Amador County Transportation Commission

PROJECT REPORT

FY 2009/10 Rural Regional Blueprint Grant Application
Amador County Transportation Commission

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Regional Context

The Amador County Transportation Commission (ACTC) is the Regional Transportation Planning Agency (RTPA) for Amador County and its five incorporated cities. ACTC has taken the lead on developing and implementing the Amador County Region's rural Blueprint project using the U.C. Davis Information Center for the Environment (ICE) UPlan land use scenario modeling tool. The purpose of ACTC's rural Blueprint project is to provide information and an analytical tool (UPlan) that can inform ACTC, Amador County, the cities (Amador City, Ione, Jackson, Plymouth, and Sutter Creek), the Local Agency Formation Commission (LAFCO), and the three federally recognized Tribal governments (Jackson Rancheria, Buena Vista Rancheria of Me-Wuk Indians, and Ione Band of Miwok Indians) to help guide decisions that will address local and regional issues. Such issues may include, but are not limited to: support and improve mobility and reduce dependency on single-occupant vehicle trips; accommodate an adequate supply of housing for all incomes; reduce impacts to valuable habitat, productive farmland, and air quality; increase resource use efficiency; promote a prosperous economy; and result in safe, healthy, and vibrant communities.

Amador County is located in the heart of the Central Sierra's historic Gold Country, approximately 40 miles southeast of Sacramento. The County population of 38,091 includes 3,060 inmates of the Mule Creek State Prison (2010 census). Approximately 42% of the population resides within the incorporated cities' limits with the remaining 58% in the unincorporated County area. The 2010 census indicates the ethnicity of the population is 79.6% White, 12.5% Hispanic, 2.5% Black, and 1.4% Native American. The current unemployment rate (July 2012) is 11.9%, up from 4.4% in 2000, and 5.2% in 2006 (EDD). Approximately 22% of Amador County workers commute out of the County for work. The 2010 census estimated that only 2.4% of home to work travel occurred by walking and 82.3% driving to work alone with a mean travel time of 28.4 minutes.

Because of the Amador County's desirable characteristics (lower land prices, lower crime rates, etc.) and the County's proximity to growth in the Sacramento-Lodi area, Amador County was experiencing a significant number of land use development projects prior to 2009 and the current economic recession. Many of these projects were for subdivision-type development in cities' spheres of influence. As such, the County was on its way to becoming a "bedroom community" for the central valley cities. These new developments were presenting challenges for addressing environmental impacts, providing affordable housing, reducing commutes, and paying for the cost of expanded public services and facilities. While this growth pressure has subsided due to the current economic recession, growth pressures are expected to resume at a reduced level as the economy improves. This assumption is documented by recent State Department of Finance (DOF) projections which indicate Amador's population will be 40,174 by 2035, as compared to previous projections of 51,009 by 2030.

The local economy has also been severely impacted by the current recession. This has been illustrated by the closure of the County's two automobile dealerships, by the dramatic increase in unemployment and by the drop in local sales tax. Amador County sales tax receipts dropped 15% between 2007/08 and 2008/09, and another 14% in 2009/10.

Due in part to the County's economic condition, the Region was not able to pass a transportation sales tax measure in November 2006 and it has been limited in its ability to increase traffic mitigation fees beyond a market threshold that local builders can afford. Consequently, this concern together with reduced State and Federal transportation funds has heightened the need to find new solutions to the region's growth pressures and resource constraints. The Amador Blueprint program and UPlan tool is intended to be a key instrument for finding such solutions.

Background/History

In 2005/06, Amador, Alpine, and Calaveras Counties were provided a $400,000 grant from Caltrans to conduct a rural counties "Blueprint" planning project (not including $100,000 local matching funds). This effort actually preceded Caltrans' rural Blueprint competitive grants program. ACTC was the lead local agency in this effort coordinating efforts with the three counties, Caltrans, and U.C. Davis ICE ACTC used its share of these initial funds ($177,107) to upgrade the County's Geographic Information Systems (GIS), to collect and map data for the UPlan land use model, and to fund a position in the County Information Technology Department (County IT) to operate and maintain the UPlan program. At Caltrans' request, ACTC presented its UPlan project at workshops throughout the State showing how the UPlan tool can be used to identify, monitor, and improve social, economic, and environmental concerns in rural counties.

County IT provided a summary presentation about the Amador County UPlan project at an ACTC meeting on September 17, 2008, a joint meeting of the County Board of Supervisors and Planning Commission on October 14, 2008, and in a public workshop held on February 4, 2009. Between June 2005 and August 2009, Amador County was working on the first comprehensive update of its countywide General Plan in more than 20 years. During this time period, ACTC participated in over 40 meetings with Amador County staff as well as the County Board of Supervisors and Planning Commission in an effort to try and have the UPlan model used in development of the County General Plan update. The purpose was to integrate Blueprint planning so that it may have a direct and measurable affect on the County's land use goals, policies, and objectives. The last meeting with Amador County staff took place on August 24, 2009. During the meeting it was mutually agreed that Amador County would not use ACTC's UPlan model for the County General Plan update for reasons including (1) the UPlan model is not finished or in a condition readily acceptable to Amador County, (2) the County General Plan does not include city incorporated areas or Tribal plans, (3) the General Plan Environmental Impact Report must be a confidential document without access or involvement of ACTC

until it is ready for public review, and (4) the County has directed that its General Plan will be "general" and will not contain performance measures or quantifiable goals and objectives.

Amador County's share of the original $400,000 Caltrans grant was expended as of June 30, 2009. On February 9, 2009, Caltrans awarded ACTC another $80,000 in rural Blueprint funding from fiscal year 2008/09 to continue the program through fiscal year 2009/10. In April 2010, ACTC was awarded another regional Blueprint program grant for fiscal year 2009/10 ($200,000). These 2009/10 funds were to be expended by June 2011, however, due to setbacks and delays explained below, Caltrans has allowed extensions through September 2013.

Early Lessons Learned

The following described setbacks and delays are all considered "lessons" for both ACTC and Blueprint planning in general as it applies to rural counties in the State.

1. Land Use Database (TCLUDB) - In early presentations of Amador's UPlan to local agencies and the public, ACTC and County IT were surprised to discover that the County Assessor's records and application of land value to building value ratios as recommended by U.C. Davis ICE did not provide accurate information about existing land uses and opportunities for infill development. Accurate information in this data layer is critical not only for operation of UPlan but also for UPlan to work in sync with the countywide traffic model (TransCAD). Consequently, ACTC used most of its 2008/09 grant funds to conduct land use surveys and to create an accurate existing land use data layer. This layer is called the TransCAD land use database (TCLUDB).
2. Keep It Simple (KISS) - ACTC learned that trying to create too many data layers was making the model too complex, too confusing, and taking too much of the project's limited time and resources. Working with local planners, realtors, and the Amador LAFCO's 2008 Municipal Services Review (which the ACTC helped to finance), it was determined that, after land use requirements (local General Plans), access to sewer, water, transportation, and proximity to urban centers have the most significant influence on where new development would occur. Time consuming work on other attraction layers such as police and fire protection, schools, internet access, etc. was put on hold while UPlan focused on these essential driving attractors.
3. Good Metadata and In-House Commitment - In January 2010, ACTC lost its County IT UPlan modeler. To fill this void, ACTC contracted with Vestra Resources in May 2010. In January 2012 the modeler designated to Amador at Vestra left the company. Each time a modeler is lost, key information about how the model is developed is lost unless time and attention is spent developing the model's "metadata". ACTC has learned that the effort to develop and use the UPlan model for Blueprint planning tends to dominate the time and attention of planners and GIS technicians and that careful maintenance of the metadata layers is often overlooked. It also learned that without commitment to an in-house GIS and UPlan program, the model may not be maintained over time or be available in the long

term when its benefits may actually be proven or needed. In January 2012, ACTC authorized hiring its own in-house GIS technician and planner whose first job was to research and complete the metadata and thus learn how Amador's UPlan model is built and then be able to maintain it over time.

4. Threat to Local Land Use Authority - The biggest lesson learned in Amador is that "Blueprint planning" can be self-defeating in a rural county if local governments feel the State or an RTPA is trying to undermine or supersede local authority to regulate land use. A core element of Blueprint planning is to use websites, public meetings, and other methods to involve the public and to carryout "scenario planning" in which case alternative land use plans with varying outcomes can be essentially voted upon by the general public to influence its local governments and land use authorities. When ACTC failed to have Amador County incorporate Blueprint planning in its General Plan update process, it became another RTPA operating outside of its local (cities and County) General Plans trying to influence their planning processes. This became a challenge or threat to the local agencies, all of whom are represented on the ACTC Board of Directors. The following paragraphs in this background narrative describe how the ACTC, working with Caltrans, have needed to adjust Amador's Blueprint/UPlan project in order to address this concern.

Amador UPlan Progress (2010-2011)

Between May 2010 and January 2012 ACTC staff worked with Vestra and planning consultants at MIG to develop the simplified model identified per lesson 2 above. ACTC staff and consultants then conducted direct one-on-one meetings with city and County planners, the LAFCO Executive Officer, and Tribal planners. The purpose of these meetings was to give local agencies a hands-on experience to understand and demystify UPlan. In the fall of 2010 ACTC worked with its Technical Advisory Committee (TAC), to secure their direct involvement and understanding. Then, with local agency staff and TAC support, ACTC staff presented the simplified UPlan and initial model runs demonstrating implementation of the County's proposed new draft General Plan and adopted city General Plans to the ACTC Board of Directors. The ACTC Board, in turn, then allowed use of an interactive website and a public workshop to receive public comments on the UPlan project. The ACTC Board directed, however, that there would be no public surveys or alternative scenario planning unless specifically requested by a member agency and approved by the Board. In December 2010, Caltrans approved amendments to ACTC's 2009/10 rural Blueprint grant application to accommodate the ACTC Board's directives.

The ACTC conducted its public workshop on March 30, 2011. Input from the workshop, written comment cards, and the website were then presented for review to the ACTC's TAC, then the ACTC Board of Directors on July 20, 2011. During this workshop the ACTC Board provided staff and consultants with direction for modification and further use of the UPlan model.

At this point, ACTC staff had begun to secure support for UPlan as a planning tool by the ACTC Board and local agency planning staff members. In carrying out the Board's directive and working with local agency staff, some elements of scenario planning has actually occurred. For example, UPlan model scenarios have been developed in one scenario where city governments control land uses within their "spheres of influence" and an alternative scenario where County government controls land use within said spheres. Another set of alternative scenarios involves future land use with or without two additional casinos (Amador County is the home to Jackson Rancheria Casino; however, County government is opposed to any additional casinos). Tribal governments are requesting two additional casinos and ACTC is required to work with federally recognized Tribal governments. Consequently, with and without additional casino scenarios have also been developed.

Support for UPlan was also manifested in early 2012 when the ACTC Board authorized hiring an in-house GIS staff person to take over operation of the model. ACTC also authorized use of the UPlan model outputs for the countywide Regional Transportation Plan (RTP) update, the Amador County Long Range Transit Development Plan (TDP), and the City of Jackson Community Based Transportation Plan.

New Problems (2012)

ACTC staff and consultants were prepared to complete model runs and conduct follow-up presentations with the ACTC Board, cities, County, and Tribes when the process became delayed by several new experiences or lessons:

1. The hiring and start-up training process for ACTC's GIS technician took longer than expected. The new GIS technician was hired on March 16, 2012; however, his efforts to update metadata and learn the background and complexities of Amador's land use data sets and model runs were hampered by work on the following listed subset of problems.
2. The conversion of UPlan land use data to Amador County's traffic model (TransCAD) which was done by outside consultants for use in the Regional Transportation Plan update and Long Range Transit Development Plan produced unanticipated results which caused ACTC staff and consultants to re-asses the accuracy of both models and the differences between the two models. Thanks to the TCLUDB effort described above, accuracy of the base year in UPlan was proven reliable; however, mistakes or unsubstantiated assumptions were made when UPlan growth projections were applied to TransCAD traffic analysis zones and these needed to be fixed. In addition, further refinement was deemed necessary in order to obtain more accurate and trustworthy UPlan projections. While the UPlan model projections were acceptable for broad, theoretical regional planning purposes, they were not proving to be practical for use in actual regional and sub-regional transportation planning. ACTC staff, working with its UPlan and TransCAD consultants, has been able to gain a first-hand knowledge regarding how the land

use and traffic models work together and this will be of significant value over the long term.

3. Jackson city planners rejected use of UPlan model outputs for growth assumptions in development of that City's Community Based Transportation Plan (CBTP). ACTC staff had intended that each local or "sub-regional" transportation plan should fit within and be consistent with the countywide traffic model which in turn needs to be consistent with the countywide UPlan model projections. ACTC learned, however, that the UPlan model runs conducted as of early 2012, while valuable for broad regional purposes, were not suitable for sub-regional planning purposes. This outcome was not acceptable to ACTC staff and it, again, threatened the desired outcome wherein city and County officials would begin to trust and request use of the UPlan tool.

New Solutions (2012-13)

During FY 2012/13, ACTC has worked with its consultants VESTRA Resources and Moore Iacofano Goltsman, Inc. as well as a sub-committee formed by the ACTC (comprised of two Commissioners, the County Planning Director, and the City of Jackson planner) to refine and upgrade Amador's UPlan model. The following changes, additions, and results have occurred:

1. **INITIAL UPLAN - TRANSCAD CORRECTIONS**
   Problems with differences between UPlan's existing and projected land uses shown in UPlan compared to the ACTC's GIS based traffic model (TransCAD) are summarized in paragraph #2 under "New Problems (2012)" above. **<u>LESSONS</u>: (a) The highly technical traffic model calibration reports must be checked for accuracy with traffic modeling consultants before traffic model contract work is concluded. Also, (b) UPlan provides a tool/opportunity to clarify and correct traffic model land use assumptions with respect to actual land use under existing and projected future conditions.**

2. **UPLAN MODEL "FINE-TOOTH-COMB" ANALYSIS**
   Problems using UPlan for local or sub-regional planning which surfaced around the Jackson CBTP are summarized in paragraph #3 under "New Problems (2012)" above. When ACTC first met with the City of Jackson planners and consultants in May 2012, 16 of the City's 45 TransCAD Traffic Area Zones (TAZs) did not accurately reflect projected growth. This caused ACTC staff to carry out a "fine-tooth-comb" review of the UPlan model for all areas of the County, not just the City of Jackson. This work led to numerous technical corrections, mostly involving "coarse" level inputs initially used to set up UPlan which don't reflect all of the factors that actually affect potential land use. For example, mine properties (Kennedy and Argonaut) are General Plan designated "agriculture" and "agriculture transition" which allowed UPlan to allocate residential and limited commercial to these properties. Local knowledge not available in the General Plan designations provide that these

properties will not be developed according to the General Plan designations, the properties needed to be masked to limit further development. **LESSON**: **After applying General Plan and other "coarse" level attractions, discouragers, and masks when developing UPlan models, it is necessary to conduct a "fine-tooth-comb" parcel by parcel review of the entire region. This work should be done by planners familiar with factors not contained in adopted policy documents that will affect actual future land use. All such work should be carefully documented within UPlan metadata.**

3. RESULTS OF INITIAL REFINEMENT

a. City of Jackson CBTP - After ACTC carried out the above described "fine-tooth-comb" adjustments, ACTC conducted another meeting with the City of Jackson planners and consultants. The number of Traffic Area Zones found to be incorrectly reflecting future growth was reduced from sixteen to only four. ACTC and City of Jackson planners and consultants agreed that the ACTC UPlan and TransCAD models were reasonably accurate for broad, countywide, regional planning purposes and that the "fine-tooth-comb" exercise improved its value for local and sub-regional planning purposes as well.

LESSONS:

(a) The UPlan model should always be maintained and improved.

(b) Neither UPlan or other land use planning models will be perfectly accurate for regional or sub-regional planning purposes; they are tools for generalized planning purposes.

(c) The growth model will not completely reflect a local government's or property owner's desires or wishes; human will or investment decisions are not necessarily factored into the model's General Plan land use designations or the physical attributes or current regulations and policies that are used to establish the models attractions and discouragements.

An example of lesson (b) described above is that the city planner identified certain properties General Plan designated and modeled correctly for future residential growth which were too steep to allow any construction. Although the ACTC was able to refine its "slope" data set, very detailed topographic mapping would be required to have identified the City lots in question as too steep for construction. This highly detailed set of topographic information is not available.

An example for lessons (a) and (c) identified above could be that although the City of Ione has identified lands for future industrial development and Ione planners and officials participated actively in establishing new attraction and discouragement inputs, model results show little or no growth in industrial development in the City of Ione. It may take ten years to determine whether the City's land use plans, human will power, and private investment (risk or

ambition) will outweigh the UPlan model's initial assumptions, parameters, and calibrations. The model can be refined and improved as additional lessons are learned.

b. Long Range Transit Development Plan (LRTDP) - LSC Transportation Consultants were in the process of updating the Long Range Transit Development Plan (LRTDP) during the initial refinement of UPlan/TransCAD. LSC was using the ACTC approved existing/future land use information for their LRTDP analysis. ACTC staff contacted LSC and discussed the existing/future land use information and issues involved. **LESSON: ACTC and LSC staff were able to use UPlan and TransCAD for existing and projected land use for long range transit planning (with or without the fine-tooth-comb analysis).**

c. 2014 Regional Transportation Plan (RTP) Update - As indicated above, the existing land use data base (TCLUDB) and 2012 UPlan and TransCAD growth and traffic projections were deemed adequate for countywide regional planning purposes. Therefore, even though UPlan model refinement efforts were ongoing, the model was used for evaluation of existing and projected conditions in development of the Administrative Draft 2014 Amador County Regional Transportation Plan (RTP) Update. Results of model refinement efforts carried out during 2012 and 2013 will be fed back into the RTP update process prior to completion of the actual draft RTP Update which is expected to be late December 2013 or early 2014. The refined UPlan projections and TransCAD outputs are not expected to significantly change policies and objectives initially developed for the Administrative Draft 2014 RTP Update, however, changes can be considered before the draft document is presented for public review in early 2014. **LESSON: Forthcoming. Will involve the extent to which UPlan refinements affect countywide transportation planning decisions.**

4. METADATA AND FILE/RUN ORGANIZATION

ACTC staff and their consultants spent significant time updating metadata and file organization in UPlan. Metadata is critical source information that needs to be maintained in a clear and organized format in GIS files in UPlan. This source information includes the history and why the GIS data was developed for UPlan purposes. The UPlan file organization was designed so that anyone can easily access model runs, documents, maps, etc., with limited ACTC staff assistance. For example, UPlan model runs are stored in UPlan Runs folders. Each run has the GIS data and grids that were specifically used for that run along with mxds and a run summary.

ACTC has found it necessary to produce a summary report concerning each UPlan run. These are referred to as the UPlan "White Papers". As the UPlan model is refined over time, each run is given a new number using a decimal system. The original UPlan run (09/10/2008) has now been identified as run version 1.1. The original "White Paper" for this run is included with this report as Appendix A. In the

White Paper, the model's inputs and masks, attractions, and discouragement layers are listed with broad information about the source for each. The "metadata" for each data set contains much more detail. An example of the metadata for one data set, TransCAD Land Use Data Base (TCLUDB), is provided in Appendix B. Each "White Paper" shows the weights and, where appropriate, buffers that are applied to each attraction and discouragement data set. This is also important to understand how a particular model run is set up. **LESSON**: **It is important to maintain accurate and detailed information over time to keep track of changes and updates to the UPlan model and resultant outputs as an agency goes through UPlan model refinements and changes over time. It is also critical to maintain well documented metadata for all attraction, discouragement, and mask data sets (layers). ACTC uses run summaries called "White Papers" to record changes to demographic, employment, and other inputs and always updates metadata with each change to masks, attraction, and discouragement layers (data sets).**

5. BASE CASE 1.1 AND DLUD 1.2

Prior to 2012, as described in the project history above, ACTC established the UPlan model and initial run 1.1. This run was the "base case" for Amador County based on the *currently adopted* Amador County General Plan as well as recent city General Plan updates. ACTC also generated run 1.2 which, per direction of the ACTC Board and Amador County planners, was based upon the County's *new draft* General Plan update also known as "DLUD". ACTC found that **LESSON: in rural counties, UPlan output maps do not visually show the changes between various land use alternatives as well as UPlan outputs show in chart format. The difference between run 1.1 based on the *currently adopted* Amador County General Plan compared to run 1.2 based upon the County's *new draft* General Plan update were modest and primarily involved changes under the new draft in the areas of farmlands , wetlands, and infill potential (see Appendix C).**

6. MODEL RUN PER JULY 20, 2011 ACTC BOARD DIRECTIVES (2.1 - 2.8)

As stated in the preceding discussion of project history and background, the ACTC Board reviewed the UPlan model on July 20, 2011. Model run 2.1 was presented which contained numerous adjustments recommended by the ACTC's Technical Advisory Committee (TAC). At that time, said model run 2.1 had four versions (These runs were subsequently renumbered 2.1, 2.2, 2.3, and 2.4):

(1a) 2030 with County controlling spheres of influence (SOI)
(1b) 2050 with County controlling SOI
(2a) 2030 with city controlling SOI
(2b) 2050 with city controlling SOI

The TAC recommended that the Board authorize use of run 1a (2.1) for planning purposes. During their workshop on July 20, the ACTC reviewed results of the public involvement and interagency consultation process and authorized that additional refinements be carried out as well.

a. Adjust employment inputs based on analysis of commuters.
b. Consult County Counsel regarding how to model Buena Vista Rancheria and Ione Band of Miwok Indians plans for additional casinos in Amador County and how said Bands should be identified.
c. Provide mapping that shows UPlan (land use) projections along with TransCAD traffic projections so people can compare the two.
d. Address long term plans for the Martell area (*new draft* General Plan designated the area as a Regional Service Center with residential whereas the *currently adopted* zoning and Master Plan have most of the area designated for industrial, commercial land uses).
e. Establish a new "very high density commercial" category that can be applied to casino properties.

Subsequent to the meeting and considering the direction provided by Amador County counsel, ACTC staff established four more runs (2.5 through 2.8). Runs 2.5 and 2.6 applied technical changes consistent with Board direction to former runs 2.1 (2030 growth with County controlling spheres of influence) and 2.4 (2050 with cities controlling the spheres). Then, per advice of County Counsel, runs 2.7 and 2.8 included plans for Indian gaming casinos within each of the two previous runs (2.5 and 2.6). Knowing in advance that Amador County did not support any new Indian gaming casinos (and the proposed casinos were having their own difficulties), further modeling efforts were conducted based on run 2.5.

7. ACTC SUBCOMMITTEE AND BOARD REVIEW (5/20/13 AND 6/27/13)

Completing refinements authorized by the ACTC on July 20, 2011 took until mid 2013 to finish because of difficulties identified in the previous section of this report titled "New Problems (2012)". However, this delay also enabled ACTC to secure new census data and Department of Finance projections. This new data along with results of the "fine-tooth-comb" analysis described above was used to create UPlan run versions 3.1.1, 3.1.2, and 3.1.3. Run 3.1.3 was presented to the ACTC's UPlan Technical Advisory Committee on May 20, 2013 and then the full ACTC Board on June 27, 2013 (see Appendix D).

During these meetings additional direction was provided to ACTC staff and consultants for further refinements as listed below.

a. Create a subdivision/land use entitlement layer
b. Create a well and septic layer (low priority)
c. Meet with Amador Water agency concerning impacts of Camanche moratorium (further discouraging growth in Camanche area) and water service capacity for the Pine Grove and Upcountry areas (potentially further attracting growth in the Upcountry area)

The committee and Board also directed further research in the area of "unusual" commercial; specifically, employment and commercial activities such as agricultural,

forestry, and recreation that are not tied to a specific site. ACTC staff and consultants subsequently prepared UPlan model runs 3.2.1 through 3.2.7 carrying out the changes recommended by the committee and Board as well as further technical refinements to improve accuracy of the model (see Appendix E).

8. FURTHER REFINEMENTS

In their review of model run 3.2.7, ACTC staff/consultants felt that UPlan growth model for 2035 was significantly improved; however, it continued to show several results that did not meet planner's expectations.

- Too much residential low density development was still going to the Camanche area and areas surrounding Plymouth city limits.
- Nearly all of Amador's future commercial and industrial development was continually going to Sutter Creek, Martell, and Amador City; very little to Ione, Plymouth, or the Upcountry area.

Consequently, ACTC staff/consultants conducted runs 3.2.8 and 3.2.9 with the following changes in order to see if they would have an affect.

3.2.8 ACTC staff and consultants are concerned that the model is reflecting too much residential low density and very low density growth and it is causing unrealistic growth patterns around areas like Camanche and Plymouth. ACTC staff and consultants investigated future trends in housing demand and found that given recent changes to the economy, the aging population, and other factors, there is reason to assume future housing demand for smaller, more affordable units, closer to services will be somewhat greater than in the past. The results of this model run appear to better reflect growth anticipated in new subdivision developments such as Plymouth's Zinfandel and around Lake Camanche.

3.2.9 A "local commercial" attraction layer was created around areas where the model shows relatively high quantities of new residential growth will occur. The assumption for this layer is that the model is presently reflecting regional commercial (shopping and services) demand and has not previously reflected local demand generated by expanding cities, communities, and neighborhoods. The results of this run did show some increase in commercial development in areas like Plymouth, Ione, and Pine Grove.

9. ACTC BOARD REVIEW OCTOBER 24, 2013

Next Steps/Future Challenges

In January 2013, ACTC was awarded additional rural regional Blueprint grant funding to extend ACTC's regional Blueprint/UPlan program through June 30, 2015. These funds

are intended to extend and continue maintenance of in-house staff and consultants, as needed, to accomplish the following objectives and address the following challenges.

1. Utilize newly approved 2035 UPlan growth projections to update the Amador Region's TransCAD traffic model and in turn use the updated traffic model to refine growth projections in the 2014 Amador County Regional Transportation Plan (RTP) Update.
2. Resume meetings with local agency's staff, Tribal planners, and the ACTC TAC. Conduct follow up presentations to the city councils, County Board of Supervisors, planning commissions, Upcountry town councils, Tribal governments, and LAFCO about availability of ACTC's UPlan and GIS program and services.
3. Update Region's uniform Traffic Impact Study (TIS) Guidelines and resubmit them to the cities and County for adoption. The TIS Guidelines require use of the TransCAD model for analysis of traffic impacts. The traffic model (and its relationship to UPlan) is used to support traffic impact studies that are required by local government lead agencies to analyze the traffic impacts of major and new land use development projects.
4. Update Amador's countywide Regional Traffic Mitigation Fee (RTMF) program. The ACTC's TransCAD traffic model is used to support the justification or "nexus" for the countywide Regional Traffic Mitigation Fee (RTMF) program. Like the TIS Guidelines, the RTMF program will be updated and readopted by the cities and County during 2013/14. Although both the TIS Guidelines and the RTMF program are funded outside of the rural Blueprint grant, maintaining the accuracy and maintenance of UPlan and TransCAD are critical to these separate implementation programs.
5. Maintain the TransCAD land use data base (TCLUDB) as new building permits are issued and new construction occurs. Cities and County are required to report to ACTC building permits that are issued with Regional Traffic Mitigation Fees (RTMF) that are paid. This new building information will be added to the TCLUDB each year so that UPlan reflects actual growth as it occurs and a future update of the TCLUDB will not be required. Existing land use data is critical to proper functioning of the TransCAD traffic model. It can also be very valuable to other agencies for other purposes. In the longer term (5-10 years) it will be useful for further evaluation and refinement of the UPlan model; is growth occurring where UPlan has predicted it will occur?
6. Continue to refine the accuracy of UPlan so that it gains more use by local agencies as a planning tool for infrastructure planning.
7. Making the model usable for sub-regional purposes is critical for getting buy-in by cities, LAFCO, the County, and other special districts or service agencies for developing local plans and when analyzing the effects of local development projects.
8. Ensure that sub-regional traffic models are consistent with the countywide regional traffic model which in turn is consistent with other regional models maintained by Caltrans, Calaveras, Alpine, SACOG, and other agencies. Presently separate models maintained by different regional agencies are not necessarily synced and communications/collaboration between agencies is not assured.

9. By training and maintaining in-house staff and a well-organized and defensible UPlan model (including essential metadata), the ACTC's UPlan and GIS programs will become tools available to and accepted by local governments for multiple planning purposes over the long term. This can occur at a time when, due to funding cuts, the County's General Plan Update has stalled and the County has deactivated its own GIS program. In addition, the region's traffic model will be made to "reside" in the ACTC office and the ACTC GIS technician will be trained to help ensure the currency and consistency of the TransCAD model as well as the UPlan model.
10. Better transportation and land use planning outcomes will be enabled by continuing the informational and educational process which is part of the ACTC's Blueprint/UPlan program. It will also be accomplished by maintaining the ACTC Board mandate that UPlan is a planning tool that can educate and inform; it is not intended to regulate, mandate, or second guess local government land use decisions.
11. As the accuracy and reliability of the UPlan tool is improved, local agencies can begin to rely upon its information. The UPlan tool can be used to establish performance measures and quantifiable goals and objectives and to monitor performance. For example, one related tool that is being built into ACTC's GIS and UPlan/TransCAD models is a traffic mitigation monitoring program. The cities and County have approved traffic impact mitigation measures (conditions of approval) with large and small land use development projects all around the region. The ACTC is able to conveniently use its GIS system to identify these improvements, funds contributed to them, schedules for their installation (if any) and other data. Most of these projects involve improvements to the State highway system. This information is not presently well maintained or coordinated between the cities, County, and Caltrans.
12. Support U.C. Davis ICE in efforts to update/maintain the UPlan tool. The programming language upon which the UPlan computer program is based is being phased out of the ESRI ArcGIS software platform (from Visual Basic to Python). U.C. Davis ICE needs support to either convert UPlan to Python or to run independent of the ESRI software. ACTC needs to work with Caltrans and U.C. Davis ICE to ensure this change takes place or the investment is threatened over the long term.
13. Provide demonstration and assistance to other rural counties. Many rural counties who participated in the Rural Blueprint program have "completed" their Blueprint projects or have been stalled or stopped by complications similar to those that have impacted Amador's progress. Few or none of the rural counties have evolved their Rural Blueprint projects into a continuing program with multiple long-term benefits as described in this report. Amador can share its work with the other counties collectively through the Rural Counties Task Force or individually to improve planning programs/processes in other parts of the State.

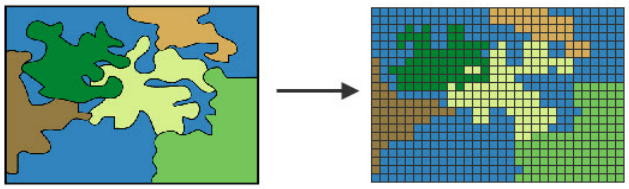
Appendix A - White Paper
Run Version: 1.1 Run Date: 09/10/2008

Inputs for Amador UPlan Regional Growth Modeling
Model Run Base Case: r080910132529
2030 Projected Growth Run
Run Date: 09/10/2008
Presentation: 9/17/2008
Run Version: 1.1

Assumptions and Inputs for Amador UPlan Regional Growth Modeling:

UPlan is a growth modeling tool developed by the University of California Davis Information Center for the Environment. It is being used by the Amador County Transportation Commission to forecast where growth may occur in future years for transportation planning purposes. The tool can also be used by other agencies to inform and influence their planning processes. The tool's premise is that population growth can be converted into demand for land by applying conversion factors to employment and housing.

UPlan operates by first dividing the project area (Amador County) and its natural/built/political features and characteristics into a grid of cells, where each cell equals a 50m by 50m area. Within each cell, there are characteristics that Attract, Discourage or Exclude (mask) new development.



ATTRACTORS
UPlan assumes that the location of new development is correlated to its proximity to natural characteristics (ex: minimal slope), man-made features (ex: access to transportation network), and/or political policies (ex: designated town centers).

DISCOURAGERS
Likewise, some features make development more difficult due to natural barriers (ex: septic constraints), infrastructure costs (ex: lack of water or sewer services), or simply less desirable (ex: proximity to airport noise or safety zones).

MASKS
In addition to attractors and discouragers, the user may define areas as an exclusion or a 'mask', in which UPlan will not allocate any new development. The use of masks has generally been limited to absolutes (for example: bodies of water).

WEIGHTING
Each attraction and discouragement feature is assigned a weighting value by the model user. This weighting value is with respect to the features potential impact on land use development. A scale of 1 to

50 is utilized for our model. Multiple layers of attraction (+) and/or discouragement (-) are aggregated to arrive at a final value of attractiveness for each cell.

UPlan uses the final sum value for each cell area to prioritize the allocation of new growth. Cells with the highest net attraction value will be developed first. Cells with lesser attraction values may be developed, but only after all cells with a greater attraction value have been allocated to development. The weights are assigned by land use type groupings.

LAND USE TYPE GROUPINGS

The general plan land use designations supersede attractions and discouragements; they will only allow the land use types and densities permitted by the general plan to be located in a given area. The actual land use designations from an adopted or proposed general plan are converted to ten corresponding UPlan land use designations. Model outputs reflect these generalized UPlan designations:

1. Industrial
2. High density commercial
3. Low density commercial
4. Very high density residential
5. High density residential
6. Medium density residential
7. Medium low density residential
8. Low density residential
9. Very low density residential
10. Extremely low density

DEMOGRAPHIC INPUTS

UPlan uses a variety of residential and employment inputs to make its land use allocation decisions (see below). By assigning a constant to the proportions of the projected population increase that live and work in the generalized UPlan residential and employment land uses, the model can identify where that increased demand for land will occur based on the attractors and discouragers.

Population Inputs[i]

Base population: **34,322 in 2010**

Future population: **51,009 in 2030**

Residential Inputs

Persons/housing unit[ii]: **2.283 in 2030**

Residential Proportions[iii]:

Residential Land Use	Description	Average Acres per Unit	Proportion of Units
Very High Density	18+ du/ac	0.08	10.97%
High Density	8-15 du/ac	0.14	10.56%
Medium Density	2-7 du/ac	0.4	31.82%
Medium Low Density	1 du/ac	2	22.86%
Low Density	1 du/5ac	6.03	10.25%
Very Low Density	1 du/40+ac	18.72	6.33%
Extremely Low Density		69.24	7.21%

Employment Inputs

Employees/Housing Unit[iv]: 1.239 (2030)

Employment Proportions[v]

Employment Land Use	Average SqFt/Emp	Average FAR	Proportion of Employees
Industry	500	.23	32%
High Density Commercial	300	.15	19.6%
Low Density Commercial	200	.35	47.2%

Vacant Land

This is the estimated percentage of land that will not be developed in the planning horizon. UPlan can randomly set aside a percentage of land that will not be available for development.

Vacant Land Percentage: **10%**

General Plan Land Use Layers

Land Use Designations	Source
Amador County General Plan (Feature Class = genplan_Jan08)	Amador County General Plan

MASKS

Mask	Source
Built Out Parcels (Fully Developed)	
Lakes	
Public Lands Unassessed	
Zero Density (OF, OW, J-OS, J-R, SC-Erikson)	
Public Lands	
Vernal Pools with 165' Buffer	
Streams with 165' Buffer	
Airport Run Way	

Attractions

ATTRACTOR	*Sources*
Communities	
Camanche Infill	
Infill Potential - Com; 1 Mile Buffer	
Infill Potential - Com; Within Bounds	
Infill Potential - Res; 1 Mile Buffer	
Infill Potential - Res; Within Bounds	
State Highways	
Major Roads	
Roads, minor	
Waste Water Infrastructure	
Spheres of Influence	
Septic Constraint - Less, East	
Transit Routes	
Commercial Vacant	
Industrial Vacant	
Residential Vacant	
Water Infrastructure	
Williamson Non-Renewal	

Discouragements

DISCOURAGEMENTS	***Sources***
Airport Noise Level 2010 - 60 db	
Airport Noise Level 2010 - 65 db	
Airport Safety Area 1	
Airport Safety Area 2	
FEMA Flood Zones	
Fire Hazard - High	
Fire Hazard - Moderate	
Fire Hazard – Very High	
Prime, Important, and Unique Farmland	
Mineral Resource Zones	
Oak Woodlands	
Roads, minor	
Serpentine Potential	
Spetic Constraint - More, West	
Timber Production Zones	
R13 East (less Kirkwood)	
Wetlands	
Williamson Act	

LAYER WEIGHTS AND BUFFERS

Layer Description	*RVH*		*RH Weight*		*RM Weight*		*RL Weight*	
		RVH Buffer		*RH Buffer*		*RM Buffer*		*RL Buffer*
ATTRACTIONS								
Communities	30	.5 mi	30	.5 mi	20	.5 mi	0	
Camanche Infill	1000	.5 mi	1000	.5 mi	1000	.5 mi	1000	.5 mi
Infill Potential - Com; 1 Mile Buffer	0		0		0		0	
Infill Potential - Com; Within Bounds	0		0		0		0	
Infill Potential - Res; 1 Mile Buffer	5		10		20		30	
Infill Potential - Res; Within Bounds	30		30		20		0	
State Highways	20	.5 mi	10	.5 mi	10	.5 mi	0	
Major Roads	20	.5 mi	20	1 mi	10	1 mi	5	2 mi
Roads, minor	0		0		0		0	
Waste Water Infrastructure	30	1 mi	30	.5 mi	30	.5 mi	0	
Spheres of Influence	50		40		40		10	
Septic Constraint - Less, East	0		0		0		10	
Transit Routes	30		10		5		0	
Commercial Vacant	0		0		0		0	
Industrial Vacant	0		0		0		0	
Residential Vacant	30		30		20		0	
Water Infrastructure	30	1 mi	30	.5 mi	30	.5 mi	0	
Williamson Non-Renewal	0		0		0		0	
DISCOURAGEMENTS								
Airport Noise Level 2010 - 60 db	30		30		30		30	
Airport Noise Level 2010 - 65 db	100		100		100		100	
Airport Safety Area 1	100		100		100		100	
Airport Safety Area 2	100		100		100		0	
FEMA Flood Zones	30		30		20		20	
Fire Hazard - High	10		10		10		10	
Fire Hazard - Moderate	5		5		5		5	
Fire Hazard – Very High	15		15		15		15	
Prime, Important, and Unique Farmland	30		30		30		20	
Mineral Resource Zones	100		100		100		100	
Oak Woodlands	15		15		15		15	
Roads, minor	30		30		20		10	
Serpentine Potential	30		30		30		15	
Spetic Constraint - More, West	30		30		30		30	
Timber Production Zones	100		100		100		100	
R13 East (less Kirkwood)	100		100		100		75	
Wetlands	10	200ft	10	200ft	10	200ft	10	
Williamson Act	100		100		100		100	

Layer Description	*RML*		*RVL Weight*		*REL Weight*		*I Weight*	
		RML Buffer		*RVL Buffer*		*REL Buffer*		*I Buffer*
ATTRACTIONS								
Communities	5	.5 mi	0		0		10	.5 mi
Camanche Infill	1000	.5 mi	1000	.5 mi	1000	.5 mi	1000	.5 mi
Infill Potential - Com; 1 Mile Buffer	0		0		0		20	
Infill Potential - Com; Within Bounds	0		0		0		10	
Infill Potential - Res; 1 Mile Buffer	20		10		0		0	
Infill Potential - Res; Within Bounds	5		0		0		0	
State Highways	0		0		0		20	.5 mi
Major Roads	10	1 mi	5	2 mi	0		20	.5 mi
Roads, minor	0		0		1000		0	
Waste Water Infrastructure	5	.5 mi	0		0		20	.5 mi
Spheres of Influence	10		0		0		0	
Septic Constraint - Less, East	20		10		0		10	
Transit Routes	0		0		0		0	
Commercial Vacant	0		0		0		10	
Industrial Vacant	0		0		0		30	
Residential Vacant	0		0		0		0	
Water Infrastructure	30	.5 mi	0		0		30	.5 mi
Williamson Non-Renewal	0		0		30		0	
DISCOURAGEMENTS								
Airport Noise Level 2010 - 60 db	30		30		30		0	
Airport Noise Level 2010 - 65 db	100		100		100		0	
Airport Safety Area 1	100		100		100		50	
Airport Safety Area 2	20		0		0		20	
FEMA Flood Zones	20		10		10		30	
Fire Hazard - High	10		10		10		10	
Fire Hazard - Moderate	5		5		5		5	
Fire Hazard – Very High	15		15		15		15	
Prime, Important, and Unique Farmland	30		10		0		30	
Mineral Resource Zones	100		100		10		10	
Oak Woodlands	15		15		15		15	
Roads, minor	15		5		0		30	
Serpentine Potential	30		10		10		30	
Spetic Constraint - More, West	30		20		0		30	
Timber Production Zones	100		100		10		100	
R13 East (less Kirkwood)	75		50		30		100	
Wetlands	10	200ft	10	200ft	10	200ft	10	200ft
Williamson Act	100		100		10		100	

Layer Description	*CH*		*CL Weight*	
		CH Buffer		*CL Buffer*
ATTRACTIONS				
Communities	10	.5 mi	20	.5 mi
Camanche Infill	1000	.5 mi	1000	.5 mi
Infill Potential - Com; 1 Mile Buffer	20		30	
Infill Potential - Com; Within Bounds	30		20	
Infill Potential - Res; 1 Mile Buffer	0		0	
Infill Potential - Res; Within Bounds	0		0	
State Highways	30	.5 mi	20	.5 mi
Major Roads	30	.5 mi	20	.5 mi
Roads, minor	0		0	
Waste Water Infrastructure	30		20	.5 mi
Spheres of Influence	0		0	
Septic Constraint - Less, East	0		10	
Transit Routes	20		10	
Commercial Vacant	30		30	
Industrial Vacant	10		10	
Residential Vacant	0		0	
Water Infrastructure	30	.5 mi	20	.5 mi
Williamson Non-Renewal	0		0	
DISCOURAGEMENTS				
Airport Noise Level 2010 - 60 db	10		10	
Airport Noise Level 2010 - 65 db	20		20	
Airport Safety Area 1	100		100	
Airport Safety Area 2	20		20	
FEMA Flood Zones	30		30	
Fire Hazard - High	10		10	
Fire Hazard - Moderate	5		5	
Fire Hazard – Very High	15		15	
Prime, Important, and Unique Farmland	30		30	
Mineral Resource Zones	100		100	
Oak Woodlands	15		15	
Roads, minor	30		30	
Serpentine Potential	30		30	
Spetic Constraint - More, West	30		30	
Timber Production Zones	100		100	
R13 East (less Kirkwood)	100		100	
Wetlands	10	200ft	10	200ft
Williamson Act	100		100	

**End Notes*

1 U.S. Census Bureau: State and County QuickFacts. Data derived from Population Estimates, Census of Population and Housing, Small Area Income and Poverty Estimates, State and County Housing Unit Estimates, County Business Patterns, Nonemployer Statistics, Economic Census, Survey of Business Owners, Building Permits, Consolidated Federal Funds Report http://quickfacts.census.gov/qfd/states/06/06005.html
2030 and 2050 projections come from State of California, Department of Finance, Race/Ethnic Population with Age and Sex Detail, 2000 – 2050. Sacramento, CA, July 2007.
All Population inputs are adjusted to subtract the Mule Creek State Prison Population of 3,769; State of California Department of Corrections and Rehabilitation website.

1 State of California, Department of Finance, E-5 Population and Housing Estimates for Cities, Counties and the State, 2001- 2007. Sacramento, California, January 1, 2007 (This number reflects vacancy rate of 14.92%).

1 Proportions are for the number of dwelling units in each land use type. They are aggregated from an analysis that considered that the past ten years of building permits, their associated number of dwelling units and parcel acreage; and was compared with the analysis of the TransCad Land Use Database (TCLUDB) used to generate the built out layer for verification.

1 CA Employment Development Department; Labor Market Information. Civilian Labor Force Annual Average 2007/No. of Households [18,100/14,611=1.239). January 1, 2007.

1 Proportions derived from the California Employment Development Department's Industry Employment Official Monthly Estimates, and an InfoUSA database of NAICS employment classifications. Each industry sector was placed into one of the following three categories: Industry, High Density Commercial or Low Density Commercial.

Appendix B - Metadata Example

Entitlements

Tags

Entitlements, UPlan, Amador County Transportation Commission, ACTC

Summary

This data was developed for use in UPlan modeling efforts. This data is intended to show proposed subdivisions within Amador County.

Description

This data set represents areas of proposed land use development within the County. These areas of proposed land use development are considered an attractor for growth because investments have been made in these areas with the intention of attracting new land uses. This makes them more attractive than other areas that are simply general plan designated to allow new development. There are three levels of entitlement, and each one is given a different weight or degree of attraction.

Category 1 = Most attractive 45 - Areas with an approved final subdivision map or parcel map. To receive final approval sewer, water, access, etc. is presumed to be in place or available.

Category 2 = Medium Weight 35 - Areas with approved tentative subdivision or parcel map. These are properties that have initiated investments to become future category 1 final maps.

Category 3 = Lowest Weight 15 - Areas with planned land use development projects where tentative and final maps are proposed but not yet processed.

Supplemental Information

Amador County and Cities were contacted and they provided lists of approved tentative and final subdivision maps. Planning files at ACTC office also contained other land use entitlements granted over the past 20 years (master plans, specific plans, etc.). These were analyzed in addition to assessor parcel maps for the entire County to identify parcels that are ready for home or commercial construction or are being prepared to be ready for such. These parcels or lots are assigned category 1, 2 and 3 and depending on their level of readiness.

Credits

Daniel Whitehorn IT/GIS Coordinator Amador County Transportation Commission Sutter Creek, CA 95670

Use limitations

The County of Amador assumes no responsibility arising from use of this data set. THIS DATA SET IS PROVIDED WITHOUT WARRANTY OF ANY KIND, expressed or implied, including but not limited to, the implied warranties of merchantability and fitness for a particular purpose. Do not make any business decisions based on this data set before validating your decision with the appropriate County Office.

Appendix C

Scenario Comparison
Acres Consumed

Layer	Base Case Acres Consumed	Alternative E Acres Consumed	Difference
Com Infill Potential	227	319	92
Res Infill Potential	4,252	4,809	557
Farmland	1,302	1,261	-41
Wetlands	75	62	-13
Spheres of Influence	1,333	1,135	-198
Far Up Country	188	224	36

Appendix D - White Paper

Run Version: 3.1.3 Run Date: 04/29/2013

Inputs for Amador UPlan Regional Growth Modeling
Model Run 2035 County: r130429145232
2035 Projected Growth Run
County Controls City's Sphere of Influence
Run Assumes Gold Rush Approved and County General Plan Applies on Band Lands
This run was review by UPlan Technical Committee on May, 20th 2013
This run was reviewed (not approved) by ACTC Board on June, 27th 2013
Run Date: 04/29/2013
Run Version: 3.1.3

Abstract

This variation includes County (not city) general plan designations inside each City's Sphere of Influence, and it doesn't include the plans of the Ione Band of Miwok and the Buena Vista Band of Miwok for properties they own or want to control in the Plymouth and Buena Vista areas. Run 3.1 include updated demographics, with base year 2012 and future year 2035 from Department of Finance to follow Amador County's Regional Transportation Plan. This run also includes an updated TCLUDB built out layer, as well as masked out road ROW's. This run also includes a new layer called Vacant Inner. This layer was created to mask out a random 10% development within the cities, SOI's, and town center. This graphically adjusted RVL randomness throughout the County to a more accurate (clustered) allocation representation.

Population Inputs

Base population[vi]: **33,923 in 2012**

Future population[vii]: **40,174 in 2035**

Residential Inputs

Persons/housing unitviii: **1.922 (2035)**

Residential Proportionsix:

Residential Land Use	Description	Average Acres per Unit	Proportion of Units
Very High Density	18+ du/ac	0.057	6%
High Density	8-15 du/ac	0.067	10%
Medium High Density	2-7 du/ac	0.143	29%
Medium Low Density	1 du/ac	1.0	11%
Low Density	1 du/5ac	5.0	26%
Very Low Density	1 du/40+ac	40	18%

Employment Inputs

Employees/Housing Unitx: **0.94 (2035)**

Employment Proportionsxi

Employment Land Use	Average SqFt/Emp	Average FAR	Proportion of Employees
Industry	1000	.22	6.5%
High Density Commercial	250	.20	63.6%
Low Density Commercial	300	.35	24%

Total = 94.1%

**Adjusted to exclude agricultural and natural resource extraction employment categories and also those persons in the labor force who live in Amador County but do not work in Amador County.*

Vacant Land

This is the estimated percentage of land that will not be developed in the planning horizon. UPlan can randomly set aside a percentage of land that will not be available for development.

Vacant Land Percentage: **10% (Within cities and communities)**

General Plan Land Use Layers

Land Use Designations	Source
County land use designations (Applies to city's spheres of influence).	Draft Land Use Diagram (DLUD) Exhibit 2 from the Notice of Preparation (NOP) for the Amador County General Plan Update, July 28, 2008.
City land use designations	Adopted City General Plans

Masks

Mask	Source
Built Out Parcels (Fully Developed)	TransCAD Land Use Database (TCLUDB)
County Roads	County wide centerline for highways and roads in Amador County
Lakes and Water Bodies	County IT Department and Amador County website. Boundaries reviewed with City Planners and LAFCO Executive Secretary and changed accordingly. `
Unassessed Lands	as per DLUD
Open Space	as per DLUD
Public Lands	as per DLUD
Slopes Greater Than 45%	National Elevation Dataset

Attractions

ATTRACTOR	*Sources*
City Limits	County IT Department and Amador County website. Boundaries reviewed with City Planners and LAFCO Executive Secretary and changed accordingly. `
Spheres of Influence	County IT Department and Amador County website. Boundaries reviewed with City Planners and LAFCO Executive Secretary and changed accordingly. `
Camanche Infill	Vacant residential parcels with a Landis ratio of .25 or less in the Camanche Village area
Town Centers	as per DLUD
Martell Regional Service Center	as per DLUD
Water Infrastructure	AWA service areas amended to show constraints per follow-up consultation with AWA and the LAFCO Municipal Services Review (MSR)
Waste Water Infrastructure	Review Findings of LAFCO MSR and consultation with County Environmental Health and AWA staff.
Major Roads-Existing Intersections where Access Control	Caltrans Freeway Agreement Map
Major Roads-ADT Count Groupings/No Access Control	Fehr and Peers Consultants
Transit Routes	Routes include a ¾ mile buffer for paratransit pickups (actual ¾ mile deviation reduced to account for road curves as grades.)
Rail Service	Provided by Chris Jordan, Ione City Planner (PMC)
Urban Area Proximities (30, 45, 60 miles)	Areas accessible to the cities of Sacramento, Stockton, Lodi, Rancho Cordova and Folsom within the designated distances via existing roads.

Discouragements

DISCOURAGEMENTS	***Sources***
Airport Noise Level 2010 - 60 db	County Dataset
Airport Noise Level 2010 - 65 db	County Dataset
Airport Safety Area 1	County Dataset
Airport Safety Area 2	County Dataset
FEMA Flood Zones	2010 Data/100 year flood plain
Fire Hazard - High	CAL FIRE: Fire Hazard Severity Zones (FHSZ) data
Fire Hazard - Moderate	CAL FIRE: Fire Hazard Severity Zones (FHSZ) data
Fire Hazard - Very High	CAL FIRE: Fire Hazard Severity Zones (FHSZ) data
Ag. Soils-Prime, Important, and Unique	Farmland Mapping and Monitoring Program (FMMP) data
High Elevation - above 6500 feet	National Elevation Dataset (NED)
Mineral Resource Zones	As per DLUD, NOP Exhibit 2
Serpentine Potential	USDA-NRCS Soil Survey Geographic Database (SSURGO)
Timber Production Zones	As per DLUD Exhibit 2
Vernal Pools	California Department of Fish and Game data
Wetlands	US Fish and Wildlife Service, Dept. of Habitat and Resource Conservation-National Wetland Inventory
Williamson Act	Assessor's tax code
Perennial Streams	National Hydrography Dataset (NHD)
Slopes (15-30, 30-45)	National Elevation Dataset

LAYER WEIGHTS AND BUFFERS

Layer Description	*RH/M*		*RL Weight*		*IND Weight*		*C Weight*	
		RH/M Buffer		*RL Buffer*		*IND Buffer*		*C Buffer*
ATTRACTIONS								
City Limits	35		0		25		25	
Spheres of Influence	15		5		20		20	
Camanche Infill	5		10		0		0	
Town Centers (BP, RP, PG)	15		0		5		5	
Regional Center (Martell)	15		0		15		15	
Water Infrastructure	15		0		15		15	
Waste Water Infrastructure	15		0		15		15	
Major Road Intersections (at Access Control)	10	.5 mi	5	.5 mi	15	.25 mi	10	.25 mi
Roads-ADT 0-5k	0	.5 mi	10	.5 mi	5	.25 mi	5	.25 mi
Roads-ADT 5-10k	5	.5 mi	5	.5 mi	10	.25 mi	10	.25 mi
Roads-ADT 10-15k	10	.5 mi	0	.5 mi	15	.25 mi	15	.25 mi
Roads-ADT 15+k	10	.5 mi	0	.5 mi	20	.25 mi	20	.25 mi
Transit Routes	10	.5 mi	0	.5 mi	0	.5 mi	5	.5 mi
Railroad	0		0		5	.25 mi	0	
Urban Areas Proximity 0-30 miles	15		15		0		0	
Urban Area Proximity 30-45 miles	10		10		0		0	
Urban Area Proximity 45-60 miles	5		5		0		0	
DISCOURAGEMENTS								
Airport Noise Level - 60 db	30		30		0		10	
Airport Noise Level- 65 db	50		50		0		20	
Airport Safety Area 1	50		50		50		50	
Airport Safety Area 2	50		0		20		20	
FEMA Flood Zones	30		20		30		30	
Fire Hazard - Moderate	5		5		5		5	
Fire Hazard - High	10		10		10		10	
Fire Hazard - Very High	15		15		15		15	
Ag Soils-Prime, Important and Unique Farmland	15		10		15		15	
High Elevation -above 6500 ft.	15		15		15		15	
Mineral Resource Zones	50		50		10		50	
Serpentine Potential	10		10		10		10	
Timber Production Zones	50		50		50		50	
Vernal Pools	10		10		10		10	
Wetlands	10	200 ft.	10	200 ft.	10	200 ft.	10	200 ft.
Williamson Act	50		50		50		50	
Perennial Streams	20		5		20		20	
Slope 15-30%	10		5		30		25	
Slope 30-45%	50		20		50		50	

End Notes

[1] *State of California, Department of Finance, Report P-2: State and County Population Projections by Race/Ethnicity and 5-Year Age Groups, 2010-2060. Sacramento, California, January 2013.* (http://www.dof.ca.gov/research/demographic/reports/projections/P-2/)
All Population inputs are adjusted to subtract the Mule Creek State Prison Population of 2,976; State of California Department of Corrections and Rehabilitation (12 month average from Monthly Report of Population (Feb 2012 - January 2013). The Prison population is assumed to remain constant through the planning horizon.
http://www.cdcr.ca.gov/Reports_Research/Offender_Information_Services_Branch/Monthly/Monthly_Tpop1a_Archive.html)

[1] *State of California, Department of Finance, Report P-1 (County): State and County Total Population Projections, 2010-2060. Sacramento, California, January 2013. (http://www.dof.ca.gov/research/demographic/reports/projections/P-1/)*
All Population inputs are adjusted to subtract the Mule Creek State Prison Population of 2,976; State of California Department of Corrections and Rehabilitation (12 month average from Monthly Report of Population (Feb 2012 - January 2013). The Prison population is assumed to remain constant through the planning horizon.
http://www.cdcr.ca.gov/Reports_Research/Offender_Information_Services_Branch/Monthly/Monthly_Tpop1a_Archive.html)
[1] *Calculated by dividing the total population projections (minus the Mule Creek State Prison Population) by the housing unit estimates (occupied housing units).*

[1] *Proportions are for the number of dwelling units in each land use type. They are aggregated from an analysis that considered that the past ten years of building permits, their associated number of dwelling units and parcel acreage; and was compared with the analysis of the TransCAD Land Use Database (TCLUDB) used to generate the built out layer for verification.*

[1] *Calculated by dividing the labor force estimates by the occupied housing unit estimates.*

[1] *Proportions derived from the California Employment Development Department's Industry Employment Official Monthly Estimates, 2009 and an InfoUSA database of NAICS employment classifications. Each industry sector was placed into one of the following three categories: Industry, High Density Commercial or Low Density Commercial.*

Appendix E - White Paper

Run Version: 3.2.7 Run Date: 09/30/2013

Inputs for Amador UPlan Regional Growth Modeling
Model Run 2035 County: r130930112735
2035 Projected Growth Run
County Controls City's Sphere of Influence
Run Assumes Gold Rush Approved and County General Plan Applies on Band Lands
Run Date: 09/30/2013
Run Version: 3.2.7

Abstract

This variation includes County (not city) general plan designations inside each City's Sphere of Influence, and it doesn't include the plans of the Ione Band of Miwok and the Buena Vista Band of Miwok for properties they own or want to control in the Plymouth and Buena Vista areas. Similar to Run 3.1.3 (see 3.1.3_County2035_RunSummary.doc), Run 3.2.7 includes updated demographics (with base year 2012 and future year 2035 from Department of Finance), an updated TCLUDB built out layer, and a Vacant Inner layer (This layer masks out a random 10% of development within the cities, SOI's, and town center). Run 3.2.7 builds upon Run 3.1.3 in the following ways:

- An updated slope layer was used (old slope was in degrees, new slope is in percent).
- Slopes > 30% were masked in the city of Jackson.
- Slopes > 45% were masked in the rest of the county (except for Residential Very Low which is masked for slopes > 100%).
- A newer version of the city boundaries were used as an attractor.
- A newer version of the city SOI's were used as an attractor and updated to exclude any overlap with city boundaries.
- The town center attractors were updated by closing off the ROW's to create a contiguous feature class thus giving the raster a more solid appearance (as opposed to being "broken-up").
- The transit buffer attractor was increased to ¾ mile.
- The water service attractor was updated to exclude any overlap with city boundaries
- The Average Daily Traffic (ADT) count attractors and the Major Road Intersection (at Access Control) attractors were updated to exclude any overlap between the buffers. The buffers were erased so that the highest volume roads take precedence.
- An attractor for Residential Low was added in the city limits.
- The decommissioned rail line attractor was removed from Ione to Sutter Creek.
- The attractor for Camanche Infill was removed.
- An attractor was added for areas identified with entitlements.
    - Three categories were used to assign a relative weight to the entitlements based on their level of investment and approval. Category 1 is the most attractive and Category 3 is the least. Zinfandel entitlement in Plymouth was assigned a category 2 even though its actual designation was a category 3.
- Attraction weights for Spheres of Influence, Town Centers, Regional Centers, and Water and Waste Water Infrastructure were reduced.
- The MRZ discourager was updated to correspond to the MRZ land use in the DLUD.
- A discourager was added for Camanche sewer and water constraints.

- The public lands mask was updated.
- A mask was added for Open Space.
- A mask was added for transmission lines.
- Timber Production Zones (TPZ) and Williamson Act discouragers were reassigned as masks.
- The DLUD was updated in Martel for the ROWs (was classified as UPlan Code = 16, changed to UPlan Code = 0)

Population Inputs

Base population[xii]: **33,923 in 2012**

Future population[xiii]: **40,174 in 2035**

Residential Inputs

Persons/housing unit[xiv]: **1.922 (2035)**

Residential Proportions[xv]:

Residential Land Use	Description	Average Acres per Unit	Proportion of Units
Very High Density	18+ du/ac	0.057	6%
High Density	8-15 du/ac	0.067	10%
Medium High Density	2-7 du/ac	0.143	29%
Medium Low Density	1 du/ac	1.0	11%
Low Density	1 du/5ac	5.0	26%
Very Low Density	1 du/40+ac	40	18%

Employment Inputs

Employees/Housing Unit[xvi]: **0.94 (2035)**

Employment Proportions[xvii]:

Employment Land Use	Average SqFt/Emp	Average FAR	Proportion of Employees
Industry	1000	.22	6.5%
High Density Commercial	250	.20	63.6%
Low Density Commercial	300	.35	24%

Total = 94.1%

**Adjusted to exclude agricultural and natural resource extraction employment categories and also those persons in the labor force who live in Amador County but do not work in Amador County. Therefore, UPlan allocates only 94.1% of the jobs to the four employment land uses (industry, very high density commercial and high density commercial and low density commercial). The nature of agricultural and natural resource extraction employment (including jobs related to farming, mining, logging, etc.) make it difficult to model in the manner that other land uses are modeled by UPlan. Some of those jobs are not fixed in a single location. In addition, location decisions for these uses are influenced by a different set of attractors and discouragements than those established for more conventional industrial and commercial uses.*

Vacant Land

This is the estimated percentage of land that will not be developed in the planning horizon. UPlan can randomly set aside a percentage of land that will not be available for development.

Vacant Land Percentage: **10% (Within cities and communities)**

GENERAL PLAN LAND USE LAYERS

Land Use Designations	Source
County land use designations (Applies to city's spheres of influence).	Draft Land Use Diagram (DLUD) Exhibit 2 from the Notice of Preparation (NOP) for the Amador County General Plan Update, July 28, 2008.
City land use designations	Adopted City General Plans

MASKS

Mask	Source
Built Out Parcels (Fully Developed)	TransCAD Land Use Database (TCLUDB)
County Roads	County wide centerline for highways and roads in Amador County
Lakes and Water Bodies	County IT Department and Amador County website. Boundaries reviewed with City Planners and LAFCO Executive Secretary and changed accordingly. `
Unassessed Lands	as per DLUD
Open Space	as per DLUD
Public Lands	as per DLUD
Slopes Greater Than 45% (except for RVL which is masked for slopes > 100%)	National Elevation Dataset
Slopes Greater than 30% in the city of Jackson	
Timber Production Zones	As per DLUD Exhibit 2
Williamson Act	Assessor's tax code
Transmission Lines	

Attractions

ATTRACTOR	*Sources*
City Limits	County IT Department and Amador County website. Boundaries reviewed with City Planners and LAFCO Executive Secretary and changed accordingly.
Spheres of Influence	County IT Department and Amador County website. Boundaries reviewed with City Planners and LAFCO Executive Secretary and changed accordingly.
Town Centers	as per DLUD
Martell Regional Service Center	as per DLUD
Water Infrastructure	AWA service areas amended to show constraints per follow-up consultation with AWA and the LAFCO Municipal Services Review
Waste Water Infrastructure	Review Findings and consultation with County Environmental Health and AWA staff.
Major Roads-Existing Intersections where Access Control	Caltrans Freeway Agreement Map
Major Roads-ADT Count Groupings/No Access Control	Fehrs and Peers Consultants
Transit Routes	Routes include a ½ mile buffer for paratransit pickups (actual ¾ mile deviation reduced to account for road curves as grades.)
Rail Service	Provided by Chris Jordan
Urban Area Proximities (30, 45, 60 miles)	Areas accessible to the cities of Sacramento, Stockton, Lodi, Rancho Cordova and Folsom within the designated distances via existing roads.
Entitlements	Areas of proposed land use development within the County

Discouragements

DISCOURAGEMENTS	***Sources***
Airport Noise Level 2010 - 60 db	County Dataset
Airport Noise Level 2010 - 65 db	County Dataset
Airport Safety Area 1	County Dataset
Airport Safety Area 2	County Dataset
FEMA Flood Zones	2010 Data/100 year flood plain
Fire Hazard - High	CAL FIRE: Fire Hazard Severity Zones (FHSZ) data
Fire Hazard - Moderate	CAL FIRE: Fire Hazard Severity Zones (FHSZ) data
Fire Hazard - Very High	CAL FIRE: Fire Hazard Severity Zones (FHSZ) data
Ag. Soils-Prime, Important, and Unique	Farmland Mapping and Monitoring Program (FMMP) data
High Elevation - above 6500 feet	National Elevation Dataset (NED)
Mineral Resource Zones	As per DLUD, NOP Exhibit 2
Serpentine Potential	USDA-NRCS Soil Survey Geographic Database (SSURGO)
Vernal Pools	California Department of Fish and Game data
Wetlands	US Fish and Wildlife Service, Dept. of Habitat and Resource Conservation-National Wetland Inventory
Perennial Streams	National Hydrography Dataset (NHD)
Slopes (15-30, 30-45)	National Elevation Dataset

LAYER WEIGHTS AND BUFFERS

Layer Description	*RH/M*		*RL Weight*		*IND Weight*		*C Weight*	
		RH/M Buffer		*RL Buffer*		*IND Buffer*		*C Buffer*
ATTRACTIONS								
City Limits	35		5		25		25	
Spheres of Influence	10		5		10		10	
Town Centers (BP, RP, PG)	10		0		5		5	
Regional Center (Martell)	10		0		10		10	
Water Infrastructure	10		0		10		10	
Waste Water Infrastructure	10		0		10		10	
Major Road Intersections (at Access Control)	10	½ mi	5	½ mi	15	¼ mi	10	¼ mi
Roads-ADT 0-5k	0	½ mi	10	½ mi	5	¼ mi	5	¼ mi
Roads-ADT 5-10k	5	½ mi	5	½ mi	10	¼ mi	10	¼ mi
Roads-ADT 10-15k	10	½ mi	0	½ mi	15	¼ mi	15	¼ mi
Roads-ADT 15+k	10	½ mi	0	½ mi	20	¼ mi	20	¼ mi
Transit Routes	10	¾ mi	0	¾ mi	0	¾ mi	5	¾ mi
Railroad	0		0		5	¼ mi	0	
Urban Areas Proximity 0-30 miles	15		15		0		0	
Urban Area Proximity 30-45 miles	10		10		0		0	
Urban Area Proximity 45-60 miles	5		5		0		0	
Entitlement Category 1	45		45		45		45	
Entitlement Category 2	30		30		30		30	
Entitlement Category 3	15		15		15		15	
DISCOURAGEMENTS								
Airport Noise Level - 60 db	30		30		0		10	
Airport Noise Level- 65 db	50		50		0		20	
Airport Safety Area 1	50		50		50		50	
Airport Safety Area 2	50		0		20		20	
FEMA Flood Zones	30		20		30		30	
Fire Hazard - Moderate	5		5		5		5	
Fire Hazard - High	10		10		10		10	
Fire Hazard - Very High	15		15		15		15	
Ag Soils-Prime, Important and Unique Farmland	15		10		15		15	
High Elevation -above 6500 ft.	15		15		15		15	
Mineral Resource Zones	50		50		10		50	
Serpentine Potential	10		10		10		10	
Vernal Pools	10		10		10		10	
Wetlands	10	200 ft.	10	200 ft.	10	200 ft.	10	200 ft.
Perennial Streams	20		5		20		20	
Slope 15-30%	10		5		30		25	
Slope 30-45%	50		20		50		50	
Camanche Water and Wastewater Constraints	15		15		15		15	

[1] *State of California, Department of Finance, Report P-2: State and County Population Projections by Race/Ethnicity and 5-Year Age Groups, 2010-2060. Sacramento, California, January 2013. (http://www.dof.ca.gov/research/demographic/reports/projections/P-2/) All Population inputs are adjusted to subtract the Mule Creek State Prison Population of 2,976; State of California Department of Corrections and Rehabilitation (12 month average from Monthly Report of Population (Feb 2012 - January 2013). The Prison population is assumed to remain constant through the planning horizon. http://www.cdcr.ca.gov/Reports_Research/Offender_Information_Services_Branch/Monthly/Monthly_Tpop1a_Archive.html)*

[1] *State of California, Department of Finance, Report P-1 (County): State and County Total Population Projections, 2010-2060. Sacramento, California, January 2013. (http://www.dof.ca.gov/research/demographic/reports/projections/P-1/) All Population inputs are adjusted to subtract the Mule Creek State Prison Population of 2,976; State of California Department of Corrections and Rehabilitation (12 month average from Monthly Report of Population (Feb 2012 - January 2013). The Prison population is assumed to remain constant through the planning horizon. http://www.cdcr.ca.gov/Reports_Research/Offender_Information_Services_Branch/Monthly/Monthly_Tpop1a_Archive.html)*

[1] *Calculated by dividing the total population projections (minus the Mule Creek State Prison Population) by the housing unit projections (occupied housing units). Housing unit projections for 2035 were derived from the following source: State of California, Department of Finance, E-5 Population and Housing Estimates for Cities, Counties, and the State, 2011 and 2012, with 2010 Benchmark. Sacramento, California, May 2012. (http://www.dof.ca.gov/research/demographic/reports/estimates/e-5/2011-20/view.php).*
The housing units reflect a vacancy rate of 18.11% (average annual vacancy rate based on a ten year historical trend (2002-2012; State of California, Department of Finance, E-8 Historical Population and Housing Estimates for Cities, Counties, and the State, 2000-2010. Sacramento, California, November 2012 (http://www.dof.ca.gov/research/demographic/reports/estimates/e-8/2000-10/))
Occupied Housing Units = (1-Vacancy Rate) x Total Housing Units.
The 2035 housing unit number is extrapolated out to 2035 from 18,111 total housing units in 2012 with an average increase of 1.5% in total housing units based on a ten year historical trend (2002-2012; State of California, Department of Finance, E-8 Historical Population and Housing Estimates for Cities, Counties, and the State, 2000-2010. Sacramento, California, November 2012 (http://www.dof.ca.gov/research/demographic/reports/estimates/e-8/2000-10/) and a vacancy rate of 18.11%. Both the percent increase and vacancy rate are assumed to remain constant through the planning horizon.

[1] *Proportions are for the number of dwelling units in each land use type. They are aggregated from an analysis that considered that the past ten years of building permits, their associated number of dwelling units and parcel acreage; and was compared with the analysis of the TransCAD Land Use Database (TCLUDB) used to generate the built out layer for verification.*

[1] *Calculated by dividing the labor force projections for 2035 by the occupied housing unit projections. The 2035 labor force projection was calculated based on the proportion of the 2012 population that was considered part of the labor force (State of California, Employment Development Department, Unemployment Rates and Labor Force - Amador County Labor Force (http://www.calmis.ca.gov/htmlfile/county/amador.htm) January 18, 2013 (Annual Averages January 2012-December 2012). Labor Force data are based upon "place of residence" –where people live, regardless of where they work.The Labor Force is made up of "employed" and "unemployed people"; it excludes all the people who don't work and are not trying to find work. Labor Force is not seasonally adjusted). This equated to 48.85% of the 2012 population. That proportion was then applied to the Department of Finance's population projections for 2035. The model assumes the labor force growth is proportionally consistent with population growth.*

[1] *Proportions derived from the California Employment Development Department's Industry Employment Official Monthly Estimates, 2009 and an InfoUSA database of NAICS employment classifications. Each industry sector was placed into one of the following three categories: Industry, High Density Commercial or Low Density Commercial.*

Appendix F - White Paper

Run Version: 3.2.9 Run Date: 10/17/2013

Inputs for Amador UPlan Regional Growth Modeling
Model Run 2035 County: r131017153004
2035 Projected Growth Run
County Controls City's Sphere of Influence
Run Assumes Gold Rush Approved and County General Plan Applies on Band Lands
Run Date: 10/17/2013
Run Version: 3.2.9

Abstract

This variation includes County (not city) general plan designations inside each City's Sphere of Influence, and it doesn't include the plans of the Ione Band of Miwok and the Buena Vista Band of Miwok for properties they own or want to control in the Plymouth and Buena Vista areas. Similar to Run 3.1.3 (see 3.1.3_County2035_RunSummary.doc), Run 3.2.9 includes updated demographics (with base year 2012 and future year 2035 from Department of Finance), an updated TCLUDB built out layer, and a Vacant Inner layer (This layer masks out a random 10% of development within the cities, SOI's, and town center). Run 3.2.9 builds upon Run 3.1.3 in the following ways:

- An updated slope layer was used (old slope was in degrees, new slope is in percent).
- Slopes > 30% were masked in the city of Jackson.
- Slopes > 45% were masked in the rest of the county (except for Residential Very Low which is masked for slopes > 100%).
- A newer version of the city boundaries were used as an attractor.
- A newer version of the city SOI's were used as an attractor and updated to exclude any overlap with city boundaries.
- The town center attractors were updated by closing off the ROW's to create a contiguous feature class thus giving the raster a more solid appearance (as opposed to being "broken-up").
- The transit buffer attractor was increased to ¾ mile.
- The water service attractor was updated to exclude any overlap with city boundaries.
- The Average Daily Traffic (ADT) count attractors and the Major Road Intersection (at Access Control) attractors were updated to exclude any overlap between the buffers. The buffers were erased so that the highest volume roads take precedence.
- The decommissioned rail line attractor was removed from Ione to Sutter Creek.
- The attractor for Camanche Infill was removed.
- An attractor was added for areas identified with entitlements.
    - Three categories were used to assign a relative weight to the entitlements based on their level of investment and approval. Category 1 is the most attractive and Category 3 is the least. Zinfandel entitlement in Plymouth was assigned a category 2 even though its actual designation was a category 3.
- Attraction weights for Spheres of Influence, Town Centers, Regional Centers, and Water and Waste Water Infrastructure were reduced.
- A commercial attractor was added within a proximity to new residential (excluding low and very low density) development "clusters".
- The MRZ discourager was updated to correspond to the MRZ land use in the DLUD.

- A discourager was added for Camanche sewer and water constraints.
- The public lands mask was updated.
- A mask was added for Open Space.
- A mask was added for transmission lines.
- Timber Production Zones (TPZ) and Williamson Act discouragers were reassigned as masks.
- The DLUD was updated to reflect the new land use for the areas that were annexed to the cities.
- The DLUD was updated in Martel for the ROWs (was classified as UPlan Code = 16, changed to UPlan Code = 0).

- Residential proportions were adjusted based on the trend that populations are shifting towards urban areas.

Population Inputs

Base population[xviii]: **33,923 in 2012**

Future population[xix]: **40,174 in 2035**

Residential Inputs

Persons/housing unit[xx]: **1.922 (2035)**

Residential Proportions[xxi]:

Residential Land Use	Description	Average Acres per Unit	Proportion of Units
Very High Density	18+ du/ac	0.057	9%
High Density	8-15 du/ac	0.067	14%
Medium High Density	2-7 du/ac	0.143	34%
Medium Low Density	1 du/ac	1.0	9%
Low Density	1 du/5ac	5.0	21%
Very Low Density	1 du/40+ac	40	13%

Employment Inputs

Employees/Housing Unit[xxii]: **0.94 (2035)**

Employment Proportions[xxiii]:

Employment Land Use	Average SqFt/Emp	Average FAR	Proportion of Employees
Industry	1000	.22	6.5%
High Density Commercial	250	.20	63.6%
Low Density Commercial	300	.35	24%

Total = 94.1%

**Adjusted to exclude agricultural and natural resource extraction employment categories and also those persons in the labor force who live in Amador County but do not work in Amador County. Therefore, UPlan allocates only 94.1% of the jobs to the four employment land uses (industry, very high density commercial and high density commercial and low density commercial). The nature of agricultural and natural resource extraction employment (including jobs related to farming, mining, logging, etc.) make it difficult to model in the manner that other land uses are modeled by UPlan. Some of those jobs are not fixed in a single location. In addition, location decisions for these uses are influenced by a different set of attractors and discouragements than those established for more conventional industrial and commercial uses.*

Vacant Land

This is the estimated percentage of land that will not be developed in the planning horizon. UPlan can randomly set aside a percentage of land that will not be available for development.

Vacant Land Percentage: **10% (Within cities and communities)**

GENERAL PLAN LAND USE LAYERS

Land Use Designations	Source
County land use designations (Applies to city's spheres of influence).	Draft Land Use Diagram (DLUD) Exhibit 2 from the Notice of Preparation (NOP) for the Amador County General Plan Update, July 28, 2008.
City land use designations	Adopted City General Plans

MASKS

Mask	Source
Built Out Parcels (Fully Developed)	TransCAD Land Use Database (TCLUDB)
County Roads	County wide centerline for highways and roads in Amador County
Lakes and Water Bodies	County IT Department and Amador County website. Boundaries reviewed with City Planners and LAFCO Executive Secretary and changed accordingly. `
Unassessed Lands	as per DLUD
Open Space	as per DLUD
Public Lands	as per DLUD
Slopes Greater Than 45% (except for RVL which is masked for slopes > 100%)	National Elevation Dataset
Slopes Greater than 30% in the city of Jackson	
Timber Production Zones	As per DLUD Exhibit 2
Williamson Act	Assessor's tax code
Transmission Lines	

Attractions

ATTRACTOR	*Sources*
City Limits	County IT Department and Amador County website. Boundaries reviewed with City Planners and LAFCO Executive Secretary and changed accordingly.
Spheres of Influence	County IT Department and Amador County website. Boundaries reviewed with City Planners and LAFCO Executive Secretary and changed accordingly.
Town Centers	as per DLUD
Martell Regional Service Center	as per DLUD
Water Infrastructure	AWA service areas amended to show constraints per follow-up consultation with AWA and the LAFCO Municipal Services Review
Waste Water Infrastructure	Review Findings and consultation with County Environmental Health and AWA staff.
Major Roads-Existing Intersections where Access Control	Caltrans Freeway Agreement Map
Major Roads-ADT Count Groupings/No Access Control	Fehrs and Peers Consultants
Transit Routes	Routes include a ½ mile buffer for paratransit pickups (actual ¾ mile deviation reduced to account for road curves as grades.)
Rail Service	Provided by Chris Jordan
Urban Area Proximities (30, 45, 60 miles)	Areas accessible to the cities of Sacramento, Stockton, Lodi, Rancho Cordova and Folsom within the designated distances via existing roads.
Entitlements	Areas of proposed land use development within the County
Local Commercial Attractor	Commercial only attraction within a proximity of new residential development "clusters"

Discouragements

DISCOURAGEMENTS	***Sources***
Airport Noise Level 2010 - 60 db	County Dataset
Airport Noise Level 2010 - 65 db	County Dataset
Airport Safety Area 1	County Dataset
Airport Safety Area 2	County Dataset
FEMA Flood Zones	2010 Data/100 year flood plain
Fire Hazard - High	CAL FIRE: Fire Hazard Severity Zones (FHSZ) data
Fire Hazard - Moderate	CAL FIRE: Fire Hazard Severity Zones (FHSZ) data
Fire Hazard - Very High	CAL FIRE: Fire Hazard Severity Zones (FHSZ) data
Ag. Soils-Prime, Important, and Unique	Farmland Mapping and Monitoring Program (FMMP) data
High Elevation - above 6500 feet	National Elevation Dataset (NED)
Mineral Resource Zones	As per DLUD, NOP Exhibit 2
Serpentine Potential	USDA-NRCS Soil Survey Geographic Database (SSURGO)
Vernal Pools	California Department of Fish and Game data
Wetlands	US Fish and Wildlife Service, Dept. of Habitat and Resource Conservation-National Wetland Inventory
Perennial Streams	National Hydrography Dataset (NHD)
Slopes (15-30, 30-45)	National Elevation Dataset

LAYER WEIGHTS AND BUFFERS

Layer Description	*RH/M*		*RL Weight*		*IND Weight*		*C Weight*	
		RH/M Buffer		*RL Buffer*		*IND Buffer*		*C Buffer*
ATTRACTIONS								
City Limits	35		0		25		25	
Spheres of Influence	10		5		10		10	
Town Centers (BP, RP, PG)	10		0		5		5	
Regional Center (Martell)	10		0		10		10	
Water Infrastructure	10		0		10		10	
Waste Water Infrastructure	10		0		10		10	
Major Road Intersections (at Access Control)	10	½ mi	5	½ mi	15	¼ mi	10	¼ mi
Roads-ADT 0-5k	0	½ mi	10	½ mi	5	¼ mi	5	¼ mi
Roads-ADT 5-10k	5	½ mi	5	½ mi	10	¼ mi	10	¼ mi
Roads-ADT 10-15k	10	½ mi	0	½ mi	15	¼ mi	15	¼ mi
Roads-ADT 15+k	10	½ mi	0	½ mi	20	¼ mi	20	¼ mi
Transit Routes	10	¾ mi	0	¾ mi	0	¾ mi	5	¾ mi
Railroad	0		0		5	¼ mi	0	
Urban Areas Proximity 0-30 miles	15		15		0		0	
Urban Area Proximity 30-45 miles	10		10		0		0	
Urban Area Proximity 45-60 miles	5		5		0		0	
Entitlement Category 1	45		45		45		45	
Entitlement Category 2	30		30		30		30	
Entitlement Category 3	15		15		15		15	
Local Commercial	0		0		0		15	
DISCOURAGEMENTS								
Airport Noise Level - 60 db	30		30		0		10	
Airport Noise Level- 65 db	50		50		0		20	
Airport Safety Area 1	50		50		50		50	
Airport Safety Area 2	50		0		20		20	
FEMA Flood Zones	30		20		30		30	
Fire Hazard - Moderate	5		5		5		5	
Fire Hazard - High	10		10		10		10	
Fire Hazard - Very High	15		15		15		15	
Ag Soils-Prime, Important and Unique Farmland	15		10		15		15	
High Elevation -above 6500 ft.	15		15		15		15	
Mineral Resource Zones	50		50		10		50	
Serpentine Potential	10		10		10		10	
Vernal Pools	10		10		10		10	
Wetlands	10	200 ft.	10	200 ft.	10	200 ft.	10	200 ft.
Perennial Streams	20		5		20		20	
Slope 15-30%	10		5		30		25	
Slope 30-45%	50		20		50		50	
Camanche Water and Wastewater Constraints	15		15		15		15	

[xviii] *State of California, Department of Finance, Report P-2: State and County Population Projections by Race/Ethnicity and 5-Year Age Groups, 2010-2060. Sacramento, California, January 2013.*
(http://www.dof.ca.gov/research/demographic/reports/projections/P-2/)
All Population inputs are adjusted to subtract the Mule Creek State Prison Population of 2,976; State of California Department of Corrections and Rehabilitation (12 month average from Monthly Report of Population (Feb 2012 - January 2013). The Prison population is assumed to remain constant through the planning horizon.
http://www.cdcr.ca.gov/Reports_Research/Offender_Information_Services_Branch/Monthly/Monthly_Tpop1a_Archive.html)

[xix] *State of California, Department of Finance, Report P-1 (County): State and County Total Population Projections, 2010-2060. Sacramento, California, January 2013.*
(http://www.dof.ca.gov/research/demographic/reports/projections/P-1/)
All Population inputs are adjusted to subtract the Mule Creek State Prison Population of 2,976; State of California Department of Corrections and Rehabilitation (12 month average from Monthly Report of Population (Feb 2012 - January 2013). The Prison population is assumed to remain constant through the planning horizon.
http://www.cdcr.ca.gov/Reports_Research/Offender_Information_Services_Branch/Monthly/Monthly_Tpop1a_Archive.html)

[xx] *Calculated by dividing the total population projections (minus the Mule Creek State Prison Population) by the housing unit projections (occupied housing units). Housing unit projections for 2035 were derived from the following source: State of California, Department of Finance, E-5 Population and Housing Estimates for Cities, Counties, and the State, 2011 and 2012, with 2010 Benchmark. Sacramento, California, May 2012.*
(http://www.dof.ca.gov/research/demographic/reports/estimates/e-5/2011-20/view.php).
The housing units reflect a vacancy rate of 18.11% (average annual vacancy rate based on a ten year historical trend (2002-2012; State of California, Department of Finance, E-8 Historical Population and Housing Estimates for Cities, Counties, and the State, 2000-2010. Sacramento, California, November 2012
(http://www.dof.ca.gov/research/demographic/reports/estimates/e-8/2000-10/))
Occupied Housing Units = (1-Vacancy Rate) x Total Housing Units.
The 2035 housing unit number is extrapolated out to 2035 from 18,111 total housing units in 2012 with an average increase of 1.5% in total housing units based on a ten year historical trend (2002-2012; State of California, Department of Finance, E-8 Historical Population and Housing Estimates for Cities, Counties, and the State, 2000-2010. Sacramento, California, November 2012 (http://www.dof.ca.gov/research/demographic/reports/estimates/e-8/2000-10/) and a vacancy rate of 18.11%. Both the percent increase and vacancy rate are assumed to remain constant through the planning horizon.

[xxi] *Proportions are for the number of dwelling units in each land use type. They are projections for the proportion of dwelling units in each land use type in 2035 based upon recent trends in housing preference. A baseline was established based upon an aggregation from an analysis that considered the past ten years of building permits (2000-2010), their associated number of dwelling units and parcel acreage. The baseline (VHD = 6%; HD = 10%; MHD = 29%; MLD = 11%; LD = 26%; VLD = 19%) was compared with the analysis of the TransCad Land Use Database (TCLUDB) used*

to generate the built out layer for verification. The base line proportions have been adjusted to reflect changes in housing preference due across a broad spectrum of socioeconomic classes and ages, as well as changing costs of transportation and housing relative to incomes and to each other. Based upon the California Department of Finance Demographic Research Unit's Report P-1 (Age) "State and County Population Projections by Major Age Groups" dated January 31, 2013, the proportion of the County population aged 25-64 years will decrease from approximately 56.1% in 2010 to 43.9% by 2030. The same source projects that the proportion of older adults in the County will increase with those 65-74 years of age increasing as a proportion of the total population from 11.8% in 2010 to 18.3% in 2030. Those residents of 85 years or older will increase as a proportion of the total population from 2.6% in 2010 to 4.0% in 2030. Also, the California Department of Finance Demographic Research Unit's Report P-1 (Race/Ethnicity) "State and County Population Projections by Race/Ethnicity" dated January 31, 2013, the proportion of the County population that self-reports as White will decrease from 79.5% in 2010 to 70.6% in 2030. Also, the proportion of the population self-reporting as Hispanic or Latino is projected to increase from 12.8% in 2010 to 19.9% in 2030. These factors suggest that the population of Amador County will begin to show an increased preference for smaller slot single family housing, attached housing and multifamily housing in and near urbanized areas (Myers and Ryu. Aging Baby Boomers and the Generational Housing Bubble. Journal of the American Planning Association, Winter 2008, Vol. 74, No. 1 and hael Mendez (2005) "Latino New Urbanism: Building on Cultural Preferences", Opolis: An International Journal of Suburban and Metropolitan Studies: Vol. 1: No. 1, Article 5. http://repositories.cdlib.org/cssd/opolis/vol1/iss1/art5)..

[xxii] *Calculated by dividing the labor force projections for 2035 by the occupied housing unit projections. The 2035 labor force projection was calculated based on the proportion of the 2012 population that was considered part of the labor force (State of California, Employment Development Department, Unemployment Rates and Labor Force - Amador County Labor Force (http://www.calmis.ca.gov/htmlfile/county/amador.htm) January 18, 2013 (Annual Averages January 2012-December 2012). Labor Force data are based upon "place of residence" –where people live, regardless of where they work.The Labor Force is made up of "employed" and "unemployed people"; it excludes all the people who don't work and are not trying to find work. Labor Force is not seasonally adjusted). This equated to 48.85% of the 2012 population. That proportion was then applied to the Department of Finance's population projections for 2035. The model assumes the labor force growth is proportionally consistent with population growth.*

[xxiii] *Proportions derived from the California Employment Development Department's Industry Employment Official Monthly Estimates, 2009 and an InfoUSA database of NAICS employment classifications. Each industry sector was placed into one of the following three categories: Industry, High Density Commercial or Low Density Commercial.*