SAN DIEGO, CALIFORNIA:

THE PLACE³S ANALYSIS METHOD

In San Diego, planners and community groups are crafting transportation, land use, and economic development strategies to reunite a divided neighborhood. First conceived over 40 years ago, a 2.2-mile stretch of Interstate 15 has split San Diego's Mid-City neighborhood since long before its completion in 2000. As early as the 1970s, buildings began to decay as residents anticipated the loss of their homes. The opening of adjacent segments of I-15 north and south of the neighborhood brought steady increases in traffic. Demolitions along the right-of-way continued the work that disinvestment had started.

In 1996, after many years of delay, groundbreaking for the freeway finally commenced, and the predominantly low-income, multicultural Mid-City neighborhood began the healing process. Enhancements to the design of the freeway brought many benefits—sound walls, exclusive bus lanes and ramps, a 25-foot below grade depression, and most significantly, a full block covered with a park built on top. Landowners are once again investing in private property, and state-owned parcels around freeway interchanges and transit stations provide additional opportunities for economic development.

Galvanized by many years of uncertainty, conflict, and neglect, the community is now taking an active role in planning for its future. The community's objectives include:

- To promote economic development that serves neighborhood residents;
- To improve the quality of the neighborhood environment; and
- To craft local land use policies and transportation strategies that maximize the benefits of the regional transportation improvements.

The Mid-City neighborhood of San Diego.

The community is using PLACE³S—a new planning method and analytical tool—to assist in making appropriate policy choices to realize these objectives. The PLACE³S method is unique in its integration of transportation, economic development, land use, and environmental issues, as well as its strong emphasis on community involvement.

THE PROJECT

The PLACE³S method (PLAnning for Community Energy, Environmental, and Economic Sustainability) is both a planning approach and a geographic information systems (GIS)-based analytical tool to support community land use and transportation planning. The California Energy Commission (CEC), which has sponsored the development of PLACE³S, is using its Transportation and Community and System Preservation Pilot Program (TCSP) grant to fund additional development and testing of the method. The CEC's FY 2000 grant of $195,000 is supporting a complete pilot test and peer review of PLACE³S in San Diego's Mid-City neighborhood.

The TCSP project builds on Phase 1 of the PLACE³S tool development for this neighborhood. Phase 1 resulted in the development of land use and economic data, methods to analyze the economic viability of alternative development plans, and a conceptual plan for the neighborhood. The TCSP-funded Phase 2 project includes the following elements:

- Create, through a public process, two alternative development scenarios and analyze the impacts of these scenarios, including transportation impacts;
- Host one or more design charrettes to convey the findings of the PLACE³S GIS analysis;
- Develop a "preferred alternative" based on the results of public meetings;
- Develop one or more requests for proposals (RFP) for development needed to produce the desired outcomes;
- Provide technical assistance for community leaders to track implementation; and
- Develop an electronic template linked to the PLACE³S model to create an annual report of progress.

By 2003, the CEC hopes to hand off the PLACE³S program to regional and local planning departments as an

The PLACE³S Method

The PLACE³S method is built around a five-step alternatives analysis and implementation process, with three primary components—public involvement, design, and impact measurement—in each step. The PLACE³S approach emphasizes continuous community involvement and also coordination with other planning activities, such as the regional transportation planning process.

While the PLACE³S modeling tool was originally developed to analyze energy use, other measures such as transportation, air quality, infrastructure costs, and economic development are now also being analyzed. Impact measurement relies on a GIS-based analysis tool, which needs to be customized depending on data availability. Some of the primary baseline data requirements include:
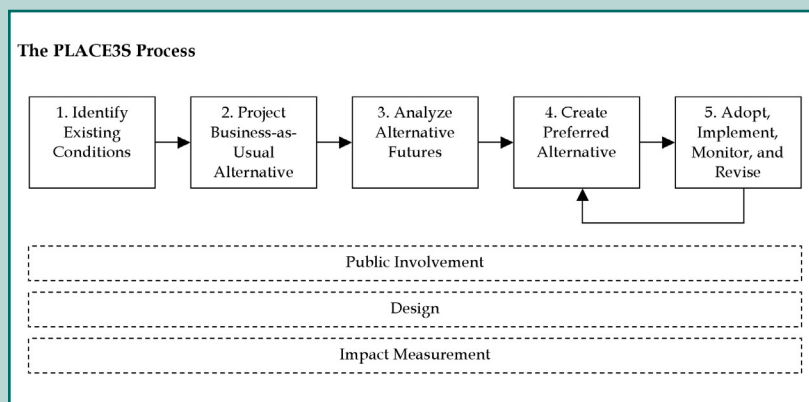
- Land use—dwelling units and employment by type by geographic area (for regional applications), or parcel-level data, including residential and commercial building types, sizes, and footprints (for local applications);
- Transportation—vehicle miles of travel (VMT) per capita, mode shares, location of transit stops;
- Infrastructure—street network, water and sewer locations and capacities, street light and traffic signal locations;
- Energy use—average vehicle fuel efficiency, electricity and natural gas use by type of residence;
- Energy supply—grid locations, capacities, and types; and
- Climate data—solar radiation, wind speeds, heating and cooling degree-days.

In addition to baseline data, alternative site or area-level development patterns (i.e., land use by type, location, and density) must also be constructed for each future scenario. In cases in which an actual development proposal is to be evaluated, the developer can usually supply computer-aided design (CAD) files that can be translated into the appropriate GIS coverages.

Based on these data, the GIS software computes a variety of measures for each alternative development scenario, such as:

- Auto dependency—VMT per capita, mode shares;
- Housing/transit proximity—percent of dwellings within one-quarter mile of a transit stop;
- Air pollution—criteria pollutants emitted from all sources;
- Redevelopment readiness of major parcels, measured as the difference between the value of the land and its improvements;
- Recreational land supply—acres of parks per 1,000 residents;
- Solar friendliness—percent of street centerlines lying within 30 degrees of an east/west axis line; and
- Global warming—carbon dioxide emitted from all sources, in pounds per resident per year.

The transportation component of the model is still under development. The methodology is expected to involve the application of elasticities from recent studies relating mode shares and vehicle miles of travel to various land use factors such as residential and employment density, mix of uses, and street connectivity.

The PLACE3S Process

| 1. Identify Existing Conditions | 2. Project Business-as-Usual Alternative | 3. Analyze Alternative Futures | 4. Create Preferred Alternative | 5. Adopt, Implement, Monitor, and Revise |

Public Involvement

Design

Impact Measurement

adoptable standard operating procedure. Project sponsors hope that PLACE[3]S will ultimately underpin a statewide program to help regions, cities, and rural counties engage the public in developing broadly supported plans that integrate land use and transportation planning with environmental protection and economic development.

PARTNERSHIPS AND PARTICIPATION

Community leaders have been a driving force behind the application of PLACE[3]S to the Mid-City neighborhood. A business owner, who heard about PLACE[3]S through an energy planning project in an adjacent neighborhood, convinced two local business groups — the El Cajon Boulevard and City Heights Business Improvement Associations — to fund the development of a scope of work to apply PLACE[3]S in Mid-City. Ultimately, the groups wanted to issue development proposals that would successfully reestablish a healthy economy and environment in Mid-City.

A 25-person citizens committee, which includes representatives of four neighborhood associations as well as the business community, provides direction and outreach to guide the planning process. The neighborhood associations and the business improvement associations will act as watchdogs over the implementation of the plan. Two Saturday workshops involving 100 to 150 people in small-group mapping sessions have provided opportunities for broad-based public input.

State and local agencies are also partners in this TCSP project. In addition to the CEC, state partners include the California Department of Transportation (Caltrans) and the California Air Resources Board (CARB). Caltrans is working with the CEC to ensure that the PLACE[3]S project is consistent with Caltrans' technical and community outreach methods for transportation planning. CARB is peer-reviewing the model and will host training workshops for air pollution control districts through-out the state.

Other project partners include the City of San Diego, the Metropolitan Transit Development Board, and the San Diego Association of Governments (SanDAG), which have helped to establish baseline data. The Environmental Sciences Research Institute (ESRI) is leading the GIS development effort, with input from the American Society of Landscape Architects. The CEC has also sponsored internships for students from the University of Southern California and the University of California at San Diego to assist on economic development and urban design issues. The

California Organized Investment Network (COIN), which provides links to insurance capital for urban redevelopment investments, will benefit from the economic capabilities of the model and will help direct investment toward PLACE[3]S communities.

RESULTS

Phase I of the PLACE[3]S project resulted in a conceptual plan for the neighborhood showing existing and future land uses, parks, transit connections, and pedestrian-oriented "garden streets." The decked-over portion of I-15 will serve as a "central green" as well as a play area for adjacent schools. The two main east-west streets — El Cajon Boulevard and University Avenue — are to be lined with three- to four-story mixed use development. Establishing a continuous facade along both streets will be an option, as the bridges over I-15 have been built to accommodate future retail development.
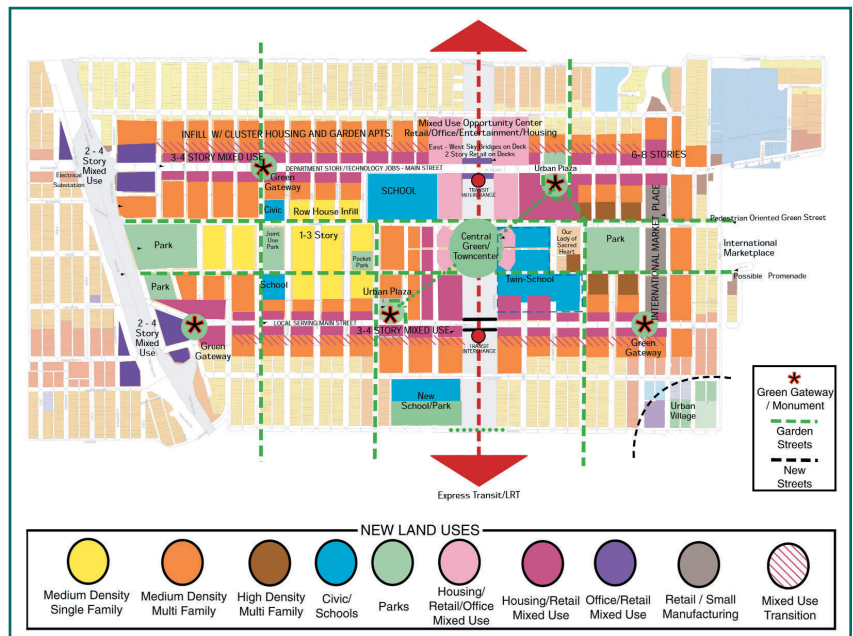
Conceptual plan for the Mid-City neighborhood.

Much of the analysis in Phase 1 of the PLACE[3]S project focused on economic development issues. Project consultants developed a spreadsheet model to estimate the viability of new development on each parcel in the study area given existing zoning constraints, development costs, and market conditions. The ratio of expected profit to costs can be plotted in GIS to show potential locations for development.

The economic analysis provided a number of useful insights to local participants. A recent study led by Dr. Edward Blakely out of the University of Southern California, for example, found that one-half million square feet of light industrial electric equipment assembly plant would provide good-paying jobs with

skill levels attainable by local workers. A PLACE3S analysis confirmed the economic viability of three- to four-story buildings, designed to look like offices, to house this industry while blending in with the urban environment. Project participants also hope to use the economic analysis tools to target incentives, such as tax rates and infrastructure investment, to areas that are "on the margin" economically, thus leveraging the greatest amount of private reinvestment per public dollar spent.

REACTIONS

The PLACE3S method and application, while only partially complete, has already helped the Mid-City community to influence its future. Perhaps one of the most significant benefits of the approach has been to make information from the GIS-based data and tools directly available to the community. Michael McKeever, a consultant on the project, notes that "people are very appreciative of having information about their community in front of them." He believes that PLACE3S is helping community members make more informed decisions.

Findings from the economic model have been helpful in overcoming resistance to increased densities. Community members now have their own development "pro forma" to play with, rather than having to rely on developers' claims about what is or is not economically viable. The PLACE3S analysis showed, for example, that the community's original intent to maintain two—to three-story zoning along University Avenue—consistent with the existing mix of eclectic, smaller-scale ethnic businesses—might be too restrictive to encourage redevelopment of vacant or underutilized properties. Three- to four-story buildings, however, were likely to be financially viable.

In Phase 2 of the Mid-City PLACE3S project, sponsors hope to make the software available for interactive use either in a large-group forum or with small groups clustered around desktop computers. Participants will be able to try different scenarios—for example, changes to land use patterns or densities—to estimate the effects on local jobs, vehicle miles of travel, mode share, and other measures of impact.

LESSONS LEARNED

PLACE3S is one of an emerging set of GIS-based planning tools that have the potential to greatly influence how communities plan for their future. These tools allow community members as well as planning staff to quickly estimate the effects of alternative zoning regulations, fiscal policies, economic incentives, and transportation investments. As the interactive capabilities of these models grow, community participants will increasingly be able to test different policies quickly, allowing a wider range of policies to be tested and facilitating learning about the effects of alternative policies.

Some specific lessons learned from activities in the Mid-City neighborhood include:

Transportation facilities can unite as well as divide. The construction of I-15 in San Diego shows that highways can be designed to minimize community impacts and even provide benefits. In Mid-City, I-15 has removed a high volume of traffic from local streets and placed it below-grade. Bus lanes and ramps provide direct access from the neighborhood to high-speed transit, and are designed to allow for conversion to light rail transit in the future.

Community plans need to consider economic viability. Even the most visionary community plans will never be realized if the proposed development is economically infeasible. The Mid-City neighborhood has used the PLACE3S economic analysis tool to identify land uses and zoning that should be profitable to developers, in addition to meeting the community's needs for jobs and retail opportunities.

Good data underpin good planning. Community planning models such as PLACE3S typically require parcel-level land use data. While the Mid-City project benefited from existing data maintained by SanDAG, the availability of such data varies from place to place. Data maintenance is also a concern; Mid-City project participants are currently discussing the best host for the data and analytical tools, as well as procedures for updating data.

The development and application of PLACE3S in San Diego is demonstrating its potential as a community planning method. Further development and implemen-tation will more fully showcase this community-led, information-driven approach to planning.