

STAFF REPORT



MEETING DATE:	10/25/11
SUBJECT:	Update Light to the Shasta County Travel Demand Model
AGENDA ITEM:	5
STAFF CONTACT:	Sean Tiedgen

SUMMARY:

The Shasta County travel demand model (TDM), last updated in 2008, reflects outdated demographics, economic and land use conditions, and growth and development forecasts. The model was recently brought up to date with the best and most recent data available and vetted through local agencies via the Shasta Model Users Group (SMUG). The SMUG recommends the new model for board adoption. Pending board approval, the new TDM will be released to Caltrans, the cities, the county and consulting firms for use in transportation planning and project studies.

STAFF RECOMMENDATION:

It is recommended that the board adopt the new TDM as the official model for Shasta County.

DISCUSSION:

Background

The TDM is used to forecast the impact of growth and development on the transportation network in support of various planning and project studies. A TDM utilizes relationships between land use, travel behavior and other key factors to model each person's decision-making process of: why, when, where and how to make a trip, and what route to take. Level-of-service measures help prioritize where and when transportation improvements are needed over a 20-year period, or longer. The TDM must be updated every five years or so to remain valid and useful.

Two TDM efforts are currently underway. An 'Update Light', the main discussion of this report, updates the current TDM to reflect the latest data and present conditions. The Regional Transportation Planning Agency (RTPA) is simultaneously developing an entirely new, 'activity-based model'. The new TDM – to be completed over the next 18-24 months – will allow for parcel level analysis (versus the current 'transportation analysis zones' or TAZs) and expands model sensitivity to include the 'Five Ds' (i.e. Density, Diversity, Design, Destination accessibility, and Distance to transit). The additional detail and capabilities of an activity-based model are consistent with the direction of other California MPOs and will eventually be required to comply with state and federal TDM guidelines. In the interim, a relatively simple update of the current model is needed.

The RTPA's current TDM was released February 2008. Since this time, economic conditions in the region have changed dramatically. The RTPA and other model users acknowledged the need to update the model to reflect recent transportation network improvements, current development and land use, 2010 U.S. Census data, and reduced growth and development

forecasts. An update of the TDM was approved by the board at the April 26, 2011, meeting and subsequently carried out.

The updated TDM uses a 2010 base year using 2010 U.S. Census data. Growth rates are based on the best and most recent data sources available and vetted through local agencies. The updated model makes forecasts to 2040. Because the current (2008 release) model only made forecasts to 2030, the following comparison between the current and new model is based upon information for 2030.

Comparison of TDM Forecasts for 2030			
	Current (2008) Model	New (2011) Model	% Change
Population	245,900	206,000	-16%
Households	101,150	85,900	-15%
Jobs	103,843	80,400	-23%

A complete description of all changes in the new TDM is provided via the attached technical memorandum and will also be documented in the forthcoming Shasta Model Users Guide.

Pending board adoption, the updated TDM will become the RTPA's new official model and be released to Caltrans, the cities, the county and private consultants for use in transportation planning and project studies. All users are required to sign a new model release form acknowledging that they have received the new travel model and will comply with the terms and conditions of its use.

ALTERNATIVES:

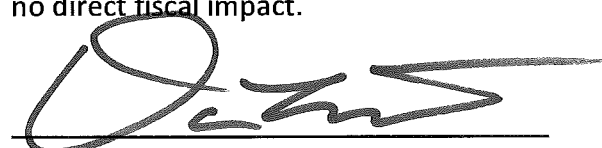
The board may choose not to accept the updated model. This is not recommended as the current model is outdated.

OTHER AGENCY INVOLVEMENT:

The TDM update process is a collaborative effort. The SMUG includes representatives from all partner agencies. Through the SMUG, local agencies provide necessary data on housing, infrastructure improvements, economic generators and land use development changes. The Technical Advisory Committee (TAC) concurs with the staff recommendation.

FINANCING:

The TDM update was accomplished under the RTPA's existing on-call services contract with Dowling Associates. Total cost of the update is less than \$15,000. Adopting the new model has no direct fiscal impact.



Daniel S. Little, AICP, Executive Director

Attachment: Memorandum from Dowling Associates



Date: October 10, 2011

Memorandum

To: Sean Tiedgen, Shasta RTPA

cc:

From: Mike Aronson, Dowling Associates

Reference: Shasta RTPA Modeling On-Call Services

P070116

Subject: Shasta County Forecast Assumptions

The Shasta County travel demand model is being updated to reflect the most current information on overall countywide growth rates, specific development assumptions and road improvement projects.

Countywide Land Use Forecasts

The land use forecasts for the current Shasta County travel demand model were developed in 2005 using the best information available at that time. Since 2005, economic conditions have changed significantly. The changes are affecting both the overall growth rates in Shasta County and the rate of construction for specific approved and proposed development projects.

Sources

The California Department of Finance (DOF) publishes forecasts of population for California counties. However, the most current DOF projections were completed in 2007, well before the effects of the current economic changes were known. Dowling Associates contacted DOF and verified that no newer projections have been released, and may not be released for some time. Because the DOF projections do not reflect current economic conditions, they are not recommended for use.

A more recent economic forecast for California has been prepared by The California Economic Forecast for the California Department of Transportation (Caltrans). The results were published as *California County-Level Economic Forecast 2010 – 2035*. The California Economic Forecast, Mark Schniepp, Director, prepared for Office of Transportation Economics, Division of Transportation Planning, California Department of Transportation, March, 2010. The Caltrans Economic Forecast reflects more current economic trends and is recommended as a basis for Shasta County forecasts.

Population

Population statistics and forecasts for Shasta County are listed in Table 1.

Table 1 : Shasta County Population Forecasts

Year	US Census (2000 & 2010)	CA DOF Estimates (2010)	CA Department of Finance Current (2011)	CA Department of Finance Forecast (2007)	Caltrans Economic Forecasts (2010)	Recommended Forecast	Shasta County Model (2005)
2000	163,256	163,256		164,794		163,256	
2005		177,944			178,724	173,029	165,430
2010	177,223	184,247	177,248	191,722	184,891	177,223	182,071
2015					191,098	183,173	198,875
2020				224,386	198,421	190,192	214,734
2025					206,303	197,747	230,231
2030				260,179	214,903	205,990	245,904
2035					223,639	214,364	
2040				295,281		222,738	

Persons per Year

Year	US Census (2000 & 2010)	CA DOF Estimates (2010)	CA Department of Finance Current (2011)	CA Department of Finance Forecast (2007)	Caltrans Economic Forecasts (2010)	Recommended Forecast	Shasta County Model (2005)
2000							
2005		2,938	-			1,955	
2010	1,397	1,261		2,693	1,233	839	3,328
2015					1,241	1,190	3,361
2020				3,266	1,465	1,404	3,172
2025					1,576	1,511	3,099
2030				3,579	1,720	1,649	3,135
2035					1,747	1,675	
2040				3,510		1,675	

Annual Rate Compared to 2010 Base

Year	US Census (2000 & 2010)	CA DOF Estimates (2010)	CA Department of Finance Current (2011)	CA Department of Finance Forecast (2007)	Caltrans Economic Forecasts (2010)	Recommended Forecast	Shasta County Model (2005)
2000							
2005		1.59%				1.10%	
2010	0.79%	0.68%		1.40%	0.67%	0.47%	1.83%
2015					0.67%	0.67%	1.85%
2020				1.70%	0.79%	0.79%	1.74%
2025					0.85%	0.85%	1.70%
2030				1.87%	0.93%	0.93%	1.72%
2035					0.94%	0.94%	
2040				1.83%		0.94%	

The population numbers in the current (2005 version) Shasta County model were based on the 2000 United States Census, supplemented by the annual population estimates provided by the California DOF and growth estimates based on a detailed review of actual building permits in each Shasta County jurisdiction between 2000 and 2004. The model estimates were 7 percent lower than actual population reported by DOF for 2005, but were only 2.7 percent higher than the recently released Census statistics for 2010 (182,071 model estimate versus 177,223 Census count).

The recommended population forecasts start with the 2010 value reported by the 2010 Census. The recommended population estimate for each forecast year up to 2035 is based on applying the growth rate from the Caltrans Economic Forecast to the prior forecast year. For example, the population estimate for 2030 is based on the 2025 population estimate increased by the Caltrans growth percentage from 2025 to 2030. The population growth from 2035 to 2040 is assumed to be similar to the growth rate from 2030 to 2035.

The resulting 2030 population forecast of 206,000 is 16 percent lower than the current model forecast of 245,900.

Housing

Statistics and forecasts for households or occupied housing units in Shasta County are listed in Table 2.

The household numbers in the current Shasta County model were based on the 2000 United States Census, supplemented by growth estimates based on a detailed review of actual building permits in each Shasta County jurisdiction between 2000 and 2004. The model estimates for 2010 were 6.8 percent higher than the recently released Census statistics for 2010.

The recommended housing forecasts start with the 2010 value reported by the 2010 Census. The recommended housing estimate for each forecast year up to 2035 is based on applying the growth rate from the Caltrans Economic Forecast to the prior forecast year. For example, the housing estimate for 2030 is based on the 2025 housing estimate increased by the Caltrans growth percentage from 2025 to 2030. The household growth from 2035 to 2040 is assumed to be similar to the growth rate from 2030 to 2035.

The resulting 2030 housing forecast of 85,900 is 15 percent lower than the current (2005 version) model forecast of 101,150.

Table 2 : Shasta County Housing Forecasts

Year	US Census (2000 & 2010)	CA DOF Estimates (2010)	CA Department of Finance Current (2011)	CA Department of Finance Forecast (2007)	Caltrans Economic Forecasts (2010)	Recommended Forecast	Shasta County Model (2005)
2000	63,426	63,426				63,426	
2005		68,220			68,200	67,392	68,220
2010	70,346	71,791	70,301		72,100	70,346	75,158
2015					75,800	73,956	81,658
2020					80,000	78,054	88,154
2025					84,100	82,054	94,670
2030					88,000	85,859	101,150
2035					91,500	89,274	
2040						92,689	

Households per Year

Year	US Census (2000 & 2010)	CA DOF Estimates (2010)	CA Department of Finance Current (2011)	CA Department of Finance Forecast (2007)	Caltrans Economic Forecasts (2010)	Recommended Forecast	Shasta County Model (2005)
2000							
2005						793	
2010	692	837			780	591	1,388
2015					740	722	1,300
2020					840	820	1,299
2025					820	800	1,303
2030					780	761	1,296
2035					700	683	
2040						683	

Annual Rate Compared to 2010 Base

Year	US Census (2000 & 2010)	CA DOF Estimates (2010)	CA Department of Finance Current (2011)	CA Department of Finance Forecast (2007)	Caltrans Economic Forecasts (2010)	Recommended Forecast	Shasta County Model (2005)
2000							
2005						1.03%	
2010	0.98%	1.17%			1.08%	1.03%	1.85%
2015					1.03%	1.03%	1.73%
2020					1.17%	1.17%	1.73%
2025					1.14%	1.14%	1.73%
2030					1.08%	1.08%	1.72%
2035					0.97%	0.97%	
2040						0.97%	

Employment

Statistics and forecasts for jobs in Shasta County are listed in Table 3.

The employment numbers in the current Shasta County model were based on a detailed inventory of 2004 employers, starting with a commercial database from InfoUSA and supplemented by manual review and checks of government employment locations and major missing employers.

The model estimates for 2005 were about 8 percent higher than the standard jobs report issued by the California Economic Development Department (EDD). However, this was deliberate, as the model intends to capture all employees who may make trips on a typical day, while the EDD reports are more oriented towards full-time equivalent employees and exclude some categories such as self-employed at home. The higher model base number is recommended as a basis for employment statistics rather than the EDD total jobs reports.

For 2010, the model forecast of 76,011 jobs was 30 percent higher than the EDD report of 58,500 jobs. As of 2005, the model forecasts assumed continued job growth consistent with trends at that time and planned development in each community. In reality, jobs in Shasta County decreased by over 9 percent between 2005 and 2010.

The recommended employment forecasts start with the 2010 value reported by the EDD, adjusted up by the 8 percent established to account for the additional job types in the model database (part-time retail workers, self-employed, etc...). The recommended employment estimate for each forecast year up to 2035 is based on applying the growth rate from the Caltrans Economic Forecast to the prior forecast year. For example, the employment estimate for 2030 is based on the 2025 employment estimate increased by the Caltrans growth percentage from 2025 to 2030.

The resulting 2030 employment forecast of 80,400 is 23 percent lower than the current (2005 version) model forecast of 103,843.

Recession Adjustment

Land use inputs for travel models generally assume that there is a base year inventory, and then new development is added to that base year inventory. However, actual employment decreased between the 2004 base year inventory and 2010. An additional set of assumptions were required to represent this recession condition.

The first assumption is that existing buildings were operating at lower occupancies in 2010 than in 2004. The change may not directly correlate to leasing rates, as employment spaces could still be actively leased but occupied by lower numbers of employees. A factor was developed for each type of employment space to account for lower occupancy in 2010 than in the 2004 base year. The factors were based on the relative number of employees in various categories in Shasta County for each year as reported by EDD (Table 4).

Table 3 : Shasta County Employment Forecasts

Year	US Census (2000 & 2010)	CA Economic Development Department Current (2011)	CA Economic Development Department Forecast (2009)	Caltrans Economic Forecasts (2010)	Recommended Forecast	Shasta County Model (2005)
2000		60,200				
2005		64,600		64,600	69,629	69,629
2010		58,500	64,060	60,300	63,054	76,017
2015				65,400	68,387	82,185
2020			69,860	69,200	72,361	88,869
2025				73,400	76,752	96,077
2030				77,000	80,517	103,834
2035				80,300	83,968	
2040					87,418	

Employees per Year

Year	US Census (2000 & 2010)	CA Economic Development Department Current (2011)	CA Economic Development Department Forecast (2009)	Caltrans Economic Forecasts (2010)	Recommended Forecast	Shasta County Model (2005)
2000						
2005		880				
2010				(860)	(1,315)	1,278
2015				1,020	1,067	1,234
2020				760	795	1,337
2025				840	878	1,442
2030				720	753	1,551
2035				660	690	
2040					690	

Annual Rate Compared to 2010 Base

Year	US Census (2000 & 2010)	CA Economic Development Department Current (2011)	CA Economic Development Department Forecast (2009)	Caltrans Economic Forecasts (2010)	Recommended Forecast	Shasta County Model (2005)
2000						
2005						
2010				-1.43%	-2.09%	1.68%
2015				1.69%	1.69%	1.62%
2020				1.26%	1.26%	1.76%
2025				1.39%	1.39%	1.90%
2030				1.19%	1.19%	2.04%
2035				1.09%	1.09%	
2040					1.09%	

A second assumption is that employment space will return to its normal occupancy levels at some point. For this model update, the recovery was assumed to require 20 years to the year 2030.

Table 4 lists the occupancy factors applied to each type of employment space and the corresponding EDD labor category used to estimate the occupancy factor.

Table 4 : Employment Occupancy Adjustment Factors

Model Land Use	Occupancy Factor			Representative EDD Categories
	2010	2020	2030	
08 Industrial	0.63	0.82	1.00	Goods Producing
09 Wholesale	1.00	1.00	1.00	Wholesale
10 Service Commercial	0.51	0.76	1.00	Construction
11 Retail	0.91	0.96	1.00	Retail Trade
12 Retail High	0.91	0.96	1.00	Retail Trade
13 Retail Warehouse	0.91	0.96	1.00	Retail Trade
14 Office	0.77	0.88	1.00	Information + Financial + Professional
15 School	1.00	1.00	1.00	Local Government Education
16 College	1.00	1.00	1.00	Local Government Education
17 Medical Office	1.00	1.00	1.00	Educational & Health
18 Hospital	1.00	1.00	1.00	Educational & Health
19 Residential Care	1.00	1.00	1.00	Educational & Health
20 Child Care	1.00	1.00	1.00	Educational & Health
21 Developed Recreation	1.00	1.00	1.00	Arts, Entertainment, Recreation
23 Casino	1.00	1.00	1.00	Arts, Entertainment, Recreation
24 Hotel	1.00	1.00	1.00	Accommodation
25 Restaurant	0.90	0.95	1.00	Food Services
26 Restaurant High	0.90	0.95	1.00	Food Services
27 Institutional	0.92	0.96	1.00	Other Services
28 Government	1.00	1.00	1.00	Government
29 Government High	1.00	1.00	1.00	Government

Forecasts by Jurisdiction

Recommended forecasts of population, housing and employment were also prepared for individual jurisdictions within Shasta County (Tables 5, 6 and 7).

The City of Redding provided specific population forecasts prepared by Economic Sciences Corporation for their jurisdiction for the years 2010 to 2025. These forecasts were incorporated in the population and housing forecasts for the travel model update. The allocations to the remaining jurisdictions are based on the allocations prepared in 2005 for the prior version of the travel model, which were in turn based on detailed assessments by Strategic Economics. The 2005 allocations were adjusted to the updated countywide totals.

Table 5 : Shasta County Population Forecasts by Jurisdiction

Year	Recommended Forecast	Anderson	Redding	Shasta Lake	Cottonwood	Other Uninc.
2000	163,256	9,027	80,865	9,093		
2005	173,029	9,731	87,146	10,069	3,649	62,433
2010	177,223	9,932	89,861	10,164	3,753	63,513
2015	183,173	10,280	94,237	10,650	3,969	64,037
2020	190,192	10,353	99,071	11,210	4,357	65,201
2025	197,747	10,426	103,539	11,845	4,756	67,181
2030	205,990	10,498	106,666	12,478	5,293	71,055
2035	214,364	10,925	111,002	12,985	5,508	73,943
2040	222,738	11,352	115,339	13,493	5,723	76,832

Persons per Year

Year	Recommended Forecast	Anderson	Redding	Shasta Lake	Cottonwood	Other Uninc.
2000						
2005	1,955	141	1,256	195		
2010	839	40	543	19	21	216
2015	1,190	70	875	97	43	105
2020	1,404	15	967	112	78	233
2025	1,511	15	894	127	80	396
2030	1,649	15	625	127	107	775
2035	1,675	85	867	101	43	578
2040	1,675	85	867	101	43	578

Annual Rate Compared to 2010 Base

Year	Recommended Forecast	Anderson	Redding	Shasta Lake	Cottonwood	Other Uninc.
2000						
2005	1.10%	1.42%	1.40%	1.92%		
2010	0.47%	0.40%	0.60%	0.19%	0.55%	0.34%
2015	0.67%	0.70%	0.97%	0.96%	1.15%	0.17%
2020	0.79%	0.15%	1.08%	1.10%	2.07%	0.37%
2025	0.85%	0.15%	0.99%	1.25%	2.13%	0.62%
2030	0.93%	0.15%	0.70%	1.25%	2.86%	1.22%
2035	0.94%	0.86%	0.97%	1.00%	1.15%	0.91%
2040	0.94%	0.86%	0.97%	1.00%	1.15%	0.91%

Table 6 : Shasta County Household Forecasts by Jurisdiction

Year	Recommended Forecast	Anderson	Redding	Shasta Lake	Cottonwood	Other Uninc.
2000	63,426	3,374	32,103	3,426		
2005	67,392	3,772	34,424	3,828	1,306	24,062
2010	70,346	3,944	36,130	3,943	1,413	24,916
2015	73,956	4,474	38,669	4,339	1,495	24,978
2020	78,054	4,513	40,704	4,545	1,617	26,676
2025	82,054	4,544	42,903	4,779	1,793	28,035
2030	85,859	4,576	44,197	5,046	2,006	30,034
2035	89,274	4,762	45,993	5,251	2,088	31,180
2040	92,689	4,948	47,790	5,456	2,169	32,325

Households per Year

Year	Recommended Forecast	Anderson	Redding	Shasta Lake	Cottonwood	Other Uninc.
2000						
2005	793	80	464	80		
2010	591	34	341	23	21	171
2015	722	106	508	79	16	12
2020	820	8	407	41	24	340
2025	800	6	440	47	35	272
2030	761	6	259	53	43	400
2035	683	37	359	41	16	229
2040	683	37	359	41	16	229

Annual Rate Compared to 2010 Base

Year	Recommended Forecast	Anderson	Redding	Shasta Lake	Cottonwood	Other Uninc.
2000						
2005	1.03%	2.02%	1.28%	2.04%		
2010	1.03%	0.87%	0.94%	0.58%		
2015	1.03%	2.69%	1.41%	2.01%	1.16%	0.05%
2020	1.17%	0.19%	1.13%	1.05%	1.72%	1.36%
2025	1.14%	0.16%	1.22%	1.19%	2.49%	1.09%
2030	1.08%	0.16%	0.72%	1.35%	3.02%	1.60%
2035	0.97%	0.94%	0.99%	1.04%	1.15%	0.92%
2040	0.97%	0.94%	0.99%	1.04%	1.15%	0.92%

Table 7 : Shasta County Employment Forecasts by Jurisdiction

Year	Recommended Forecast	Anderson	Redding	Shasta Lake	Cottonwood	Other Uninc.
2000						
2005	69,629	3,373	48,449	2,324	1,219	14,264
2010	63,054	2,699	43,635	2,067	1,147	13,506
2015	68,387	2,982	46,950	2,234	1,344	14,876
2020	72,361	3,263	48,250	2,427	1,362	17,058
2025	76,752	3,407	51,366	2,558	1,380	18,041
2030	80,517	3,780	53,288	2,623	1,395	19,431
2035	83,968	3,942	55,572	2,735	1,455	20,264
2040	87,418	4,104	57,856	2,847	1,514	21,097

Employees per Year

Year	Recommended Forecast	Anderson	Redding	Shasta Lake	Cottonwood	Other Uninc.
2000						
2005						
2010	(1,315)	(135)	(963)	(51)	(14)	(152)
2015	1,067	57	663	34	39	274
2020	795	56	260	39	4	436
2025	878	29	623	26	4	197
2030	753	75	384	13	3	278
2035	690	32	457	22	12	167
2040	690	32	457	22	12	167

Annual Rate Compared to 2010 Base

Year	Recommended Forecast	Anderson	Redding	Shasta Lake	Cottonwood	Other Uninc.
2000						
2005						
2010	-2.09%	-5.00%	-2.21%	-2.49%	-1.26%	-1.12%
2015	1.69%	2.10%	1.52%	1.62%	3.44%	2.03%
2020	1.26%	2.08%	0.60%	1.86%	0.31%	3.23%
2025	1.39%	1.07%	1.43%	1.27%	0.32%	1.46%
2030	1.19%	2.77%	0.88%	0.62%	0.25%	2.06%
2035	1.09%	1.20%	1.05%	1.09%	1.04%	1.23%
2040	1.09%	1.20%	1.05%	1.09%	1.04%	1.23%

Development Phasing Assumptions

Table 8 lists the phasing assumptions for specific development areas in Shasta County with development occurring after 2010. Input was received from Shasta County and the cities of Anderson, Redding and Shasta Lake. In some cases, phasing was shifted to later years than those provided by the jurisdictions in order for the county totals to match the control totals shown in Tables 2 and 3.

The development listing also includes assumptions for some properties which were not based on input received from the jurisdictions in 2011. These assumptions are based on the original input received from jurisdictions in 2005, adjusted to match county totals when combined with the specific development information provided in 2011.

In addition to the specific development shown, there are also incremental assumptions for ongoing growth in certain land uses. These include small amounts of infill housing in unincorporated communities, and general employment growth at existing institutional sites including large schools and school administration centers, medical centers and government offices.

Table 8: Shasta County Travel Model Phased Development Assumptions

Development	Address	Land Use	Units	2010	2015	2020	2025	2030	2035	2040	After 2040	TOTAL	Percent by 2040
ANDERSON													
Anderson Commercial	Anderson	Retail	SF	0	0	0	0	0	0	58,500	58,500	117,000	50%
Anderson Condos	Anderson	MF Attached	DU	0	70	0	0	0	0	0	0	70	100%
Anderson Restaurant	Anderson	Restaurant	SF	0	2,500	0	0	0	0	0	0	2,500	100%
Anderson Conference Facility	Anderson	Retail	SF	0	0	0	0	0	130,000	66,000	130,000	326,000	60%
Anderson Potential Target Site	Anderson	Fast Food	SF	0	0	0	0	2,500	2,500	0	0	5,000	100%
Campbell Estates	Anderson	SF Detached	DU	0	0	28	0	0	0	0	0	28	100%
Church Property	Anderson	SF Detached	DU	0	0	0	0	0	69	0	0	69	100%
Continental Peak	Anderson	MF Attached	DU	16	16	0	0	0	0	0	0	32	100%
River Pointe	Anderson	SF Detached	DU	0	0	111	74	0	0	0	0	185	100%
Torney Estates	Anderson	SF Detached	DU	43	43	0	0	0	0	0	0	86	100%
Vineyards	Anderson	SF Detached	DU	15	85	157	722	848	981	839	648	4,295	85%
		MF Attached	DU	0	640	0	287	287	0	0	0	1,214	100%
		Retail	SF	0	0	0	0	0	70,000	20,000	50,000	140,000	64%
		Office	SF	0	0	0	0	0	50,000	0	50,000	100,000	50%
		School	Emps	0	0	0	0	0	50	50	0	100	100%
Willow Glen	Anderson	SF Detached	DU	28	28	0	0	0	0	0	0	56	100%
REDDING													
Airpark Manor	Redding (Placer St.)	SF Detached	DU	10	10	0	0	0	0	0	0	20	100%
Airport Rd. Auto Dealer Site	Redding (3900 Airport Rd.)	Service Commercial	SF	0	0	0	0	0	44,000	135,000	0	179,000	100%
Altze Subdivision	Redding (160 Quartz Hill Rd.)	SF Detached	DU	0	93	87	0	0	0	0	0	180	100%
Avalon Park	Redding (11701 Twin Tower Dr.)	SF Detached	DU	0	28	27	0	0	0	0	0	55	100%
Bel Air	Redding (Quartz Hill Rd.)	SF Detached	DU	13	12	0	0	0	0	0	0	25	100%
Bel Air Estates	Redding (2430 Snow Ln.)	SF Detached	DU	75	74	0	0	0	0	0	0	149	100%
Buena Ventura Senior Housing	Redding (1350 Buena Ventura)	Senior Housing	DU	0	120	0	0	0	0	0	0	120	100%
Chapel of the Ferns	Redding (1400 Industrial St.)	SF Detached	DU	0	0	80	0	0	0	0	0	80	100%
City of Redding	Redding (7251 Eastside Rd.)	Industrial	SF	0	0	0	0	0	198,000	298,000	496,000	992,000	50%
Clover Creek	Redding (3901 Airport Rd.)	Office	SF	0	0	0	36,400	0	36,400	0	0	72,800	100%
Cottages at Bel Air	Redding (Quartz Hill Rd.)	SF Detached	DU	14	41	0	0	0	0	0	0	55	100%
Del Monte PSL	Redding (Del Monte St.)	Retail	SF	0	0	0	0	0	0	61,500	67,000	128,500	48%
East Oaks Estates	Redding (1283 Douglas Ln.)	SF Detached	DU	37	37	0	0	0	0	0	0	74	100%
Emily Estates	Redding (Oasis Rd.)	SF Detached	DU	29	29	0	0	0	0	0	0	58	100%
Fleur de Lac	Redding (1870 Shasta View Dr.)	SF Detached	DU	39	39	0	0	0	0	0	0	78	100%
Forotan	Redding (187 Sulphur Creek Rd.)	SF Detached	DU	0	23	41	41	41	41	41	0	187	100%
Gironda	Redding (Shasta View Dr.)	SF Detached	DU	0	102	102	102	103	0	0	0	307	100%
Gold Hills Park	Redding (2141 Gold Hills Dr.)	SF Detached	DU	0	88	87	0	0	0	0	0	175	100%
Green	Redding (Hillmonte Dr.)	Retail	SF	0	0	0	0	0	4,000	0	0	4,000	100%
Highland Park	Redding (Davis Ridge Rd.)	SF Detached	DU	0	100	200	120	0	0	0	0	420	100%
Hilltop Center	Redding (1085 Hilltop Dr.)	Retail	SF	0	46,500	46,500	0	0	0	0	0	93,000	100%
Hilltop Estates	Redding (240 Hilltop Dr.)	SF Detached	DU	14	13	0	0	0	0	0	0	27	100%
Hinds Feet LLC	Redding (Laurel Ave.)	SF Detached	DU	0	0	11	37	0	0	0	0	48	100%
Hope Lane	Redding (1175 Hope Ln.)	SF Detached	DU	22	22	0	0	0	0	0	0	44	100%
Kohn	Redding (4730 Aloe Vera Dr.)	SF Detached	DU	0	101	101	0	0	0	0	0	202	100%
Lakeside Avenues	Redding (1397 Buena Ventura)	SF Detached	DU	20	20	0	0	0	0	0	0	40	100%
Launzing	Redding (1335 Hope Ln.)	SF Detached	DU	0	30	0	0	0	0	0	0	30	100%
Lemm	Redding (2300 Lakeside Dr.)	SF Detached	DU	0	0	0	0	0	0	38	0	38	100%
McConnell Land	Redding (Old Oregon Trail)	SF Detached	DU	0	0	0	0	0	605	447	337	1,389	76%
MD Development	Redding (Oasis Rd.)	SF Detached	DU	0	50	50	0	0	0	0	0	100	100%
Mercy Hospital	Redding (2655 Airport Dr.)	Retail	SF	0	0	0	0	0	0	0	0	11,000	100%
		Office	SF	0	0	0	0	0	0	11,000	0	11,000	100%

Table 8: Shasta County Travel Model Phased Development Assumptions

Development		Address	Land Use	Units	2010	2015	2020	2025	2030	2035	2040	After 2040	TOTAL	Percent by 2040	
Metz Road Development	Redding (2230 Metz Rd.)	Industrial	SF		0	0	0	0	0	200,000	200,000	392,000	992,000	60%	
	Redding (3900 Riverside Dr.)	SF Detached	DU		0	0	0	0	0	0	260	260	260	100%	
	Redding (Cedars Rd.)	MF Attached	DU	12	36	0	0	0	0	0	0	0	48	100%	
	Redding (Tarmac Rd.)	SF Detached	DU	7	22	0	0	0	0	0	0	0	29	100%	
Money Vest		Retail	SF		0	41,000	0	0	0	0	0	0	41,000	100%	
Morgan	Redding (2425 Rancho Rd.)	SF Detached	DU		0	20	0	0	0	0	0	0	20	100%	
Niemann	Redding (Westside Rd.)	MF Attached	DU	12	34	0	0	0	0	0	0	0	46	100%	
Oasis Point Village	Redding (6021 Oasis Road)	SF Detached	DU	40	121	0	0	0	0	0	0	0	161	100%	
Oasis Road Specific Plan	Redding	SF 1-5 DU/Acre	DU		0	0	5	4	3	0	0	0	0	12	100%
		SF 2-3.5 DU/Acre	DU		0	0	30	30	0	0	0	0	0	90	100%
		SF 6-10 DU/Acre	DU		0	0	30	30	0	0	0	0	0	60	100%
		MF 15 DU/Acre	DU		0	0	100	100	100	100	100	435	935	53%	
		Regional Commercial	SF		0	160,000	180,000	45,000	50,000	185,000	50,000	1,614,722	2,284,722	29%	
		General Commercial	SF		0	0	40,000	0	0	40,000	40,000	454,000	574,000	21%	
		Shopping Center	SF		0	0	0	37,500	0	37,500	75,000	77,000	227,000	66%	
		General Office	SF		0	0	0	0	10,000	9,800	0	0	0	19,800	100%
		Limited Office	SF		0	0	0	0	7,000	6,100	0	0	0	13,100	100%
		Retail	SF		0	8,000	0	12,500	0	27,500	50,000	89,200	187,200	52%	
Park Marina Drive Specific Plan (Turtle Bay listed separately)	Office	SF		0	0	22,000	20,500	0	0	0	0	0	42,500	100%	
	Hotel	SF		0	0	0	0	0	50,500	0	0	0	50,500	100%	
Parkview/Orange	Redding (Mark St.)	SF Detached	DU	27	27	0	0	0	0	0	0	0	54	100%	
Quartz Hill PSL	Redding (850 Quartz Hill Rd.)	SF Detached	DU		0	0	120	0	0	0	0	0	120	100%	
Redding PD-03-02	Redding (Collyer Dr.)	MF Attached	DU		0	116	116	0	0	0	0	0	232	100%	
Redding S.51.90	Redding (Santa Rosa Way)	SF Detached	DU		0	0	160	0	149	0	0	0	309	100%	
Redding SDP 18.04	Redding (Linden West)	MF Attached	DU		0	15	15	0	0	0	0	0	30	100%	
Redding SDP 24.04	Redding (2649 Twin View Blvd.)	MF Attached	DU		0	140	140	0	0	0	0	0	280	100%	
Roesner	Redding (4655 Goodwater Ave.)	SF Detached	DU		0	0	0	0	0	23	0	0	23	100%	
Roman Catholic Bishop	Redding (1300 Ridge Dr.)	SF Detached	DU		0	0	0	0	0	0	79	0	79	100%	
Salt Creek	Redding (4402 Eureka Way)	SF Detached	DU		0	120	250	70	0	0	0	0	440	100%	
Scarborough	Redding (3600 Argyle Rd.)	MF Attached	DU		0	67	0	0	0	0	0	0	67	100%	
Shascade	Redding (950 Lake Blvd.)	SF Detached	DU		0	0	0	0	38	0	0	0	38	100%	
Shasta Bible College	Redding (3005 Hartnell Ave.)	MF Attached	DU		0	100	0	0	0	0	0	0	100	100%	
Shastina Ranch	Redding	SF Detached	DU		0	0	150	200	125	0	0	0	475	100%	
Sierra Pacific	Redding (Branstetter Ln.)	SF Detached	DU		5	64	113	0	0	0	0	0	182	100%	
Signature Northwest	Redding (4200 Sunglow Dr.)	SF Detached	DU		0	39	39	0	0	0	0	0	78	100%	
Stillwater Business Park	Redding	Industrial Office	SF		0	224,000	0	0	0	0	224,000	3,753,000	4,201,000	11%	
			SF		0	105,500	0	0	0	132,700	132,700	1,726,600	2,097,500	18%	
Stone Creek Subdivision	Redding (Rancho Rd.)	SF Detached	DU		0	0	155	0	0	0	0	0	155	100%	
Stonesfair Subdivision	Redding (Rancho Rd.)	SF Detached	DU		0	0	0	0	0	215	0	0	215	100%	
Summer Field Meadows	Redding (3555 Sacramento Dr.)	SF Detached	DU	18	18	0	0	0	0	0	0	0	36	100%	
Tarmac Ridge Villas	Redding (2260 Tarmac Rd.)	SF Detached	DU	43	43	0	0	0	0	0	0	0	86	100%	
Thomason	Redding (3901 Airport Rd.)	Retail	SF		0	0	0	0	0	72,500	0	0	72,500	100%	
Tip Top Partners	Redding (2425 Sonoma St.)	Retail Office	SF		0	0	0	0	0	0	0	6,500	6,500	0%	
			SF		0	6,500	0	0	0	0	0	0	6,500	100%	
Turtle Bay Hotel	Redding	Hotel Restaurant	SF		0	70,000	0	0	0	0	0	0	70,000	100%	
			SF		0	8,000	0	0	0	0	0	0	8,000	100%	
Tuscany Villas	Redding (6111 Oasis Rd.)	SF Detached	DU		0	40	39	0	0	0	0	0	79	100%	
Van Eperen	Redding (5304 Bo Peep Ln.)	SF Detached	DU	43	43	0	0	0	0	0	0	0	86	100%	
Veterans Home	Redding (3400 Knighton Rd.)	Residential Care	SF		0	145,000	0	0	0	0	0	0	145,000	100%	
Villages at Shasta View Gardens	Redding (2275 Tarmac Rd.)	SF Detached	DU	31	93	0	0	0	0	0	0	0	124	100%	
Viale	Redding (1817 Kenton Dr.)	SF Detached	DU		0	0	0	0	112	0	0	0	112	100%	

Table 8: Shasta County Travel Model Phased Development Assumptions

Development	Address	Land Use	Units	2010	2015	2020	2025	2030	2035	2040	After 2040	TOTAL	Percent by 2040
Vistas	Redding (355 Quartz Hill Rd.)	SF Detached	DU	0	105	105	0	0	0	0	0	210	100%
Western Acres	Redding (890 Hilltop Dr.)	SF Detached	DU	0	0	0	0	0	0	80	0	80	100%
Westridge Subdivision	Redding (950 Canyon Creek Rd.)	SF Detached	DU	0	0	132	0	0	0	0	0	132	100%
Westward Estates	Redding (16989 Campo Calle St.)	SF Detached	DU	0	0	150	0	0	0	0	0	150	100%
Williams	Redding (670 Churn Creek Rd.)	SF Detached	DU	0	0	18	0	0	0	0	0	18	100%
SHASTA LAKE													
Cascade Deer Creek Hotel	Shasta Lake	Hotel	SF	0	0	0	20,000	0	0	0	0	20,000	100%
Cascade Riddle	Shasta Lake	MF Attached	DU	0	0	60	0	0	0	0	0	60	100%
Deer Creek Manor	Shasta Lake	SF Detached	DU	0	10	30	30	15	0	0	0	85	100%
Hazelwood Subdivision	Shasta Lake	SF Detached	DU	15	43	0	0	0	0	0	0	58	100%
Mobile Home Park Expansion	Shasta Lake	Mobile Home	DU	0	0	89	0	0	0	0	0	89	100%
Mountain Gate Meadows	Shasta Lake	SF Detached	DU	0	0	100	200	300	300	100	0	1,000	100%
		MF Attached	DU	0	0	100	150	150	100	0	0	500	100%
		Service Commercial	SF	0	0	0	50,000	50,000	0	0	0	100,000	100%
Mountain Properties	Shasta Lake	SF Detached	DU	56	55	55	0	0	0	0	0	166	100%
Oak Ridge	Shasta Lake	SF Detached	DU	21	21	0	0	0	0	0	0	42	100%
Pine Grove E. of Leona	Shasta Lake	SF Detached	DU	0	0	20	55	55	0	0	0	130	100%
Shasta Gateway Industrial Park	Shasta Lake (Phase 1)	Light Industrial	SF	0	0	10,000	50,000	38,000	0	0	0	98,000	100%
	Shasta Lake (Phase 2)	Industrial	SF	0	0	0	100,000	0	250,000	250,000	1,370,000	1,970,000	30%
Shasta Lake Commercial Center	Shasta Lake	Service Commercial	SF	0	0	0	50,000	50,000	35,000	0	0	135,000	100%
SHASTA COUNTY													
Anderson	Shasta Co.	SF Detached	DU	0	0	3	3	3	2	0	0	11	100%
Aventino	Shasta Co.	SF Detached	DU	0	0	11	13	13	8	0	0	45	100%
Cabli LLC	Shasta Co.	SF Detached	DU	5	9	4	0	0	0	0	0	18	100%
Cassel Ridge	Shasta Co.	SF Detached	DU	0	0	11	13	13	8	0	0	45	100%
Chuck	Shasta Co.	SF Detached	DU	0	0	5	5	5	5	0	0	20	100%
Churn Creek Commons	Shasta Co.	Retail	SF	0	200,000	100,000	150,000	0	50,000	100,000	140,000	740,000	81%
D&M Partnerships	Shasta Co.	Industrial	SF	0	40,000	40,000	40,000	13,000	0	0	0	133,000	100%
Fallwood Ranch	Shasta Co. Dersch Corridor	SF Detached	DU	0	17	17	0	0	0	0	0	34	100%
Happy Valley	Shasta Co.	SF Detached	DU	0	23	22	0	0	0	0	0	45	100%
Heritage Grove	Shasta Co.	SF Detached	DU	0	30	75	100	86	0	0	0	291	100%
		Service Commercial	SF	0	0	0	158,123	0	0	0	0	158,123	100%
Hill Country Clinic	Shasta Co.	Medical Office	SF	0	12,500	0	0	0	0	0	0	12,500	100%
Jewell	Shasta Co.	SF Detached	DU	0	0	2	2	2	4	0	0	10	100%
K2 Development	Shasta Co.	SF Detached	DU	0	0	3	3	3	2	0	0	11	100%
Knighien	Shasta Co.	SF Detached	DU	0	0	6	6	6	5	0	0	23	100%
Manlev	Shasta Co.	SF Detached	DU	0	0	3	3	3	3	6	0	15	100%
Manor Crest (Cottonwood Hills)	Shasta Co. Cottonwood	SF Detached	DU	64	64	0	0	0	0	0	0	128	100%
Montgomery Development	Shasta Co.	SF Detached	DU	0	0	8	8	8	9	0	0	33	100%
Nelson	Shasta Co.	SF Detached	DU	0	0	5	5	5	7	0	0	22	100%
Nichols	Shasta Co.	SF Detached	DU	0	5	5	5	5	5	5	0	30	100%
North Fork		SF Detached	DU	0	0	0	0	0	0	0	1,400	1,400	0%
		Retail	SF	0	0	0	0	0	0	0	0	942,000	0%
		Office	SF	0	0	0	0	0	0	0	0	145,000	0%
		Equestrian Center	Emps	0	0	0	0	0	0	0	10	10	0%
Nunes	Shasta Co.	SF Detached	DU	0	0	2	2	2	4	0	0	10	100%
Oak Ranch Estates	Shasta Co.	SF Detached	DU	0	0	36	39	39	26	0	0	140	100%
Palo Cedro Silverbridge Oaks		SF Detached	DU	0	0	100	100	100	0	0	0	300	100%
Panorama PD	Shasta Co.	SF Detached	DU	0	20	111	114	114	71	0	0	430	100%
Poulos	Shasta Co.	SF Detached	DU	0	0	8	8	8	10	0	0	34	100%

Table 8: Shasta County Travel Model Phased Development Assumptions

Development	Address	Land Use	Units	2010	2015	2020	2025	2030	2035	2040	After 2040	TOTAL	Percent by 2040
Richie	Shasta Co.	SF Detached	DU	0	0	3	3	3	2	0	0	11	100%
Rossi	Shasta Co.	SF Detached	DU	0	0	3	3	3	6	0	0	15	100%
Scott	Shasta Co.	SF Detached	DU	0	0	3	3	3	2	0	0	11	100%
Shingle Glen	Shasta Co.	SF Detached	DU	0	0	5	5	5	8	0	0	23	100%
Shingletown Community Center	Shasta Co.	Institutional	SF	0	50,000	0	0	0	0	0	0	50,000	100%
Shingletown Sierra Pacific	Shasta Co.	SF Detached	DU	0	42	23	25	25	17	0	0	132	100%
Spoon	Shasta Co.	SF Detached	DU	0	0	13	13	13	11	0	0	50	100%
Stahl	Shasta Co.	SF Detached	DU	0	0	3	0	0	0	0	0	3	100%
Stilwater Ranch	Shasta Co.	SF Detached	DU	3	6	2	0	0	0	0	0	11	100%
Stilwater Ranches Unit 2	Shasta Co.	SF Detached	DU	0	0	7	7	7	8	0	0	29	100%
Stone Creek	Shasta Co.	SF Detached	DU	0	0	3	3	3	5	0	0	14	100%
Summer	Shasta Co.	SF Detached	DU	2	8	6	0	0	0	0	0	16	100%
West Valley High School Area	Shasta Co.	SF Detached	DU	0	100	100	0	0	0	0	0	200	100%
Wiebelhaus	Shasta Co.	SF Detached	DU	0	0	3	3	3	2	0	0	11	100%
Woodridge Lake	Shasta Co.	Retail	SF	0	0	0	30,000	0	30,000	0	0	60,000	100%