AIR QUALITY CONFORMITY ANALYSIS
AND
DETERMINATION

2012 Metropolitan Transportation Plan and 2013 Federal Transportation Improvement Program Amendment #1

Prepared by:
Butte County Association of Governments
Adopted: 12/13/2012

Butte County Association of Governments
2580 Sierra Sunrise Terrace, Suite 100
Chico, CA 95928
530-879-2468
http://www.bcag.org

(This document is available at www.bcag.org. Please direct any questions or comments to Brian Lasagna, BCAG Senior Planner by phone or email at blasagna@bcag.org)

TABLE OF CONTENTS

AIR QUALITY CONFORMITY ANALYSIS AND DETERMINATION – Draft

Purpose

The Butte County Association of Governments (BCAG) is the designated Metropolitan Planning Organization (MPO) in Butte County, California, and is responsible for regional transportation planning. The purpose of this conformity determination is to ensure that BCAG's plans and programs "conform" to all applicable federal air quality requirements.

The Clean Air Act Section 176I (42 U.S.C. 7506 I) and EPA's transportation conformity regulations (40 CFR 93.104(b) and (c)) require that each new regional transportation plan (RTP) and transportation improvement plan (TIP) be demonstrated to conform to the State Implementation Plan (SIP) before the RTP and FTIP are approved by the MPO or accepted by the U.S. Department of Transportation (DOT). This ensures that federally supported highway and transit project activities will not cause new air quality violations, worsen existing violations, or delay timely attainment of the relevant national ambient air quality standards (NAAQS). Conformity currently applies under EPA's rules to areas that are designated non-attainment, and those re-designated to attainment after 1990 ("maintenance areas").

The region's last conformity determination was adopted by the BCAG Board of Directors on September 27th, 2012 as part of an approved amendment to the 2013 FTIP and 2008 RTP and relied on a previous regional emissions analysis.

This transportation air quality conformity determination shows that transportation projects programmed in the 2012 Butte County Metropolitan Transportation Plan (MTP) and 2013 Federal Transportation Improvement Program (FTIP) Amendment #1 are consistent with the applicable SIP.

Butte County's Air Quality Status

Ozone

Butte County was previously designated "basic subpart 1 non-attainment" for ozone under EPA's 1997 8-hour ozone National Ambient Air Quality Standards (NAAQS). However, the current classification for the Butte County federal nonattainment area for the 1997 ozone NAAQS is marginal nonattainment. Because of this designation, transportation projects occurring within Butte County are subject to an air quality conformity determination for the ozone precursors Reactive Organic Gases (ROG) and Oxides of Nitrogen (Nox).

Previously, under EPA's 1-hour ozone rule, Butte County was designated "non-attainment – transitional" (Section 185A) and was not required to develop an attainment SIP with an emissions budget.

Also, effective July 20, 2012, Butte County is designated marginal nonattainment for the 2008 ozone NAAQS. EPA has proposed to revoke the 1997 ozone standards one year after the effective date. Under this proposal, BCAG is required to prepare a new conformity determination by July 20, 2013 in order to demonstrate conformity for the 2008 ozone NAAQS. Please note, the analysis contained in this determination demonstrates for the 1997 8-hour ozone NAAQS only. BCAG anticipates preparing an amendment, at a later date, to demonstrate for the 2008 ozone NAAQS.

Since no emissions budget exists from a prior SIP submittal that has been found adequate by EPA, or was part of an approved SIP, an interim conformity test applies. In order to make a conformity determination under the federal 8-hour standard, future emissions of ROG and Nox must be no greater than 2002 emissions levels, or the build/no-build test must be passed.

Carbon Monoxide

As a result of a 1998 SIP revision approved by EPA, Butte County (Chico Urbanized area) was redesignated from non-attainment to attainment with a Maintenance SIP for carbon monoxide (CO). In 2007, the 1998 Maintenance SIP was updated by ARB and approved by EPA for the second decade of the maintenance period. Conformity applies for CO through 2018. The current emission budget is for the second Maintenance SIP. As a maintenance area, BCAG continues to be required to demonstrate conformity for CO.

In order to show conformity for CO, BCAG must show that future emissions will be less than the CO emissions budget assigned to Butte County (budget test). Butte County's emissions budget of 80-tons per day is specified in the *2004 Revision to the California State Implementation Plan for Carbon Monoxide*. EPA published a direct final rulemaking approving the plan on November 20, 2005, effective January 30, 2006. Based on the designated maintenance status, Butte County needs to demonstrate that vehicular emissions forecasts will not exceed 80 tons/day and are consistent with the applicable State Implementation Plan (SIP).

Fine Particulate Matter (PM2.5)

Effective December 14, 2009, Butte County (partial) was designated as non-attainment for fine particulate matter (PM2.5) under the EPA 2006 24-hour PM2.5 NAAQS. Transportation conformity for the 2006 PM2.5 NAAQS applies one year after the effective date. Therefore, Butte County conformity applies December 14, 2010.

As a newly designated non-attainment area for PM2.5, no emissions budget currently exists from an approved SIP, therefore an interim conformity test applies. In order to make a conformity determination under the 2006 24-hour PM2.5 standard, future emissions of PM2.5 and Nox must be no greater than 2008 emissions levels, or the build/no-build test must be passed.

Conformity Criteria and Procedures

Planning Assumptions

The emissions estimates developed for this conformity determination were based on the latest planning assumptions available for Butte County in accordance with 40 CFR 93.110 of the Federal Conformity Rule. BCAG has the responsibility to develop estimates and forecasts of population, employment, travel, and congestion for the Metropolitan Transportation Plan (MTP) and for preparation of the required air quality conformity emissions analysis and determination. Forecasts for population and employment are incorporated into the countywide transportation model database used by BCAG.

The initial modeling for the 2012 MTP conformity analysis began on January 10, 2011. A comprehensive update of the BCAG traffic model was recently completed in July 2012 and the population, housing, and employment projections identified in BCAGs *Butte County Long-Term Regional Growth Forecasts 2010-2035* are the same as those used in the updated model. The model was validated in 2012 for the 2010 base year, and utilizes TransCAD V5.0 modeling software. The latest planning assumptions used in the transportation model validation and conformity analysis is summarized in Table 1.

Table 1
Summary of Latest Planning Assumptions for the BCAG Conformity Analysis
40 CFR 93.110

Assumption	Year and Source of Data (MPO Action)	Modeling	Next Scheduled Update
Population	Base Year: 2010 CA DOF Projections: based on BCAG's *Butte County Long-Term Regional Growth Forecasts 2010-2035*[1], prepared January 2011. Modeling utilizes "medium scenario" included in the plan.	Included in developing latest BCAG regional transportation model and land use allocations for the years 2020 and 2035.	Next update to population forecasts is anticipated to be in January 2015.
Employment	Base Year: 2010 CA EDD Projections: based on BCAG's *Butte County Long-Term Regional Growth Forecasts 2010-2035*[1], prepared January 2011. Modeling utilizes "medium scenario" included in the plan.	Included in developing latest BCAG regional transportation model and land use allocations for the years 2020 and 2035.	Next update to employment forecasts is anticipated to be in January 2015.
Traffic Counts	Base Year: 2009/10 The transportation model was validated to the base year using year 2009/10 traffic counts collected by Caltrans, local jurisdictions, and BCAG.	Latest BCAG regional transportation model was validated using counts.	Traffic counts are updated every 4 years, dependent upon availability of funding.
Vehicle Miles of Travel	The transportation model was validated in 2012 to the 2010 base year.	TransCAD V5 is the model used to estimate VMT for the BCAG regional transportation model.	VMT is an output of the transportation model; VMT is affected by the MTP/FTIP project updates and is included in each new conformity analysis.
Speeds	The transportation model uses industry-standard volume delay curves. Baseline speeds are set according to posted and surveyed speeds and the speeds are sensitive to the amount of traffic on the roadway segments.	TransCAD v5, EMFAC 2007 V2.3, and EMFAC 2011	Speed data is updated every 4 years, dependent upon availability of funding.
Vehicle Registration	EMFAC 2007 is the most recent federally approved model for use in California conformity analysis. Vehicle registration is included by ARB in the model and cannot be updated by the user. EMFAC 2011 has also been used based in the case it is approved by for use in conformity determinations prior to adoption of this determination.	EMFAC 2007 V2.3 and EMFAC 2011	The next update is scheduled to occur in 2012/13.
Transit	Base Year: 2010 American Community Survey 3-year estimates Projections: based on BCAG's transportation forecasts which project a 0.11% increase of transit mode share from 2010 levels. These levels assume transit fares remain constant in 2010 dollars.	TransCAD v5 and BCAG off-model transit forecasting tool	The next update of the land use forecasts and transit mode share is scheduled to occur in 2015.

BCAG Transportation Model

The transportation conformity rule (TCR) section 93.122(b) requires the use of network-based transportation models for serious, severe, and extreme ozone non-attainment areas if their metropolitan planning region contains an urbanized population of more than 200,000. Butte County does not contain an urbanized area of that size, nor does it have an ozone classification of serious or greater. However, BCAG has used a

network-based model in the past and has continued to with the recent transportation model update. The BCAG transportation model meets the requirements of TCR 93.122.

The BCAG transportation model is consistent in form and function with the standard traffic forecasting models used in the transportation planning profession. The model is a three step travel demand forecasting model consisting of Trip Generation, Trip Distribution, and Trip Assignment and produces forecasts for daily, AM peak hour, and PM peak hour conditions. In addition, the model is calibrated to traffic counts for what is conventionally termed a "typical workday", which is defined as a Tuesday, Wednesday, or Thursday during a week with no holidays and when schools are in session. The model utilizes TransCAD V5.0 software, which is consistent with many of the models used by local jurisdictions in California and Caltrans.

Traffic Counts

The transportation model was validated to the 2010 base year using traffic count data collected from several sources including Caltrans, Butte County, and BCAG.

Speeds

The transportation model uses industry-standard volume delay curves as part of the traffic modeling process. The baseline speeds in the model are set according to the posted speeds and checked with observed speed data. Speeds are sensitive to the amount of traffic on the roadway segments. For example, as roadway segment volumes increase, the link speed decreases

Speed distributions were updated in EMFAC 2007 and EMFAC 2011, using methodology approved by ARB and with information from the transportation model.

Transit

As with previous versions of the BCAG transportation model, there is no transit component in the current model. However, BCAG has the ability to forecast ridership using an off-model tool and utilize these assumptions when preparing the emissions analysis. For the purpose of preparing the emissions analysis, BCAG assumes a minor increase in transit mode share of 0.11%. This represents an increase from a 1% mode share in 2010, based on information from the 2008-2010 American Community Survey 3-year estimates, to a 1.11% mode share in 2035. It is also assumed that transit fares will remain constant in 2010 dollars over the 25 year period of the analysis.

Land Use

The 2010 base year land use data for the model was developed utilizing the Butte County Assessor's database which was verified with the cities, town, and county's existing land use information along with 2010 aerial photos, field observations, and vendor supplied business data.

The transportation model's future year land use data was developed with the assistance of the local jurisdictions planning staff and is based on land use information from the areas local land use plans, planned development, reasonable assumptions regarding infill and redevelopment, regional growth forecasts, and a review of development attractions (i.e., motorized and non-motorized transportation networks, existing development, service areas, etc.) and discouragements (i.e., resource areas and farmland, public lands, areas exceeding 25% slope, etc.). The general plan and specific plan development activities occurring in the county by the local jurisdictions are reflected in the future year land use assumptions, which are generally representative of the best available information as of June 30th, 2011.

The transportation model contains 912 transportation analysis zones (TAZ's) within which land use data is summarized into the following 17 categories:

- Single-Family Residential (dwelling units – du)
- Multi-Family Residential (du)
- Mobile Home Residential (du)
- Neighborhood-Serving Retail (1,000 square feet – ksf)
- Region Serving Retail (ksf)
- Industrial (ksf)
- Office (ksf)
- Medical Office (ksf)
- Hospital (ksf)
- Public-Quasi Public (ksf)
- Hotels (rooms)
- University (students)
- Community College (students)
- K-12 Schools (students)
- Park (acres)
- Special Generator for Casino (slots)
- External Trip Distribution for Casino (trips)

Road Network

The roadway network is based on the BCAG centerline road network and contains all existing and future roadway classifications of "local" and above which were developed considering local jurisdictions circulation elements of their general plans and Caltrans

California Road System (CRS) maps. The road network includes all regionally significant roadways.

Future road networks prepared for emissions analysis include all regionally significant and non-regionally significant federal, state, and locally funded, and non-exempt projects. Tables 3-6 contain these non-exempt projects sorted by conformity analysis year. In addition, all projects within the MTP/FTIP that are exempt from conformity requirements have been documented (see Appendix A).

Validation/Calibration

The BCAG transportation model was validated to daily, AM and PM peak hour conditions. Detailed validation summary reports are available upon request. In general, the transportation model generates results that exceed the screenline and link volume validation standards established in Caltrans *Travel Forecasting Guidelines*, November 1992, and *Travel Model Improvement Program (TMIP) Model Validation and Reasonableness Checking Manual*, February 1997 for daily, AM and PM peak hour conditions. In addition, the model meets the specific static validation criteria contained in the *2010 California Regional Transportation Plan Guidelines*.

In addition to static tests, the BCAG TDF model's estimate of daily vehicle miles of travel (VMT) for Butte County was compared to independent estimates from the Highway Performance Monitoring System (HPMS).

BCAG Consultation and Planning Process

BCAG has followed the latest Final Transportation Conformity Rule in preparing the air quality conformity determination for the 2012 MTP. The Final Conformity Rule requires that Regional Transportation Planning Agencies (RTPAs) develop an Air Quality Conformity Element to identify the procedures and criteria for developing air quality conformity determinations for their respective regions.

As the Regional Transportation Planning Agency (RTPA) for Butte County, BCAG has established a broad planning process and partnership with federal, state, and local governments, the Butte County Air Quality Management District, and the general public.

This planning process and partnership includes consultation through our Transportation Advisory Committees that is comprised of representatives from all levels of local government, state and federal agencies, the air district, the general public, and other affected agencies and interested citizens in Butte County. The Transportation Advisory Committee typically meets on a monthly basis as needed to review and provide input into all BCAG planning activities. The technical issues are resolved at this level, and recommendations are made to the BCAG Board of Directors.

Specific Consultation

The transportation conformity document is required to be developed in consultation with BCAG's planning partners, and the opportunity must be provided for public review.

During the development of the air quality conformity analysis and determination, BCAG consulted with the **Interagency Consultation Review (ICR)** which reviewed and concurred with the emissions inventory, conformity analysis years, latest planning assumptions, project exemptions, as well as the methodology used to generate the emissions inventory. The ICR includes representatives from the Federal Highway Administration (FHWA), Environmental Protection Agency (EPA), Caltrans, Butte Count Air Quality Management District and BCAG. The Federal Transit Administration was invited to participate as well. The interagency consultation process began on June 10, 2011 with a memorandum requesting confirmation of analysis years.

Further, a Planning Partners group was created to provide input on the future land use allocations utilized in preparing the analysis. The Planning Partners group included representatives from each local jurisdiction within Butte County. The group reviewed all assumptions and inputs that went into the development of the land use assumptions and allocation.

BCAG staff provided a 30-day public review and comment period in compliance with BCAG's adopted Public Participation Plan (PPP). Legal notices were posted in local newspapers, and the conformity document was made available at local public libraries and on BCAG's website. The Air Quality Conformity Analysis and Determination were circulated among staff from Federal Highway Administration (FHWA), Environmental Protection Agency (EPA), Federal Transit Agency (FTA), and Caltrans. Appendices B and C contain copies of public notices and responses to public comments.

Financial Constraint

The 2013 FTIP has been financially constrained in accordance with the requirements of 40 CFR 93.108 and is consistent with the U.S. DOT metropolitan planning regulations (23 CFR Part 450). See Financial Element of 2012 MTP for further details.

Transportation Control Measures

There are no TCMs in the CO SIP and there is no approved ozone or PM2.5 SIP applicable to Butte County. Because there are no TCMs in an approved SIP for Butte County, Butte County currently has no TCMs in place and therefore timely TCM implementation requirements do not apply.

Vehicle Registrations

Butte County Association of Governments does not estimate vehicle registrations, age distributions or fleet mix. Rather, current forecasted estimates for these data are developed by the California Air Resources Board (CARB) and included in the EMFAC 2007 and EMFAC 2011 models. EMFAC 2007 is the most recent, federally approved, model for use in California conformity analysis. Vehicle registrations, age distribution and fleet mix are developed and included in the model by CARB and cannot be updated by the user.

Modeling Documentation

A complete description of BCAG's transportation model is available upon request. BCAG's transportation model, which was used to develop transportation-related emissions for the Butte County non-attainment and maintenance areas, currently meets all requirements set forth in the August 15, 1997 Federal Register.

Emissions Models

In order to determine emissions associated with the implementation of the 2012 MTP, the most recent, federally approved, emissions model is used. To develop the air quality conformity analysis, two types of models were used: the BCAG transportation model and EMFAC.

The BCAG transportation model was used to prepare the traffic model runs for the necessary analysis years. The BCAG transportation model produced forecasts of vehicle miles traveled (VMT), trip ends, speed distributions, lane miles, and other travel related data required for the emission models.

BCAG used the most current federally approved emissions model to prepare the regional emissions analysis. At the time this document was prepared, August 2012, EMFAC 2007 V2.3 was the latest federally approved model in California. However, EMFAC 2011 was released by the California Air Resources Board (ARB) in September of 2011. ARB is presently awaiting approval of EMFAC 2011 for federal emissions modeling, which is anticipated to occur prior to the end of 2012. Since this 2012 MTP conformity determination is scheduled to be approved in December of 2012, BCAG has prepared the emissions using both models.

BCAG has followed CARB's methodology outlined in *EMFAC 2007/ Calculating Emissions Inventories for Vehicles in California.*

Analysis Years

The regional emissions analysis begins with the year of 2015, as the transportation conformity rule states that the first emissions analysis year may not exceed five years from the year the RTP/FTIP conformity determination was prepared (2012). The next analysis year is the attainment year for CO under the 80-tons-per-day budget which is 2018. The milestone year of 2025 is included since analysis is required between years and can not be more than 10 years apart. The last year included in the emissions analysis is the long-range MTP horizon year of 2035.

A summary of the analysis years is indicated below:

2015 – No greater than five years from the preparation of the FTIP conformity determination
2018 – CO maintenance year (new 80 tons-per-day budget)
2025 – Milestone year no more than 10 years from last analysis
2035 – Horizon year of BCAG's long-range RTP and additional analysis year for GHG

Projects Included in the Regional Emissions Analysis

The 2012 MTP and 2013 FTIP include all federal and non-federal regionally significant projects expected to occur in the Butte County ozone and PM2.5 non-attainment areas and Chico Urbanized Area carbon monoxide maintenance area. Projects included in this emissions analysis include all relevant projects contained in the 2012 MTP and 2013 FTIP that are assumed funded. The projects are those receiving federal transportation dollars as well as those that have been determined to be regionally significant regardless of funding type. All capacity increasing projects have been included in this conformity analysis as required by the Transportation Conformity Rule. The funding sources for which the specific list of projects is derived are listed in Table 2 below.

Table 2
RTP and FTIP Project Funding Sources

APDE	Advanced Project Development Element (Derived from RIP/STIP)
CMAQ	Congestion Mitigation and Air Quality
CRTP	California Recreation Trails Program
HBRR	Highway Bridge Repair and Replacement Program
IIP	Interregional Improvement Program (Derived from STIP)
Local	Local Agency Funds (City/County funds)
PLH	Public Lands Highway Program
RIP	Regional Improvement Program (Derived from STIP)
SHOPP	State Highway Operations and Protection Program

The specific capacity-increasing projects included in each analysis year in the emissions analysis are included below in Tables 3, 4, 5, and 6. It is important to note that the 2018 model includes all projects listed in Table 3, the 2025 model includes all projects listed in Tables 3 and 4, and the 2035 model includes all projects listed in Tables 3, 4, and 5.

Table 3
Capacity-increasing Projects Included in 2015 Emissions Analysis

Jurisdiction	Roadway	Segment	Proposed Improvement
Butte County	SR 70	Ophir Rd to Palermo Rd	Widen to 4 lanes
Chico	SR 99	SR 32 to E. 1st Ave	Auxiliary lanes
Chico	Bruce Rd	Skyway to SR 32	Widen to 4 lanes
Chico	Eaton Rd	East Ave to Floral Ave	Construct 4 lane roadway
Chico	MLK Blvd	E. Park Ave to 20th St	Widen to 4 lanes
Chico	SR 32	SR 99 to El Monte	Widen to 4 lanes
Chico	Eaton Rd	SR 99 interchange	Widen to 4 lanes
Chico	Cohasset Rd	Two Oaks Dr to Thorntree Dr	Widen to 4 lanes
Chico	Cohasset Rd	Airport Blvd to Eaton Rd	Widen to 4 lanes
Chico	Midway	Hegan Ln to E Park Ave	Widen to 4 lanes
Chico	Forest Ave	SR 32 to Humboldt Rd	Widen to 4 lanes

Table 4
Capacity-increasing Projects Included in 2018 Emissions Analysis*

Jurisdiction	Roadway	Segment	Proposed Improvement
Chico	Eaton Rd	SR 32 to western termini	Construct 4 lane roadway
Chico	SR 32	El Monte Ave to Yosemite Dr	Widen to 4 lanes
Chico	SR 99	Skyway to 20th St	Auxiliary lanes
Chico	East Ave	SR 99 interchange improvements	Reconfigure interchange
Chico	Notre Dame	E 20th St to Little Chico Creek	Construct 2 lane roadway
Chico	Guynn Rd	Bridge @ Lindo Channel	Widen to 2 lanes
Butte County	Central House Rd	Bridge @ Wyman Ravine	Widen to 2 lanes
Paradise	Anchor Way	Clark Rd to Bennet Rd	Construct 2 lane roadway

*Also includes all projects listed in Table 3.

Table 5
Capacity-increasing Projects Included in 2025 Emissions Analysis*

Jurisdiction	Roadway	Segment	Proposed Improvement
Butte County	SR 70	Palermo Rd to E Gridley Rd	Widen to 4 lanes
Chico	SR 99	20th St to SR 32	Auxiliary lanes
Chico	Notre Dame	Comanche Creek to Southgate Ave	Construct 2 lane roadway
Chico	Southgate	SR 99 interchange	Replace intersection with new 2 lane overpass
Chico	Fair St	Fair St to Entler Ave	Construct 2 lane roadway
Chico	E 20th St	Notre Dame to Bruce Rd	Widen to 4 lanes
Chico	Silver Dollar Way	Fair St to MLK Blvd	Construct 2 lane roadway
Chico	Manzanita Ave	E 8th St to Wildwood Ave	Widen to 4 lanes
Butte County	Kittyhawk Dr	SR 99 to Garner Ln	Construct 2 lane roadway
Chico	Esplanade	Eaton Rd to SR 99	Widen to 4 lanes
Chico	Southgate	Midway to SR 99 & SR 99 to Skyway	Construct 4 lane roadway

*Also includes all projects listed in Tables 3 and 4.

Table 6
Capacity-increasing Projects Included in 2035 Emissions Analysis*

Jurisdiction	Roadway	Segment	Proposed Improvement
Butte County	SR 70	E Gridley Rd to Yuba County	Widen to 4 lanes

*Also includes all projects listed in Tables 3, 4 and 5.

Eight-hour Ozone Standard

On April 27, 2012 U.S. EPA finalized revisions to 2004 rule for the 1997 8-hour federal ozone NAAQS. Based on this standard, Butte County is designated as marginal nonattainment.

The conformity test to be used to demonstrate conformity to the 1997 8-hour federal ozone NAAQS is the "no-greater-than 2002" test whereby future emissions must be less than or equal to those emission present in 2002.

Carbon Monoxide "Budget Test"

Upon being redesignated from "non-attainment" to "maintenance" for carbon monoxide in 1998, BCAG was allocated a countywide emissions budget of 100 tons per day. As part of a July 2004 revision to the California State Implementation Plan (SIP) for Carbon Monoxide, Butte County's CO emissions budget was changed to 80 tons per day.

The conformity test to be used to demonstrate conformity for CO is the "budget test" whereby CO emissions are not to exceed the 80 tons per day budget.

Fine Particulate Matter (PM2.5)

On October 17, 2006 U.S. EPA promulgated the new 2006 24-hour PM2.5 standard. Based on this standard, a portion of Butte County (western) has been designated non-attainment. This new standard took effect December 14, 2009, at which time the old PM2.5 standard was revoked.

The conformity test to be used to demonstrate conformity to the 2006 24-hour PM2.5 standard is the "no-greater-than 2008" test whereby future emissions must be less than or equal to those emission present in 2008. The baseline year of 2008 is consistent with U.S. EPA's finalized Transportation Conformity Rule PM2.5 and PM10 amendments signed March 10, 2010 and detailed in 40 CFR 93.119.

Regional Emissions Analysis and Forecast

The regional emissions analysis and forecast for ozone precursors, carbon monoxide, PM2.5 and its precursor have been summarized in the following tables. The summary of emissions forecasts is derived from outputs of the EMFAC 2007 Version 2.3 and EMFAC 2011 models. These tables show comparisons of:

ROG: Reactive Organic Gases as an ozone precursor
Nox: Oxides of Nitrogen as an ozone and PM2.5 precursor
CO: Carbon Monoxide
PM2.5: Fine Particulate Matter (smaller than 2.5 micrometers)

Ozone 8-hour Standard Test – No-greater-than- 2002 Test

Table 7
ROG "No-greater-than-2002" Emissions Test

ROG – TONS PER DAY OF EMISSIONS						
	(EMFAC 2007 Summer Run)			(EMFAC 2011 Summer Run)		
Analysis Year	**ROG Emissions**	**Less than 2002?**	**Pass Conformity Test?**	**ROG Emissions**	**Less than 2002?**	**Pass Conformity Test?**
2002	7.3	--	--	5.6	--	--
2015	3.3	yes	yes	2.4	yes	yes
2018	2.6	yes	yes	1.9	yes	yes
2025	1.9	yes	yes	1.4	yes	yes
2035	1.5	yes	yes	1.3	yes	yes

Table 8
Nox "No-greater-than-2002" Emissions Test

Nox – TONS PER DAY OF EMISSIONS						
	(EMFAC 2007 Summer Run)			(EMFAC 2011 Summer Run)		
Analysis Year	**Nox Emissions**	**Less than 2002?**	**Pass Conformity Test?**	**Nox Emissions**	**Less than 2002?**	**Pass Conformity Test?**
2002	10.7	--	--	12.1	--	--
2015	6.3	yes	yes	5.1	yes	yes
2018	4.9	yes	yes	3.9	yes	yes
2025	3.3	yes	yes	2.5	yes	yes
2035	2.8	yes	yes	2.2	yes	yes

Carbon Monoxide Budget Test

Table 9
CO "Budget Test" Emissions Test 80 Tons-per-day Budget

CO – TONS PER DAY OF EMISSIONS						
	(EMFAC 2007 Winter Run)			(EMFAC 2011 Winter Run)		
Analysis Year	**CO Emissions**	**CO Budget**	**Pass Conformity Test?**	**CO Emissions**	**CO Budget**	**Pass Conformity Test?**
2015	24.9	80.0	yes	20.8	80.0	yes
2018	18.9	80.0	yes	15.5	80.0	yes
2025	12.3	80.0	yes	10.6	80.0	yes
2035	9.9	80.0	yes	9.5	80.0	yes

2006 24-hour PM2.5 Standard Test – No-greater-than-2008 Test

Table 10
24-hour PM2.5 "No-greater-than-2008" Emissions Test

24-hour PM2.5 - TONS PER DAY OF EMISSIONS						
	(EMFAC 2007 Winter Run)			(EMFAC 2011 Winter Run)		
Analysis Year	**PM2.5 Emissions**	**Less than 2008?**	**Pass Conformity Test?**	**PM2.5 Emissions**	**Less than 2008?**	**Pass Conformity Test?**
2008	0.3	--	--	0.3	--	--
2015	0.2	yes	yes	0.2	yes	yes
2018	0.2	yes	yes	0.2	yes	yes
2025	0.2	yes	yes	0.2	yes	yes
2035	0.2	yes	yes	0.2	yes	yes

Table 11
NOx "No-greater-than-2008" Emissions Test

NOx - TONS PER DAY OF EMISSIONS						
	(EMFAC 2007 Winter Run)			(EMFAC 2011 Winter Run)		
Analysis Year	**NOx Emissions**	**Less than 2008?**	**Pass Conformity Test?**	**NOx Emissions**	**Less than 2008?**	**Pass Conformity Test?**
2008	11.2	--	--	10.3	--	--
2015	6.5	yes	yes	5.7	yes	yes
2018	5.0	yes	yes	4.3	yes	yes
2025	3.4	yes	yes	2.8	yes	yes
2035	2.8	yes	yes	2.4	yes	yes

Air Quality Conformity Determination

The results from this conformity analysis show that current and future emissions of the ozone precursors ROG and NOx will be less than the 2002 emissions levels, current and future carbon monoxide emissions will be below their budget threshold of 80 tons per day, and future emissions of 24-hour PM2.5 and its precursor NOx will be less than the 2008 emissions levels. Thus, Butte County, in accordance with the Transportation Conformity Rule requirements applicable to Butte County (§51.464 and §51.436 – 51.440), has satisfied the requirements of the "no-greater-than-2002" test for the 1997 8-hour federal ozone NAAQS, the "budget test" for carbon monoxide for the 80-tons-per-day budget, and the "no-greater-than-2008" test for federal 24-hour PM2.5 NAAQS. **Based on this analysis, the 2012 Metropolitan Transportation Plan (MTP) and 2013 Federal Transportation Improvement Program (FTIP) conforms to the applicable State Implementation Plan (SIP) and all applicable sections of the EPA's Transportation Conformity Rule.**

APPENDIX A

BCAG Exempt Project Listing - 2012 MTP/SCS & 2013 FTIP Through Amendment #1

AGENCY	CTIPS ID	TITLE	PROJECT DESCRIPTION	Total ($1,000s)	TRANSPORTATION CONFORMITY RULE - Exempt Reference			
County	10200000165	Neal Road and Cohassset Road Bike Project	On Neal Rd. from Oro-Chico Hwy to the Skyway & unicorporated portion of Cohasset Rd from Chico Limits to the Cohasset School. Construct Class 2 bike lanes.	1,580	Section 93.126	Table 2 Exempt Projects	Air Quality	Bicycle and Pedestrian Facilities
County	10200000172	Midway Bridge Replacement across Butte Creek	On Midway (old SR 99) approximately 0.2 miles south of White Ave to approximately 0.7 miles south of White Ave. ,spanning Butte Creek and Butte Creek Overflow. Replace 2 bridge structures. (HBP project)	17,853	Section 93.126	Table 2 Exempt Projects	Safety	Widening narrow pavements or reconstructing bridges (no additional travel lanes)
County	20200000070	Butte County HSIP Grouped Projects	Butte County HSIP Grouped Projects (Highway Safety Improvment Program) various local projects including HR3 as a result of MAP 21.	4,204	Section 93.126	Table 2 Exempt Projects	Safety	Highway Safety Improvement Program implementation
County	20200000125	Las Plumas Federal Safe Routes to School Project	Between Waler Rd and Autrey Ln. Walmer Rd between Lincon Blvd and Rosedale Ave. Construct sidewalks, curb, gutter, ramps and AC tie-in; install speed humps and speed feedback signs; upgrade crosswalks	1,012	Section 93.126	Table 2 Exempt Projects	Air Quality	Bicycle and Pedestrian Facilities
County	20200000123	Butte County Capital Replacement Program - Grouped Listing	Proposal is to replace capital vehicle/equipment including the retimrement of vehicles: 1: 1995 aerial lift truck; 2: 1998 water truck; 3: 1994 crane truck; 4: 2000 dump truck; 5; 2000 dump truck.	650	Section 93.126	Table 2 Exempt Projects	Other	Specific activities which do not involve or lead directly to construction
County	20200000118	South Oroville Traffic Signal at Lower Wyandotte and Monte Vista	Construct new traffic signal and remove 4 way stop	410	Section 93.127	Table 3 Projects Exempt from Regional Emissions Analyses	Intersection signalization projects at individual intersections.	
BCAG	10200000171	Chico Bike Map Update	Covering the urbanized area of Chico. The Bike Map update will update the existing bike map to identify new class 1, 2 and 3 bike lanes, new roads, bike facilities, safety data and to have the map reproduced.	32	Section 93.126	Table 2 Exempt Projects	Other	Specific activities which do not involve or lead directly to construction
BCAG	20200000110	JARC Mobility Management System Project	New mobility management system for Butte Regional Transit. Project purpose is to improve access of low and moderate income individuals to available transportation services and to other human services and community recources.	188	Section 93.126	Table 2 Exempt Projects	Other	Specific activities which do not involve or lead directly to construction
BCAG	20200000005	FTA Sec. 5307 Program - B - Line	Butte Regional Transit. Chico UZA Area. Operations and Capital	55,588	Section 93.126	Table 2 Exempt Projects	Mass Transit	Operating assistance to transit agencies
BCAG	20200000008	FTA Sec 5311 Program	B - Line (Butte Regional Transit) Operations and Captial	34,953	Section 93.126	Table 2 Exempt Projects	Mass Transit	Operating assistance to transit agencies
BCAG	20200000111	SR 70 Passing Lane Projects - PSR/PDS Development	PSR/PDS Development for passing lane projects along SR 70 in Butte County for four segments from SR 70 Ophir Rd in Butte County to Butte/Yuba County line and from Butte/Yuba County line to Marysville . See MPO notes for description.	2,364	Section 93.126	Table 2 Exempt Projects	Other	Engineering to assess social, economic, and environmental effects of the proposed action or alternatives to that action.
BCAG	20200000106	Butte Regional Transit Operations Center	In Chico, construct new Butte Reigonal Transit Operations Center. See MPO comments for full description	9,900	Section 93.126	Table 2 Exempt Projects	Mass Transit	Construction of new bus or rail storage/maintenance facilities categorically excluded in 23 CFR 771.
BCAG	10200000020	Planning, Programming and Monitoring	Planning, programming and monitoring	1,680	Section 93.126	Table 2 Exempt Projects	Other	Specific activities which do not involve or lead directly to construction
BCAG	20200000131	Butte Regional Transit Bus Replacement Program	Purchase up to 7 buses for the fixed route system	3,410	Section 93.126	Table 2 Exempt Projects	Mass Transit	Purchase of new buses and rail cars to replace existing vehicles or for minor expansions of the fleet.
Caltrans	10200000164	Butte County SHOPP Collission Reduction Grouped Listing	SR 99 Near Chico at the Rock Creek Bridge #12-27. Widen shoulder on structure	3,940	Section 93.126	Table 2 Exempt Projects	Safety	Shoulder improvements
Caltrans	20200000129	Butte County SHOPP Mandates Grouped Listing	SHOPP Mandates - ADA pedestrain infrastructure project on SR 32 near Chico from Kennedy Avenue to the SR 99/32 separation. Construct sidewalks, curb-ramps and crosswalks.	4,002	Section 93.126	Table 2 Exempt Projects	Air Quality	Bicycle and Pedestrian Facilities
Caltrans	20200000162	Butte County SHOPP Bridge Preservation Grouped Listing	State Route 70 in Oroville at Flag Canyon Creek Bridge # 12-0140. Replace bridge	5,595	Section 93.126	Table 2 Exempt Projects	Safety	Widening narrow pavements or reconstructing bridges (no additional travel lanes)
Caltrans	20200000102	SHOPP Highway Maintenance Grouped Proejcts	Highway Maintenance for SR 191 EA 4M270 - SR 191 PM 0 to 11.4 and for SR 99 EA 4M530 - PM 13 to 20.6. Scope of work - maintenance asphalt overlay in FY 12/13. 100% federal funding. Toll credits for match.	5,200	Section 93.126	Table 2 Exempt Projects	Safety	Pavement resurfacing and/or rehabilitation.
Caltrans	20200000166	Butte County SHOPP Seismic Grouped Listing	Near Oroville, at Pentz Overhead #12-138 and at Cherokee Overhead #12-137. Seismic retrofit.	3,918	Section 93.126	Table 2 Exempt Projects	Safety	Railroad/highway crossing.
Chico	20200000130	SR 99 Cohasset Rd Interchange Direct SB On Ramp	Reconfigure interchange to construct a new direct on-ramp from Eastbound Cohasset Rd to Southbound SR 99 iin Chico at post mile 33.5/34.4. Scope of the this project is to complete the technical studies through preliminary engineering.	1,200	Section 93.127	Table 3 Projects Exempt from Regional Emissions Analyses	Interchange reconfiguration projects.	
Chico	20200000117	SR 99 Corridor Bikeway Phase 5 - 20th Street Crossing PE	SR 99 Corridor Bikeway Project Phase 5 completes the gap adjacent to SR 99 from Chico Mall across 20th Street to the north end of Business Lane. This project is to complete the technical studies only thru preliminary engineering.	200	Section 93.126	Table 2 Exempt Projects	Air Quality	Bicycle and Pedestrian Facilities
Chico	20200000116	SR 99 Corridor Bikeway Phase 4	SR 99 Corridor Bikeway Phase 4 - Business Lane to the Skyway . This project constructs a new bike/ped/multiuse path adjacent to SR 99 from 20th Street (Business Lane) to Bute College at the Skway/Notre Dame Blvd.	1,000	Section 93.126	Table 2 Exempt Projects	Air Quality	Bicycle and Pedestrian Facilities
Gridley	10200000170	Hazel Street Rehabilitation Project	In the City of Gridley on Hazel Street from Virginia Street to Vermont Street. Construct intersection and roadway improvements, pavement striping as well as landscaped areas and bicycle/pedestrian facilities at the Kentucky Street intersection.	748	Section 93.126	Table 2 Exempt Projects	Air Quality	Bicycle and Pedestrian Facilities
Oroville	20200000086	Table Mountain Blvd Roundabout	In Oroville at Table Mountain Blvd., Nelson Ave and Cherokee Rd - Reconfigure intesection and construct a roundabout.	1,547	Section 93.127	Table 3 Projects Exempt from Regional Emissions Analyses	Intersection channelization projects.	
Oroville	20200000121	Oroville Street Sweeper Replacement Project	In the City of Oroville, replace 1998 street sweeper.	223	Section 93.126	Table 2 Exempt Projects	Other	Specific activities which do not involve or lead directly to construction
Oroville	20200000122	City of Oroville Motor Grader Replacement Project	Replace 1980 motor grader	220	Section 93.126	Table 2 Exempt Projects	Other	Specific activities which do not involve or lead directly to construction
Oroville	20200000124	City of Oroville Water Truck Replacement Project	Replace 1992 water truck.	195	Section 93.126	Table 2 Exempt Projects	Other	Specific activities which do not involve or lead directly to construction
Oroville	20200000119	Oroville Signalization Synchronization Project	In the City of Oroville, coordinate traffic signals along Mitchell at Lincoln, Myers, Washington and Oro Dam/ OroQuincy Hwy. Includes updating the singals to ADA standards, update controllersinlehicle detection system, street name signs, emergency preemption and cabinet upgrades.	215	Section 93.128	Traffic Signal Synchronization Projects	Traffic Signal Synchronization Projects	
Various	20200000056	Local HBP - Grouped Listing -Lump Sum	Local Bridge lump sum grouping. All projects are exempt from AQ Conformity. See MPO Notes for locations and BCAG FTIP Webpage for Backup List. 9 bridge projects included.	41,405	Section 93.126	Table 2 Exempt Projects	Safety	Pavement resurfacing and/or rehabilitation.
Various	20200000024	FTA 5310 Grouped Listing	Capital competitive grant - Lump Sum item for Butte Regional Transit andn Work Training Center Paratransit vehicles and equipment. Funds for capital costs.	5,172	Section 93.126	Table 2 Exempt Projects	Mass Transit	Purchase of new buses and rail cars to replace existing vehicles or for minor expansions of the fleet.

MTP Projects not in 2013 FTIP

AGENCY	CTIPS ID	TITLE	PROJECT DESCRIPTION	Total ($1,000s)	TRANSPORTATION CONFORMITY RULE - Exempt Reference			
Gridley	20200000084	SR 99 Gridley Pedestrian Project	On the east side of SR 99 from Obermeyer Ave to approx 1800 feet north of Obermeyer Ave - construct urban improvements including sidewalks and pedestrain ramps to facilitate pedestrian travel.	459	Section 93.126	Table 2 Exempt Projects	Air Quality	Bicycle and Pedestrian Facilities
County	20200000082	Oro-Chico Hwy Bike Project	Construct Class 2 Bike lane from Midway to Butte Campus Drive along Oro Chico Hwy, Durham Dayton Hwy & Durham Pentz Rd.	1,000	Section 93.126	Table 2 Exempt Projects	Air Quality	Bicycle and Pedestrian Facilities

APPENDIX B

PUBLIC MEETING DOCUMENTATION

PUBLIC NOTICE

The Butte County Association of Governments (BCAG) is the designated Metropolitan Planning Organization (MPO) and the Regional Transportation Planning Agency (RTPA) for Butte County. As the MPO, BCAG is required to prepare a long-range Metropolitan Transportation Plan (MTP) / Sustainable Communities Strategy (SCS) every four years. The MTP identifies the long-range transportation plans for specific funding programs by transportation mode through the year 2035.

The 2012 MTP/SCS will consist of the following:

1. MTP Document – Draft Document
2. Air Quality Conformity Analysis and Determination – demonstrating that the projects in the MTP conform to the applicable federal air quality requirements.
3. Sustainable Communities Strategy (SCS) – new component of the MTP intended to demonstrate a reduction in the passenger vehicle greenhouse gas emissions associated with the plan
4. Environmental Impact Report – complying with the California Environmental Quality Act requirements

The 2012 MTP/SCS are scheduled to be adopted on December 13, 2012. The purpose of the workshops will be to present the draft MTP/SCS document.

Workshop Locations:

OROVILLE
Monday, October 15, 2012
10 a.m. – 12:00 p.m.
Butte County Public Health
"Klamath" Conference Room Cou
202 Mira Loma Street, Oroville CA

PARADISE
Monday, October 15, 2012
12:30 p.m. – 2:30 p.m.
Paradise Town Hall
ncil Chambers Room 9
5555 Skyway, Paradise CA

GRIDLEY
Monday, October 15, 2012
6:00 p.m. 3
City Hall Conference Room
685 Kentucky Street
Gridley CA 95948
(City Council Study Session)

CHICO
Monday, October 15, 2012
p.m. – 5:00 p.m.
BCAG Conference Room
2580 Sierra Sunrise Terrace
Suite 100, Chico CA 95928

The public is encouraged to attend any one of these workshops, ask questions of staff, complete comment cards, or speak to a bilingual English/Spanish transcriber to have their comments recorded. All documents are available for review on the Internet at www.bcag.org. Comments on the project can be directed to Mr. Iván García, Programming Manager for BCAG at 530-879-2468 or by email at igarcia@bcag.org. Comments can also be mailed to BCAG at 2580 Sierra Sunrise Terrace, Suite 100, Chico, CA 95928.

APPENDIX C

RESPONSES TO PUBLIC COMMENTS

(No Public Comments Received)

APPENDIX D

CONFORMITY CHECKLIST

FHWA Checklist for MPO TIPs/RTPs
Checklist/Version Date: June 27, 2005

40 CFR	Criteria	Page	Comments
§93.102	Document the applicable pollutants and precursors for which EPA designates the area as nonattainment or maintenance. Describe the nonattainment or maintenance area and its boundaries.	p. 1-3	
§93.104 (b, c)	Document the date that the MPO officially adopted, accepted or approved the TIP/RTP and made a conformity determination. Include a copy of the MPO resolution. Include the date of the last prior conformity finding.	p. 1	
§93.104 (e)	If the conformity determination is being made to meet the timelines included in this section, document when the new motor vehicle emissions budget was approved or found adequate.	N/A	
§93.106 (a)(2)ii	Describe the regionally significant additions or modifications to the existing transportation network that are expected to be open to traffic in each analysis year. Document that the design concept and scope of projects allows adequate model representation to determine intersections with regionally significant facilities, route options, travel times, transit ridership and land use.	p. 4-7 p. 11-12 Tables 3-6	
§93.108	Document that the TIP/RTP is financially constrained (23 CFR 450).	p. 8	
§93.109 (a, b)	Document that the TIP/RTP complies with any applicable conformity requirements of air quality implementation plans (SIPs) and court orders.	p. 16	
§93.109 (c-k)	Provide either a table or text description that details, for each pollutant and precursor, whether the interim emissions tests and/or the budget test apply for conformity. Indicate which emissions budgets have been found adequate by EPA, and which budgets are currently applicable for what analysis years.	p. 12-15	
§93.110 (a, b)	Document the use of latest planning assumptions (source and year) at the "time the conformity analysis begins," including current and future population, employment, travel and congestion. Document the use of the most recent available vehicle registration data. Document the date upon which the conformity analysis was begun.	p. 3-7 Table 1	
USDOT/EPA guidance	Document the use of planning assumptions less than five years old. If unable, include written justification for the use of older data. (1/18/02)	p. 3-7	
§93.110 (c,d,e,f)	Document any changes in transit operating policies and assumed ridership levels since the previous conformity determination. Document the use of the latest transit fares and road and bridge tolls. Document the use of the latest information on the effectiveness of TCMs and other SIP measures that have been implemented. Document the key assumptions and show that they were agreed to through Interagency and public consultation.	p. 5&8	No TCMs
§93.111	Document the use of the latest emissions model approved by EPA.	p. 9	
§93.112	Document fulfillment of the interagency and public consultation requirements outlined in a specific implementation plan according to §51.390 or, if a SIP revision has not been completed, according to §93.105 and 23 CFR 450. Include documentation of consultation on conformity tests and methodologies as well as responses to written comments.	p. 8	
§93.113	Document timely implementation of all TCMs in approved SIPs. Document	p. 8	No TCMs

40 CFR	Criteria	Page	Comments
	that implementation is consistent with schedules in the applicable SIP and document whether anything interferes with timely implementation. Document any delayed TCMs in the applicable SIP and describe the measures being taken to overcome obstacles to implementation.		
§93.114	Document that the conformity analyses performed for the TIP is consistent with the analysis performed for the Plan, in accordance with 23 CFR 450.324(f)(2).	p. 1	
§93.118 (a, c, e)	For areas with SIP budgets: Document that emissions from the transportation network for each applicable pollutant and precursor, including projects in any associated donut area that are in the Statewide TIP and regionally significant non-Federal projects, are consistent with any adequate or approved motor vehicle emissions budget for all pollutants and precursors in applicable SIPs.	p. 12	
§93.118 (b)	Document for which years consistency with motor vehicle emissions budgets must be shown.	p. 10	
§93.118 (d)	Document the use of the appropriate analysis years in the regional emissions analysis for areas with SIP budgets, and the analysis results for these years. Document any interpolation performed to meet tests for years in which specific analysis is not required.	p. 10	
§93.119 [i]	For areas without applicable SIP budgets: Document that emissions from the transportation network for each applicable pollutant and precursor, including projects in any associated donut area that are in the Statewide TIP and regionally significant non-Federal projects, are consistent with the requirements of the "Action/Baseline", "Action/1990" and/or "Action/2002" interim emissions tests as applicable.	p. 12-13	
§93.119 (g)	Document the use of the appropriate analysis years in the regional emissions analysis for areas without applicable SIP budgets.	p. 12-13	
§93.119 (h,i)	Document how the baseline and action scenarios are defined for each analysis year.	p. 12-13	
§93.122 (a)(1)	Document that all regionally significant federal and non-Federal projects in the nonattainment/maintenance area are explicitly modeled in the regional emissions analysis. For each project, identify by which analysis it will be open to traffic. Document that VMT for non-regionally significant Federal projects is accounted for in the regional emissions analysis	p. 10-12	
§93.122 (a)(2, 3)	Document that only emission reduction credits from TCMs on schedule have been included, or that partial credit has been taken for partially implemented TCMs. Document that the regional emissions analysis only includes emissions credit for projects, programs, or activities that require regulatory action if: the regulatory action has been adopted; the project, program, activity or a written commitment is included in the SIP; EPA has approved an opt-in to the program, EPA has promulgated the program, or the Clean Air Act requires the program (indicate applicable date). Discuss the implementation status of these programs and the associated emissions credit for each analysis year.	p. 8	No TCMs
§93.122 (a)(4,5,6)	For nonregulatory measures that are not included in the STIP, include written commitments from appropriate agencies. Document that assumptions for measures outside the transportation system (e.g. fuels measures) are the same for baseline and action scenarios. Document that factors such as ambient temperature are consistent with those used in the SIP unless modified through interagency consultation.	p. 9	
§93.122 (b)(1)(i) [ii]	Document that a network-based travel model is in use that is validated against observed counts for a base year no more than 10 years before the	p. 7	

40 CFR	Criteria	Page	Comments
	date of the conformity determination. Document that the model results have been analyzed for reasonableness and compared to historical trends and explain any significant differences between past trends and forecasts (for per capita vehicle-trips, VMT, trip lengths mode shares, time of day, etc.).		
§93.122 (b)(1)(ii) [2]	Document the land use, population, employment, and other network-based travel model assumptions.	p. 3-7	
§93.122 (b)(1)(iii) [2]	Document how land use development scenarios are consistent with future transportation system alternatives, and the reasonable distribution of employment and residences for each alternative.	p. 3-7	
§93.122 (b)(1)(iv) [2]	Document use of capacity sensitive assignment methodology and emissions estimates based on a methodology that differentiates between peak and off-peak volumes and speeds, and bases speeds on final assigned volumes.	p. 3-7	
§93.122 (b)(1)(v) [2]	Document the use of zone-to-zone travel impedances to distribute trips in reasonable agreement with the travel times estimated from final assigned traffic volumes. Where transit is a significant factor, document that zone-to-zone travel impedances used to distribute trips are used to model mode split.	p. 3-7	
§93.122 (b)(1)(vi) [2]	Document how travel models are reasonably sensitive to changes in time, cost, and other factors affecting travel choices.	p. 3-7	
§93.122 (b)(2) [2]	Document that reasonable methods were used to estimate traffic speeds and delays in a manner sensitive to the estimated volume of travel on each roadway segment represented in the travel model.	p. 3-7	
§93.122 (b)(3) [2]	Document the use of HPMS, or a locally developed count-based program or procedures that have been chosen through the consultation process, to reconcile and calibrate the network-based travel model estimates of VMT.	p. 3-7	
§93.122 (d)	In areas not subject to §93.122(b), document the continued use of modeling techniques or the use of appropriate alternative techniques to estimate vehicle miles traveled	p. 3-7	
§93.122 (e, f)	Document, in areas where a SIP identifies construction-related PM10 or PM 2.5 as significant pollutants, the inclusion of PM10 and/or PM 2.5 construction emissions in the conformity analysis.	N/A	
§93.122 (g)	If appropriate, document that the conformity determination relies on a previous regional emissions analysis and is consistent with that analysis.	N/A	
§93.126, §93.127, §93.128	Document all projects in the TIP/RTP that are exempt from conformity requirements or exempt from the regional emissions analysis. Indicate the reason for the exemption (Table 2, Table 3, traffic signal synchronization) and that the interagency consultation process found these projects to have no potentially adverse emissions impacts.	p. 8 App. A	

[i] Note that some areas are required to complete both interim emissions tests.
[ii] 40 CFR 93.122(b) refers only to serious, severe and extreme ozone areas and serious CO areas above 200,000 population

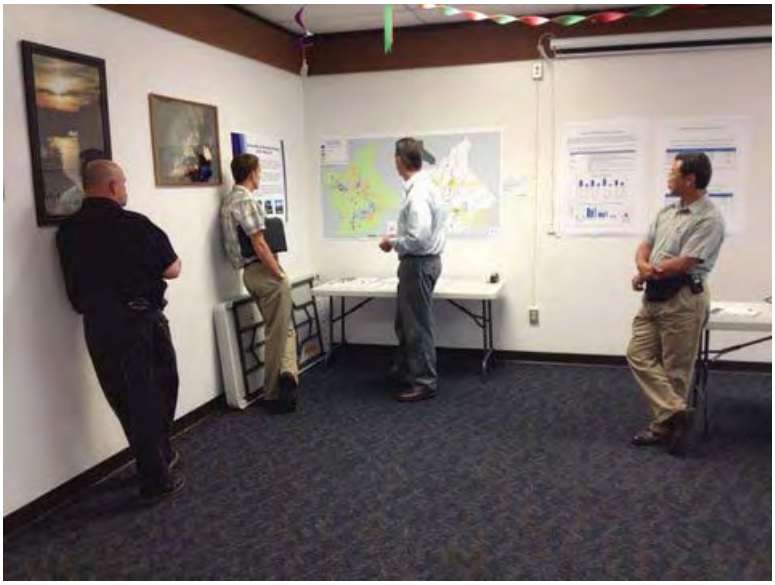
Disclaimers
This checklist is intended solely as an informational guideline to be used in reviewing Transportation Plans and Transportation Improvement Programs for adequacy of their conformity documentation. It is in no way intended to replace or supercede the Transportation Conformity regulations of 40 CFR Parts 51 and 93, the Statewide and Metropolitan Planning Regulations of 23 CFR Part 450 or any other EPA, FHWA or FTA guidance pertaining to transportation conformity or statewide and metropolitan planning. This checklist is not intended for use in documenting transportation conformity for individual transportation projects in nonattainment or maintenance areas. 40 CFR Parts 51 and 93 contain additional criteria for project-level conformity determinations.

Document #46711

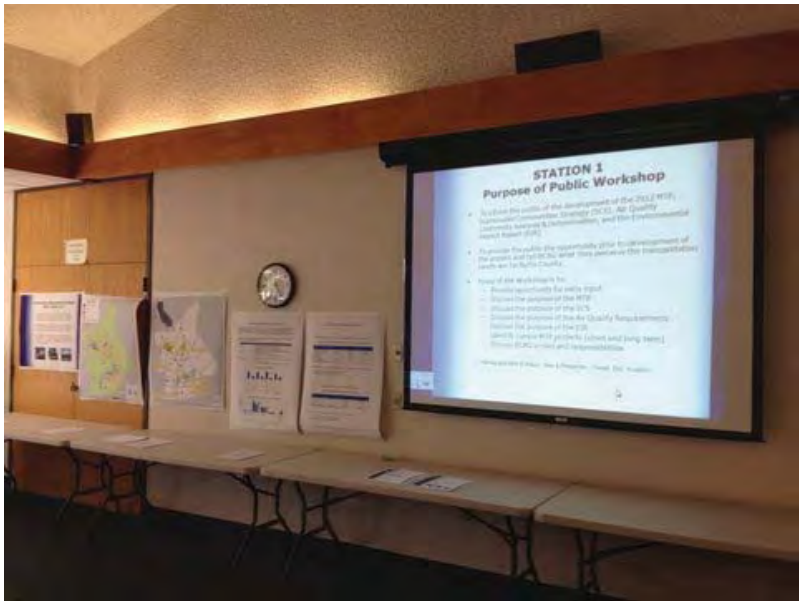
APPENDIX 3

Public Involvement Documentation - Summary

BCAG undertook an extensive Public Participation Process in developing the 2012 MTP/SCS, Air Quality Conformity Analysis and Determination, and the Program Environmental Impact Report. In accordance with the adopted Public Participation Plan, BCAG held extensive an extensive public outreach process prior to the development of the 2012 MTP/SCS, during the process, and once a final draft was complete.



In addition to the material contained in this appendix, the development of this project was developed in consultation with the BCAG Transportation Advisory Committee comprised of the cities, county, Caltrans, the air district, public health, the university and other interested individuals. Also, as various chapters or elements were prepared, the information was presented for review and comment to the BCAG Board of Directors.



All BCAG meetings are open to the public. While formal workshops, presentation and hearings were held throughout the process, BCAG staff has always been made available to inform and educate the public concerning the project. The documentation provided supports the project which took approximately 2 fiscal years to complete.

Each round of public workshops included a presentation in the cities of Chico, Gridley, Oroville and Paradise for a total of 4 per round. Each public workshop typically consisted of a prepared power point presentation with an information brochure for the public which included an area to write comments and leave for

staff. In addition, BCAG staff is bilingual in Spanish and was able to make the presentations in Spanish should there have been a need to. Appendix 3 is the compilation of the documentation which includes copies of:

- Public Notices
- Brochures
- Power point presentation
- Agency correspondence
- Native American Tribe outreach

In addition with the documentation, all material was (continues to be) posted at BCAG's website at: http://www.bcag.org/Planning/2012-MTPSCS/index.html. In addition to the documentation to the MTP/SCS, the SCS portion of the MTP has specific public involvement criteria as well. The SCS portion of the SCS is also posted at: http://www.bcag.org/Planning/2012-MTPSCS/Sustainable-Communities-Strategy/index.html. Public documentation is included under Appendix 8.

Four rounds of public workshops were held. Each round consisted of 4 workshops. The first workshop was prior to the development of the MTP/SCS to solicit early input by the public and or interested individuals or agencies. The second round was midway thru the process. The third was prior to the completion of the project. The fourth round was to present the complete draft document. The workshops were held:

- October 2010
- August 2011
- June 2012
- October 2012

Additional workshops and presentations were held for the SCS component and the Program Environmental Impact Report as required.

BCAG BOARD OF DIRECTORS

Item #
Information

September 13, 2010

2012 REGIONAL TRANSPORTATION PLAN DEVELOPMENT - WORKSHOPS SCHEDULE

PREPARED BY: Ivan Garcia, Programming Manager

ISSUE: BCAG is required to adopt a Regional Transportation Plan (RTP) every 4 years to identify the region's long range transportation plan for a 20 minimum horizon. The 2012 RTP will cover the years from 2012 to 2035. Staff has scheduled four public workshops prior to the development of the project to inform and educate the public.

DISCUSSION: The RTP serves as the foundation for the development of the short-range Regional Transportation Improvement Program (RTIP) and the Federal Transportation Improvement Program (FTIP). The RTP can be amended at any time by the BCAG Board of Directors.

The 2012 RTP will contain the following:

1. RTP Document – including all required components (Policy, Action and Financial)
2. Air Quality Conformity Analysis and Determination – demonstrating that the projects in the RTP conform to the applicable federal air quality requirements.
3. Sustainable Communities Strategy – complying with recent legislation
4. Environmental Impact Report – complying with the California Environmental Quality Act requirements

Prior to development of the RTP, staff has scheduled four public workshops throughout the County to educate and inform the public as to what the project consist of and to solicit comments. Attached is the public notice that will be published in all of the local newspapers of general circulation.

STAFF RECOMMENDATION: None, this item is presented for information only.

Key staff: Ivan Garcia, Programming Manager
Brian Lasagna, Senior Planner

BCAG Social Services Transportation Advisory Council

Information

September 13, 2010

2012 REGIONAL TRANSPORTATION PLAN DEVELOPMENT - WORKSHOPS SCHEDULE

PREPARED BY: Ivan Garcia, Programming Manager

ISSUE: BCAG is required to adopt a Regional Transportation Plan (RTP) every 4 years to identify the region's long range transportation plan for a 20 minimum horizon. The 2012 RTP will cover the years from 2012 to 2035. Staff has scheduled four public workshops prior to the development of the project to inform and educate the public.

DISCUSSION: The RTP serves as the foundation for the development of the short-range Regional Transportation Improvement Program (RTIP) and the Federal Transportation Improvement Program (FTIP). The RTP can be amended at any time by the BCAG Board of Directors.

The 2012 RTP will contain the following:

1. RTP Document – including all required components (Policy, Action and Financial)
2. Air Quality Conformity Analysis and Determination – demonstrating that the projects in the RTP conform to the applicable federal air quality requirements.
3. Sustainable Communities Strategy – complying with recent legislation
4. Environmental Impact Report – complying with the California Environmental Quality Act requirements

Prior to development of the RTP, staff has scheduled four public workshops throughout the County to educate and inform the public as to what the project consist of and to solicit comments. Attached is the public notice that will be published in all of the local newspapers of general circulation.

STAFF RECOMMENDATION: None, this item is presented for information only.

Key staff: Ivan Garcia, Programming Manager
Brian Lasagna, Senior Planner

BUTTE COUNTY ASSOCIATION of GOVERNMENTS
2580 Sierra Sunrise Terrace, Suite 100, Chico, California 95928-8441 • (530) 879-2468 • FAX: (530) 879-2444 • www.bcag.org

October 14, 2010

The Honorable Glenda Nelson, Chairperson
Enterprise Rancheria
1940 Feather River Blvd., Suite B
Oroville, CA 95965

Subject: 2012 Regional Transportation Plan Development

Honorable Chairperson:

The Butte County Association of Governments (BCAG) is the federally designated Metropolitan Planning Organization (MPO) and the state designated Regional Transportation Planning Agency (RTPA) serving Butte County. BCAG is responsible for developing all state and federal transportation plans and programming documents that are necessary to program transportation funds within the region.

BCAG was formed through a joint powers agreement between the County of Butte and the incorporated Cities of Biggs, Gridley, Oroville, Chico and the Town of Paradise. BCAG is governed by a ten member Board of Directors comprised of the five county Board of Supervisors and one council person from each of the five incorporated cities. I currently serve as the Supervisor for District 2 and as Chair representing BCAG.

BCAG is committed to developing Government-to-Government relationships with the Tribal Governments within the Butte County region. As a reminder, BCAG has extended an invitation to your Tribe to attend our Transportation Advisory Committee (TAC), which typically meets on a monthly basis. The purpose of the TAC is to review and discuss BCAG's transportation planning activities and issues in a multi-jurisdictional planning forum. Representatives from Caltrans, the cities, town and county participate on the TAC.

BCAG staff will be commencing the development of the 2012 Regional Transportation Plan (RTP) for Butte County. This is a federally required long-range transportation planning document that is updated every four years. The purpose of this document is to identify Butte County's long-term transportation needs for all travel modes. The RTP will cover the period between 2012 and 2035. All projects selected for programming into the Regional Transportation Improvement Program and the Federal Transportation Improvement Program (FTIP) are required to be included in the RTP.

Prior to the development of the RTP, **we welcome any input you may have**. If you prefer, I can arrange for BCAG staff to provide your Tribe with a workshop on these activities or any other item concerning BCAG.

All material will be posted on the Internet at BCAG's website at: http://www.bcag.org/Planning/2012-RTP/index.html as it is developed.

If you have any questions please give me a call or you can contact Mr. Jon Clark, Executive Director of BCAG at 879-2468. If you prefer, we can schedule a meeting at your office and at your convenience to discuss this project. We look forward to working with you.

Sincerely,

Jane Dolan, Chair
Butte County Association of Governments

IG

BUTTE COUNTY ASSOCIATION of GOVERNMENTS
2580 Sierra Sunrise Terrace, Suite 100, Chico, California 95928-8441 • (530) 879-2468 • FAX: (530) 879-2444 • www.bcag.org

October 14, 2010

The Honorable Jim Edwards, Chairperson
Berry Creek Rancheria
5 Tyme Way
Oroville, CA 95966

Subject: 2012 Regional Transportation Plan Development

Honorable Chairperson:

The Butte County Association of Governments (BCAG) is the federally designated Metropolitan Planning Organization (MPO) and the state designated Regional Transportation Planning Agency (RTPA) serving Butte County. BCAG is responsible for developing all state and federal transportation plans and programming documents that are necessary to program transportation funds within the region.

BCAG was formed through a joint powers agreement between the County of Butte and the incorporated Cities of Biggs, Gridley, Oroville, Chico and the Town of Paradise. BCAG is governed by a ten member Board of Directors comprised of the five county Board of Supervisors and one council person from each of the five incorporated cities. I currently serve as the Supervisor for District 2 and as Chair representing BCAG.

BCAG is committed to developing Government-to-Government relationships with the Tribal Governments within the Butte County region. As a reminder, BCAG has extended an invitation to your Tribe to attend our Transportation Advisory Committee (TAC), which typically meets on a monthly basis. The purpose of the TAC is to review and discuss BCAG's transportation planning activities and issues in a multi-jurisdictional planning forum. Representatives from Caltrans, the cities, town and county participate on the TAC.

BCAG staff will be commencing the development of the 2012 Regional Transportation Plan (RTP) for Butte County. This is a federally required long-range transportation planning document that is updated every four years. The purpose of this document is to identify Butte County's long-term transportation needs for all travel modes. The RTP will cover the period between 2012 and 2035. All projects selected for programming into the Regional Transportation Improvement Program and the Federal Transportation Improvement Program (FTIP) are required to be included in the RTP

Prior to the development of the RTP, **we welcome any input you may have**. If you prefer, I can arrange for BCAG staff to provide your Tribe with a workshop on these activities or any other item concerning BCAG.

All material will be posted on the Internet at BCAG's website at: http://www.bcag.org/Planning/2012-RTP/index.html as it is developed.

If you have any questions please give me a call or you can contact Mr. Jon Clark, Executive Director of BCAG at 879-2468. If you prefer, we can schedule a meeting at your office and at your convenience to discuss this project. We look forward to working with you.

Sincerely,

Jane Dolan, Chair
Butte County Association of Governments

IG

BUTTE COUNTY ASSOCIATION of GOVERNMENTS
2580 Sierra Sunrise Terrace, Suite 100, Chico, California 95928-8441 • (530) 879-2468 • FAX: (530) 879-2444 • www.bcag.org

October 14, 2010

The Honorable Gary Archuleta, Chairperson
Mooretown Rancheria
#1 Alverda Drive
Oroville, CA 95966

Subject: 2012 Regional Transportation Plan Development

Honorable Chairperson:

The Butte County Association of Governments (BCAG) is the federally designated Metropolitan Planning Organization (MPO) and the state designated Regional Transportation Planning Agency (RTPA) serving Butte County. BCAG is responsible for developing all state and federal transportation plans and programming documents that are necessary to program transportation funds within the region.

BCAG was formed through a joint powers agreement between the County of Butte and the incorporated Cities of Biggs, Gridley, Oroville, Chico and the Town of Paradise. BCAG is governed by a ten member Board of Directors comprised of the five county Board of Supervisors and one council person from each of the five incorporated cities. I currently serve as the Supervisor for District 2 and as Chair representing BCAG.

BCAG is committed to developing Government-to-Government relationships with the Tribal Governments within the Butte County region. As a reminder, BCAG has extended an invitation to your Tribe to attend our Transportation Advisory Committee (TAC), which typically meets on a monthly basis. The purpose of the TAC is to review and discuss BCAG's transportation planning activities and issues in a multi-jurisdictional planning forum. Representatives from Caltrans, the cities, town and county participate on the TAC.

BCAG staff will be commencing the development of the 2012 Regional Transportation Plan (RTP) for Butte County. This is a federally required long-range transportation planning document that is updated every four years. The purpose of this document is to identify Butte County's long-term transportation needs for all travel modes. The RTP will cover the period between 2012 and 2035. All projects selected for programming into the Regional Transportation Improvement Program and the Federal Transportation Improvement Program (FTIP) are required to be included in the RTP

Prior to the development of the RTP, **we welcome any input you may have**. If you prefer, I can arrange for BCAG staff to provide your Tribe with a workshop on these activities or any other item concerning BCAG.

All material will be posted on the Internet at BCAG's website at: http://www.bcag.org/Planning/2012-RTP/index.html as it is developed.

If you have any questions please give me a call or you can contact Mr. Jon Clark, Executive Director of BCAG at 879-2468. If you prefer, we can schedule a meeting at your office and at your convenience to discuss this project. We look forward to working with you.

Sincerely,

Jane Dolan, Chair
Butte County Association of Governments

IG

BUTTE COUNTY ASSOCIATION of GOVERNMENTS
2580 Sierra Sunrise Terrace, Suite 100, Chico, California 95928-8441 • (530) 879-2468 • FAX: (530) 879-2444 • www.bcag.org

October 14, 2010

The Honorable Dennis Ramirez, Chairperson
Mechoopda Indian Tribe of the Chico Rancheria
125 Mission Ranch Blvd.
Chico, CA 95926

Subject: 2012 Regional Transportation Plan Development

Honorable Chairperson:

The Butte County Association of Governments (BCAG) is the federally designated Metropolitan Planning Organization (MPO) and the state designated Regional Transportation Planning Agency (RTPA) serving Butte County. BCAG is responsible for developing all state and federal transportation plans and programming documents that are necessary to program transportation funds within the region.

BCAG was formed through a joint powers agreement between the County of Butte and the incorporated Cities of Biggs, Gridley, Oroville, Chico and the Town of Paradise. BCAG is governed by a ten member Board of Directors comprised of the five county Board of Supervisors and one council person from each of the five incorporated cities. I currently serve as the Supervisor for District 2 and as Chair representing BCAG.

BCAG is committed to developing Government-to-Government relationships with the Tribal Governments within the Butte County region. As a reminder, BCAG has extended an invitation to your Tribe to attend our Transportation Advisory Committee (TAC), which typically meets on a monthly basis. The purpose of the TAC is to review and discuss BCAG's transportation planning activities and issues in a multi-jurisdictional planning forum. Representatives from Caltrans, the cities, town and county participate on the TAC.

BCAG staff will be commencing the development of the 2012 Regional Transportation Plan (RTP) for Butte County. This is a federally required long-range transportation planning document that is updated every four years. The purpose of this document is to identify Butte County's long-term transportation needs for all travel modes. The RTP will cover the period between 2012 and 2035. All projects selected for programming into the Regional Transportation Improvement Program and the Federal Transportation Improvement Program (FTIP) are required to be included in the RTP.

Prior to the development of the RTP, **we welcome any input you may have**. If you prefer, I can arrange for BCAG staff to provide your Tribe with a workshop on these activities or any other item concerning BCAG.

All material will be posted on the Internet at BCAG's website at: http://www.bcag.org/Planning/2012-RTP/index.html as it is developed.

If you have any questions please give me a call or you can contact Mr. Jon Clark, Executive Director of BCAG at 879-2468. If you prefer, we can schedule a meeting at your office and at your convenience to discuss this project. We look forward to working with you.

Sincerely,

Jane Dolan, Chair
Butte County Association of Governments

IG

PUBLIC NOTICE

The Butte County Association of Governments (BCAG) is the designated Metropolitan Planning Organization (MPO) and the Regional Transportation Planning Agency (RTPA) for Butte County. As the MPO, BCAG is required to prepare a long-range Regional Transportation Plan (RTP) every four years. The RTP identifies the long-range transportation plans for specific funding programs by transportation mode through the year 2035.

The 2012 RTP will consist of the following:

1. RTP Document – including all required components (Policy, Action and Financial)
2. Air Quality Conformity Analysis and Determination – demonstrating that the projects in the RTP conform to the applicable federal air quality requirements.
3. Sustainable Communities Strategy – complying with recent legislation
4. Environmental Impact Report – complying with the California Environmental Quality Act requirements

The 2012 RTP is scheduled to be adopted in December of 2012. Prior to development of the RTP, BCAG has scheduled four public workshops throughout the County to educate and inform the public as to what the project consist of and to solicit comments prior to development.

Workshop Locations:

Gridley: October 6, 2010
(4:30 p.m. – 6:30 p.m.)
Vierra Park Recreation Building
194 Washington Street
Gridley

Chico: October 7, 2010
(2 p.m. - 4 p.m.)
BCAG Conference Room
2580 Sierra Sunrise Terrace, Suite 100
Chico

Oroville: October 8, 2010
(12 p.m. - 2 p.m.)
Butte County Public Health Department
Tahoe Room - 202 Mira Loma Dr.
Oroville

Paradise: October 14, 2010
(11 a.m. - 1 p.m.)
Town Hall Conference Room 9
5555 Skyway
Paradise

All documents will be available for review on the Internet at www.bcag.org. Comments on the project can be directed to Mr. Iván García, Programming Manager for BCAG at 530-879-2468 or by email at igarcia@bcag.org. Comments can also be mailed to BCAG at 2580 Sierra Sunrise Terrace, Suite 100, Chico, CA 95928.

Ivan Garcia

From: Ivan Garcia
Sent: Friday, October 08, 2010 8:31 AM
To: 'Bernard Beerman'; Brittany LaValley; 'Cameron Wise (E-mail)'; 'Cindy Jones'; 'Diane Cooper (E-mail)'; Donna Cook (djmac1010@sbcglobal.net); Ivan Garcia; 'Jay Harris'; Jim Peplow; 'Joyce Wolf (blindwolf42@yahoo.com)'; Kristy Bonnifet; Linda Furr (ljbfurr@yahoo.com); 'Mary Neumann'; 'Michael Worley'; 'Mike Crump'; 'Mike Trainor'; Robin Van Valkenburgh; 'Shawn O'Brien'; 'William Moline'
Subject: Notification of ucoming workshops for Butte County RTP development
Attachments: SSTAC_RTP_Early_Outreach_Schedule.pdf

E – MEMORANDUM

DATE: October 8, 2010
TO: BCAG Social Services Transportation Advisory Council
FROM: Ivan Garcia, BCAG Programming Manager
SUBJECT: 2012 Regional Transportation Plan Development – Notice of Upcoming Public Workshops

---

Attached for your awareness is an information memo concerning the "kick off" of the development of the 2012 Regional Transportation Plan (RTP) for Butte County. Staff has scheduled four informational workshops throughout the county to inform the public of this work effort. The purpose is to educate those who are interested on what the RTP consist of and to provide for the opportunity to provide comments. The attached workshops simply represent the first round of workshops. I expect another round will be held in the spring in addition to what we present at the Board and committee meetings as draft components are completed.

We anticipate the document to be completed by June 2011 at which time development of the Program Environmental Impact Analysis would take a year to complete. This document is scheduled to be adopted by December 2012. The attached notice on page two will be published in all local newspapers of general circulation.

If you have any questions, please give me a call or send me an email. Please accept my apologies for not getting this notice out to you sooner. The attached "notice" was published in the local newspapers. If you or your organization would like a presentation on what the RTP consists of, please send me an email or give me a call.

Thank you.

~~~~~~~~~~~~~~~~~

Ivan Garcia
Programming Manager
Butte County Association of Governments (BCAG)
Butte Regional Transit (B-Line)
2580 Sierra Sunrise Terrace, Suite 100
Chico CA 95928
530-879-2468 Phone 530-879-2444 Fax
igarcia@bcag.org www.bcag.org
~~~~~~~~~~~~~~~~~

Butte County 2012 RTP, Air Quality Conformity Analysis & Determination, Sustainable Communities Strategy, and Program Environmental Impact Report

The RTP is Butte County's long range regional transportation plan for each mode of transportation. The plan identifies financial projections through 2035 and the BCAG Board of Directors' priorities on specific projects can be accomplished. The plan then quantifies the air quality impacts to ensure Butte County is in compliance with its air quality requirements. This long range "plan" can be amended at any time by the BCAG Board.

The RTP then serves as a foundation for the development of the shorter "action" plans called the Regional Transportation Improvement Program (RTIP), which satisfies California transportation planning requirements, and the federal counterpart referred to as the Federal Transportation Improvement Program or FTIP for all transportation projects that require federal approval.

A new component to the 2012 RTP will be the development of a Sustainable Communities Strategy in response to Senate Bill 375 - the Sustainable Communities and Climate Protection Act of 2008.

All information pertaining to this project will be posted at the BCAG website at: http://www.bcag.org/Planning/2012-RTP/index.html

Why Public Input?

A key part of BCAG's transportation planning process is to involve the public and solicit input. Public input is very important for the decision making process. The public's knowledge and perspective adds to the overall understanding of the transportation needs of the region. Therefore, prior to the development or update of the current 2008 RTP, BCAG goes out to the community to seek input prior to updating the document. Your comments and concerns will be documented as part of the process.

The RTP also serves as documentation for the BCAG Board's priorities for transportation funding to the region. As such, it is very important to be involved in the transportation decision-making process early on.

How Do I Provide Input?

Providing input is easy. Simply write BCAG a letter and mail it to 2580 Sierra Sunrise Terrace, Suite 100, Chico CA, 95928, by email at igarcia@bcag.org or by phone at 530-879-2468. You can also use the back of this sheet, and mail it in or drop it off at the end of the public meeting. If you have any questions, please direct them to Mr. Ivan Garcia at the number or email identified above.

Thank you for your input.

Sincerely,

Iván García
BCAG Programming Manager

PLEASE USE THE FOLLOWING SPACE TO PROVIDE INPUT. THANK YOU VERY MUCH FOR YOUR PARTICIPATION.

Your Name and Address (optional):

Mail /Drop off or Fax to:
BCAG
2580 Sierra Sunrise Terrace
Suite 100
Chico CA 95928
FAX: 530-879-2444
www.bcag.org

Contact Ivan Garcia at:
(530) 879-2468 or via email at:
igarcia@bcag.org for any questions or comments.

BUTTE COUNTY ASSOCIATION OF GOVERNMENTS

PUBLIC WORKSHOPS FOR THE 2012 REGIONAL TRANSPORTATION PLAN

Gridley: October 6, 2010
(4:30 – 6:30 p.m.)
Vierra Park
Recreation Building
194 Washington St, Gridley

Chico: October 7, 2010
(2-4 p.m.)
BCAG Conference Room
2580 Sierra Sunrise Terrace,
Chico

Oroville: October 8, 2010
(12 p.m. -2 p.m.)
Butte County Public Health Department
Tahoe Room - 202 Mira Loma Dr.
Oroville

Paradise: October 14, 2010
(11 a.m. -1 p.m.)
Town Hall Conference Room 9
5555 Skyway, Paradise

2012 Regional Transportation Plan
Public Workshops

Gridley (October 6, 2010 / Vierra Park 4:30 p.m.)
Chico (October 7, 2010 / BCAG offices 2 p.m.)
Oroville (October 8, 2010 / BC Public Health 12 p.m.)
Paradise (October 14, 2010 / Town Hall 11 a.m.)

NAME	AFFILIATION/AGENCY	TELEPHONE	EMAIL or MAILING ADDRESS	Please Circle If You Would Like to be Added to:
Andrea Redamonti	City of Gridley	846 3631	aredamonti@gridley.ca.us	RTP
Tina Blenn	Dist 4	538-2516	dist4@buttecounty.net	RTP
SEAN EARLEY	Butte Co. Fair	846-3626	searley@buttecountyfair.org	RTP
RuthAnn King	Gridley Museum	846-4482	ruthanngrid@sbcglobal.net	RTP
Dorothy Lindsay	Gridley Museum	846-4482	dorothylindsay@att.net	RTP
GARY KEELER	CITY OF GRIDLEY	846-5678	gkeeler@gridley.ca.us	RTP
Jerry Fichter	City of Gridley	846-3687	gbid@att.net	RTP
OWEN STILES	CITY OF GRIDLEY AMERICAN LEGION KIWANIS	846-3251	OSTILES@WCISP.COM	RTP
Deborah Swanson	City of Gridley	846-0807	ds0807@yahoo.com	RTP
Michael Dahl	Gridley Lions	846-3190	gandmdahl@hotmail.com	RTP
Jeanne Hart	Gridley Chamber FOCUS	846-6060	mgjhart@sbcglobal.net	RTP
Kirsten Storne-Piazza	Gridley Hospital	846 9082	Kstorne@bcgmh.us	RTP
Lisa Van De Hey	Gridley Herald	846-3661	publisher@gridleyherald.com	RTP

over

Eileen Burke-Trent Gridley BID & SBSG 846-4444 e.burketrent@yahoo.com (RTP)

Mark Miller RVCOC / Gridley BID 701-4462 Mark@rvcoc.org
Bob Forde Business Improvement District Forde.bob@gmail.com
DAN BOEGER GRIDLEY CITY COUNCIL dan@agdata.com

2012 Regional Transportation Plan
Public Workshops

Gridley (October 6, 2010 / Vierra Park 4:30 p.m.)
Chico (October 7, 2010 / BCAG offices 2 p.m.)
Oroville (October 8, 2010 / BC Public Health 12 p.m.)
Paradise (October 14, 2010 / Town Hall 11 a.m.)

NAME	AFFILIATION/AGENCY	TELEPHONE	EMAIL or MAILING ADDRESS	Please Circle If You Would Like to be Added to:
Robin Huffman	BEC	680-3991	rhuffman@becprojects.com	RTP
Donna Cook	BEC	343-1662		RTP
DENNIS SCHMIDT	TOP	872-6298	dschmidt@townofparadise.com	RTP
				RTP
				RTP
				RTP
				RTP
				RTP
				RTP
				RTP
				RTP
				RTP
				RTP

PUBLIC NOTICE

The Butte County Association of Governments (BCAG) is designated by the U.S. Department of Transportation (DOT) and the U.S. Environmental Protection Agency (EPA) as the Metropolitan Planning Organization (MPO) for Butte County and its incorporated cities. As the MPO, BCAG is required to prepare a Federal Transportation Improvement program (FTIP) every two years and a long-range Regional Transportation Plan (RTP) every four years. The purpose of the FTIP is to identify all transportation-related projects that require federal funding or other approval by the Federal Highway Administration (FHWA) or the Federal Transit Administration (FTA). The FTIP also identifies all non-federal, regionally significant projects for information and air quality emissions modeling purposes. The FTIP indicates the area's short-term plan for use of federal dollars and other resources for the maintenance, operation, and improvement of the transportation system and the achievement of federal air quality standards over the next four federal fiscal years. BCAG is also currently developing the 2012 RTP which identifies the long-range transportation plans for specific funding programs through the year 2035.

The draft 2010/11 (FFY 11) FTIP and Air Quality Conformity Analysis and Determination has been prepared and is available for public review and input. BCAG has scheduled a public hearing to adopt the 2011 FTIP and Air Quality Conformity Determination at the August 26, 2010 Board Meeting at 9:00 a.m. at the Chico Municipal Building Council Chambers located at 421 Main Street, in Chico. The 2011 FTIP & Air Quality Conformity Determination is available for review at all Butte County Public Libraries and posted on the internet at www.bcag.org. The 2008 RTP will also be amended to update the projects as contained in the 2011 FTIP and to update the Air Quality Conformity Analysis and Determination to ensure consistency between the Plan and the Program. Comments will be accepted until the adoption of the FTIP on August 26, 2010. The 2011 FTIP covers the period between October 1, 2010 and September 30, 2014. Amendments to the FTIP and RTP can be made at any time by the BCAG Board of Directors.

Questions regarding the FTIP or the RTP can be directed to Ivan Garcia, Programming Manager at BCAG at 530-879-2468 or by e-mail at igarcia@bcag.org.

(SPACE FOR FILING STAMP ONLY)

IN THE SUPERIOR COURT OF THE STATE OF CALIFORNIA, IN AND FOR THE COUNTY OF BUTTE

In The Matter Of

Public Notice. **NO PR**

AFFIDAVIT OF PUBLICATION

State of California } ss.
County of Butte }

The undersigned resident of the county of Butte, State of California, says:

That I am, and at all time herein mentioned n was a citizen of the United States and not a party to nor interested in the above entitled matter; that I am the principal clerk of the printer and publisher of

The Chico Enterprise-Record
The Oroville Mercury-Register

That said newspaper is one of general circletion as defined by Section 6000 Government Code of the State of California, Case No. 26796 by the Superior Court of the State of California, in and for the County of Butte; that said newspaper at all times herein mentioned was printed and published daily in the City of Chico and County of Butte; that the notice of which the annexed is a true printed copy, was published in said newspaper on the following days:

May 21, 2010.

Dated May 28, 2010.
at Chico, California.

Natali Nogales
(Signature)

PUBLIC NOTICE

The Butte County Association of Governments (BCAG) is designated by the U.S. Department of Transportation (DOT) and the U.S. Environmental Protection Agency (EPA) as the Metropolitan Planning Organization (MPO) for Butte County and its incorporated cities. As the MPO, BCAG is required to prepare a Federal Transportation Improvement program (FTIP) every two years and a long-range Regional Transportation Plan (RTP) every four years. The purpose of the FTIP is to identify all transportation-related projects that require federal funding or other approval by the Federal Highway Administration (FHWA) or the Federal Transit Administration (FTA). The FTIP also identifies all non-federal, regionally significant projects for information and air quality emissions modeling purposes. The FTIP indicates the area's short-term plan for use of federal dollars and other resources for the maintenance, operation, and improvement of the transportation system and the achievement of federal air quality standards over the next four federal fiscal years. BCAG will also begin developing the 2012 RTP which identifies the long-range transportation plans for specific funding programs through the year 2035.

Before the 2010/11 (FFY 11) FTIP is prepared, BCAG is soliciting input early in the planning process. The public is encouraged to participate and provide input to both the FTIP and the RTP and learn how these documents relate to each other as well as to learn more about transportation funding in Butte County. Both documents will be available for review on the Internet at www.bcag.org as they are developed and at each of the Butte County public libraries once a draft is complete. The public may also contact the respective public works departments to find out what projects will be nominated for funding and to provide input as well. The FTIP and RTP will be developed in consultation with the BCAG Transportation Advisory Committee meetings and are open to the public.

BCAG has also issued a call for new State Transportation Improvement Program (STIP) Transportation Enhancements (TE) projects. Project applications are due July 1, 2010. The total amount available for new projects is $1,013,000. Eligible applicants must have a master agreement in place with Caltrans. Typical applicants include cities and county, however, joint project sponsorship is allowed. Interested applicants without a master agreement with Caltrans are encouraged to work with the local cities and county for potential projects. New projects will be programmed as part of the development of the 2010/11 Federal Transportation Improvement Program and State Transportation Improvement Program. Please direct comments or questions to Mr. Ivan Garcia, Programming Manager at BCAG at 530-879-2468 or by e-mail at igarcia@bcag.org.
Publish: 05/21/2010

Paradise Post

Declaration of Publication

State of California
County of Butte

That at all times herein mentioned Declarant is and was a resident of said county of Butte over the age of twenty-one years; not a part to nor interested in the within matter; that Declarant is now and was at all times herein mentioned the Legal Clerk of the Paradise Post, a tri- weekly newspaper, which said newspaper was adjudged a newspaper of general circulation on November 12, 1946, by Superior Court Order No.22262 as entered in Book 30 Page 223 of said Court; and that said newspaper is printed and published
every Tuesday, Thursday and Saturday in

PUBLIC NOTICE
Butte County Association of Governments
Butte Regional Transit (B-Line)
2011 FTIP Workshop
Legal # 342-10
June 12, 2010
and such publications was made in the regular issues of said paper (and not in any supplemental edition or extra thereof)...

June 12, 2010

Declarant

Norma Thimsen

Legal Notices

The Butte County Association of Governments (BCAG) is designated by the U.S. Department of Transportation (DOT) and the U.S. Environmental Protection Agency (EPA) as the Metropolitan Planning Organization (MPO) for Butte County and its incorporated cities. As the MPO, BCAG is required to prepare a Federal Transportation Improvement Program (FTIP) every two years and a long-range Regional Transportation Plan (RTP) every four years. The purpose of the FTIP is to identify all transportation-related projects that require federal funding or other approval by the Federal Highway Administration (FHWA) or the Federal Transit Administration (FTA). The FTIP also identifies all non-federal, regionally significant projects for information and air quality emissions modeling purposes. The FTIP indicates the area's short-term plan for use of federal dollars and other resources for the maintenance, operation and improvement of the transportation system and the achievement of federal air quality standards over the next four federal fiscal years. BCAG will also begin developing the 2012 RTP which identifies the long-range transportation plans for specific funding programs through the year 2035.

The public is invited to attend an "Open House" workshop to review the draft 2011 FTIP and to inform the public of the development of the 2012 RTP how these two documents relate to each other. The purpose of this workshop is to provide the public with the opportunity to participate in BCAG's planning and programming activities.

Legal Notices

The workshop is scheduled for:
Friday, June 18, 2010
1:30 p.m. - 4:00 p.m.
BCAG Conference Room
2580 Sierra Sunrise Terrace, Suite 100
Chico, CA 95928
Question can be directed to Ivan Garcia, Programming Manager, at BCAG at (530) 879-2468 or by e-mail at igarcia@bcag.org
342-10

PUBLIC NOTICE

The Butte County Association of Governments (BCAG) is the designated Metropolitan Planning Organization (MPO) and the Regional Transportation Planning Agency (RTPA) for Butte County. As the MPO, BCAG is required to prepare a long-range Metropolitan Transportation Plan (MTP) every four years. The MTP identifies the long-range transportation plans for specific funding programs by transportation mode through the year 2035.

The 2012 MTP will consist of the following:

1. MTP Document – Policy, Action, and Financial Elements
2. Air Quality Conformity Analysis and Determination – demonstrating that the projects in the MTP conform to the applicable federal air quality requirements.
3. Sustainable Communities Strategy (SCS) – new component of the MTP intended to reduce the passenger vehicle greenhouse gas emissions associated with the plan
4. Environmental Impact Report – complying with the California Environmental Quality Act requirements

The 2012 MTP and its SCS are scheduled to be adopted in December of 2012. The purpose of the workshops will be to present the preliminary draft MTP document. In addition, information will be presented to educate and inform the public as what the SCS consists of, the issues and policies choices, and to solicit comments on the preliminary draft analysis of land use scenarios.

Workshop Locations:

OROVILLE
Monday, June 18, 2012
4:00 p.m. – 6:00 p.m.
Oroville Public Library
Meeting Room
1820 Mitchell Ave., Oroville CA

PARADISE
Tuesday, June 19, 2012
11 a.m. – 1 p.m.
Paradise Town Hall
Council Chambers Room 9
5555 Skyway, Paradise CA

GRIDLEY
Tuesday, June 19, 2012
4:00 p.m. – 6:00 p.m.
City Hall Conference Room
685 Kentucky Street
Gridley CA 95948

CHICO
Wednesday, June 20, 2012
4:00 p.m. – 6:00 p.m.
Chico Public Library
1108 Sherman Ave
Chico CA 95926

The public workshops will be conducted in an open house format where participants can attend at any time during the workshop, view displays and information about the 2012 MTP and its SCS, ask questions of staff, complete comment cards, or speak to a bilingual English/Spanish transcriber to have their comments recorded. All documents will be available for review on the Internet at www.bcag.org. Comments on the project can be directed to Mr. Iván García, Programming Manager for BCAG at 530-879-2468 or by email at igarcia@bcag.org. Comments can also be mailed to BCAG at 2580 Sierra Sunrise Terrace, Suite 100, Chico, CA 95928.

PUBLIC NOTICE

The Butte County Association of Governments (BCAG) is the designated Metropolitan Planning Organization (MPO) and the Regional Transportation Planning Agency (RTPA) for Butte County. As the MPO, BCAG is required to prepare a long-range Metropolitan Transportation Plan (MTP) / Sustainable Communities Strategy (SCS) every four years. The MTP identifies the long-range transportation plans for specific funding programs by transportation mode through the year 2035.

The 2012 MTP/SCS will consist of the following:

1. MTP Document – Draft Document
2. Air Quality Conformity Analysis and Determination – demonstrating that the projects in the MTP conform to the applicable federal air quality requirements.
3. Sustainable Communities Strategy (SCS) – new component of the MTP intended to demonstrate a reduction in the passenger vehicle greenhouse gas emissions associated with the plan
4. Environmental Impact Report – complying with the California Environmental Quality Act requirements

The 2012 MTP/SCS are scheduled to be adopted on December 13, 2012. The purpose of the workshops will be to present the draft MTP/SCS document.

Workshop Locations:

OROVILLE
Monday, October 15, 2012
10 a.m. – 12:00 p.m.
Butte County Public Health
"Klamath" Conference Room
202 Mira Loma Street, Oroville CA

PARADISE
Monday, October 15, 2012
12:30 p.m. – 2:30 p.m.
Paradise Town Hall
Council Chambers Room 9
5555 Skyway, Paradise CA

GRIDLEY
Monday, October 15, 2012
6:00 p.m.
City Hall Conference Room
685 Kentucky Street
Gridley CA 95948
(City Council Study Session)

CHICO
Monday, October 15, 2012
3 p.m. – 5:00 p.m.
BCAG Conference Room
2580 Sierra Sunrise Terrace
Suite 100, Chico CA 95928

The public is encouraged to attend any one of these workshops, ask questions of staff, complete comment cards, or speak to a bilingual English/Spanish transcriber to have their comments recorded. All documents are available for review on the Internet at www.bcag.org. Comments on the project can be directed to Mr. Iván García, Programming Manager for BCAG at 530-879-2468 or by email at igarcia@bcag.org. Comments can also be mailed to BCAG at 2580 Sierra Sunrise Terrace, Suite 100, Chico, CA 95928.

2012 Metropolitan Transportation Plan for Butte County

Public Outreach Workshops

Oct. 15, 2012 Oroville 10:00 a.m. – 12:00 p.m.

Oct. 15, 2012 Paradise 12:30 a.m. – 2:30 p.m.

Oct. 15, 2012 Chico 3:00 p.m. – 5:00 p.m.

Oct. 15, 2012 Gridley 6:00 p.m. *(City Council Study Session)*

Prepared by:
Ivan Garcia, Programming Manager
Butte County Association of Governments
2580 Sierra Sunrise Terrace Suite 100
Chico CA 95928
www.bcag.org 530-879-2468

STATION 1
Purpose of Public Workshop

- To inform the public of the draft 2012 MTP, Sustainable Communities Strategy (SCS), Air Quality Conformity Analysis & Determination, and the Environmental Impact Report (EIR)
- To provide the public an opportunity to engage in the planning process, provide input and learn about the project
- Focus of the Workshop is to:
  - Provide opportunity for input
  - Discuss the purpose of the MTP
  - Discuss the purpose of the SCS
  - Discuss the purpose of the Air Quality Requirements
  - Discuss the purpose of the EIR
  - Identify current MTP projects (short and long-term)
  - Discuss BCAG's roles and responsibilities

Highways/Streets & Roads, Bike & Pedestrian, Transit, Rail, Aviation

STATION 2
What is BCAG?

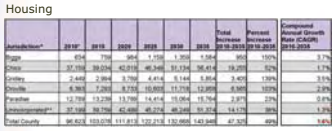
- Federal designated Metropolitan Planning Organization (MPO), state designated Regional Transportation Planning Agency (RTPA) for Butte County
- BCAG Board of Directors – Includes all five County Supervisors one representative from each of the five incorporated cities/town
- Responsibilities –
  - ☑ Secure state and federal funding & ensure timely delivery
  - ☑ Prepare MTP and programming documents required to secure state and federal funding
  - ☑ Ensure public participation in the planning process
  - ☑ Butte Regional Transit Administrator
  - ☑ Planning or Project Management that benefit cities, town and county

STATION 3
Purpose of the MTP

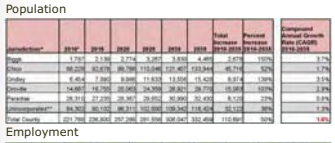
- Meet state and federal requirements for other planning and funding activities
- Serve as foundation for the development of :
  - ☑ Federal Transportation Improvement Program
  - ☑ Regional Transportation Improvement Program
  - ☑ Interregional Transportation Improvement Program
- The MTP has four main components:
  - ☑ Policy Element – Goals, policies & objectives
  - ☑ Action Element – Recommended projects by mode and fund source
  - ☑ Financial Element – Financial projections by fund source which project are constrained
  - ☑ Sustainable Communities Strategy – Integration of land use, housing, and transportation to reduce GHG's

STATION 4
Population, Housing, and Employment Forecasts

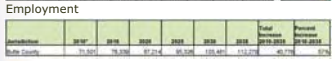
Housing



Population



Employment



STATION 5
Regional Priorities – STIP

STATION 6
Currently Funded Projects (Short-Term 2013 FTIP Projects)

State Hwy	Project	Cost Thousands	Total for Group	Program
70	SR 70 Passing Lane Project – Segment 1. ($13m from Caltrans)	13,000		
70	SR 70 Passing Lane Project – Segment 2. ($17m from Caltrans)	17,000		
70	SR 70 Passing Lane Project – Segment 3. ($25m from Caltrans)	25,000	State Transportation Improvement Program (STIP) - BCAG Share	
	Planning Programming & Monitoring	3,400		
	Midway over Butte Creek Bridges Replacement Project	1,499		
	Butte County Neal Rd Class 2 Bike Lane Project. (TE Project)	1,500		
	Gridley Hazel Street Downtown Streetscape Project (TE Project)	452		
	Chico Bike Map Update (TE Project)	32	**61,883**	**STIP**

	FTA Sec. 5307 Program - B - Line	38,400		
	FTA Sec 5311 Program	10,790		
	Butte Regional Transit Operations Center	18,000	Federal Tansit Administration (FTA)	
	Butte Regional Transit Operations Center - Non FTA Funds (Prop 1B & CMAQ)	*10,000*		
	JARC Mobility Management System Project	1,362		
	FTA 5310	29,634	**108,186**	**Transit**

STATION 6
Currently Funded Projects - Continued

Chico	Bruce Rd - between Skyway and SR 32. Widen from 2 to 4 lanes	6,500		
Chico	Eaton Rd Extension - East Ave to Foothill Park East Subdivision. New 4 lanes	750		
Chico	MLK Blvd - E. Park Ave to 20th St. Widen 2 to 4 lanes	1,750		
Chico	20th St Corridor Improvements Phase 1 - SR99 to Forest Ave	750		
Chico	20th St Corridor Improvements Phase 2 - SR99 to MLK Blvd	500		
Chico	20th St Park Bike Path Phase 2 - Phase 1 terminus to LCC Bike Path	600		
Chico	Sycamore Creek Bike Path Phase 1 - 5 Mile Div to FH Park East Sub	450		
Chico	Sycamore Creek Bike Path Phase 2 - Gap closures FH Park East to Cohasset Rd	750		
Chico	SR 32 Mutimodal Improvements - E/O Park and Ride to Bartlett St	2000		
Chico	SR32 Widening Phase 3 - El Monte Ave to Yosemite Dr	750		
Chico	SR99 Bikeway Phase 3 - E 8th St to Humboldt Rd	2000		
Chico	SR99 Bikeway Phase 5 - Chico mall to Business Ln	200		
Chico	SR99 Bikeway Phase 4 - Business Ln to Skyway	200		
Chico	Eaton/SR99 Interchange Improvements. Widen 2 to 4 lanes	1250		
Chico	SR99 Auxy Lanes Phase 1 - Skyway to 20th Street	1000		
Chico	SR99 Auxy Lanes Phase 1 - 20th Street to SR32	1000		
Chico	SR99/Cohasset Rd Interchange Improvements	450		
Chico	SR99/Southgate Interchange - New Interchange to replace at grade intersection	750		
Chico	Guynn St @ Lindo Channel Bridge Replacement	3250	Locally Funded Road Projects	
Chico	Salem St @ LCC Bridge Widening	1550		
Chico	Pomona St @ LCC Bridge Widening	1750		
Chico	20th St Corridor Improvements Phase 3 - Forest Ave to Bruce Rd	500		
Chico	20th St Corridor Improvements Phase 4 - MLK Blvd to Park Ave	500		
Chico	SR32 Widening Phase 3 - El Monte Ave to Yosemite Dr	8,000		
Chico	SR99 Bikeway Phase 4 - Chico mall to Business Ln	1,500		
Chico	SR99 Bikeway Phase 5 - Business Ln to Skyway	250		
Chico	Eaton/SR99 Interchange Improvements Phase 1. Widen 2 to 4 lanes	4,500		
Chico	SR99 Auxy Lanes Phase 1 - Skyway to 20th Street	6,500		
Chico	SR99 Auxy Lanes Phase 1 - 20th Street to SR32	8,500		
Chico	SR99/Cohasset Rd Interchange Improvements	10,000		
Chico	SR99/Southgate Interchange Phase 1 - Reconfigure grade intersection	1,000		
Chico	SR99/East Ave Interchange Improvements	750		
Chico	Notre Dame Blvd - LCC to 20th St. New 2 lane	2500		
Chico	20th St Corridor Improvements Phase 1 - SR99 to Forest Ave	3500		
Chico	20th St Corridor Improvements Phase 2 - SR99 to MLK Blvd	1500		
Chico	SR99/Southgate Interchange Phase 1 - New Interchange to replace at grade intersection	2,000		
Chico	SR99/East Ave Interchange Improvements	3,500		
Chico				
County	*Kittyhawk Dr. Extension (SR-99 to Garner Ln.)*	2500		
County	Southgate Ave Extension	3000	88,700	Local

Total Financial Estimate for All Projects in the 2013 MTP/SCS - in thousands	**468,725**

STATION 6
Currently Funded Projects - Continued

70	In Oroville at Flag Canyon Creek Bridge #12-0140. Post Mile 24.3. Replace bridge.	5,595		
99	SR 99 near Estates Drive. SHOPP Bridge Preservation Program.	15,515		
70	Near Oroville at Pentz Overhead #12-138, Cherokee Overhead#12-137	3,918		
70	West Branch Feather River Bridge #12-134. Seismic Retrofit. SHOPP Bridge Preservation Program.	20,002		
99	Near Chico at the Rock Creek Bridge #12-27. Widen shoulder on structure. Post Mile 40.6 / 40.8. SHOPP Collision Reduction Program.	3,940		
32	Near Chico from Kennedy Avenue to SR 99/32 separation. Construct sidewalks, curb-ramps and crosswalks. (SHOPP Mandates)	4,002		
191	SHOPP Highway Maintenance – Overlays. EA 4M270 (SR 191)	4,840	State Highway Operations and Protection Program (SHOPP)	
99	SHOPP Highway Maintenance EA 4M53 (SR 99)	360		
70	WB Feather River Bridge – Seismic Retrofit	16,000		
99	Pine Creek Bridge Scour Mitigation	2,000		
32	Big Chico Bridge Scour Mitigation	150		
99	Butte Creek Bridge Scour Mitigation	500		
99	10 Bridges – Rail Upgrade	2,100		
70	5 Bridges – Rail Upgrade	1,300		
32	4 Bridges - Rail Upgrade	1,500		
70	Pavement Rehab P.M. 13.5-17.0	8,000		
	Oroville Maintenance Station	7,500		
70	AC Overlay PM 28.8 -35.5	7,000		
32	AC Overlay 12.0 - 37.8	18,000		
162	Drainage Rehab - Big Butte Creek	1,000		
Var	Caltrans Highway Maintenance (HM) Lump Sum	5,200		
99	Highway Planning and Irrigation Restoration	2,200	**130,622**	**SHOPP**

STATION 7

BCAG operates Butte Regional Transit (B-Line) for fixed route and paratransit service. The purpose of Transit in the MTP is to identify the existing route structure and to identify planned improvements.

The public is encouraged to voice their thoughts and opinions on what transit or other mass transportation improvements BCAG should be working on in the future.

During the 2009/10 fiscal year, BCAG embarked on a comprehensive market based transit study to assist in evaluating how B-Line fixed route service could be improved. The following slide highlights some changes that began in November 2010 followed by adjustments made in April 2011 to the fixed route transit system as a result of the study.

STATION 6
Currently Funded Projects - Continued

	B-Line - Replace 7	2,867		
	County - Oroville Park and Ride Facility -	589		
32	Chico - SR 32 Multi-Modal Project at SR 32/99/Fir Street	2,453		
99	Chico SR 99 Corridor Bike Project	883	Congestion Mitigation And Air Quality	
	Chico SR 99 Bike over 20th Street Phase 5	98		
99	Chico - SR 99 Cohasset Rd I/C direct southbound on-ramp.	736		
	County - South Oroville Signalization Project	343		
	Oroville - Table Mountain & Nelson Roundabout Project.	1,290		
	Oroville - Signalization Synchronization Project.	211		
	Oroville - Capital Replacement / Street Sweeper	219		
	Oroville - Capital Replacement / Motor Grader	185	3,200	Local
	County - Capital Replacement / 5 Year Diesel Engine Retrofit	638	10,703	CMAQ
	Oroville - Capital Replacement / Water Truck Replacement	191	**13,903**	**Total**

	Central House Rd over Wymann Ravine Bridge – Replace Bridge	2,105		
	Guynn Rd over Lindo Channel Bridge – Replace Bridge	3,248		
	Ord Ferry at Sacramento Bridge - Bridge Retrofit	4,000		
	Oregon Gulch at Morris Ravine - Bridge Replacement	2,000		
	Durham Dayton Rd at Hamlin Slough - Bridge Replacement	2,200		
	Foothill Blvd at Wyman Ravine - Bridge Replacement	1,500		
	Midway at Butte Creek - Bridge Replacement	15,000		
	Keefer Rd at Keefer Slough - Bridge Replacement	1,500		
	Ord Ferry at Little Chico Creek - Bridge Replacement	7,000		
	Oregon Gulch at Morris Ravine - Bridge Replacement	2,000		
	E. Rio Bonito Rd at Sutter Butte Canal - Bridge Replacement	1,000	Local Highway Bridge Program	
	Oro Bangor Hwy at Whitehall Ravine-Bridge	1,000		
	River Rd at Grassy Banks Slough - Replace Bridge	1,000		
	River Rd at Shady Oaks Slough - Bridge Replacement	1,000		
	Mesa Rd Bridge - Bridge Replacement	1,000		
	Hupp Coutolenc Bridge - Bridge Replacement	1,000		
	Central House Rd Bridge - Bridge Replacement	1,000		
	Dunstone Drive Bridge - Bridge Replacement	1,000		
	Afton Rd at Butte Creek - Bridge Replacement	2,500		
	Ord Ferry Rd at the Dips - Bridge Replacement	10,000		
	East Evans Reimer Bridge	1,000		
	Lower Wyandotte at Wyman Ravine - Bridge Replacement	1,000	**63,053**	HBP

	Butte County Highway Safety Improvement Program - Lump Sum Group	1437	1437	HSIP

	Las Plumas Safe Routes to Schools Project	941	941	SRTS

STATION 7
Transit - Continued

Highlights of the Market Based Transit Study & Implemented Changes

CHICO

New Route 15 provides 20-minute headways during peak periods, and half-hour service through the midday. Route 15 is a combination of old routes 1, 6 & 10. A new transfer point established near Wal-Mart.

Allows connectivity between routes 5, 7, 15, 20, 40 & 41. This will provide regional routes direct access to the Chico Mall from Paradise & Oroville.

Route 7 is interlined with Route 2 during peak commute hours, providing better connection between the east side of Chico and Downtown. Route 5 extended to Notre Dame and Forest Ave to provide broader coverage, enhance transfer opportunities, and be rerouted to Ivy Street to replace the old Route 6. An additional early morning run has been added to Route 4 to help school and commuter connections.

OROVILLE

Hourly service on all four routes (24, 25, 26 & 27). Service is available for an additional 1½ hours later into the evening. New Kelly Ridge service on regularly scheduled fixed route.

STATION 7
Transit - Continued

PARADISE

Both Routes 40 & 41 from Paradise now serve the Chico Mall area directly before heading downtown, reducing the need to transfer. An additional mid-day run on Saturday has been added to Magalia.

GRIDLEY

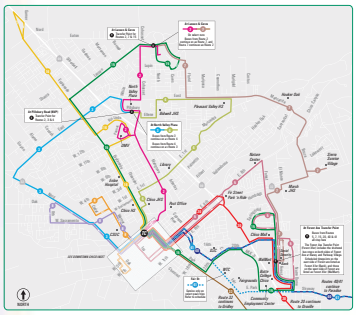
A new direct commuter service, Route 32, has been added between Gridley/Biggs and Chico (this route began service in July 2010)

ADDITIONAL HIGHLIGHTS (outside study)

- 50+ new bus shelters installed
- Schedule holders at all bus stops have been updated
- AVL/GPS installed on entire fleet
- Updated web site for transit
- Oroville Transit Center construction completed
- Upgraded security camera on buses
- Paradise Park and Ride completed

STATION 7
Transit – Chico Routes

STATION 7
Transit – Chico Routes



STATION 7
Transit – Paradise/Magalia Routes

STATION 7
Transit – Chico Routes

STATION 7
Transit –Paradise/Magalia Routes

STATION 7
Transit –Gridley/Biggs

STATION 8
Non-Motorized Transportation (Bicycle)

STATION 7
Transit – Oroville Routes

STATION 8
Non-Motorized Transportation (Bicycle)

Chico Area

Paradise Area

STATION 8
Non-Motorized Transportation (Bicycle)

BCAG works with each of the local jurisdictions to coordinate bicycle route improvements for the region and assists in developing grant applications for state and federal grant opportunities.

The following maps are from the City of Chico and Butte County's Bicycle Plan.

What routes or projects should BCAG or the local jurisdictions be considering for the future?

STATION 8
Non-Motorized Transportation (Bicycle)

General County Area

Oroville Area

STATION 9
Financial Element

The following table identifies typical BCAG financial sources for projects in the MTP. Forecasts are developed for each fund source identified below. The MTP is required to be financially constrained

TYPICAL FUNDING SOURCES FOR HIGHWAYS, LOCAL STREETS AND ROADS AND TRANSIT	AGENCIES
Congestion Mitigation and Air Quality (CMAQ)	BCAG, Cities and County
Federal Highway Bridge Repair and Replacement Program	Cities and County
Federal Rail Crossing Improvement Program (FCIP)	Cities and County
Federal Transit Administration - Sect 5307 "Urbanized" Area Funds	Chico Urbanized Area
Federal Transit Administration - Sect 5310 "Non Profit" Funds	Non Profit Agencies (Work Training Center)
Federal Transit Administration - Sect 5311 "Rural" Area Funds	County Area
Public Lands Highways "Forest Highways"	BCAG
State Highways Operations Protection Program (Caltrans SHOPP)	Caltrans
State Transportation Improvement Program (STIP)	BCAG, Cities and County
Transit Funding - TCRP	B-Line
Transportation Development Act - Local Transportation Fund	BCAG, Cities and County
Transportation Development Act - State Transit Assistance Fund	Cities and County for B-Line
Transportation Enhancements (TE)	Cities and County

STATION 10
SCS – <u>Components</u>

The SCS consists of three major components:

- **Land Use Allocation** - must identify the general location of different land use types, residential densities, and areas to house the region's forecasted growth
- **Transportation Network** - financially constrained multimodal network which serves the transportation needs of the region
- **Transportation Measures and Policies** – any additional measures or policies which would be needed to meet GHG emissions reduction target

STATION 10
Sustainable Communities Strategy (SCS)- What is it?

- A new element of the 2012 MTP enacted with the passage of Senate Bill 375 (Steinberg) – Sustainable Communities and Climate Protection Act of 2008
- Demonstrates the integration of land use, housing, and transportation to reduce passenger vehicle (cars & light trucks) greenhouse gas emissions (GHG)
- Must meet GHG emission reduction targets set by the California Air Resources Board for the years 2020 and 2035, or be subject to completing an Alternative Planning Strategy



STATION 10
SCS – <u>Strategies to Reduce GHG Emissions</u>

Land Use

- Increase mixed use development and development in areas with existing infrastructure
- Increase residential/commercial density near transit
- Provide local housing for local workforce to improve the jobs – housing balance

Transportation

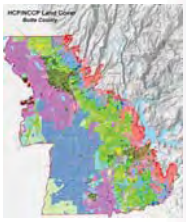
- Improve and expand transit facilities
- Improve pedestrian and bicycle facilities and infrastructure
- Improve linkages between modes of travel (auto, transit, bike, and walk)
- Minimize the addition of general purpose road lanes
- Maintain the existing road network

STATION 10
SCS – <u>Intent</u>

- **Reduce Greenhouse Gas Emissions** – The primary objective of the SCS will be to meet passenger vehicle GHG reduction targets established by the state, by reducing vehicle travel.
- **Manage Region's Growth** – Projections show that over the next 25 years, the region's population will increase by ~110,000 people and an estimate 47,000 homes will be needed to accommodate this growth.
- **Provide Opportunities for Affordable Housing** – The SCS must be consistent with the Regional Housing Needs Assessment, assuring that each community provides for a mix of housing affordable to all economic segments of the population.
- **Preserve Farmland and Natural Resources** – When being developed, the SCS must consider the region's natural resources and prime farmlands.

STATION 10
SCS – <u>Existing Sustainable Planning Efforts</u>

- **Blueprint Planning Program (2006-2009) –** Project led by BCAG to inform the 2008 RTP and local land use planning efforts by preparing ecological baseline report, biological constraints analysis, land cover mapping, growth forecasts, and regional guiding principles. Allowed for a coordinated update of local general plans and assisted in focusing growth towards existing urban areas.



- **Butte Regional Conservation Plan (2007–present)** A joint Habitat Conservation Plan/Natural Communities Conservation Plan (HCP/NCCP) led by BCAG. Seeks to preserve resource areas and sensitive species habitat.

STATION 10
SCS – New Planning Tools

In order to prepare and quantify the SCS, BCAG has worked to develop new tools and enhance the existing travel model.

Land Use Allocation Model (UPLAN)

- allocates housing and jobs based on available land in local general plan
- considers attractions & discouragements for development

Travel Demand Model (*TransCAD*)

- Forecasts travel on regional road network
- Enhanced with the ability to better analyze smart growth land use design
- Increased sensitivity for age, household size, cost of travel, and the number of workers in each household

Public Involvement

In addition to BCAG's normal 2012 MTP public outreach efforts, further opportunities are provided for public input into the SCS.

- Public Workshops – three rounds of workshops taking place throughout the region (August 2011, June 2012, and October 2012)
- Public Hearings – conducted at regularly scheduled meetings of the BCAG Board of Directors
- Public Comment and Review Periods – noticed in the local newspapers and BCAG website
- Website and Email Notification List – ask to be placed on the MTP/SCS notification list and receive information regarding activities related to the SCS.

http://www.bcag.org

STATION 10
SCS – Local Government Coordination

Local governments are directly involved in the development of the 2012 SCS.

Planning Directors Working Group

- Consists of planning staff from local jurisdictions and the Butte LAFCO
- Partners in SCS coordination grant received from the CA Strategic Growth Council
- Provides direction and input regarding the land use allocation component of the SCS

Transportation Advisory Committee

- Established BCAG committee which provides input into the overall RTP
- Provides input into the transportation network component of the SCS

Process Timeline

SCS GHG Emissions Target Setting (Completed 2010)

↓

First Round Public Workshops (August 2011)

↓

SCS Scenario Development and Analysis (September 2011 – May 2012)

↓

Second Round Public Workshops (June 2012)

↓

Prepare Draft SCS (June 2011 – September 2012)

↓

Third Round Public Workshops (October 2012)

↓

Final RTP and SCS (December 2012)

↓

Air Resource Board Review (January – March 2012)

STATION 10
SCS – CEQA Benefits

Development projects that are shown to be consistent with the SCS may be eligible for certain types of CEQA streamlining.

Two types of projects which may be eligible:

1) Residential & Mixed Use Projects – has at least 75% of the building square footage in residential
2) Transit Priority Project – residential projects located near major transit stops which meet density and use requirements described in SB 375.

MTP/SCS Land Use Scenario Development

BCAG Prepared three distinctive land use scenarios.

✓Illustrate the travel effects of different development patterns on the transportation system and the associated greenhouse gas emissions resulting from these patterns.

✓Allows BCAG to test the performance of the enhanced regional travel demand to model to assure it is responding appropriately to changes in land use.

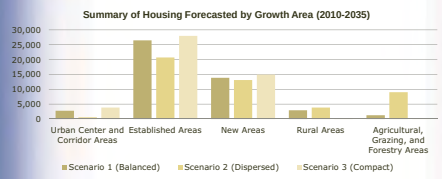
✓All three scenarios prepared using the same regional employment, population and housing growth projections and regional transportation network.

MTP/SCS Land Use Scenario Cont.

Scenario	Land Use
Scenario 1 – Balanced	• Balanced share of new housing within the center, established and new growth areas • Contains reasonable levels of infill and redevelopment • Consistent with local land use plans and draft conservation plan • Consistent with BCAG long-term regional growth forecasts by jurisdiction
Scenario 2 – Dispersed	• Largest share or single-family housing with a greater amount of growth directed to the new, rural, and agricultural growth areas • Minimize the amount of infill and redevelopment • Exceeds the unincorporated areas local land use plans reasonable capacities for growth
Scenario 3 – Compact	• Greatest share of infill and redevelopment within the established and center growth areas • Highest share of multi-family housing • Exceeds the incorporated areas local land use plans reasonable capacities for growth

MTP/SCS Land Use Scenario Development Cont.

Variations in Scenarios



MTP/SCS Land Use Growth Areas

Five Growth Area Types

1. **Urban Center and Corridor Areas** : higher density, access to frequent transit, compact infill and redevelopment
2. **Established Areas** : existing urban area, range urban densities, access to transit, currently planned developments and infill
3. **New Areas** : connect to existing urban area, future expansion, urban densities, vacant lands, specific plan areas
4. **Rural Areas** : outside existing and planned urban footprint, rural densities, residential, limited transit if any, no bike or pedestrian facilities.
5. **Agricultural, Grazing, and Forestry Areas** : remaining areas of county, support agricultural and other land resources, no urban type development, residential uses are secondary.

MTP/SCS Preferred Scenario

Highlights

• Accommodates growth of ~ 110,000 persons, ~47,000 new homes, and ~41,000 new jobs.

• Decreases per capita CO_2 for passenger vehicles (12% for 2020 and 2% for 2035), meeting regional targets.

• Balanced share of housing and employment within defined Growth Areas. Majority of new development occurs within Existing Area.

• Improves jobs-housing balance (0.74 to 0.78)

• Increases percentage multi-family housing (25% to 26%)

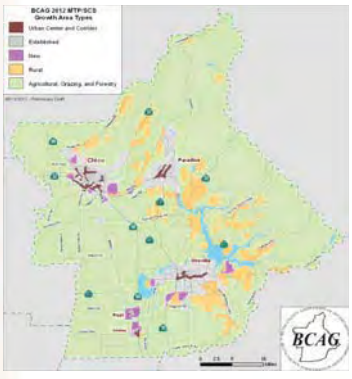
• Establishes the Chico Transit Priority Project Area

• Accommodates Regional Housing Needs Allocation

• Minimizes impacts to resource areas and farmlands

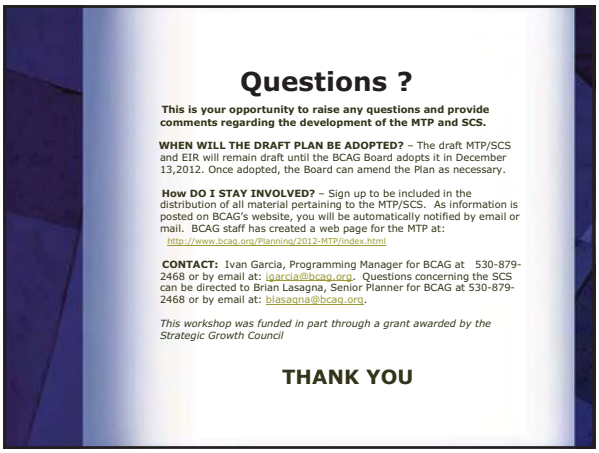
• Consistent with local land use plans

MTP/SCS Land Use Growth Areas



STATION 11
Next Steps

- Public and Agency Review & Opportunity to Comment on the Following:
  - Final Draft 2012 MTP/SCS Document
  - Draft Air Quality Conformity Determination
  - Draft Environmental Impact Report
- Two Public Hearings at BCAG Board Meetings for:
  - October 25, 2012
  - December 13, 2012 (Adoption Date)


Questions ?
This is your opportunity to raise any questions and provide comments regarding the development of the MTP and SCS.
WHEN WILL THE DRAFT PLAN BE ADOPTED? – The draft MTP/SCS and EIR will remain draft until the BCAG Board adopts it in December 13,2012. Once adopted, the Board can amend the Plan as necessary.
How DO I STAY INVOLVED? – Sign up to be included in the distribution of all material pertaining to the MTP/SCS. As information is posted on BCAG's website, you will be automatically notified by email or mail. BCAG staff has created a web page for the MTP at:
http://www.bcag.org/Planning/2012-MTP/index.html
CONTACT: Ivan Garcia, Programming Manager for BCAG at 530-879-2468 or by email at: igarcia@bcag.org. Questions concerning the SCS can be directed to Brian Lasagna, Senior Planner for BCAG at 530-879-2468 or by email at: blasagna@bcag.org.
This workshop was funded in part through a grant awarded by the Strategic Growth Council
THANK YOU

STATE OF CALIFORNIA—BUSINESS, TRANSPORTATION AND HOUSING AGENCY EDMUND G. BROWN Jr., Governor

DEPARTMENT OF TRANSPORTATION
703 B STREET
MARYSVILLE, CA 95901
PHONE (530) 741-4004
FAX (530) 741-5346
TTY 711

Flex your power!
Be energy efficient!

November 19, 2012

Mr. Ivan Garcia
Programming Manager
Butte County Association of Governments (BCAG)
2580 Sierra Sunrise Terrace, Suite 100
Chico, CA 95928

Butte County Draft Metropolitan Transportation Plan/Sustainable Communities Strategy (MTP/SCS)

Dear Mr. Garcia:

Thank you for the opportunity to provide comments regarding the Butte County Association of Governments (BCAG) Draft Butte County MTP/SCS. The following comments are for your consideration in the MTP/SCS process.

Transportation Planning

- Pg. 4-4: Please consider providing more detailed information on housing densities using applicable General Plans.

- Please consider defining more clearly the relationship between the three land use scenarios used for the MTP/SCS and the three project alternatives in the Draft Environmental Impact Report.

Airports and Aviation Planning

We appreciate BCAG's responsiveness to our request to expand the aviation section of their MTP. This version offers a comprehensive discussion of all four of Butte County's public and special use airports. Of particular note, BCAG's discussion of Paradise Skypark as a weather alternative airport to Chico, the county's commercial airport is noteworthy, as is their description of all ground access options for each of the county's airports. We commend BCAG for their comprehensive discussion of aviation as it relates to Butte County's multimodal transportation system needs, and ask BCAG to continue this level of detailed discussion of aviation in future MTP updates. Additional information is available on the Division of Aeronautics web site:
http://www.dot.ca.gov/hq/planning/aeronaut/index.html
You may also contact Colette Armao, Associate Aviation Planner by telephone at 916-654-5346, or by email: colette_armao@dot.ca.gov

Highways and Local Streets and Roads

Please add the following projects to the MTP/SCS under Table 6-3 "Ten Year SHOPP."

Route	Description	Year	Total (1,000s)
32	City of Chico – Upgrade curb ramps and ped facilities	2013	$3,800
70	North of Oroville from Jct. Rte 191 to West Branch Feather River Bridge. (Bridge # 12-0174)	2016	$3,700
70	Install additional paved areas and permanent lighting in chain control areas	2013	$7,070
99	In Butte county in and near Chico from 0.5 miles south of Skyway Overcrossing (Bridge # 12-0167) to 0.10 miles north of Esplanade	2013	$10,000
162	ADA Access	2013	$4,000
162	11 Bridges - Rail Upgrade	2013	$8,800

The following projects should be deleted from the MTP/SCS under Table 6-3 "Ten Year SHOPP." These projects are not part of the 10-Year SHOPP.

Route	Description	Year	Total (1,000s)
32	Big Chico Bridge Scour Mitigation	2014	$150
32	4 Bridges – Rail Upgrade	2014	$1,500
70	5 Bridges – Rail Upgrade	2014	$1,300
70	Pavement Rehab P.M. 13.5-17.0	2014	$8,000
99	Pine Creek Bridge Scour Mitigation	2013	$2,000
162	Drainage Rehab – Big Butte Creek	2016	$1,000

If you have questions or need additional information, please contact Shannon Culbertson, Butte County Regional Planning Liaison at (530) 741-5435 or by e-mail: Shannon_culbertson@dot.ca.gov

Sincerely,

GARY ARNOLD, Chief
Office of Transportation Planning – North

Department of Public Works

County of Butte

J. Michael Crump, *Director*
Shawn H. O'Brien, *Assistant Director*

7 County Center Drive
Oroville, CA 95965-3397
(530) 538-7681
(FAX) 538-7171

August 10, 2011

Jon Clark, Executive Director
Butte County Association of Governments
2580 Sierra Sunrise Terrace, Suite 100
Chico, CA 95928

Dear Jon:

This letter concerns implementation of SB 375 and the preparation of a Sustainable Communities Strategy (SCS) for the Butte County Association of Governments. Your agency recently issued a Public Notice for a series of workshops regarding the preparation of the SCS. Butte County Public Works looks forward to participating in this regional planning process, and has particular interest in the implementation of California Government Code Section 65080 (b) (4) (C), which states:

> "*The metropolitan planning organization or county transportation agency, whichever entity is appropriate, shall consider financial incentives for cities and counties that have resource areas or farmland, as defined in Section 65080.01, for the purposes of, for example, transportation investments for the preservation and safety of the city street or county road system and farm to market and interconnectivity transportation needs. The metropolitan planning organization or county transportation agency, whichever entity is appropriate, shall also consider financial assistance for counties to address countywide service responsibilities in counties that contribute towards the greenhouse gas emission reduction targets by implementing policies for a growth to occur within their cities.*"

I am not aware of any substantive discussions regarding the implementation of this section, either at the Technical Advisory Committee or elsewhere within the MPO. Butte County Public Works would like to request that some actions be undertaken in the regard. Specifically, we believe that the next Regional Transportation Plan should consider a new funding program, called something like the "Resource and Farmland Preservation and Transportation Incentive Fund". I also believe the Sustainable Community Strategy should include some "credit" for agricultural preservation and local food production since food that is produced within Butte County is food that does not have to be imported from farther away.

From my perspective, the basic premise of the proposed "Resources and Farmland Preservation Transportation Incentive Fund" would be to provide an incentive to the County and other local agencies that preserve resource areas and farmland. The fund would provide a source of funding for the preservation and safety of farm-to-market and community-interconnection routes that provide access to such farm-to-market areas. To get the funds, jurisdictions would need to demonstrate that they have resource and/or farmland areas, as defined by the statue, or that they have policies which direct growth to urbanized areas as the Butte County General Plan 2030 presently does. BCAG would then allocate

funding to eligible projects for local street or county road improvements, or for other transportation or emission reduction improvements specifically geared to the movement of farm to market goods.

Addressing agricultural preservation and local food production in the SCS is a difficult challenge, simply because many of us in local government are still unclear exactly how the "base case" and "vision scenario" proposed as the first steps in the planning process will lead to a comprehensive strategy. It seems likely, however, that transportation investments and Regional Housing Needs Allocations will somehow be allocated in the SCS in a manner that is expected to reduce VMT and direct housing to urbanized areas. These are laudable goals and are directly congruent with Butte County's own goals; however, they do not necessarily acknowledge that in rural settings, even limited growth can generate substantial VMT because of the travels distances and lack of economically viable alternatives to the private automobile. I believe these issues warrant explicit attention in the SCS.

We look forward to discussing these ideas with you in more depth at your earliest convenience.

Sincerely,

Mike Crump
Director of Public Works

MC/jg

cc: Butte County Board of Supervisors
Paul Hahn, Chief Administrative Officer
Tim Snellings, Director Development Services

BUTTE COUNTY ASSOCIATION of GOVERNMENTS

2580 Sierra Sunrise Terrace, Suite 100, Chico, California 95928-8441 • (530) 879-2468 • FAX: (530) 879-2444 • www.bcag.org

August 24, 2011

Mike Crump, Director of Public Works
County of Butte
7 County Center Drive
Oroville, CA 95965-3397

Re: Department of Public Works Comment Letter on the Development of 2012 Regional Transportation Plan and Sustainable Communities Strategy and the Implementation of a Financial Incentive.

Dear Mike:

This letter has been prepared in response to the comments provided by the Butte County Department of Public Works regarding BCAG's development of the 2012 Regional Transportation Plan (RTP) and Sustainable Communities Strategy (SCS) and the discussion of financial incentives as described in Senate Bill (SB) 375 (Steinberg).

BCAG would like to thank you in providing comments and personally meeting with us regarding this matter.

As we discussed in our meeting, no additional funds were provided to BCAG, or any of the 18 Metropolitan Planning Organizations (MPO) within California, with the passage of SB 375 for the purpose of funding transportation projects or preparing and implementing such a program described in the County's letter.

As we concluded in our meeting, BCAG will work with the Transportation Advisory Committee (TAC) to include language in the upcoming draft of the 2012 RTP's Financial Element addressing the need to consider a financial incentive for cities and counties that have resource areas or farmlands, as required in SB 375. We anticipate that the language will emphasize the fact that there is no current identifiable source of funding to establish a financial incentive or create the mechanism and criteria for distribution of incentives, but if a new source of funds does become available for the purpose of addressing the financial incentive described in SB 375, the RTP will be amended to consider such an incentive.

We look forward to working with the County and other members of BCAG's Transportation Advisory Committee in addressing this issue.

Sincerely,

Jon Clark,
Executive Director

Cc: Butte County Board of Supervisors
Paul Hahn, Chief Administrative Officer
Tim Snellings, Director Development Services

DEPARTMENT OF THE ARMY
U.S. ARMY ENGINEER DISTRICT, SACRAMENTO
CORPS OF ENGINEERS
1325 J STREET
SACRAMENTO CA 95814-2922

REPLY TO
ATTENTION OF

July 9, 2010

Regulatory Division (SPK-2010-00802)

Mr. Ivan Garcia
Butte County Association of Governments
2580 Sierra Sunrise Terrace, Suite 100
Chico, California 95928-8441

Dear Mr. Garcia:

We are responding to your June 15, 2010 request for comments on the Butte County RTP and FTIP project for Butte County. The project encompasses Butte County, California. Your identification number is SPK-2010-00802.

The Corps of Engineers' jurisdiction is under the authority of Section 404 of the Clean Water Act for the discharge of dredged or fill material into waters of the United States. Waters of the United States include, but are not limited to, rivers, perennial or intermittent streams, lakes, ponds, wetlands, vernal pools, marshes, wet meadows, and seeps. Transportation projects that result in the discharge of dredged or fill material into waters of the United States will require Department of the Army authorization prior to starting work.

The range of alternatives considered for transportation projects included in your Regional Transportation Plan should include alternatives that avoid impacts to wetlands or other waters of the United States. Every effort should be made to avoid project features which require the discharge of dredged or fill material into waters of the United States. In the event it can be clearly demonstrated there are no practicable alternatives to filling waters of the United States, mitigation plans should be developed to compensate for the unavoidable losses resulting from project implementation.

Under Section 404(b)1 of the CWA, proposed discharges of dredged or fill material must conform to guidelines developed by the U.S. Environmental Protection Agency (USEPA). It is mandatory that the 404(b)1 Guidelines be applied to all proposed discharges of dredged and fill material that are subject to approval under Section 404. It is critical for you to note that our Section 404(b)1 Guidelines only allow permit issuance for the least environmentally damaging practicable alternative (LEDPA) in light of the overall project purpose, after weighing the practicability of other alternatives in terms of cost, existing technology, and logistics.

We appreciate your feedback. At your earliest convenience, please tell us how we are doing by completing the customer survey on our website at:
http://per2.nwp.usace.army.mil/survey.html

Please refer to identification number SPK-2010-00802 in any correspondence concerning this project. If you have any questions, please contact Ms. Leah Fisher at our California South Branch Office, 1325 J Street, Room 1480 Sacramento, California 95814-2922, email *Leah.M.Fisher@usace.army.mil*, or telephone 916-557-6639.

For more information regarding our program, please visit our website at *www.spk.usace.army.mil/regulatory.html*.

Sincerely,

Leah M Fisher
Project Manager, California South Branch

10/19/2012

To: Ivan Garcia, Butte County Association of Governments

Hello Ivan,

As BCAG is in the process of reviewing the Metropolitan Transportation Plan, I wanted to take a moment to send you a note to applaud BCAG for its ongoing efforts to be proactive in securing transportation funds for 'active' transportation modes such as bicycling and walking.

At Chico Velo we recognize that your role is instrumental in making bike/pedestrian-friendly projects happen in our local community. These projects, like the Hwy 99 bike path and the 1st and 2nd St Couplet are not only great support for encouraging people to get out of their cars and be more active, they also enhance our neighborhoods and our downtown by creating people-friendly environments rather than finding ways to move people through, faster. We encourage you to continue the good work and support more projects in the next planning cycle!

Thanks for your efforts on the behalf of cyclists!

Janine

Janine Rood
Executive Director,
Chico Velo

APPENDIX - 5

Regional Transportation Plan Checklist

(Revised February 2010)

(To be completed electronically in Microsoft Word format by the MPO/RTPA and submitted along with the draft RTP to Caltrans)

Name of MPO/RTPA: Butte County Association of Governments (BCAG)

Date Draft RTP Completed: September 27, 2012

RTP Adoption Date: December 13, 2012

What is the Certification Date of the Environmental Document (ED)? December 13, 2012

Is the ED located in the RTP or is it a separate document? Separate Document

By completing this checklist, the MPO/RTPA verifies the RTP addresses all of the following required information within the RTP.

Regional Transportation Plan Contents

General

		Yes/ No	Page #
1.	Does the RTP address no less than a 20-year planning horizon? (23 CFR 450.322(a))	Yes	1-1
2.	Does the RTP include both long-range and short-range strategies/actions? (23 CFR part 450.322(b))	Yes	5-1, Chapter 5
3.	Does the RTP address issues specified in the policy, action and financial elements identified in California Government Code Section 65080?	Yes	Cha. 2-Policy Cha. 5&6, Action Cha. 13 – Financial
4.	Does the RTP address the 10 issues specified in the Sustainable Communities Strategy (SCS) component as identified in Government Code Sections 65080(b)(2)(B) and 65584.04(i)(1)? **(MPOs only)**	Yes	Appendix 7 Chapter 4 – SCS.
	a. Identify the general location of uses, residential densities, and building intensities within the region? **(MPOs only)**	Yes	SCS - Pages 4-4 & 4-5
	b. Identify areas within the region sufficient to house all the population of the region, including all economic segments of the population over the course of the planning period of the regional transportation plan taking into account net migration into the region, population growth, household formation and employment growth? **(MPOs only)**	Yes	SCS Chapter 4 Pages 4-4 & 4-5

	Yes/ No	Page #
c. Identify areas within the region sufficient to house an eight-year projection of the regional housing need for the region pursuant to Government Code Section 65584? **(MPOs only)**	Yes	SCS Chapter 4 - Pages 4-4 & 4-5 & Table 4-15
d. Identify a transportation network to service the transportation needs of the region? **(MPOs only)**	Yes	Regional Transportation Network & SCS P. 4-30, Chapters 6-8.
e. Gather and consider the best practically available scientific information regarding resource areas and farmland in the region as defined in subdivisions (a) and (b) of Government Code Section 65080.01? **(MPOs only)**	Yes	Resource Areas and Farmlands Considerations Page 4-17
f. Consider the state housing goals specified in Sections 65580 and 65581? **(MPOs only)**	Yes	Page 4-15
g. Utilize the most recent planning assumptions, considering local general plans and other factors? **(MPOs only)**	Yes	Pages 4-1 and 4-2
h. Set forth a forecasted development pattern for the region, which, when integrated with the transportation network, and other transportation measures and policies, will reduce the greenhouse gas emissions from automobiles and light trucks to achieve, if there is a feasible way to do so, the greenhouse gas emission reduction targets approved by the ARB? **(MPOs only)**	Yes	Page 4-1
i. Provide consistency between the development pattern and allocation of housing units within the region (Government Code 65584.04(i)(1)? **(MPOs only)**	Yes	Page 4-5, Table 4-3, Table 4-4, Appendix 7
j. Allow the regional transportation plan to comply with Section 176 of the federal Clean Air Act (42 U.S.C. Section 7506)? **(MPOs only)**	Yes	AQ Conformity, Appendix 1
4. Does the RTP include Project Intent i.e. Plan Level Purpose and Need Statements?	Yes	Page 6-1, 7-2,8-1, 9-2
5. Does the RTP specify how travel demand modeling methodology, results and key assumptions were developed as part of the RTP process? (Government Code 14522.2) **(MPOs only)**	Yes	4-30
<u>Consultation/Cooperation</u>	Yes	Appendix 3
1. Does the RTP contain a public involvement program that meets the requirements of Title 23, CFR part 450.316(a)?		

	Yes/ No	Page #
2. Did the MPO/RTPA consult with the appropriate State and local representatives including representatives from environmental and economic communities; airport; transit; freight during the preparation of the RTP? (23CFR450.316(3)(b))	Yes	PPP – Appendix 3
3. Did the MPO/RTPA who has federal lands within its jurisdictional boundary involve the federal land management agencies during the preparation of the RTP?	Yes	PPP – Appendix 3
4. Where does the RTP specify that the appropriate State and local agencies responsible for land use, natural resources, environmental protection, conservation and historic preservation consulted? (23 CFR part 450.322(g))	Yes	Appendix 2 – EIR , Appendix 3 - PPP
5. Did the RTP include a comparison with the California State Wildlife Action Plan and (if available) inventories of natural and historic resources? (23 CFR part 450.322(g))	Yes	Appendix 2 - EIR
6. Did the MPO/RTPA who has a federally recognized Native American Tribal Government(s) and/or historical and sacred sites or subsistence resources of these Tribal Governments within its jurisdictional boundary address tribal concerns in the RTP and develop the RTP in consultation with the Tribal Government(s)? (Title 23 CFR part 450.316(c))	Yes	Appendix 3 - PPP
7. Does the RTP address how the public and various specified groups were given a reasonable opportunity to comment on the plan using the participation plan developed under 23 CFR part 450.316(a)? (23 CFR 450.316(i))	Yes	Appendix 3 - PPP
8. Does the RTP contain a discussion describing the private sector involvement efforts that were used during the development of the plan? (23 CFR part 450.316 (a))	Yes	Appendix 3 - PPP
9. Does the RTP contain a discussion describing the coordination efforts with regional air quality planning authorities? (23 CFR 450.316(a)(2)) **(MPO nonattainment and maintenance areas only)**	Yes	Appendix 3 - PPP
10. Is the RTP coordinated and consistent with the Public Transit-Human Services Transportation Plan?	Yes	Page 7-20, 7-21
11. Were the draft and adopted RTP posted on the Internet? (23 CFR part 450.322(j))	Yes	http://www.bcag.org/Planning/2012-MTP/index.html
12. Did the RTP explain how consultation occurred with locally elected officials? (Government Code 65080(D)) **(MPOs only)**	Yes	Appendix 3 - PPP
13. Did the RTP outline the public participation process for the sustainable communities strategy? (Government Code 65080(E) **(MPOs only)**	Yes	Appendix 3 & Appendix 8

Modal Discussion

1. Does the RTP discuss intermodal and connectivity issues?	Yes	Action Element Chapters 6-12

	Yes/ No	Page #
2. Does the RTP include a discussion of highways?	Yes	Chapter 6
3. Does the RTP include a discussion of mass transportation?	Yes	Chapter 7
4. Does the RTP include a discussion of the regional airport system?	Yes	Chapter 10
5. Does the RTP include a discussion of regional pedestrian needs?	Yes	Chapter 8
6. Does the RTP include a discussion of regional bicycle needs?	Yes	Chapter 8
7. Does the RTP address the California Coastal Trail? (Government Code 65080.1) **(For MPOs and RTPAs located along the coast only)**	No	Not Applicable
8. Does the RTP include a discussion of rail transportation?	Yes	Chapter 11
9. Does the RTP include a discussion of maritime transportation (if appropriate)?	No	Not Applicable
10. Does the RTP include a discussion of goods movement?	Yes	Chapter 12

Programming/Operations

1. Is a congestion management process discussed in the RTP? (23 CFR part 450.450.320(b)) **(MPOs designated as TMAs only)**	No	Not Applicable
2. Is the RTP consistent (to the maximum extent practicable) with the development of the regional ITS architecture?	Yes	Chapter 9
3. Does the RTP identify the objective criteria used for measuring the performance of the transportation system?	Yes	Page 3-26, 3-27
4. Does the RTP contain a list of un-constrained projects?	Yes	Table 13-9, Page 13-26

Financial

1. Does the RTP include a financial plan that meets the requirements identified in 23 CFR part 450.322(f)(10)?	Yes	Chapter 13
2. Does the RTP contain a consistency statement between the first 4 years of the fund estimate and the 4-year STIP fund estimate? (2006 STIP Guidelines, Section 19)	Yes	Chapter 13, Page 13-1, 13-7
3. Do the projected revenues in the RTP reflect Fiscal Constraint? (23 CFR part 450.322(f)(10)(ii))	Yes	Page 13-3, 13-7
4. Does the RTP contain a list of financially constrained projects? Any regionally significant projects should be identified. (Government Code 65080(4)(A))	Yes	Chapter 6

	Yes/ No	Page #
5. Do the cost estimates for implementing the projects identified in the RTP reflect "year of expenditure dollars" to reflect inflation rates? (23 CFR part 450.322(f)(10)(iv))	Yes	13-1
6. After 12/11/07, does the RTP contain estimates of costs and revenue sources that are reasonably expected to be available to operate and maintain the freeways, highway and transit within the region? (23 CFR 450.322(f)(10)(i))	Yes	Financial Element. Page 13-3, 13-7
7. Does the RTP contain a statement regarding consistency between the projects in the RTP and the ITIP? (2006 STIP Guidelines section 33)	Yes	Page 5-1, 6-1
8. Does the RTP contain a statement regarding consistency between the projects in the RTP and the FTIP? (2006 STIP Guidelines section 19)	Yes	Page 5-1, 6-1
9. Does the RTP address the specific financial strategies required to ensure the identified TCMs from the SIP can be implemented? (23 CFR part 450.322(f)(10)(vi) (**nonattainment and maintenance MPOs only**)	No	Not applicable, No TCMs for Butte County

Environmental

1. Did the MPO/RTPA prepare an EIR or a program EIR for the RTP in accordance with CEQA guidelines?	Yes	Appendix 2
2. Does the RTP contain a list of projects specifically identified as TCMs, if applicable?	No	N/A
3. Does the RTP contain a discussion of SIP conformity, if applicable? **(MPOs only)**	Yes	Appendix 1
4. Does the RTP specify mitigation activities? (23 CFR part 450.322(f)(7))	Yes	Appendix 2
5. Where does the EIR address mitigation activities?	Yes	Appendix 2 – ES -5
6. Did the MPO/RTPA prepare a Negative Declaration or a Mitigated Negative Declaration for the RTP in accordance with CEQA guidelines?	No	A Program EIR was prepared
7. Does the RTP specify the TCMs to be implemented in the region? **(federal nonattainment and maintenance areas only)**	No	Not applicable, No TCMs for Butte County

I have reviewed the above information and certify that it is correct and complete.

(Must be signed by MPO/RTPA Executive Director or designated representative)

9/27/2012
Date

Jon Clark
Print Name

Executive Director
Title

APPENDIX 6

Butte County Association of Governments
2012 Metropolitan Transportation Plan
Sustainable Communities Strategy

Technical Methodology for Estimating Greenhouse Gas Emissions

The work upon which this publication is based was funded in whole or in part through a grant awarded by the Strategic Growth Council

Purpose

As required by the Sustainable Communities and Climate Protection Act of 2008, BCAG has prepared this document describing the technical methodology it has used in estimating greenhouse gas emissions from its 2012 Metropolitan Transportation Plan /Sustainable Communities Strategy (MTP/SCS). An initial report, prepared by BCAG in 2011, was reviewed by the California Air Resources Board (ARB) in order to insure that the methods would yield accurate measures of greenhouse gas emissions.

SB 375 Background

In September 2008, Senate Bill 375 (SB 375), also known as the Sustainable Communities and Climate Protection Act of 2008, was enacted by the state of California. SB 375 prompts regions to reduce greenhouse gas (GHG) emissions from passenger vehicles through the coordinated planning of long range transportation plans. The new legislation requires all Metropolitan Planning Organizations (MPO) in California to develop a Sustainable Communities Strategy, which meets regional passenger vehicle GHG emissions targets, as an additional element of their regional transportation plans. BCAG's 2012 MTP/SCS update is to be completed by December 2012.

As described in SB 375, the SCS will be an integrated transportation and land use plan which is intended to meet the regional GHG target for the years 2020 and 2035 while also accommodating the region's forecasted growth. If the SCS is unable to meet the regional GHG target within the required state and federal constraints for RTP development, then an Alternative Planning Strategy (APS) must be prepared. The APS will identify how GHG targets would be achieved through alternative development patterns, infrastructure, or additional transportation measures or policies.

In February 2011, ARB approved regional passenger vehicle GHG targets for all of California's 18 MPOs, including the Butte County Association of Governments (BCAG). The Butte County region's targets for the years 2020 and 2035, for this first round of the MTP/SCS development, are to achieve no greater than a 1% increase in per capita CO2 emissions from passenger vehicles, from 2005 levels. The metric used for preparing the reductions will be GHG emissions per capita.

Model Development

BCAG was awarded both a Caltrans 5304 Planning Grant and Strategic Growth Council Model Improvement Plan Grant for the purpose of enhancing BCAG's regional modeling capabilities to assist in preparing and quantifying the region's 2012 MTP/SCS. The enhancements from each of these grants are included in the descriptions for each model within the section below and included in Attachments 1 & 2. The improvements from these grants were implemented by BCAG and used in preparing the MTP/SCS.

Modeling the 2012 MTP/SCS

BCAG utilized 3 models to prepare the 2012 MTP/SCS and estimate the GHG emissions: (1) BCAG Regional Land Use Allocation Model, (2) BCAG Regional Travel Demand Model (a three-step transportation forecasting model), and (3) the 2007 emission factors (EMFAC) model from ARB.

Land Use Allocation Model

The BCAG Land Use Allocation Model was developed by a team of project consultants from the University of California Davis – Information Center for the Environment (ICE), California State University, Chico – Geographical Information Center (GIC), and Fehr & Peers. The model utilizes the UPlan software platform, which has been implemented broadly across the state for various Blueprint planning efforts. UPlan is a rule based model which allocates future residential and employment growth while considering the region's existing land use plans, growth forecasts, and development attractions (e.g. transportation and infrastructure) and discouragements (e.g. resource areas, farmland, and floodplains).

The land use allocation model uses the base year of 2010, to coincide with the latest available validated travel model and existing land use datasets. Land use scenarios were developed for the GHG target years of 2020 and 2035. After completion of the scenarios, the model outputs were summarized by traffic analysis zone (TAZ) and used as inputs for the regional travel demand model.

Attachment #1 contains the documentation for the BCAG Land Use Allocation Model.

Travel Demand Model

The BCAG Travel Demand Model uses the TransCAD software package to forecast travel activity. The transportation model requires two major inputs. The first input is the forecasted allocation of housing and non-residential land uses from the land use allocation model. The other input is the regional road network. Inputs are prepared for the emissions analysis year of 2005, the model base year (2010), and the GHG target years of 2020 and 2035.

The first version of this model was developed in 2007 and validated to the 2006 base year. The model is a three step travel demand forecasting model consisting of Trip Generation, Trip Distribution, and Trip Assignment. In 2012, the model was updated to include the following components.

- Validating the base year to 2010 consistent with the 2010 California Regional Transportation Guidelines
- Increasing sensitivities for age of head of household, number of workers, income household size, and cost of travel.

- Adding multiple time periods (daily, AM peak period, AM peak hour, PM peak period, PM peak hour, mid-day period, and evening period conditions)
- Implementing the 4D's (density, diversity, design, and destination accessibility)
- Adding a new transit forecasting component.

These new updates were utilized in preparing and quantifying the 2012 MTP/SCS.

The travel model outputs vehicle trips (VT), vehicle miles traveled (VMT), vehicle hours of travel (VHT), delay, and congestion, for both on and off peak travel periods and for various trip end types (e.g. II, XX, and IX-XI) for the years 2005, 2010 and GHG target years (2020 and 2035). A post-processor is used to prepare the data for the vehicle emissions model (EMFAC). The post-processor divides the VMT into 13 separate speed bins set at 5 mile per hour intervals.

Attachment #2 contains the documentation for the BCAG Regional Travel Demand Model.

EMFAC

ARB's 2007 emissions factor model (EMFAC) has been used to calculate the greenhouse gas, carbon dioxide (CO2), emissions output based on the provided VMT and speed bin classification from the travel model and post-processor. BCAG utilized the annual option for CO2 output as suggested by the RTAC report.

Once all trips were ran in EMFAC, BCAG extracted the total VMT and carbon dioxide (CO2) emissions for LDA, LDT1, LDT2, and MDV vehicle types. This ensured that only passenger vehicle (cars and light trucks) types were included in the emissions analysis.

In 2010, ARB released the Pavley 1 + LCFS post processor for EMFAC. This post processor was not used by BCAG.

Modeling Interregional Trips

For the purpose of preparing the GHG emissions analysis for 2012 MTP/SCS, BCAG subtracted all emissions from through trips (X-X trips). In addition, the portion of VMT from trips that either begin or end within the region but travel to/from neighboring regions (X-I, I-X trips) has been included for all portions of the trip within the BCAG region, this is consistent with the method used in preparing the targets.

The percentage of VMT by through trip type (X-X) was calculated for the years 2005, 2020, and 2035.

Table 1 contains the percent of VMT associated with through trips for the years 2005, 2020, and 2035.

Table 1.

2012 BCAG MTP/SCS – Through Trips			
	2005 Base Yr	**2020 Interim Yr**	**2035 Horizon Yr**
% of Through (X-X) Trips	3.4%	4.1%	5.3%

Source: Fehr & Peers, 2012 – BCAG Travel Demand Forecasting Model, 2035 Cumulative Year.

GHG Emissions in the 2012 MTP/SCS

As prescribed by the final ARB-RTAC report, BCAG staff quantified the outputs from the modeling methods described in this document using the target metric in terms of a percent reduction in per capita greenhouse gas emissions (CO2) from base year levels.

The baseline year for the BCAG GHG forecasts is 2005, as requested by ARB in its November 17, 2011 letter to BCAG (Attachment #3) and as stated in ARB's approved Resolution 10-31. BCAG has prepared the 2005 base year data utilizing the updated travel demand model and performing a "backcast" from the validated year of 2010. During the target setting process, the base year of 2006 was utilized by BCAG since it was the closest available model year from BCAG's 2008 MTP. Attachment # 4 contains a table illustrating the modeling parameters for the years 2005, 2006, 2010, 2020, and 2035.

Table 2 contains the per capita GHG emissions and calculations for the years 2005, 2020, and 2035 for BCAG's 2012 MTP/SCS.

Table 2.

2012 BCAG MTP/SCS – GHG Emission Calculations			
	2005 Base Yr	**2020 Interim Yr**	**2035 Horizon Yr**
Passenger Vehicle Weekday VMT	3,668	4,397	5,681
Population	214,582	257,266	332,459
Weekday CO2 (tons)	1,770	2,080	2,690
Per Capita CO2 (lbs)	16.50	16.17	16.18
% Reduction VMT Per Capita from '05		0.01%	0.03%
% Reduction CO2 Per Capita from '05		1.98%	1.91%

Notes:

VMT and CO2 from passenger vehicles (LDA, LDT1, LDT2, and MDV);

Trips based on intra-regional and inter-regional travel (no through trips);

Growth based on BCAG Regional Growth Forecasts 2010-2035 medium scenario.

Butte County Association of Governments

Land Use Allocation Model

Technical Methodology for Preparing 2012 Metropolitan Transportation Plan / Sustainable Communities Strategy Land Use Allocation

November 2012

The work upon which this publication is based was funded in whole or in part through a grant awarded by the Strategic Growth Council

INTRODUCTION

BCAG, in coordination with local agency members, California State University-Chico, and the University of California at Davis, developed the Butte County region's first land use allocation model for the purpose of assisting in preparing the forecasted development pattern for BCAG's 2012 Metropolitan Transportation Plan (MTP) and Sustainable Communities Strategy (SCS). The model was used by BCAG in developing three distinctive land use allocation scenarios to be analyzed as part of the 2012 MTP/SCS. The following describes the process used in preparing the allocations utilizing the model.

DATA PREPARATION

Three scenarios were developed to model future planned growth in the Butte County region. In preparing an individual scenario, growth was modeled separately for each of the Butte County Association of Government's (BCAG) member jurisdictions and combined into one county-wide growth projection for each scenario. BCAG member jurisdiction's boundaries included Chico, Paradise, Oroville, Gridley, Biggs, and the remaining unincorporated area of Butte County.

General Plan

A standard list of general plan classification code values were developed for use in the model. Each of the jurisdiction's general plan classifications was cross-walked into one of twenty standard modeling classifications (See Appendix A). This addressed any variations in general plans across the county, and allowed for the implementation of a single countywide general plan classification system. The purpose of the general plan modeling classifications is to restrict the type and location of new growth to designated areas when preparing the allocations.

Planning Areas

Planning area boundaries were created to define the extent of each jurisdiction, for planning purposes. The extents determine the areas in which a jurisdictions future growth allocation is accounted for. The Oroville planning area was further divided into an Oroville-City and Oroville-County due to the overlap in anticipated growth planned by both the City and County. Planning areas were adapted from a combination of jurisdiction city limits, Local Agency Formation Commission (LAFCo) spheres of influence, general plan and special planning area considerations. Planning areas do not overlap one another and together they encompass the entirety of Butte County (See Appendix B).

Land Use Assumptions

Land Use (LU) assumptions for regional and jurisdiction specific employment and housing characteristics were developed for each of the modeling classifications where new growth was assigned (See Appendix C). These assumptions included metrics for the following:

- Dwelling units per acre (DU/AC): Density of homes for a specific residential or mixed use land classification.
- Average square footage per employee (Avg. SF/E): Density of employees working in a business (Retail, Office, Industrial, or Mixed Use).
- Floor Area Ratio (FAR): Described as the relationship between the total useable floor space inside of a building(s) and the total area of the lot where building(s) are located.
- Mixed use ratio: Mixed use LU classifications receive a percentage of two or more different LU types (Residential, Retail, Office, and Industrial).

Attractors, Discouragements, and Masks

Attractors, discouragements, and masks, are used in the model to assist in determining where specific types of new growth may be desirable, unfavorable, or not allowed. Attractors (Table 1.) are defined as features that promote or make new growth more suitable. An example of which would be existing bike routes. Residents of a new housing development next to an established bike route will have better and safer alternative transportation options. Discouragements (Table 2.) are defined as features that deter or make new growth less desired in an area. An example is prime farmland. New development on land with ideal conditions for farming would not be considered desirable, based on local planning policies. Masks (Table 3.) are areas where new growth is not permitted or reasonably foreseeable to occur. Areas such as existing development, public parks, and protected lands are all examples of areas where growth is not permitted. Below is a list of attractors, discouragements, and masks used in the development of the Butte County urban growth model.

Table 1. Attraction Layers
Butte Regional Conservation Plan – Urban Permit Areas
City Spheres of Influence
City Limits
Butte Regional Transit Bus Routes
Bike Routes
Regional Road Network
Service Districts (LAFCo)
Oroville Enterprise Zone

Table 2. Discouragement Layers
Federal Flood Zones
California Land Conservation Act Lands
Prime Farmlands
Butte Regional Conservation Plan – Ecological Baseline Areas
Areas of Slope 15 to 25%

Table 3. Mask Layers
Public Park Lands
Existing Protected Lands
Existing Developed Lands
Butte Regional Conservation Plan – Draft Preserve Hardline Area
Lakes
Rivers
Existing Right of Ways
Areas of Slope > 25%
Public Lands
Federal Lands
Utility Lands
State Lands
Union Pacific Lands
Proposed/Approved Development Areas

Layer Weighting

In addition, each attraction and discouragement has associated weights at specified buffer distances, specific to each particular modeled land use classification (See Appendix D). The further away new growth is from an attracting feature; the less desirable the location is for development. Discouragement weighting works just the opposite; the further from a discouraging feature, the more desirable the location is for development within the model. Appendix E-1 through E-3 includes three “heat maps” developed using the weighting and referenced by planners when preparing the scenarios.

Available Lands

For each jurisdiction, an “available lands” (See Appendix F) layer was created by overlaying the General Plan with each jurisdiction’s plan area and the mask layers. First the land use layer was overlaid with a chosen jurisdiction’s plan area. All modeled land use classifications not inside the plan area were removed, leaving only model land uses specific to the plan area. The remaining area was then overlaid with all applicable mask

layers. All modeled areas that intersected with a mask, were then removed. The final remaining area consists of all the “available lands” for new growth within the plan area. This process was repeated for each jurisdiction. Appendix G is included and illustrates the areas masked in preparing the “available lands”.

ALLOCATING FUTURE LAND USES

Once data and inputs were prepared, allocation of new growth began. First the “available lands” layers attribute tables were imported into a spreadsheet based allocation model for each jurisdiction, which included specific tables for allocating growth for planned development, mixed use (employment and housing), and redevelopment.

Growth Areas

Each jurisdiction was further broken down into Growth Areas. Jurisdiction plan areas were split into five Growth Areas; center, established, new, rural, and agricultural growth areas. Center growth areas are downtown and central business areas where higher densities of commercial LU’s were present. Established growth areas are within the currently built environment. They represented areas where infill and redevelopment opportunities are present. New growth areas are where new development could occur outside of the currently established built environment. Rural and agricultural growth areas are only present in the unincorporated county jurisdiction and represented areas for new growth that are separated from any incorporated area in the county. Appendix H is included illustrating the locations of Growth Areas.

Allocation Process

Allocation of forecasted development for each Growth Area was based on the considerations of regional guiding principles and growth forecasts, current and proposed land use plans, modeled attractions and discouragements, and input from local jurisdiction planners and public outreach. Allocations were prepared for the region using the process of combining available lands growth, planned development, and redevelopment at the parcel group and TAZ levels in GIS format.

Available Lands Allocation

The allocation spreadsheets prepared for the “available lands” were translated back to a GIS based model for each growth area. Conversion was performed at the traffic analysis zone (TAZ) and parcel group level for analysis and input to the travel demand model and 4Ds post processor. Allocation spreadsheets outlined how much growth was to occur in each modeled land use classification per growth area. The growth was then

distributed between all parcels of the particular land use classification based on the total percentage of development for that particular class. For example, if the High Density Residential (HDR) land use class was to receive a 40% allocation, all HDR areas received equal portions of that allocation based on parcel size.

Planned Projects Allocation

In the case of planned projects, or projects which have been or are likely to be approved by local agencies and can reasonably be assumed to develop within the 2012 MTP/SCS planning period, details on the location and development is pre-determined. For these situations growth was allocated into specified parcels, split by TAZ. Appendix I-1 contains the locations of planned projects allocated in the model. In addition, Appendix I-2 contains the detailed listing of planned projects by plan area.

Redevelopment Allocation

Redevelopment was allocated into designated parcels where redevelopment opportunities existed, based on input from local jurisdiction planning staff. The same techniques for allocating the available lands were applied. In most cases a percentage of the existing land uses were subtracted from the redevelopment allocation to account for displaced existing uses. In other cases redevelopment was accomplished by reclaiming underutilized space such as removing portions of an existing parking lot. For these cases, no existing uses were displaced. Appendix J illustrates the general location of areas receiving redevelopment allocations.

Final Allocation Files

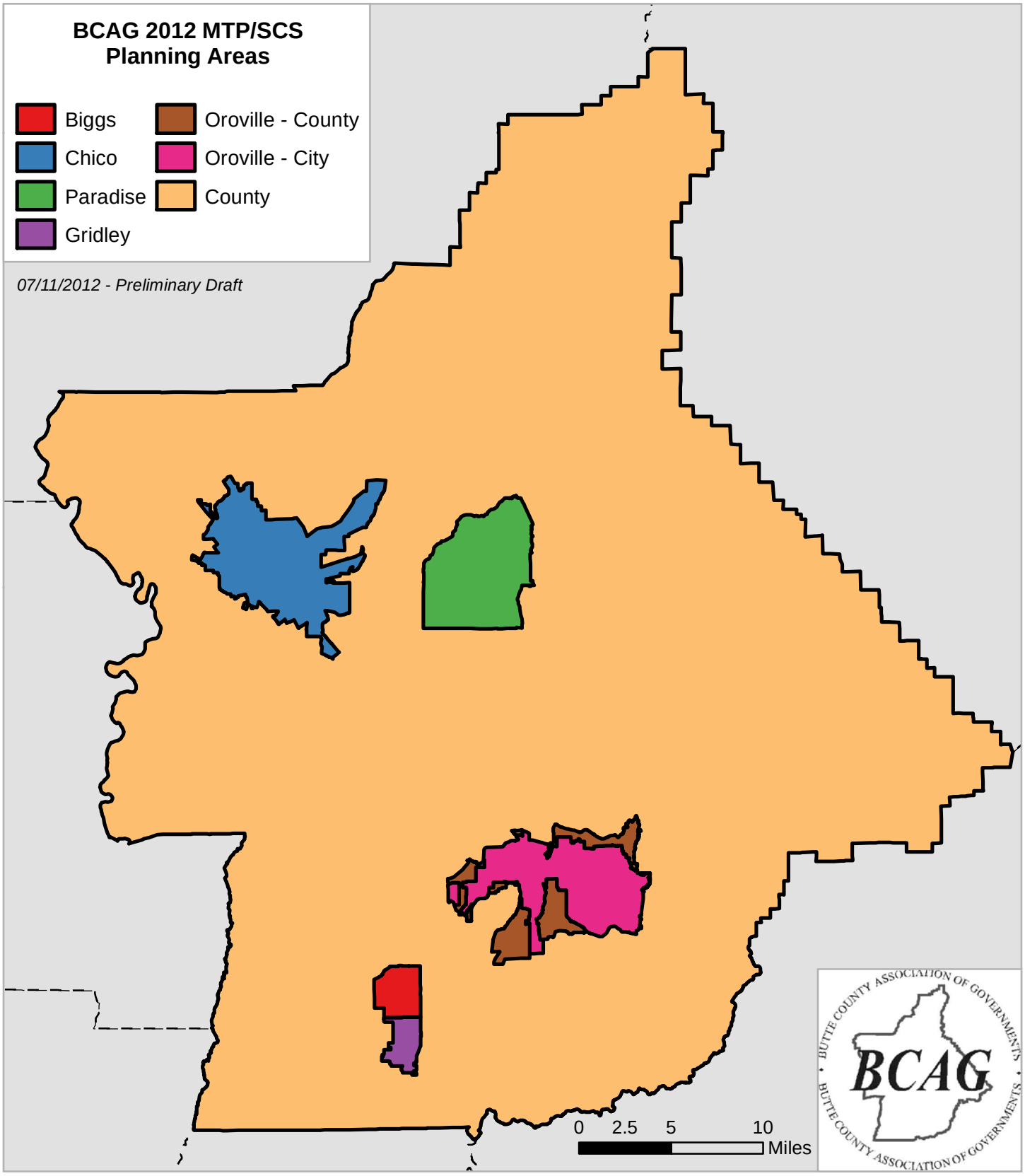
The results were shapefiles with attributes containing the allocated growth for each sub area. These were then merged together into a single county-wide shapefile. Growth types were then cross-walked into travel demand model (TransCAD) classifications. The final Butte County Allocation shapefile was then delivered to the travel modeling team for incorporation in the travel demand model. Appendix K illustrates the areas receiving final allocations by modeled land use classification for land use scenario #1.

APPENDIX A.

General Plan Class to Model Class Crosswalk

Model Code	Model Classification	TransCAD Classification	City of Chico 2030 GP (Final)	Town of Paradise 1994 GP	City of Gridley GP 2030 (Final)	City of Biggs GP 2030 (Pending)	City of Oroville GP 2030 (Final)	Butte County GP 2030 (Final)
0	Unclassified	N/A			Right of Way (ROW), Right of Way Railroad (ROWR), Right of Way Water (ROWW)	Right of Way (ROW), Railroad ROW (RR)	Right of Way (ROW)	Right of Way (ROW), Sports and Entertainment (SE)
1	Agriculture	N/A			Agriculture (AG)	Agriculture (A)		Agriculture (AG)
2	Industry	IND_KSF	Manufactoring and Warehouse (MW)			Agriculture Industrial (AI), Heavy Industrial (HI)	Industrial (IND)	Industrial (I)
4	Agriculture	N/A				Agriculture Commercial (AC)		
5	Office Commercial	OFF_KSF					Office (OFC)	
6.1	Mixed Use Retail	RET_KSF & OFF_KSF	Neighborhood Commercial (NC)	Neighborhood Commercial (NC)	Downtown Mixed Use (DMU)	Commercial (C)	Mixed Use Commercial (MUC)	Mixed Use (MU)
6.2	Mixed Use Retail	RET_KSF & OFF_KSF & MF_DU	Commercial Mixed Use (CMU)	Central Commercial (CC)	Neighborhood Center Mixed Use (MU)	Downtown Mixed Use (DMU)	Retail and Business Services (RBS)	Retail and Office (RTL)
6.3	Mixed Use Retail	RET_KSF & OFF_KSF & MF_DU	Commercial Mixed Use (CMU) with Downtown or Corridor Overlays (OS-3, 7, 9, 13, 14, 15)	Town Commercial (TC)	Commercial (C)	Mixed Use (MU)	Airport Business Park (ABP)	Industrial (I) and Rural Residential (RR) with Retail Overlay (Retail)
6.4	Mixed Use Retail	RET_KSF & OFF_KSF & IND_KSF	Commercial Services (CS)	Business Park (BP)				Recreation Commercial (REC)
6.5	Mixed Use Retail	RET_KSF & OFF_KSF & MF_DU	Regional Commercial (RC)	Community Service (CS)				Research and Business (RBP)
6.6	Mixed Use Office	RET_KSF & OFF_KSF & MF_DU	Office Mixed Use (OMU)					
6.7	Mixed Use Office	RET_KSF & OFF_KSF & MF_DU	Office Mixed Use (CMU) with Downtown or Corridor Overlays (OS-3, 7, 9, 13, 14, 15)					
7	Mixed Use Industrial	IND_KSF & OFF_KSF	Industrial Office Mixed Use (IOMU)	Light Industrial (LI)	Industrial (M), Agriculture Industrial (AI)	Light Industrial (LI)		Agriculture Services (AS)
8.1	Mixed Use Residential	MF_DU & RET_KSF & OFF_KSF	Residential Mixed Use (RMU)					
8.2	Mixed Use Residential	MF_DU & RET_KSF & OFF_KSF	Residential Mixed Use (RMU) with Downtown and Corridor Overlays (OS-3, 7, 9, 13, 14, 15)					
9	High Density Residential	MF_DU	High Density Residential (HDR)		Residential High Density 2 (RHD 2)	High Density Residential (HDR)	High Density Residential (HDR)	High Density Residential (HDR)
10	Medium-High Density Residential	MF_DU	Medium-High Density Residential (MHDR)	Multi-Family Residential (MR)			Medium High Density Residential (MHDR)	
11	Medium Density Residential	SF_DU	Medium Density Residential (MDR)		Residential High Density 1 (RHD 1)	Medium Residential (MDR)	Medium Density Residential (MDR)	Medium High Density Residential (MHDR)
12	Low Density Residential	SF_DU	Low Density Residential (LDR)	Rural Residential (RR) and Town Residential (TR)	Residential Medium Density (RMD), Residential Low Denisty (RLD)	Low Density Residential (LDR)	Medium Low Density Residential (MLDR)	Medium Density Residential (MDR)
13	Very Low Density Residential	SF_DU	Very Low Density Residential (VLDR)	Agricultural Residential (AR)	Residential Very Low Density (RS)		Low Density Residential (LDR)	Very Low Density Residential (VLDR), Low Density Residential (LDR)
14	Rural Residential	SF_DU						Foothill Residential (FR), Rural Residential (RR)
15	Planned Development	N/A	Special Mixed Use (SMU)					Planned Unit Development (PUD)
16	Public Lands & Open Space	N/A	Primary Open Space (POS), Secondary Open Space (SOS)	Recreational (R), Open Space/Agricultural (OS/AG)	Park (PARK), Open Space (OS)		Park (PARK), Environmental Conservation/Safety (ECS), Resource Management (RM)	Resource Conservation (RC)
17	Water Bodies	N/A					State Water Project (SWP)	
18	Urban Reserve	N/A			Urban Reserve (UR)			
19	Timber	N/A		Timber Production (TP)				Timber Mountain (TM)
20	Public Facilities	N/A	Public Facilities and Services (PFS)	Public Institutional (PI)	School (S), Public (PUB)	Public (P)	Public (PUB)	Public (P)

APPEDNIX B.


BCAG 2012 MTP/SCS
Planning Areas
Biggs
Chico
Paradise
Gridley
Oroville - County
Oroville - City
County
07/11/2012 - Preliminary Draft
0 2.5 5 10
Miles
BUTTE COUNTY ASSOCIATION OF GOVERNMENTS
BCAG
BUTTE COUNTY ASSOCIATION OF GOVERNMENTS

APPENDIX C.

Modeling Assumptions

		CHICO				PARADISE				GRIDLEY				BIGGS			
Model Code	**Model Classification**	**DU / AC**	**AVG SF / E**	**FAR**	**Mixed Use Ratio RES / RET / OFF / IND**	**DU / AC**	**AVG SF / E**	**FAR**	**Mixed Use Ratio RES / RET / OFF / IND**	**DU / AC**	**AVG SF / E**	**FAR**	**Mixed Use Ratio RES / RET / OFF / IND**	**DU / AC**	**AVG SF / E**	**FAR**	**Mixed Use Ratio RES / RET / OFF / IND**
2	Industry		900	0.35			900	0.35			900	0.35			900	0.35	
5	Office Commercial		300	0.35			300	0.35			300	0.35			300	0.35	
6.1	Mixed Use Retail		500	0.3	0 / 85 / 15 / 0	0	416.7	0.5	0 / 70 / 30 / 0	20	454.5	1	10 / 60 / 30 / 0		428.6	0.3	0 / 70 / 30 / 0
6.2	Mixed Use Retail	13	545.5	0.3	10 / 75 / 15 / 0	13	555.6	1	30 / 40 / 30 / 0		428.6	0.3	0 / 70 / 30 / 0	20	454.5	1	10 / 60 / 30 / 0
6.3	Mixed Use Retail	33	537.6	1.7	15 / 73 / 12 / 0	6.5	555.6	0.5	30 / 40 / 30 / 0		428.6	0.3	0 / 70 / 30 / 0	13	461.5	0.3	10 / 60 / 30 / 0
6.4	Mixed Use Retail		534.7	0.3	0 / 85 / 10 / 5		403	0.3	0 / 40 / 40 / 20								
6.5	Mixed Use Retail	15.5	531	0.3	3 / 85 / 12 / 0		545.5	0.3	30 / 40 / 30 / 0								
6.6	Mixed Use Office	13	305.1	0.3	10 / 10 / 80 / 0	0											
6.7	Mixed Use Office	30	365	1.7	13 / 12 / 75 / 0	13											
7	Mixed Use Industrial	10.5	562.5	0.35	0 / 0 / 30 / 70		750	0.35	0 / 0 / 10 / 90		642.9	0.35	0 / 0 / 20 / 80		642.9	0.35	0 / 0 / 20 / 80
8.1	Mixed Use Residential	16.2	400	0.3	95 / 2 / 3 / 0												
8.2	Mixed Use Residential	50	400	1.7	90 / 5 / 5 / 0												
9	High Density Residential	40								22.5				20			
10	Medium-High Density	18.5				13											
11	Medium Density Residential	12								12				10			
12	Low Density Residential	5.1								5				4			
13	Very Low Density Residential	1.1				1.5				1							
14	Rural Residential																

		OROVILLE				OROVILLE - COUNTY PORTION				COUNTY			
Model Code	**Model Classification**	**DU / AC**	**AVG SF / E**	**FAR**	**Mixed Use Ratio RES / RET / OFF / IND**	**DU / AC**	**AVG SF / E**	**FAR**	**Mixed Use Ratio RES / RET / OFF / IND**	**DU / AC**	**AVG SF / E**	**FAR**	**Mixed Use Ratio RES / RET / OFF / IND**
1	Agriculture									0.05			
2	Industry		900	0.35			900	0.35			900	0.35	
5	Office Commercial		300	0.35			300	0.35			300	0.35	
6.1	Mixed Use Retail	20	507	0.3	15 / 60 / 25 / 0	13	514.3	0.3	10 / 70 / 20 / 0	13	461.5	0.3	10 / 60 / 30 / 0
6.2	Mixed Use Retail		428.6	0.3	0 / 70 / 30 / 0		473.7	0.3	0 / 80 / 20 / 0		409.1	0.3	0 / 65 / 35 / 0
6.3	Mixed Use Retail		337.5	0.3	0 / 30 / 60 / 10		428.6	0.3	0 / 70 / 30 / 0		409.1	0.3	0 / 65 / 35 / 0
6.4	Mixed Use Retail						473.7	0.3	0 / 80 / 20 / 0		409.1	0.3	0 / 65 / 35 / 0
6.5	Mixed Use Retail						275.5	0.3	0 / 0 / 90 / 10		275.5	0.3	0 / 0 / 90 / 10
6.6	Mixed Use Office												
6.7	Mixed Use Office												
7	Mixed Use Industrial						818.2	0.35	0 / 10 / 10 / 80		732.6	0.35	0 / 10 / 10 / 80
8.1	Mixed Use Residential												
8.2	Mixed Use Residential												
9	High Density Residential		25			20				20			
10	Medium-High Density		18.5										
11	Medium Density Residential		13			13				13			
12	Low Density Residential		5.5			4.5				4.5			
13	Very Low Density Residential		1			1				1			
14	Rural Residential		0.1			0.1125				0.1125			
19	Timber									0.00625			

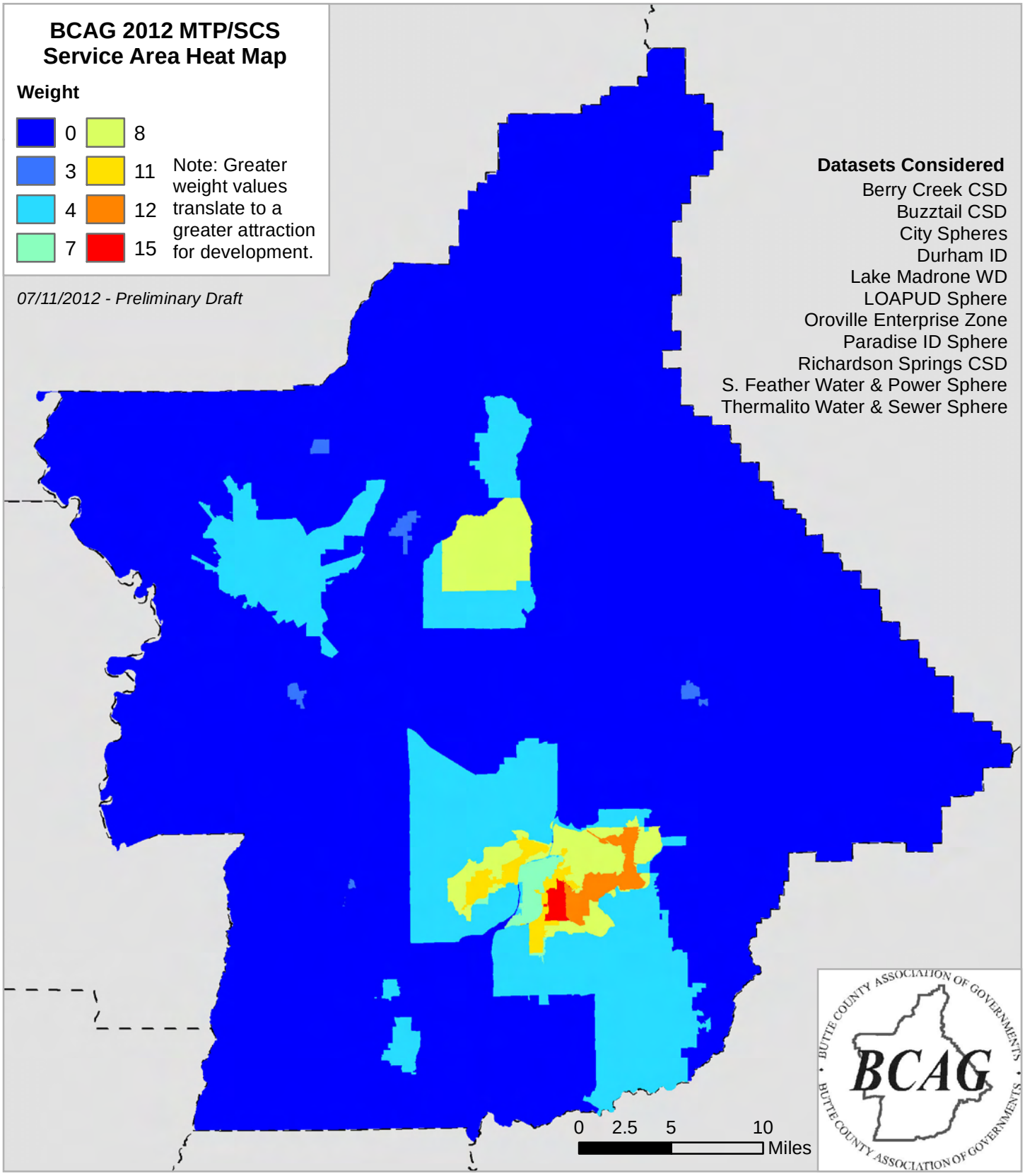
APPENDIX D.

BCAG Weighting Classification Scheme

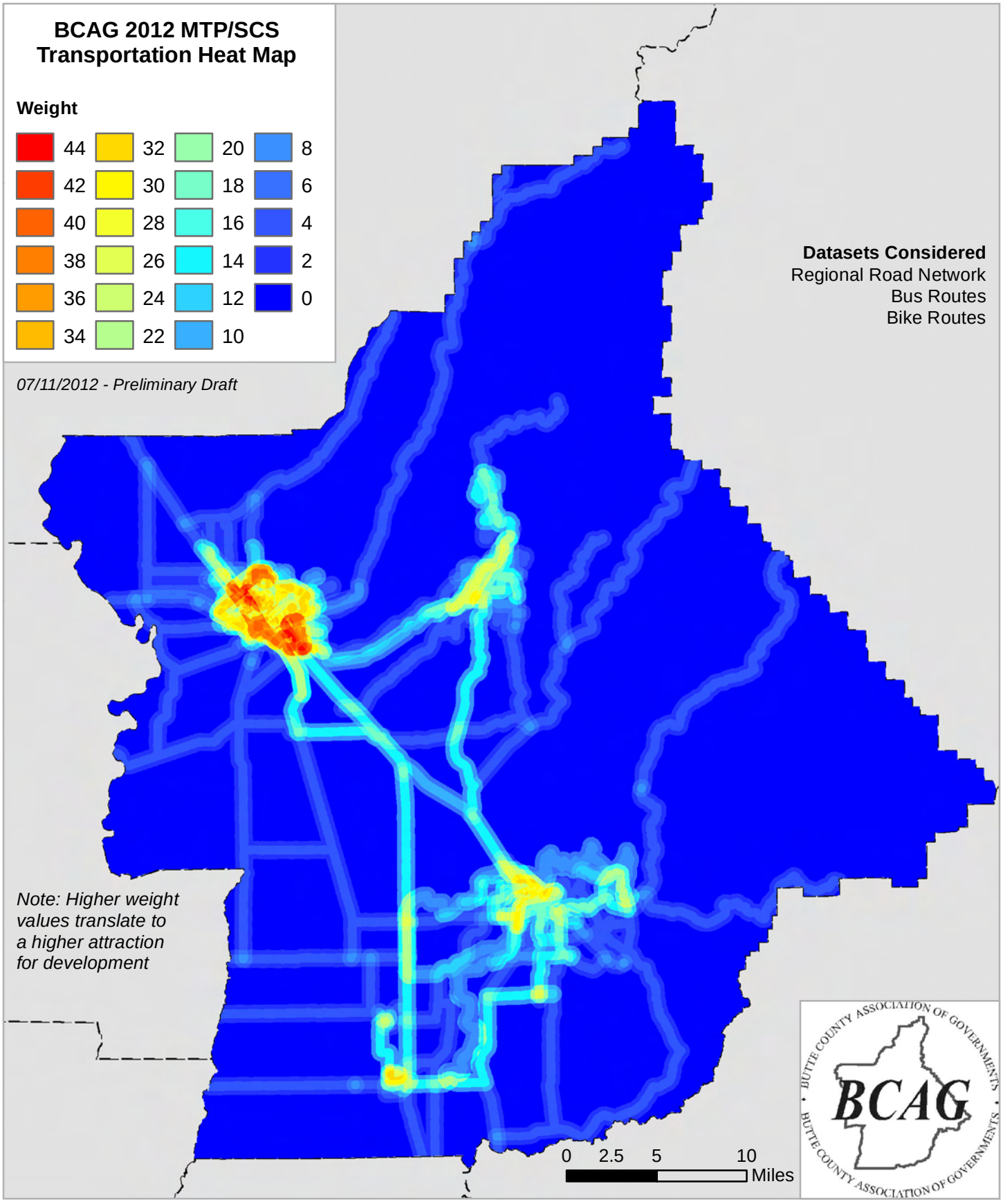
Discouragement Layer	Class	Buffer (mi)	Weight (0 to 10)
FEMA Flood Zones	A, AE, AH, AO	-	6
	0.2 PCT Chance	-	2
	All others	-	-
CLCA Williamson Act	Ongoing	-	8
	Non Renewal	-	4
		-	
DOC Farmland	P and U	-	8
HCP Constraint	Very High	-	8
	High	-	6
	Moderate	-	2
Slope	15-25%	-	10

Attraction Layer	Class	Buffer (mi)	Weight (0 to 10)
HCP UPAs	All	-	8
City Spheres	All	-	4
City Limits	All	-	3
		1/4 mile	2
		1/2 mile	1
Bus Routes	15	1/2 mile	8
	All others	1/4 mile	6
		1/2 mile	4
Bike Routes	Class 1 & Multi Use	1/4 mile	8
		1/2 mile	6
	Class 2	1/4 mile	6
		1/2 mile	4
	Class 3	1/4 mile	4
		1/2 mile	2
Road Network	Freeway	1/4 mile	4
		1/2 mile	2
	Arterial	1/8 mile	4
		1/4 mile	4
		1/2 mile	2
	Collector	1/8 mile	8
		1/4 mile	8
		1/2 mile	4
Utility Districts (LAFCO)	All	-	3
Oroville Enterprise Zone	All	-	3

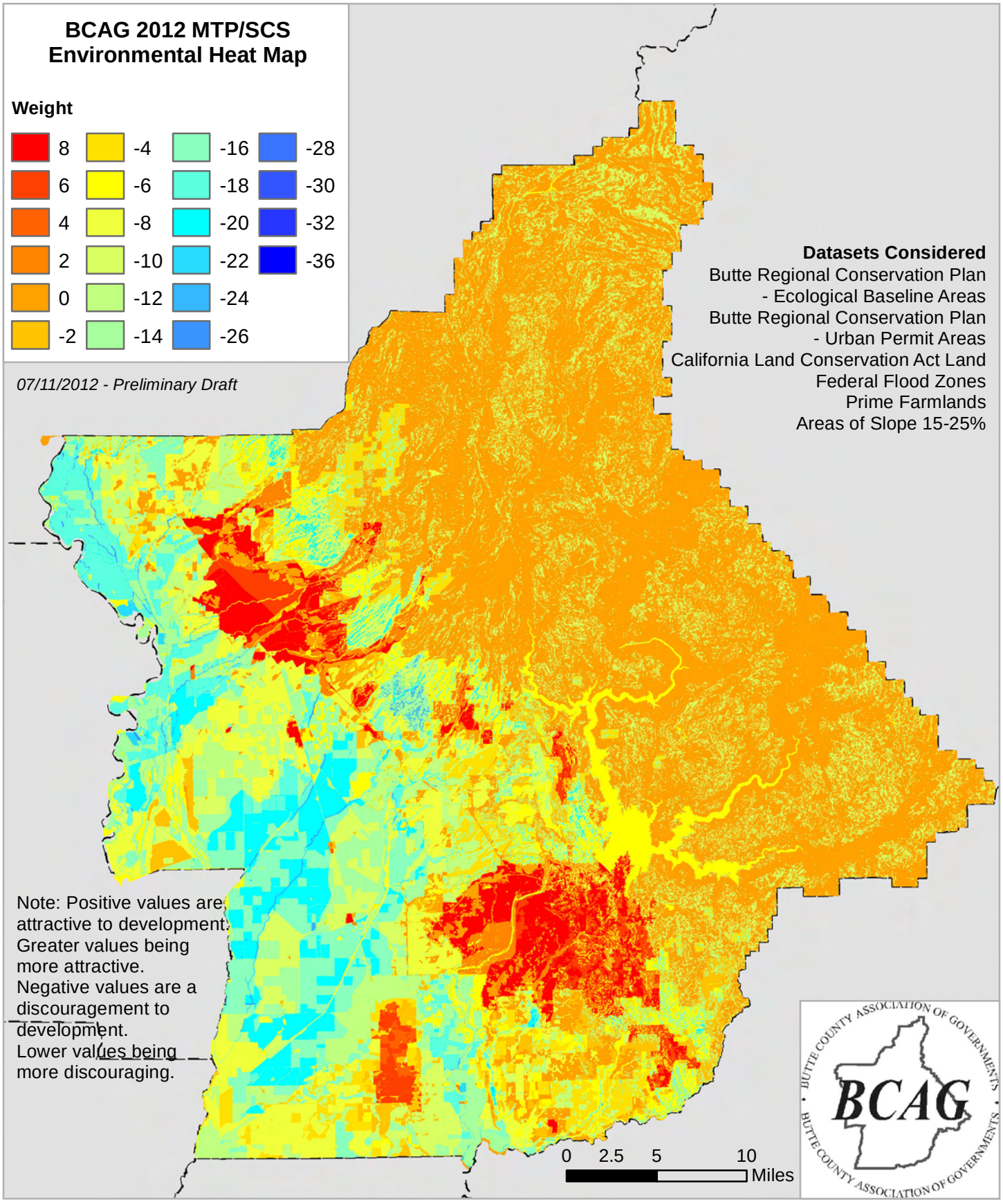
APPENDIX E-1.


BCAG 2012 MTP/SCS
Service Area Heat Map
Weight
0
3
4
7
8
11
12
15
Note: Greater weight values translate to a greater attraction for development.
07/11/2012 - Preliminary Draft
Datasets Considered
Berry Creek CSD
Buzztail CSD
City Spheres
Durham ID
Lake Madrone WD
LOAPUD Sphere
Oroville Enterprise Zone
Paradise ID Sphere
Richardson Springs CSD
S. Feather Water & Power Sphere
Thermalito Water & Sewer Sphere
0 2.5 5 10
Miles
BUTTE COUNTY ASSOCIATION OF GOVERNMENTS
BCAG
BUTTE COUNTY ASSOCIATION OF GOVERNMENTS

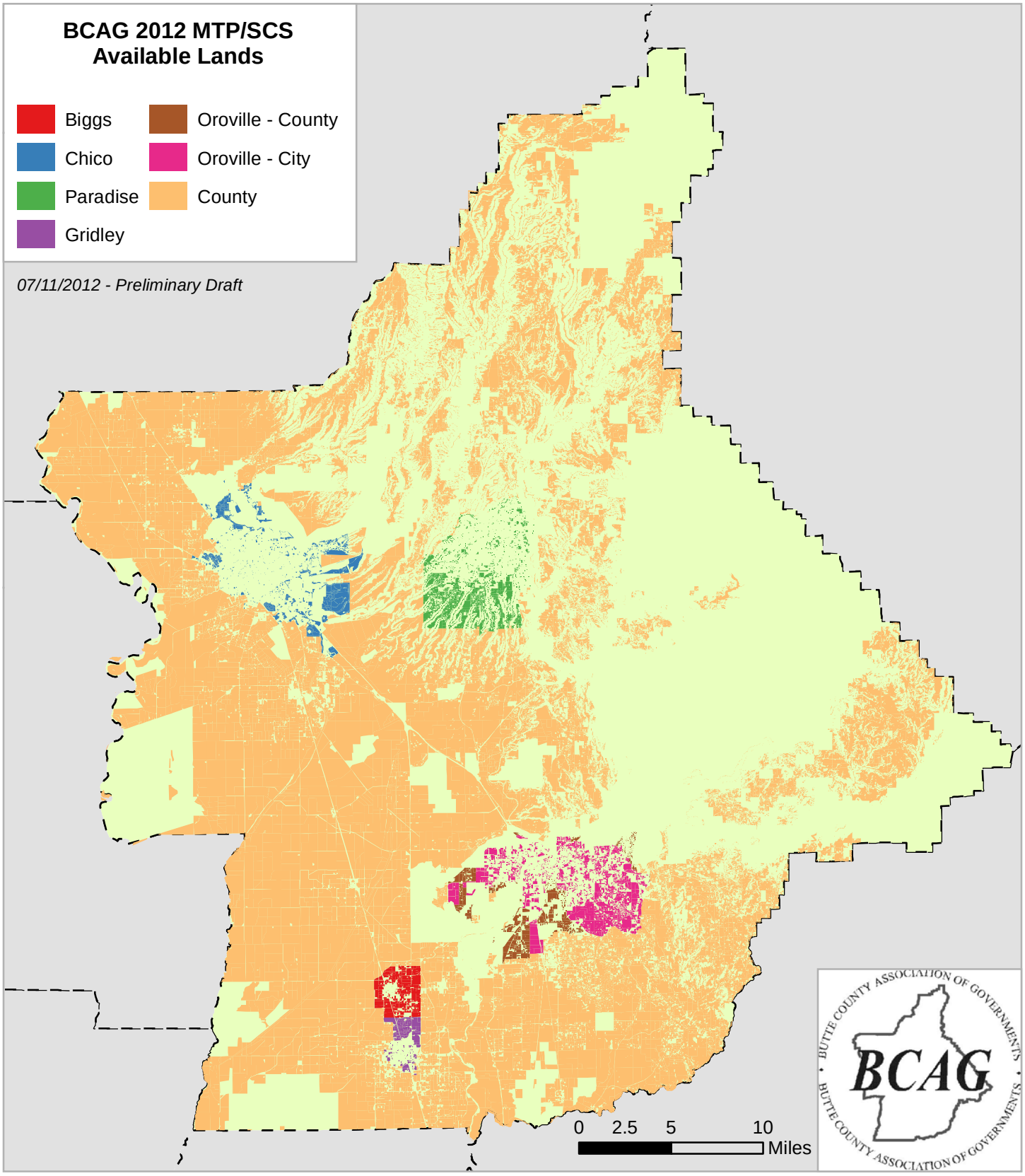
APPENDIX E-2.


BCAG 2012 MTP/SCS
Transportation Heat Map
Weight
44 32 20 8
42 30 18 6
40 28 16 4
38 26 14 2
36 24 12 0
34 22 10
07/11/2012 - Preliminary Draft
Datasets Considered
Regional Road Network
Bus Routes
Bike Routes
Note: Higher weight values translate to a higher attraction for development
0 2.5 5 10
Miles
BUTTE COUNTY ASSOCIATION OF GOVERNMENTS
BCAG
BUTTE COUNTY ASSOCIATION OF GOVERNMENTS

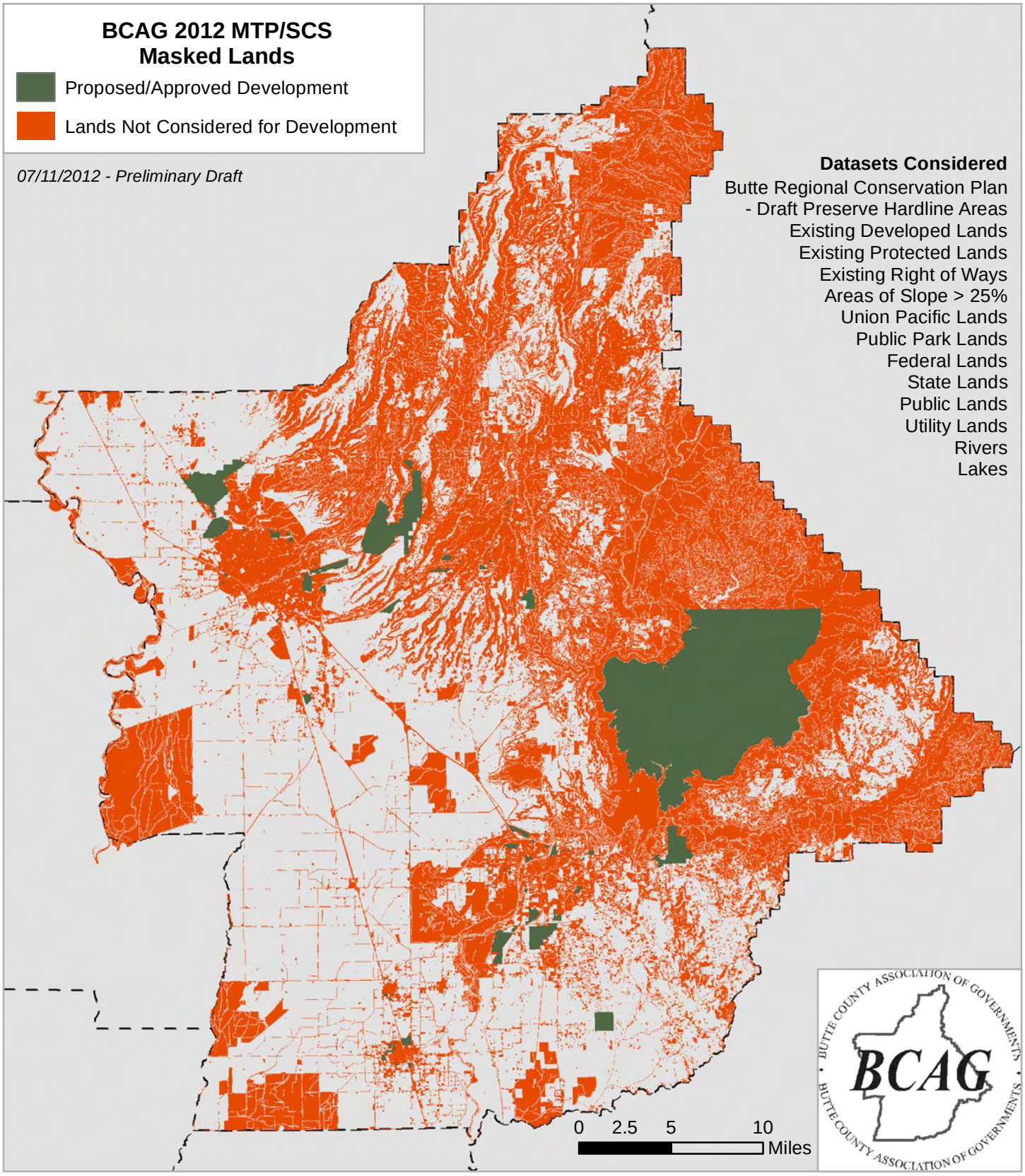
APPENDIX E-3.


BCAG 2012 MTP/SCS
Environmental Heat Map
Weight
8
6
4
2
0
-2
-4
-6
-8
-10
-12
-14
-16
-18
-20
-22
-24
-26
-28
-30
-32
-36
07/11/2012 - Preliminary Draft
Datasets Considered
Butte Regional Conservation Plan
- Ecological Baseline Areas
Butte Regional Conservation Plan
- Urban Permit Areas
California Land Conservation Act Land
Federal Flood Zones
Prime Farmlands
Areas of Slope 15-25%
Note: Positive values are attractive to development. Greater values being more attractive. Negative values are a discouragement to development. Lower values being more discouraging.
0 2.5 5 10
Miles
BUTTE COUNTY ASSOCIATION OF GOVERNMENTS
BCAG
BUTTE COUNTY ASSOCIATION OF GOVERNMENTS

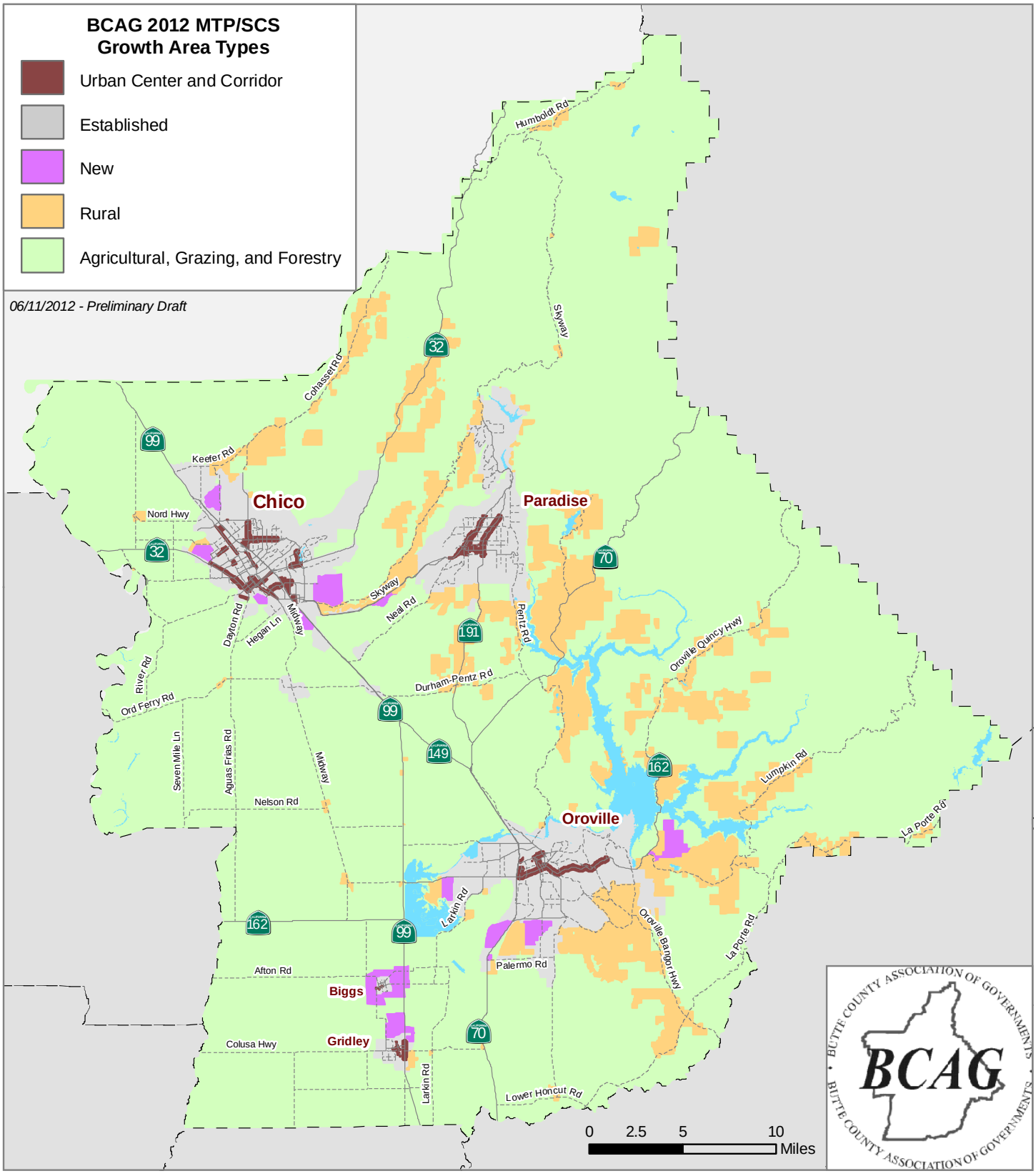
APPENDIX F.


BCAG 2012 MTP/SCS
Available Lands
Biggs
Chico
Paradise
Gridley
Oroville - County
Oroville - City
County
07/11/2012 - Preliminary Draft
0 2.5 5 10
Miles
BUTTE COUNTY ASSOCIATION OF GOVERNMENTS
BCAG
BUTTE COUNTY ASSOCIATION OF GOVERNMENTS

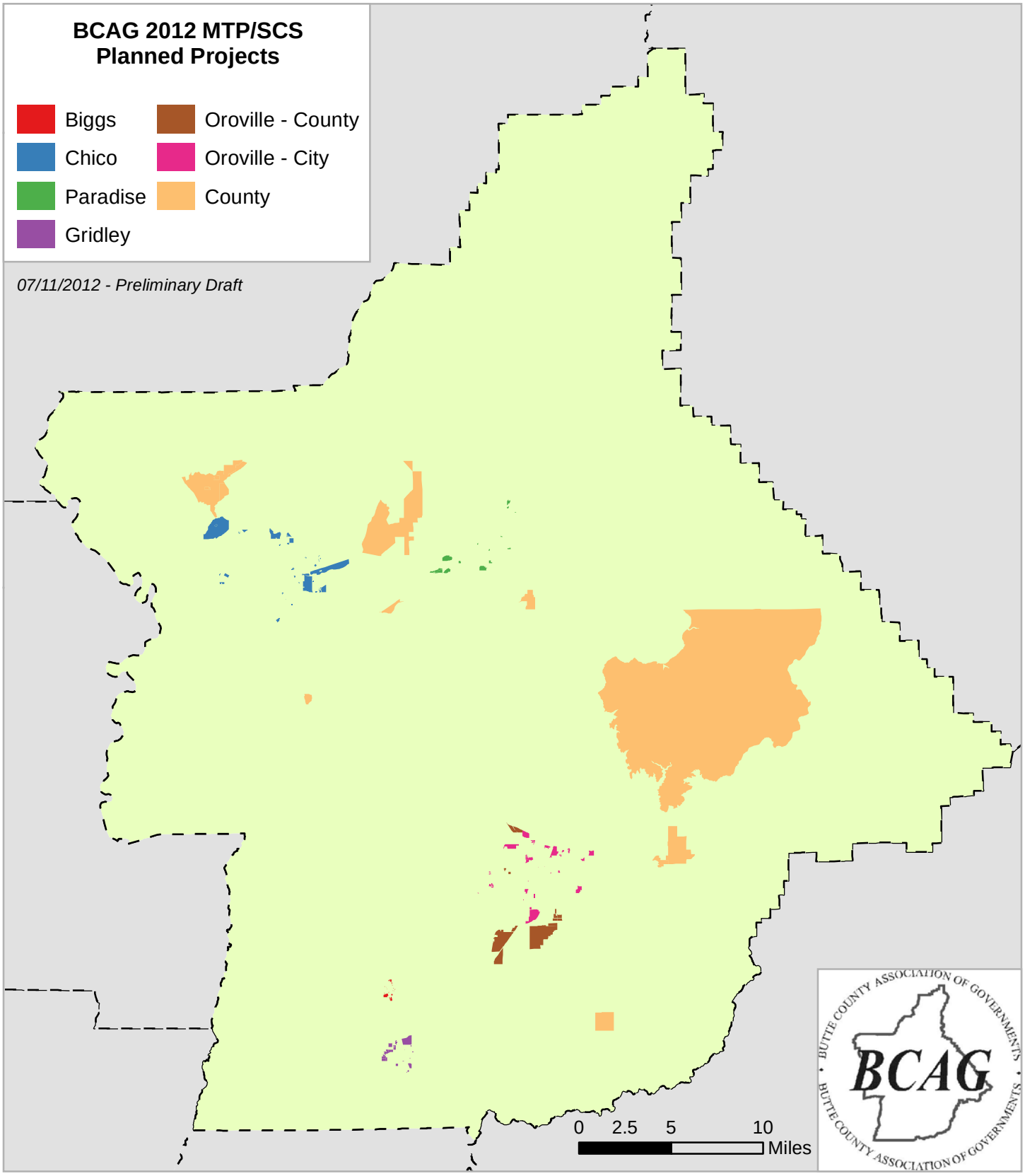
APPENDIX G.


BCAG 2012 MTP/SCS
Masked Lands
Proposed/Approved Development
Lands Not Considered for Development
07/11/2012 - Preliminary Draft
Datasets Considered
Butte Regional Conservation Plan
- Draft Preserve Hardline Areas
Existing Developed Lands
Existing Protected Lands
Existing Right of Ways
Areas of Slope > 25%
Union Pacific Lands
Public Park Lands
Federal Lands
State Lands
Public Lands
Utility Lands
Rivers
Lakes
0 2.5 5 10
Miles
BUTTE COUNTY ASSOCIATION OF GOVERNMENTS
BCAG
BUTTE COUNTY ASSOCIATION OF GOVERNMENTS

APPENDIX H.


BCAG 2012 MTP/SCS
Growth Area Types
Urban Center and Corridor
Established
New
Rural
Agricultural, Grazing, and Forestry
06/11/2012 - Preliminary Draft
Chico
Paradise
Oroville
Biggs
Gridley
Humboldt Rd
Cohasset Rd
Skyway
Keefer Rd
Nord Hwy
Dayton Rd
Hegan Ln
Midway
Neal Rd
Pentz Rd
Oroville Quincy Hwy
River Rd
Ord Ferry Rd
Durham-Pentz Rd
Seven Mile Ln
Aguas Frias Rd
Nelson Rd
Lumpkin Rd
La Porte Rd
Larkin Rd
Oroville Bangor Hwy
Palermo Rd
Afton Rd
Colusa Hwy
Lower Honcut Rd
32
99
70
191
149
162
0 2.5 5 10
Miles
BCAG
BUTTE COUNTY ASSOCIATION OF GOVERNMENTS

APPENDIX I-1.


BCAG 2012 MTP/SCS
Planned Projects
Biggs
Chico
Paradise
Gridley
Oroville - County
Oroville - City
County
07/11/2012 - Preliminary Draft
0 2.5 5 10
Miles
BUTTE COUNTY ASSOCIATION OF GOVERNMENTS
BCAG
BUTTE COUNTY ASSOCIATION OF GOVERNMENTS

APPENDIX I-2.

Planned Projects

CHICO		Housing Units			Non-Residential (KSF)			
Development Name	**Growth Area**	**Single Fam**	**Multi Fam**		**Retail**	**Office**	**Medical Office**	**Industrial**
Sycamore Glen/Mountain Vista	Established	479	200		25			
NW Chico Specific Plan Phase 1	Established	600	500		50			
Oak Valley Phase 1	Established	160						
Meriam Park Phase 1	Established	150	700		200	150		
Belvedere Heights	Established	192						
Tuscan Village	Established	155						
Foothill Park East 7	Established	65						
Wildwood Estates	Established	175						
Various Other Single Family	Established	176						
Various Other Multi Family	Established		18					
Villa Risa Apartments	Established		292					
Hartford Square	Established		58					
Valley Oak Vet Center	Established						13	
CVS	Established				14			
Sierra Nevada Brewery Security Building	Established					1		
NW Chico Specific Plan Phase 2	Established	180	200		250			
Oak Valley Phase 2	Established	1164			109			
Sierra Gardens Townhouses	Established		72					
Shastan @ Glenwood 2	Established	26						
Meriam Park Phase 2	Established	650	1000		300	250		
BCAG Transit Facility	Established					15		60
Mission Vista Ranch 2	Center	17						
Various Other Single Family	Center	22						
Westside Place	Center	140						
PARADISE								
Paradise Community Village PD Subdivision	Established	32	96					
Skyway Land Project PD Condominiums	Established		35					
Blackberry Knolls PD Subdivision	Established	44						
Valley Vista PD Subdivision	Established	14						
Baume Subdivision	Established	10						
Redbud Estates PD Subdivision	Established	16						
Nielson Estates Subdivision	Established	9						
Pheasant Ridge Commons	Established	2	24					
Walmart PD Subdivision, annexation, etc.	Established				200			
Northwest Assisted Living	Established						5	
Paradise Land Project PD Subdivision	Center	66						
Skyway Meadows PD Subdivision	Center	13			3			
Wendy's restaurant	Center				3			

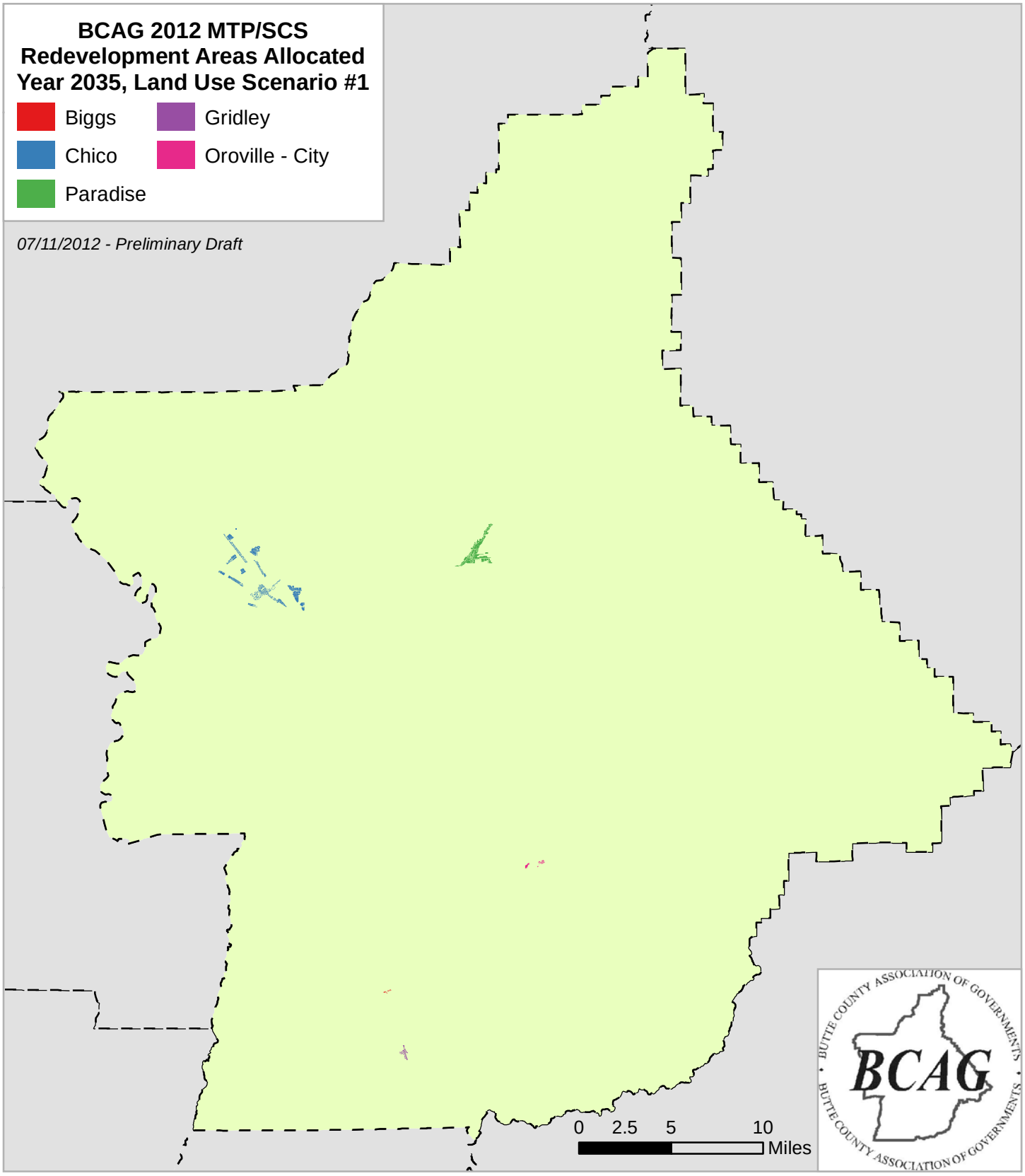
APPENDIX I-2. Continued

GRIDLEY	Growth Area	Single Fam	Multi Fam		Retail	Office	Medical Office	Industrial
Deniz Ranch	Established	465	196					
Little Property	Established	71						
Smith	Established	22						
West Biggs Gridley Road Property	Established	58						
Smith Parcel Map	Established	4						
Valley Oak Estates	Established	18						
North Valley Estates	Established	17						
Steffan Estates	Established	28						
Edler Estates	Established	25						
Butte Country Homes Unit 2	Established	70						
Huffman	Established	3						
Butte Country Homes Unit 1	Established	43						
Moss Parcel Map	Established	0			9	14		72
Gridley Industrial Park 1	Established	0						60
Gridley Industrial Park 2	Established	0						20
Various other Single Family	Established	123						
Qumar Estates	Center	19						
AutoZone	Center	0			47			
Ford and 99 Property	Center	0			6			
Spruce and Washington Property	Center	0			10			
BIGGS								
Sunwest Rice Mill Warehouse Expansion (Ind.)	Established	0						29
North Biggs Estates Project	Established	56	26					
Infill Development (various)	Established	15						
Summit Estates	New	53						
Eagle Meadows of Biggs	Established	17						
OROVILLE								
Oro Industrial Park	Established					10		400
Martin Ranch	Established	237						
Oak Park	Established	222						
Heritage Oaks	Established	79						
Ford Drive	Established	46						
Deer Creek	Established	79						
River View	Established	93						
Rivers Edge	Established	123						
Nelson 56	Established	197						
PEP Housing Project	Established		50					
Mission Olive Ranch	Established	19						
Super Walmart	Established				197			
Hillview Ridge Phase 2	Established		72					
Sierra Silca Sand Plant	Established					2		15
Merle Airport Hanger	Established							3
Community Action Agency	Established					10		20
2875 Feather River - Steel Building	Established							3
Calle Vista Unit 2 Phase 1	Established	43						
Acacia Estates	Established	20						
Highlands Estates	Established	32						
Buttewoods	Established	167						
Canel view Estates	Established	32						
Forebay Estates	Established	122	~~122~~					
Various other Single Family	Established	101						
Steve Horn Building	Center							2
Weichart Building	Center							1
Sonic Burger	Center				2			

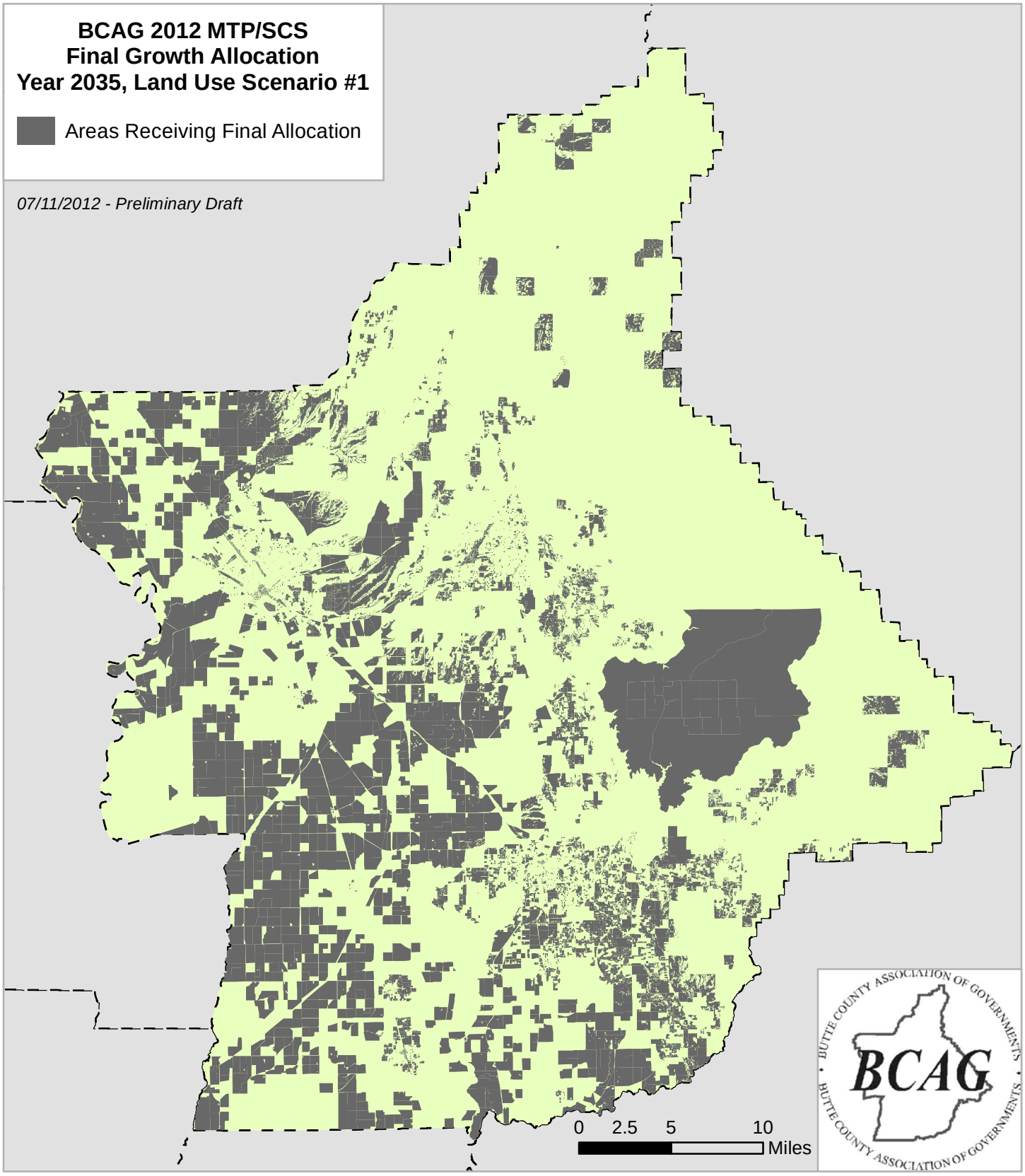
APPENDIX I-2. Continued

OROVILLE - COUNTY PORTION	Growth Area	Single Fam	Multi Fam		Retail	Office	Medical Office	Industrial
Rio d Oro	New	2045	655		248			
South Ophir Specific Plan	New	150	0					
Garden Drive Research & Business Park	Established	0	0			650		
M&T Subdivision	Established	29	0					
Tonriha Subdivision	Established	28	0					
Lincoln and Ophir	Established	65	125		120			
Southlands Subdivision	Established	174	0					
Vista Creek Estates	Established	156	0					
Monte Vista Estates	Established	97	0					
Monte Vista Park	Established	114	0					
COUNTY								
Valencia Estates	Agricultural	28	0					
Tuscan Ridge PUD	New	165	0					
Stringtown Mountain SP - A	New	166	32					
Stringtown Mountain SP - B	New	487	0					
Rancho Sol Tierra	Established	139	0		8			
Sierra Moon	Established	119	0					
Mandville Park	Established	26	0					
TSM 03-02	Established	24	0					
Paradise Summit PUD	Established	335	0					
North Chico SP (Established)	Established	780	0					
Upper Stilson Canyon	Rural	75	0					
Berry Creek Area Plan	Rural	30	0					
Emerald Sea Ranch	Rural	34	0					
Southeast Paradise SP	Rural	0	0					
Paradise Urban Reserve SP	Rural	0	0					
North Chico SP (Rural)	Rural	60	0					

APPENDIX J.


BCAG 2012 MTP/SCS
Redevelopment Areas Allocated
Year 2035, Land Use Scenario #1
Biggs
Gridley
Chico
Oroville - City
Paradise
07/11/2012 - Preliminary Draft
0 2.5 5 10
Miles
BUTTE COUNTY ASSOCIATION OF GOVERNMENTS
BCAG
BUTTE COUNTY ASSOCIATION OF GOVERNMENTS

APPENDIX K.


BCAG 2012 MTP/SCS
Final Growth Allocation
Year 2035, Land Use Scenario #1
Areas Receiving Final Allocation
07/11/2012 - Preliminary Draft
0 2.5 5 10
Miles
BCAG
BUTTE COUNTY ASSOCIATION OF GOVERNMENTS

| December 2012

BCAG Travel Demand Forecasting

Final Model Development Report

Prepared For:

Butte County Association of Governments

Prepared By:

FEHR PEERS
2990 Lava Ridge Court
Suite 200
Roseville, CA 95661

TABLE OF CONTENTS

APPENDICES

LIST OF FIGURES

LIST OF TABLES

INTRODUCTION

The purpose of this report is to describe the Butte County Association of Governments' (BCAG) Travel Demand Forecasting (TDF) model update. This report explains the general model development process from data collection through calibration and final validation. Detailed information about key model update refinements can be found in Appendices A-D.

BACKGROUND

BCAG has maintained a TDF model to support long-range transportation planning efforts and to provide a mechanism for evaluating the potential effects of future land development and transportation improvement projects. The last update of the BCAG model occurred in 2008 at which time the model was converted to the TransCAD modeling software package and was calibrated to year 2006 conditions. This latest model update focused on improving the accuracy and sensitivity of the trip generation sub-model, operationalizing the 4D built environment trip adjustments, adding a direct ridership model for transit forecasting, and re-validating the model to year 2010 conditions.

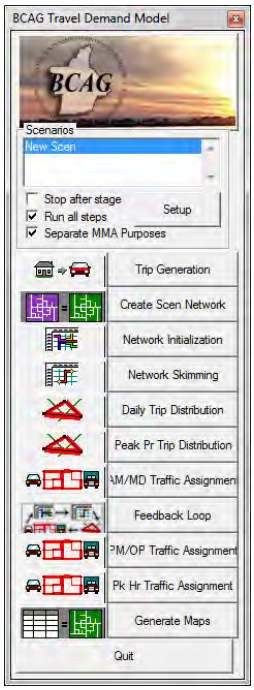
MODEL OVERVIEW

Like the previous version of the BCAG TDF Model, this version is a three-step model consisting of Trip Generation, Trip Distribution, and Trip Assignment. A Mode Choice component was not included in the model process. However, as part of this update, an off-model direct ridership forecasting tool was developed to allow BCAG and member agencies to test the effects of changes to the existing transit system. The model was updated to run in TransCAD version 5.0 Build 1695.

MODEL INTERFACE

The Graphical User Interface (GUI) developed for the BCAG TDF Model was built to conveniently allow the user to run the model with the click of a button, without going into detailed menus or components of the TransCAD program. The GUI closely follows the stages in the model and gives the user the ability to run one stage of the model at a time or run the entire model system by the click of a button.

The figure shows the TransCAD based GUI, programmed with TransCAD's GISDK scripting language.



STUDY AREA

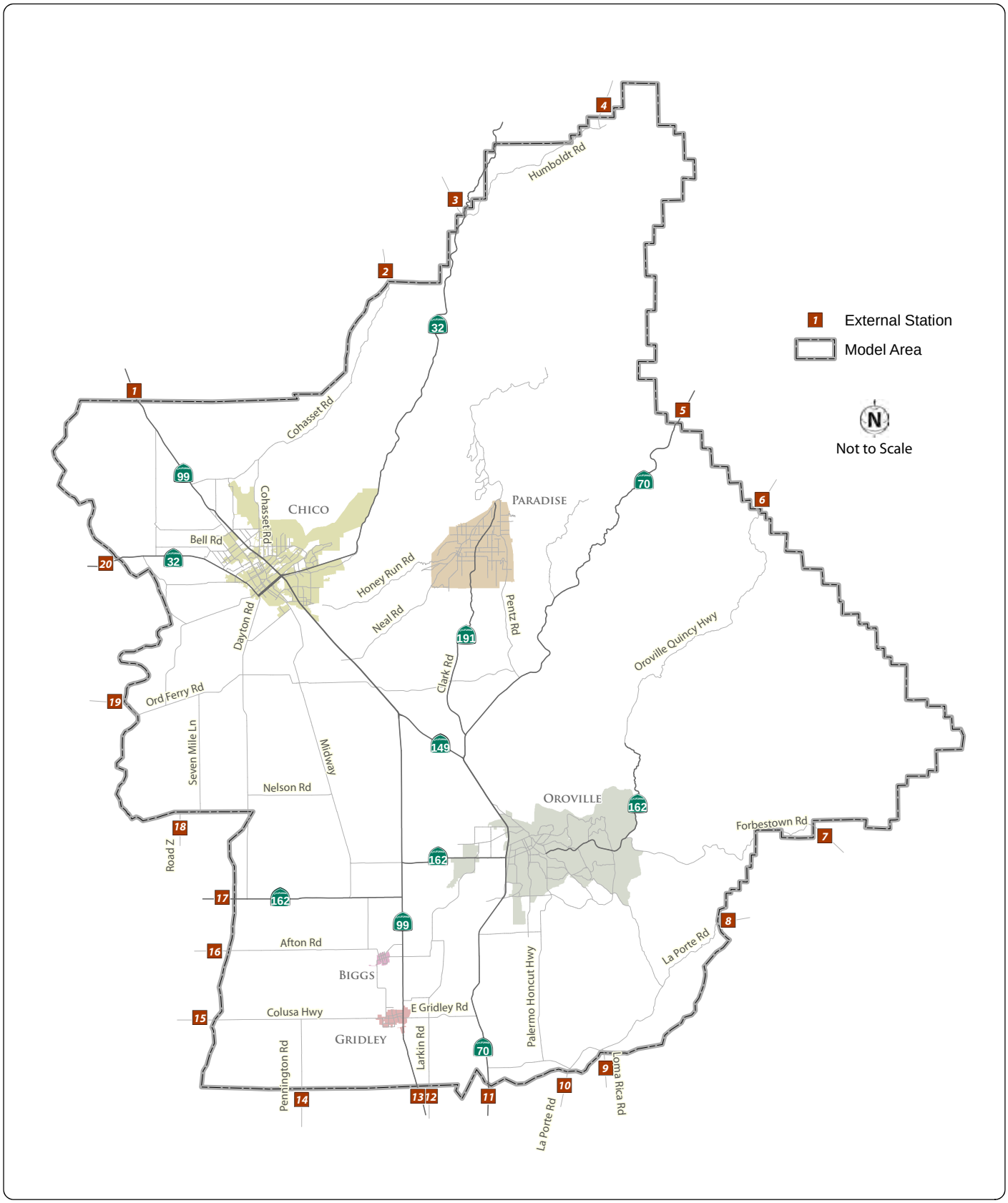
The model area for the BCAG TDF Model encompasses Butte County, which includes the cities of Chico, Paradise, Oroville, Biggs, and Gridley. Figure 1 shows the BCAG TDF model area. To represent travel into and out of Butte County, the model also includes 20 "external gateways" at major roads that cross the county line.

NEW ENHANCEMENTS & UPDATES

Several enhancements have been made to the BCAG TDF Model.

- New 2010 socioeconomic data inputs (e.g., households and employment)
- Updated roadway classifications to be consistent with the 2008 RTP
- New 2010 traffic counts
- Updated TransCAD user interface and additional automated functions;
- Enhanced trip generation sub-model to add sensitivity for age of head of household, number of workers, income, household size, and cost of travel
- Addition of multiple time periods – Daily, AM peak period, AM peak hour, PM peak period, PM peak hour, mid-day period, and evening period
- Implementation of the 4D's – Density, Diversity, Design, and Destination
- New transit direct ridership forecasting tool
- Updated EMFAC post-processor
- Updated 2020 and 2035 forecast years

These updates are described in detail within the document.



FEHR PEERS

\\fpse2\data2\2010Projects\RS_Projects\RS10_2809_BCAG_Model_Update\mxd\Model_Area_2.mxd

MODEL AREA
FIGURE 1

SUMMARY OF THE INPUT DATA

DATA COLLECTION

All of the model's input data was updated to 2010 conditions. In some cases, this effort was limited to modifying existing data to reflect changes since 2006 such as the addition of new lanes to an existing roadway. In other cases, new data had to be developed for the enhanced trip generation sub-model and the direct ridership forecasting model. Specific data and associated sources are listed below.

- Vehicle volume, classification, and speeds were collected for over 200 roadway segments from data compiled by Caltrans and purchased from a private vendor
- Department of Finance (DOF) housing estimates
- Employment Development Department (EDD) employment estimates
- California Statewide Household Travel Survey, 2001
- 2000 Census Bureau data
- Butte Regional Transit ridership data
- BCAG parcel and building footprint land use data
- 2010 Info USA employment data

LAND USE DATA

Land use data is one of the primary inputs to the BCAG model, and this data is instrumental in estimating trip generation. The model's primary source of land use data is BCAGs residential, school, and commercial parcel and footprint datasets (maintained in a GIS format). Each database provides information on the existing level of development within the county and is aggregated to the model's traffic analysis zones (TAZs). A detailed explanation of the TAZ system is provided below.

The land use data in the model is divided into a variety of residential and non-residential categories. The BCAG model employs 17 land use data categories, as shown in Table 1.

TABLE 1 – BCAG MODEL LAND USE CATEGORIES		
Model Land Use	**Land Use Description**	**Units**
SF_DU	Single-Family Residential	Dwelling Units
MF_DU	Multi-Family Residential	Dwelling Units
MH_DU	Mobile Home Residential	Dwelling Units
RET_KSF	Neighborhood-Serving Retail	1,000 Square Feet
RRET_KSF	Region-Serving Retail	1,000 Square Feet
IND_KSF	Industrial	1,000 Square Feet
OFF_KSF	Office	1,000 Square Feet
MED_KSF	Medical Office	1,000 Square Feet
HOSP_KSF	Hospital	1,000 Square Feet
PQP_KSF	Public-Quasi Public	1,000 Square Feet
HOTEL_RMS	Hotels	Rooms
UNIV_STU	University	Students
CC_STU	Community College	Students
K12_STU	K-12 Schools	Students
PARK_AC	Park	Acres
CASINO_SLT	Special Generator for Casino	Slots
CASINO_PRD	External Trip Distribution for Casino (Trips from outside Butte County that go to local Casinos)	Vehicle Trips
Source: 2010 BCAG TDF Model		

TRAFFIC ANALYSIS ZONE SYSTEM

Travel demand models use TAZs to subdivide the study area for the purpose of connecting land uses to the street network. TAZs represent physical areas containing land uses that produce or attract vehicle-trip ends. The TAZ structure and detail from the previous model was deemed sufficient for this update. Therefore, the 2010 model TAZ system maintains 962 zones in the model area, of which 912 zones cover Butte County and the remaining 50 are extra zones available for use in more detailed project analyses. Also included in the TAZ structure are external stations or gateways, which are points where major roadways provide access into the model area (see Figure 1 for specific locations). The external gateways represent all major routes by which traffic can enter or exit the study area and capture the traffic entering, exiting, or passing through the model area.

STREET NETWORK

The street network for the base year condition was originally developed in the 2008 TDF model update from a Butte County GIS centerline file provided by BCAG. The model street network includes all freeways, state highways, arterials, collectors, and local roads within the study area (see Figure 1). The functional classifications were updated for approximately 280 roadways throughout the County to be consistent with the 2008 RTP. The major street categories are described below.

Freeways

Freeways are high-capacity facilities that primarily serve longer distance travel. Access is limited to interchanges typically spaced at least one mile apart. State Route (SR) 70 and SR 99 are the major freeways in the Butte County. Portions of SR 149 that connects SR 70 and SR 99 are also designed to freeway standards.

Expressways

Expressways are high-capacity facilities that primarily serve intermediate distance travel between intercity destinations. Access is limited, but not to the extent of freeways and travel lanes may or may not be divided. Portions of SR 70, SR 99, and SR 149 are classified as expressways in Butte County.

Arterials

Roadway segments classified as Arterials are major roads that provide connections within cities, between cities and neighboring areas, and through the cities (cut-through traffic) of Butte County. Arterials in Butte County typically have one or two lanes in each direction, with travel speeds of 30-40 miles per hour (mph). Examples of these arterials are East Avenue in Chico, Clark Road in Paradise, and Olive Highway in Oroville.

Collectors

Collectors are facilities that connect local streets to the arterial and highway system, and may also provide direct access to local land uses. Collectors typically have one lane in each direction, with speeds of 25-35 mph. Examples of these collectors are Ceres Avenue in Chico, Nunneley Road in Paradise, and Myers Street in Oroville.

Local Streets

Local Streets primarily feed collector roads and are typically one lane in each direction, with speeds of 20-25 mph. These streets provide more realistic loadings to larger roadways in the TDF model network, and may not accurately represent the actual volumes experience on an average day. Examples of these collectors are Chestnut Street in Chico, Roe Road in Paradise, and Hilldale Avenue in Oroville.

For each record, the street network database includes a street name, distance, functional class, speed, capacity, and number of lanes. These attributes were checked using maps, aerial photographs, and other data provided by Butte County. Where necessary, these values were adjusted at specific locations to

reflect current conditions as part of the model validation. Table 2 shows the initial roadway capacities used for each roadway functional class in the model.

TABLE 2 – ROAD CAPACITY BY FUNCTIONAL CLASSIFICATION

Roadway Classification	Capacity (vehicles per hour per lane)
Freeway Mainline	1,600 - 1,800
Freeway Ramp	1,700
Expressway (4 Lanes)	1,500
Expressway (2 Lanes)	1,400
Arterial	800
Collector	700
Local	600
Centroid Connector[1]	10,000

[1] Centroid connectors are abstract representations of the starting and ending point of each trip. Capacity is set significantly higher than other model links to prevent travel times from being affected by capacity on these abstract links.

Both existing roadways and future roadway improvements are coded into one master network. The master network concept helps manage the model network files. Users will not need to perform the same edits in different network scenarios. The future road improvements can be turned on and off by changing the construction year field in the master network.

MODEL ESTIMATION AND CALIBRATION PROCESS

Model estimation involves specifying the mathematical formulations and calculations such that the model's output matches or fits observed travel data. Most of the BCAG model was already specified. New estimation effort though was required for the enhanced trip generation sub-model and the transit direct ridership model. These components were calibrated through an iterative process of model testing and refining of model parameters to achieve appropriate matches between model estimates and measured travel demand. This section provides a general description of the estimation and calibration steps and the adjustments made during the process.

TRIP GENERATION

Residential Trip Generation

This update to the BCAG model enhanced the residential trip generation sub-model from one that relied exclusively on land use as the independent variable to one that now considers land use, demographic, and socioeconomic factors in a cross-classified formulation. For this model update, the trip generation rates for single family and multi-family homes have been expanded to represent the different trip making characteristics of a variety of households within Butte County based on the following characteristics.

- Household size
- Number of workers
- Household income

Table 3 displays the cross-classified residential vehicle trip rates for single family homes. Table 4 displays the vehicle trip generation rate for multifamily homes.

TABLE 3 – SINGLE FAMILY DAILY VEHICLE TRIP GENERATION RATES							
Household Size	**Number of Workers**	**Income**					
		<$10K	**$10K - $25K**	**$25K - $45K**	**$45K - $75K**	**$75K - $125K**	**>$125K**
1	0	2.82	2.89	2.97	3.28	3.34	3.37
	1	3.61	3.70	3.80	4.20	4.28	4.32
	2	N/A	N/A	N/A	N/A	N/A	N/A
	3	N/A	N/A	N/A	N/A	N/A	N/A
	4+	N/A	N/A	N/A	N/A	N/A	N/A
2	0	5.62	5.66	5.78	5.82	5.88	5.92
	1	6.15	6.19	6.32	6.36	6.43	6.47
	2	6.53	6.69	6.88	7.60	7.74	7.81
	3	N/A	N/A	N/A	N/A	N/A	N/A
	4+	N/A	N/A	N/A	N/A	N/A	N/A
3	0	8.67	8.73	8.91	8.97	9.06	9.12
	1	9.31	9.38	9.58	9.65	9.75	9.82
	2	10.30	10.37	10.59	10.66	10.77	10.84
	3	10.58	10.66	10.89	10.97	11.08	11.16
	4+	N/A	N/A	N/A	N/A	N/A	N/A
4+	0	13.17	13.26	13.54	13.63	13.77	13.86
	1	15.85	15.87	15.88	15.90	15.92	15.92
	2	15.93	16.04	16.21	16.27	16.44	16.50
	3	16.63	16.75	17.10	17.22	17.40	17.52
	4+	17.57	17.69	18.06	18.18	18.37	18.50

Source: Fehr & Peers, 2011

TABLE 4 – MULTIFAMILY DAILY VEHICLE TRIP GENERATION RATES

Household Size	Number of Workers	Income					
		<$10K	$10K - $25K	$25K - $45K	$45K - $75K	$75K - $125K	>$125K
1	0	2.23	2.29	2.35	2.59	2.64	2.66
	1	2.85	2.93	3.00	3.32	3.38	3.42
	2	N/A	N/A	N/A	N/A	N/A	N/A
	3	N/A	N/A	N/A	N/A	N/A	N/A
	4+	N/A	N/A	N/A	N/A	N/A	N/A
2	0	4.44	4.48	4.57	4.60	4.65	4.68
	1	4.86	4.89	5.00	5.03	5.08	5.12
	2	5.16	5.29	5.44	6.01	6.12	6.18
	3	N/A	N/A	N/A	N/A	N/A	N/A
	4+	N/A	N/A	N/A	N/A	N/A	N/A
3	0	6.86	6.90	7.05	7.09	7.16	7.21
	1	7.36	7.42	7.58	7.63	7.71	7.77
	2	8.15	8.20	8.37	8.43	8.52	8.57
	3	8.37	8.43	8.61	8.67	8.76	8.83
	4+	N/A	N/A	N/A	N/A	N/A	N/A
4+	0	10.41	10.49	10.71	10.78	10.89	10.96
	1	12.53	12.55	12.56	12.57	12.59	12.59
	2	12.60	12.68	12.82	12.87	13.00	13.05
	3	13.15	13.25	13.52	13.62	13.76	13.85
	4+	13.89	13.99	14.28	14.38	14.53	14.63

Source: Fehr & Peers, 2011

These cross-classified trip generation rates help to explain the differences in trip generation that are observed in different parts of the BCAG region. The mobile home category was not expanded because there is not sufficient data on how mobile home characteristics (household size, number of workers, and income) vary. In general, the trip generation rates presented in Tables 4 and 5 were developed from base vehicle trip generation rates developed by the Sacramento Area Council of Governments (SACOG). The SACOG rates were then calibrated to BCAG conditions using observed trip generation data collected in a variety of locations across Butte County. This was accomplished by cordoning off select residential areas and measuring the vehicle trips entering and leaving. The measured vehicle trips were then divided by the number of occupied residential units to develop an aggregate vehicle trip rate. Details on the development and application of the cross-classified trip generation rates can be found in Appendix A.

Non-Residential Trip Generation

Only limited changes were made to the non-residential trip generation component of the previous BCAG TDF model. The primary source for non-residential trip generation rates in the BCAG TDF model was *Trip Generation, 8th Edition* (Institute of transportation Engineers [ITE], 2008). This reference document contains national averages of vehicle trip generation rates for a variety of land uses in what are generally suburban locations. These rates were calibrated for major non-residential land uses such as prominent retail centers and institutions within Butte County using a methodology similar to that explained above for residential uses. Table 5 displays the final non-residential trip rates.

TABLE 5 – NON-RESIDENTIAL USE DAILY TRIP GENERATION RATES

Land Use Category	Unit	Daily Vehicle Trip Generation Rate
Neighborhood-Serving Retail	1,000 Square Feet	42.94
Region-Serving Retail	1,000 Square Feet	47.63
Industrial	1,000 Square Feet	3.70
Office	1,000 Square Feet	11.69
Medical Office	1,000 Square Feet	33.76
Hospital	1,000 Square Feet	16.50
Public-Quasi Public	1,000 Square Feet	8.00
Hotels	Rooms	6.23
University	Students	2.38
Community College	Students	1.16
K-12 Schools	Students	1.54
Park	Acres	1.59
Special Generator for Casino	Slots	5.18

Source: Fehr & Peers 2011

Trip Purposes

Trip generation rates are initially defined for total trips and later split by trip purpose. Each trip has two ends, a "production" and an "attraction." By convention, trips with one end at a residence are defined as being "produced" by the residence and "attracted" to the other use (workplace, school, retail store, etc.), and are called "Home-Based" trips. Trips that do not have one end at a residence are called "Non-Home-Based" trips.

There are five trip purposes used in the BCAG model:

1. Home-Based Work (HBW): trips between a residence and a workplace.
2. Home-Based Other (HBO): trips between a residence and any other destination.
3. Non-Home-Based (NHB): trips that do not begin or end at a residence, such as traveling from a workplace to a restaurant, or from a retail store to a bank.
4. School (SCHOOL): trips to and from a school.
5. Casino (CASINO): trips to and from a casino.

To determine the appropriate proportion of trips that fall into each purpose, the California Household Travel Survey was used. This survey was conducted statewide and provides a complete summary of daily household trip making, which can be used to determine the specific trip purpose proportions. More details are provided below in the discussion of trip production and attraction balancing since this is also related to each trip purpose.

Production and Attraction Balancing

Local trips (internal-to-internal, or I-I) are trips that both start and end in the study area. One of the basic assumptions of any travel model is that the total number of local trips produced is equal to the total number of local trips attracted. It is logically assumed that if a journey is started, it must also have an end. If the total productions and attractions are not equal, the model will typically adjust the attractions to match the productions, thus ensuring that each departing traveler finds a destination. While it is never possible to achieve a perfect match between productions and attractions prior to the automatic balancing procedure, the existence of a substantial mismatch in one or more trip purposes indicates that either land use inputs or trip generation factors may be in error. Therefore, in developing the trip productions and attractions for the BCAG TDF Model, a careful pre-balancing was conducted outside the model stream to minimize possible errors.

Table 6 summarizes the local trip productions and attractions from the BCAG TDF model for each trip purpose, prior to the application of the automatic balancing procedure. Guidelines published by Federal Highway Administration's Transportation Model Improvement Program (TMIP) and National Highway Cooperative Research Program (NCHRP) suggest that, prior to balancing, the number of productions and attractions should match to within plus or minus 10% (i.e., the production-to-attraction ratio should be within the range of 0.90 to 1.10). The results shown in Table 6 indicate that the model meets the published guidelines for all trip purposes.

TABLE 6 – TRIP PRODUCTION TO ATTRACTION RATIOS BY PURPOSE			
Trip Purpose	**Production/Attraction Ratio**	**Percent of Total Daily Vehicle Trips**	
		BCAG TDF Model[1]	**California[2]**
Home-Based Work (HBW)	0.98	20%	21%
Home-Based Other (HBO)	0.99	50%	48%
Non-Home-Based (NHB)	1.00	30%	31%
Total		100%	100%

1. Centroid connectors are abstract representations of the starting and ending point of each trip.
2. 2001 California Statewide Household Travel Survey Final Report, June 2002.

Trip Generation Sensitivity

In addition to the trip generation components described above, certain enhancements were added to the BCAG TDF model to better capture local trip making characteristics and provide the ability to test certain policy options for future development scenarios. These enhancements include adjustments for residential and non-residential vacancy rates and adding sensitivity for the cost of travel, smart growth development, and changes to the transit system.

Vacancy Rates

An important new feature of the trip generation sub-model is the ability to reflect varying levels of occupancy for residential and non-residential buildings. Occupancy levels of existing buildings have declined due to the 2008/09 recession and had not yet recovered in 2010. Occupancy levels were established as part of the production and attraction balancing step described above supplemented with observed conditions from BCAG staff at a handful of commercial sites in Oroville and Chico.

In general, it was necessary to set non-residential occupancy levels at 80 percent countywide such that the observed traffic counts matched model output (see more on matching traffic counts in the Model Validation section of this document). However, several areas, including locations in Paradise, Eastern Butte County, and Oroville, had lower occupancy rates (between 30 and 70 percent) based on BCAG staff observations and local traffic counts. Two TAZs in Paradise had an occupancy rate of 100 percent to match observed traffic counts. Residential occupancy rates were set at 0.80 in the eastern portion of Butte County to match observed traffic volumes. There were also a handful of TAZs in southeast Butte County and south of Durham that had lower occupancy rates – typically of 65 percent. The residential occupancy rate in the remainder of the County was set at 100 percent. This reduction in occupancy assumed to reflect the higher levels of vacation/seasonal homes in the eastern portion of the county. Figures 2 and 3 show the non-residential and residential occupancy rates by TAZ.

This new factor can be adjusted by the user to test different future scenarios where occupancy levels can be maintained at 2010 levels or adjusted to higher levels commensurate with conditions prior to the recession.

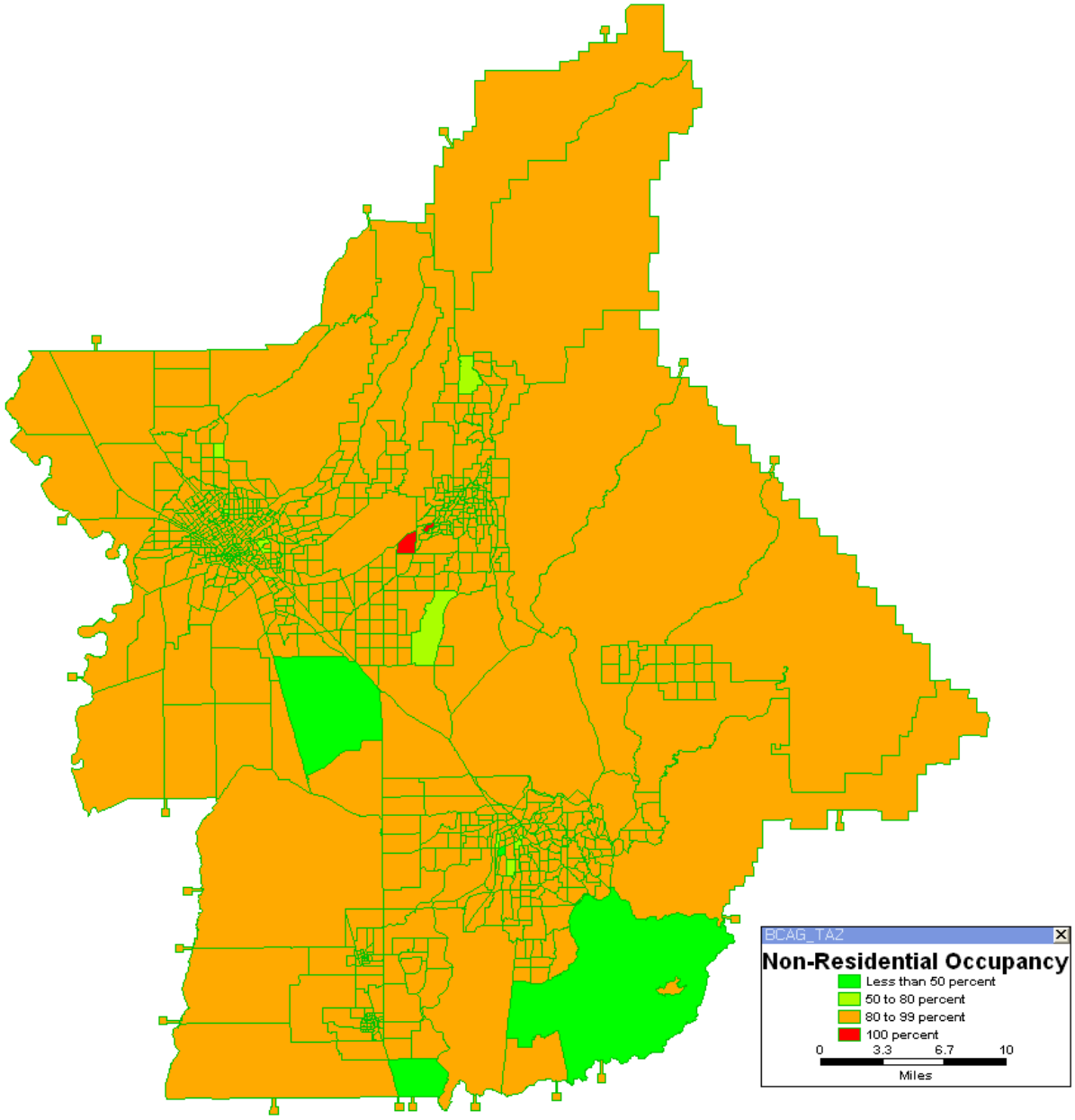


Figure 2 – BCAG Model Base Year Non-Residential Occupancy Rates

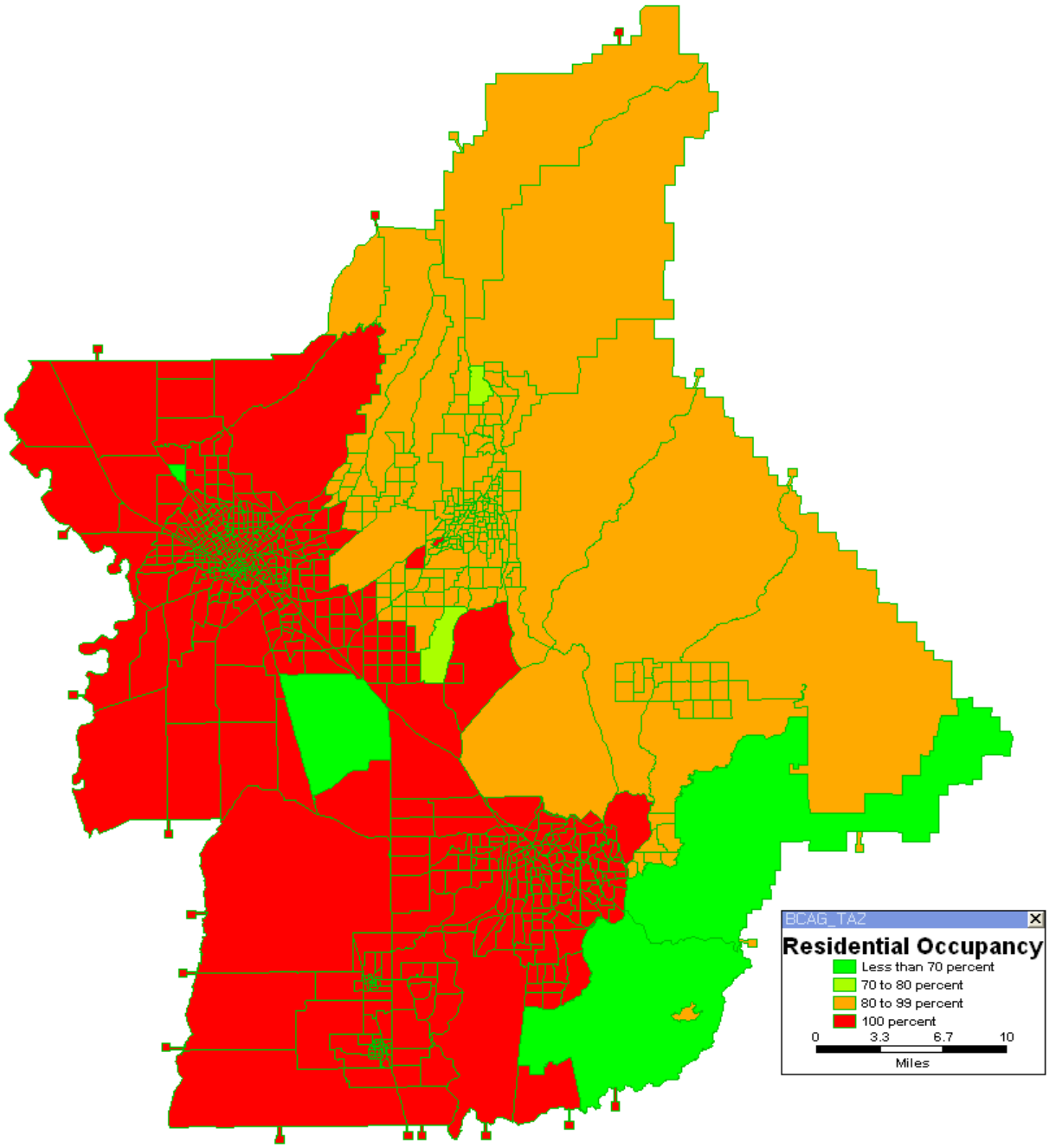


Figure 3 – BCAG Model Base Year Residential Occupancy Rates

Cost of Travel

Fuel prices are a major influence on travel since the price of gasoline or diesel is a substantial component to the overall cost of travel. It is the one cost most recognizable to drivers compared to infrequent costs like tire wear or oil changes. When determining the effects of fuel cost on travel, economists typically use the idea of price elasticity. In the case of fuel price elasticity, this represents the change in VMT with respect to the price of fuel. For example, a VMT/fuel price elasticity of -0.05 indicates that an increase in fuel prices of 10 percent would result in a 0.5 percent decline in VMT.

A fuel price sensitivity component was included in the BCAG TDF model during the trip generation process. However, this component is turned off for default model runs. Planners can turn on the component to test fuel price scenarios and evaluate how fuel prices impact travel outcomes. Details on the research and how to enable fuel price elasticity in the BCAG TDF model can be found in Appendix B.

Built Environment Sensitivity

The BCAG TDF model's ability to capture relationships between "sustainable" land use characteristics and transportation effects was enhanced to improve the VMT forecasts. Since future land use alternatives may be developed to follow sustainable planning principles, enhancing the model for smart growth sensitivity improves the model's ability to capture the potential effects these alternatives would have on vehicle travel. The model has been equipped with the 4Ds (Design, Diversity, Destinations, and Density), which are key built environment variables that have a proven influence on vehicle travel.

As part of the documentation associated with the future model development, Fehr & Peers will be fully describing the 4D component development process, however, the component generally works as follows:

- Step 1 – Calculate D Variables: The first step of the 4D adjustment process is to calculate the D variables across the entire BCAG model area. This task is handled in ArcGIS using detailed parcel-level[1] data from BCAG. Variables such as residential population density, employment population density, street network density, and job-housing diversity are all calculated. Destination accessibility is not calculated in ArcGIS since the BCAG model already considers this affect. The calculations are performed on relatively small grid cells that represent a walkable distance from homes and businesses in the model area. The grid cell data are then averaged to the TAZs within the model structure.

- Step 2 – Calculate Change in 4D Characteristics: The Step 1 calculations are performed for a baseline and alternative scenario. In this step, the change in 4D variables per TAZ between the baseline and alternative scenarios is determined using a spreadsheet. This change in 4D characteristics forms the basis of the trip generation adjustment performed in Step 3.

[1] The existing conditions D calculations were performed using parcel data. Future year D calculations relied on grid cell data from the BCAG Uplan model.

- Step 3 – Calculate and Apply the Trip Generation Adjustment: There is a wide array of literature describing how the 4Ds affect vehicle trip generation. One of the most widely cited sources of the relationship between trip making and the 4Ds is a paper written by Cervero and Ewing, *Travel and the Built Environment: A Meta-Analysis* (Journal of the American Planning Association, Summer 2010). Cervero and Ewing's paper summarized vehicle trip generation/built environment elasticities that were incorporated into the BCAG 4D component. The BCAG TDF model calculates the trip generation adjustment by multiplying the change in 4D characteristics per TAZ (calculated in Step 2) with the elasticities described above. The end result is a modified trip table which is then assigned to the roadway network.

TRIP DISTRIBUTION (GRAVITY MODEL)

Once the trip generation step has estimated the number of trips that begin and end in each zone, the trip distribution process determines the specific destination of each originating trip. The destination may be within the zone itself, resulting in an intra-zonal trip. If the destination is outside of the zone of origin, it is an inter-zonal trip. Inter-zonal trips consist of three types.

- Internal-internal (I-I) trips originate and terminate within the model area.
- Internal-external (I-X) trips originate within but terminate outside of the model area.
- External-internal (X-I) trips originate outside and terminate inside of the model area.

Trips passing completely through the model area are external-external (X-X).

The trip distribution model uses a gravity model equation to distribute trips to all zones. This equation estimates an accessibility index for each zone based on the number of attractions in each zone and a friction factor, which is a function of travel time between zones. Each attraction zone is given its share of productions based on its share of the accessibility index. This process applies to the I-I, I-X, and X-I trips. The X-X trips are added to the trip matrix prior to final assignment.

Friction Factors

Friction factors, also known as travel time factors, are used in calculating the relative attractiveness of each destination zone based on the travel time between TAZs and the number of potential origins and destinations in each TAZ. These factors are used in the trip distribution stage of the model. The BCAG TDF model friction factors are based on data reported in national modeling reference documents such as National Cooperative Highway Research Program (NCHRP) 365. See Appendix D for friction factor curves.

Trips between the Model Area and External Areas

One of the important inputs to a travel model is an estimate of the amount of travel between the study area and neighboring areas outside the model. These are typically called internal-external, or I-X/X-I, trips. Table 7 illustrates the distribution of work locations for Butte County residents and the distribution of residential locations for Butte County employees based on US Census Bureau results.

TABLE 7 – BUTTE COUNTY COMMUTING PATTERNS

WORK LOCATIONS FOR BUTTE COUNTY RESIDENTS		
Year	**% Working Inside Butte County**	**% Working Outside Butte County**
2010	91%	9%
RESIDENTIAL LOCATIONS FOR BUTTE COUNTY EMPLOYEES		
Year	**% Living Inside Butte County**	**% Living Outside Butte County**
2010	95%	5%

Source: U.S. Census Bureau

Based on this data, the proportion of HBW trips entering and leaving the study area was estimated. For non-work trip purposes, information from the 2001 California Household Travel Survey (CHTS)[2] was used to develop initial estimates of the percent of HBO and NHB trips that travel between Butte County and to other regions. The CHTS results used in the model are summarized in Table 8.

TABLE 8 – BUTTE COUNTY NON-COMMUTE TRAVEL PATTERNS

Year	% of Trips Remaining Inside Butte County	% of Trips to Butte County from Other Counties	% of Trips from Butte County to Other Counties
2001	91%	4%	5%

Source: California Household Travel Survey, Caltrans 2001

After the number of I-X/X-I trips was estimated, these trips were distributed to the external gateways around the perimeter of the model area using external station weights. External station weights were

[2] Note that this is the most recent version of the CHTS.

based on counts collected at each external station (these are roadway segments at the border of the model area). The number of through trips at each station was subtracted from the count and the remainder was filled in by I-X/X-I trips estimates.

Through Trips

Through trips (also called external-external, or XX trips) are trips that pass through the study area without stopping inside the study area. The major flows of through traffic in Butte County use SR 32, SR 70, and SR 99 with lower volumes of through traffic using other county roads. The size of these flows was estimated based on the previous version of the model, adjusted for any growth in traffic between 2006 and 2010.

TRANSIT DIRECT RIDERSHIP FORECASTING

While the BCAG TDF Model does not have a mode choice sub-model, a separate off-model process was developed to forecast transit ridership. The model uses transportation and land use data along bus lines to predict ridership. BCAG developed extensive data on the bus system and the land uses surrounding each bus line and bus stop. A series of direct ridership forecasting (DRF) models were developed and tested, using these data, to best fit the existing ridership levels based on land use and transit system information. Given the geographic and demographic diversity in the County, three separate DRF models were developed. The models can be used, not only to forecast future B-Line ridership, but to estimate the effect of rerouting existing lines, adjusting headways, or developing new bus lines in the County. Descriptions of these models, along with detailed information on their development, can be found in Appendix C.

TRIP ASSIGNMENT

The trip assignment process determines the route that each vehicle trip takes from a particular origin to particular destination. The model selects these routes in a manner that is sensitive to congestion and the desire of drivers to minimize overall travel time. It uses an iterative, capacity-restrained assignment, and volume adjustments are made that progress towards equilibrium. This technique finds a travel path for each trip that minimizes travel time, while taking into account congestion delays caused by the other simulated trips in the model. The trip assignment produces volumes for each roadway segment in the model for the following time periods.

- AM peak period
- AM peak hour
- PM peak period
- PM peak hour
- mid-day period
- evening period

Daily volumes are also produced but not through an assignment routine. Instead, daily volumes are created by summing the AM peak period, PM peak period, mid-day, and evening periods.

Turn Penalties

Turn penalties are used to prohibit or add delay to certain turning movements. The BCAG TDF model prohibits traffic from getting off a freeway ramp and then immediately getting back on. The model also prohibits traffic from making turns across impassable medians. In addition, the model does not allow U-turns to avoid counter-intuitive traffic routing.

MODEL VALIDATION

Model validation describes a model's performance in terms of how closely the model's output matches existing travel data in the base year. During the model development process, these outputs are used to further calibrate model inputs. The extent to which model outputs match existing travel data validates the assumptions of the inputs.

Traditionally, most model validation guidelines have focused on the performance of the trip assignment function in accurately assigning trips to the street network. This metric is called static validation, and it remains the most common means of measuring model accuracy.

However, models are seldom used for static applications. The most common use of models is to forecast how a change in inputs would result in a change in traffic conditions. Therefore, another test of a model's accuracy focuses on the model's ability to predict realistic differences in outputs as inputs are changed. This method is referred to as dynamic validation. This section describes the highest-level validation checks that have been performed for the BCAG TDF model.

STATIC VALIDATION

An important static measurement of the accuracy of any travel model is the degree to which it can approximate actual traffic counts in the base year. The *2010 California Regional Transportation Plan Guidelines*, California Transportation Commission, contains the following specific static validation criteria and thresholds that have been used to evaluate the BCAG TDF model performance.

- *At least 75 percent of the roadway links for which counts are available should be within the maximum desirable deviation*, which ranges from approximately 15 to 60 percent depending on total volume (the larger the volume, the less deviation is permitted).
- *A correlation coefficient of at least 0.88* - The correlation coefficient estimates the overall level of accuracy between observed traffic counts and the estimated traffic volumes from the model. This coefficient ranges from 0 to 1.0, where 1.0 indicates that the model perfectly fits the data.
- *The percent root mean square error (RMSE) below 40%* - The RMSE is the square root of the model volume minus the actual count squared, divided by the number of counts. It is a measure similar to standard deviation in that it assesses the accuracy of the entire model.

In addition to these criteria, the model-wide volume-to-count ratio was checked against a desired maximum threshold of no more than a 10 percent deviation. The validity of the BCAG TDF model was tested for 218 individual roadway segments under daily, AM peak hour, and PM peak hour conditions. The results are shown in Tables 9, 10, and 11.

TABLE 9 – RESULTS OF DAILY MODEL VALIDATION		
Validation Item	**Criterion of Acceptance**	**Model Results**
Model Wide Volume-to-Count Ratio	Within ± 10%	- 5%
% of Links Within Deviation Allowance	At Least 75%	81%
Correlation Coefficient	At Least 88%	93%
RMSE	40% or less	31%
Source: Fehr & Peers, 2011.		

TABLE 10 – RESULTS OF AM PEAK HOUR MODEL VALIDATION		
Validation Item	**Criterion of Acceptance**	**Model Results**
Model Wide Volume-to-Count Ratio	Within ± 10%	+1%
% of Links Within Deviation Allowance	At Least 75%	78%
Correlation Coefficient	At Least 88%	88%
RMSE	40% or less	40%
Source: Fehr & Peers, 2011.		

TABLE 11 – RESULTS OF PM PEAK HOUR MODEL VALIDATION		
Validation Item	**Criterion of Acceptance**	**Model Results**
Model Wide Volume-to-Count Ratio	Within ± 10%	+1%
% of Links Within Deviation Allowance	At Least 75%	75%
Correlation Coefficient	At Least 88%	91%
RMSE	40% or less	37%
Source: Fehr & Peers, 2011.		

In addition to these static tests, the BCAG TDF model's estimate of daily vehicle miles of travel (VMT) for Butte County was compared to independent estimates from the Highway Performance Monitoring System (HPMS). VMT values from HPMS are also a model estimate based on a limited set of existing traffic counts. The purpose of comparing these two estimates is to determine whether there is any significant difference that would require further investigation of either estimate. Table 12 contains the comparison

results and shows that the BCAG TDF model estimates a daily VMT that is approximately one percent lower than the slightly older HPMS data. Given the economic recession and its impact on travel, the relatively small difference shown in Table 12 is not a concern.

TABLE 12 – DAILY VMT VALIDATION

Validation Item	HPMS (2009)	Model Results (2010)
Daily Model VMT	4,527,240	4,469,500

Source: Fehr & Peers, 2011.

DYNAMIC VALIDATION

In addition to testing the BCAG TDF model for its ability to replicate existing traffic volumes, the model was dynamically tested. While reproducing existing conditions is important, it is also important to know that the model will produce stable and reasonable results when various inputs such as land use are changed. The following section presents a summary of the dynamic validation results.

Land Use and Network Changes

A basic form of dynamic validation is to vary the amounts of a particular land use type or make changes to the roadway network and compare the magnitude and direction of change from the original forecast. The specific dynamic validation tests completed for this model update are listed below.

- Add lanes to a roadway segment
- Remove lanes from a roadway segment
- Add a new roadway segment
- Delete a roadway segment
- Add 10, 100, and 1,000 households to a TAZ
- Remove 10 and 1,000 households from a TAZ
- Add and remove 100,000, and 500,000 square feet of retail to a TAZ

In addition to the test outlined above, Fehr & Peers also intends to test the BCAG TDF model's sensitivity to changes in the cost of travel. For these tests, the cost of travel will be varied by -10, 10, and 50 percent. These travel cost dynamic tests will be performed on the future year version of the BCAG TDF model.

The key model output variables involved in the dynamic validation tests are vehicle trips (VT) generated and vehicle miles of travel (VMT). The tests are intended to reveal whether the model output changes in

the correct direction and magnitude. The dynamic validation results for the roadway network changes are summarized in Table 13 and the results for the land use changes are summarized in Table 14.

TABLE 13 – DYNAMIC VALIDATION: CHANGE IN ROADWAY NETWORK (DAILY DEMAND)

Roadway Change	Before Change		After Change	
	Changed Link	Screenline[1]	Changed Link	Screenline
Add one Lane to SR 32 (Yosemite Ave & SR 99)	16,643	20,133	17,537	20,714
Remove one Lane from Oro Dam Road (between Feather River Blvd and Olive Hwy)	22,634	41,351	20,670	40,752
New Road (New Bridge over Feather River, between SR 70 and Washington Ave Bridge)	0	38,232	10,128	39,719
Remove Road (Washington Ave Bridge Removed)	16,949	38,232	0	34,790

Note:

[1] Screenlines are as follows for each of the dynamic validation tests:

- Add Lanes: Esplanade to SR 99 N. of W. 3rd Ave
- Remove Lanes: Esplanade to SR 99 N. of W. 3rd Ave
- New Road: SR 70 & Washington Ave Bridges, across Feather River
- Remove Road: SR 70 & Washington Ave Bridges, across Feather River

Source: Fehr & Peers, 2011.

As shown in Table 13, the model behaves as would be expected in response to changes in the roadway network. For example, the addition of a lane on SR 32 between Yosemite Avenue and SR 99 leads to a slight increase in traffic on the link as well as across a screenline between Bidwell Park and Humboldt Road. Similarly, removing a lane from Oroville Dam Road between Feather River Boulevard and Olive Highway leads to an approximate 10 percent decrease in traffic along Oroville Dam Road but a smaller decrease across a screenline between the Feather River and Oroville Dam Road.

In the tests were new bridges were added over the Feather River in Oroville, the model also responded logically. When a new bridge crossing the Feather River was modeled, the overall screenline volumes increased; however, the new bridge experienced more growth the screenline as a whole. This result makes sense since it shows that the new bridge would provide congestion relief to other routes while inducing more overall traffic flow across the river.

TABLE 14 – DYNAMIC VALIDATION: CHANGE IN LAND USES					
Land Use Change	**Change in TAZ Trip Generation**	**Model-wide Changes**			
		Vehicle Trips	**Vehicle Trips/DU or KSF**	**VMT**	**VMT/DU or KSF**
Add 10 Households	+69	737,855	7.82	4,397,868	46.6
Add 100 Households	+685	738,461	7.82	4,398,738	46.6
Add 1,000 Households	+6,854	744,523	7.81	4,408,933	46.2
Remove 10 Households	-70	737,717	7.81	4,397,701	46.6
Remove 1,000 Households	-6,870	729,137	7.80	4,390,904	47.0
Add 100 KSF of Retail	5,811	737,030	17.55	4,414,662	105.1
Add 500 KSF of Retail	18,125	742,171	17.60	4,486,657	105.8
Remove 100 KSF of Retail	-2,398	736,910	17.58	4,381,504	104.8
Remove 500 KSF of Retail	-12,045	733,403	17.49	4,323,897	104.4
Source: Fehr & Peers, 2011.					

Table 14 shows the results of the dynamic land use validation tests. Similar to the roadway network tests, the model responds reasonably to changes in land uses. For example, when changing residential uses, the change in overall model vehicle trip generation and VMT is stable across the entire range and producing results that are reasonable (i.e., 7.8 vehicle trips per household and 46 VMT per household). In addition, the change in trip generation at the TAZ level is as expected with the increase/decrease in TAZ trip generation corresponding to the change in households (add versus remove households). The magnitude of vehicle trip generation at the TAZ level (approximately 6.9 vehicle trips per household) is reasonable given the socioeconomic characteristics of the test area in northeast Chico. The results of the retail dynamic tests were also reasonable.

FUTURE YEAR MODELS

FUTURE YEAR LAND USE GROWTH

BCAG prepared three land use growth scenarios to represent three distinct visions of regional development patterns in designated future years. All three scenarios were created using the same regional transit network and generally contain the same regional employment, population, and housing growth projections for their respective years – only with different geographical distributions. These scenarios are summarized in the following sections.

Scenario 1 - Balanced

- Prepared for future years 2020 and 2035
- Balanced share of new housing within the center, established and new growth areas
- Contains reasonable levels of infill and redevelopment
- Consistent with local land use plans and draft conservation plan
- Consistent with BCAG long-term regional growth forecasts by jurisdiction

Scenario 2 - Dispersed

- Prepared for future years 2035
- Largest share or single-family housing with a greater amount of growth directed to the new, rural, and agricultural growth areas
- Minimize the amount of infill and redevelopment
- Exceeds the unincorporated areas local land use plans reasonable capacities for growth

Scenario 3 - Compact

- Prepared for future years 2035
- Greatest share of infill and redevelopment within the established and center growth areas
- Highest share of multi-family housing
- Exceeds the incorporated areas local land use plans reasonable capacities for growth

PROCESSING THE FUTURE YEAR SCENARIOS

For each future year scenario, BCAG provided an ESRI shapefile containing land use growth (occurring after base model year 2010) by TAZ. Land use growth categories were identical to those included in the

2010 model and described in Table 1. It should be noted that mobile home growth was assumed to be zero for all future year scenarios.

Fehr & Peers extracted the land use growth data from the shapefiles and developed land use inputs for the future year model scenarios. First, single family and multifamily land use growth data were stratified by the same cross-classified independent variables categories described for the 2010 model and shown in Tables 3 and 4. It was assumed that the percent representation of each single family and multifamily category would not change from 2010 conditions. Then, all land use growth categories (including the residential stratifications) were added to the 2010 land use to determine future year land use totals.

Future year land use totals for each scenario are summarized in Table 15 with residential land use re-aggregated for display purposes. Table 16 summarizes the VMT generated by each of the scenarios. Note that the VMT results for the balanced and compact growth scenarios reflect Ds adjustments to account for the effect of built environment variables on vehicle travel.

TABLE 15 – FUTURE YEAR MODEL LAND USE SUMMARY

Model Land Use	Base Year 2010	Scenario 1		Scenario 2 2035	Scenario 3 2035
		2020	2035		
SF_DU	56,648	67,843	90,690	95,174	87,662
MF_DU	24,682	28,677	38,150	33,690	41,114
MH_DU	13,019	13,019	13,019	13,019	13,019
RET_KSF	10,059	15,884	19,697	19,663	20,079
RRET_KSF	1,074	1,404	1,404	1,404	1,404
IND_KSF	10,550	16,330	19,799	20,475	19,093
OFF_KSF	6,342	9,353	11,820	11,641	11,828
MED_KSF	1,889	2,594	3,121	3,069	3,087
HOSP_KSF	842	1,221	1,578	1,578	1,578
PQP_KSF	1,679	2,409	3,119	3,119	3,119
HOTEL_RMS	1,972	2,340	2,961	2,961	2,961
UNIV_STU	17,000	18,110	20,000	20,000	20,000
CC_STU	12,200	14,453	18,288	18,288	18,288
K12_STU	31,010	36,006	49,409	49,871	49,409
PARK_AC	476	515	548	548	548
CASINO_SLT	1,900	2,322	3,040	3,040	3,040

Source: 2010 BCAG TDF Model

TABLE 16 – FUTURE YEAR MODEL VMT SUMMARY		
Model Scenario	**Year**	**Total VMT**
Base Year	2010	4,469,500
Scenario 1 – Balanced Growth	2020	5,318,700
	2035	6,932,100
Scenario 2 – Dispersed Growth	2035	7,449,800
Scenario 3 – Compact Growth	2035	6,588,500
Source: Fehr & Peers, 2011.		

MODEL LIMITATIONS

The BCAG TDF Model has been developed for regional planning purposes within a trip-based model framework. The model conforms to the recommendations outlined in the 2010 California Regional Transportation Guidelines for a Type B metropolitan planning organization (MPO), but does have limitations.

- The current structure has limited sensitivity to factors that may affect trip generation rates such as significant declines in economic activity. However, since the model has a land use occupancy component, economic cycles can be reflected in the assumed intensity of land uses within the model.
- Although the model network includes all local roadways, not all local roadways are assigned vehicle trips. Use of the model for local applications will require sub-area refinements and validation to ensure the model is appropriately sensitive to changes at this scale.
- Model parameters relying on household travel survey data are based on a small sample size. Future model updates would benefit from a larger sample of households in Butte County.
- The trip-based model structure does not allow for estimates of forecasts of vehicle trips (VT) or VMT generated by residential households or individual persons. Vehicle trips are assigned at the TAZ level and any connection to individual land uses that originally generated the trips are lost. VT and VMT can be expressed as ratios such as VMT per capita or VMT per household. But these ratios are based only on dividing total VMT by the number of people or households in the model area. It does not indicate the level of VT or VMT being generated.

APPENDIX A:
BCAG TDF MODEL TRIP GENERATION MEMORANDUM

FEHR PEERS

MEMORANDUM

Date: July 27, 2011

To: Brian Lasagna, BCAG

From: Chris Breiland, Kwasi Donkor, and Ronald T. Milam, Fehr & Peers

Subject: ***Trip Generation Cross-Classification***

RS10-2809

This memorandum describes the development of the cross-classified residential trip generation model for the BCAG regional travel demand forecasting (TDF) model. The previous version of the BCAG TDF model predicted vehicle trips based on simple single-class trip generation rates that vary for each residential unit type (single family, multi-family, mobile home). Single-class trip generation rates are common for smaller regional travel models used in California and elsewhere and have the advantage that they are simple to develop and apply. However, the simplicity of the single-class trip generation rates also limits a model's sensitivity to important household characteristics like the number of residents and income. For this model update, the trip generation rates for single family and multi-family homes have been expanded to represent the different trip making characteristics of a variety of households within Butte County based on the following characteristics.

- Household size
- Number of workers
- Household income

These so-called cross-classified trip generation rates are common for large MPO TDF models and help to explain the differences in trip generation that are observed in different parts of a region.

The mobile home category was not expanded because there is not sufficient data on how mobile home characteristics (household size, number of workers, and income) vary. Moreover, there are relatively few mobile homes in Butte County and we do not feel that the trip generation benefits would be worth the additional complexity associated with the cross-classified trip generation rates. This remainder of this memorandum explains how the trip generation rates were developed and how they will be applied in the BCAG TDF model.

Demographic Data Collection

The first step in developing the enhanced residential trip generation submodel was to obtain data from the US Census Bureau on the household characteristics listed above. The data were derived from block-group datasets and then aggregated to the model's traffic analysis zones (TAZs). A description of each variable is as follows:

Household Size (4 Categories):

- One-person households
- Two-person households
- Three-person households
- Four or more person households

Household Workers (4 Categories):

- One-worker households
- Two-worker households
- Three-worker households
- Four or more worker households

Household Income (6 Categories):

- < $10K
- $10K - $25K
- $25K - $45K
- $45K - $75K
- $75K - $125K
- >$125K

Each household in a block group was classified into a combination of the three demographic variables using the 2000 Census Transportation Planning Package (CTPP) Access Tool[1]. Multiple block groups within a TAZ were then aggregated to develop a "household distribution" for each TAZ. For example, a TAZ with 1,175 single family households may have been stratified by the various household characteristics shown in Table 1.

[1] The 2010 Census Bureau data was not available at the time this model was developed.

TABLE 1: LAND USE CROSS-CLASSIFICATION EXAMPLE

Household Size	Number of Workers	Income					
		<$10K	$10K - $25K	$25K - $45K	$45K - $75K	$75K - $125K	>$125K
1	0	100	80	50	30	10	0
	1	0	55	50	10	10	0
	2	0	0	0	0	0	0
	3	0	0	0	0	0	0
	4+	0	0	0	0	0	0
2	0	15	65	20	0	0	0
	1	4	54	40	50	0	0
	2	0	14	45	24	20	0
	3	0	0	0	0	0	0
	4+	0	0	0	0	0	0
3	0	4	10	0	0	0	0
	1	0	25	19	4	0	0
	2	0	25	24	35	10	0
	3	0	0	0	0	0	10
	4+	0	0	0	0	0	0
4+	0	10	35	0	0	0	0
	1	0	35	25	15	4	10
	2	0	0	25	45	0	10
	3	0	10	25	10	0	4
	4+	0	0	0	0	0	0
	Subtotal	133	408	323	223	54	34
						Grand Total	1,175

Source: Fehr & Peers, 2011

Trip Generation

With the household data stratified across the three 'classifications' of size, workers, and income, the next step was to develop corresponding trip generation rates. Initial person-trip rates were based on the residential cross-classification trip generation submodel contained in the SACMET TDF model developed by the Sacramento Area Council of Governments (SACOG). To convert to vehicle trip rates, the rates were adjusted based on a comparison to the previous model's overall vehicle trip generation. Table 2 shows an example of the BCAG model's residential cross-classified vehicle-trip generation rates. Please note that the vehicle trip generation rates will be adjusted and finalized during the calibration and validation stage of the model development effort.

FEHR PEERS

TABLE 2: SINGLE FAMILY VEHICLE TRIP GENERATION CROSS-CLASSIFICATION EXAMPLE

Household Size	Number of Workers	Income					
		<$10K	$10K - $25K	$25K - $45K	$45K - $75K	$75K - $125K	>$125K
1	0	2.82	2.89	2.97	3.28	3.34	3.37
	1	3.61	3.70	3.80	4.20	4.28	4.32
	2	N/A	N/A	N/A	N/A	N/A	N/A
	3	N/A	N/A	N/A	N/A	N/A	N/A
	4+	N/A	N/A	N/A	N/A	N/A	N/A
2	0	5.62	5.66	5.78	5.82	5.88	5.92
	1	6.15	6.19	6.32	6.36	6.43	6.47
	2	6.53	6.69	6.88	7.60	7.74	7.81
	3	N/A	N/A	N/A	N/A	N/A	N/A
	4+	N/A	N/A	N/A	N/A	N/A	N/A
3	0	8.67	8.73	8.91	8.97	9.06	9.12
	1	9.31	9.38	9.58	9.65	9.75	9.82
	2	10.30	10.37	10.59	10.66	10.77	10.84
	3	10.58	10.66	10.89	10.97	11.08	11.16
	4+	N/A	N/A	N/A	N/A	N/A	N/A
4+	0	13.17	13.26	13.54	13.63	13.77	13.86
	1	15.85	15.87	15.88	15.90	15.92	15.92
	2	15.93	16.04	16.21	16.27	16.44	16.50
	3	16.63	16.75	17.10	17.22	17.40	17.52
	4+	17.57	17.69	18.06	18.18	18.37	18.50

Source: Fehr & Peers, 2011

Next Steps

As part of the model validation stage we will verify that the vehicle trip generation resulting from the household distribution and cross-classified trip rates are reasonable when compared to the trip generation counts collected earlier this year within Butte County.

We hope this information was helpful. Please do not hesitate to contact us if you have any questions or comments.

APPENDIX B:
BCAG TDF MODEL FUEL PRICE MEMORANDUM

MEMORANDUM

Date: June 27, 2011

To: Brian Lasagna, BCAG

From: Chris Breiland, Kwasi Donkor, and Ronald T. Milam, Fehr & Peers

Subject: ***Fuel Price Elasticity Information***

RS10-2809

As part of the BCAG TDF model update, we are including an option that will allow the TDF model to be sensitive to the expected increases in the cost of travel (specifically fuel prices) between 2010 and 2035. The following discussion summarizes the latest research on the effect of fuel prices in particular on vehicle miles of travel (VMT), with some discussion of other fuel price effects.

How Fuel Prices Affect Travel

Fuel prices are a major influence on travel since the price of gasoline or diesel is a substantial component to the overall cost of travel and the one cost most recognizable to drivers compared to infrequent costs like tire wear or oil changes. When determining the effects of fuel cost on travel, economists typically use the idea of price elasticity. In the case of fuel price elasticity, this represents the change in VMT with respect to fuel prices price. For example, a VMT/fuel price elasticity of -0.05 indicates that an increase in fuel prices of 10 percent would result in a 0.5 percent decline in VMT.

VMT/Fuel Price Elasticities Relevant for California

Two studies of VMT/fuel price elasticity are particularly relevant for travel modeling in California.

- The Congressional Budget Office (http://www.cbo.gov/ftpdocs/88xx/doc8893/01-14-GasolinePrices.pdf) examines highway vehicle flow data from 13 locations around California, intended to represent traffic conditions in California's major metropolitan areas, from 2003 to 2006. The CBO finds a VMT/fuel price elasticity of -0.02 for all weekday VMT and an elasticity of -0.035 for weekday VMT at study locations that specifically had a parallel rail transit option. Weekend VMT effects are not significant.

- Gillingham (2010, http://www.stanford.edu/~kgilling/Gillingham_JMP.pdf) analyzes data from California odometer readings taken at smog checks from 2005 to 2008. He finds medium-run ("roughly two years") VMT/fuel price elasticities ranging between -0.15 and -0.2.

Other VMT/Fuel Price Elasticities

Several other studies address VMT/fuel price elasticities, but are less appropriate for use with current California travel models due to different time periods, different geographic contexts, or methodological issues.

- Hanly et al. (2002, http://www2.cege.ucl.ac.uk/cts/tsu/papers/transprev243.pdf) find a short-run elasticity of -0.1 and a long-run elasticity of -0.3, comparable to the results of other United Kingdom-based studies.
    - Goodwin (1992, http://www.bath.ac.uk/e-journals/jtep/pdf/Volume_XXV1_No_2_155-169.pdf) finds short- and long-run elasticities of -0.16 and -0.33, respectively.
    - Graham and Glaister (2002, http://www.cts.cv.ic.ac.uk/documents/publications/iccts00007.pdf) find similar elasticities of -0.15 and -0.3. However, these results are based on U.K. and U.K.-comparable studies that might not be applicable in California.
- In the United States, Small and Van Dender (2006, http://www.economics.uci.edu /files/economics/docs/workingpapers/2005-06/Small-03.pdf) consider U.S. State-level data from 1966 to 2001, finding a short-run elasticity of -0.056 and a long-run elasticity of -0.296. The inclusion of older data in this study could over-estimate the magnitude of the fuel price effect, because fuel consumption has become more inelastic over time, possibly due to increased consumer dependence on automobiles, suburbanization, the rise of multiple-income households, or decreased availability of public transit (Hughes et al., 2006, http://www.econ.ucdavis.edu/faculty/knittel/papers/gas_demand_final.pdf).
- The Department of Energy (DOE, 1996) also reviews literature from the 1980s and 1990s, finding short-run elasticities in the range of -0.05 to -0.2 and long-run elasticities from -0.09 to -0.26. The DOE also notes the trend toward lower elasticities over time, so these results are consistent with the more recent short- and long-term elasticities from CBO (2008) and Gillingham (2010).
- Brand (2006, http://www.fhwa.dot.gov/policy/otps/innovation/issue1/impacts.htm) considers aggregate, U.S. VMT and fuel price data to calculate short-run elasticities of -0.21 to -0.30. Rather than an econometric analysis, Brand uses a simple “but-for” methodology that uses only 4 data points, adjusted for what he considers to be the long-term, secular trend in VMT growth.

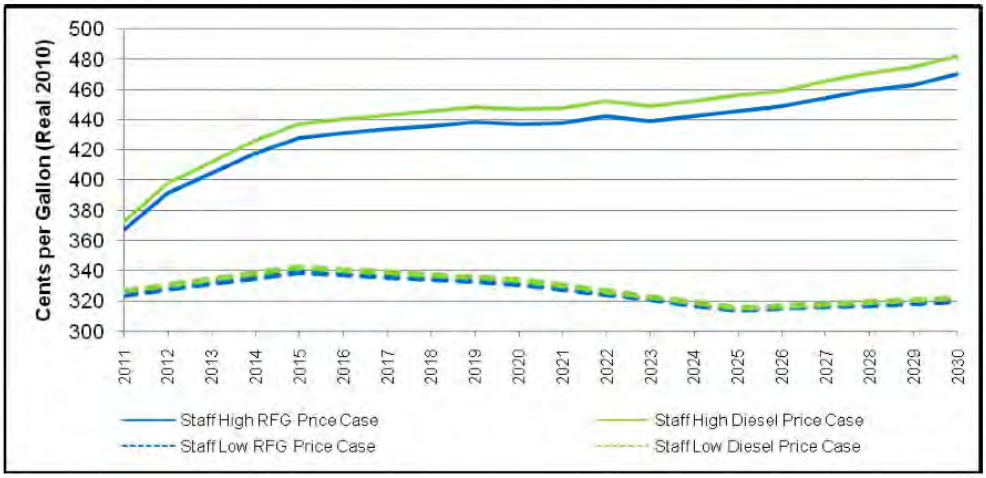
Summary

As described above, there has been a wide range of study related to the effect of fuel price on vehicle travel. The studies listed above employ a variety of methodologies and sample sizes and cover a variety of time spans and geographic locations. However, despite these differences, most of the studies conclude that the long-term elasticity of VMT relative to fuel price is between -0.2 and -0.3. For application in the BCAG TDF model, Fehr & Peers recommends that a mid-range elasticity of -0.25 be used.

To estimate the impact of fuel prices on future travel, the BCAG TDF model will have an option to multiply the elasticity described above against a user-defined estimate of fuel prices. The fuel prices will need to be specified in constant 2010 dollar terms to avoid double-counting the effects of overall price inflation. There are a variety of data sources available that forecast fuel prices 10, 20, and 30 years into the future. All future fuel price forecasts cover a wide range of prices because of the volatile nature of this commodity. Therefore it can be difficult to determine the "right" estimate of future year fuel prices.

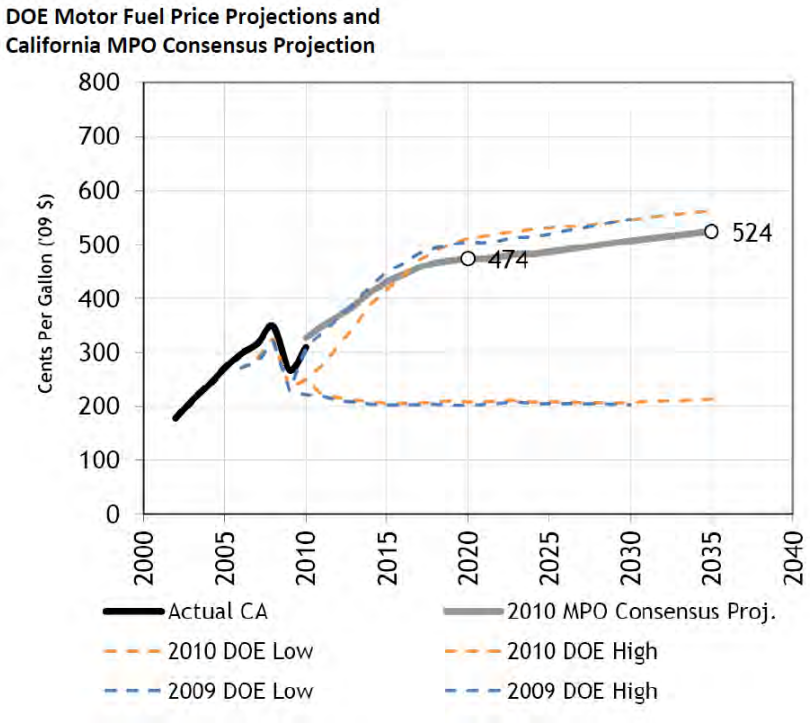
The chart below shows the California Energy Commission's estimate of gasoline and diesel costs, which range between $3.20 and $4.80 per gallon. As of summer 2011, the average gas price in Butte County was $3.80 per gallon, which is at the high end of the Energy Commission's 2011 forecast and would be at the median of the 2030 forecast.

Figure 6: California Gasoline and Diesel Price Cases (2010 cents per gallon)

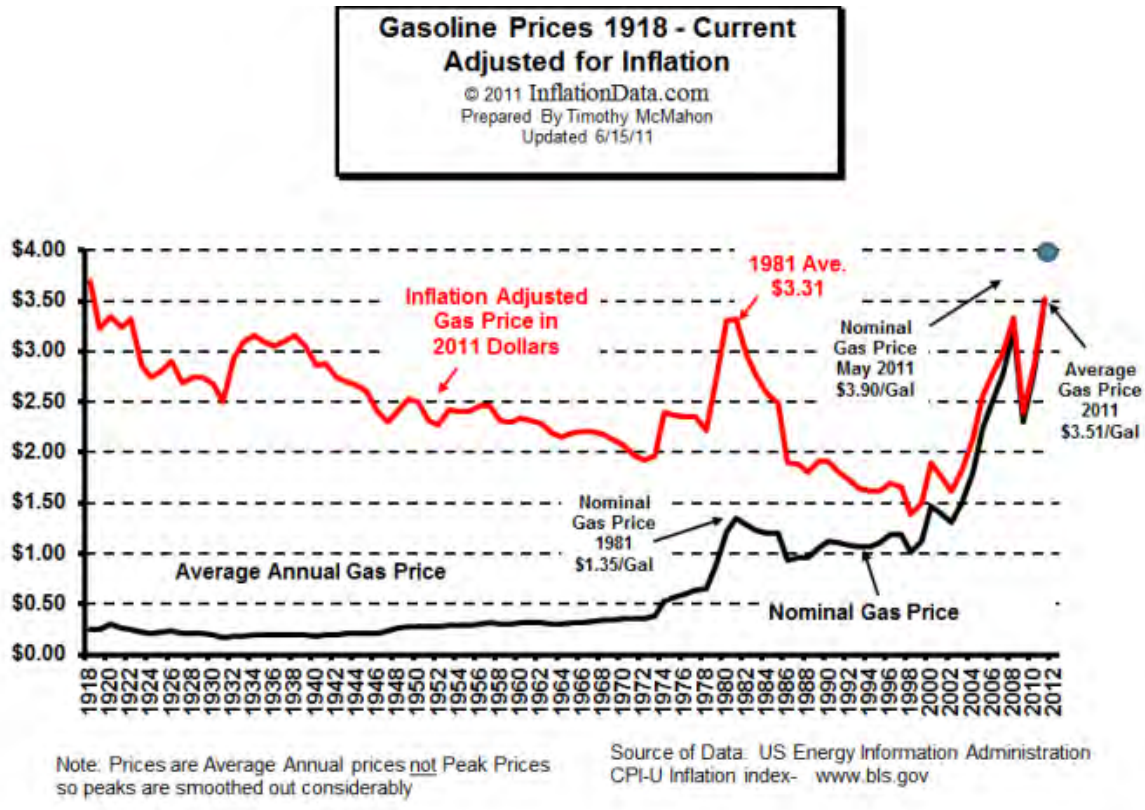


Source: California Energy Commission

The chart below shows the US Department of Energy's (DOE) estimate of fuel costs, along with the consensus fuel price estimate from California MPOs. The US DOE forecast is more variable than the California Energy Commission's estimate with a higher upper estimate and lower bottom estimate. The MPO consensus price is near the upper end of the estimate.



The final chart shows the historic average annual gas price in constant 2011 (and nominal) dollars from 1918 to today. The chart shows that there has been considerable variability, including a recent run-up in prices. The current 2011 price is about 40 percent higher than the long-term average of about $2.50 per gallon. While $2.50 per gallon for gasoline may seem unlikely in today's environment, prices were below that level just two years ago amidst the peak of the economic slowdown.



Recommendation

The fuel cost price forecasts and historic average data show that predicting fuel prices 20 years into the future is filled with uncertainty. Many in the industry are preparing for an era of much higher fuel costs; however, this trend, which has been long predicted, has not been borne out in historic data. Further, increased market penetration of hybrid and electric vehicles adds another dimension to future predictions.

If we were to assume the MPO consensus fuel price of $5.00 per gallon in 2030 and the recommended -0.25 VMT/fuel price elasticity, this would result in a 7.9 percent decline in VMT compared to baseline conditions (this assumes 2011 Butte County fuel prices of $3.80 per gallon). However, if we were to assume the midpoint fuel price estimate from the California Energy Commission under 2030 conditions, then baseline VMT would be unchanged since this midpoint fuel price estimate is about the same as today's price. Assuming the low price estimates from either the Energy Commission or DOE forecasts would result in more VMT than the baseline condition.

Based on the information above, we recommend that the fuel price sensitivity component be included in the BCAG TDF model, however, we recommend that this component be turned off for default model runs. Planners can turn on the component to test fuel price scenarios and evaluate how fuel prices impact travel outcomes. In performing these tests, marginal projects that may not provide benefit under a variety of fuel price scenarios can be eliminated during a screening process.

APPENDIX C:
BCAG DIRECT RIDERSHIP FORECASTING MEMORANDUM

FEHR PEERS

MEMORANDUM

Date: July 13, 2012

To: Brian Lasagna, BCAG

From: Chris Breiland and Jonathan Williams, Fehr & Peers

Subject: ***Direct Ridership Models to Forecast Bus Line Ridership in Butte County***
RS10-2809

This memorandum summarizes the Direct Ridership Forecasting (DRF) models Fehr & Peers prepared for the B-Line system in Butte County, California. DRF is a modeling system that relates transportation and land use data along bus lines to predict ridership. This tool is helpful in predicting future line ridership in the BCAG area and it can also be used to estimate the effect of rerouting existing lines, adjusting headways, or developing new bus lines in the County.

MODEL SUMMARY

BCAG provided extensive data on the bus system and the land uses surrounding each bus line and bus stop. Using these data, Fehr & Peers developed and tested a series of DRF models that best fit the existing ridership levels based on land use and transit system information. Given the geographic and demographic diversity in the County, three separate DRF models were developed. Model A is tailored to conditions in the Chico Area, and focuses only on intracity routes. Model B focuses on the rural routes that serve Paradise/Magalia, Oroville, and Biggs/Gridley area. Model C focuses on intercity routes connecting Chico with the rest of the county.

METHODOLOGY

Linear regression techniques were used to determine the variables and models that better forecast bus ridership in the county's transit system. The statistical software R was used for the calculations.

Butte County provided a complete dataset with land use, population, income distribution and demographic information in the proximity of bus routes. Also, daily ridership information and headways throughout the day were provided.

Several models were tested with ridership as the dependent variable. The selected models are those with the highest adjusted R^2 statistic and with independent variables that are relatively simple to estimate/forecast, have the most intuitive relationships, and have the highest significance levels. A description of the independent and selected independent variables is presented below. The majority of the variables below have a positive impact on ridership (positive sign). However, the headway-related variables have a negative impact on ridership (negative sign) since ridership decreases when headways are longer.

- *Ridership*: average ridership per route per day. BCAG provided ridership for typical weekday (Tuesday, Wednesday, and Thursday) conditions during the spring of 2011.
- *MultiFam*: Total number of multifamily residential units within a quarter-mile of a bus route. This information was provided by BCAG and buffered to the bus route by staff at CSU Chico.
- *Headway_Peak*: approximate peak-period (6:00 AM – 9:00 AM and 3:30 PM – 6:00 PM) headway in minutes. Plots of this variable indicate that ridership decreases faster at the lowest headway values (short headways) and slower at the highest ones (long headways). Therefore, the natural logarithm of the peak headways was used in the regression modeling.
- *Headway_Midday*: approximate midday period (9:00 AM - 3:30 PM) headway in minutes. If a bus does not run during this period a value of 390 was assumed. The natural logarithm conversion is also used with this variable. All headway information was based on the BCAG website.
- *Headway_Avg*: average of the *Headway_Peak* and *Headway_Midday* variables. The natural logarithm conversion is also applied to the resulting averages.
- *Population*: population in the cities and areas served by a route. The 2009 population data was used. If not available, a linear interpolation was performed on 2000 and 2010 population data. This information was obtained from the US Census Bureau.
- *ServPOP*: variable that represents the total population served by the routes. This variable comes from the addition of four variables provided by BCAG:
    - *SingleFam*: Total number of single-family units within a quarter-mile of a bus route. This information was provided by the BCAG and buffered by CSU Chico staff.
    - *Retail KSF*: similar to *SingleFam* but for total retail space, in thousands of square feet (KSF).
    - *Non Retail KSF*: similar to *SingleFam* but for total non-retail space, in thousands of square feet (KSF).
    - *Enroll 2010*: Total number of K-12 students enrolled in public schools within a quarter-mile of a bus route.

RESULTS

The routes serving the BCAG area were grouped in three sets:

A. Bus routes serving only the Chico Area: Chico-serving bus routes tend to have substantially higher ridership than other routes in the county. This effect is likely due to the presence of Chico State University and the higher population densities within Chico.

B. Bus routes serving the areas of Paradise/Magalia, Oroville, and Biggs/Gridley: local and regional buses serving these areas.

C. Regional bus routes connecting Chico with the Paradise/Magalia, Oroville, and Biggs/Gridley Areas. Regional trips serving Chico were grouped in a third set because these routes tended to have somewhat higher ridership than the group B routes.

The selected DRF models for each of these sets are presented below. The adjusted R^2 value for the Group A and B DRF models are presented below each equation. A correlation coefficient is presented for the Group C DRF model since an adjusted R^2 value is not applicable since it is a hybrid model (combining the basic form of the Group B model with an additional parameter describing the regional population of the non-Chico end of the route). Tables summarizing the predicted and actual values are presented as well.

A summary with the significance level of each of the dependent variables and intercepts is presented at the end of this section

A. Bus routes only serving Chico Area

$$Ridership = 0.25 \times (2{,}567.11 + 0.11 \times ServPOP + 0.22 \times MultiFam - 733.96 \times \ln(Headway_{Midday}))$$

$$R^2_{Adjusted} = 0.93$$

The Group A DRF model has three independent variables, which can be interpreted as follows:

- Ridership increases as service population increases
- Ridership increases as the number of multi-family dwelling units increases
- Ridership decreases as headways get longer

The predicted and actual ridership values for this group are presented in Table 1. The actual values range from 71 (Route 7) to 1,298 (Route 15) trips. In general, the model shows good performance across the entire range of ridership. The model over-predicts the low-ridership Route 7, and under-predicts Route 9, which is a relatively short, but high ridership line that is geared toward serving the university population.

TABLE 1. PREDICTED AND ACTUAL WEEKDAY RIDERSHIP FOR ROUTES SERVING THE CHICO AREA

Route	Predicted	Actual	Difference
2	337	334	3
3	452	340	112
4	429	417	12
5	357	271	85
7	14	71	(57)
8	392	411	(18)
9	432	544	(112)
15	1,274	1,298	(24)

Source: Fehr & Peers, 2011.

B. Bus routes serving the Paradise/Magalia, Oroville, and Biggs/Gridley Area

$$Ridership = 0.25 \times (753.82 + 0.05 \times MultiFam - 138.57 \times \ln(Headway\_Avg))$$
$$R^2_{Adjusted} = 0.52$$

The Group B DRF model has only two independent variables, which can be interpreted as follows:

- Ridership increases as the number of multi-family dwelling units increases
- Ridership decreases as headways get longer

The predicted and actual ridership values are presented in Table 2. The actual values vary in a narrower range than the previous case; however, the overall ridership levels are also lower.

TABLE 2. PREDICTED AND ACTUAL WEEKDAY RIDERSHIP FOR ROUTES SERVING THE PARADISE, OROVILLE, AND GRIDLEY/BIGGS AREA

Route	Predicted	Actual	Difference
24	80	99	(20)
25	62	58	4
26	70	65	5
27	53	43	11
30	15	56	(41)
31	32	20	12
46	4	3	1

Source: Fehr & Peers, 2011.

C. Regional bus routes connecting Chico with the Paradise/Magalia, Oroville, Biggs/Gridley Areas

$$Ridership = 0.25 \times \left(0.05 \times MultiFam - 138.57 \times \ln\left(Headway_{Avg}\right) + 0.07 \times Population\right)$$
$$Correlation = 0.957$$

The Group C DRF model is an adaptation of the Group B model. Rather than estimating an entirely new model, a similar form was adopted where the intercept is removed and replaced by a third term that accounts for the populations of the areas that are connected to Chico. This approach was taken to simplify the overall model structure so that fewer variables would have to be estimated/forecasted.

Routes 40 and 41 are considered as a single route since they work as complementary services and share the same general alignment (although Route 41 extends further north into Magalia).

Both routes have a common headway and operate in a repeating pattern, essentially leading to a common route with one-hour headways.

The predicted and actual ridership values for this group are presented in Table 3. The actual values cover a wide range, from 8 (Route 32) to 511 (Route 20). The Group C DRF model performs reasonably well for the higher ridership routes, but significantly overestimates (in absolute terms) the ridership on Route 32. However, given the low ridership on this route, the model performance is deemed to be adequate.

TABLE 3. PREDICTED AND ACTUAL WEEKDAY RIDERSHIP FOR ROUTES CONNECTING CHICO WITH PARADISE, OROVILLE, AND GRIDLEY/BIGGS AREA

Route	Predicted	Actual	Difference
20	443	511	(68)
32	81	8	73
40/41	571	494	77

Calculations from software R.

EFFECT OF FUEL PRICES ON RIDERSHIP

Based on data provided by BCAG, transit ridership increased substantially in the summer of 2008 when fuel prices approached $5.00 per gallon. While this one-time increase in fuel price spike is not enough information to develop a model to accurately predict how ridership will change with fuel price, it can provide anecdotal evidence related to transit ridership elasticity with respect to fuel costs. Based on this one data point, the transit/fuel price elasticity is 0.55. In other words, given a doubling in fuel prices, transit ridership increased by 55 percent.

Literature indicates that this is a short-term elasticity and ridership levels will increase over time as people move and switch job locations, in part to have access to transit and reduce travel costs. The literature generally indicates that the long-term transit/fuel price elasticity is 1.5 to 3 times greater than the short-term elasticity, which would suggest that the long-term elasticity in the BCAG area could be as high as 0.83. This value is estimated at the low range, based on the magnitude of the sudden fuel price increase in the summer of 2008 and resulting high short term elasticity.

Based on this limited data, we do not recommend incorporating a fuel price element in the direct ridership model at this time. However, as fuel prices fluctuate and ridership levels are tracked, there may be enough information to add this element to the Direct Ridership model in the future.

2035 FUTURE CONDITIONS RIDERSHIP FORECASTS

Using the DRF model, 2035 ridership forecasts were developed based on household and non-residential land use information provided by BCAG and processed by CSU Chico. Ridership forecasts were developed for two 2035 land use alternatives: Scenario 1 representing a balanced growth pattern with a mix of infill and new suburban development; and Scenario 2, which represents a more dispersed growth pattern with a greater emphasis on suburban and greenfield development. Both of these scenarios were evaluated as part of BCAG's Sustainable Communities Strategy effort.

Given the uncertainty in transit planning and funding, BCAG did not have any 2035 transit routes identified for evaluation purposes. Therefore the transit ridership forecasts are based on the existing (summer 2012) routing and headways. The 2035 ridership forecasts and growth in transit ridership for each transit line are shown in Tables 4 and 5 for Scenarios 1 and 2, respectively. Note that the ridership estimates developed below reflect application of the "difference method," which adds the DRF model's predicted growth in ridership to the actual ridership counts on each transit line. The difference method is commonly used in all types of travel forecasting to reduce the degree of model error.

TABLE 4. 2035 WEEKDAY RIDERSHIP BY ROUTE, LAND USE SCENARIO 1

Route	Service Area	2035 Ridership Forecast	Change from Existing Ridership
2	Chico	462	128
3	Chico	496	156
4	Chico	581	164
5	Chico	588	317
7	Chico	347	276
8	Chico	535	124
9	Chico	666	122
15	Chico	1,748	450
24	Rural	109	10
25	Rural	62	4
26	Rural	81	16
27	Rural	43	0
30	Rural	65	9
31	Rural	32	12
46	Rural	4	1
20	Intercity	747	236
32	Intercity	113	105
40/41	Intercity	750	256

Source: Fehr & Peers, 2012.

TABLE 5. 2035 WEEKDAY RIDERSHIP BY ROUTE, LAND USE SCENARIO 2

Route	Service Area	2035 Ridership Forecast	Change from Existing Ridership
2	Chico	441	107
3	Chico	443	103
4	Chico	563	146
5	Chico	561	290
7	Chico	327	256
8	Chico	523	112
9	Chico	652	108
15	Chico	1,719	421
24	Rural	104	5
25	Rural	60	2
26	Rural	74	9
27	Rural	43	0
30	Rural	61	5
31	Rural	24	4
46	Rural	3	0
20	Intercity	619	108
32	Intercity	53	45
40/41	Intercity	588	94

Source: Fehr & Peers, 2012.

As expected, Scenario 1 has greater overall transit ridership growth since it is denser and has a greater level of development along the B-Line routes. Overall ridership growth is 32 percent higher for Scenario 1 compared to Scenario 2. Appendix D summarizes the input variables used for the 2035 transit ridership forecasts. In addition, the raw model transit ridership forecasts (which do not have the difference method applied are provided).

APPENDIX A

Significance level of variables and intercept

The following tables show the parameter and significance level for each independent variable and intercept for each of the models highlighted above.

Group A Model: Bus routes only serving Chico Area

TABLE 6: PARAMETERS AND SIGNIFICANCE LEVEL FOR GROUP A MODEL

Variable	Parameter	Significance Level
ServPOP	0.11	98.1%
MultiFam	0.22	92.7%
Ln(Headway_Midday)	-733.96	98.3%
Intercept	2,567.11	95.1%

Source: Fehr & Peers, 2011.

Group B Model: Bus routes serving the Paradise, Oroville, and Biggs/Gridley Area

TABLE 7: PARAMETERS AND SIGNIFICANCE LEVEL FOR GROUP B MODEL

Variable	Parameter	Significance Level
MultiFam	0.05	71.9%
Ln(Headway_Avg)	-138.57	94.5%
Intercept	753.82	96.2%

Source: Fehr & Peers, 2011.

Group C Model: Regional bus routes connecting Chico with the Paradise, Oroville, Biggs/Gridley Areas

This model is the same as the Group B model detailed in Table 7, but with an additional term estimated to quantify the effect of population on transit trips.

TABLE 8: PARAMETER AND SIGNIFICANCE LEVEL FOR THE GROUP C MODEL

Variable	Parameter	Significance Level
Population	0.07	95.0%

Source: Fehr & Peers, 2011.

APPENDIX B

Model Data Inputs

Table 9 contains the local transit service and demographic data used to create the ridership model.

TABLE 9. MODEL INPUT DATA

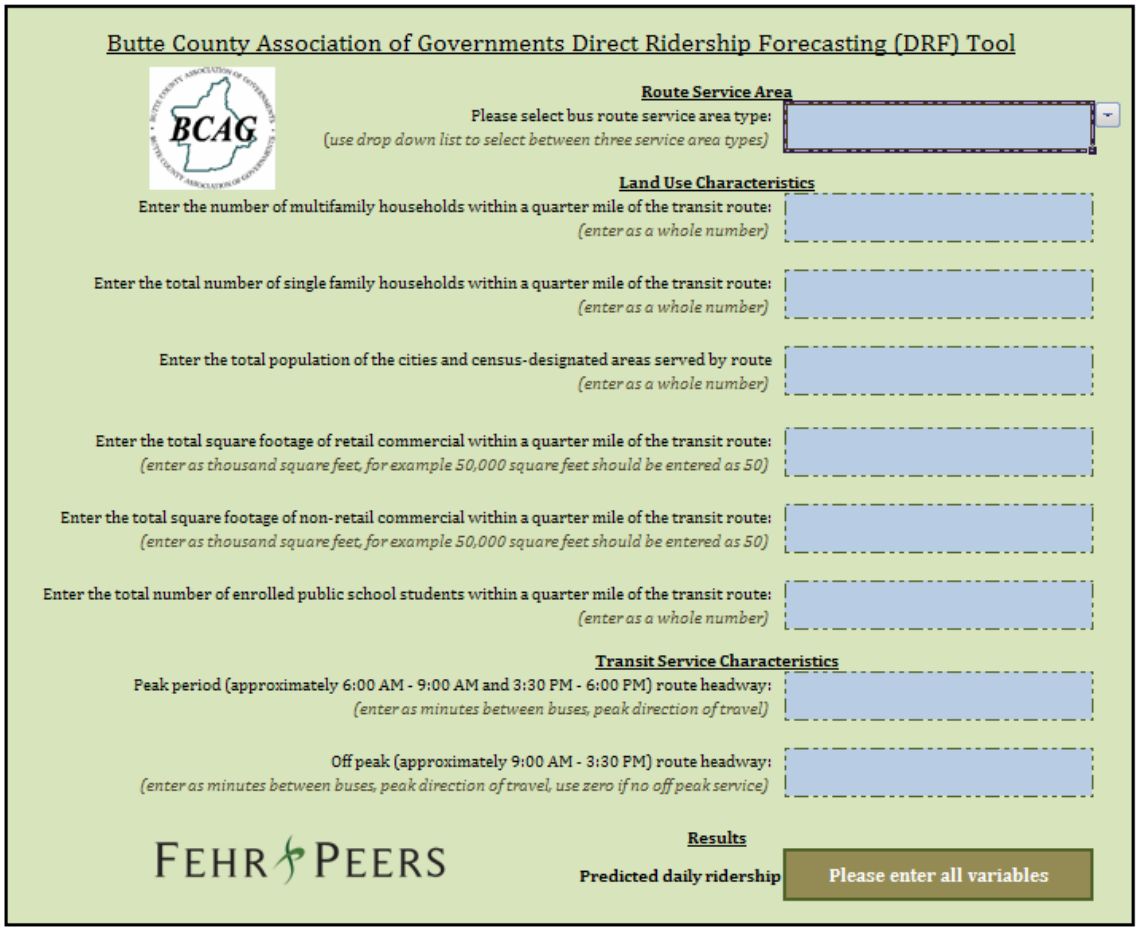
Route	Service Area	Peak Frequency	Off-Peak Frequency	Total Pop.	Quarter Mile Distance from Line				
					MF HH[a]	SF HH[b]	Retail KSF	Non-retail KSF	K-12 Public School Enrollment
2	Chico		60		3,187	2,083	2,230.085	3,612.512	1,758
3	Chico		60		5,765	2,312	2,192.124	2,381.143	1,706
4	Chico		60		2,109	3,256	2,048.806	2,304.908	7,562
5	Chico		60		3,718	2,662	2,864.728	2,424.723	1,350
7	Chico		390[c]		3,463	3,503	1,330.665	1,238.076	3,775
8	Chico		30		3,687	1,058	902.337	918.518	3,185
9	Chico		30		4,493	873	985.536	1,032.680	2,974
15	Chico		30		9,385	5,695	5,427.863	9,664.250	5,576
24	Rural	60	60		2,874				
25	Rural	60	60		1,364				
26	Rural	60	60		2,031				
27	Rural	60	60		584				
30	Rural	180[d]	390[c]		1,814				
31	Rural	180[d]	390[c]		3,209				
46	Rural	180[d]	390[c]		947				
20	Intercity	60	120	31,445	4,258				
32	Intercity	180[d]	390[c]	14,660	1,640				
40/41	Intercity	120	120	38,441	3,484				

[a] Multifamily Households
[b] Single-family Households
[c] No off-peak service, 390 used for model input
[d] Only 1-3 daily trips offered, 180 used for model input

APPENDIX C

Direct Ridership Model

The below is a screen capture of the Butte County Bus Line Ridership Model. This model is created and operates in Microsoft Excel 2007.



APPENDIX D

Tables 10 and 11 summarize the 2035 input variables used for Scenarios 1 and 2, respectively. Tables 12 and 13 summarize the DRF model's raw 2035 ridership forecasts for Scenarios 1 and 2, respectively. These raw ridership forecasts were processed with the difference method to forecast 2035 ridership using the following relationship:

2035 Ridership Forecast = 2011 Observed Ridership + (2035 Raw DRF Forecast – 2011 Raw DRF Forecast)

TABLE 10. SCENARIO 1 2035 INPUT DATA

Route	Service Area	Peak Frequency	Off-Peak Frequency	Total Pop.	Quarter Mile Distance from Line				
					MF HH[a]	SF HH[b]	Retail KSF	Non-retail KSF	K-12 Public School Enrollment
2	Chico		60		3,351	2,091	2,678	3,926	2,158
3	Chico		60		6,300	2,670	2,566	2,748	2,094
4	Chico		60		2,225	3,350	2,347	2,437	9,282
5	Chico		60		5,280	3,415	3,511	2,962	1,657
7	Chico		390[c]		5,893	6,070	2,076	1,882	4,634
8	Chico		30		3,729	1,197	1,177	1,022	3,910
9	Chico		30		4,605	874	1,192	1,139	3,651
15	Chico		30		7,383	11,073	6,637	10,496	6,844
24	Rural	60	60		3,692				
25	Rural	60	60		1,664				
26	Rural	60	60		3,435				
27	Rural	60	60		633				
30	Rural	180[d]	390[c]		2,742				
31	Rural	180[d]	390[c]		4,486				
46	Rural	180[d]	390[c]		1,085				
20	Intercity	60	120	43,782	6,004				
32	Intercity	180[d]	390[c]	20,412	2,183				
40/41	Intercity	120	120	53,523	4,876				

[a] Multifamily Households
[b] Single-family Households
[c] No off-peak service, 390 used for model input
[d] Only 1-3 daily trips offered, 180 used for model input

TABLE 11. SCENARIO 2 2035 INPUT DATA

Route	Service Area	Peak Frequency	Off-Peak Frequency	Total Pop.	Quarter Mile Distance from Line				
					MF HH[a]	SF HH[b]	Retail KSF	Non-retail KSF	K-12 Public School Enrollment
2	Chico		60		3,219	2,088	2,257	3,869	2,072
3	Chico		60		5,771	2,520	2,199	2,409	2,011
4	Chico		60		2,114	3,299	2,060	2,353	8,912
5	Chico		60		5,052	3,304	3,273	2,793	1,591
7	Chico		390[c]		5,593	5,949	2,094	1,888	4,449
8	Chico		30		3,690	1,205	902	919	3,754
9	Chico		30		4,497	877	2,257	3,869	3,505
15	Chico		30		7,228	11,067	7,300	10,512	6,572
24	Rural	60	60		3,258				
25	Rural	60	60		1,496				
26	Rural	60	60		2,807				
27	Rural	60	60		614				
30	Rural	180[d]	390[c]		2,373				
31	Rural	180[d]	390[c]		3,775				
46	Rural	180[d]	390[c]		973				
20	Intercity	60	120	36,848	5,385				
32	Intercity	180[d]	390[c]	17,179	1,884				
40/41	Intercity	120	120	45,046	3,725				

[a] Multifamily Households
[b] Single-family Households
[c] No off-peak service, 390 used for model input
[d] Only 1-3 daily trips offered, 180 used for model input

TABLE 12. RAW 2035 WEEKDAY RIDERSHIP BY ROUTE, LAND USE SCENARIO 1

Route	Service Area	Raw DRF Ridership Forecast
2	Chico	465
3	Chico	608
4	Chico	593
5	Chico	673
7	Chico	290
8	Chico	517
9	Chico	554
15	Chico	1,724
24	Rural	89
25	Rural	66
26	Rural	86
27	Rural	54
30	Rural	24
31	Rural	44
46	Rural	5
20	Intercity	679
32	Intercity	186
40/41	Intercity	827

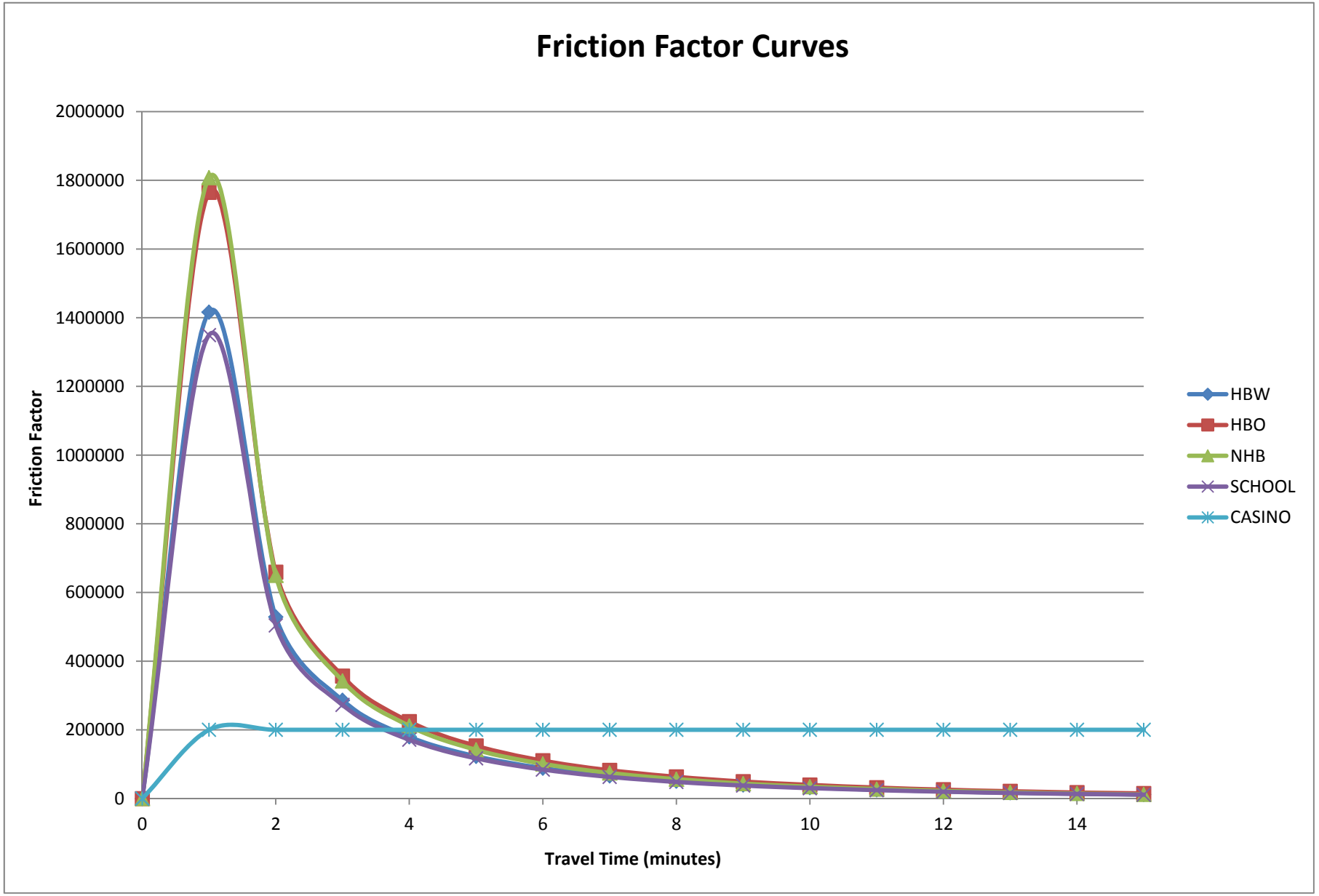
Source: Fehr & Peers, 2012.

TABLE 13. RAW 2035 WEEKDAY RIDERSHIP BY ROUTE BY ROUTE, LAND USE SCENARIO 2

Route	Service Area	Model Prediction
2	Chico	444
3	Chico	555
4	Chico	575
5	Chico	646
7	Chico	270
8	Chico	505
9	Chico	540
15	Chico	1,695
24	Rural	84
25	Rural	64
26	Rural	79
27	Rural	54
30	Rural	20
31	Rural	36
46	Rural	4
20	Intercity	551
32	Intercity	126
40/41	Intercity	665

Source: Fehr & Peers, 2012.

APPENDIX D:
BCAG TDF MODEL FRICTION FACTOR CURVES


Friction Factor Curves
2000000
1800000
1600000
1400000
1200000
1000000
800000
600000
400000
200000
0
Friction Factor
0
2
4
6
8
10
12
14
Travel Time (minutes)
HBW
HBO
NHB
SCHOOL
CASINO

Air Resources Board

Mary D. Nichols, Chairman
1001 I Street • P.O. Box 2815
Sacramento, California 95812 • www.arb.ca.gov

Matthew Rodriquez
Secretary for
Environmental Protection

Edmund G. Brown Jr.
Governor

November 17, 2011

Mr. Jon Clark
Executive Director
Butte County Association of Governments
2580 Sierra Sunrise Terrace, Suite 100
Chico, California 95928-8441

Dear Mr. Clark:

Thank you for your letter of August 30, 2011 to Chairman Mary D. Nichols submitting the Butte County Association of Government's (BCAG) proposed technical methodology document to the Air Resources Board (ARB) as required by Senate Bill 375 (SB 375). Your submittal fulfills the requirement under California Government Code section 65080(b)(2)(J)(i) that each metropolitan planning organization (MPO) submit to ARB a description of the technical methodology it will use to estimate greenhouse gas (GHG) emissions from its Sustainable Communities Strategy (SCS).

Under California Government Code section 65080(b)(2)(J)(ii), an MPO must submit its adopted SCS to ARB staff for review, including a quantification of the GHG emissions from its SCS and a determination of whether the SCS meets the region's GHG emission reduction targets established by ARB. ARB is required to review and either accept or reject an MPO's determination that its adopted SCS, if implemented, would meet the GHG emission reduction targets. To facilitate ARB staff's future review of BCAG's adopted SCS, ARB staff will request supporting information regarding your technical methodology during the upcoming development of the draft SCS. The types of supporting information ARB staff will request are identified in ARB's July 2011 "Description of Methodology for ARB Staff Review of Greenhouse Gas Reductions from Sustainable Communities Strategies Pursuant to SB 375 (Methodology)." ARB staff's Methodology provides the framework for a transparent evaluation of the GHG emissions from an SCS, and focuses on four technical aspects of transportation modeling that are central to quantifying passenger vehicle-related GHG emissions: use of appropriate modeling tools (including off-model processes), use of appropriate data and assumptions, demonstration of model sensitivity, and demonstration of consistency with related performance indicators.

As you develop your region's draft SCS, ARB staff will work with BCAG to customize our approach to the review of BCAG's SCS, taking into consideration the unique conditions and capabilities in your region. For BCAG, this process is just about to start, and ARB looks forward to working with you to craft a process that is appropriate to BCAG's unique circumstances.

We would also like to clarify that the regional GHG emission reduction targets for the BCAG region established by ARB for 2020 and 2035 are to achieve no greater than a one percent increase in per capita CO_2 emissions from passenger vehicles, from 2005 levels, in either year. This correction should be made to your proposed methodology before proceeding further with development of BCAG's draft SCS.

If you have any questions, please contact me at (916) 322-0285 or have your staff contact Ms. Jennifer Gray, Air Pollution Specialist, at (916) 327-0027, or by email at jgray@arb.ca.gov.

Sincerely,

Douglas Ito, Chief
Air Quality and Transportation Planning Branch

cc: Mary D. Nichols, Chairman
California Air Resources Board

Jennifer Gray
Air Pollution Specialist
Air Quality and Transportation Planning Branch

APPENDIX 6
ATTACHMENT 4

Modeling Parameters	2005 (GHG Target Base)	2006 [3]	2010 (MTP/SCS Base)	2020	2035
Total Population	214,582 [1]	216,599 [1]	221,768 [1]	257,266	332,459
Total Number of Households	85,478 [1]	87,172 [1]	90,405 [1]	108,095	139,689
Persons Per Household	2.44	2.41	2.38	2.38	2.38
Total Jobs (Non-Farm)	73,400 [2]	75,600 [2]	71,501 [2]	87,214	112,279
Total Housing/Dwelling Units	91,666 [1]	93,381 [1]	96,623 [1]	111,813	143,948

[1] State of California, Department of Finance, E-5 Population and Housing Estimates for Cities, Counties and the State, 2001-2010, with 2000 Benchmark. Sacramento, California, May 2010.

[2] State of California, Employment Development Department, Butte County Industry Employment & Labor Force, March 2009 Benchmark. Sacramento, California, June 18, 2010.

[3] The year 2006 was not modeled within the BCAG travel demand model. 2006 model parameters are included for the purpose of illustrating the difference between the years 2005 and 2006, since the year 2005 was used as the base year for reporting.

BCAG MTP/SCS - SB 375 Requirements and Recommendation Checklist

Subject Area	SB 375 Requirement	Addressed
SCS Requirement	CGC Section 65080(b)(2)(B) Each metropolitan planning organization shall prepare a sustainable communities strategy, subject to the requirements of Part 450 of Title 23 of, and Part 93 of Title 40 of, the Code of Federal Regulations, including the requirement to utilize the most recent planning assumptions considering local general plans and other factors. The sustainable communities strategy shall:	Introduction (page 4-1) and Background (page 4-2)
Land Use	CGC Section 65080(b)(2)(B)(i) identify the general location of uses, residential densities, and building intensities within the region;	Regional Growth Forecasts (page 4-4) and Land Use Forecasts (page 4-5)
Housing Goals	CGC Section 65080(b)(2)(B)(vi) consider the state housing goals specified in Sections 65580 and 65581;	Accommodating the Regional Housing Need Allocation (page 4-15)
	CGC Section 65080(b)(2)(B)(ii) identify areas within the region sufficient to house all the population of the region, including all economic segments of the population, over the course of the planning period of the regional transportation plan taking into account net migration into the region, population growth, household formation and employment growth;.	Regional Growth Forecasts (page 4-4) and Accommodating the Regional Housing Need Allocation (page 4-15)
	CGC Section 65080(b)(2)(B)(iii) identify areas within the region sufficient to house an eight-year projection of the regional housing need for the region pursuant to Section 65584;	Accommodating the Regional Housing Need Allocation (page 4-15)
Natural Resources	CGC Section 65080(b)(2)(B)(v) gather and consider the best practically available scientific information regarding resource areas and farmland in the region as defined in subdivisions (a) and (b) of Section 65080.01;	Resource Areas and Farmlands Considerations (page 4-17)
Transportation Network	CGC Section 65080(b)(2)(B)(iv) identify a transportation network to service the transportation needs of the region;	Regional Transportation Network and the SCS (page 4-30), Highways and Local Streets and Roads (Chapter 6), Transit (Chapter 7), and Non-Motorized Transportation (Chapter 8)
Meeting Greenhouse Gas Reduction Targets	CGC Section 65080(b)(2)(B)(vii): set forth a forecasted development pattern for the region, which, when integrated with the transportation network, and other transportation measures and policies, will reduce the greenhouse gas emissions from automobiles and light trucks to achieve, if there is a feasible way to do so, the greenhouse gas emission reduction targets approved by the state board;	Introduction (page 4-1)
Meeting Federal Air Quality Requirements	CGC Section 65080(b)(2)(B)(viii) allow the regional transportation plan to comply with Section 176 of the federal Clean Air Act (42 U.S.C. Sec. 7506).	Air Quality Conformity Analysis and Determination (Appendix 1)
Informational Meetings	CGC Section 65080(b)(2)(E) The metropolitan planning organization shall conduct at least two informational meetings in each county within the region for members of the board of supervisors and city councils on the sustainable communities strategy and alternative planning strategy, if any.	Public Involvement Efforts regarding SB 375 Requirements (Appendix 8)

Subject Area	SB 375 Requirement	Addressed
Public Participation Plan	CGC Section 65080(b)(2)(F) Each metropolitan planning organization shall adopt a public participation plan, for development of the sustainable communities strategy and an alternative planning strategy, if any, that includes all of the following: etc.	Public Involvement Efforts regarding SB 375 Requirements (Appendix 8)
	CGC Section 65080(b)(2)(F)(i) Outreach efforts to encourage the active participation of a broad range of stakeholder groups in the planning process, consistent with the agency's adopted Federal Public Participation Plan, including, but not limited to, affordable housing advocates, transportation advocates, neighborhood and community groups, environmental advocates, home builder representatives, broad-based business organizations, landowners, commercial property interests, and homeowner associations.	Public Involvement Efforts regarding SB 375 Requirements (Appendix 8)
	CGC Section 65080(b)(2)(F)(ii) Consultation with congestion management agencies, transportation agencies, and transportation commissions.	Public Involvement Efforts regarding SB 375 Requirements (Appendix 8)
	CGC Section 65080(b)(2)(F)(iii) Three workshops throughout the region to provide the public with the information and tools necessary to provide a clear understanding of the issues and policy choices. Each workshop, to the extent practicable, shall include urban simulation computer modeling to create visual	Public Involvement Efforts regarding SB 375 Requirements (Appendix 8)
	CGC Section 65080(b)(2)(F)(iv) Preparation and circulation of a draft SCS and an alternative planning strategy, if one is prepared, not less than 55 days before adoption of a final regional transportation plan.	Public Involvement Efforts regarding SB 375 Requirements (Appendix 8)
	CGC Section 65080(b)(2)(F)(v) At least three public hearings on the draft sustainable communities strategy in the regional transportation plan and alternative planning strategy, if one is prepared. If the metropolitan transportation organization consists of a single county, at least two public hearings shall be held. To the maximum extent feasible, the hearings shall be in different parts of the region to maximize the opportunity for participation by members of the public throughout the region.	Public Involvement Efforts regarding SB 375 Requirements (Appendix 8)
	CGC Section 65080(b)(2)(F)(vi) A process for enabling members of the public to provide a single request to received notices, information, and updates.	Public Involvement Efforts regarding SB 375 Requirements (Appendix 8)
Consultation with Local Agency Formation Commission	CGC Section 65080(b)(2)(G) In preparing a sustainable communities strategy, the metropolitan planning organization shall consider spheres of influence that have been adopted by the local agency formation commissions within its region.	Consultation with Local Agency Formation Commission (page 4-27)
CARB Greenhouse Gas Emission Targets for BCAG	CGC Section 65080(b)(2)(H) Prior to adopting a sustainable communities strategy, the metropolitan planning organization shall quantify the reduction in greenhouse gas emissions projected to be achieved by the sustainable communities strategy and set forth the difference, if any, between the amount of that reduction and the target for the region established by the state board.	Introduction (page 4-1)

Subject Area	SB 375 Requirement	Addressed
Local Government Land Use Authority	CGC Section 65080(b) (2) (K) Neither a sustainable communities strategy nor an alternative planning strategy regulates the use of land, nor, except as provided by subparagraph (J), shall either one be subject to any state approval. Nothing in a sustainable communities strategy shall be interpreted as superseding the exercise of the land use authority of cities and counties within the region. Nothing in this section shall be interpreted to limit the state board's authority under any other provision of law. Nothing in this section shall be interpreted to authorize the abrogation of any vested right whether created by statute or by common law. Nothing in this section shall require a city's or county's land use policies and regulations, including its general plan, to be consistent with the regional transportation plan or an alternative planning strategy. Nothing in this section requires a metropolitan planning organization to approve a sustainable communities strategy that would be inconsistent with Part 450 of Title 23 of, or Part 93 of Title 40 of, the Code of Federal Regulations and any administrative guidance under those regulations. Nothing in this section relieves a public or private entity or any	Local Government Land Use Authority and CEQA Streamlining (page 4-28)
Exemption of Projects Contained in Previously Approved Plans and Programs	CGC Section 65080(b) (2) (L) Nothing in this section requires projects programmed for funding on or before December 31, 2011, to be subject to the provisions of this paragraph if they (i) are contained in the 2007 or 2009 Federal Statewide Transportation Improvement Program, (ii) are funded pursuant to Chapter 12.49 (commencing with Section 8879.20) of Division 1 of Title 2, or (iii) were specifically listed in a ballot measure prior to December 31, 2008, approving a sales tax increase for transportation projects. Nothing in this section shall require a transportation sales tax authority to change the funding allocations approved by the voters for categories of transportation projects in a sales tax measure adopted prior to December 31, 2010. For purposes of this subparagraph, a transportation sales tax authority is a district, as defined in Section 7252 of the Revenue and Taxation Code, that is authorized to impose a sales tax for transportation purposes.	Financial Element (Chapter 13)
Consideration of Financial Incentives for Cities and Counties with Resource Areas or Farmlands	CGC Section 65080(b) (4)(C) The metropolitan planning organization or county transportation agency, whichever entity is appropriate, shall consider financial incentives for cities and counties that have resource areas or farmland, as defined in Section 65080.01, for the purposes of, for example, transportation investments for the preservation and safety of the city street or county road system and farm to market and interconnectivity transportation needs. The metropolitan planning organization or county transportation agency, whichever entity is appropriate, shall also consider financial assistance for counties to address countywide service responsibilities in counties that contribute towards the greenhouse gas emission reduction targets by implementing policies for growth to occur within their cities.	Financial Element (Chapter 13)

Subject Area	SB 375 Recommendation	Addressed
Consideration of Alternative Planning Scenario	CGC Section 65080.3.(a) Each transportation planning agency with a population that exceeds 200,000 persons may prepare at least one "alternative planning scenario" for presentation to local officials, agency board members, and the public during the development of the triennial regional transportation plan and the hearing required under subdivision (c) of Section 65080.	Land Use Forecasts (page 4-5)

APPENDIX 8

2012 MTP/SCS Public Involvement Efforts regarding SB 375 Requirements

Senate Bill 375 (Steinberg, 2008) contains a number of references to guide public participation efforts in developing the Metropolitan Transportation Plan and its Sustainable Communities Strategy (SCS). This table outlines references in the legislation and how BCAG is meeting or will meet the requirements.

SB 375 Requirement (Government Code Section 65080)	**Date**	**Outreach Activity**
(2Aii) The metropolitan planning organization shall hold at least one public workshop within the region after receipt of the report from the Regional Targets Advisory Committee.	May and August 2010	Presented target setting information and provided overview of regions targets at BCAG Board of Directors meetings. BCAG Board Meeting May 2010 BCAG Board Meeting August 2010
(2D) The metropolitan planning organization shall conduct two informational meetings on the sustainable communities strategy and alternative planning strategy, if any. The metropolitan planning organization may conduct only one informational meeting if it is attended by representatives of the county board of supervisors and city council members representing a majority of the cities representing a majority of the population in the incorporated areas of that county.	June and Octoberr 2012	Draft SCS preparation and development presented at BCAG Board of Directors meetings. BCAG Board Meeting June 2012 BCAG Board Meeting October 2012
(2E) Each metropolitan planning organization shall adopt a public participation plan, for development of the sustainable communities strategy and an alternative planning strategy	March 2010	BCAG Board of Directors adopts amended Public Participation Plan which incorporates SCS outreach requirements.
(2Ei) Outreach efforts to encourage the active participation of a broad range of stakeholder groups in the planning process, consistent with the agency's adopted Federal Public Participation Plan, including, but not limited to, affordable housing advocates, transportation advocates, neighborhood and community groups, environmental advocates, home builder representatives, broad-based business organizations, landowners, commercial property interests, and homeowner associations.	Ongoing	The 2012 MTP/SCS outreach efforts are a component of the BCAG Federal Participation Plan (PPP). The PPP describes activities, audiences, etc. to insure input on the MTP and SCS. Public outreach and involvement efforts since initiating the MTP/SCS include noticed public meetings, newsletter updates, web site updates, and presentations and updates to the BCAG Board of Directors, Transportation Advisory Committee, Social Services Advisory Committee, and Planning Directors Group.
(2Eii) Consultation with congestion management agencies, transportation agencies, and transportation commissions.	Ongoing	The BCAG Board of Directors is the forum for these agencies. BCAG is the regional transit operator and transportation commission. There is no congestions management agency for the Butte County region.
(2Eiii) Three workshops throughout the region to provide the public with the information and tools necessary to provide a clear understanding of the issues and policy choices. Each workshop, to the extent practicable, shall include urban simulation computer modeling to create visual representations of the SCS and the alternative planning strategy.	August 2011, June 2012, and October 2012	BCAG heldthree rounds of public workshops throughout the region. Each round consisted of 4 workshops in different locations (Chico, Gridley, Paradise, and Oroville). The workshops included maps, information, and digital presentation of SCS. Round 1 Workshops - August 2011 Round 2 Workshops - June 2012 Round 3 Workshops - October 2012

APPENDIX 8

SB 375 Requirement (Government Code Section 65080)	**Date**	**Outreach Activity**
(2Eiv) Preparation and circulation of a draft SCS and an alternative planning strategy, if one is prepared, not less than 55 days before adoption of a final regional transportation plan.	September 2011	The draft Sustainable Communities Strategy is scheduled to be released September 27, 2012 and final adopted December 13, 2012 (77 days)
(2Ev) Two public hearings shall be held. To the maximum extent feasible, the hearings shall be in different parts of the region to maximize the opportunity for participation by members of the public throughout the region.	Planned for October 25th, 2012 and December 13th, 2012	Two public hearings are scheduled to be held as part of the regularly scheduled BCAG Board Meetings.
(2Evi) A process for enabling members of the public to provide a single request to receive notices, information, and updates.	Ongoing since March 2010	Dedicated Web page containing contact information and opportunity to be added to SCS contact list.
(2II) Prior to starting the public participation process adopted pursuant to subparagraph (F), the metropolitan planning organization shall submit a description to the state board of the technical methodology it intends to use to estimate the greenhouse gas emissions from its sustainable communities strategy and, if appropriate, its alternative planning strategy.	Technical methodology submitted August 30, 2011	Technical Methodology posted on BCAG website.

Butte County Long-Term Regional Growth Forecasts 2010 – 2035

Prepared by:
Butte County Association of Governments
January 26th, 2011

Butte County Association of Governments
2580 Sierra Sunrise Terrace, Suite 100
Chico, CA 95928
Phone: 530-879-2468 FAX: 530-879-244 www.bcag.org

This document is available online at www.bcag.org. Please direct any questions or comments to Mr. Brian Lasagna, BCAG Senior Planner by phone or email at blasagna@bcag.org.

TABLE OF CONTENTS

INDEX OF TABLES

INTRODUCTION

Approximately every four years, the Butte County Association of Governments (BCAG) prepares long-term regional growth forecasts of housing, population, and employment for the Butte County area. The forecasts are used in preparation of BCAG's 2012 Regional Transportation Plan, Sustainable Communities Strategy, Air Quality Conformity Determination, and Regional Housing Needs Plan and provide data support for BCAG's regional Travel Demand Model. Local land use planning agencies may also elect to utilize the forecasts for preparing district plans or city and county long range plans.

The forecasts have been developed by BCAG in consultation with its Planning Directors Group which consists of representatives from each of BCAG's local jurisdiction members and the Butte Local Agency Formation Commission. Each of the local jurisdictions provided valuable input regarding the anticipated amount of growth within their respective planning areas.

A low, medium, and high scenario has been developed for each forecast of housing, population, and employment. The use of these scenarios provides for increased flexibility when utilizing the forecast for long-term planning and alleviates some of the uncertainty inherent in long range projections.

The regional growth forecasts will be updated again during the 2014/15 fiscal year in preparation for BCAG's 2016 Regional Transportation Plan and to ensure that any unexpected trends will be integrated into the forecasts.

REGIONAL FORECASTS

In comparison to the regional forecasts prepared by BCAG in 2006, the 2010 forecasts capture the downward trend in regional growth associated with the dramatic downturn in the economy. This is most evident in the short term periods (2010-2020) of the forecasts in which the overall growth of the region has been most affected. Less variation is seen with the longer range (2020-2035) forecasts, suggesting that future growth patterns are likely to stay intact following an economic recovery.

As identified in BCAG's 2006 growth forecasts, jurisdictions in the southern portions of the region are projected to absorb a greater percentage of the regional growth then achieved in past growth trends. The cities of Biggs, Gridley, and Oroville are forecasted to, at a minimum, double in population by the year 2035. While the greatest amount of growth will continue to be occurring in the Chico area with a forecasted range of 16,339 – 22,096 new housing units by the year 2035.

Consistent with the population and housing trends, employment is projected to rebound from its current estimate of 0.74 jobs per housing unit in 2010 to moderate historic levels by the year 2020 and maintain a 0.78 ratio into the horizon year of 2035.

Table 1: Housing Forecasts 2010-2035

Low Scenario

Jurisdiction^	2010*	2015	2020	2025	2030	2035	Total Increase 2010-2035	Percent Increase 2010-2035	Compound Annual Growth Rate (CAGR) 2010-2035
Biggs	634	740	931	1,080	1,249	1,440	806	127%	3.3%
Chico	37,159	38,750	41,283	44,957	49,018	53,498	16,339	44%	1.5%
Gridley	2,449	2,911	3,586	4,116	4,736	5,338	2,889	118%	3.2%
Oroville	6,393	7,157	8,379	9,966	10,912	11,964	5,571	87%	2.5%
Paradise	12,789	13,171	13,638	14,168	14,720	15,314	2,525	20%	0.7%
Unincorporated^^	37,199	39,371	41,696	44,051	46,576	49,228	12,029	32%	1.1%
Total County	96,623	102,101	109,513	118,338	127,210	136,782	40,159	42%	**1.4%**

Medium Scenario

Jurisdiction^	2010*	2015	2020	2025	2030	2035	Total Increase 2010-2035	Percent Increase 2010-2035	Compound Annual Growth Rate (CAGR) 2010-2035
Biggs	634	759	984	1,159	1,359	1,584	950	150%	3.7%
Chico	37,159	39,034	42,019	46,349	51,134	56,414	19,255	52%	1.7%
Gridley	2,449	2,994	3,789	4,414	5,144	5,854	3,405	139%	3.5%
Oroville	6,393	7,293	8,733	10,603	11,718	12,958	6,565	103%	2.9%
Paradise	12,789	13,239	13,789	14,414	15,064	15,764	2,975	23%	0.8%
Unincorporated^^	37,199	39,759	42,499	45,274	48,249	51,374	14,175	38%	1.3%
Total County	96,623	103,078	111,813	122,213	132,668	143,948	47,325	49%	**1.6%**

High Scenario

Jurisdiction^	2010*	2015	2020	2025	2030	2035	Total Increase 2010-2035	Percent Increase 2010-2035	Compound Annual Growth Rate (CAGR) 2010-2035
Biggs	634	777	1,036	1,236	1,466	1,724	1,090	172%	4.1%
Chico	37,159	39,311	42,736	47,705	53,196	59,255	22,096	59%	1.9%
Gridley	2,449	3,074	3,987	4,704	5,542	6,356	3,907	160%	3.9%
Oroville	6,393	7,426	9,078	11,224	12,504	13,927	7,534	118%	3.2%
Paradise	12,789	13,305	13,937	14,654	15,400	16,203	3,414	27%	1.0%
Unincorporated^^	37,199	40,137	43,281	46,465	49,879	53,465	16,266	44%	1.5%
Total County	96,623	104,030	114,054	125,988	137,986	150,930	54,307	56%	**1.8%**

* Source: *State of California, Department of Finance, E-5 Population and Housing Estimates for Cities, Counties and the State, 2001-2010, with 2000 Benchmark. Sacramento, California, May 2010.*

Notes:
^ Jurisdictional figures reflect anticipated new growth within the anticipated boundaries of each jurisdiction and do not reflect future annexation of existing units or as-yet-unbuilt new units in unincorporated areas to the respective cities. Assumptions about future boundaries are not intended by BCAG to be interpreted as factors limiting such jurisdictions' future boundaries.

^^ Unincorporated Butte County figures exclude forecasted growth identified in the Butte County General Plan 2030 - Environmental Impact Report as Bell Muir/Chico Area, Doe Mill/Honey Run Specific Plan, Thermolito Afterbay, Biggs Area, and Gridley Area and includes shared growth (50%) of Thermalito, Southern Oroville and Eastern Oroville.

Table 2: Population Forecasts 2010-2035

Low Scenario

Jurisdiction^	2010*	2015	2020	2025	2030	2035	Total Increase 2010-2035	Percent Increase 2010-2035	Compound Annual Growth Rate (CAGR) 2010-2035
Biggs	1,787	2,086	2,624	3,043	3,521	4,059	2,272	127%	3.3%
Chico	88,228	92,004	98,018	106,743	116,383	127,021	38,793	44%	1.5%
Gridley	6,454	7,673	9,451	10,849	12,481	14,069	7,615	118%	3.2%
Oroville	14,687	16,442	19,249	22,895	25,069	27,486	12,799	87%	2.5%
Paradise	26,310	27,095	28,055	29,146	30,281	31,503	5,193	20%	0.7%
Unincorporated^^	84,302	89,223	94,493	99,829	105,550	111,560	27,258	32%	1.1%
Total County	221,768	234,524	251,890	272,504	293,285	315,698	93,930	42%	**1.4%**

Medium Scenario

Jurisdiction^	2010*	2015	2020	2025	2030	2035	Total Increase 2010-2035	Percent Increase 2010-2035	Compound Annual Growth Rate (CAGR) 2010-2035
Biggs	1,787	2,139	2,774	3,267	3,830	4,465	2,678	150%	3.7%
Chico	88,228	92,678	99,766	110,046	121,407	133,944	45,716	52%	1.7%
Gridley	6,454	7,890	9,986	11,633	13,556	15,428	8,974	139%	3.5%
Oroville	14,687	16,755	20,063	24,359	26,921	29,770	15,083	103%	2.9%
Paradise	26,310	27,235	28,367	29,652	30,990	32,430	6,120	23%	0.8%
Unincorporated^^	84,302	90,102	96,311	102,600	109,342	116,424	32,122	38%	1.3%
Total County	221,768	236,800	257,266	281,558	306,047	332,459	110,691	50%	**1.6%**

High Scenario

Jurisdiction^	2010*	2015	2020	2025	2030	2035	Total Increase 2010-2035	Percent Increase 2010-2035	Compound Annual Growth Rate (CAGR) 2010-2035
Biggs	1,787	2,191	2,919	3,485	4,132	4,860	3,073	172%	4.1%
Chico	88,228	93,335	101,468	113,265	126,303	140,688	52,460	59%	1.9%
Gridley	6,454	8,102	10,507	12,397	14,604	16,751	10,297	160%	3.9%
Oroville	14,687	17,060	20,856	25,786	28,726	31,995	17,308	118%	3.2%
Paradise	26,310	27,372	28,670	30,146	31,680	33,333	7,023	27%	1.0%
Unincorporated^^	84,302	90,958	98,083	105,300	113,036	121,163	36,861	44%	1.5%
Total County	221,768	239,018	262,503	290,379	318,481	348,790	127,022	57%	**1.8%**

* Source: *State of California, Department of Finance, E-5 Population and Housing Estimates for Cities, Counties and the State, 2001-2010, with 2000 Benchmark. Sacramento, California, May 2010.*

Notes:
^Jurisdictional figures reflect anticipated new growth within the anticipated boundaries of each jurisdiction and do not reflect future annexation of existing units or as-yet-unbuilt new units in unincorporated areas to the respective cities. Assumptions about future boundaries are not intended by BCAG to be interpreted as factors limiting such jurisdictions' future boundaries.

^^ Unincorporated Butte County figures exclude forecasted growth identified in the Butte County General Plan 2030 - Environmental Impact Report as Bell Muir/Chico Area, Doe Mill/Honey Run Specific Plan, Thermolito Afterbay, Biggs Area, and Gridley Area and includes shared growth (50%) of Thermalito, Southern Oroville and Eastern Oroville.

Table 3: Employment Forecasts 2010-2035

Low Scenario

Jurisdiction	2010*	2015	2020	2025	2030	2035	Total Increase 2010-2035	Percent Increase 2010-2035
Butte County	71,501	77,596	85,420	92,304	99,224	106,690	35,189	49%

Medium Scenario

Jurisdiction	2010*	2015	2020	2025	2030	2035	Total Increase 2010-2035	Percent Increase 2010-2035
Butte County	71,501	78,339	87,214	95,326	103,481	112,279	40,778	57%

High Scenario

Jurisdiction	2010*	2015	2020	2025	2030	2035	Total Increase 2010-2035	Percent Increase 2010-2035
Butte County	71,501	79,063	88,962	98,271	107,629	117,725	46,224	65%

Table 4: Jobs (Non-Farm) to Housing Unit Ratios 2010-2035

Factor	2010*	2015	2020	2025	2030	2035
Jobs/Housing Unit	0.74	0.76	0.78	0.78	0.78	0.78

* Source: *State of California, Department of Finance, E-5 Population and Housing Estimates for Cities, Counties and the State, 2001-2010, with 2000 Benchmark. Sacramento, California, May 2010. California Employment Development Department, Industry Employment & Labor Force - by Annual Average, March 2009 Benchmark, for Butte County (Chico MSA).*

FORECAST METHODOLOGY

BCAG has prepared the forecasts using professionally accepted methodologies for long-range forecasting. First, utilizing a "top down" approach, long-term projections prepared by the State of California were consulted for Butte County and used to establish control totals for the region. Secondly, a variety of data sources, including input from local jurisdiction staff, were then consulted to develop historic trends and projected growth at the local jurisdiction level, therefore incorporating a "bottom up" approach. Forecasts were then allocated into five year increments until the year 2035. Lastly, low, medium, and high scenarios were prepared for each forecasted category.

HOUSING

The latest California Department of Finance (DOF) long range population and housing projections, as of December 2010, were analyzed for the period 2010-2035 for the Butte County region. These projections determine that the Butte County region will grow at a Compound Annual Growth Rate (CAGR) of 1.8%. This information was used to establish the control total for BCAG's high forecast scenario.

BCAG then compiled historic building permit data and prepared a revise of the 2006 BCAG growth forecasts utilizing 2010 base line data from DOF, for each jurisdiction in the region. After reviewing the information described above, planning staff from the local jurisdictions provided input into future housing development considering their most recent local land use plans and knowledge of current development activity. Based on the information gathered, an estimate of the production of new housing units occurring within each jurisdiction, for each five year increment, to the year 2035, were then developed. Once compiled for all jurisdictions, the forecast showed a regional CAGR of 1.6%. This information was used to represent the medium forecast scenario.

Based on a 0.2 percent incremental change between the established high and medium scenarios, a low scenario was developed using a CAGR of 1.4%. Each jurisdictions growth, represented in 5 year increments, was adjusted from the medium scenario to the high and low scenarios based on its share of growth.

POPULATION

Population forecasts were prepared by applying average persons per housing unit to the housing unit forecasts. This method allows for the capture of variations in household for each jurisdiction. The average person per housing unit was prepared by dividing the 2010 DOF preliminary population estimates by the preliminary housing estimates for each jurisdiction. This method was applied to all scenarios.

EMPLOYMENT

Employment forecasts were prepared at the regional/county level only and are based on a ratio of jobs per housing unit.

Baseline 2010 employment data was obtained from the California Employment Development Department (EDD) for the year 2009 – an annual average for 2010 was not available at the time the BCAG regional forecasts were prepared. The 2009 EDD data provide a total of all non-farm jobs for the region. This information was then used in conjunction with 2009 DOF preliminary housing unit estimates to calculate a ratio of 0.74 jobs per housing unit.

Historic employment information was also obtained from the EDD for the period 1990-2009 and averaged to calculate a long range jobs to housing unit ratio of 0.78. This ratio was applied to the years 2020-2035 and based on the assumption that historic rates of employment will completely resume by the year 2020.

Anticipating a recovery from the existing lows of the economy, an average of the 2010 and long-term ratios were prepared for the year 2015, of 0.76 jobs per housing unit.

Lastly, the jobs to housing unit ratio developed for each 5 year period was applied to all scenarios.

BCAG 2012 MTP/SCS Land Use Scenario Analysis – Draft

BCAG has prepared three distinctive land use scenarios for the purpose of illustrating the travel effects of different development patterns on the regional transportation system and the associated greenhouse gas emissions resulting from these patterns. In addition, the scenarios allow BCAG to test the performance of the enhanced regional travel demand model to assure it is responding appropriately to changes in land use.

Land Use – Growth Areas

BCAG has developed a framework for describing the land use growth associated with each scenario that is made up of Growth Area Types. The Growth Area Types are a variation of a similar framework developed by the Sacramento Area Council of Governments (SACOG), BCAGs closest neighboring Metropolitan Planning Organization (MPO). Appendix 1 provides an illustration of the Growth Areas by location within the region.

The following is a description of each Growth Area Type.

- ***Urban Center and Corridor Areas*** consist of higher density and mixed land uses with access to frequent transit service. These areas typically have existing or planned infrastructure for non-motorized transportation modes which are more supportive of walking and bicycling. Future growth within these areas consists of compact infill developments on underutilized lands, or redevelopment of existing developed lands. Local plans identify these areas as opportunity sites, downtowns, central business districts, or mixed use corridors.

- ***Established Areas*** generally consist of the remaining existing urban development footprint surrounding the Urban Center and Corridor Areas. Locations disconnected from Urban and Corridor Centers may be residential-only, employment-only, or a mix of these uses with urban densities. These areas consist of a range of urban development densities with most locations having access to transit through the urban fixed route system or commuter service. Future growth within these areas typically utilize locations of currently planned developments or vacant infill parcels. Local plans generally seek to maintain the existing character of these areas.

- ***New Areas*** are typically connected to the outer edge of an Established Area. These areas currently consist of vacant land adjacent to existing development and represent areas of future urban expansion. Future growth within these areas will most often consist of urban densities of residential and employment uses with a few select areas being residential only. Local plans identify these areas as special or specific plan areas, master plans, and planned development or planned growth areas. Currently, fixed route transit service is nonexistent in these areas. However, fixed route transit service may well be provided to areas which are directly adjacent to current urban routing and are able to achieve build-out. Pedestrian and bicycle infrastructure are typically required to be incorporated under the local jurisdictions plans.

- ***Rural Areas*** consist of areas outside existing and planned urban areas with development at rural densities. These areas are predominantly residential and may contain a small commercial component. The densities at which these areas are developed do not reasonably allow for pedestrian or bicycle infrastructure and transit service is limited or nonexistent. Automobile travel is typically the only transportation option.

- ***Agricultural, Grazing, and Forestry Areas*** represent the remaining areas of the region not being planned for development at urban densities. These areas support agricultural, grazing, forestry, mining, recreational, and resource conservation type uses. Locations within these areas may be protected from future urban development under federal, state, and local plans or programs such as the Chico area "greenline", Williamson Act contracts, or conservation easements. Employment and residential uses are typically allowed within portions of this area but are most often secondary to agricultural, forestry, or other rural uses.

Land Use Scenarios

All three scenarios were prepared using the same regional employment, population and housing growth projections and regional transportation network. However, the following land use variables were adjusted to create the distinctive scenarios:

- The amount of development occurring within each of the five Growth Areas (i.e., Urban Center and Corridor, Established, New, Rural, and Agricultural).
- The levels of infill and redevelopment occurring within the Urban Center and Corridor and Established Growth Areas.
- The shares of single-family to multi-family development.
- The amount of growth being accommodated within each local jurisdiction.

The land use scenarios were designed by first assembling the "balanced" scenario. The "balanced" scenario (scenario #1) was prepared based on land use information from the recent general plan updates, the latest information regarding planned development, reasonable assumptions regarding infill and redevelopment, regional growth forecasts, and a review of development attractions (i.e., motorized and non-motorized transportation networks, existing development, utility areas, etc.) and discouragements (i.e., resource areas and farmland, public lands, areas exceeding 25% slope, etc.). Secondly, the "dispersed" (scenario #2) and "compact" (scenario #3) scenarios were prepared to represent development occurring at opposite ends of the spectrum from scenario #1. The scenarios are described by numerical order in Table 1.

Table 1

Scenario	Land Use
Scenario 1 – Balanced	• Balanced share of new housing within the center, established and new growth areas • Contains reasonable levels of infill and redevelopment • Consistent with local land use plans and draft conservation plan • Consistent with BCAG long-term regional growth forecasts by jurisdiction
Scenario 2 – Dispersed	• Largest share of single-family housing with a greater amount of growth directed to the new, rural, and agricultural growth areas • Minimize the amount of infill and redevelopment • Exceeds the unincorporated areas local land use plans reasonable capacities for growth
Scenario 3 – Compact	• Greatest share of infill and redevelopment within the established and center growth areas • Highest share of multi-family housing • Exceeds the incorporated areas local land use plans reasonable capacities for growth

Vehicle Miles of Travel

Once prepared, each scenario was incorporated, in combination with the preliminary draft forecasted transportation network, into the BCAG regional travel demand model. The travel demand model captures the amount of average weekday vehicle miles of travel (VMT) occurring as a result of each scenario, in addition to the amount of congested VMT (CVMT). In general, the more dispersed the land use pattern, the greater the average vehicle trip length will be, resulting in greater VMT. In turn, the more compact the land use pattern, the shorter the average trip length will be, resulting in less VMT but greater congestion. The preliminary VMT and CVMT results of the scenario model runs are included in Table 2.

Table 2

Summary of Preliminary VMT and Congested VMT per Capita for the Year 2035

Year 2035 Forecast	Scenario 1 (Balanced)	Scenario 2 (Dispersed)	Scenario 3 (Compact)
Vehicle Miles of Travel[1]	5,780,000	6,327,000	5,511,000
Congested VMT[2]	355,480	408,890	360,400
Population	332,459		
VMT per Capita	17.39	19.03	16.58
Congested VMT per Capita	1.07	1.23	1.08

[1]VMT excludes through trips (X-X trips)
[2]VMT includes through trips (X-X trips)

The basic definition of VMT is one vehicle traveling on a roadway for one mile. VMT is the primary indicator of travel for policy makers and transportation professionals since it is relatively easy to measure using travel models and that it bears a direct relationship to vehicle emissions (lower VMT typically means lower emissions).

Congested VMT is used as a primary indicator in determining the amount of delay a vehicle may experience when traveling. Typical signs of congestion are stop-and-go driving conditions and lines of drivers waiting to get through a signaled intersection. BCAG defines a congested VMT (CVMT) as a VMT that occurs on roadways with a volume-to-capacity ratio of 1.0 or greater, meaning that the volume on the roadway is at or exceeding its capacity.

The results of the VMT analysis for each scenario, presented in Table 2, shows VMT per capita increases of 9.5% for the dispersed scenario #2 over the balanced scenario #1. In converse, VMT per capita for the compact scenario #3 shows a 4.7% decrease from the balanced scenario #1. However, CVMT for the dispersed and compact scenarios are greater than that of the balance scenario #1. This is expected based on the assumption that a more compact land use footprint would focus more of the travel within the urbanized roadways, exceeding those roadway capacities. These results conclude that the model is responding accordingly to the changes in land use and illustrates the affects that a compact or dispersed land use allocation has on travel and the regional transportation system.

Passenger Vehicle Greenhouse Gas Emissions

In addition to measuring the amount of travel occurring as a result of each scenario, BCAG measured the levels of passenger vehicle greenhouse gas (GHG) emissions using the California Emissions Factor (EMFAC) model. The purpose of the passenger vehicle GHG measurement is to determine how well each land use scenario performs in relation to achieving the GHG targets established for the MTP/SCS as a result of SB 375. As directed by the California Air Resources Board (ARB), the 2035 GHG emission estimates are presented as pounds (lbs.) of Carbon Dioxide (CO_2) per capita. Table 3 reflects the amount of CO_2 emissions resulting from each scenario.

Table 3

Summary of Preliminary CO_2 per Capita for the Year 2035

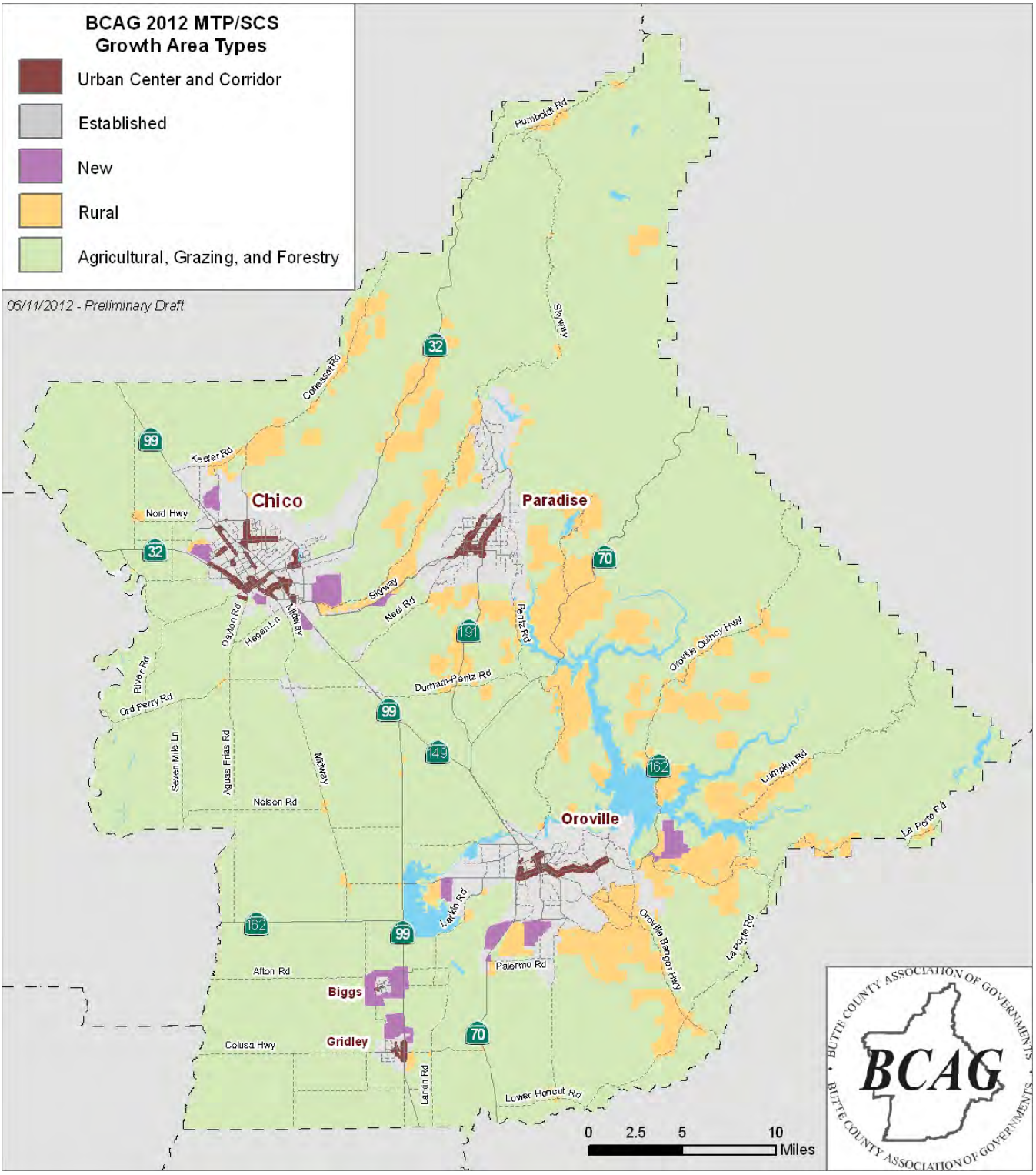
Year 2035 Forecast	Scenario 1 (Balanced)	Scenario 2 (Dispersed)	Scenario 3 (Compact)
CO_2 lbs. per day	5,460,000	5,980,000	5,220,000
Population	332,459		
CO_2 lbs. per Capita	16.42*	17.99	15.70*

*Note: preliminary result meets or exceeds ARB GHG target for Butte County.

Similar to the results of the VMT analysis, Table 3 shows CO_2 per capita increases of 9.5% for the dispersed scenario #2 over the balanced scenario #1. In converse, CO_2 per capita for the compact scenario #3 shows a 4.4% decrease from the balanced scenario #1. These results conclude that the passenger vehicle GHG emissions, generated using VMT from the travel model, are correlating with the VMT from each scenario, illustrating the connection between VMT and GHG emissions.

The preliminary CO_2 lbs. per capita also demonstrate that the balance scenario #1 and compact scenario #3 meet or exceed the ARB GHG targets for the Butte County region for the year 2035. The current MTP/SCS GHG targets are to achieve no greater than a 1% increase in per capita CO_2 emissions, from 2005 levels. However, these are preliminary estimates based on information which has not been reviewed by ARB staff.

Appendix 1


BCAG 2012 MTP/SCS
Growth Area Types
Urban Center and Corridor
Established
New
Rural
Agricultural, Grazing, and Forestry
06/11/2012 - Preliminary Draft
Chico
Paradise
Oroville
Biggs
Gridley
Humboldt Rd
Cohasset Rd
Skyway
Keefer Rd
Nord Hwy
Neal Rd
Pentz Rd
Oroville Quincy Hwy
Durham-Pentz Rd
Ord Ferry Rd
River Rd
Dayton Rd
Hegan Ln
Midway
Seven Mile Ln
Aguas Frias Rd
Nelson Rd
Lumpkin Rd
La Porte Rd
Larkin Rd
Oroville Bangor Hwy
Palermo Rd
Afton Rd
Colusa Hwy
Lower Honcut Rd
32
99
70
191
149
162
0 2.5 5 10
Miles
BCAG
BUTTE COUNTY ASSOCIATION OF GOVERNMENTS

APPENDIX 11

Regional Housing Needs Allocation Methodology

Prepared by:
Butte County Association of Governments (BCAG)

Approved: August 23. 2012

Butte County Association of Governments (BCAG)

FINAL REGIONAL HOUSING NEEDS ALLOCATION (RHNA) METHODOLOGY

This document describes the final methodology for allocating housing units for the 2012 Regional Housing Needs Plan (RHNP). The 2012 RHNP will cover the 8 1/2 year period from January 1, 2014, to June 30, 2022.

SUMMARY OF FINAL METHODOLOGY

The final methodology for the housing needs allocation is made up of two primary components for which allocations are first distributed by jurisdiction then, secondly, are distributed by income group.

Jurisdiction: The methodology takes each jurisdiction's percentage share of growth forecasted in the Butte County Long-Term Regional Growth Forecasts 2010-2035 for the period from 2015 to 2025, and multiplies that percentage by the overall RHNA allocation mandated by Housing and Community Development (10,320 housing units). The resulting number is the total unit allocation for each jurisdiction.

Income Group: The methodology breaks out each jurisdictions housing unit allocation, developed from the above methodology, into the following income groups: very low, low, moderate, and above moderate. The income distribution for each BCAG jurisdiction is based on a trend line from 2010 to 2035. On one endpoint, the 2006-2010 ACS shows the percentage of households that a jurisdiction has in each income category. On the other end, 2035, shows the regional average percentage of households in each income category. The trend line that connects these two points is intersected at the year 2022. That intersection has the incorporated jurisdiction's 2022 allocation for that income category.

The unincorporated allocation of housing units by income group will not be adjusted from the 2006-2010 ACS estimates, but will be kept consistent with their existing distribution of housing types as identified in the 2006-2010 ACS. This is similar to the process used in the last two RHNP cycles occurring in 2003 and 2007.

Lastly, a final adjustment is made to assure that no jurisdiction receives a combined allocation of very low and low units greater than what that jurisdiction received during the last RHNP cycle. This is newly introduced component of the methodology added to insure that no jurisdiction is asked to plan for a greater amount of very low and low income units, than was received in the last RHNP cycle, based on the current uncertainty of the short-term market demand for housing.

DETAILED DESCRIPTION OF METHODOLOGY

The methodology for the housing needs allocation can essentially be broken down into two components:

1. Allocation of Housing Units by Jurisdiction
2. Allocation of Housing Units by Income Group

Allocation of Housing Units by Jurisdiction

The first component involves distributing the countywide housing allocation provided by HCD among BCAG's six member jurisdictions.

Allocations are based on each jurisdictions share of growth forecasted in the Butte County Long-Term Regional Growth Forecasts 2010-2035 for the period from 2015 to 2025, the closest corresponding period to the RHNA 2014-2022 determination. Although the 2015-2025 forecast numbers are based on a slightly longer period and represent a different amount of growth than the HCD target allocation, they do reflect the rates and general magnitudes of growth expected to occur in the region's jurisdictions by 2022. The Butte County Long-Term Regional Growth Forecasts 2010-2035 were developed by BCAG in cooperation with the local jurisdictions for use in their local planning efforts and BCAG's update of the 2012 Metropolitan Transportation Plan and Sustainable Communities Strategy (MTP/SCS), 2012 update of the regional travel model, and 2012 Regional Housing Needs Allocation.

The following two steps detail the final methodology used to allocate the housing units among BCAG's six member jurisdictions.

1) Summarize each jurisdictions individual projected housing unit growth rates from the Butte County Long-Term Regional Growth Forecasts 2010-2035 for the period from 2015 to 2025. A percentage of the total housing unit increase is then determined for each jurisdiction.

2) Apply percentage of total housing unit increase for each jurisdiction to HCD's housing units. The resulting number represents each jurisdictions housing unit share of HCD's determination.

Allocation of Housing Units by Income Group

The second component breaks out each jurisdictions housing unit allocation into the following income groups: very low, low, moderate, and above moderate. The income distribution for each BCAG jurisdiction is based on the current (2006-2010) income distribution of each community, it then moves each incorporated areas income distribution towards regional percentages provided by HCD.

For incorporated communities with a relatively high percentage of lower-income households, the basic construction need by income group will reflect an adjustment to reduce the lower-income share of those communities, and to increase the lower-income share of those communities with a smaller percentage of low-income households. This adjustment is based on the state requirement that the regional share allocation avoid further impacting communities with a higher than average percentage of lower-income households in comparison to the region. The method for accomplishing this adjustment is based on a trend line from 2010-2035, as described below.

The income distribution for each BCAG jurisdiction is based on a trend line from 2010 to 2035. On one endpoint, the 2006-2010 ACS provides the percentage of households that a jurisdiction has in each income category. On the other end, 2035, shows the regional average percentage of households in each income category. The trend line that connects these two points is intersected at the year 2022. That intersection has the incorporated jurisdiction's 2022 allocation for that income category.

The Unincorporated allocation of housing units by income group is not adjusted from the 2006-2010 ACS estimates, but rather is kept consistent with their existing distribution of housing types as identified in the 2006-2010 ACS. This follows the same methodology used in the 2003 and 2007 Regional Housing Needs Plans due to the fact that very low and low income households are better developed in incorporated areas where infrastructure and services exist to accommodate this housing type. Thus, the methodology does not make an adjustment to give the unincorporated area an increased share of very low and low income housing, but rather keeps their allocation consistent with their existing distribution of housing types as identified in the 2006-2010 ACS.

Lastly, a final adjustment is made to assure that no jurisdiction receives a combined allocation of very low and low units greater than what that jurisdiction received during the last RHNP cycle. This is newly introduced component of the methodology added to insure that no jurisdiction is asked to plan for a greater amount of very low and low income units, than was received in the last RHNP cycle, based on the current uncertainty of the short-term market demand for housing.

A manual adjustment may then be made to eliminate errors from numeric rounding by adding or subtracting the remaining units needed to meet the allocation for each individual income group. Adjustments may be made to all income groups in order to meet the HCD required totals.

APPENDIX A
REGIONAL HOUSING NEEDS PLAN - FACTORS TO CONSIDER

In developing the methodology used in the Regional Housing Needs Plan (RHNP), BCAG is required to consider several factors as defined in State Law (Government Code, Section 65584.04(d)). These factors are listed below:

a) Member jurisdictions' existing and projected jobs and housing relationship.

b) The opportunities and constraints to development of additional housing in each member jurisdiction, including all of the following:

   i. Lack of capacity for sewer or water service due to federal or state laws, regulations or regulatory actions, or supply and distribution decisions made by a sewer or water service provider other than the local jurisdiction that preclude the jurisdiction from providing necessary infrastructure for additional development during the planning period.

   ii. The availability of land suitable for urban development or for conversion to residential use, the availability of underutilized land, and opportunities for infill development and increased residential densities. The council of governments may not limit its consideration of suitable housing sites or land suitable for urban development to existing zoning ordinances and land use restrictions of a locality, but shall consider the potential for increased residential development under alternative zoning ordinances and land use restrictions.

   iii. Lands preserved or protected from urban development under existing federal or state programs, or both, designed to protect open space, farmland, environmental habitats, and natural resources on a long term basis.

   iv. County policies to preserve prime agricultural land within an unincorporated area.

c) The distribution of household growth assumed for purposes of a comparable period of regional transportation plans and opportunities to maximize the use of public transportation and existing transportation infrastructure.

d) The market demand for housing.

e) Agreements between a county and cities in a county to direct growth toward incorporated areas of the county.

f) The loss of units contained in assisted housing developments that changed to non-low-income use through mortgage prepayment, subsidy contract expirations, or termination of use restrictions.

g) High-housing costs burdens.

h) The housing needs of farmworkers.

i) The housing needs generated by the presence of a private university or a campus of the California State University or the University of California within any member jurisdiction.

j) Any other factors adopted by the council of governments.

The foundation for BCAG's RHNP proposed methodology is the long-term regional growth forecasts developed by BCAG in collaboration with the City/Town/County Planning Directors Group. Complete descriptions of the regional growth forecasts, its incorporated methodology and detailed tables, and the associated guiding principles have been provided in Appendix B and C.

The development of the growth forecasts included the consideration of a substantial number of the factors required by State Law, and therefore have been incorporated into the RHNA methodology. The remaining factors that were not directly considered in the development of the growth projections were further reviewed by BCAG staff and City/Town/County Planning Directors Group. These factors and a summary of their evaluation have been provided below:

- **The market demand for housing.**
  The market demand for housing has decreased significantly compared to the first half of the decade and current development has been at a virtual standstill over the past several years. A special adjustment has been incorporated into the methodology in order to counter a portion of the uncertainty regarding the short-term market demand for housing included in the long-term regional growth forecasts. This adjustment caps the amount of combined very low and low income units a jurisdiction can be allocated based on the previous RHNP cycle.

- **The loss of units contained in assisted housing developments.**
  Assisted housing developments are multi-family rental complexes that receive government assistance which are eligible to change to market rate housing due to termination of a rent subsidy contract (e.g. Section 8), mortgage repayment, or other expiring use restrictions.

The California Housing Partnership Corporation (CHPC) has identified 11 projects (615 units) within Butte County as "at-risk" of being loss to market rate housing (see Appendix E). This data, however, does not identify all units assisted units which may be supported through other programs nor does it account for new projects being developed over the RHNA timeline. Compiling assisted housing data, in general, is very difficult due to the array of programs and agencies involved. BCAG determined that the available data is insufficient for being incorporated into the methodology in a consistent and rationale manner. Each individual jurisdiction should consider this category of need in their respective housing elements.

- **The housing needs of farmworkers.**

Farmworkers provide an important contribution to the economy of Butte County. Agricultural production for the year 2008 employed 2,800 people, with countywide agricultural production value totaling $540 million in 2009. The ten leading crops identified by their 2009 dollar value are shown in Table 1.

The California Employment Development Department (EDD) projects farm industry average annual employment to remain unchanged through the year 2018, with 2,800 total farm jobs. Projections beyond the 2018 time period were not available at the time this report was prepared.

The farmworker population experiences a distinct set of issues that contribute to unique housing challenges, including seasonal income fluctuations, very low incomes, and a severe deterioration of existing housing stock.

There are several different groups within the farmworker population, each with their own set of housing issues. *Regular* or year-round farmworkers are defined by the EDD as those working 150 or more days for the same employer. *Seasonal* workers are those who work less than 150 days annually for the same employer. *Migrant* seasonal workers are defined as those who travel more than 50 miles across county lines to obtain agricultural employment.

Table 1. Leading Agricultural Commodities with Value of Production, 2009.

Commodity	$ Mill.
Rice, Milling	184.2
Walnuts, English	116.7
Almonds	90.8
Plums, Dried	36.9
Nursery Products	26.8
Rice, Seed	12.2
Fruits & Nuts	10.9
Peaches, Clingstone	10.6
Cattle & Calves	7.6
Apiary Products	6.5

Source: CA Dept. of Food & Agriculture

The Regional Housing Need Plan concentrates on determining a needed increase in housing available for year-round occupancy. It is assumed that seasonal and migrant workers will continue to be housed in non-year-round units. For planning purposes, this

means that no net increase in seasonal or migrant housing is anticipated. Regular farmworker housing has been addressed, in part, in the allocation for very-low and low income housing. Each city and county, however, should consider this category of need in individual housing elements.

- **The housing needs generated by California State University, Chico.**
  The student population, generated by California State University, Chico (CSUC), is a significant and unique group within the City of Chico and adjoining unincorporated area. Unlike the general population, students tend to prefer shared accommodations and may qualify individually as low income but do not, in fact, live in low-income households.

  The latest Chico State University Master Plan, prepared in 2005, seeks to obtain a full time equivalent student (FTES) capacity of 15,800 students. This is a 10% increase from current, Spring Semester 2012, FTES levels of 14,300. The master plan has been considered in the development of the latest update of the City of Chico General Plan and has been incorporated into the latest long-term regional forecasts as a component of the City of Chico projections. No specific adjustments to the methodology have been made for the housing needs of CSUC. However, the CSUC student population growth has been incorporated into the long-term regional growth forecasts.

- **Any other factors adopted by BCAG.**
  At this time, BCAG has no adopted policy which has been considered as a factor in the RHNA methodology.

APPENDIX 11

Appendix B

Butte County Long-Term Regional Growth Forecasts 2010 – 2035

Prepared by:
Butte County Association of Governments
January 26th, 2011

Butte County Association of Governments
2580 Sierra Sunrise Terrace, Suite 100
Chico, CA 95928
Phone: 530-879-2468 FAX: 530-879-244 www.bcag.org

This document is available online at www.bcag.org. Please direct any questions or comments to Mr. Brian Lasagna, BCAG Senior Planner by phone or email at blasagna@bcag.org.

TABLE OF CONTENTS

INDEX OF TABLES

INTRODUCTION

Approximately every four years, the Butte County Association of Governments (BCAG) prepares long-term regional growth forecasts of housing, population, and employment for the Butte County area. The forecasts are used in preparation of BCAG's 2012 Regional Transportation Plan, Sustainable Communities Strategy, Air Quality Conformity Determination, and Regional Housing Needs Plan and provide data support for BCAG's regional Travel Demand Model. Local land use planning agencies may also elect to utilize the forecasts for preparing district plans or city and county long range plans.

The forecasts have been developed by BCAG in consultation with its Planning Directors Group which consists of representatives from each of BCAG's local jurisdiction members and the Butte Local Agency Formation Commission. Each of the local jurisdictions provided valuable input regarding the anticipated amount of growth within their respective planning areas.

A low, medium, and high scenario has been developed for each forecast of housing, population, and employment. The use of these scenarios provides for increased flexibility when utilizing the forecast for long-term planning and alleviates some of the uncertainty inherent in long range projections.

The regional growth forecasts will be updated again during the 2014/15 fiscal year in preparation for BCAG's 2016 Regional Transportation Plan and to ensure that any unexpected trends will be integrated into the forecasts.

REGIONAL FORECASTS

In comparison to the regional forecasts prepared by BCAG in 2006, the 2010 forecasts capture the downward trend in regional growth associated with the dramatic downturn in the economy. This is most evident in the short term periods (2010-2020) of the forecasts in which the overall growth of the region has been most affected. Less variation is seen with the longer range (2020-2035) forecasts, suggesting that future growth patterns are likely to stay intact following an economic recovery.

As identified in BCAG's 2006 growth forecasts, jurisdictions in the southern portions of the region are projected to absorb a greater percentage of the regional growth then achieved in past growth trends. The cities of Biggs, Gridley, and Oroville are forecasted to, at a minimum, double in population by the year 2035. While the greatest amount of growth will continue to be occurring in the Chico area with a forecasted range of 16,339 – 22,096 new housing units by the year 2035.

Consistent with the population and housing trends, employment is projected to rebound from its current estimate of 0.74 jobs per housing unit in 2010 to moderate historic levels by the year 2020 and maintain a 0.78 ratio into the horizon year of 2035.

Table 1: Housing Forecasts 2010-2035

Low Scenario

Jurisdiction^	2010*	2015	2020	2025	2030	2035	Total Increase 2010-2035	Percent Increase 2010-2035	Compound Annual Growth Rate (CAGR) 2010-2035
Biggs	634	740	931	1,080	1,249	1,440	806	127%	3.3%
Chico	37,159	38,750	41,283	44,957	49,018	53,498	16,339	44%	1.5%
Gridley	2,449	2,911	3,586	4,116	4,736	5,338	2,889	118%	3.2%
Oroville	6,393	7,157	8,379	9,966	10,912	11,964	5,571	87%	2.5%
Paradise	12,789	13,171	13,638	14,168	14,720	15,314	2,525	20%	0.7%
Unincorporated^^	37,199	39,371	41,696	44,051	46,576	49,228	12,029	32%	1.1%
Total County	96,623	102,101	109,513	118,338	127,210	136,782	40,159	42%	**1.4%**

Medium Scenario

Jurisdiction^	2010*	2015	2020	2025	2030	2035	Total Increase 2010-2035	Percent Increase 2010-2035	Compound Annual Growth Rate (CAGR) 2010-2035
Biggs	634	759	984	1,159	1,359	1,584	950	150%	3.7%
Chico	37,159	39,034	42,019	46,349	51,134	56,414	19,255	52%	1.7%
Gridley	2,449	2,994	3,789	4,414	5,144	5,854	3,405	139%	3.5%
Oroville	6,393	7,293	8,733	10,603	11,718	12,958	6,565	103%	2.9%
Paradise	12,789	13,239	13,789	14,414	15,064	15,764	2,975	23%	0.8%
Unincorporated^^	37,199	39,759	42,499	45,274	48,249	51,374	14,175	38%	1.3%
Total County	96,623	103,078	111,813	122,213	132,668	143,948	47,325	49%	**1.6%**

High Scenario

Jurisdiction^	2010*	2015	2020	2025	2030	2035	Total Increase 2010-2035	Percent Increase 2010-2035	Compound Annual Growth Rate (CAGR) 2010-2035
Biggs	634	777	1,036	1,236	1,466	1,724	1,090	172%	4.1%
Chico	37,159	39,311	42,736	47,705	53,196	59,255	22,096	59%	1.9%
Gridley	2,449	3,074	3,987	4,704	5,542	6,356	3,907	160%	3.9%
Oroville	6,393	7,426	9,078	11,224	12,504	13,927	7,534	118%	3.2%
Paradise	12,789	13,305	13,937	14,654	15,400	16,203	3,414	27%	1.0%
Unincorporated^^	37,199	40,137	43,281	46,465	49,879	53,465	16,266	44%	1.5%
Total County	96,623	104,030	114,054	125,988	137,986	150,930	54,307	56%	**1.8%**

* Source: *State of California, Department of Finance, E-5 Population and Housing Estimates for Cities, Counties and the State, 2001-2010, with 2000 Benchmark. Sacramento, California, May 2010.*

Notes:
^ Jurisdictional figures reflect anticipated new growth within the anticipated boundaries of each jurisdiction and do not reflect future annexation of existing units or as-yet-unbuilt new units in unincorporated areas to the respective cities. Assumptions about future boundaries are not intended by BCAG to be interpreted as factors limiting such jurisdictions' future boundaries.

^^ Unincorporated Butte County figures exclude forecasted growth identified in the Butte County General Plan 2030 - Environmental Impact Report as Bell Muir/Chico Area, Doe Mill/Honey Run Specific Plan, Thermolito Afterbay, Biggs Area, and Gridley Area and includes shared growth (50%) of Thermalito, Southern Oroville and Eastern Oroville.

Table 2: Population Forecasts 2010-2035

Low Scenario

Jurisdiction^	2010*	2015	2020	2025	2030	2035	Total Increase 2010-2035	Percent Increase 2010-2035	Compound Annual Growth Rate (CAGR) 2010-2035
Biggs	1,787	2,086	2,624	3,043	3,521	4,059	2,272	127%	3.3%
Chico	88,228	92,004	98,018	106,743	116,383	127,021	38,793	44%	1.5%
Gridley	6,454	7,673	9,451	10,849	12,481	14,069	7,615	118%	3.2%
Oroville	14,687	16,442	19,249	22,895	25,069	27,486	12,799	87%	2.5%
Paradise	26,310	27,095	28,055	29,146	30,281	31,503	5,193	20%	0.7%
Unincorporated^^	84,302	89,223	94,493	99,829	105,550	111,560	27,258	32%	1.1%
Total County	221,768	234,524	251,890	272,504	293,285	315,698	93,930	42%	**1.4%**

Medium Scenario

Jurisdiction^	2010*	2015	2020	2025	2030	2035	Total Increase 2010-2035	Percent Increase 2010-2035	Compound Annual Growth Rate (CAGR) 2010-2035
Biggs	1,787	2,139	2,774	3,267	3,830	4,465	2,678	150%	3.7%
Chico	88,228	92,678	99,766	110,046	121,407	133,944	45,716	52%	1.7%
Gridley	6,454	7,890	9,986	11,633	13,556	15,428	8,974	139%	3.5%
Oroville	14,687	16,755	20,063	24,359	26,921	29,770	15,083	103%	2.9%
Paradise	26,310	27,235	28,367	29,652	30,990	32,430	6,120	23%	0.8%
Unincorporated^^	84,302	90,102	96,311	102,600	109,342	116,424	32,122	38%	1.3%
Total County	221,768	236,800	257,266	281,558	306,047	332,459	110,691	50%	**1.6%**

High Scenario

Jurisdiction^	2010*	2015	2020	2025	2030	2035	Total Increase 2010-2035	Percent Increase 2010-2035	Compound Annual Growth Rate (CAGR) 2010-2035
Biggs	1,787	2,191	2,919	3,485	4,132	4,860	3,073	172%	4.1%
Chico	88,228	93,335	101,468	113,265	126,303	140,688	52,460	59%	1.9%
Gridley	6,454	8,102	10,507	12,397	14,604	16,751	10,297	160%	3.9%
Oroville	14,687	17,060	20,856	25,786	28,726	31,995	17,308	118%	3.2%
Paradise	26,310	27,372	28,670	30,146	31,680	33,333	7,023	27%	1.0%
Unincorporated^^	84,302	90,958	98,083	105,300	113,036	121,163	36,861	44%	1.5%
Total County	221,768	239,018	262,503	290,379	318,481	348,790	127,022	57%	**1.8%**

* Source: *State of California, Department of Finance, E-5 Population and Housing Estimates for Cities, Counties and the State, 2001-2010, with 2000 Benchmark. Sacramento, California, May 2010.*

Notes:
^Jurisdictional figures reflect anticipated new growth within the anticipated boundaries of each jurisdiction and do not reflect future annexation of existing units or as-yet-unbuilt new units in unincorporated areas to the respective cities. Assumptions about future boundaries are not intended by BCAG to be interpreted as factors limiting such jurisdictions' future boundaries.

^^ Unincorporated Butte County figures exclude forecasted growth identified in the Butte County General Plan 2030 - Environmental Impact Report as Bell Muir/Chico Area, Doe Mill/Honey Run Specific Plan, Thermolito Afterbay, Biggs Area, and Gridley Area and includes shared growth (50%) of Thermalito, Southern Oroville and Eastern Oroville.

Table 3: Employment Forecasts 2010-2035

Low Scenario

Jurisdiction	2010*	2015	2020	2025	2030	2035	Total Increase 2010-2035	Percent Increase 2010-2035
Butte County	71,501	77,596	85,420	92,304	99,224	106,690	35,189	49%

Medium Scenario

Jurisdiction	2010*	2015	2020	2025	2030	2035	Total Increase 2010-2035	Percent Increase 2010-2035
Butte County	71,501	78,339	87,214	95,326	103,481	112,279	40,778	57%

High Scenario

Jurisdiction	2010*	2015	2020	2025	2030	2035	Total Increase 2010-2035	Percent Increase 2010-2035
Butte County	71,501	79,063	88,962	98,271	107,629	117,725	46,224	65%

Table 4: Jobs (Non-Farm) to Housing Unit Ratios 2010-2035

Factor	2010*	2015	2020	2025	2030	2035
Jobs/Housing Unit	0.74	0.76	0.78	0.78	0.78	0.78

* Source: *State of California, Department of Finance, E-5 Population and Housing Estimates for Cities, Counties and the State, 2001-2010, with 2000 Benchmark. Sacramento, California, May 2010. California Employment Development Department, Industry Employment & Labor Force - by Annual Average, March 2009 Benchmark, for Butte County (Chico MSA).*

FORECAST METHODOLOGY

BCAG has prepared the forecasts using professionally accepted methodologies for long-range forecasting. First, utilizing a "top down" approach, long-term projections prepared by the State of California were consulted for Butte County and used to establish control totals for the region. Secondly, a variety of data sources, including input from local jurisdiction staff, were then consulted to develop historic trends and projected growth at the local jurisdiction level, therefore incorporating a "bottom up" approach. Forecasts were then allocated into five year increments until the year 2035. Lastly, low, medium, and high scenarios were prepared for each forecasted category.

HOUSING

The latest California Department of Finance (DOF) long range population and housing projections, as of December 2010, were analyzed for the period 2010-2035 for the Butte County region. These projections determine that the Butte County region will grow at a Compound Annual Growth Rate (CAGR) of 1.8%. This information was used to establish the control total for BCAG's high forecast scenario.

BCAG then compiled historic building permit data and prepared a revise of the 2006 BCAG growth forecasts utilizing 2010 base line data from DOF, for each jurisdiction in the region. After reviewing the information described above, planning staff from the local jurisdictions provided input into future housing development considering their most recent local land use plans and knowledge of current development activity. Based on the information gathered, an estimate of the production of new housing units occurring within each jurisdiction, for each five year increment, to the year 2035, were then developed. Once compiled for all jurisdictions, the forecast showed a regional CAGR of 1.6%. This information was used to represent the medium forecast scenario.

Based on a 0.2 percent incremental change between the established high and medium scenarios, a low scenario was developed using a CAGR of 1.4%. Each jurisdictions growth, represented in 5 year increments, was adjusted from the medium scenario to the high and low scenarios based on its share of growth.

POPULATION

Population forecasts were prepared by applying average persons per housing unit to the housing unit forecasts. This method allows for the capture of variations in household for each jurisdiction. The average person per housing unit was prepared by dividing the 2010 DOF preliminary population estimates by the preliminary housing estimates for each jurisdiction. This method was applied to all scenarios.

EMPLOYMENT

Employment forecasts were prepared at the regional/county level only and are based on a ratio of jobs per housing unit.

Baseline 2010 employment data was obtained from the California Employment Development Department (EDD) for the year 2009 – an annual average for 2010 was not available at the time the BCAG regional forecasts were prepared. The 2009 EDD data provide a total of all non-farm jobs for the region. This information was then used in conjunction with 2009 DOF preliminary housing unit estimates to calculate a ratio of 0.74 jobs per housing unit.

Historic employment information was also obtained from the EDD for the period 1990-2009 and averaged to calculate a long range jobs to housing unit ratio of 0.78. This ratio was applied to the years 2020-2035 and based on the assumption that historic rates of employment will completely resume by the year 2020.

Anticipating a recovery from the existing lows of the economy, an average of the 2010 and long-term ratios were prepared for the year 2015, of 0.76 jobs per housing unit.

Lastly, the jobs to housing unit ratio developed for each 5 year period was applied to all scenarios.

APPENDIX C

REGIONAL GUIDING PRINCIPLES

The list of Regional Guiding Principles below was developed through the City/Town/County Planning Directors group in an effort to better coordinate the various General Plan updates that have been or are currently being developed. The Regional Guiding Principles are intended to serve as general concepts that are common to all jurisdictions in Butte County, and should be incorporated into each land use plan update as they occur.

The Regional Guiding Principles provide a regional framework to better guide growth and development on a regional, or macro, level and ensure a consistent unifying theme between the many General Plans. Principles and guidelines specific to each jurisdiction will be included in each areas general plan.

No single Guiding Principle should be viewed independently, but instead all of the principles should be considered together as a framework for providing checks and balances for meeting the needs of a growing population while continuing to preserve and enhance the many resources that help define the region's unique identity.

- **Cultural Resources** – Identify, protect and celebrate cultural resources.

- **Natural Resources and Environment** –Conserve, enhance and protect natural resources and unique natural environments.

- **Employment Activity and Economic Development –** Ensure that adequate sites are available for commercial and industrial development and that there is a comprehensive proactive strategy for job creation and retention.

- **Housing-Jobs Balance –** Maintain a housing-jobs balance to avoid sprawl, shorten vehicle commute lengths, strengthen communities and provide an improved quality of life for area residents.

- **Range of Housing Choices –** Provide a range of housing opportunities affordable to low, middle and upper income families in a variety of densities.

- **Transportation and Circulation** – Enhance and strengthen local and regional multi-modal transportation systems to ensure the safe and efficient movement of people and goods within and through the region.

- **Agriculture** – Maintain, protect, promote and enhance agriculture which is an important component of the region's economy and lifestyle.

- **Growth within Spheres of Influence** - Focus future growth in the region within city Sphere of Influence boundaries where infrastructure and services are more readily available and more compact urban forms can be realized, discouraging sprawl, traffic congestion and air pollution.

- **City, Community and Neighborhood Identity –** Maintain and enhance the unique identities of the region's cities, unincorporated communities and neighborhoods.

- **Surface and Ground Water Quality –** Protect the water quality in the region's creeks, rivers, lakes and aquifers.

- **Airports** – Protect airports to allow for future expansion of these facilities and their continued safe operation within communities.

- **Regional Recreation and Parks** – Encourage zoning for and development of parks and open space to maintain and encourage a healthy and active population.

- **Regional Cooperation** – Strengthen relationships and planning efforts with neighboring jurisdictions and special districts.

- **The Role of Downtown as the Heart of the Community –** Downtown areas play an important role in the social, as well as economic well being of communities. All incorporated cities and many unincorporated communities in the region are fortunate to have downtown areas that should be strengthened, enhanced and preserved.

Appendix E

California Housing Partnership Corporation
California's Experts on Affordable Housing Finance, Advocacy & Policy

Butte County: USDA Subsidized Property Listing

4/24/2012

Property	Address	City	County	Zip	Rent Assisted Units	Sec. 8 Units	Total Units	Operational Date	Restriction Exp. Date	Tax Credit Exp. Date
GRIDLEY										
THE OAKS	1500 HIGHWAY 99	GRIDLEY	BUTTE	95948	55	0	56	6/25/1980	5/14/2002	
GRIDLEY SPRINGS APT	210 FORD AVENUE	GRIDLEY	BUTTE	95948	26	0	32	6/7/1989	6/9/2009	12/31/2004
OROVILLE										
OROVILLE APTS	39 NELSON AVENUE	OROVILLE	BUTTE	95965	12	0	62	9/2/1980	7/21/2033	10/1/2018
OROVILLE MANOR	2750 LINCOLN STREET	OROVILLE	BUTTE	95966	71	0	72	6/30/1981	9/1/2034	8/31/2019
THE HIGHLANDS	202 TABLE MOUNTAIN BLVD	OROVILLE	BUTTE	95965	82	0	88	11/7/1979	11/7/2029	8/31/2022
PARADISE										
PARADISE GARDNS III	1040 BUSCHMANN	PARADISE	BUTTE	95969	0	0	48	6/15/1979	12/21/2015	

Appendix E Cont.

Butte County: HUD Subsidized Property Listing

4/24/2012

HUD Data Property	Address	City	County	Zip	Cong. District	Sec 8 Assist Units	Total Units	Program Type	Overall Exp. Date	Financing	Loan Maturity Dste	Owner	T2/T6	Risk Level
CHICO														
CHICO GARDENS	851 POMONA AVE	CHICO	Butte	95928	02	18	92	LMSA	9/30/2013			Limited Dividend		High.
Lucian Manor	120 PARMAC RD	CHICO	Butte	95926	02	38	38	202/8 NC	6/30/2015	207/223(f)	1/1/2042	Profit Motivated		High.
TRANS PACIFIC GARDENS II	729 NORD AVE	CHICO	Butte	95926	02	125	164	Preservation	10/31/2016	241/236	11/1/2034	Limited Dividend	T2	High.
TURNING POINT COMMONS	25 VIA LA PAZ	CHICO	Butte	95928	02	24	24	HFDA/8 NC	3/12/2014			Non-Profit		High.
VILLA RITA APARTMENTS	650 MANZANITA AVE	CHICO	Butte	95926	02	52	59	LMSA	3/31/2012			Profit Motivated		Very High
PARADISE														
PARADISE GARDENS III	1040 BUSCHMANN RD	PARADISE	Butte	95969	02	48	48	515/8 NC	12/31/2013			Profit Motivated		High.