

SCENARIO PLANNING TOOLS AND SERVICES FOR THE FRESNO COUNCIL OF GOVERNMENTS



JOHN FREGONESE PRESIDENT

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August 19, 2011

Attn: Kristine Kai
Fresno COG
2035 Tulare Street
Suite 201
Fresno, CA 93721

Dear Ms. Kai,

I am pleased to submit our proposal to provide the Envision Tomorrow Suite of Planning Tools, along with scenario development, technical support and training, to the Fresno COG. Fregonese Associates has successfully used the Envision Tomorrow Suite with clients around the country, including the Fresno region during the Public Transportation Infrastructure Study (PTIS) process.

We know that the Fresno region is expecting significant growth in the coming decades and will need to address a variety of complex, interconnected issues including greenhouse gas emissions, water quality, infrastructure improvements, and housing affordability. I believe that the combination of our past market research, prototype and scenario development in the Fresno region using the Envision Tomorrow Suite will provide a strong fit with the Fresno COG's scenario planning endeavors.

We would appreciate the opportunity to work with the Fresno COG and we look forward to hearing from you. Please don't hesitate to contact me if I can answer any questions you may have.

Sincerely,



John Fregonese
President



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OUR FIRM

Fregonese Associates is a full-service, nationally recognized, land-use planning firm with an award-winning track record of helping make better cities and regions. Fregonese Associates' successful work can be attributed to the firm's unique ability to combine cutting edge analytical techniques with modern communication methods.

The firm includes interdisciplinary planners who combine land use expertise with an understanding of transportation, urban design, economics, housing, natural systems and the environment, history and public policy—all within a mindset of sustainability. This visionary and pragmatic team works to guide the futures of neighborhoods, cities and regions, emphasizing and facilitating public engagement throughout the planning process.

The roots of the firm's multi-faceted approach emerge from its founder and president, John Fregonese, and his leadership in the design and implementation of the Portland region's Metro 2040 Plan—the nation's first regional plan built using state-of-the-art scenario planning techniques. Fregonese Associates values cutting-edge approaches, ideas and technology, and has evolved into a nationally recognized firm, earning a number of planning awards and a regional Emmy for documentary film, along with publishing a case study in the Lincoln Institute of Land Policy's *Urban Planning Tools for Climate Change Mitigation*.

OVERVIEW OF ENVISION TOMORROW, SUITE OF PLANNING TOOLS

Fregonese Associates developed Envision Tomorrow, a suite of breakthrough planning tools that helps planners design and test land use and transportation options at a range of scales. Envision Tomorrow consists of two primary tools: the Prototype Builder and the Scenario Builder. Each tool provides stand-alone capability, but together can create entire land use and transportation scenarios from the building site level on up to an entire region. Whether considering how to maximize growth around transit or identify development and redevelopment priorities, Envision Tomorrow provides planners with an easy-to-use, analytical decision-making tool for cities and regions.

Envision Tomorrow can be used to develop land use scenarios, test and refine transportation plans, produce small-area concept plans, and model complex regional issues. And in the era of carbon footprinting, the software can also provide baseline carbon emissions analysis of different land use patterns. By using Envision Tomorrow, it is possible to model the relationship between land use and transportation decisions and GHG emissions. Fregonese Associates has used these tools and this approach in diverse projects ranging from a sustainability plan for Arizona's Superstition Vistas to multiple regional SB-375 land use and transportation scenarios for the Southern California Association of Governments.



CREATING REGIONAL INDICATORS

Since the Envision Tomorrow analysis process begins at the building level, anything we know about a building, we can test in a scenario:

- **Housing and jobs**
(mix and density)
- **Jobs-housing balance**
- **Land consumption**
(vacant, agricultural, infill)
- **Impervious surface**
- **Open space**
- **Housing affordability**
- **Resource usage**
(energy and water)
- **Waste production**
(water, solid, carbon)
- **Transportation** *(travel mode choice, vehicle miles traveled)*
- **Fiscal impact** *(local revenue and infrastructure costs)*
- **Balanced housing index**
(how a scenario's housing mix matches the expected future demographic profile)



The scenario designs can be easily exported to Adobe Illustrator or other design software in order to create highly readable, versatile scenario maps.

OVERVIEW OF ENVISION TOMORROW, SUITE OF PLANNING TOOLS

TWO PRIMARY TOOLS

The Prototype Builder, a return on investment (ROI) spreadsheet tool, can be used to model buildings and test the physical and financial feasibility of development. The tool allows the user to examine land use regulations in relation to the current development market and consider the impact of parking, height requirements, construction costs, rents and subsidies. Use this tool to see what “pencils.” Use it to see how preferred forms of development, such as mixed-use retail with housing above, might become more financially feasible within your existing code.

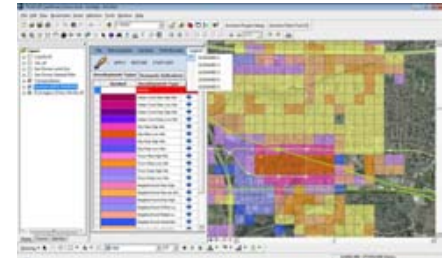
The Scenario Builder adds scenario-building functionality to ArcGIS. First, design a library of buildings in the Prototype Builder. Next, use the Scenario Builder to create development types and “paint the landscape” by allocating different development types across the study area to create unique land use scenarios. The tool then allows real-time evaluation of each scenario through a set of user-defined benchmarks or indicators. The indicators measure such things as the scenario’s impact on land use, housing, sustainability, transportation, and economic conditions. It also allows communities and regions to monitor progress over the short and long-terms.

WHO IS USING ENVISION TOMORROW?

Municipalities, regional governments, and private organizations around the nation use Envision Tomorrow. The Chicago, Illinois region uses the tool to conduct housing studies; Baton Rouge, Louisiana is analyzing future growth scenarios, while the Southern California Association of Governments in California is examining the potential for greenhouse emissions reduction through different land use policies. In Portland, Oregon the regional government, Metro, is refining their ability to test land use and transportation policies through scenario planning. Smaller cities like Waco, Texas and Mountlake Terrace, Washington have found Envision Tomorrow to be a valuable addition to their planning toolbox.



Prototype Builder



Scenario Builder

WHAT MAKES ENVISION TOMORROW UNIQUE?

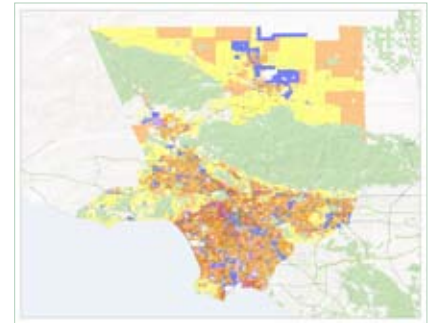
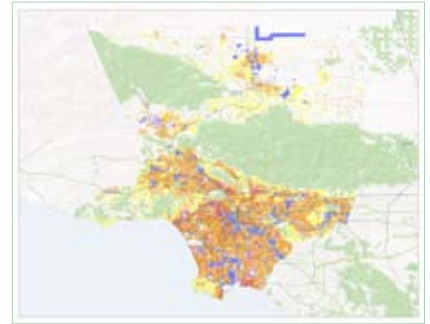
Fregonese Associates developed Envision Tomorrow as a versatile and expandable tool that can easily be adapted to accommodate various uses. Unlike most planning software, Envision Tomorrow allows the user to easily and transparently change the assumptions of the prototype buildings, development types, and scenario inputs. By making the tool transparent, you can quickly and easily adjust the assumptions to more accurately reflect the dynamics of your particular neighborhood, city, or region. Experience dictates that it is important that planners see all of the assumptions in the scenario process and be able to adjust the assumptions, if necessary.

RELEVANT PROJECT EXPERIENCE

SOUTHERN CALIFORNIA ASSOCIATION OF GOVERNMENTS' CONCEPTUAL LAND USE SCENARIO FOR SB 375 2009

Fregonese Associates recently completed a ground-breaking project for the Southern California Association of Governments to test the effectiveness of applying specific land use strategies in order to reduce the region's carbon emissions resulting from daily passenger vehicle travel. This scenario was developed in response to the passage of Assembly Bill 32, which requires the state of California to reduce statewide carbon emissions to 1990 levels by the year 2020, and Senate Bill 375, which calls for coordinated, regional land use and transportation planning to help reduce the state's total carbon emissions.

Fregonese Associates worked with SCAG, and the council of governments, counties and cities within it, to develop land use scenarios that could test the effects of applying specific strategies to reduce the region's transportation-related carbon emissions. Fregonese Associates developed a sophisticated presentation to communicate findings including fly-over visualizations of different land use concepts. The firm also produced a comprehensive white paper and created a clear and effective presentation to initiate ongoing discussions with member cities and regional council leadership.



The Southern California region used scenarios to better understand what their future could look like.

REFERENCE:

Mark Butala

Comprehensive Planning Manager

Southern California Association
of Governments

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Fregonese Associates provided graphically rich communication materials that SCAG presented to regional jurisdictions.

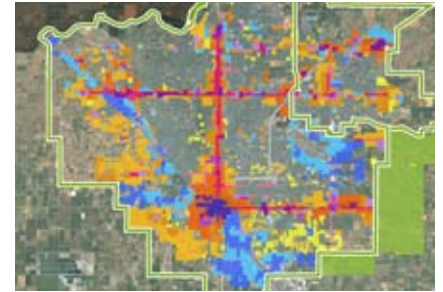
RELEVANT PROJECT EXPERIENCE

FASTTRACK FRESNO COUNTY: PUBLIC TRANSPORTATION INFRASTRUCTURE STUDY (PTIS) 2009-2010

Fregonese Associates assisted Kimley-Horn and Associates in the development of the regional Public Transportation Infrastructure Study (PTIS) for the Fresno region. The study examined the role of land use in relation to transit feasibility and worked to accomplish several goals: reduce urban sprawl; decrease traffic congestion; reduce greenhouse gas emissions; improve air quality; and preserve agricultural land.

Fregonese Associates built three land use scenarios to test the impact of changes in land use patterns on the feasibility of bus rapid transit (BRT) and streetcar. Fregonese Associates utilized the County's 2035 housing and job growth forecasts but modified the geographic allocation of growth, shifting expected growth from the fringes of the City of Fresno into BRT and streetcar corridors. These scenarios tested a range of infill and redevelopment strategies.

Using the Envision Tomorrow Prototype Builder, the team developed a library of prototype buildings to demonstrate what financially-feasible, transit-oriented redevelopment might look like in Fresno's unique real estate market. Developing the prototypes provided the opportunity for testing innovative infill and redevelopment strategies of older, auto-oriented, single-family residential areas and suburban-style shopping centers into town centers and corridors that support transit.



This map shows the 2035 full build out scenario where growth was redistributed from fringe areas to transit corridors.

REFERENCE:

John Downs
Senior Transportation Planner
Fresno COG
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In a series of public workshops throughout the region, community members were given a chance to envision the future of specific corridors using a variety of building and development types, transit options such as local bus, BRT, street car, light rail, plus neighborhood amenities including bike lanes, pedestrian street improvements and public spaces. These workshops shed insight about the values and preferences of Fresno residents and stakeholders that can be used in redesigning corridors throughout Fresno.

KEY STAFF BIOS

JOHN FREGONESE | PRESIDENT

As president of Fregonese Associates, John Fregonese operates a full-service planning firm that specializes in visioning, comprehensive and small area planning, implementation strategies, and public involvement strategies. Fregonese has been a planner for 30 years, where he has earned the rare reputation of being able both to create an energizing vision for communities and to develop concrete, workable solutions to urban problems. Fregonese is known for his work in Portland, Oregon, where he served as planning director for five years of the regional government, Metro, and was the primary author of the award-winning regional growth concept known as Region 2040.

Since founding Fregonese Associates in 1997, Fregonese has led a variety of planning projects, including some of the most nationally significant regional plans in recent decades. Fregonese was a key consultant in the Envision Utah process, an ongoing regional plan that has garnered national recognition, as well as the lead consultant for Chicago Metropolis, the initiative by the Chicago Commercial Club to reprise the seminal Chicago Plan of 1909. He was a key consultant for Louisiana Speaks, the first regional plan for southern Louisiana, the Grand Vision for Traverse City area, Michigan, and was lead consultant to the Big Look Task Force; which conducted a comprehensive revision of Oregon's planning system.

In addition to his regional plans, Fregonese has led numerous comprehensive plans for large cities such as Denver, Dallas, Tulsa and Baton Rouge, plans and visions for small cities with ethnically diverse populations such as Watsonville, California and Mountlake Terrace, Washington, as well as numerous small area plans for downtowns and neighborhoods. By working at a variety of scales, Fregonese has been able to bring a versatile, practical and ambitious approach to planning.



KEY STAFF BIOS

GLEN BOLEN | VICE-PRESIDENT

As Vice-President at Fregonese Associates, Bolen provides leadership within the company and is one of the firm's core strategic decision makers. He provides guidance and supervision to the firm's team of project managers and their staff. With fifteen years experience at the cutting edge of planning, he excels in project management and strategy, public involvement, ordinance writing, and scenario planning for large and small scales.

Bolen is one of Fregonese Associates' key managers with a proven record of success, from downtown plans to regional growth strategies. He was a key manager for Louisiana Speaks, a long-term recovery plan for Southern Louisiana following Hurricanes Katrina and Rita. Bolen recently managed Fregonese Associates' role in the Fresno County Public Transportation Infrastructure Study.

He has extensive experience working in Southern California where he managed a growth visioning process and several Compass Blueprint demonstration projects for the Southern California Association of Governments (SCAG). More recently, he managed the ground-breaking study for SCAG investigating the potential of changing land use pattern to lower carbon emissions to meet the reductions mandated by California Senate Bill 375.



KEY STAFF BIOS

C.J. GABBE, AICP | PROJECT MANAGER

C.J. Gabbe is an urban planner and project manager with a multi-disciplinary background in public policy, housing, real estate, and public involvement.

At Fregonese Associates, Gabbe has managed key projects including Chicago's Homes for a Changing Region, Building Our Economy: Transportation for a New Illinois, and the launch of the Envision Tomorrow Suite of Planning Tools. He has also contributed key elements to the Beaverton Civic Plan (Beaverton, Oregon), PLANiTULSA (Tulsa, Oklahoma), the Greater Downtown Waco Plan (Waco, Texas), The Grand Vision (Grand Traverse Region, Michigan), Superstition Vistas (Arizona), Louisiana Speaks, and multiple demonstration projects for the Southern California Association of Governments.

Before joining Fregonese Associates, Gabbe worked for the Portland Development Commission, the City of Portland's redevelopment agency, on the revitalization of the Old Town/Chinatown neighborhood and the extension of the Downtown Waterfront Urban Renewal Area. He previously worked on Capitol Hill as a staffer to U.S. Senator Ron Wyden, working with constituents on a range of policy issues.

Gabbe has Master of Urban Planning degree, with a real estate track, from the University of Washington. Additionally, Gabbe has a Bachelor of Science in Planning, Public Policy and Management, with a concentration in community development, from the University of Oregon.



KEY STAFF BIOS

ALEX JOYCE, AICP | PROJECT MANAGER

Alex Joyce is an urban planner with strong skills in urban design and complex spatial mapping and analysis. Joyce works with GIS, 3D modeling and graphic design software to bring planning ideas to life. His work helps clients visualize how their plans will look and feel on the ground. His products include fully rendered site plans, 3-D video fly-throughs and 2-D photomorph visualizations.

Joyce has been a project lead on developing Envision Tomorrow, the land use scenario modeling software on which the Local Sustainability Planning Tool is based. His strong technical skills and knowledge of advanced computer software have made the critical difference during the rapid development of land use scenarios for several of the largest mega-regions in the country, including Southern California.

Joyce took the lead role in the development of SCAG's land use and climate change planning efforts related to Senate Bill 375. Joyce worked with software developers to refine the tool to analyze the impact of land use decisions on overall greenhouse gas emissions and travel choice. Joyce also served as the lead designer on the long-range plan for a model sustainable city in Superstition Vistas, a 175,000 acre parcel managed by the Arizona State Land Trust.



APPROACH OVERVIEW AND SCOPE OF WORK

Working with Fresno COG staff and project stakeholders, we will help guide your team through the scenario development process from start to finish. This includes comprehensive staff training sessions on Envision Tomorrow, acquiring data, and building scenarios.

We propose the following scope in order to fulfill the goals of the Fresno COG:

TASK 1: SOFTWARE INSTALLATION AND TRAINING

1.1 Install Envision Tomorrow software:

Fregonese Associates will provide the Fresno COG with all installation files and assist the Fresno COG with installation of the Envision Tomorrow Suite, including the Prototype Builder and Scenario Builder Components.

1.2 Training for Prototype Builder:

Fregonese Associates will conduct in-depth training with Fresno COG staff to build long-term technical proficiency in using the Prototype Builder tool. Trainings will include instruction on how to conduct market research and build/refine prototype buildings.

1.3 Training for Scenario Builder:

Fregonese Associates will conduct in-depth training with Fresno COG staff to build long-term technical proficiency in using the Scenario Builder tool. Trainings will include instruction on data requirements, setting up project files, creating development types, using the various tool functions and capabilities, building scenarios, and evaluating scenario results using a range of indicators.



Envision Tomorrow trainings provide a comprehensive overview and detailed explanations about building scenarios and running a digital workshop.

APPROACH OVERVIEW AND SCOPE OF WORK

TASK 2: SOFTWARE CUSTOMIZATION

2.1 *Conduct market research:*

Fregonese Associates will work with Fresno COG staff to support market research that will be used to further refine the inputs used in the Fresno PTIS process. These inputs will include, but are not limited to, ranges of building and parking construction costs, land values, achievable rents, sales prices and building permit fees. Market research for these inputs that was completed for the Fresno study area in the PTIS provides a basis from which to update, expand and refine.

2.2 *Expand and refine library of prototype buildings:*

Based on input from Fresno COG staff, Fregonese Associates will refine and expand its prototype buildings using the Prototype Builder tool. These prototypes can include mixed-use, residential, commercial and industrial buildings; the Prototype Builder outputs including building envelope parameters and a basic pro forma analysis. Fregonese Associates developed a set of prototypes based on market conditions during the PTIS. These prototypes will provide a starting point to refine and update with more current costs, data, trends and preferences.

2.3 *Expand and refine development types:*

Using the library of prototype buildings, Fregonese Associates will refine and expand the Fresno PTIS development types. These development types become the “paint” with which we’ll create the scenarios.

2.4 *Develop indicators:*

Fregonese Associates will assist the Fresno COG in prioritizing evaluation criteria for the scenarios. Scenario indicators may relate to:

- Greenhouse gas emissions
- Housing affordability
- Access to open space
- Housing and jobs: mix and density
- Jobs-housing balance
- Land consumption
- Impervious surface
- Resource usage: energy and water
- Waste production: water, solid waste
- Transportation: 7Ds, walkability, additional indicators using transportation model

OPEN SOURCE APPLICATIONS FOR ENVISION TOMORROW

A HUD Sustainable Communities grant for the Wasatch Front has funded the movement of Envision Tomorrow to open source and the development of 18 modules, or “apps”:

- Growth Location Prediction
- Building and Land Use Types
- Building Energy Consumption
- 7D Transportation Effects
- Return on Investment
- Housing and Transportation Costs
- Air Quality and CO2 Impacts
- Fiscal Impact
- Public Health
- Employment Growth
- Employment Resilience
- Development Capital
- Redevelopment Timing
- Water Consumption
- Transportation Safety
- Workforce Housing
- LEED-ND
- Arts and Public Amenities
- Local Jobs Housing Balance

APPROACH OVERVIEW AND SCOPE OF WORK

TASK 3: DEVELOP SCENARIOS

3.1 *Develop countywide scenarios:*

Fregonese Associates will work with Fresno COG staff to create a virtual present and a base case scenario that allows for understanding how different land use policy choices could impact the future livability and sustainability of the region. Envision Tomorrow's outputs can be used to provide visual scenario results in multiple formats, including maps, charts, and graphics. Scenario results can be used to create 2D and 3D visualizations.

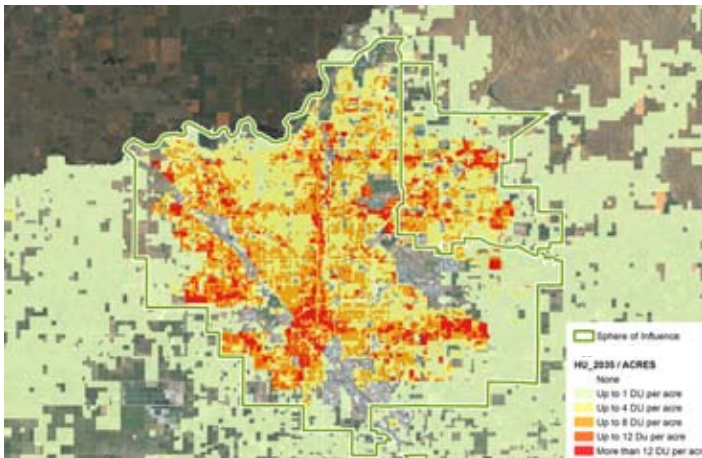
3.2 *Support scenario development and evaluation:*

Fregonese Associates will support developing further scenarios and analyzing scenario indicators. Fregonese Associates developed a base case, virtual present and alternative growth scenarios for the Fresno/Clovis area within the COG boundary as part of the PTIS. This past work helped to develop a familiarity with the constraints and opportunity areas of the Fresno region that will be helpful on the countywide scale. These scenarios were done at a grid cell scale. For further refinement and analysis, specific areas could be created at a parcel scale.

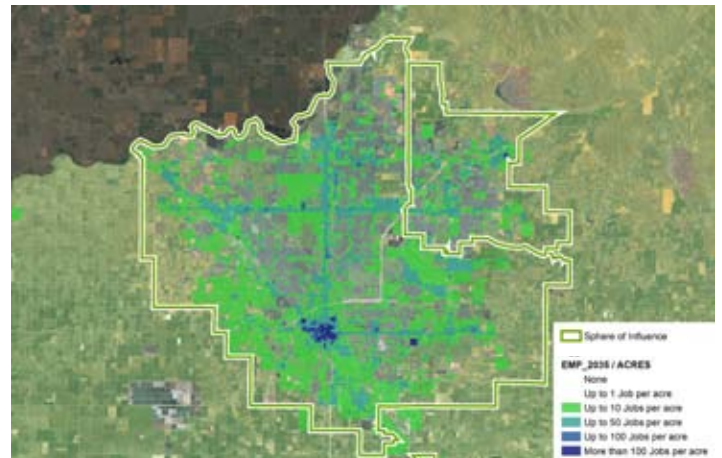


This photosimulation created as part of the PTIS shows the impact of corridor improvements, including street parking, dedicated transit lanes, multi-story mixed use buildings, and street trees.

2-D and 3-D visualizations are designed to help stakeholders and clients understand what their planning decisions look like. They convey the main land use and transportation differences between several distinct scenarios.



Housing density shown for the full buildout TOD scenario.



Employment density shown for the full buildout TOD scenario.

PROPOSED BUDGET

	\$ 250	\$ 150	\$ 85	\$ 85		
	John Fregonese	Glen Bolen	C.J. Gabbe	Alex Joyce	Fregonese Associates Hours	Fregonese Associates Costs
Proposed Budget - Fresno COG Modeling Software and Services						
Task 1: Software Installation and Training						\$ 6,290
1.1 Install Envision Tomorrow software	0	0	4	6	10	\$ 850
1.2 Training for Prototype Builder	0	0	32	0	32	\$ 2,720
1.3 Training for Scenario Builder	0	0	0	32	32	\$ 2,720
Task 2: Software Customization						\$ 19,820
2.1: Conduct market research	0	0	16	8	24	\$ 2,040
2.2: Expand and refine library of prototype buildings	2	2	32	24	60	\$ 5,560
2.3: Expand and refine development types	2	2	16	24	44	\$ 4,200
2.4: Develop indicators	4	6	36	36	82	\$ 8,020
Task 3: Develop Scenarios						\$ 18,000
3.1: Develop countywide virtual present and base scenario	4	8	24	96	132	\$ 12,400
3.3: Support scenario development and evaluation process	4	8	20	20	52	\$ 5,600
Subtotal	16		180	246	468	\$ 44,110
Expenses - Travel *						\$ 4,800
Total						\$ 48,910

* Four person-trips @ \$1,200/each (airfare, hotel, car rental and meals for two days)