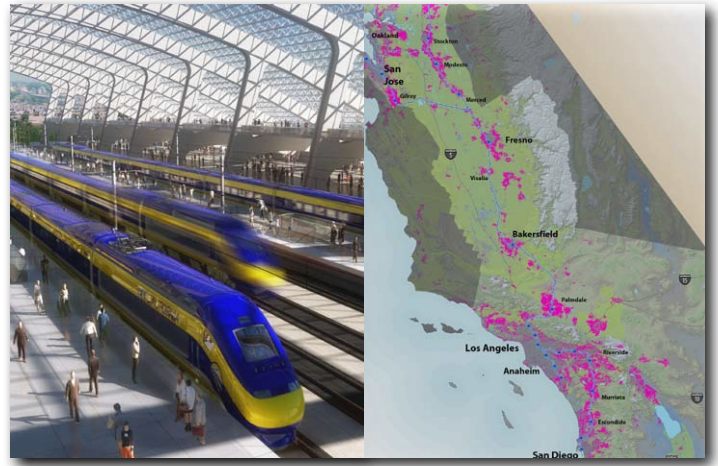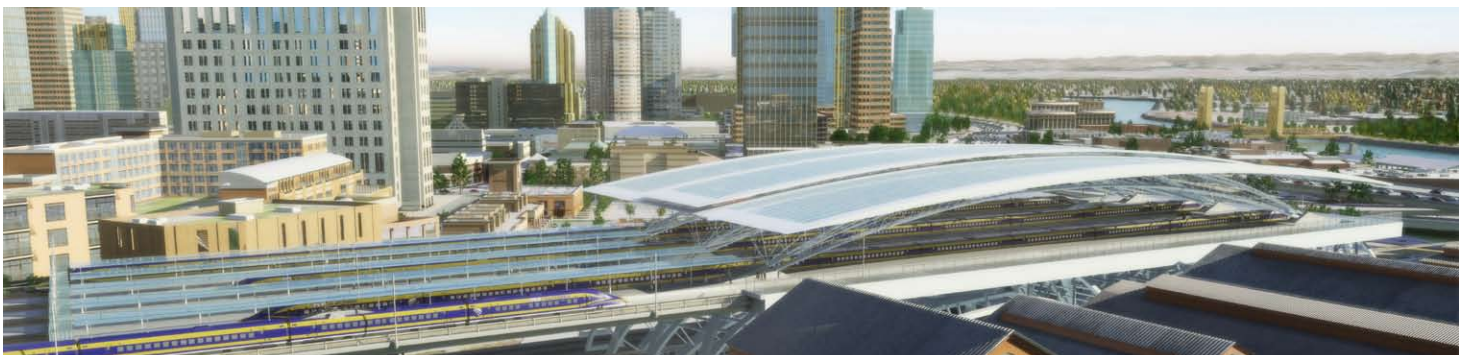# VISION CALIFORNIA
THE GOLDEN STATE IN 2050

What is Vision California?

Vision California is an unprecedented effort to explore the critical role of land use and transportation investments in meeting the environmental and fiscal challenges facing the Golden State over the coming decades. It will produce new modeling and scenario development tools, and a series of alternative physical visions for how California can accommodate growth. It will clearly identify the consequences of these options so that informed decisions can be made about the investments and policies that will drive the state's growth.

Vision California will:

- Frame California's growth issues in a comprehensive manner, clearly expressing the role of land use in meeting greenhouse gas reduction targets through integrated defensible analysis.

- Clearly link land use and infrastructure priorities to mandated targets as set forth by AB 32, SB 375, and the California Air Resources Board (CARB).

- Produce tools that accurately and easily measure the impacts of land use and transportation investments for use by state agencies, regions, local governments, and the non-profit community.

- Produce state-wide scenarios that assess the combined impact of MPO Regional Plans and Blueprints.

- Educate stakeholders, interest groups, and citizens on the value of integrated land use and transportation strategies in reducing carbon emissions.

- Illustrate the critical linkages between land use and other major challenges, such as affordability, farmland preservation, infrastructure provision, energy and water consumption, and economic development.

- Connect state and national goals for energy independence, energy efficiency, and green job creation to land use and transportation investments.

- Inform the ongoing development of state and regional greenhouse gas reduction targets for automobile-related emissions.

CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALTHORPE ASSOCIATES
URBAN DESIGNERS, PLANNERS, ARCHITECTS

MOVING AT THE SPEED OF POLICY

Tools to meet near- and long-term planning and policy needs

Vision California is developing a new set of scenario building and analysis tools to clarify the critical consequences of varying land use patterns and transportation investments. For the near-term, as initial state greenhouse gas (GHG) targets are being developed, Vision California introduces empirical tools that measure the effects of land use in a more nuanced and transparent way than other empirical models. At the same time, the tools provide an essential counter to the complex models utilized by regional Metropolitan Planning Organizations (MPOs), which do not always accurately reflect the impact of varying land use patterns on VMT and mobile-source emissions.

For the long-term, Vision California tools will provide state agencies, regions, local governments, and advocates with the ability to test and quantify the impacts of land use and investment policy decisions on a full range of collateral issues, including land and water consumption, vehicle miles traveled, air pollution, infrastructure cost, and building-related energy and water use and cost.

Potential users of the Vision California suite of scenario and modeling tools includes:

- **California Air Resources Board (CARB) and Regional Targets Advisory Committee (RTAC)**: The Rapid Fire model can inform the development of 'aggressive and achievable' state and regional GHG targets and allow for testing of policy options; the Map-Based sketch model can provide for critical sounding board as regions submit their plans and targets.
- **Regional Governments (MPOs)**: The Rapid-Fire and Map-Based sketch planning tools can be utilized to test and calibrate land use scenarios as part of the development of newly-mandated Sustainable Communities Strategies (SCS) for each region.
- **State Agencies:** Defensible quantification of the broad impacts of growth policy can serve agencies developing critical water, energy, transportation, public health, and fiscal policy.
- **Local Governments**: The tools can help to assess the impacts of comprehensive planning policies and land use options quickly and easily.
- **Advocates**: Defensible results can help community groups and other advocates to inform debate over new policy.
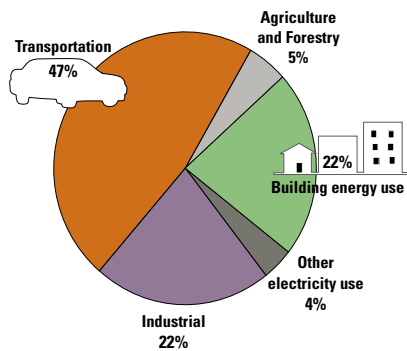
Addressing Climate Challenges through Efficient Land Use and Transportation Investments

The Vision California process builds upon the challenges set forth by the 2006 passage of the California Global Warming Solutions Act (Assembly Bill 32), the ground breaking legislation that sets aggressive targets for the reduction of greenhouse gases (GHG). Meeting these targets will require taking a new direction in how we invest in and develop our communities, transportation systems, and critical infrastructure. The project will provide essential context for the implementation of Senate Bill 375 and the land use-related GHG reduction targets that will be set by the California Air Resources Board (CARB). It will illustrate and comprehensively measure the role of land use and SB 375-mandated regional "Sustainable Communities Strategies" in meeting the CARB targets.

Vision California will develop new analysis tools to quantify the critical role of land use and coordinated transportation investments in meeting GHG reduction challenges. While vehicle efficiency and cleaner fuels are an important part of moving the state towards its greenhouse gas, air quality, and energy goals, the sheer number of vehicle miles driven threatens to outpace and undermine these technological fixes. Much of the state's growth over the past decades has been in the form of auto-dependent communities that limit daily travel options for Californians. Smarter, more compact communities can provide a wider variety of travel options and reduce miles driven and emissions significantly. When built at higher densities, homes and businesses also consume far less energy, water, and fiscal resources.

Statewide Growth
California will grow to more than 50 million people by 2035 and nearly 60 million by 2050. Where and how we grow will have major impacts on fiscal and environmental sustainability.

Source: California Department of Finance, 2008.

Sources of California Greenhouse Gas Emissions

Compact development can significantly reduce greenhouse gas emissions from transportation and buildings, which together account for nearly 70 percent of statewide emissions.

Land use — how we grow and the investments that spur that growth — affects not only our GHG emissions, but how well we meet a wider array of fiscal, environmental, and community-scale challenges. The Vision California process will craft scenarios that vary land use and infrastructure investments to compare how they can meet these interrelated challenges. These scenarios will evaluate how critical infrastructure components, such as the planned high speed rail network, can play a significant role in shaping a cleaner, more energy-efficient, and more sustainable future for the state. The scenarios, linked to their consequences, will provide essential context within which new policy is developed and implemented in the state. They will identify land use and transportation options that are consistent with the state's global warming and energy goals as well as broader objectives related to open space, farmland preservation, community health, mobility, housing affordability, and more.

Beyond Regions: a Vision for ALL of California

The past decade has seen regions across California engage in significant planning efforts that break through the limits of local boundaries to develop sustainable and innovative regional land use and infrastructure investment plans. Sacramento's Blueprint and regional plans for the San Diego, Los Angeles, and San Francisco Bay Area regions are setting the stage for better development and infrastructure decisions. Blueprints are also underway in the counties of the San Joaquin Valley. Vision California will build upon these efforts, stitching together the latest versions of these plans and filling in the gaps across the state to create a cohesive plan. In so doing, Vision California will produce a comprehensive statewide land use database, as well as powerful modeling and analytical tools that can ultimately be deployed by agencies and advocates across the state. It will combine the technical advancements of these regional efforts with new analytical tools that can demonstrate the cumulative impacts of local, regional and statewide land use and transportation choices.

WORK PLAN SUMMARY

Vision California introduces a process to explore answers to the many land use and development challenges facing California. It focuses on the development and modeling of future scenarios that clearly express the consequences of our land use choices. The work plan lays out the major steps and milestones of the Vision California process. It is broken up into three phases:

PHASE 1

Technical Preparation, Tool and Methodology Development

This phase focuses on the development of scenario building and modeling methodologies that form the technical back bone of Vision California and inform the direction of policy as it is being developed in California and at the Federal level. It includes the development of a robust Map-Based modeling engine that allows for the creation and modeling of comprehensive physical land use-transportation investment scenarios. Phase 1 also includes the development of the Rapid Fire scenario model, a spreadsheet-based tool which produces high-level state-wide and regional scenarios. Rapid Fire scenarios will inform the designation of state and regional VMT-related GHG targets, and provide a near-term assessment of the land consumption, infrastructure cost, VMT, GHG and pollutant emissions, building-sector energy, water, and emissions impacts of varying land use-transportation investment scenarios. It is estimated that Phase 1 will take roughly 9-12 months.

PHASE 2

Scenario Development and Modeling

Phase 2 builds upon the direction and technical base developed in Phase 1 to create land use scenarios using both the Rapid Fire and Map-Based models. Targeted stakeholder outreach, which will include a broad cross section of the non-profit community, state agencies, regional governments, and business leaders (to be identified), will solicit key input into these scenarios and their consequences. This phase will result in refined scenarios and model results, and will run approximately 9-12 months from the completion of Phase 1.

PHASE 3

*Public Outreach and Preferred Scenario Development*

This phase includes a broad multi-media and interactive outreach process that brings the scenarios and their consequences to citizens and decision-makers in California.

Scenario Planning and Cutting-Edge Technical Analysis

There have been a number of statewide visioning efforts undertaken over the past years. While these have been instrumental in pulling together constituencies, they have often fallen short of producing a compelling vision that yields significant change. Vision California will be different. Vision California will utilize state-of-the-art scenario planning and new analysis techniques to produce physical scenarios that can be seen, explored, and clearly understood. These alternative futures will not just be a collection of goals, policies, maps, or pictures — they will quantitatively assess how varying land use and infrastructure investments can meet state goals for reducing GHG emissions as well

as collateral objectives for open space and farmland preservation, community health, mobility, housing affordability, and more.

It is this unique combination of alternatives and the quantification of their collateral impacts that can lead to more informed decisions about the future of our state. Only by understanding the consequences of our land use and related investment decisions can we break through the gridlock and develop the political will for the decisions we need to move forward sustainably.
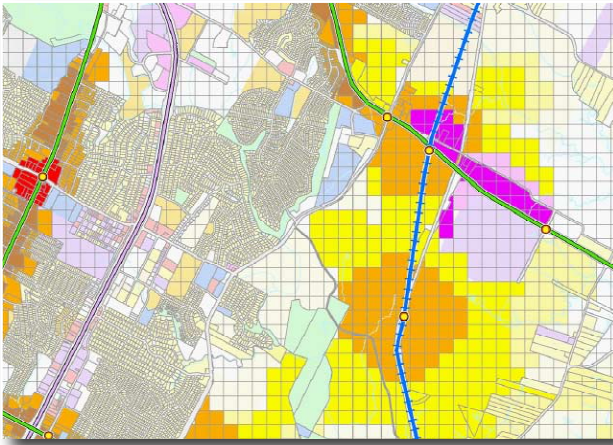
Scenario Development
Map-Based scenario alternatives are built in a Geographic Information System (GIS).

Modeling and Analysis
Scenario alternatives are analyzed for a full range of impacts, including:

Environmental
- Greenhouse Gas Emissions
- Air Pollution
- Water and Energy Consumption

Transportation
- Vehicle Miles Traveled
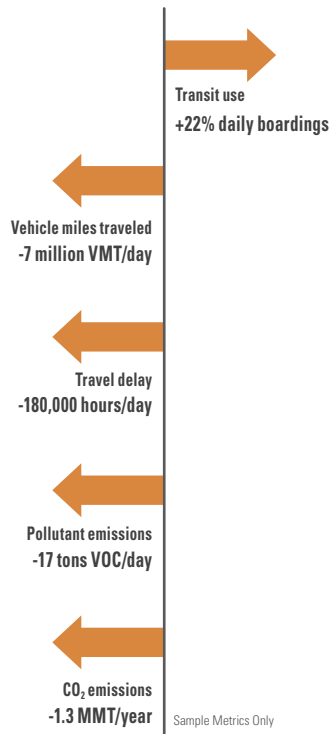- Transit, Walk, Bike Mode share
- Vehicle Emissions

Fiscal
- State and Regional Infrastructure Cost
- Household/Business Costs for Energy & Water

Social
- Housing Diversity & Affordability
- Access to Jobs and Services
- Public Health Impacts
- Cost of Living and Household Costs

Transit use
+22% daily boardings

Vehicle miles traveled
-7 million VMT/day

Travel delay
-180,000 hours/day

Pollutant emissions
-17 tons VOC/day

CO_2 emissions
-1.3 MMT/year   Sample Metrics Only

CALTHORPEASSOCIATES
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REGIONAL PLANNING EXAMPLES

An overview of scenario-based planning as applied by Calthorpe Associates in selected regional planning projects
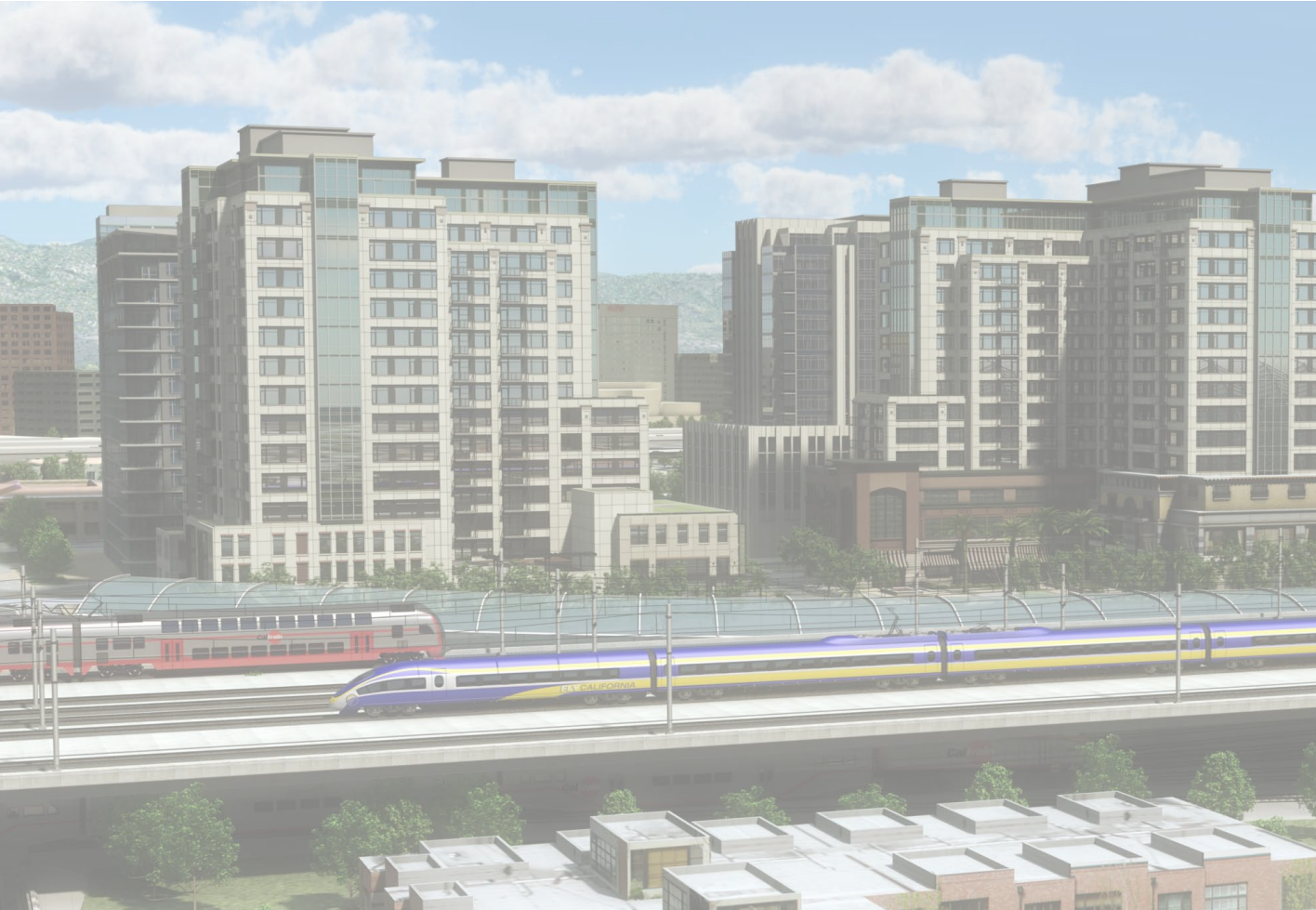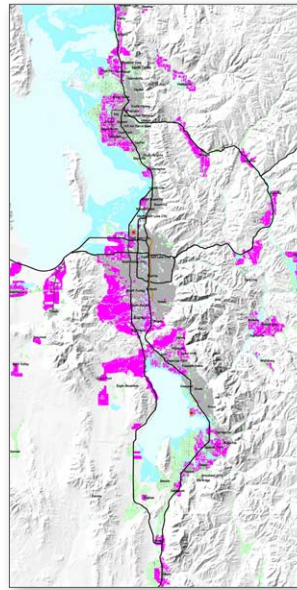
ENVISION UTAH

Regional Visioning on the Rapidly Growing Wasatch Front

Envision Utah has become a model for regional planning across the United States. The project arose out of an effort to educate the public and decision makers about the issues and consequences associated with rapid growth in the greater Salt Lake City region of Utah. Projections showed the region growing from 1.6 million residents in 1998 to more than 2.2 million by 2020 and more than 5 million by 2050.
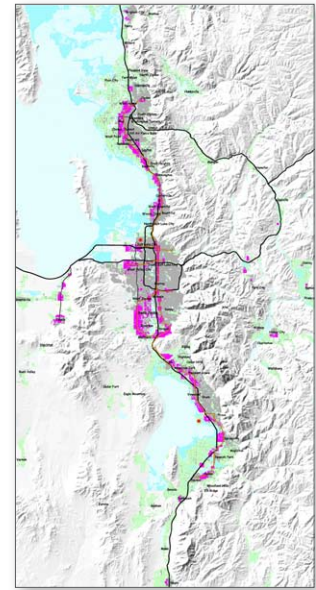
The Envision Utah project included the development and modeling of four regional growth scenarios that clearly illustrated the consequences of varying growth patterns and transportation investments. Extensive public outreach formed the foundation of a Quality Growth Strategy for the region, which was adopted by the Utah State Legislature in 1999 and has informed regional and local decisions ever since.

Regional growth scenarios

The first phase of the two-year Envision Utah process culminated in the release of four regional growth scenarios. The scenarios range from a low-density alternative consisting of predominantly auto-oriented development types (Scenario A) to a transit-oriented, higher-density alternative with more compact growth and higher levels of infill and redevelopment (Scenario D). A baseline scenario represented how the region would develop given current growth patterns.
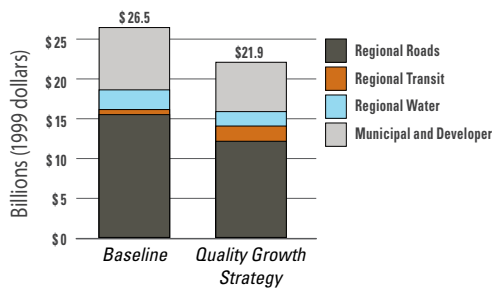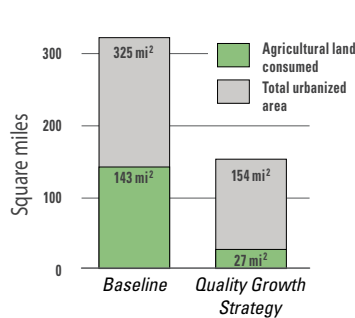

*Scenario A
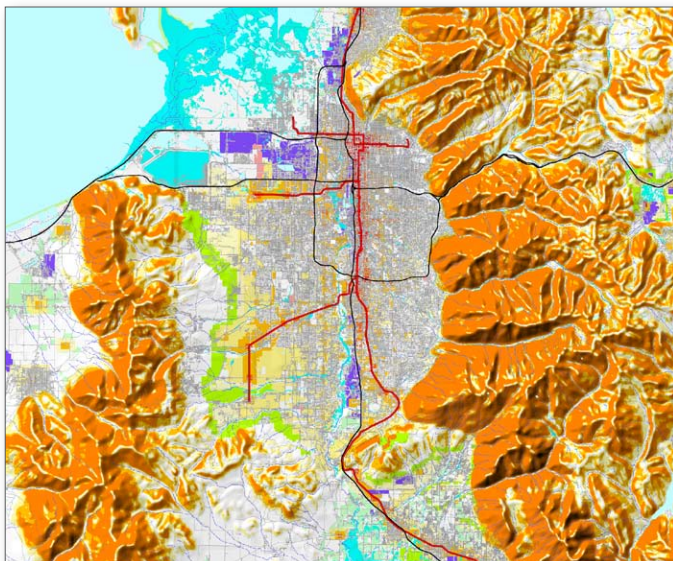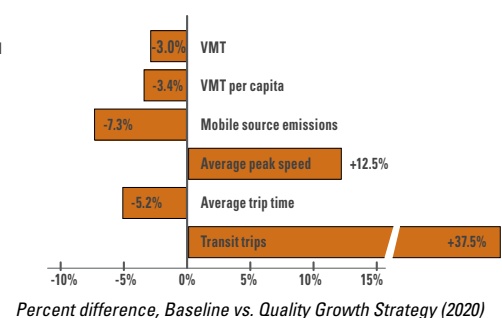Auto-Oriented*

*Scenario D
Transit-Oriented*

TOTAL INFRASTRUCTURE COSTS, 1998 – 2020

- Regional Roads
- Regional Transit
- Regional Water
- Municipal and Developer

LAND CONSUMPTION TO 2020

- Agricultural land consumed
- Total urbanized area

TRANSPORTATION COMPARISON

-3.0%	VMT
-3.4%	VMT per capita
-7.3%	Mobile source emissions
Average peak speed	+12.5%
-5.2%	Average trip time
Transit trips	+37.5%

Percent difference, Baseline vs. Quality Growth Strategy (2020)

## The Quality Growth Strategy

The Envision Utah process culminated in the development of a Quality Growth Strategy (QGS) for the region that included a toolbox of strategies and policies as well as a preferred development scenario. The composite QGS (left) was modeled for its impacts on land use, air quality, transportation infrastructure, and other factors. The QGS represents a compilation of separate "advocacy layers" of open space, new growth, redevelopment, and designations of centers and corridors which together form a complete Quality Growth Strategy.


*New Growth &
Redevelopment*

Centers & Corridors

Open Space
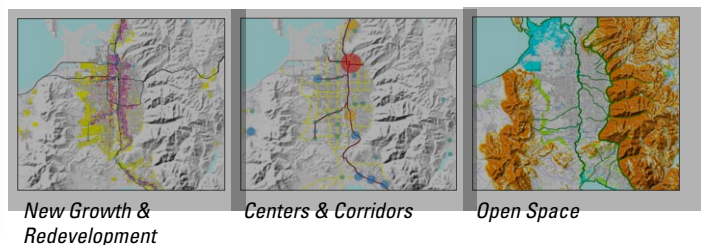
SOUTHERN CALIFORNIA COMPASS BLUEPRINT
Planning for Growth in Southern California

The Southern California Compass Blueprint is a long-range vision for the 17 million population Southern California region. The Compass Blueprint covers 34,000 square miles, including six counties and 185 cities. The project engaged a diverse public in crafting alternative development scenarios for the region's future.
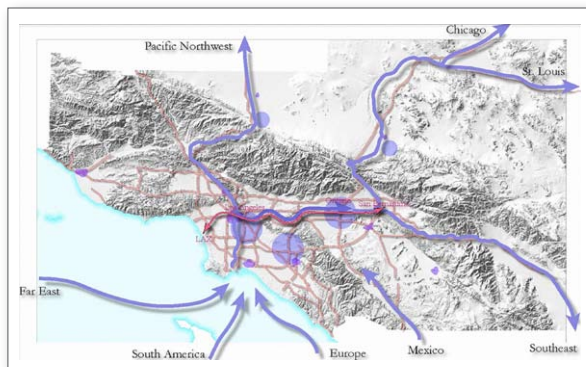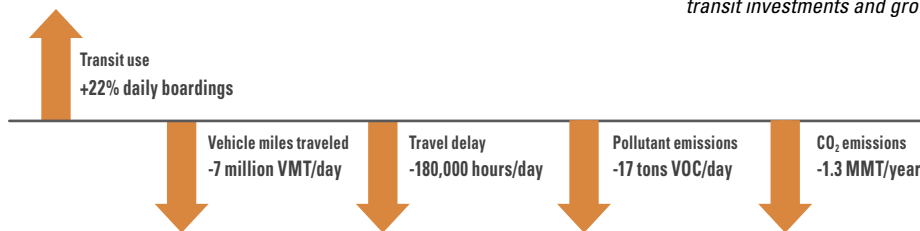
The Compass Regional Growth Vision that emerged through the process focuses projected growth to 2030 along major transit corridors and results in improved air quality, reduced greenhouse gas emissions, a reduction in roadway system impacts, expanded housing diversity, and reduced infrastructure cost.
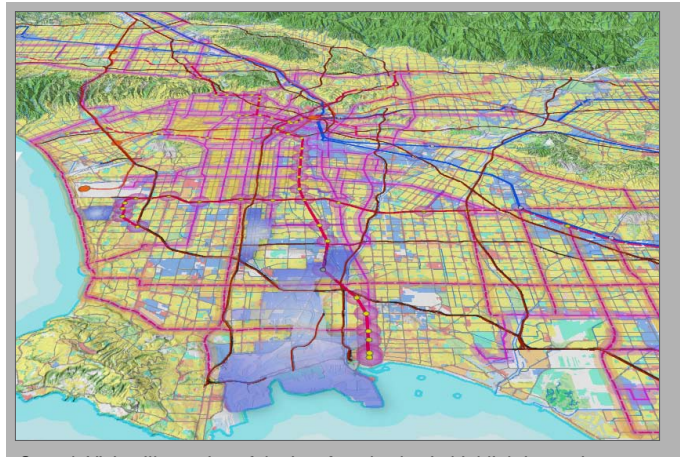
Growth Vision illustrative of the Los Angeles basin highlighting major transit investments and growth in centers and along corridors.

LAND USE AND TRANSPORTATION BENEFITS
Baseline vs. Regional Growth Vision to 2030

Transit use
+22% daily boardings

Vehicle miles traveled | **Travel delay** | **Pollutant emissions** | **CO_2 emissions**
-7 million VMT/day | **-180,000 hours/day** | **-17 tons VOC/day** | **-1.3 MMT/year**

Goods Movement & Economic Flows
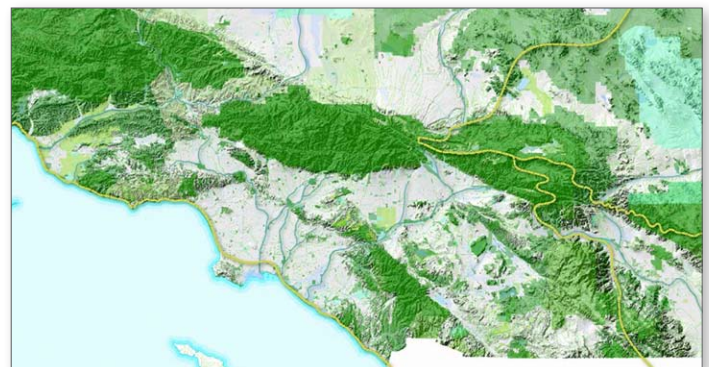
Open Space

The Compass Regional Growth Vision

The Regional Growth Vision reduces harmful pollutant and GHG emissions, preserves critical open spaces, and supports a diversity of housing and employment options by focusing a significant portion of projected growth along existing and planned rail and bus transit networks. Modeling of the Growth Vision versus a Baseline scenario of trend development patterns and transport investments illustrates these significant benefits.

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LOUISIANA SPEAKS

Comprehensive regional planning for recovery and long-term growth in South Louisiana

Initiated in the aftermath of Hurricanes Katrina and Rita in 2005, the Louisiana Speaks planning process yielded a physical plan and policy framework that comprehensively address South Louisiana's needs for recovery and smarter, safer, more sustainable growth.

Louisiana Speaks included the most extensive public outreach process ever undertaken for a planning project in the United States. More than 1,000 participants participated in six hands-on workshops. This input, along with more than 100 in-depth interviews and an extensive survey of 2,500 residents, provided critical input for shaping the recovery and development scenarios and helped create the final Louisiana Speaks plan.

In addition, more than 23,000 citizens engaged in a Regional Vision Poll. They were reached through direct community outreach, an Emmy Award-winning Louisiana Public Broadcasting television show, and a wide-reaching multi-media campaign. Citizens responded through newspaper inserts, online polling, a toll-free number, and telephone surveys. Their responses provided clear guidance on the region's preferences for the future.
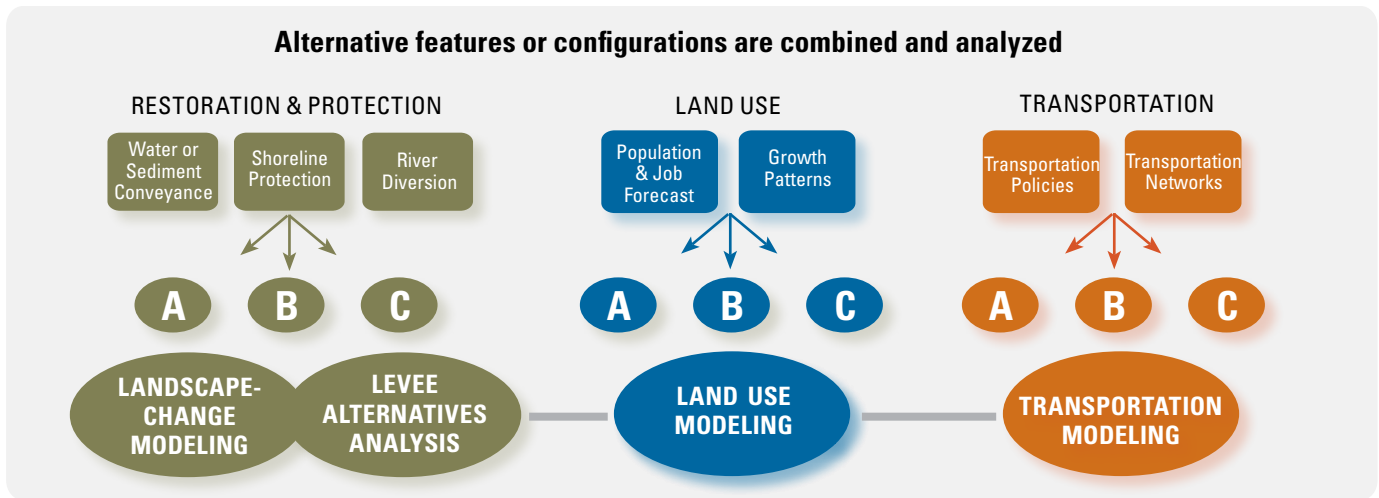
Creating a final vision and action plan

The final Louisiana Speaks plan, which was adopted by the Louisiana Recovery Authority in 2007, lays out a clear path towards a more sustainable future for the 25,000-square mile South Louisiana region. It includes massive environmental restoration, and growth focused within existing cities and towns around targeted transit and storm protection investments.

Reinvestment Areas
- Urban Center
- City Center
- Town Center
- Existing Urbanized Areas
- Special Economic Zones

New Growth Areas
- Town
- Neighborhood
- Industrial Expansion

Transportation Systems
- New Primary Transit Corridor
- New or Existing Secondary Transit Corridor
- New or Improved Roadway
- Existing Interstate
- Existing US or State Highway
- Major Port Facility
- Existing Rail Corridor

CPRA Master Plan Features
- New Levee
- Upgraded Levee
- Existing Levee
- Shoreline, Barrier Island or Navigable Waterway Restoration/Stabilization
- River Diversion

Landscape Features
- Agricultural, Upland Forest or Open Land
- Open Water

N
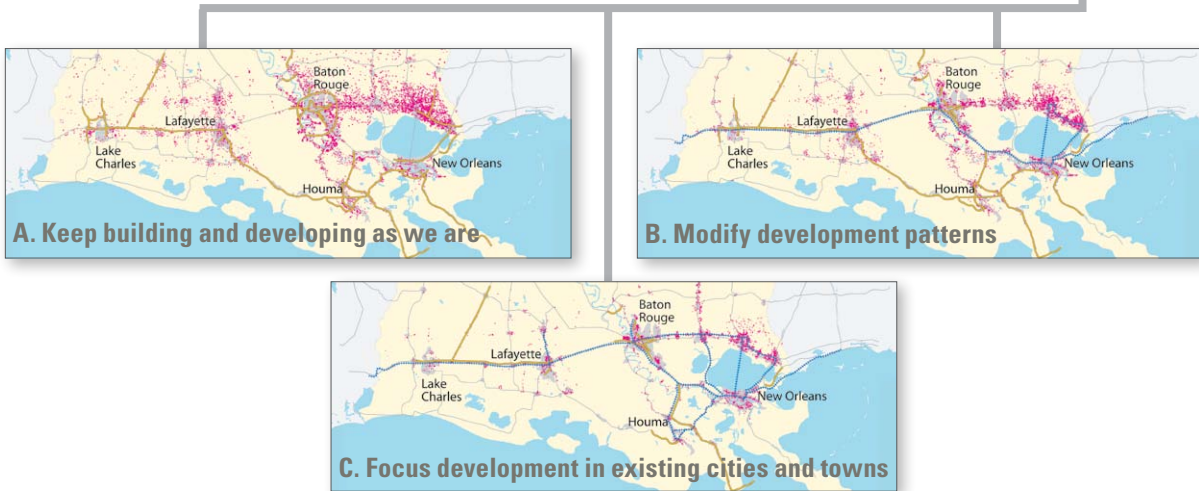
1 inch equals approximately 20 miles
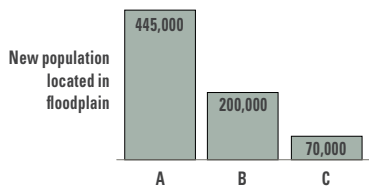
Building and Modeling Scenarios

Louisiana Speaks utilized computer modeling to build and test the effects of different land use, transportation, storm protection, and restoration scenarios for a variety of safety, livability, and transportation indicators. The scenarios represented possible futures based on historic patterns, emerging trends, and different policy directions. The diagram below illustrates some of the key variables and technical models used to develop the scenarios and their modeled consequences.

Alternative features or configurations are combined and analyzed

RESTORATION & PROTECTION

Water or Sediment Conveyance • Shoreline Protection • River Diversion

A • B • C

LANDSCAPE-CHANGE MODELING • **LEVEE ALTERNATIVES ANALYSIS**

LAND USE

Population & Job Forecast • Growth Patterns

A • B • C

LAND USE MODELING

TRANSPORTATION

Transportation Policies • Transportation Networks

A • B • C

TRANSPORTATION MODELING

Modeling of restoration/protection, land use, and transportation informs composite scenarios

A. Keep building and developing as we are

B. Modify development patterns

C. Focus development in existing cities and towns
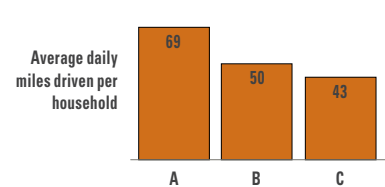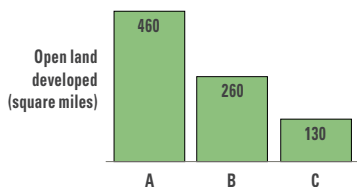
Comparing the impacts different land use and investment futures

Scenario modeling clearly illustrated the impacts and consequences of the different growth scenarios. Some key indicators are shown here.
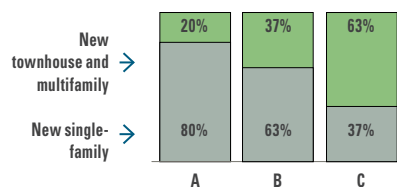
DEVELOPMENT IN FLOODPLAIN

New population located in floodplain

	A	B	C
	445,000	200,000	70,000

COMMUTE TIMES

Average daily miles driven per household

	A	B	C
	69	50	43

OPEN LAND DEVELOPED

Open land developed (square miles)

	A	B	C
	460	260	130

HOUSING MIX

	A	B	C
New townhouse and multifamily	20%	37%	63%
New single-family	80%	63%	37%

ANNUAL HOUSEHOLD EXPENSES

	A	B	C
	$5,420	$4,430	$3,960
Commuting	$2,550	$1,850	$1,600
Home energy	$2,000	$1,950	$1,850
Infrastructure	$870	$630	$510

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