Scenario Planning Peer Workshop

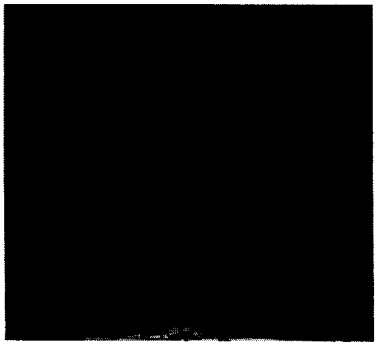
Sponsored by the Federal Highway Administration

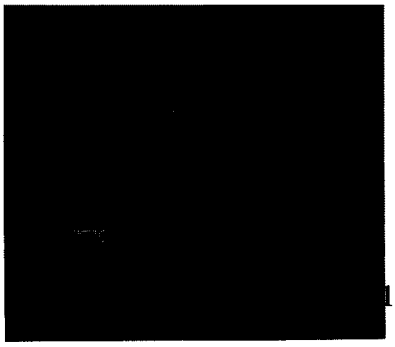
Location:	Chico, California
Date:	August 9, 2006
Workshop Host Agencies:	Butte County Association of Governments California Department of Transportation Federal Highway Administration, California Division Shasta County Regional Transportation Planning Agency Tahoe Regional Planning Agency
Workshop Participants:	Butte Local Agency Formation Commission California State University, Chico Cities of Redding, Shasta Lake Counties of Butte, Shasta, Tehama ENPLAN Federal Highway Administration Merced County Association of Governments (MCAG) Thomas Jefferson Planning District Commission University of California, Davis Volpe National Transportation Systems Center

Summary

The following report summarizes a Peer Workshop on tools and effective practices for scenario planning. The Federal Highway Administration (FHWA) coordinated and led the daylong workshop in Chico, California. Presenters from the FHWA provided participants with an overview of the scenario planning process and described available resources and tools to assist with scenario planning analysis. Local presenters from the Butte County Association of Governments, Shasta County Regional Transportation Planning Agency, and Tahoe Regional Planning Agency discussed population, quality of life, and development trends in their region. The region is known for its natural resources and prime agricultural lands, but does face development pressure. Host agencies are starting today to proactively plan for change and growth, and are interested in using scenario planning techniques to do so.

Peer presenters from the Thomas Jefferson Planning District Commission and Merced County Association of Governments presented information on their regions' scenario planning efforts, including the Jefferson Area Eastern Planning Initiative, the Partnership for Integrated Planning (PIP) project, and the new San Joaquin Valley Blueprint Project.





I. Introduction

Jody McCullough of the FHWA Office of Planning began the workshop by presenting an overview of scenario planning and the FHWA's role in supporting its use.

FHWA's definition of scenario planning is "a process in which transportation professionals and citizens work together to analyze and shape the long-term future of their communities. Using a variety of tools and techniques, participants assess trends in key factors such as transportation, land use, demographics, health, etc. Participants bring the factors together in alternative future scenarios, each of these reflecting different trend assumptions and tradeoff preferences."

Scenario planning represents an integrated approach to decision making. It is not a prediction for the future, but rather a tool to help communities recognize uncertainty and make good decisions across a range of possible futures. The process begins with an assessment of the community's values, existing quality of life issues, and trends. Next, visualization tools, usually Geographic Information Systems (GIS)-based, are used to help participants picture a future based on existing conditions and possible future changes in transportation, housing, and other areas. Last, planners need to build relationships, credibility, and trust with stakeholders and the public. An effective way to build trust is to listen to the public and show them that their input is being acted upon.

Queensland, Australia, developed the following step-by-step process for scenario planning:

Step 1: Identify Quality of Life Issues
Step 2: Research Driving Forces
Step 3: Determine Patterns of Interaction
Step 4: Create Scenarios
Step 5: Analyze Implications
Step 6: Evaluate Scenarios
Step 7: Monitor Indicators

One benefit of scenario planning is being able to analyze complex issues through a strong analytical framework and process, good data, and system oriented tools. Scenario planning also facilitates consensus building by creating the capacity for communities to participate actively, improving communication and understanding among stakeholders, and making the decision-making framework more transparent.

FHWA supports scenario planning in the transportation planning process. As part of this support, FHWA encourages the use of Metropolitan Planning (PL) and other transportation funds to implement scenario planning, provides feedback on efforts being planned or implemented, shares and provides information on scenario planning efforts nationwide, identifies resources and tools for use in scenario planning, and facilitates peer workshops. More resources, including case studies, techniques, and tools can be found on the Scenario Planning website, www.fhwa.dot.gov/planning/scenplan/.

II. Local Trends and Planning Efforts

A. California Regional Blueprint Planning Program

Sharon Scherzinger, Chief, Office of Regional and Interagency Planning, California Department of Transportation
Regional Blueprint Planning Program

The California Regional Blueprint Planning Program is a state initiative to promote the linking of land use, transportation, housing, environment, economic development, and equity. Through the California Department of Transportation (Caltrans), the state distributed five million dollars in funding to seven

regions in FY 05-06, and the state will distribute another $5 million in FY 06-07. These funds are to be used by the region to reach consensus on a preferred growth scenario or "Blueprint."

The program focuses on regions by providing a regional framework for collaboration. Federal and state agencies provide funding and guidance, localities make land use decisions, and communities supply public input on needs and desires. Regions are well-positioned in this framework since they already have a regional planning process, corridor and landscape vantage points, and a process for convening stakeholders.

Regional Blueprint planning consists of scenario planning; stakeholder involvement and a commitment to results so that people feel that the Blueprint is a real vision; extensive public involvement including those who are traditionally underserved; the innovative use of visioning tools; the incorporation of environmental and socio-economic data, especially early on in the process to head off any issues down the road; and performance measures. Regional Blueprint planning also involves the integration of plans, such as regional transportation plans, habitat conservation plans, integrated regional water management plans, housing plans, and local general plans. Including public involvement, the integration and coordination of these plans results in planning processes that are parallel and not conflicting (Figure 1).

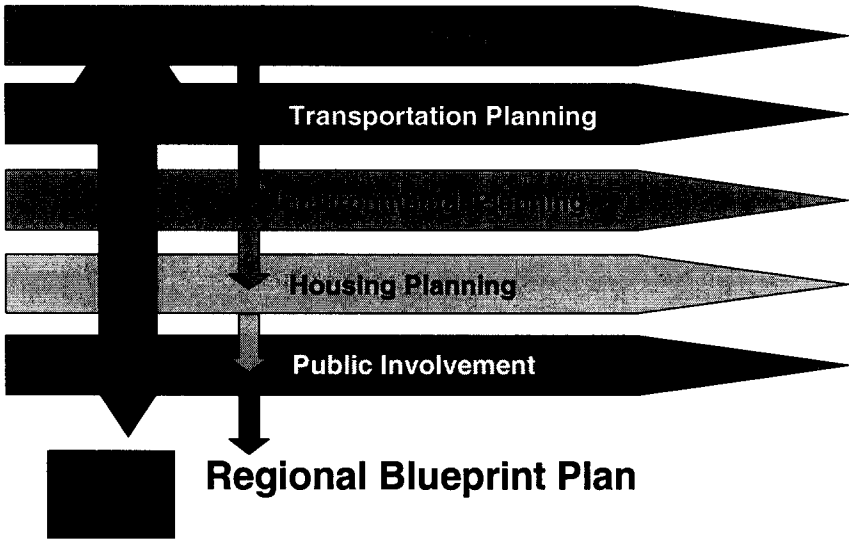


Figure 1: California's Blueprint Planning Process: Comprehensive, Collaborative, and Integrated

The state hopes that the program will result in regional plans for land use patterns and transportation systems that:

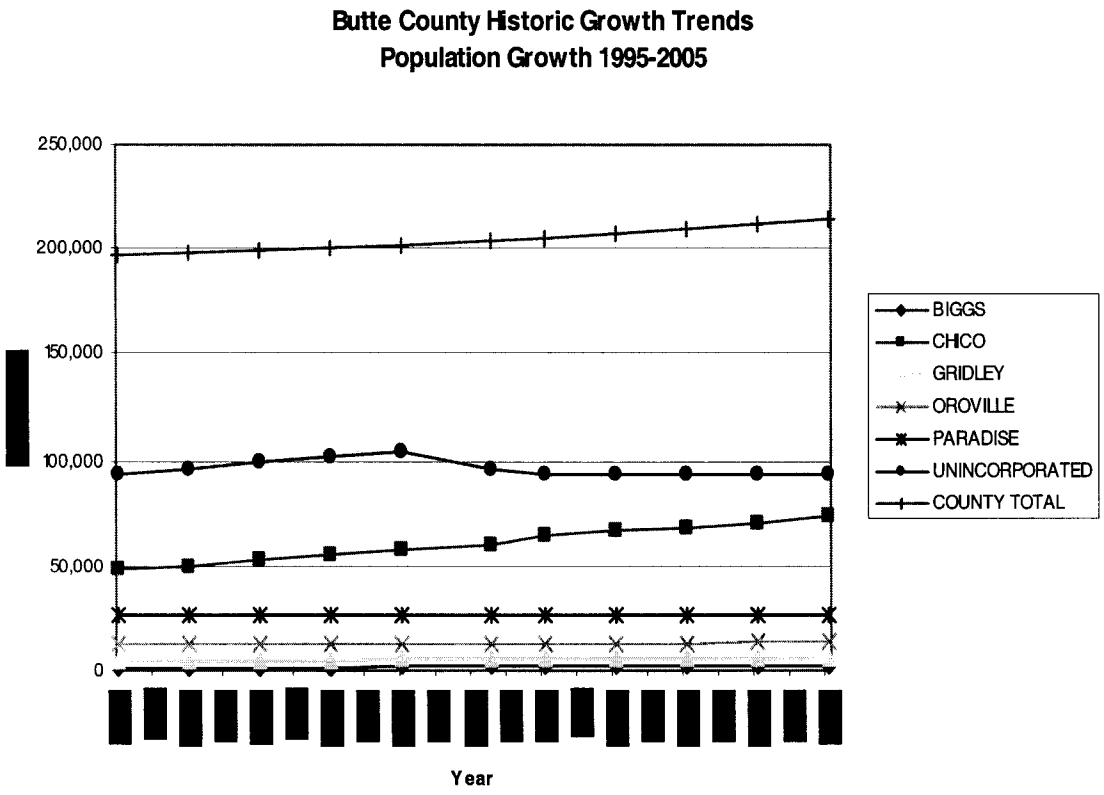
- Improve mobility;
- Reduce auto dependency and congestion;
- Increase transit use, walking, and bicycling;
- Encourage infill development;
- Accommodate a sufficient housing supply;
- Minimize impacts on farmland and habitat; and
- Establishes an on-going process for public engagement in planning.

Ms. Scherzinger provided information on the criteria that are considered in selecting and awarding blueprint grants, including performance measures and addressing the GoCalifornia Plan. Caltrans encourages those who are interested to work with their district office in putting together their applications, and to work with neighboring MPOs and COGs in the meantime.

B. Overview of Trends – Butte County

Chris Devine, Butte County Association of Governments (BCAG)

BCAG is the MPO for Butte County, California, situated approximately 90 minutes north of Sacramento. It has five incorporated communities, of which Chico is the largest, and is largely composed of agricultural land and mountainous terrain. There has historically been fairly slow growth, but the southernmost portion of the county is beginning to feel development pressures stemming from the housing market in Sacramento. Towns such as Oroville and Gridley are now facing a projected doubling of their populations. Partly in response to the growth projections, the incorporated areas are in the process of updating their general plans. Updates are being coordinated through the City/County Planning Directors' Group.

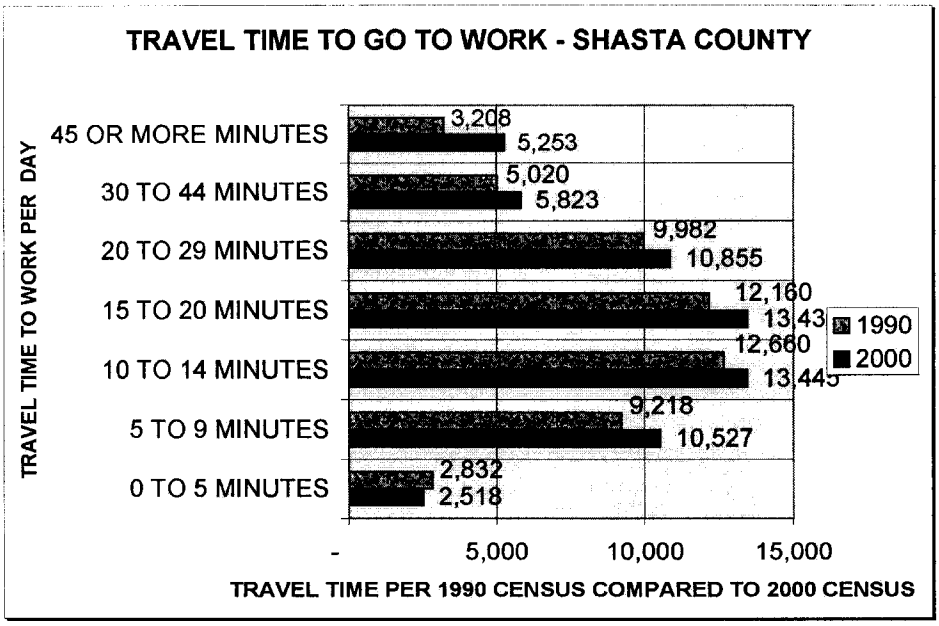


C. Overview of Trends – Shasta County

Dan Little, Shasta County Regional Transportation Planning Agency

Shasta County's major city is Redding, which is the regional hub for the "Greater North" area. I-5, a major goods corridor regionally, statewide, and nationally, runs through the center of the county. The region is just beginning to feel developments pressures. The current county population of approximately 180,000 is expected to double by 2040. The scale of development has recently increased: for example, new very large residential projects of up to 5,000 homes are being built.

Congestion has recently started to become a problem in the county, especially in the I-5 corridor. There is a close relationship between Tehama County and Shasta County. A regional traffic impact fee to "level



the playing field" is being considered. Commuting times are still relatively low on average; however, the number of residents commuting more than 45 minutes has more than doubled from 1990 to 2000. Mr. Little noted that he would ask the "Big Four": Los Angeles, San Diego, San Francisco, and Sacramento, "if you could go back thirty years, what would you have done differently?" Shasta has the opportunity to address problems now, instead of waiting for them to become worse. Countywide, there is no regional land use planning right now, but the RTPA is beginning to address the issue.

D. Overview of Trends – Tahoe Region

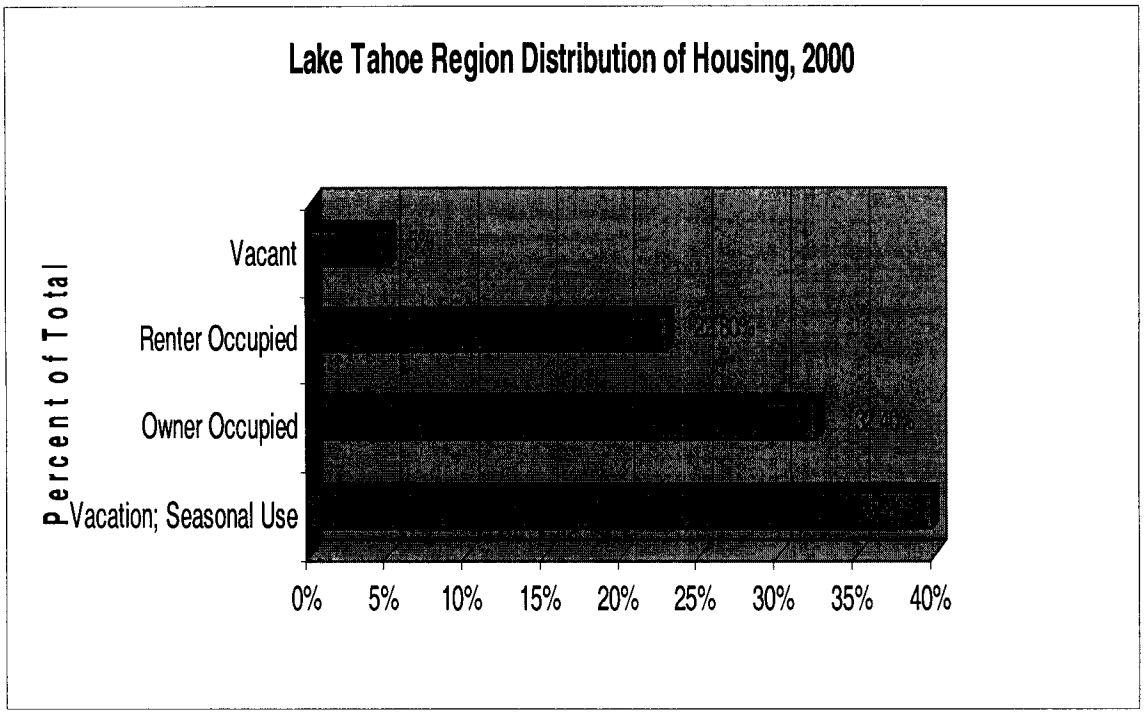
Keith Norberg, Tahoe Regional Planning Agency

The Tahoe Regional Planning Compact was created in 1969 by Congress and the States of California and Nevada. It entrusted the Tahoe Regional Planning Agency with the missions of overseeing growth management and environmental issues around Lake Tahoe. It has a wide range of responsibilities, including acting as the metropolitan planning organization.

Pathway 2007 is the Tahoe Region's Blueprint process, which is designed to align and coordinate basin planning processes by July of 2007. These include the TRPA 's 20-year Regional Plan Update, the US Forest Service, the Lahontan Regional Quality Control Board, and the Nevada Division of Environmental Protection. So far, they have held 20 - 30 outreach workshops in the communities, with a goal of coordinating the plans of three agencies, five counties, and one city.

TRPA's regulatory program has goals of controlling environmental impacts of new development, maintaining the quality of the lake. There is an extensive environmental improvement program, with attention to erosion control for water quality. Transportation goals include reducing auto dependency and the resulting air pollution. There have been no roadway capacity increases due to runoff issues.

Traffic has been decreasing in recent years as full-time residents sell their homes, generally to seasonal residents. Seasonal owners occupy nearly 40% of housing, a larger percentage than renters, full-time owners, or vacancies. Maintaining the continuity of community is difficult and encouraging seasonal residents to participate has been an obstacle in the Pathway 2007 process.



III. Peer Practices and Observations

The peer presenters provided the group with two different approaches for conducting and implementing scenario planning. Harrison Rue, from the Thomas Jefferson Planning District Commission (TJPDC), discussed several projects TJPDC has undertaken, including the Jefferson Area Eastern Planning Initiative.

Marjie Kirn, of the Merced County Association of Governments (MCAG), discussed their use of scenario planning in both MCAG's Partnership for Integrated Planning (PIP) project and the new San Joaquin Valley Blueprint Project.

A. Scenario Planning: Creating an Agency Action Agenda

Harrison Rue, Thomas Jefferson Planning District Commission, Charlottesville, Virginia

Overview

The Thomas Jefferson Planning District Commission (TJPDC) is the Metropolitan Planning Organization for the Charlottesville, Virginia metropolitan area. Charlottesville is a university town a few hours outside of Washington, D.C. After September 11, 2001, the region saw an influx of "equity refugees", and rapid growth continues in outlying areas. The downtown is pedestrian-friendly, but growth is happening outside of the center city, a suburban low-density and traditionally rural area.

The Commission uses an effective hands-on process, scenario-based planning, Transit Ready Development, and strategic multimodal investment strategies.

Effective public process

Mr. Rue recommended that agencies go out to the public and be hands-on. One technique that has worked well is to hold interactive workshops, where people can edit and mark up together a 'workbook' - an oversized version of the long-range plan. Key public process steps include:

- Identify community values
- Combine programs & problems
- Bring everyone to the table
- Use process to educate, train, and introduce innovative solutions
- Develop scenarios to test all issues
- Use science to model the visions
- Incorporate preferred scenario into project programming and funding

Scenario-based planning

Mr. Rue noted that scenario planning can be used as a tool for measuring what investment would be required by different infrastructure decisions. TJPDC received a Transportation, Community, and System Preservation (TCSP) Program grant to fund the Jefferson Area Eastern Planning Initiative and build the CorPlan model, used in scenario planning workshops. CorPlan is a modeling tool capable of concurrently evaluating transportation and land use options.

TJPDC analyzed the region and discovered 26 existing community land use types. These were used to envision ways that the region could grow in patterns that are already established. They next compared "business as usual" plans to preferred scenarios and analyzed the financial and congestion impacts. They found that compact development creates $500 million in transportation infrastructure savings and proved that the area would retain its values by developing accordingly. TJPDC developed a 50-year transportation and land use vision for the five-county region surrounding Charlottesville.

In retrospect, Mr. Rue noted that it would have have been preferable to analyze the entire planning district, not just the areas of fastest growth (as required by the TCSP grant). It would also have been better to more formally include State Department of Transportation staff, although this has effectively been done by incorporating the EPI findings in the United Jefferson Area Mobility Plan (UnJAM 2025 - the regional long-range transportation plan), as well as several follow-up corridor-level cooperative efforts.

These next steps include working with Virginia DOT and localities to develop a sub-regional model focusing on growth areas in three rural counties, developing guidelines to use in comprehensive plans (adopted by local governments), and designing transportation improvements in critical locations and corridors. Nelson County, a small rural county not part of the Jefferson Area Eastern Planning Initiative, liked the design principles and requested a comprehensive plan based on them.

B. Metropolitan Development Blueprint

Marjie Kirn, Merced County Association of Governments (MCAG) Merced, California

MCAG represents the six incorporated cities and the unincorporated areas of Merced County, California. Marjie Kirn discussed both MCAG's Partnership for Integrated Planning (PIP) project and the new San Joaquin Valley Blueprint Project.

Partnership for Integrated Planning

The Partnership for Integrated Planning (PIP), begun in 1999, was a pilot project conducted by MCAG in partnership with FHWA, United States Environmental Protection Agency, and Caltrans to improve public outreach and analysis. Scenario planning was used to select a preferred scenario to drive the Regional Transportation Plan.

The project used "fishbowl planning", where the public is involved every step of the way. Other innovative components included an Environmental Impact Report and cumulative impact analysis and the use of UPlan modeling.

Various interest groups were represented on the PIP advisory committee, including youth, seniors, Latinos, and commuters. At first, MCAG held standalone workshops in communities across the region. In spite of widespread publicity, attendance was low. So, MCAG decided to go to meetings that other organizations preside over and were happening anyway, such as planning commissions. Not only did MCAG benefit from the "built-in" audience, but they also advertised the meetings and brought in some new faces to the existing meetings. It is especially important to "go to them" when there are cultural differences. In Merced County, the Hmong people were brought into the public process in a much more interactive way than in the past. Monolingual participants were paired with a bilingual partner. Throughout the process, MCAG tried to make the process fun for participants by using questions like, "If Merced County were a person, who would it be and why?"

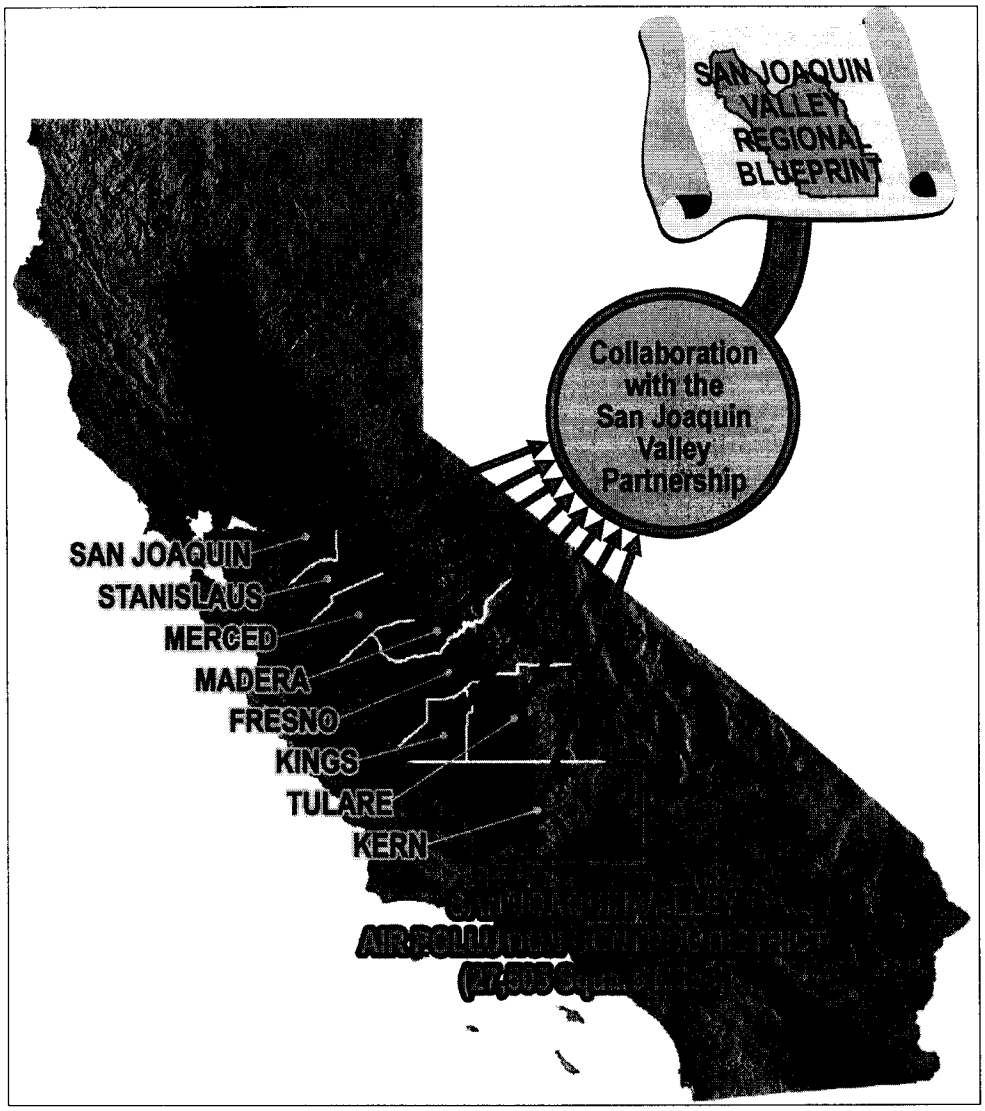
Scenarios started out broad and participants were allowed to pick an entire scenario or components of one scenario by mode. If the new scenario was more expensive than current spending, they then had to make a tradeoff – by reducing another mode or finding a new funding source. This process helped people "connect the dots". MCAG then developed hybrids with the preferred components of the scenarios, analyzed them, and developed performance measures, such as land converted to urban uses and accidents reduced over twenty-five. Three open houses were held throughout the community. Stations were set up to explain the impacts of each scenario for each mode, with staff to answer questions. At the open houses, participants used keypad voting technology to vote in real-time on what they liked and did not like about each scenario.

UPlan was used in an environmental and cumulative impact review for the long-range transportation plan. MCAG actively involved the resource agencies in providing environmental data, reviewing the combined data layers for accuracy and ranking environmentally sensitive areas. This allowed MCAG to understand the critical environmental issues from the Resource Agencies' perspectives. The challenge was to do cumulative analysis at a plan level. Resource agencies are used to working at the project level, not the regional level.

The result of the process was an "RTP Plus". The project costs were high and it is too soon to tell for certain if the benefits justify the costs. Besides the RTP, another result of the process was the creation of a regional transportation impact fee, dedicated to projects that cross jurisdictional boundaries.

Lessons learned:

- Go to them; they will not come to you.
- If you go to another meeting, be flexible and try to keep it short.
- People want to talk, not listen! Make it interactive and fun.
- Relationships are important.
- GIS, data, and UPlan were critical tools.
- Local efforts create local champions.



San Joaquin Valley Blueprint

The San Joaquin Valley Blueprint project is supported by a $2 million grant from the State of California and a $500,000 matching grant from the San Joaquin Valley Pollution Control District.

Eight San Joaquin Valley agencies worked together to apply for the grant. The theme is that 'the Valley needs a voice". Individual communities' voices are drowned out by the big cities and Valley communities need to work together to be heard at the state and Federal levels. Merced is the lead county. The project is just getting started and a preferred scenario is projected to be selected in January 2008.

D. Scenario Planning Tools

Brian Betlyon, Metropolitan Planning Specialist, FHWA Resource Center; Baltimore, MD

Brian Betlyon discussed the role of tools in scenario planning and provided information on additional resources. According to Betlyon, the premise of scenario planning is that it is better to "get the future imprecisely right" than to "get the future precisely wrong" when developing transportation plans. Tools

can help people involved in scenario planning get the future as "imprecisely right" as possible. These scenario planning tools can provide decision-makers and the public with the information they need to make educated decisions. Scenario planning tools can help communities plan by design instead of by default, meaning that they can make informed decisions on how the actions (or inaction) that they take today will affect the future.

A variety of technology tools can help communities consider scenarios and make better decisions. These tools can be divided into the following categories:

- *information resources*, including websites such as http://www.placematters.com, http://www.smartgrowthamerica.com, http://www.sustainable.doe.gov, http://www.fgdc.gov, http://www.fhwa.dot.gov/planning/landuse/, http://www.natureserve.org/, and http://hud.esri.com/egis/;
- *visualization tools and techniques*, such as photo montage, architectural drawings, visual preference surveys, visual kiosks, and Box City;
- *impact analysis and GIS models* using software such as INDEX and Paint the Town, What If?, MetroQUEST, UrbanSim, and CommunityViz; and
- *process tools and techniques* such as civic participation, the PLACE^{3}S process, and methods for finding common ground. For example, establish a neutral community meeting place, conduct large-scale town meetings, or establish a civic learning center.

Instead of concentrating on one aspect of planning for the future, many impact analysis and GIS models used in scenario planning estimate the impacts of people's decisions today on the land use, transportation system, and environment of tomorrow. Additionally, these tools take into account the interconnections between these three aspects of planning. For example, if a change to the transportation system is proposed for an area, the model will estimate the change's impact on the land use and environment. Additional changes in these areas may then need to be made to accommodate the initial change. Through this process, these tools help people plan for the future in as real of a way as possible.

Several regions have used scenario planning as part of their land use and transportation planning efforts. The Delaware Valley Regional Planning Commission is using scenario planning to assist in the development of a new long-range plan for the Philadelphia area. Finally, Envision Utah, a public–private partnership "working to keep Utah beautiful, prosperous and neighborly for future generations," involved over 100 partners and the general public in a statewide scenario planning effort.

E. Land Use Modeling As A Communication Tool

Mike McCoy, University of California, Davis, Information Center for the Environment; Davis, California

The University of California, Davis (UC Davis) is honored to be a trusted partner in the Blueprint Program. The University acts as a neutral scientific and technical advisor and engages students in solving real-world problems in the communities that pay taxes to support the institution.

UPlan 2.0 is a simple "rule based model" designed at UC Davis it can be used as a prelude or a follow-on to PLACE^{3}S, a scenario planning tool developed by the State of California. It can also be used without scenario models if they are not available. UPlan was developed by working with smaller MPOs on a limited budget. It is simple and can be easily explained to policy makers. For areas that have already used scenario planning to determine their vision, UPlan can be used to determine what kinds of policies are needed to implement that vision. The software runs in ArcGIS and is available at no cost online with a user manual from www.ice.ucdavis.edu/um.

UPlan divides an area into a regular grid, with each 50 meter cell assigned a weighted attraction for different types of land use growth. Attractions include transportation infrastructure and proximity to existing urban areas. Discouragements subtract from a cells weighting. Discouragements include flood zones, sensitive natural resource areas, steep slopes, among others. This process helps communities

determine if the market will develop where the community says it wants development, or if infrastructure, regulations, etc. must change.

In the San Joaquin Valley, growth projections for 2025 were examined and UPlan was used to create multiple scenarios for 2050. These included the status quo; enhanced east/west highways; a compact growth scenario, which accommodates population growth without annexing additional land; a farmland protection scenario, and an I-5 to Highway 99 Exclusion scenario (no growth).

An interesting result was that the farmland protection scenario created fragmented land use patterns. As prime farmlands are scattered throughout the study area, this scenario dispersed growth into the "inverse", all of the areas where good farmland is not. Seeing these sorts of results can open policy dialogues that might not otherwise be opened. In this case, agricultural leadership in the San Joaquin Valley is now open to discussing the strategic taking of farmland with appropriate mitigation.

IV. Question and Answer / Breakout Discussion

Attendees actively participated in the question and answer and breakout group discussions. Major topics included:

- Transportation funding sources
  - Development impact fees
  - Taxes
  - Bond issue
- Annexation and zoning issues
- The Blueprint program
- Discussion of existing and proposed highway projects
- Land use changes, especially changing use of formerly agricultural lands

V. For More Information

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VI. Attachments

A. Agenda

Scenario Planning Peer Workshop
August 9, 2006

8:30 am	**Welcome** Sharon Scherzinger, California Department of Transportation
9:00 am	**Welcome and Presentation: Overview of Scenario Planning** Jody McCullough, FHWA – Office of Planning
9:15 am	**Overview of the California Blueprint Program** Sharon Scherzinger, California Department of Transportation
9:30 am	**Overview of Trends – Butte County** Chris Devine – Butte County Association of Governments

9:45 am	**Overview of Trends – Shasta County** Dan Little - Shasta County Regional Transportation Planning Agency
10:00 am	**Overview of Trends – Tahoe Region** Keith Norberg - Tahoe Regional Planning Agency
10:45 am	**Break-out Group Discussions**
11:15 am	**Peer Presentation** Harrison Rue – Thomas Jefferson Planning District Commission, Charlottesville, VA
11:45 am	**Peer Presentation** Marjie Kirn – Merced County Association of Governments
2:00 pm	**Scenario Planning Tools** Brian Betlyon, FHWA – Resource Center, Chicago, IL
2:30 pm	**Scenario Planning Tools** Mike McCoy, University of California, Davis, Information Center for the Environment
2:50	**Questions and Discussion**

B. List of Presenters

Agency	Name	Email
FHWA – Office of Planning	Jody McCullough	Jody.Mccullough@dot.gov
FHWA – Resource Center	Brian Betlyon	Brian.Betlyon@dot.gov
Thomas Jefferson Planning District Commission	Harrison Rue	hrue@tjpdc.org
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Butte County Association of Governments	Chris Devine	cdevine@bcag.org
Shasta County Regional Transportation Planning Agency	Dan Little	dlittle@co.shasta.ca.us
Tahoe Regional Planning Agency	Keith Norberg	knorberg@trpa.org