APPENDIX C

Traffic Technical Appendix

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Plumas County General Plan Traffic Analysis

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The following describes the traffic analysis methodology used to assess the transportation-related impacts of the Plumas County General Plan alternatives. A countywide or sub-area computerized traffic model has never been developed for Plumas County, as the substantial cost of such a model is not justified given the low level of development and generally good traffic conditions in the area. In addition, there is no existing countywide assessment of Level Of Service (LOS). To address the General Plan analysis, a spreadsheet-based model has been developed. The analysis focuses on summer peak-hour conditions, as previous studies (such as the *Almanor Regional Transportation Assessment*, Caltrans District 2, et al) have shown that overall traffic conditions are worse in summer than in winter.

Given the large physical extent of Plumas County and the limited funds available for this traffic analysis, it is not possible to assess all roadway elements. Instead, the analysis focuses on key roadway links as indicators of overall traffic conditions. The analysis focuses on roadway segments, rather than intersections, as (1) the large majority of traffic delays in the area are associated with travel along roadways between communities, rather than at specific intersections, (2) the implications of solving traffic issues along roadway segments (such as adding climbing or passing lanes) are much greater that the relatively straightforward solutions to intersection issues and (3) the general nature of land use forecasts associated with a countywide General Plan make it possible to forecast traffic volumes for roadway segments, but difficult to forecast traffic volumes for specific intersections.

Key roadway segments were selected for analysis, based upon previous traffic analyses presented in the *Almanor Regional Transportation Assessment* as well as the Route Concept Reports and Transportation Concept Reports for the various state highways in Plumas County. These segments were selected to represent the critical roadway links, with the poorest existing or potential future traffic conditions, as "key indicators" for overall traffic conditions:

1. SR 36 West of Chester (Junction SR 89 to beginning of 4-lane section)
2. SR 36 East of Chester (Junction County Road A-13 to Junction SR 147)
3. SR 89 South of Canyondam (Junction SR 147 to Forest Road 27N80)
4. SR 147 on East Shore of Lake Almanor (Junction SR 89 to Junction County Road A-13)
5. SR 89 in Graeagle (Junction SR 70 to Frazier Creek Bridge)
6. SR 70 North of Keddie (Junction SR 89 to Keddie)
7. SR 70 in East Quincy (East End of 1-Way Couplet to East End of East Quincy)
8. SR 70 in Sloat (1.5 Mile East of Spring Garden Overhead to Cromberg)
9. SR 70 in Portola (Sleepy Pines Motel to N. 4th Street)

Existing Traffic

Roadway Traffic Volumes

Existing peak-hour two-way traffic volumes were drawn from the Caltrans website (2011 counts). To identify directional volumes, a directional split was identified for each site, based upon factors presented in the *Almanor Regional Transportation Assessment*, the *Route Concept Report: Route 70* (Caltrans District 2, 1990) and the *Transportation Concept Report: State Route 89* (Caltrans District 2, 2002). The resulting volumes are shown in Table A.

Vehicle-Miles of Travel

The *2919 California Public Road Data* document (California Department of Transportation, Division of Transportation Systems Information, 2011) presents daily estimates of 2010 VMT throughout Plumas County by roadway type. These estimates are generated from a statewide model of VMT, based on fuel consumption. The Plumas County Department of Public Works maintains a detailed inventory of VMT estimates on County roadway. As this is based on locally collected traffic counts, it is considered to be a more accurate estimate of existing VMT on County roadways. Combining these sources yields the following estimate of existing average daily VMT on all roadways throughout Plumas County:

State Highways	537,570
County Roads	210,440
US Forest Service Roads	17,260
City of Portola Roads	17,130
State Parks Roads	1,420
National Park Service Roads	880
Total	784,700

Forecast of Traffic Volumes -- Existing General Plan

Land Use Forecasts

Development is expected to occur in Plumas County over the next 23 years under the existing General Plan. As documented in *Plumas County General Plan Long-Range Housing Growth Projections Memo* (Bay Area Economics, 2012), a total of 3,700 second home dwelling units and 1,065 primary home dwelling units are forecast to be developed, under either the existing or the proposed General Plan. LSC Transportation Consultants, Inc. used these totals along with an evaluation of development capacity and trends to forecast the number of units expected to develop in each of the 56 individual places (towns, communities, rural places, master planned communities and outlying areas) comprising Plumas County under the existing General Plan. This table is provided as Table B.

Trip Generation of Future Plumas County Land Uses

The trip generation analysis focuses on the future residential development throughout the county. This reflects that it is new permanent population and second-home residents of Plumas

County that will generate the large majority of growth in vehicle-trips generated within Plumas County. Future commercial and public service development will also occur, but is expected to largely serve the future growth in residential population. This future non-residential growth is not expected to be large enough to generate new vehicle-trips from outside of Plumas County. As a result, the vehicle-trips to and from the commercial/public service uses are those that are accounted for in the residential trip generation (with the exception of delivery and service trips, as discussed separately below). The impacts of trips generated by growth outside of Plumas County are also discussed separately below.

Trip generation of the residential units was analyzed as follows:

1. Base trip rates were identified from *Trip Generation* (Institute of Transportation Engineers, 2008), for both single-family dwelling units (permanently occupied) and for recreational homes (second homes), as shown in Table C.

2. For areas within reasonable walking/bicycling distance of stores and other destinations, it is appropriate to apply a modest reduction for non-auto travel. The US Census' 5-Year American Community Survey indicates that a total of 5 percent of Plumas County residents working outside the home walk, bicycle or take transit to work. This factor is considered to be conservatively applicable for the town areas. For communities, a non-auto travel mode factor of 3 percent was applied, while no reduction was applied to the more remote areas of Plumas County.

3. Multiplying the forecast growth in land use by the trip generation rate and applying the reduction for non-auto travel results in the trip generation of future land use, as shown in Table D. As indicated, future growth under this scenario would add an estimated 19,037 vehicle-trips per day to the countywide roadway system. This growth will be concentrated in the Almanor area (41 percent of the county wide total), followed by the Mohawk Valley area (24 percent) and the Sierra Valley area (16 percent).

Trip Distribution and Assignment

The next step in the analysis is to define the distribution of trips for various "trip types." For purposes of this analysis, the following trip types were defined:

- Work trips – commute trips from home to work or return. Second homes are assumed to not generate significant work trips.

- Local trips – vehicle-trips made to nearby local activity centers for non-work purposes, such as grocery shopping, schools, recreation, etc. These trips are generated by both primary homes and second homes.

- Urban trips – vehicle-trips made to urban centers outside of Plumas County (such as Reno, Susanville, Chico and Oroville) for major shopping, accessing intercity transportation, etc. Second home owners are assumed to not generate separate urban trips, as they can accommodate these needs as part of their access trip to/from Plumas County.

- Access trips – vehicle-trips made by second home owners traveling between their primary home and their second home in Plumas County.

The proportion of trips generated by primary home and second homes within each of these trip type categories is presented in Table E. There are several sources that were referenced to estimate these proportions:

- The *National Household Travel Survey* conducted by the Federal Highways Administration includes surveys of approximately 48,000 rural households nationwide. As shown in Table F, 26 percent of vehicle-trips generated by rural households are for work purposes.

- The proportion of non-work trips generated by permanent residents that require travel outside of the county to urban centers is based on the *National Household Travel Survey* data regarding trip purpose, and a review of the opportunities to accomplish these trip purposes within Plumas County. Overall, 4 percent of non-work trips are estimated to consist of trips to urban centers.

- The proportion of second home trips that represent access trips assumes that each unit generates an access round-trip once every three days (either by the primary owner of the unit or by other guests). Dividing by the total trips generated over a three day period, based on the ITE rate for recreational homes, yields the proportion of access trips.

- The remainder of both the trips generated by permanent residents and those generated by second homeowners consist of local trips.

It is next necessary to develop a distribution pattern of these trips, as they impact the nine key roadway segments. These distributions are shown in Table G (for work and local trips) and Table H (for urban and access trips). The proportions of trips generated in each area impacting the key segments were developed based upon the following:

- Average home-to-work travel times, as reported by the US Census. Table I presents the most recent data regarding Plumas County commute trips. This reflects that commute travel times for residents of Plumas County communities are substantially shorter than for residents of more rural areas.

- Commute patterns for Plumas County employed residents and for persons employed within Plumas County, as shown in the US Census's Longitudinal Employment Household Dynamics data.

- Location within Plumas County of key trip attractions, such as employment sites, commercial centers, schools, and government offices.

- Travel time between various portions of Plumas County and urban shopping/services in Susanville, Reno, Oroville, Chico and Red Bluff.

- Travel time to key urban centers that are the primary residence areas of owners of Plumas County second homes.

The trip generation for each place within the county (Table D) by land use type was then multiplied by the trip type factors (Table E) and the trip distribution percentages (Tables G and H) to identify the peak-hour traffic volume impact on each of the key roadway segments. These assignments also reflect the direction of travel on the roadway segment. The resulting trip assignments associated with residential development are presented in Table J.

Growth in External and Other Trips

In addition to trips associated with residential development, there are several additional sources of future growth in traffic:

- Given the geography of the county and the land use plans of nearby counties, the only planned development external to Plumas County that is expected to have a substantial impact on traffic volumes within the county is the Dyer Mountain project. Consistent with the assumption in the *Almanor Regional Transportation Assessment*, Phase I of the Dyer Mountain development plan is assumed to be constructed by 2035. The pertinent section of the *Dyer Mountain EIR* (North Fork Associates, 2008) was reviewed to identify the traffic volumes associated with this phase of development.

- The residential development within Plumas County will trigger additional commercial development. While the vehicle-trips generated by customers of future commercial development are addressed in the traffic impacts associated with the residential development, this future commercial development will also generate commercial vehicle trips (delivery trucks, garbage trucks, etc.) as well as commuting by residents of nearby areas outside Plumas County to the new commercial jobs in Plumas County. The volume impacts associated with these trips was estimated for each key roadway segment based upon standards for new commercial development per dwelling unit, truck trip generation rates, and current job-housing patterns for employees commuting to jobs in Plumas County.

- There will also be a modest growth in traffic passing entirely through Plumas County. For the northern portion of the County, estimates were drawn from those presented in the *Almanor Regional Transportation Assessment*. For the remainder of the County, an evaluation was conducted of travel times using state highways through southern Plumas County (SR 70, SR 89) versus other route options. Travelers tend to choose travel routes that minimize their travel time. For these highways, there are other routes between urban centers outside Plumas County that provide quicker alternatives to travel through southern Plumas County. As an example, the travel time between Reno and Oroville is less via I-80, SR 20 and SR 70 south of Plumas County than via US 395 and SR 70 through Plumas County. Similarly, travel time between Reno and Chico is less via US 395 and SR 36 than via SR 70. As a result, traffic on SR 70 passing completely through Plumas County (under typical conditions when other routes are open) is modest.

The volumes associated with these additional sources of traffic growth are shown in the bottom portion of Table J. The total traffic growth from all sources is shown in Table J, as well as in Table A. The greatest growth in peak-hour traffic volume (total of both directions) is forecast for SR 70 in the Portola area, with 468 additional peak-hour vehicles, followed by SR 36 east of

Chester (201 additional peak-hour vehicles). On a proportionate basis, the greatest increase is on SR 36 east of Chester, with an increase of 270 percent over current volumes (resulting in large part from Dyer Mountain development), followed by an 86 percent increase on SR 89 in the Graeagle area.

Level of Service – Existing General Plan

Table K presents the LOS on the key roadway segments in 2035 under the existing General Plan, along with the existing (2012) LOS. Results are presented for both Existing Plus Existing General Plan conditions, as well as Cumulative Plus Existing General Plan conditions. As shown:

- For the Existing Plus Existing General Plan condition, the only roadway segment exceeding the LOS C minimum standard is the section of SR 36 west of Chester between the eastern SR 89 intersection and the beginning of the four-lane cross-section, where LOS would be D in both directions. While LOS grade would not degrade, the addition of traffic would increase the percent time drivers must follow another vehicle from 64 percent of the time to 68 percent of the time in the eastbound direction, and from 61 percent of the time to 65 percent of the time in the westbound direction.

- The addition of other cumulative traffic would also cause the section of SR 36 east of Chester (between the intersection with A-13 and the intersection with SR 147) to fall to LOS D in the westbound direction.

All other key roadway segments would remain at acceptable (LOS C or better) level under either the Existing Plus Existing General Plan or the Cumulative Plus General Plan conditions.

Vehicle-Miles of Travel – Existing General Plan

The impact of future development on countywide Vehicle-Miles of Travel (VMT) under the existing General Plan can be forecast as follows:

1. For each of the four trip types (work, local non-work, urban, and access), average trip lengths were identified for each place (town, community, rural place, other). These lengths were developed based upon the following:

    - The average commute distances shown in Table I.
    - The roadway travel distance to the primary nearby local activity centers (shopping, schools, etc.).
    - The roadway travel distance within Plumas County for trips to nearby urban centers.
    - The roadway travel distance within Plumas County for the primary access routes for second-home owners.

2. Total daily vehicle-trip generation (as shown in Table D) was factored by the proportion of trips by type (as shown in Table E) and multiplied by the average trip length to yield the daily VMT generated by residential development within each area of Plumas County, as shown in Table L.

3. For the other three generators of VMT within Plumas County (Dyer Mountain, non-residential commercial, and through trips), the total PM peak-hour vehicle-trips at each key roadway segment was factored by the ratio of daily to peak-hour volumes to identify a daily increase in vehicle-trips. A total overall roadway segment length represented by each of the key roadway segments was then measured, and multiplied by the daily increase in volume. Summed over all roadway segments, this resulted in the total countywide VMT associated with these other sources of future VMT.

As shown in the bottom portion of Table L, the total future growth in VMT under the proposed General Plan is forecast to be 272,249. Of this total, 75 percent (204,400) is due to development within Plumas County, 17 percent (45,894) due to growth in through traffic (other than Dyer Mountain), and 8 percent (21,954) due to Dyer Mountain.

Forecast of Traffic Volumes – Proposed General Plan

The forecasting of traffic volumes for the proposed general plan focuses on the *change* in land use between the 2035 forecasts under the existing General Plan (as discussed above) and the forecasts under the proposed General Plan. As the existing development capacity throughout Plumas County far exceeds the market demand for additional units, and as the proposed General Plan does not significantly reduce overall development capacity for the region as a whole, the adoption of the proposed General Plan will not affect the overall number of dwelling units constructed in Plumas County (or associated population) over the coming 23 years.

The proposed General Plan, however, will impact the expected location of some future development. Specifically, there are some areas outside of proposed Planning Areas that will have a lower potential for future subdivision (and subsequent development) under the proposed General Plan. The following are the key new policies that would be adopted as part of the proposed General Plan that can be expected to reduce the potential for development in outlying areas:

> ***LU 1.1.1 Future Development***
>
> *The County shall require future residential, commercial and industrial development to be located adjacent to or within existing Planning Areas; areas identified on Plumas County's General Plan Land Use Maps as Towns, Communities, Rural Areas or Master Planned Communities in order to maintain Plumas County's rural character with compact and walkable communities. Future development may also be approved within areas for which Community Plans or Specific Plans have been prepared. Small, isolated housing tracts in outlying areas shall be discouraged as they disrupt surrounding rural and productive agricultural lands, forests, and ranches and are difficult and costly to provide with services. Land division may be allowed outside of Planning Areas only when the resulting development complies with all applicable General Plan Policies and County Codes.*

LU 1.1.2 Infill Development

The County shall plan to concentrate new growth both within and contiguous to existing Towns and Communities and require expansion of existing infrastructure as needed to efficiently and safely serve the new growth.

LU 1.5.3 Provision for Fire and Life Safety Services

The County shall require development to be located adjacent to, or within, areas where fire and life safety services exist, or can be efficiently and economically provided.

As there is more than sufficient existing development capacity to accommodate any resulting shift in development within each general area, any reduction in future development in outlying areas will be balanced with an increase in development in nearby Planning Areas. Based on these conditions, the traffic analysis focuses on those specific areas where the potential for residential development changes is reduced with the adoption of the proposed General Plan, compared with the alternative location within Planning Areas where the opposite change in development will occur.

In addition, the non-residential future development (such as commercial development) that would occur will not be significantly impacted by adoption of the proposed General Plan, either in total level of development or in location. This commercial development is expected to be sufficient to serve the local residents and visitors, but to not be so large as to attract new trips from areas outside the county.

Based on these conditions, the traffic analysis focuses on those specific areas where the potential for residential development changes occur with the adoption of the proposed General Plan, compared with the areas where the displaced development will occur. As summarized in Table M, this analysis was conducted in the following steps:

1. The GIS layers prepared by the Plumas County GIS Division reflecting the existing General Plan and proposed General Plan were obtained. These were reviewed to identify parcels that are zoned for potential residential development and outside the proposed Planning Areas (reflecting a lower probability for future subdivision of the parcel under the proposed General Plan)[1]. Areas with less than a 5-unit potential change in total development capacity were considered to be sufficiently small to not affect the overall analysis.

2. The acreage of each specific "change" area (Column 1) was multiplied by the zoning density (number of dwelling units per acre, Column 2) to identify the change in zoning capacity (Column 3).

3. The total development forecast for the town/community/rural place (Column 4) was drawn from Table B.

[1] Areas within plan boundary areas that would newly be assigned a residential development zoning classification as part of the proposed General Plan were reviewed and found to not materially change the potential for development within each area.

4. The proportion of future development capacity that the specific area of land use change comprises of the general vicinity was estimated, based on the unused zoning capacity within the larger area (Column 5). It reflects that some areas have a substantial amount of existing unused development capacity close to the specific area of land use change (in which case much of the development will simply shift to a nearby area with equivalent traffic characteristics) while other areas with more limited available development capacity will result in larger shifts to community centers with lower auto use and shorter trip lengths.

5. The proportion of development shifting from the outlying area (Column 5) was multiplied by the lower of the zoning capacity (Column 3) or the total development forecast (Column 4). In addition, a factor was conservatively applied reflecting that some development of outlying areas could occur despite the new land use policies. Rather than assuming that 100 percent of development would be eliminated from the outlying parcels, this analysis assumes that 75 percent would be eliminated. The resulting estimate of the number of dwelling units that would be shifted from an outlying area is shown in Column 6.

6. The trip generation associated with the change of units is then calculated, based upon daily trip generation rates and assuming that all travel in the outlying areas will be via the auto travel mode. A daily trip generation rate of 7.59 one-way trips per day for permanently occupied residents (per the *South Plumas County Traffic Impact Fee Study*, LSC, 2006) and a rate of 3.16 one-way trips per day for second homes (per the Institute of Transportation Engineers *Trip Generation*, 2008). The proportion of second homes is identified from Table B, for the town / community / rural place. The resulting trip generation of the dwelling units that would be shifted in each location is shown in Column 7.

7. Shifting location from an outlying location where essentially all trips require use of a car to a more centralized location would, in some cases, increase the proportion of trips that can be accomplished by walking, bicycling or transit. Column 8 presents the estimated increase in the proportion of trips that can be completed by non-auto means with the shift in development location.

8. Multiplying the trip generation in the outlying location (Column 7) by the increase in non-auto travel mode (Column 8) yields the change (reduction) in daily vehicle-trips that would result from the shift in development locations, as shown in Column 9.

These differences in trip generation in each area were then added to the trip generation under the existing General Plan (Table D) to yield the trip generation under the Proposed General Plan, as shown in Table N. Changes in peak-hour generation were calculated by factoring the Existing General Plan peak-hour generation by the change in daily trip generation. These volumes were then factored based upon the same distribution factors discussed above for the Existing General Plan, yielding the future growth in traffic volumes on key roadway links under the Proposed General Plan, as shown in Table O.

Level of Service – Proposed General Plan

The LOS associated with the traffic forecasts under the Proposed General Plan are shown in Table K, above. As indicated,

- For the Existing Plus Proposed General Plan condition, the only roadway segment exceeding the LOS C minimum standard is the section of SR 36 west of Chester between the eastern SR 89 intersection and the beginning of the four-lane cross-section, where LOS would be D in both directions. While LOS grade would not degrade, the addition of traffic would increase the percent time drivers must follow another vehicle from 64 percent of the time to 68 percent of the time in the eastbound direction, and from 61 percent of the time to 65 percent of the time in the westbound direction.

- The addition of other cumulative traffic would also cause the section of SR 36 east of Chester (between the intersection with A-13 and the intersection with SR 147) to fall to LOS D in the westbound direction.

All other key roadway segments would remain at acceptable (LOS C or better) level under either the Existing Plus Proposed General Plan or the Cumulative Plus Proposed Plan conditions. For these key roadway segments, there would be no noticeable different in LOS between the Existing and the Proposed General Plans.

VMT Impacts – Proposed General Plan

The impacts of future development under the proposed General Plan are presented in the right hand portion of Table M, above. This analysis builds upon the evaluation of the trip generation impacts. The average vehicle trip length for the outlying location was estimated (Column 10), based upon the location of the specific area to commercial centers, employment and other trip destinations. In addition, the change in average trip length associated with the shift in development location was measured. Note that there are several areas where shifting development into a plan area would slightly increase average trip length, as the Planning Area is further from trip destinations than the specific area.

The change in VMT associated with the trips eliminated through the increase in non-motorized travel mode was then calculated by multiplying the change in trip generation (Column 9) by the existing trip length (Column 10). The remainder of the trip generation is then multiplied by the change in trip length (Column 11). The sum of these two categories yields the total change in VMT associated with the change in development location in the specific area (Column 12). The VMT reduction associated with reduced trip lengths for remaining trips is the preponderance of the total VMT reduction.

In sum, the adoption of the Proposed General Plan would reduce future growth in daily VMT by 8,969 per day. Compared with the future growth in traffic associated with development under the Existing General Plan, these figures reflect a 4.4 percent reduction in growth in countywide VMT associated with development in Plumas County.

References

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TABLE A: Summary of Directional Roadway Volumes

1-Way Summer PM Peak-Hour Volumes

						2011 Peak Hour Volume			Existing + Existing General Plan Volume			Cumulative + Existing General Plan Volume			Existing + Proposed General Plan Volume			Cumulative + Proposed General Plan Volume		
Route	Location	Postmile Back	Postmile Ahead	Road From	Road to	Total	NB/EB	SB/WB	Total	NB/EB	SB/WB	Total	NB/EB	SB/WB	Total	NB/EB	SB/WB	Total	NB/EB	SB/WB
36	West of Chester	6.287	8.152	Jct. SR 89	Collins Drive (Begin 4-lane)	610	320	290	756	387	369	957	471	486	756	387	369	957	471	486
36	East of Chester	13.930	0.760	Jct. Cnty Rd. A-13 (Big Springs Road)	Jct. SR 147	240	110	130	318	148	170	592	261	331	318	148	170	592	261	331
89	South of Canyondam	29.590	21.320	Jct. SR 147	Forest Service Road 27N80	170	70	100	205	84	121	269	113	156	205	84	121	269	113	156
147	East Shore of Lake Almanor	0.000	7.370	Jct. SR 89	County Road A-13	140	100	40	161	109	52	235	140	95	161	109	52	235	140	95
89	Graeagle Area	6.290	8.710	Frazier Creek Bridge	SR 70	340	220	120	610	349	261	634	360	274	609	348	260	633	359	273
70	North of Keddie	33.000	36.600	SR 89	Keddie	290	150	140	329	170	159	377	196	181	329	170	159	377	196	181
70	East Quincy	43.700	46.300	E. End of Couplet	E. End of E. Quincy	1100	570	530	1337	680	657	1385	706	679	1336	679	656	1384	705	678
70	Sloat Area	50.200	57.800	1.5 E of Spring Garden OH	Cromberg	310	160	150	358	187	171	402	210	192	358	187	171	402	210	192
70	Portola	75.000	76.400	Sleepy Pines Motel	N. 4th Street	760	460	300	1228	706	522	1248	716	532	1225	704	520	1245	714	530

Table B: Allocation of Future Plumas County Dwelling Units -- 2012 to 2035

For Purposes of Analysis for the Plumas County General Plan EIR Only

			Number of Future New Dwelling Units		
		Area	Primary Homes	Second Homes	Total
Towns	Chester	North	134	70	204
	Lake Almanor Peninsula / LACC / Hamilton Branch	North	234	1,326	1,560
	Greenville	Central	23	179	202
	East Quincy / Quincy	Central	164	43	207
	Graeagle	South	98	445	543
	Delleker	South	34	26	60
	City of Portola	South	58	5	63
Communities	Portola Sphere of Influence	South	82	83	165
	Crescent Mills	Central	6	13	19
	Taylorsville	Central	15	30	45
	Clio	South	4	24	28
	Beckwourth	South	16	50	66
	Vinton / Chilcoot	South	35	24	59
	La Porte	Central	6	101	107
Rural Places	Prattville	North	1	26	27
	East Shore of Lake Almanor	North	3	8	11
	Canyon Dam	North	1	2	3
	Indian Falls	North	1	0	1
	Keddie	Central	1	2	3
	Meadow Valley	Central	5	30	35
	Spanish Ranch	Central	1	2	3
	Tollgate	Central	1	2	3
	Bucks Lake	Central	0	75	75
	Twain	Central	6	4	10
	Belden	Central	1	0	1
	Tobin	Central	1	0	1
	Greenhorn Ranch	Central	14	78	92
	Sloat / Cromberg	South	20	50	70
	Blairsden	South	0	2	2
	C-Road	South	3	5	8
	Mohawk Vista	South	10	10	20
	Lake Davis	South	2	188	190
	Little Grass Valley	South	0	2	2
Master Planned Commun- ities	Lake Almanor West	North	39	126	165
	Gold Mountain	South	0	369	369
	Valley Ranch	South	3	19	22
	Whitehawk Ranch	South	3	138	141
	Grizzly Ranch	South	13	112	125
Outlying Areas	Warner Valley	North	13	6	19
	Sierra Valley	South	1	2	3
	Dixie Valley	South	2	2	4
	Genesee	Central	2	2	4
	Johnsville	South	3	14	17
	Frenchman Lake	South	6	5	11
	Total		1,065	3,700	4,765

Subtotal By Region of the County	North	426	1,564	1,990
	Central	246	561	807
	South	393	1,575	1,968
Subtotal By General Area	Almanor General Area	425	1,564	1,989
	American Valley General Area	165	45	210
	Indian Valley General Area	47	224	271
	La Porte General Area	6	103	109
	Meadow Valley/Canyon General Area	15	113	128
	Mohawk Valley General Area	192	1,180	1,372
	Sierra Valley General Area	215	471	686

TABLE C: Trip Generation Rates

1-Way Vehicle-Trips Per Unit

	Single Family Dwelling Units	Recreational Homes
Daily	7.59	3.16
PM Peak	1.01	0.26
PM Outbound	0.37	0.15
PM Inbound	0.64	0.11

SOURCE: Plumas County Traffic Impact Fee Study, LSC, 2006
(Single Family Daily) and Trip Generation, ITE, 2008 (all others)

TABLE D: Trip Generation -- Existing General Plan

One-Way Vehicle-Trips

			Daily Trips			PM Pk Hr Trips		
		Non Auto	Primary Homes	Second Homes	Total	Outbound	Inbound	Total
Towns	Chester	5%	966	210	1,176	57	89	146
	Lake Almanor Peninsula / LACC / Hamilton Branch	5%	1,687	3,981	5,668	271	281	552
	Greenville	5%	166	537	703	34	33	66
	East Quincy / Quincy	5%	1,183	129	1,312	64	104	168
	Graeagle	5%	707	1,336	2,043	98	106	204
	Delleker	5%	245	78	323	16	23	39
	City of Portola	5%	418	15	433	21	36	57
Communities	Portola Sphere of Influence	3%	604	254	858	42	60	101
	Crescent Mills	3%	44	40	84	4	5	9
	Taylorsville	3%	110	92	202	10	13	22
	Clio	3%	29	74	103	5	5	10
	Beckwourth	3%	118	153	271	13	15	28
	Vinton / Chilcoot	3%	258	74	331	16	24	40
	La Porte	3%	44	310	354	17	15	31
Rural Places	Prattville	0%	8	82	90	4	4	8
	East Shore of Lake Almanor	0%	23	25	48	2	3	5
	Canyon Dam	0%	8	6	14	1	1	2
	Indian Falls	0%	8	0	8	0	1	1
	Keddie	0%	8	6	14	1	1	2
	Meadow Valley	0%	38	95	133	6	7	13
	Spanish Ranch	0%	8	6	14	1	1	2
	Tollgate	0%	8	6	14	1	1	2
	Bucks Lake	0%	0	237	237	11	8	20
	Twain	0%	46	13	58	3	4	7
	Belden	0%	8	0	8	0	1	1
	Tobin	0%	8	0	8	0	1	1
	Greenhorn Ranch	0%	106	246	353	17	18	34
	Sloat / Cromberg	0%	152	158	310	15	18	33
	Blairsden	0%	0	6	6	0	0	1
	C-Road	0%	23	16	39	2	2	4
	Mohawk Vista	0%	76	32	108	5	8	13
	Lake Davis	0%	15	594	609	29	22	51
	Little Grass Valley	0%	0	6	6	0	0	1
Master Planned Communities	Lake Almanor West	2%	290	390	680	33	38	71
	Gold Mountain	2%	0	1,143	1,143	54	40	94
	Valley Ranch	2%	22	59	81	4	4	8
	Whitehawk Ranch	2%	22	427	450	21	17	38
	Grizzly Ranch	2%	97	347	444	21	20	41
Outlying Areas	Warner Valley	0%	99	19	118	6	9	15
	Sierra Valley	0%	8	6	14	1	1	2
	Dixie Valley	0%	15	6	22	1	2	3
	Genesee	0%	15	6	22	1	2	3
	Johnsville	0%	23	44	67	3	3	7
	Frenchman Lake	0%	46	16	61	3	4	7
	Total		7,754	11,282	19,037	914	1,047	1,960
SUBTOTALS BY GENERAL AREA								
Almanor General Area			3,080	4,714	7,794	374	424	798
American Valley General Area			1,190	135	1,326	64	105	170
Indian Valley General Area			343	675	1,019	49	52	101
La Porte General Area			44	316	360	17	15	32
Meadow Valley/Canyon General Area			114	357	471	23	22	45
Mohawk Valley General Area			1,405	3,619	5,024	240	244	485
Sierra Valley General Area			1,578	1,466	3,043	146	184	331

TABLE E: Trip Types

	Percentage of Trips Generated by Future Land Use			
	Work	Local	Urban	Access
Primary Homes	26%	70%	4%	-
Secondary Homes	-	79%	-	21%

TABLE F: Rural Trips by Trip Purpose and Average Trip Length

Trip Purpose	Percent of Daily Trips by Trip Purpose	Average Trip Length (mi)
Work	26%	16.3
School/Daycare/Religious Activity	4%	14.65
Medical/Dental Services	2%	15.93
Shopping/Errands	29%	8.71
Social/Recreational	13%	16.2
Family personal business	5%	13.9
Transporting Others	10%	9.47
Dining	9%	8.23
Other	0%	24.38
All Non-Work	74%	12.59

Source: Federal Highway Administration, 2009 National Household Travel Survey (NHTS)

Tabulation created on the NHTS website at http://nhts.ornl.gov

Table G: Proportion of Local and Work Trips on Key Roadway Segments

		Local Non-Work Trips									Work Trips								
		SR 36	SR 36	SR 89	SR 147	SR 89	SR 70	SR 70	SR 70	SR 70	SR 36	SR 36	SR 89	SR 147	SR 89	SR 70	SR 70	SR 70	SR 70
Area of Traffic Generation		W. of Chester	E. of Chester	S. of Canyon-dam	East Shore of Lake Almanor	Graeagle Area	N. of Keddie	East Quincy	Sloat Area	Portola	W. of Chester	E. of Chester	S. of Canyon-dam	East Shore of Lake Almanor	Graeagle Area	N. of Keddie	East Quincy	Sloat Area	Portola
Towns	Chester	0%	0%	0%	0%	0%	0%	0%	0%	0%	10%	10%	2%	0%	0%	0%	0%	0%	0%
	Lake Almanor Peninsula / LACC / Hamilton Branch	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	40%	0%	0%	0%	0%	0%	0%	0%
	Greenville	0%	0%	10%	5%	0%	10%	5%	0%	0%	5%	0%	20%	15%	0%	20%	5%	0%	0%
	East Quincy / Quincy	5%	0%	5%	0%	0%	0%	65%	0%	0%	0%	0%	10%	10%	0%	15%	50%	5%	5%
	Graeagle	0%	0%	0%	0%	80%	0%	0%	0%	60%	0%	0%	0%	0%	80%	0%	20%	20%	50%
	Delleker	0%	0%	0%	0%	10%	0%	5%	5%	75%	0%	0%	0%	0%	20%	0%	15%	15%	60%
	City of Portola	0%	0%	0%	0%	5%	0%	5%	5%	75%	0%	0%	0%	0%	10%	0%	10%	10%	50%
Communities	Portola Sphere of Influence	0%	0%	0%	0%	5%	0%	5%	5%	75%	0%	0%	0%	0%	10%	0%	10%	10%	50%
	Crescent Mills	0%	0%	5%	0%	0%	20%	15%	0%	0%	0%	0%	15%	15%	0%	35%	20%	0%	0%
	Taylorsville	0%	0%	0%	0%	0%	20%	15%	0%	0%	0%	0%	15%	15%	0%	35%	20%	0%	0%
	Clio	0%	0%	0%	0%	70%	0%	0%	0%	30%	0%	0%	0%	0%	60%	0%	10%	10%	20%
	Beckwourth	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	80%
	Vinton / Chilcoot	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	50%
	La Porte	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	60%	0%	0%
Rural Places	Prattville	90%	0%	10%	0%	0%	0%	0%	0%	0%	60%	0%	10%	30%	0%	5%	0%	0%	0%
	East Shore of Lake Almanor	0%	0%	0%	80%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
	Canyon Dam	40%	0%	40%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
	Indian Falls	0%	0%	0%	0%	0%	40%	30%	0%	0%	5%	0%	30%	25%	0%	60%	35%	0%	0%
	Keddie	0%	0%	0%	0%	0%	80%	60%	0%	0%	5%	0%	30%	25%	0%	70%	40%	0%	0%
	Meadow Valley	0%	0%	0%	0%	0%	0%	80%	0%	0%	0%	0%	5%	5%	0%	0%	50%	0%	0%
	Spanish Ranch	0%	0%	0%	0%	0%	0%	80%	0%	0%	0%	0%	5%	5%	0%	0%	50%	0%	0%
	Tollgate	5%	0%	5%	0%	0%	0%	75%	0%	0%	0%	0%	10%	10%	0%	15%	50%	5%	5%
	Bucks Lake	0%	0%	0%	0%	0%	0%	80%	0%	0%	0%	0%	0%	0%	0%	0%	50%	0%	0%
	Twain	0%	0%	0%	0%	0%	60%	50%	0%	0%	5%	0%	30%	25%	0%	70%	40%	0%	0%
	Belden	0%	0%	0%	0%	0%	60%	50%	0%	0%	0%	0%	10%	10%	0%	40%	30%	0%	0%
	Tobin	0%	0%	0%	0%	0%	60%	50%	0%	0%	0%	0%	5%	5%	0%	30%	20%	0%	0%
	Greenhorn Ranch	0%	0%	0%	0%	0%	0%	90%	10%	10%	0%	0%	0%	0%	10%	0%	70%	30%	20%
	Sloat / Cromberg	0%	0%	0%	0%	0%	0%	75%	0%	0%	0%	0%	0%	0%	30%	0%	30%	60%	30%
	Blairsden	0%	0%	0%	0%	70%	0%	0%	0%	80%	0%	0%	0%	0%	70%	0%	15%	15%	50%
	C-Road	0%	0%	0%	0%	10%	0%	0%	0%	90%	0%	0%	0%	0%	30%	0%	15%	15%	55%
	Mohawk Vista	0%	0%	0%	0%	10%	0%	0%	0%	90%	0%	0%	0%	0%	30%	0%	15%	15%	55%
	Lake Davis	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	80%
	Little Grass Valley	0%	0%	0%	0%	0%	0%	80%	0%	0%	0%	0%	0%	0%	0%	0%	60%	0%	0%
Master Planned Communities	Lake Almanor West	100%	0%	0%	0%	0%	0%	0%	0%	0%	70%	0%	10%	20%	0%	5%	0%	0%	0%
	Gold Mountain	0%	0%	0%	0%	70%	0%	0%	0%	30%	0%	0%	0%	0%	60%	0%	0%	0%	20%
	Valley Ranch	0%	0%	0%	0%	70%	0%	0%	0%	30%	0%	0%	0%	0%	60%	0%	0%	0%	20%
	Whitehawk Ranch	0%	0%	0%	0%	70%	0%	0%	0%	30%	0%	0%	0%	0%	60%	0%	0%	0%	20%
	Grizzly Ranch	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	80%
Outlying Areas	Warner Valley	0%	0%	0%	0%	0%	0%	0%	0%	0%	10%	10%	2%	0%	0%	0%	0%	0%	0%
	Sierra Valley	0%	0%	0%	0%	0%	0%	0%	0%	90%	0%	0%	0%	0%	0%	0%	0%	0%	80%
	Dixie Valley	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	80%
	Genesee	0%	0%	0%	0%	0%	20%	15%	0%	0%	0%	0%	15%	15%	0%	35%	20%	0%	0%
	Johnsville	0%	0%	0%	0%	100%	0%	0%	0%	70%	0%	0%	0%	0%	100%	0%	10%	10%	50%
	Frenchman Lake	0%	0%	0%	0%	0%	0%	0%	0%	90%	0%	0%	0%	0%	0%	0%	0%	0%	50%

Table H: Proportion of Urban and Access Trips on Key Roadway Segments

		Urban Non-Work Trips									Access Trips								
		SR 36	SR 36	SR 89	SR 147	SR 89	SR 70	SR 70	SR 70	SR 70	SR 36	SR 36	SR 89	SR 147	SR 89	SR 70	SR 70	SR 70	SR 70
	Area of Traffic Generation	W. of Chester	E. of Chester	S. of Canyon-dam	East Shore of Lake Almanor	Graeagle Area	N. of Keddie	East Quincy	Sloat Area	Portola	W. of Chester	E. of Chester	S. of Canyon-dam	East Shore of Lake Almanor	Graeagle Area	N. of Keddie	East Quincy	Sloat Area	Portola
Towns	Chester	0%	100%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%
	Lake Almanor Peninsula / LACC / Hamilton Branch	10%	90%	0%	0%	0%	0%	0%	0%	0%	80%	20%	0%	0%	0%	0%	0%	0%	0%
	Greenville	0%	0%	95%	95%	0%	5%	5%	5%	5%	0%	0%	0%	0%	0%	10%	10%	10%	10%
	East Quincy / Quincy	0%	0%	70%	70%	0%	0%	30%	30%	30%	0%	0%	0%	0%	0%	90%	10%	10%	10%
	Graeagle	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
	Delleker	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	90%	0%	0%	0%	10%
	City of Portola	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	80%	0%	0%	0%	20%
Communities	Portola Sphere of Influence	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	80%	0%	0%	0%	20%
	Crescent Mills	0%	0%	95%	95%	0%	5%	5%	5%	5%	0%	0%	0%	0%	0%	10%	10%	10%	10%
	Taylorsville	0%	0%	95%	95%	0%	5%	5%	5%	5%	0%	0%	0%	0%	0%	10%	10%	10%	10%
	Clio	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	10%
	Beckwourth	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
	Vinton / Chilcoot	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
	La Porte	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Rural Places	Prattville	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	30%	0%	0%	0%	0%	0%	0%
	East Shore of Lake Almanor	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	30%	0%	0%	0%	0%	0%	0%
	Canyon Dam	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	40%	0%	0%	0%	0%	0%	0%
	Indian Falls	0%	0%	80%	80%	0%	20%	20%	20%	20%	0%	0%	0%	0%	0%	0%	0%	0%	0%
	Keddie	0%	0%	80%	80%	0%	20%	20%	20%	20%	0%	0%	0%	0%	0%	0%	0%	0%	0%
	Meadow Valley	0%	0%	70%	70%	0%	0%	30%	30%	30%	0%	0%	0%	0%	0%	0%	5%	5%	5%
	Spanish Ranch	0%	0%	70%	70%	0%	0%	30%	30%	30%	0%	0%	0%	0%	0%	0%	5%	5%	5%
	Tollgate	0%	0%	70%	70%	0%	0%	0%	30%	30%	0%	0%	0%	0%	0%	90%	0%	10%	10%
	Bucks Lake	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
	Twain	0%	0%	50%	50%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
	Belden	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
	Tobin	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
	Greenhorn Ranch	0%	0%	0%	0%	0%	0%	100%	100%	100%	0%	0%	0%	0%	80%	0%	0%	100%	20%
	Sloat / Cromberg	0%	0%	0%	0%	0%	0%	100%	100%	100%	0%	0%	0%	0%	80%	0%	0%	100%	20%
	Blairsden	0%	0%	0%	0%	100%	0%	0%	0%	100%	0%	0%	0%	0%	100%	0%	0%	0%	10%
	C-Road	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	90%	0%	0%	0%	20%
	Mohawk Vista	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	90%	0%	0%	0%	20%
	Lake Davis	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
	Little Grass Valley	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Master Planned Communities	Lake Almanor West	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	20%	0%	0%	0%	0%	0%	0%
	Gold Mountain	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	10%
	Valley Ranch	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	10%
	Whitehawk Ranch	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	10%
	Grizzly Ranch	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Outlying Areas	Warner Valley	0%	100%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%
	Sierra Valley	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
	Dixie Valley	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
	Genesee	0%	0%	95%	95%	0%	5%	5%	5%	5%	0%	0%	0%	0%	0%	5%	5%	5%	5%
	Johnsville	0%	0%	0%	0%	100%	0%	0%	0%	100%	0%	0%	0%	0%	100%	0%	0%	0%	10%
	Frenchman Lake	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

TABLE I: Average Commute Time and Estimated Distance

	Total County	Quincy	Beckwourth	Chester	Graeagle	Greenville	Portola	Outlying Plumas County
Average Travel Time (Minutes)	19.5	6.9	24.2	12.5	21.1	20.2	20.2	32.0
Estimated Average Commute Length (Miles)	13	5	16	8	14	13	13	21

Source: US 2010 Decennial Census

Note 1: At an estimated average of 40 miles per hour.

TABLE J: Trip Assignment -- Existing General Plan

		Peak-Hour Trips: NORTHBOUND/EASTBOUND									Peak-Hour Trips: SOUTHBOUND/WESTBOUND								
		SR 36	SR 36	SR 89	SR 147	SR 89	SR 70	SR 70	SR 70	SR 70	SR 36	SR 36	SR 89	SR 147	SR 89	SR 70	SR 70	SR 70	SR 70
		W. of Chester	E. of Chester	S. of Canyon-dam	East Shore of Lake Almanor	Graeagle Area	N. of Keddie	East Quincy	Sloat Area	Portola	W. of Chester	E. of Chester	S. of Canyon-dam	East Shore of Lake Almanor	Graeagle Area	N. of Keddie	East Quincy	Sloat Area	Portola
Towns	Chester	4	3	0	0	0	0	0	0	0	3	5	0	0	0	0	0	0	0
	Lake Almanor Peninsula / LACC / Hamilton Branch	24	19	0	0	0	0	0	0	0	32	26	0	0	0	0	0	0	0
	Greenville	0	0	3	2	0	4	2	1	1	0	0	4	2	0	4	2	0	0
	East Quincy / Quincy	2	0	5	3	0	5	38	2	2	4	0	9	5	0	3	62	3	3
	Graeagle	0	0	0	0	67	0	3	3	49	0	0	0	0	75	0	2	2	55
	Delleker	0	0	0	0	3	0	2	2	11	0	0	0	0	2	0	1	1	17
	City of Portola	0	0	0	0	2	0	2	2	25	0	0	0	0	1	0	1	1	15
Communities	Portola Sphere of Influence	0	0	0	0	5	0	3	3	41	0	0	0	0	4	0	2	2	28
	Crescent Mills	0	0	0	0	0	1	1	0	0	0	0	0	0	0	1	1	0	0
	Taylorsville	0	0	0	0	0	2	1	0	0	0	0	1	1	0	3	2	0	0
	Clio	0	0	0	0	3	0	0	0	1	0	0	0	0	3	0	0	0	1
	Beckwourth	0	0	0	0	0	0	0	0	13	0	0	0	0	0	0	0	0	11
	Vinton / Chilcoot	0	0	0	0	0	0	0	0	20	0	0	0	0	0	0	0	0	13
	La Porte	0	0	0	0	0	0	13	0	0	0	0	0	0	0	0	12	0	0
Rural Places	Prattville	3	0	0	0	0	0	0	0	0	3	0	1	0	0	0	0	0	0
	East Shore of Lake Almanor	0	0	0	1	0	0	0	0	0	0	0	0	2	0	0	0	0	0
	Canyon Dam	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Indian Falls	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Keddie	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
	Meadow Valley	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	4	0	0
	Spanish Ranch	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
	Tollgate	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
	Bucks Lake	0	0	0	0	0	0	7	0	0	0	0	0	0	0	0	5	0	0
	Twain	0	0	0	0	0	2	1	0	0	0	0	0	0	0	3	2	0	0
	Belden	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Tobin	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Greenhorn Ranch	0	0	0	0	2	0	14	4	2	0	0	0	0	2	0	13	4	2
	Sloat / Cromberg	0	0	0	0	2	0	11	4	1	0	0	0	0	2	0	9	3	2
	Blairsden	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	C-Road	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	2
	Mohawk Vista	0	0	0	0	1	0	0	0	4	0	0	0	0	1	0	0	0	6
	Lake Davis	0	0	0	0	0	0	0	0	17	0	0	0	0	0	0	0	0	23
	Little Grass Valley	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Master Planned Communities	Lake Almanor West	28	1	1	1	0	0	0	0	0	33	1	1	1	0	0	0	0	0
	Gold Mountain	0	0	0	0	22	0	0	0	14	0	0	0	0	30	0	0	0	10
	Valley Ranch	0	0	0	0	2	0	0	0	1	0	0	0	0	2	0	0	0	1
	Whitehawk Ranch	0	0	0	0	9	0	0	0	6	0	0	0	0	12	0	0	0	4
	Grizzly Ranch	0	0	0	0	0	0	0	0	17	0	0	0	0	0	0	0	0	17
Outlying Areas	Warner Valley	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
	Sierra Valley	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1
	Dixie Valley	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1
	Genesee	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Johnsville	0	0	0	0	3	0	0	0	2	0	0	0	0	3	0	0	0	2
	Frenchman Lake	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	2
	Total Plumas County Land Uses	61	23	9	7	121	15	102	21	233	75	33	16	11	137	14	120	16	216
ADDITIONAL TRIPS																			
	Dyer Mountain	56	85	9	18	4	9	9	6	0	89	133	15	30	6	5	5	4	0
	Commercial (Not Generated by Residential)	6	15	5	2	8	5	8	6	13	4	7	5	1	4	5	7	5	6
	Through	28	28	20	13	7	17	17	17	10	28	28	20	13	7	17	17	17	10
Total		151	151	43	40	140	46	136	50	256	196	201	56	55	154	41	149	42	232
Total Excluding Dyer Mountain and Through		67	38	14	9	129	20	110	27	246	79	40	21	12	141	19	127	21	222

TABLE K: Level of Service on Key Plumas County Roadways

		Existing Conditions			Existing + Existing General Plan			Cumulative + Existing General Plan			Existing + Proposed General Plan			Cumulative + Proposed General Plan		
		EB/NB LOS	WB/SB LOS	Improvements Needed to Achieve LOS C Standard	EB/NB LOS	WB/SB LOS	Improvements Needed to Achieve LOS C Standard	EB/NB LOS	WB/SB LOS	Improvements Needed to Achieve LOS C Standard	EB/NB LOS	WB/SB LOS	Improvements Needed to Achieve LOS C Standard	EB/NB LOS	WB/SB LOS	Improvements Needed to Achieve LOS C Standard
SR 36	W. of Chester	D	D	4-Lane Highway	D	D	4-Lane Highway	D	D	4-Lane Highway	D	D	4-Lane Highway	D	D	4-Lane Highway
SR 36	E. of Chester	B	B	N/A	B	C	N/A	C	D	4-Lane Highway	B	C	N/A	C	D	4-Lane Highway
SR 89	S. of Canyondam	A	B	N/A	B	B	N/A	B	C	N/A	B	B	N/A	B	C	N/A
SR 147	East Shore of Lake Almanor	B	A	N/A	B	A	N/A	B	A	N/A	B	A	N/A	B	A	N/A
SR 89	Graeagle Area	C	C	N/A	C	C	N/A	C	C	N/A	C	C	N/A	C	C	N/A
SR 70	N. of Keddie	B	B	N/A	B	B	N/A	C	B	N/A	B	B	N/A	C	B	N/A
SR 70	East Quincy	A	A	N/A	A	A	N/A	A	A	N/A	A	A	N/A	A	A	N/A
SR 70	Sloat Area	B	B	N/A	C	B	N/A	C	C	N/A	C	B	N/A	C	C	N/A
SR 70	Portola	A	A	N/A	A	A	N/A	B	A	N/A	A	A	N/A	A	A	N/A

TABLE L: Vehicle-Miles of Travel -- Existing General Plan

Future Growth Only

		Trip Length In County (Miles)				Daily VMT		
		Work	Local	Urban	Access	Primary Homes	Secondary Homes	Total
Towns	Chester	8	2	20	8	4,135	685	4,820
	Lake Almanor Peninsula / LACC / Hamilton Branch	13	9	18	17	17,726	42,513	60,239
	Greenville	13	1	20	45	827	5,503	6,330
	East Quincy / Quincy	5	2	42	44	5,050	1,397	6,447
	Graeagle	14	11	31	7	8,890	13,573	22,463
	Delleker	13	3	22	16	1,585	447	2,032
	City of Portola	13	1	20	13	2,085	53	2,138
Communities	Portola Sphere of Influence	13	2	20	13	3,432	1,097	4,529
	Crescent Mills	15	5	24	40	374	492	866
	Taylorsville	18	10	30	44	1,434	1,576	3,010
	Clio	14	14	34	4	436	875	1,311
	Beckwourth	18	5	15	15	1,047	1,088	2,135
	Vinton / Chilcoot	21	18	4	4	4,711	1,108	5,819
	La Porte	33	33	10	10	1,417	8,721	10,138
Rural Places	Prattville	15	8	20	8	78	657	735
	East Shore of Lake Almanor	17	12	7	22	301	356	657
	Canyon Dam	17	15	11	53	117	145	262
	Indian Falls	17	13	29	36	112	0	112
	Keddie	12	6	36	40	66	83	149
	Meadow Valley	12	7	49	51	375	1,540	1,915
	Spanish Ranch	12	7	49	51	75	103	178
	Tollgate	9	6	41	43	61	87	148
	Bucks Lake	21	19	12	12	0	4,155	4,155
	Twain	18	16	38	27	787	231	1,018
	Belden	21	28	15	15	195	0	195
	Tobin	21	36	8	8	236	0	236
	Greenhorn Ranch	19	12	44	23	1,605	3,527	5,132
	Sloat / Cromberg	19	15	39	18	2,581	2,470	5,051
	Blairsden	14	10	30	8	0	61	61
	C-Road	13	8	28	6	232	120	352
	Mohawk Vista	17	7	27	12	789	254	1,043
	Lake Davis	20	12	25	25	223	8,751	8,974
	Little Grass Valley	32	33	14	14	0	183	183
Master Planned Communities	Lake Almanor West	13	7	9	10	2,506	2,977	5,483
	Gold Mountain	15	5	24	6	0	5,954	5,954
	Valley Ranch	16	15	28	3	352	734	1,086
	Whitehawk Ranch	18	17	36	2	402	5,919	6,321
	Grizzly Ranch	20	5	18	11	921	2,171	3,092
Outlying Areas	Warner Valley	16	8	17	36	1,030	263	1,293
	Sierra Valley	21	12	7	5	108	67	175
	Dixie Valley	38	25	30	30	435	165	600
	Genesee	12	17	36	51	250	153	403
	Johnsville	26	15	35	12	425	636	1,061
	Frenchman Lake	21	26	10	10	1,099	358	1,457
	Total -- Plumas County Residential Development					68,510	121,248	189,758

	SR 36 W. of Chester	SR 36 E. of Chester	SR 89 S. of Canyon-dam	SR 147 East Shore of Lake Almanor	SR 89 Graeagle Area	SR 70 N. of Keddie	SR 70 East Quincy	SR 70 Sloat Area	SR 70 Portola	TOTAL	
Daily Trips											
Dyer Mountain	617	928	102	204	43	60	60	43	0		
Commercial (Not Generated by Residential)	87	192	87	26	105	87	131	96	166		
Through	584	584	417	271	146	354	354	354	208		
Representative Trip Length	8.1	10.4	33.1	9.8	7.7	9.1	3.6	19.5	29.3		
Daily VMT											
Dyer Mountain	5,001	9,653	3,382	2,003	328	542	215	830	0	21,954	8%
Commercial (Not Generated by Resid	706	1,996	2,887	256	806	794	471	1,871	4,856	14,642	5%
Through	4,728	6,070	13,799	2,656	1,124	3,225	1,276	6,910	6,108	45,894	17%
TOTAL GENERATED BY PLUMAS COUNTY DEVELOPMENT										204,400	75%
TOTAL GENERATED BY GROWTH EXTERNAL TO PLUMAS COUNTY										67,848	25%
TOTAL GROWTH IN VMT WITHIN PLUMAS COUNTY										272,249	100%

TABLE M: Analysis of Trip Generation and VMT Impacts Associated with Proposed Plumas County General Plan

Compared withTraffic Impact of Existing General Plan

Column	1	2	3	4	5	6	7	8	9	10	11	12
Specific Area	Zoning Designation	Acreage	Zoning Density (DU per Acre)	Zoning Capacity (DU)	Total Development Forecast for Town/ Community/ Rural Place (DU)	Proportion Shifting From Outlying Area	# DU Shifted in Location	Existing Trip Generation of Relocated DU	Change in % Non-Auto Mode	Change in Daily Trip Generation (1)	Existing Trip Length (miles)	Change in Average Trip Length (miles)	Change in VMT
Warner Valley	R-10	737.3	0.1	74	19	50%	7	43	5%	-3	11.0	-5.0	-233
Chester	S-3	15.4	0.3	5									
Chester	2-R	66.2	2.0	132									
Subtotal: Chester				*137*	204	25%	26	158	3%	-6	4.1	-1.2	-207
Lake Almanor / East Shore	R-20	260.1	0.1	13	11	25%	2	9	5%	0	13.7	-1.0	-9
Lake Almanor West	S-3	14.7	0.3	5	165	25%	1	4	5%	0	8.1	1.3	5
Prattville	S-3	177.3	0.3	59	27	75%	15	50	0%	0	8.2	1.0	50
Bucks Lake	S-3	72.9	0.3	24									
SW of Bucks Lake	R-20	608.3	0.1	30									
Subtotal: Bucks Lake				*55*	75	50%	21	66	0%	0	17.5	-0.5	-33
Meadow Valley	R-10	90.0	0.1	9									
Meadow Valley	S-3	11.2	0.3	4									
Subtotal: Meadow Valley				13	35	25%	2	8	0%	0	14.4	-0.5	-4
Quincy	R-10	157.2	0.1	16									
Quincy	R-20	813.3	0.1	41									
Quincy	S-1	308.1	1.0	308									
Quincy	S-3	883.7	0.3	295									
Subtotal: Quincy				659	207	50%	78	520	5%	-32	10.1	-5.2	-2,861
Indian Falls	S-3	652.4	0.3	217	45	50%	17	79	0%	0	14.9	-0.5	
Crescent Mills	S-3	98.6	0.3	33	19	25%	4	18	5%	-1	10.3	-1.3	-32
Taylorsville	R-10	407.1	0.1	41									
Taylorsville	S-3	2415.8	0.3	805									
Subtotal: Taylorsville				846	45	50%	17	79	5%	-5	14.9	-4.9	-437
Greenville	R-10	199.7	0.1	20									
Greenville	R-20	156.4	0.1	8									
Greenville	S-3	947.9	0.3	316									
Greenville	2-R	17.7	2.0	35									
Subtotal: Greenville				379	202	50%	76	278	5%	-15	9.0	-2.1	-687
La Porte	S-3	75.0	0.3	25	107	25%	5	17	0%	0	28.7	-0.2	-3
Greenhorn Ranch	S-3	66.0	0.3	22									
Greenhorn Ranch	2-R	376.2	2.0	752									
Subtotal: Greenhorn Ranch				774	92	25%	17	65	0%	0	14.5	-0.2	-13
Sloat / Cromberg	R-10	74.9	0.1	7									
Sloat / Cromberg	R-20	104.4	0.1	5									
Subtotal: Sloat / Cromberg				13	70	25%	2	9	3%	0	16.3	-1.8	-16
Graeagle	R-20	144.9	0.1	7									
Graeagle	S-3	71.3	0.3	24									
Graeagle	2-R	38.8	2.0	78									
Subtotal: Graeagle				109	543	50%	41	162	5%	-9	11.0	-3.6	-650
Portola	R-10	431.1	0.1	43									
Portola	R-20	440.3	0.1	22									
Portola	S-3	810.3	0.3	270									
Portola	S-1	521.7	1.0	522									
Subtotal: Portola				857	228	50%	86	623	5%	-39	4.9	-2.6	-1,710
Mohawk Vista	S-3	201.7	0.3	67	20	75%	11	59	5%	-4	9.7	0.0	-39
C-Road	S-3	106.1	0.3	35	8	25%	2	10	5%	-1	9.1	0.0	-9
Clio	S-3	41.4	0.3	14	28	50%	5	19	5%	-1	12.7	0.0	-13
Gold Mountain	R-20	118.8	0.1	6									
Gold Mountain	S-3	35.1	0.3	12									
Subtotal: Gold Mountain				18	369	25%	3	9	2%	0	5.2	-1.6	-14
Beckwourth	R-10	244.0	0.1	24									
Beckwourth	S-1	289.3	1.0	289									
Subtotal: Beckwourth				314	66	50%	25	106	3%	-4	7.9	-2.6	-297
E. of Lake Davis	R-10	2782.7	0.1	278									
E. of Lake Davis	R-20	851.2	0.1	43									
E. of Lake Davis	S-3	122.6	0.3	41									
Subtotal: Lake Davis				362	190	25%	36	115	3%	-3	14.7	-9.0	-1,052
Vinton / Chilcoot	R-10	1696.1	0.1	170									
Vinton / Chilcoot	R-20	749.9	0.1	37									
Subtotal: Vinton / Chilcoot				207	59	25%	11	64	3%	-2	17.6	-5.2	-358
Frenchman Lake	R-20	305.4	0.1	15	11	75%	6	33	3%	-1	23.8	-10.1	-347
TOTAL										-126			-8,969

Note 1: Based on 7.59 one-way trips per day for permanent single-family residents and 3.16 one-way trips per day for second homes.

TABLE N: Trip Generation -- Existing General Plan

One-Way Vehicle-Trips

		Daily Trips: Total	PM Pk Hr Trips		
			Outbound	Inbound	Total
Towns	Chester	1,173	57	89	146
	Lake Almanor Peninsula / LACC / Hamilton Branch	5,674	271	281	552
	Greenville	688	33	32	65
	East Quincy / Quincy	1,280	62	102	164
	Graeagle	2,034	97	106	203
	Delleker	323	16	23	39
	City of Portola	407	20	34	54
Communities	Portola Sphere of Influence	858	42	60	102
	Crescent Mills	83	4	5	9
	Taylorsville	197	10	12	22
	Clio	102	5	5	10
	Beckwourth	267	13	15	28
	Vinton / Chilcoot	330	16	24	40
	La Porte	354	17	15	32
Rural Places	Prattville	90	4	4	8
	East Shore of Lake Almanor	48	2	3	5
	Canyon Dam	14	1	1	2
	Indian Falls	8	0	1	1
	Keddie	14	1	1	2
	Meadow Valley	133	6	7	13
	Spanish Ranch	14	1	1	2
	Tollgate	14	1	1	2
	Bucks Lake	237	11	8	19
	Twain	58	3	4	7
	Belden	8	0	1	1
	Tobin	8	0	1	1
	Greenhorn Ranch	353	17	18	35
	Sloat / Cromberg	310	15	18	33
	Blairsden	6	0	0	0
	C-Road	38	2	2	4
	Mohawk Vista	104	5	7	12
	Lake Davis	606	29	22	51
	Little Grass Valley	6	0	0	0
Master Planned Communities	Lake Almanor West	680	33	38	71
	Gold Mountain	1,143	54	40	94
	Valley Ranch	81	4	4	8
	Whitehawk Ranch	450	21	17	38
	Grizzly Ranch	444	21	20	41
Outlying Areas	Warner Valley	115	6	9	15
	Sierra Valley	14	1	1	2
	Dixie Valley	22	1	2	3
	Genesee	22	1	2	3
	Johnsville	67	3	3	6
	Frenchman Lake	60	3	4	7
	Total	18,934	909	1,043	1,952

SUBTOTALS BY GENERAL AREA

Almanor General Area	7,794	374	425	799
American Valley General Area	1,294	63	103	166
Indian Valley General Area	998	48	52	100
La Porte General Area	360	17	15	32
Meadow Valley/Canyon General Area	471	22	23	45
Mohawk Valley General Area	5,009	239	243	482
Sierra Valley General Area	3,008	146	182	328

TABLE O: Trip Assignment -- Proposed General Plan

		Peak-Hour Trips: NORTHBOUND/EASTBOUND									Peak-Hour Trips: SOUTHBOUND/WESTBOUND								
		SR 36	SR 36	SR 89	SR 147	SR 89	SR 70	SR 70	SR 70	SR 70	SR 36	SR 36	SR 89	SR 147	SR 89	SR 70	SR 70	SR 70	SR 70
		W. of Chester	E. of Chester	S. of Canyon-dam	East Shore of Lake Almanor	Graeagle Area	N. of Keddie	East Quincy	Sloat Area	Portola	W. of Chester	E. of Chester	S. of Canyon-dam	East Shore of Lake Almanor	Graeagle Area	N. of Keddie	East Quincy	Sloat Area	Portola
Towns	Chester	4	3	0	0	0	0	0	0	0	3	5	0	0	0	0	0	0	0
	Lake Almanor Peninsula / LACC / Hamilton Branch	24	19	0	0	0	0	0	0	0	32	26	0	0	0	0	0	0	0
	Greenville	0	0	3	2	0	4	2	1	1	0	0	4	2	0	4	2	0	0
	East Quincy / Quincy	2	0	5	3	0	5	37	2	2	4	0	9	5	0	3	61	3	3
	Graeagle	0	0	0	0	67	0	3	3	49	0	0	0	0	75	0	2	2	55
	Delleker	0	0	0	0	3	0	2	2	11	0	0	0	0	2	0	1	1	17
	City of Portola	0	0	0	0	2	0	2	2	24	0	0	0	0	1	0	1	1	14
Communities	Portola Sphere of Influence	0	0	0	0	5	0	3	3	41	0	0	0	0	4	0	2	2	28
	Crescent Mills	0	0	0	0	0	1	1	0	0	0	0	0	0	0	1	1	0	0
	Taylorsville	0	0	0	0	0	2	1	0	0	0	0	1	1	0	3	2	0	0
	Clio	0	0	0	0	3	0	0	0	1	0	0	0	0	3	0	0	0	1
	Beckwourth	0	0	0	0	0	0	0	0	13	0	0	0	0	0	0	0	0	11
	Vinton / Chilcoot	0	0	0	0	0	0	0	0	20	0	0	0	0	0	0	0	0	13
	La Porte	0	0	0	0	0	0	13	0	0	0	0	0	0	0	0	12	0	0
Rural Places	Prattville	3	0	0	0	0	0	0	0	0	3	0	1	0	0	0	0	0	0
	East Shore of Lake Almanor	0	0	0	1	0	0	0	0	0	0	0	0	2	0	0	0	0	0
	Canyon Dam	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Indian Falls	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Keddie	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
	Meadow Valley	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	4	0	0
	Spanish Ranch	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
	Tollgate	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
	Bucks Lake	0	0	0	0	0	0	7	0	0	0	0	0	0	0	0	5	0	0
	Twain	0	0	0	0	0	2	1	0	0	0	0	0	0	0	3	2	0	0
	Belden	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Tobin	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Greenhorn Ranch	0	0	0	0	2	0	14	4	2	0	0	0	0	2	0	13	4	2
	Sloat / Cromberg	0	0	0	0	2	0	11	4	1	0	0	0	0	2	0	9	3	2
	Blairsden	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	C-Road	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	2
	Mohawk Vista	0	0	0	0	1	0	0	0	4	0	0	0	0	1	0	0	0	6
	Lake Davis	0	0	0	0	0	0	0	0	17	0	0	0	0	0	0	0	0	23
	Little Grass Valley	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Master Planned Communities	Lake Almanor West	28	1	1	1	0	0	0	0	0	33	1	1	1	0	0	0	0	0
	Gold Mountain	0	0	0	0	22	0	0	0	14	0	0	0	0	30	0	0	0	10
	Valley Ranch	0	0	0	0	2	0	0	0	1	0	0	0	0	2	0	0	0	1
	Whitehawk Ranch	0	0	0	0	9	0	0	0	6	0	0	0	0	12	0	0	0	4
	Grizzly Ranch	0	0	0	0	0	0	0	0	17	0	0	0	0	0	0	0	0	17
Outlying Areas	Warner Valley	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
	Sierra Valley	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1
	Dixie Valley	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1
	Genesee	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Johnsville	0	0	0	0	3	0	0	0	2	0	0	0	0	3	0	0	0	2
	Frenchman Lake	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	2
	Total Plumas County Land Uses	61	23	9	7	120	15	101	21	231	75	33	16	11	136	14	119	16	214
ADDITIONAL TRIPS																			
	Dyer Mountain	56	85	9	18	4	9	9	6	0	89	133	15	30	6	5	5	4	0
	Commercial (Not Generated by Residential)	6	15	5	2	8	5	8	6	13	4	7	5	1	4	5	7	5	6
	Through	28	28	20	13	7	17	17	17	10	28	28	20	13	7	17	17	17	10
Total		151	151	43	40	139	46	135	50	254	196	201	56	55	153	41	148	42	230
Total Excluding Dyer Mountain and Through		67	38	14	9	128	20	109	27	244	79	40	21	12	140	19	126	21	220