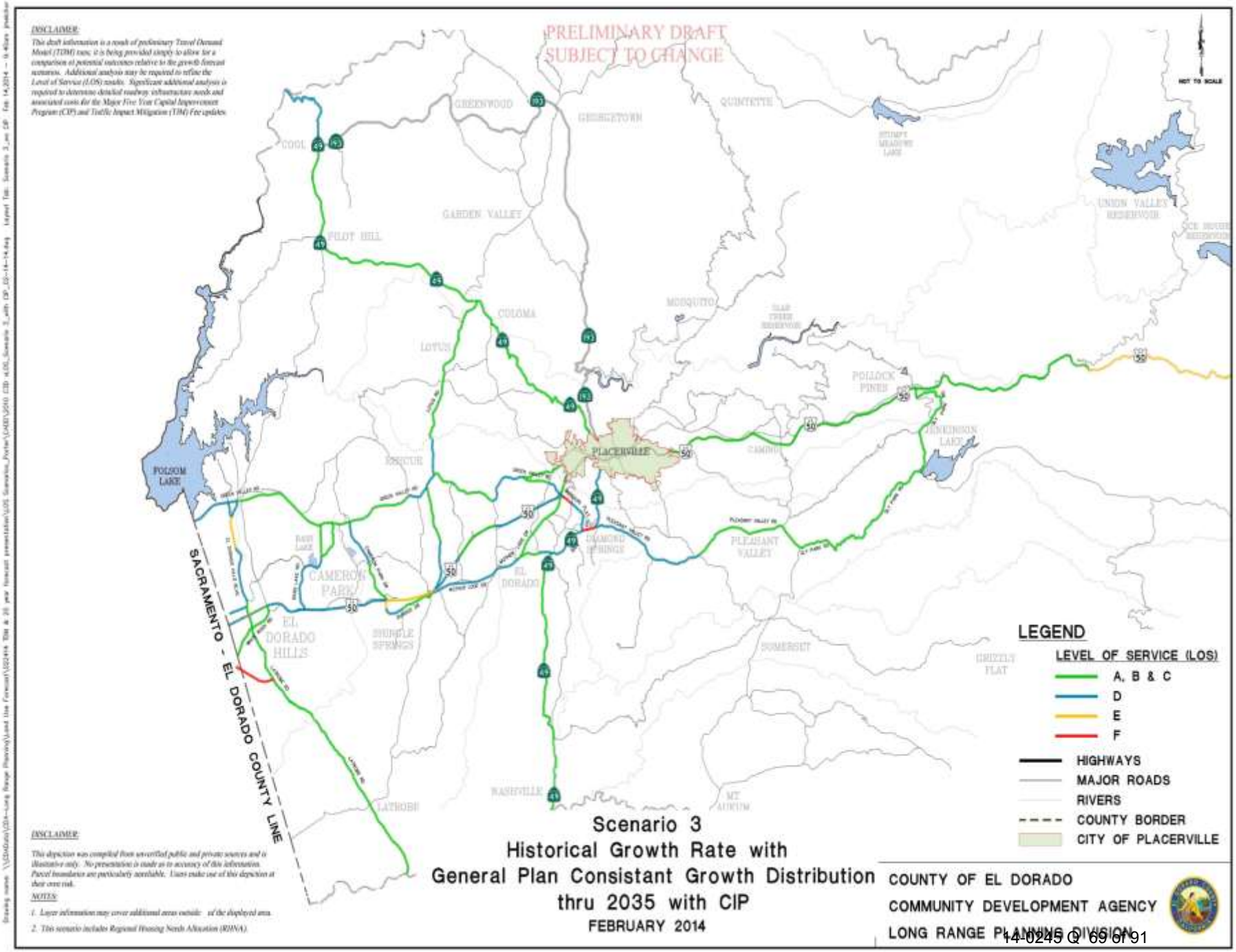
COUNTY OF EL DORADO
COMMUNITY DEVELOPMENT AGENCY
LONG RANGE PLANNING DIVISION

Draft TDM Results - Scenario 3 Summary

Historical Growth Rate with General Plan Distribution (approximately 75% within the Community Regions and the Rural Centers/Regions) approximately 25% within

Summary of Potential Improvements Needed if Improvements identified in the 2013 Capital Improvements Program are not constructed

ROAD NAME	SEGMENT	Gen. Plan Max LOS	Road Classification	Community Region (CR), Rural Center (RC), Rural Region (RR)	Year 2035 WKDY AM PK HR LOS (Using HCM2010)	Year 2035 WKDY PM PK HR LOS (Using HCM2010)	Potential Improvements Needed*	Rough Estimated Cost of Improvements (in millions)**	Comment
LOCAL ROADS									
BASS LAKE ROAD	Country Club Dr to Bass Lake(Silver Springs)	D	2A	RR/CR	E	E	4AU - 4 lane undivided arterial	$42.4	
GREEN VALLEY ROAD	County Line to Francisco Dr	E	2A	CR	F	F	4AU - 4 lane undivided arterial	$0.0	To be constructed by City of Folsom
	Francisco Dr to Salmon Falls Rd	E	2A		F	F	4AU - 4 lane undivided arterial	$3.4	
WHITE ROCK ROAD	County Line to Manchester Dr.	E	2A	CR	D	F	4AD - 4 lane divided arterial	$1.3	
	Latrobe Rd to Silva Valley Pkwy	E	2A		D	F	4AU - 4 lane undivided arterial	$19.1	
U.S. 50									
WB	Bass Lake Rd to Cambridge Rd	D/E	2F	RR/CR	E	E	Auxiliary Lane	$15.3	
							Total	**$83.5 M**	



Scenario 3
Historical Growth Rate with General Plan Consistant Growth Distribution thru 2035 with CIP

FEBRUARY 2014

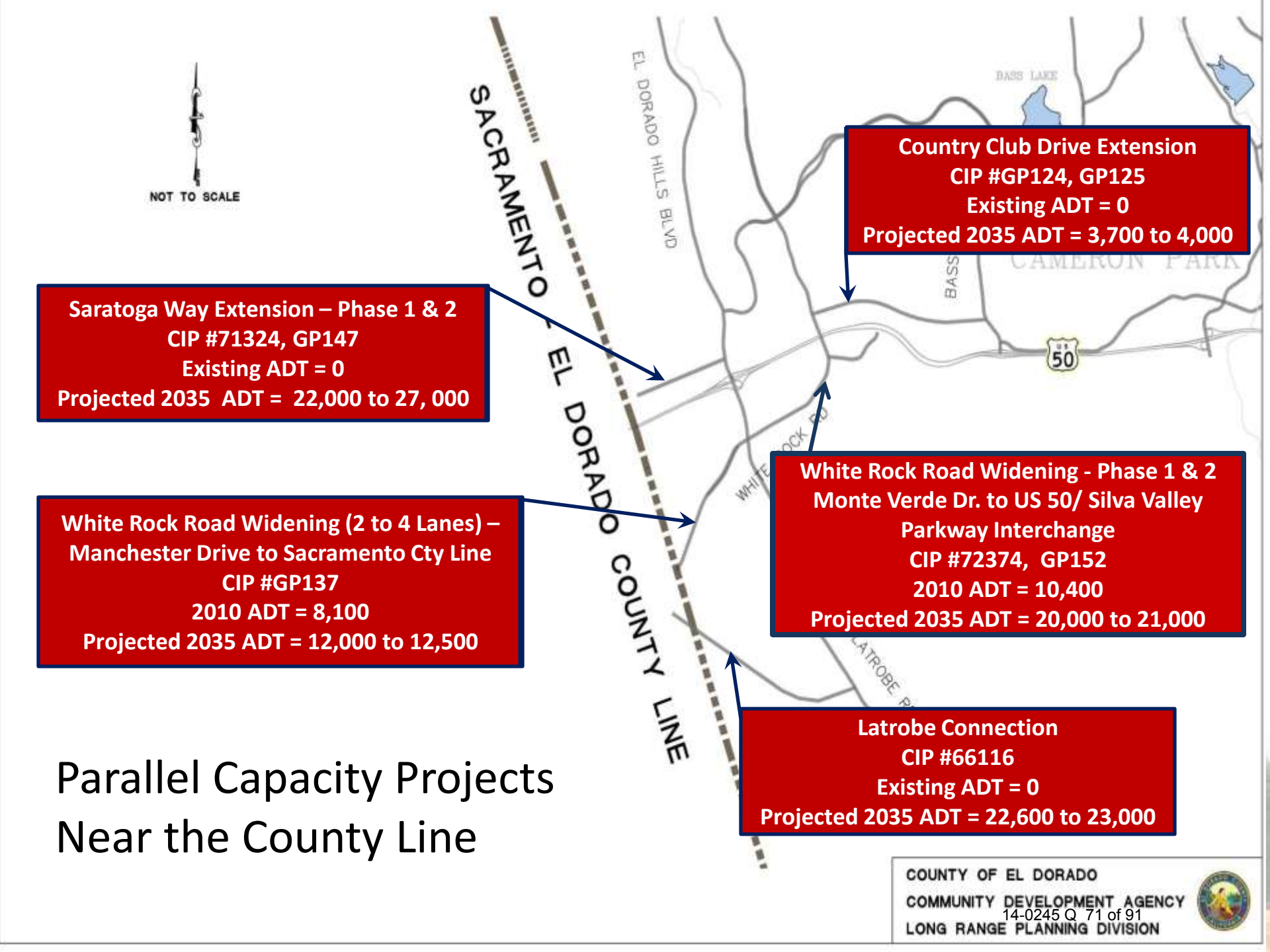
COUNTY OF EL DORADO
COMMUNITY DEVELOPMENT AGENCY
LONG RANGE PLANNING DIVISION

Draft TDM Results - Scenario 3 Summary

Historical Growth Rate with General Plan Distribution (approximately 75% within the Community Regions and approximately 25% within the Rural Centers/Regions)

Summary of Potential Improvements Needed if Improvements identified in the 2013 Capital Improvements Program are constructed

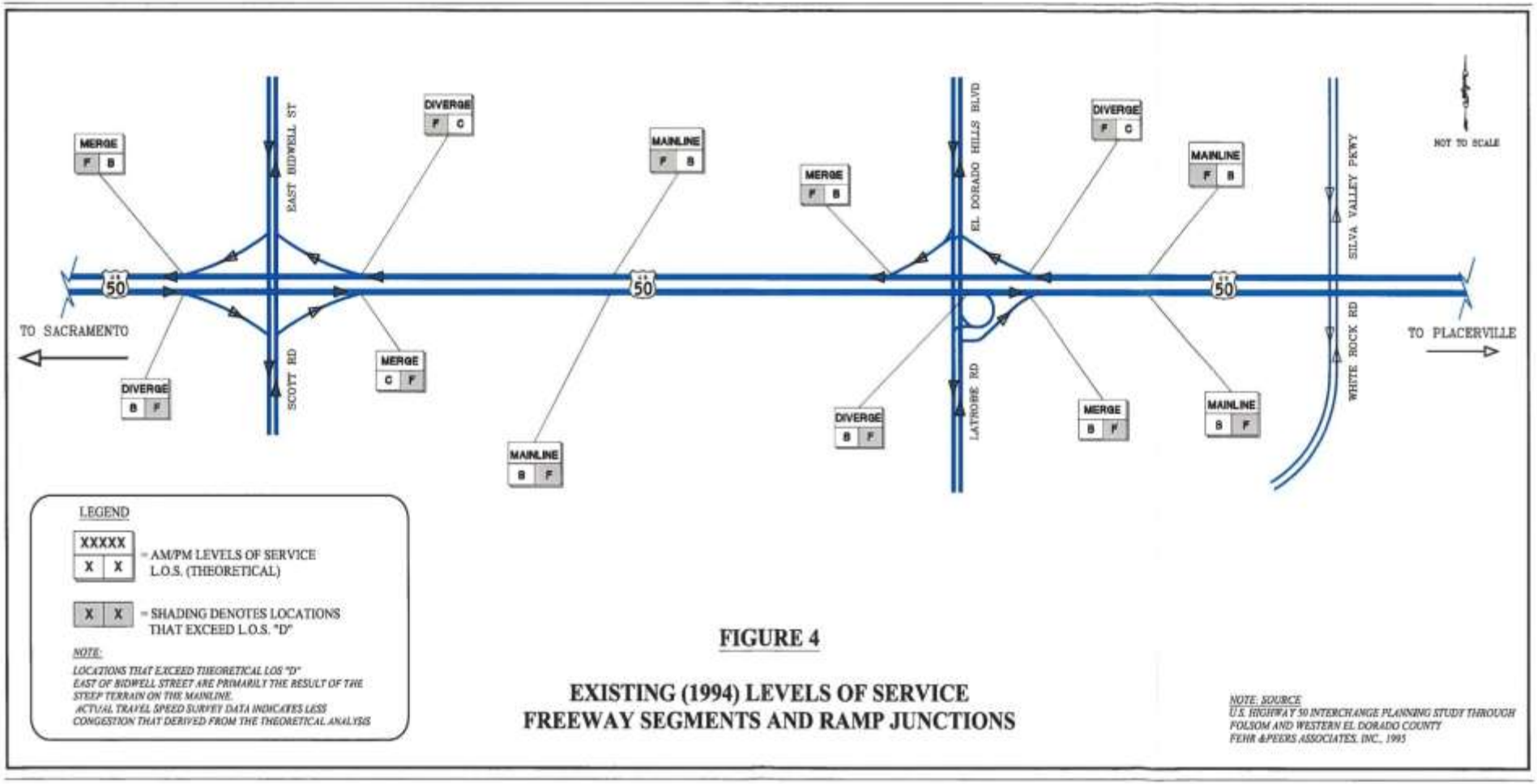
ROAD NAME	SEGMENT	Gen. Plan Max LOS	Road Classification	Community Region (CR), Rural Center (RC), Rural Region (RR)	Year 2035 WKDY AM PK HR LOS (Using HCM2010)	Year 2035 WKDY PM PK HR LOS (Using HCM2010)	Potential Improvements Needed*	Rough Estimated Cost of Improvements (in millions)**	Comment
LOCAL ROADS									
SUNCAST LANE EXTENSION (LATROBE CONNECTION)	White Rock Rd to Latrobe Rd	E	2A	CR	F	F	4AU - 4 lane undivided	$29.3	
SR 49									
SR 49	Missouri Flat Rd to Pleasant Valley Rd	E	2A	CR	F	F	4AU - 4 lane undivided	$5.3	
							Total	**$34.6 M**	

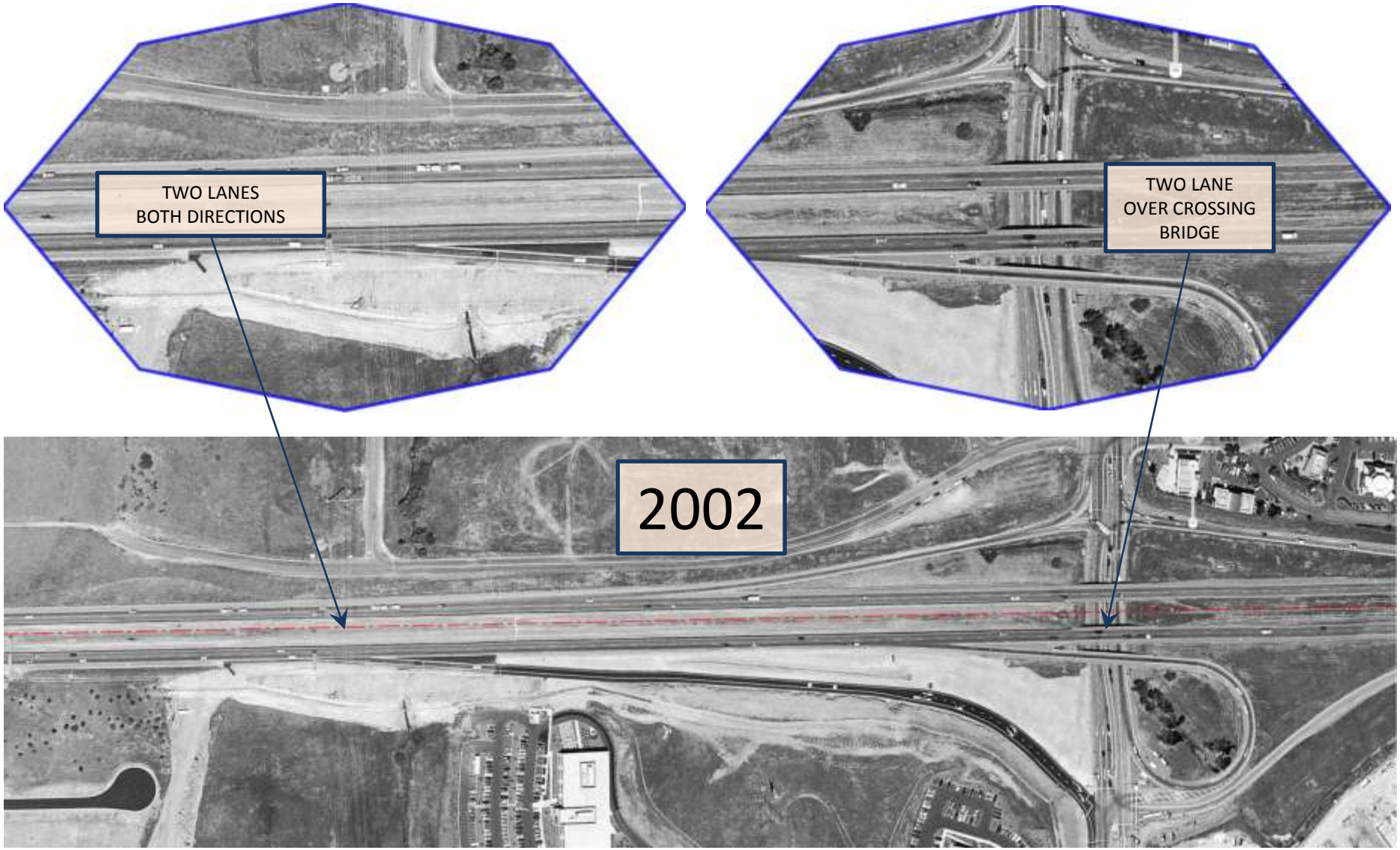


Parallel Capacity Projects Near the County Line

COUNTY OF EL DORADO
COMMUNITY DEVELOPMENT AGENCY
LONG RANGE PLANNING DIVISION

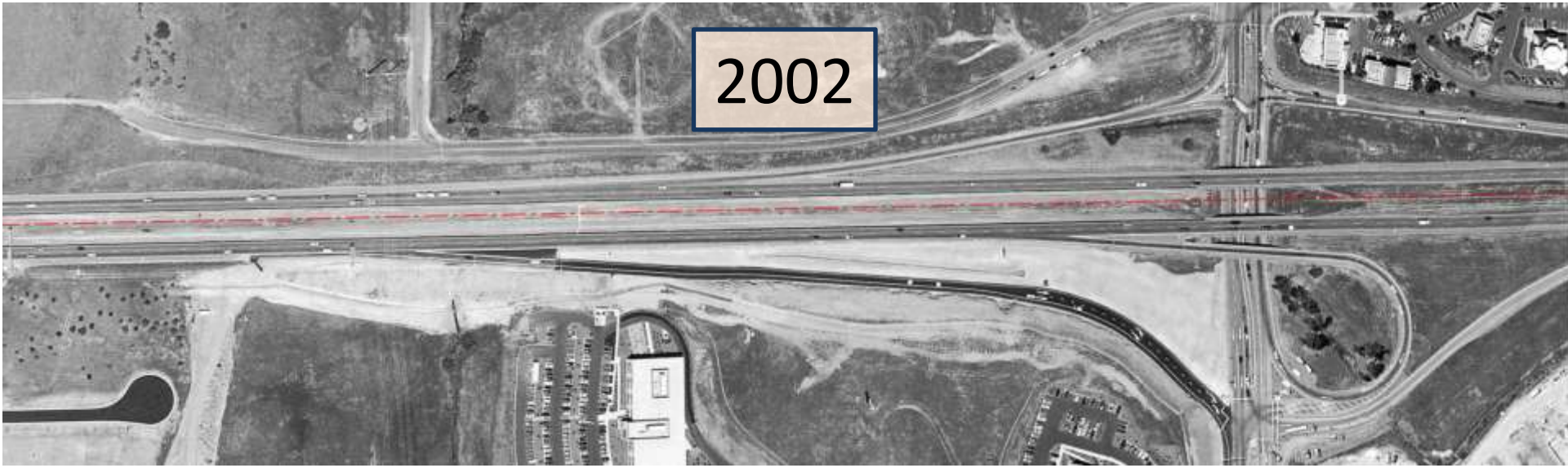
LOS on U.S. Highway 50 in 1994

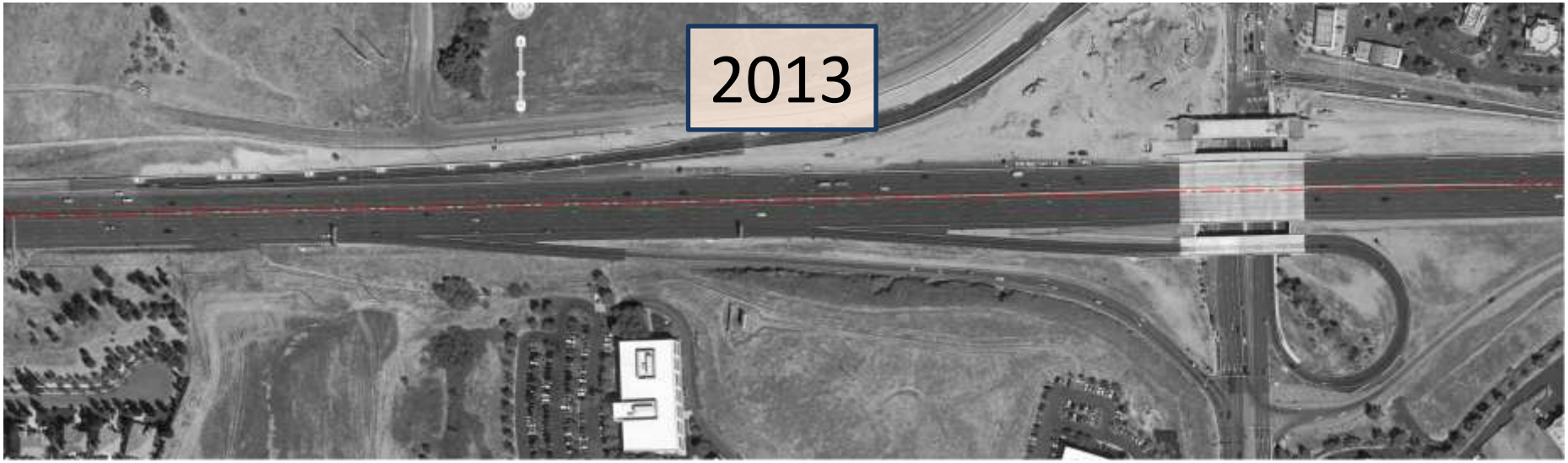




U.S. 50 – West of the El Dorado Hills Blvd. Interchange

U.S. 50 – West of the El Dorado Hills Blvd. Interchange





U.S. 50 – West of the El Dorado Hills Blvd. Interchange

Other considerations when selecting a growth distribution….

General Plan - Plan Concepts (page 6)

A. **Community Regions** where growth will be directed and facilitated;
B. **Rural Centers** where growth and commercial activities will be directed to serve the larger Rural Regions; and
C. **Rural Regions** where resource based activities are located will be enhanced while accommodating reasonable growth.

Higher levels of infrastructure and public services of all types shall be provided within Community Regions to minimize the demands on services in Rural Regions. The Capital Improvement Plan for the County and all special districts will prioritize improvements.

General Plan - Plan Objectives (pages 6-7)

6. To **concentrate and direct urban growth where infrastructure is present and/or can be more feasibly provided**

8. To **conserve, protect, and manage the County's abundant natural resources** for economic benefits now and for the future

9. To **encourage infill development that more efficiently utilizes existing infrastructure** and minimizes land use conflicts while avoiding the premature development of non-contiguous lands where direct and life cycle costs are greater

Land Use Element Principles (page 9)

- The General Plan (GP) **establishes a land use development pattern that makes the most efficient and feasible use of existing infrastructure and public services**.
- The GP provides guidelines for new and existing development that promotes a sense of community.
- The GP **defines those characteristics which make the County "rural" and provides strategies for preserving these characteristics**.
- The GP provides opportunities for positive economic growth such as increased employment opportunities, greater capture of tourism, increased retail sales, and high technology industries.
- The GP provides guidelines for new development that maintains or enhances the quality of the County.

Land Use Element Objectives and Policies

Objective 2.1.1 - Provide opportunities that allow for continued population growth and economic expansion while preserving the character and extent of existing rural centers and urban communities…"

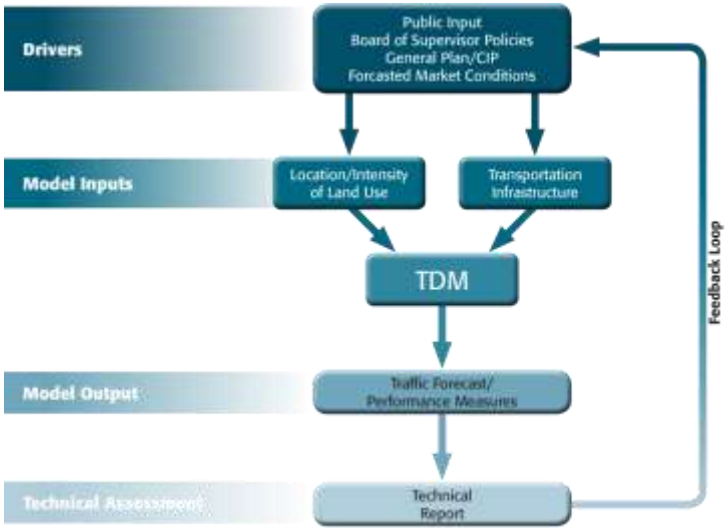
Policy 2.1.1.2 - **Establish Community Regions to define those areas which are appropriate for the highest intensity of self-sustaining compact urban-type development** or suburban type development within the County **based on …availability of infrastructure, public services, major transportation corridors and travel patterns**, the location of major topographic patterns and features, and the ability to provide and maintain appropriate transitions at Community Region boundaries.

Objective 2.2.1 - An appropriate range of land use designations that will **distribute growth and development in a manner that maintains the rural character of the County, utilizes infrastructure in an efficient, cost-effective manner, and further the implementation of the Community Region, Rural Center, and Rural Region concept areas.**

Recommend Scenario 3

- Preserve rural character through the protection of and use of best management practices for agricultural and natural resource lands
- Make most efficient and feasible use of existing infrastructure and public services
- Maximize future investments in infrastructure and public services

Next Steps to Finish



START HERE

Growth Forecast

Distribution

Impacts

Mitigation (How and When)

Costs

Fee Program

Part Two
Staff Recommendation & Next Steps

Recommendation

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

Next Steps

Upon approval of the recommended action, staff will:

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

Part Three
Interpretation of General Plan TC-X Policies (aka Measure Y)

Background

- Control Traffic Congestion Initiative for El Dorado County (Measure Y) passed on November 3, 1998
- Measure Y was implemented as Policy TC-Xa in the 2004 El Dorado County General Plan
- In conjunction with Measure Y Committee and in accordance with voters intent, BOS voted on interpretations of Measure Y in 1999
- Supplemental Policies (TX-Xb through TC-Xi) were included in 2004 General Plan in order to further the goals of the General Plan including Measure Y Policies

Background cont.

Board placed the revised Measure Y on the ballot prior to expiration in 2008

- Prior to the vote, Board adopted Resolution No.194-2008 to revise associated traffic policies (TC-Xb through TC-Xi) – effective upon voter approval of 2008 Measure Y (Policy TC-Xa)
- Proposed revisions to Measure Y were supported by the Board, the Measure Y Committee and other stakeholders

Background cont.

November 2008, Measure Y was amended. Changes to General Plan Policy TC-Xa and concurrent policies included:

- Allowing the Board to add road segments to General Plan Table TC-2 through a Board 4/5 vote
- For commercial and multi-family projects: If roadway improvement is in the County's 20 yr TIM Fee/CIP program - TIM Fee Payment may be sufficient
- For single family subdivisions of 5 lots or more: If roadway improvement is included in 10 yr TIM Fee/CIP program– TIM Fee Payment may be sufficient
- Allowing for developer-paid traffic impact fees combined with any other available funds for building roadway improvements

Abbreviated Flow Chart Showing How General Plan Policy TC-Xa (aka Measure Y) is Implemented when a Proposed Development Project is Submitted to County

Note: *This flow chart shows a simplified summary of the basic steps for discussion purposes only; it is not a comprehensive representation of the process.*

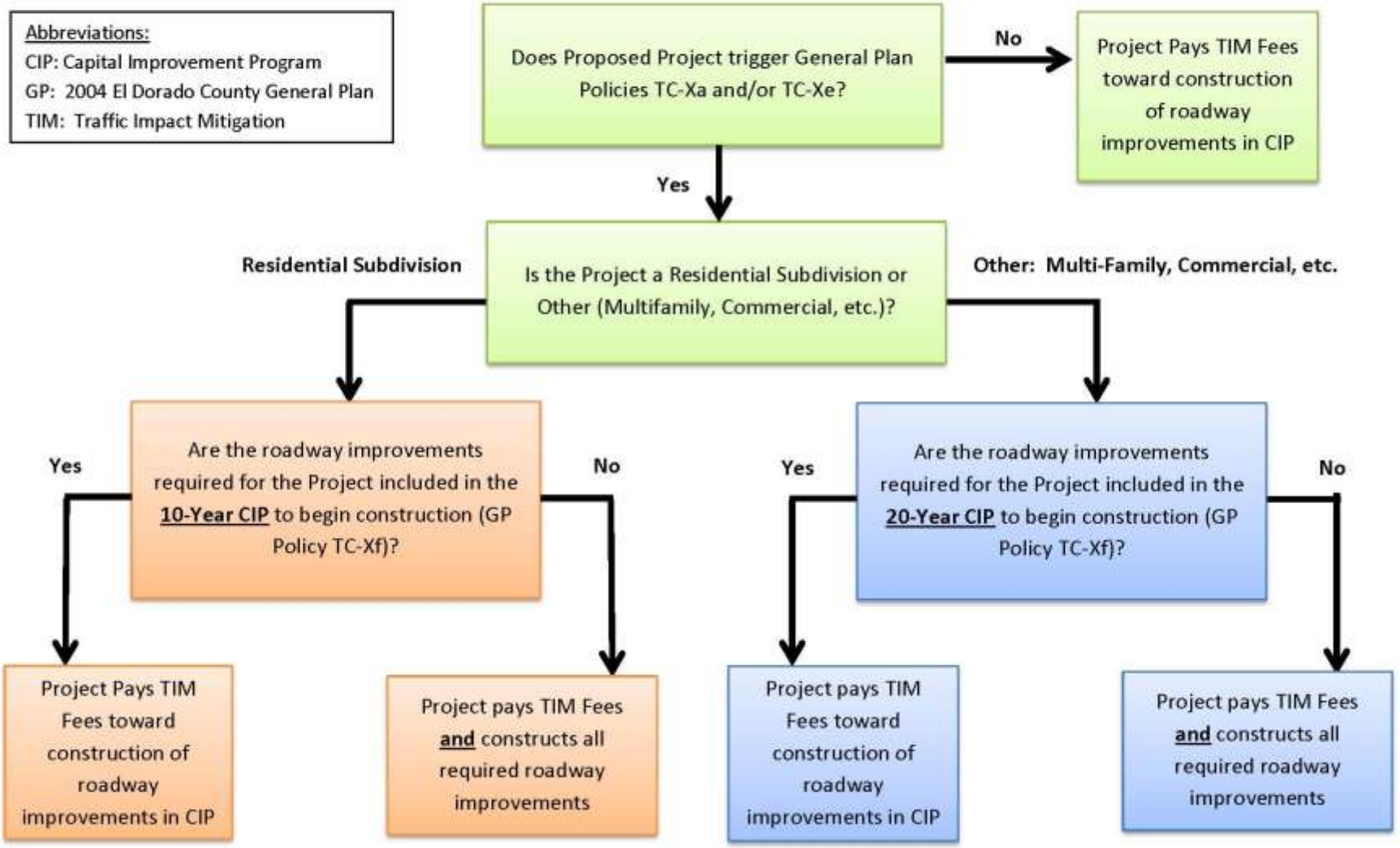


Figure 2: **Annual CIP and TIM Fee Program Update Cycles as required by General Plan Policy TC-Xb and Implementation Measures TC-A and TC-B**

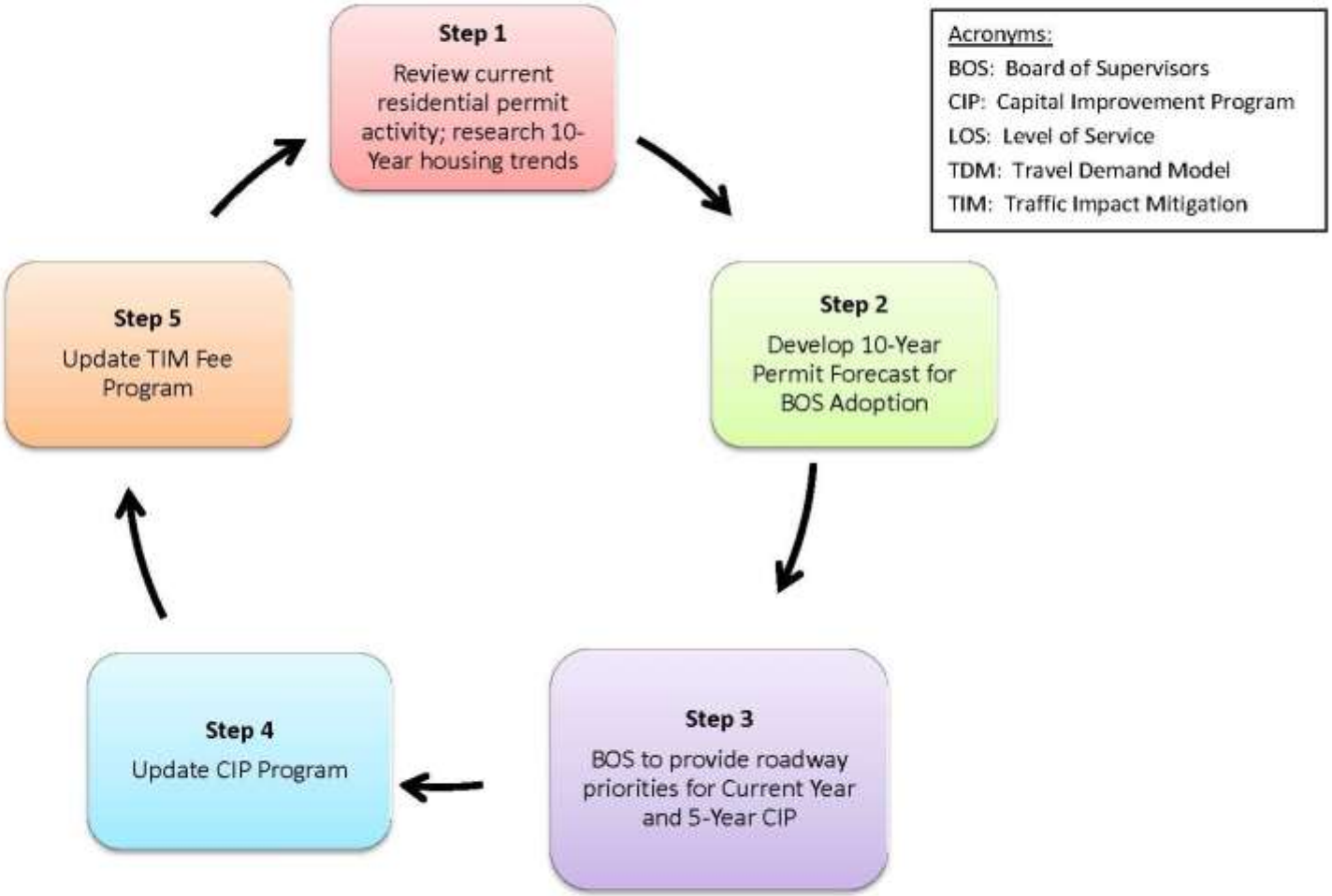
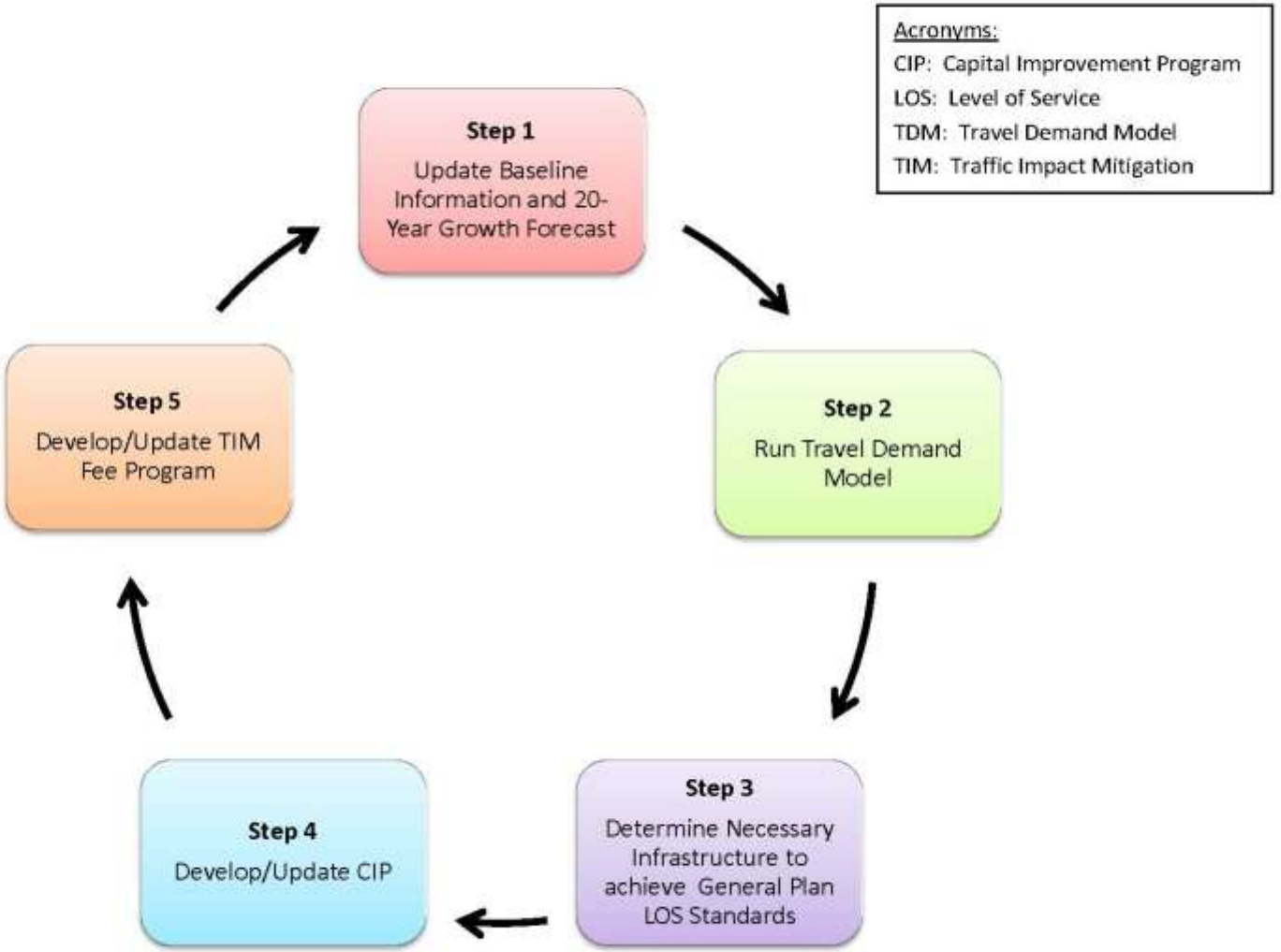


Figure 1: **Major 5-Year CIP and TIM Fee Program Update Cycles as required by General Plan Policy TC-Xb and Implementation Measure TC-B**



Part Three
Questions & Comments