

# Developing a Regional Strategy for Transportation System Development

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## ABSTRACT

The southern California region has historically been ineffective in obtaining capital money from federal agencies for transit system development. This has been the case in spite of the fact that the region contains more people than 46 other states and is still growing rapidly. Growth, in fact, is reaching a level that requires the region to become more effective in developing its entire transportation system in order to facilitate that growth. The history of transportation in the region is examined and the reasons why transportation development is slow are investigated. Overlapping agency responsibilities and the lack of regionwide consensus are cited as principal causes. The financial and talent resources of the region are substantial and could be used to develop a successful transportation program if properly managed. A strategy is proposed by which a successful program could be realized. The strategy involves a top-down approach that begins by asking, "What should the transportation system accomplish?" There follows a phased project development process that includes a series of decision points, each more specific than the last. The strategy also includes the assignment of specific decision-making responsibility to specific agencies at each decision point.

The southern California region comprises six counties surrounding the city of Los Angeles. The region's population of 11.5 million people would rank the region as the fifth largest state in America. As the premier Sun Belt area, southern California has experienced phenomenal growth over the last several decades--growth that even now shows no signs of abating.

Continuous growth has changed the complexion of the region in many ways. Orange County, once covered by orchards and farms, is now a dynamic economic growth area. One major outcome of the recent development is an overtaxed transportation infrastructure characterized by massive congestion even on week-ends. San Bernardino and Riverside counties, once known for their rural environments, are also rapidly learning about the transportation problems associated with higher density development. Los Angeles County is learning that even a massive freeway system has its limits as demand continues to increase.

The region's planning community realizes that major improvements to the transportation infrastructure will be needed if the region is to continue to grow. For the first time, a regional transportation plan is being developed that quantifies anticipated deficiencies in the transportation system and seeks to take action focusing on the most crucial areas. New financial strategies are being pursued in earnest.

Los Angeles County has recently reached a major milestone through the ratification of Proposition A. For the first time, a guaranteed local source of funds has been earmarked for the development of public transportation facilities. The half-cent sales tax will generate approximately \$1 billion in the first 10 years to develop a rail rapid transit system in the county. A countywide rail transit implementation program is being developed by the major transportation planning agencies, spearheaded by the Los Angeles County Transportation Commission. Orange County will soon find a similar tax referendum on its ballot.

In developing programs for transportation development, the agencies must consider a wide range of issues such as population and land use in major travel corridors, alternative technologies and alignments, and system financing. Addressing these and many other issues will help the planning agencies develop a program that can provide the greatest public benefits for the investment.

## ISSUES

Although the planning agencies are facing some new questions in developing a rail transit system in Los Angeles County, the basic underlying issues that must be addressed have been around for a long time. Rail transit, after all, is but one element of a very large urban transportation system that currently services a populace of more than 7 million within Los Angeles County plus millions more in the rest of the region.

The existing transportation system is both praised for the number of people that it carries and maligned for not being able to carry more. The most recent growth projections indicate that the system will be required to carry many more people in the years ahead.

## Evolution of the Transportation System

The transportation system serving the region is the product of a long evolutionary process. Planning studies were performed at least as far back as 1906. Since that time the key element, or backbone, of the transportation system has changed a number of times.

### Electric Railway

In 1906, the backbone of the southern California transportation system was the electric railway (today it would be called a light rail system). The system expanded rapidly until its peak in 1925 when it extended more than 1,100 miles and reached nearly every developed area in the county.

Even at its peak, however, the transportation system based on the electric railway was proving to have some drawbacks. In 1924 and 1925 the city and county of Los Angeles prepared the Major Traffic Street Plan and the Comprehensive Rapid Transit Plan (1). Both of these plans addressed traffic conges-

tion and the role of transportation in the development of the metropolis. The City Club of Los Angeles in 1926 cited "relief of congestion" as the most important issue in transportation planning and advocated a decentralized urban form consisting of "local centers and garden cities" that would minimize the demand for long trips.

The Rapid Transit Plan led to a bonding initiative in 1926 to begin grade separating the highest density portions of the system. This was soundly defeated whereas, on the same ballot, a proposal to build a unified intercity passenger rail station, Union Station, was passed. (The bonding initiative was jointly sponsored by the Pacific Electric; Southern Pacific; Union Pacific; and Atchison, Topeka and Santa Fe railroads and included a partial sharing of rail and stations. The Union Station ballot measure was one step in the city's plan to build a union station that started in 1915 and ended with the station opening in 1939. The railroads fought the project until 1931 when the U.S. Supreme Court ruled in favor of the station.)

#### Highways

A few years after the bonding issue was defeated, the electric railway began to decline until 1963 when it ceased to exist. The faster and more convenient automobile took over and a network of arterial highways became the new backbone of the transportation system. It soon became apparent, however, that the network of arterials would not be adequate and the concept of freeways was introduced.

A report by the Automobile Club of Southern California in 1937 stated, "the streets and highways of the Los Angeles area are daily becoming more difficult and hazardous to travel," and proposed exclusive motor vehicle facilities. This was reinforced in 1939 by the City of Los Angeles Transportation Engineering Board. Both reports referred to the growth of the region, the latter specifically mentioning the "decentralizing trends" of urban development (1).

#### Freeways

The region's first freeway, the Arroyo Seco Parkway, was completed in 1940, but large-scale growth in the freeway system did not begin until about 1950. In the 1960s the freeways clearly became the backbone of the transportation system. More than 500 miles of freeway had been constructed by 1970, and today more than 1,500 miles of freeway are operating in the region.

#### Transportation and Urban Form

The symbiotic relationship between the transportation system and urban form has long been recognized in Los Angeles. By the 1920s the multiple-centers form of development was already appearing in local plans. The impact that the transportation system would have on development was addressed in the 1925 Rapid Transit Plan: "a clear cut recognition of the fundamental relationship of transportation to the growth of a city is essential to the determination of a sound development policy."

Each time the transportation system went through a transition, congestion was the catalyst. This indicates that the county had outgrown its existing transportation system and was looking for a new solution. New solutions, when found, became the backbone of a larger, more efficient transportation sys-

tem. In each case, the inconvenience and danger of congestion--created by population growth and increased personal mobility--gave way to a faster more convenient way of travel.

#### FACING THE PROBLEM AGAIN

In 1983 the fact that the growth of the region is exceeding the capacity of the transportation system must again be faced. Already serious congestion plagues many miles of freeway as well as localized centers such as downtown Los Angeles and the area around Los Angeles International Airport.

The recently adopted Regional Development Guide, the region's long-range projection of population, employment, and land use, promotes multiple centers and subregional job and housing balance--objectives of the metropolitan area for more than 50 years. The transportation system is to be designed to serve centers and promote subregional travel, and it is to be sized according to growth trends.

The existing transportation system has reached capacity in many areas and will be inadequate to meet the mobility needs of the future. By the year 2000, 454 miles of the region's 1,500 miles of freeway will be inadequate to meet the projected travel demand. Even the new Century Freeway, when built, will be seriously overcrowded.

#### New Freeways Unlikely

The opportunity to build new freeways is almost gone in many areas of the region. This is partly due to the completion of the federal Interstate system and the termination of FAI funding and partly due to the fact that increased densities have nearly eliminated the potential for acquiring new rights-of-way or widening existing freeways. It is unlikely that improving the freeways will in itself provide a transportation system that is adequate for the future.

#### Communities Concerned About Growth

The impacts of growth are being felt more and more by local communities. Several have adopted no-growth policies to try to limit the future demands on their local infrastructures. Local highway congestion has reached the critical state in many areas and is continually worsening. Some cities are actively pursuing ways to reduce congestion or to ensure that large-scale growth of arterial traffic does not occur.

The actions being used include evaluating transportation system management (TSM) strategies and requiring developers to provide their own roads when building major projects. Concerns about the impact of major transportation and other projects on local streets and arterials are being expressed more and more.

In some areas, greatly increasing the capacity of arterials is being studied as a short-term solution to the congestion problem. However, the impact of this solution is relatively small in some high-density areas. Other communities do not wish their arterials to be heavily used for regional travel, and therefore do not support this strategy. Improving arterials, then, will not provide all of the needed capacity in the long term.

#### A New Backbone Is Needed

If freeways and arterials will not be able to meet

all of the region's mobility needs in the future, a new solution must be found. A new backbone for the transportation system--the key element of future improvements--must be found if the transportation system is to keep up with urban development. Important objectives of this new solution include

- Increasing total system capacity;
- Inducing people to stop traveling in single-occupancy automobiles (reducing congestion);
- Reducing travel times, especially during the morning and evening peaks; and
- Reinforcing the Development Guide and local development plans.

Several strategies to develop the needed transportation capacity have been examined. They include rapid transit, bus and high-occupancy vehicle guideways, light rail, mixed-flow bus, and commuter rail. Projects growing out of these solutions are in the development stage. One of these line-haul strategies, or perhaps all of them in combination, may be the source for providing a new backbone for the transportation system.

#### DEVELOPING THE TRANSPORTATION SYSTEM

One thing that Proposition A accomplished in Los Angeles County was to indicate a desire on the part of the general public for rail rapid transit. Planning agencies in the county now have a direction to pursue but do not yet have all of the answers.

It is up to the planning agencies to develop the total transportation system for the county. The issues to be addressed in developing that system have been addressed before, but they now must be looked at from a new perspective. Rail rapid transit must be an integral part of that system. In fact, it may be the backbone of the system in the future, as it is now in several areas of the United States.

#### THE NEED FOR A STRATEGY

During the past several years, the existing program for implementing transportation projects has yielded only disappointment and frustration. There is concern that this trend may continue and that the agencies involved may not be able to develop projects, which meet the mobility needs of the county as well as of the region as a whole, in a timely manner.

In this section, the institutional problems in the existing process are identified as are the tremendous opportunities that lie ahead. The existing situation including potential revenues, the tremendous need for projects, and the current institutional environment is described in some detail.

#### EXISTING CONDITIONS

Currently, Los Angeles has the largest all-bus system in the country, yet the percentage of trips that use transit rather than automobiles is very low relative to other major U.S. cities. One reason for this is that there is only one high-capacity transit facility in the entire region. This is the case in spite of the fact that many other major cities are operating or are in the construction phase on high-speed, high-capacity rail systems. Why is it that southern California has been unable to tap its resources to build such a system until now?

#### Available Revenues

A frequently offered explanation of why there is not more rapid transit in southern California is the lack of capital resources. Financial feasibility, in fact, is a major item in every work program concerned with project development. Perhaps this is a pessimistic outlook because the actual projections of transit capital revenues do not look dismal at all.

The Southern California Association of Governments (SCAG) analysis indicates that (assuming no change to existing state and federal programs and policies) total capital resources for the region from federal, state, and local sources (including Proposition A) for the next decade will total \$5.1 billion. If federal funding for the Wilshire Starter Line is approved, this amount will increase to \$7.3 billion. Total estimated capital revenues for the next 20 years are expected to reach \$11 billion (2).

Another potential source of capital revenue is the increase in residual land value due to transit development. High-quality transit projects in the central business district (CBD) and regional core areas alone could result in an increase in residual land values of from \$600 million to \$1.26 billion per decade. A logical percentage of this increased value that might be captured by such value-capture techniques as joint development and benefit assessment is about 50 percent. It may, therefore, be possible to capture an additional \$1.26 billion over two decades from increases in land values.

These and other potential capital revenues may yield up to \$15.5 billion over the next 20 years if aggressive and innovative financing strategies are used. As an order of magnitude estimate, this is roughly five times the escalated cost of the Wilshire Metro Line.

The effectiveness of these revenues can be enhanced as well through some cost savings both in capital and operating expenditures. These savings include joint vehicle purchases such as the purchase of light rail cars by Miami and Baltimore, safe harbor leasing, and fare reform that reduces subsidy requirements.

Realizing this potential will require more than aggressive and innovative strategies. Favorable legislation at the state and federal level and local governmental actions will be needed. This means that a strong support base for transit projects will have to be developed. A well-established mechanism for obtaining value-capture revenues will also be required.

#### Needs

The recently approved development forecast, SCAG-82, recognizes there will be about 1 million more people and 800,000 more jobs in Los Angeles County alone by 2000. This is going to place increasing pressure on the region's transportation network. SCAG's analysis shows that increasing congestion and inconvenience will occur unless significant improvements are made or mobility habits (e.g., travel patterns, trip making, land use, or other behavior) change.

The adopted air quality management plan (AQMP) shows that the air basin will not achieve air quality standards by the year 2000 without rather sweeping long-range measures. Among them are substantial shifts in population to outlying deserts, substantial substitution of telecommunications for automobile travel, the introduction of high-speed trains, and changing the basin to a nonpetroleum-based economy. It also supports the urban form development

patterns promoted in the Development Guide Policies. Finally, sufficient transportation infrastructure is needed so that the freeway network can maintain peak hour speeds of about 30 mph.

#### Project Development

Although the region has long believed that money was an extremely limiting factor in making transit investment decisions, it is becoming clear that this is not the case and, in fact, there could be more money than will be needed. The region has also believed that its population would always continue to enjoy the ability to move about and have the quality of life that most southern Californians have come to take for granted. This too may no longer be the case.

#### Long-Range Plan

Although a documented regional transportation plan (RTP) does exist for southern California, it is being revised to reflect changing conditions and forecasts of the future. The projects that made up the 1980 Regional Transit Development Program, for example, are in various states of completion, or confusion, indicating a distinct move away from the plan in just 2 years. Even though specific projects are clearly recommended in the RTP, local support has not always been maintained to enable the projects to be implemented.

The indication, then, is that the RTP is not being used by the state and the region as the sole long-range plan even though legislation and a multi-agency memorandum of understanding clearly state its intended function. As a result, broad-based support for the plan and for specific projects is lacking, which makes nonlocal support very difficult to arrange.

#### Tie to Development Patterns

An essential linkage that the long-range plan must provide is to the development patterns that the region envisions. The recent adoption of SCAG-82 shows the magnitude of the increase in population in southern California and illustrates the form in which development is occurring. The form is one of subregions developing with a variety of centers throughout the region.

More important, SCAG-82 contains key policy statements about project planning and project decisions. The essence of these policies is to ensure that all infrastructure is phased, sized, and located according to the pattern and magnitude of growth shown in SCAG-82. This pattern would tend to emphasize the kinds of infrastructure improvements that serve short trips within subregions. SCAG-82 policies also give priority to transportation development, which serves centers, and recommend that land use decisions should encourage growth around transit stations and in identified growth centers.

#### County Agencies

There are numerous agencies in the region involved in transportation development. These include the county transportation commissions, transit districts, some of the larger cities, SCAG, and Caltrans. Each agency has different and similar responsibilities. Each has distinct technical expertise and talented staffs. All have varying relationships with one another and with other state and federal

funding sources. The resources of these agencies give the region an excellent professional staff with which to develop a successful transportation program.

#### Overlapping Responsibilities

This complex institutional environment and the idea that "if you want something done you have to do it yourself" have led to overlapping activities among all these agencies. There seems to be suspicion of, or lack of respect for, other agencies' abilities or responsibilities. This unclear assignment of responsibility has led to competition among agencies, which results in apparent competition between projects. It divides political and technical support for projects both geographically and institutionally. Perhaps more important, the apparent competition leads to confusion and apparent lack of direction in the "signals" and communication to local, state, and federal agencies and the private sector.

#### Project Development

This lack of clarity has also led to inefficient project development. Public agencies seem to be falling over one another leading to redundant, parallel, or illogical work activities. For example, the Los Angeles-Long Beach Light Rail Project first had a feasibility study done by Caltrans; then one was done by the Los Angeles County Transportation Committee (LACTC).

The Santa Monica Boulevard Light Rail Feasibility Study was done by Caltrans, but for what purpose? Los Angeles City has begun an alternatives analysis for the same area. In the recent past parallel studies have been performed or proposed such as the Southern California Rapid Transit District (SCRTD) Starter Line Extension Analysis, SCAG's Line-Haul Study, and the LACTC Tier II Strategy. All of the studies have similar objectives but were or will be done by different agencies. Another example of inefficient project development is the selection of projects. Projects have been selected before corridor refinement studies have been completed (e.g., Harbor and Santa Ana Freeway HOV lanes).

Even the private sector has initiated transit studies out of either true community spirit or desperation. The El Segundo Employers Association South Bay Trolley Feasibility Study and the Central City Association Study of Los Angeles CBD Alternatives are two of the most prominent examples.

#### Lack of Overseer

Project development is a complex, detailed process that needs management. The region cannot afford to just let it happen. Project development needs orchestration, scheduling, resource allocating, assignment of responsibility, and accountability. What appears to be missing from the existing transit program is a manager or overseer of this process: an agency to marshal the resources necessary to do the job, apply those resources, and ensure that the project development process is producing the sorely needed projects in an efficient and effective manner. This process should produce flexibility for project scheduling in order to take advantage of available resources, to meet needs, and to respond to changing conditions.

#### PROJECT DELIVERY SYSTEM

An implied element in the guideway transit program is a process through which projects are eventually

implemented, a project delivery system. To improve the current project delivery system the important characteristics need to be defined, the talents and responsibilities available need to be capitalized on, and identified gaps need to be filled with existing or new institutions.

There are several characteristics that are essential to an effective project delivery system. First, there needs to be an effective long-range plan that links transportation system evolution with other components of the environment (e.g., land use, air quality, economic base) and provides the direction to be taken. Second, there must be a manager of the delivery system who identifies milestones and marshals the resources to accomplish the job. Next, there needs to be a clear assignment of work to each agency that has a responsibility and expertise to contribute. All responsible agencies with a role must be directly involved in this process. This is essential if the last characteristic, consensus of support of the project being developed, is to be obtained.

Long-Range Plan

Figure 1 shows how the long-range transportation plan should function in the planning process. SCAG is currently revising the regional transportation plan, which is the long-range planning document for southern California. This should provide the context and set the direction for project development work for each county of the region. It will provide the linkage to SCAG-82 and the AQMP both in a quantitative and in a policy manner. The modeling and analysis used in the plan's development will tie transport networks to land use and development patterns and should lead to the development of high-productivity transportation projects. It will quantify needs in subregions and corridors and recommend modes for refinement studies that are consistent with SCAG-82 and the AQMP. It will include mode-split objectives by subarea and corridor, some of which will require high-capacity transit projects.

Milestone Management

Milestone management is the next essential characteristic of a successful project delivery system. An overseer of the project delivery system, who is the

final decision maker on guideway transit, is the first requirement. The overseer programs resources, identifies priorities, sets milestones, coordinates the process, and ensures that each activity is being carried out efficiently and effectively. The overseer also coordinates with the private sector through value-capture strategies and ensures that costs are minimized by coordinating cost-reducing strategies such as joint purchase agreements. In effect, the overseer controls the financial game plan for guideway transit development.

The overseer should ensure that an orderly set of decision points is charted--one flowing from the other and each leading to specific project choices. The manager also has to tap all available resources, not only construction and operating resources but institutional resources as well. The overseer has to manage the entire system.

Clear Assignments

Roles and responsibilities of each agency have to be understood, clearly anticipated, and accepted by every agency. The job is too large and the task too crucial to not bring to bear all the expertise that is available. The planner, the manager, the designer, the builder, and the operator roles and responsibilities must be delineated and given to various agencies if the project is going to be successful. It is essential that all agencies clearly understand their responsibilities throughout the process.

Consensus in Support of Projects

Perhaps the most essential ingredient for a successful project delivery system is a broad support base. The region must speak with a single voice to Sacramento and to the federal government in order to make that voice heard.

As a case in point, an elected official from one county spoke out against the Downtown People Mover Project and shortly afterwards UMTA dropped its support. What would have happened if several elected officials together with the major agencies in the county had collectively spoken out in support of the project? As it was, no single agency or individual had enough confidence in the support of others to

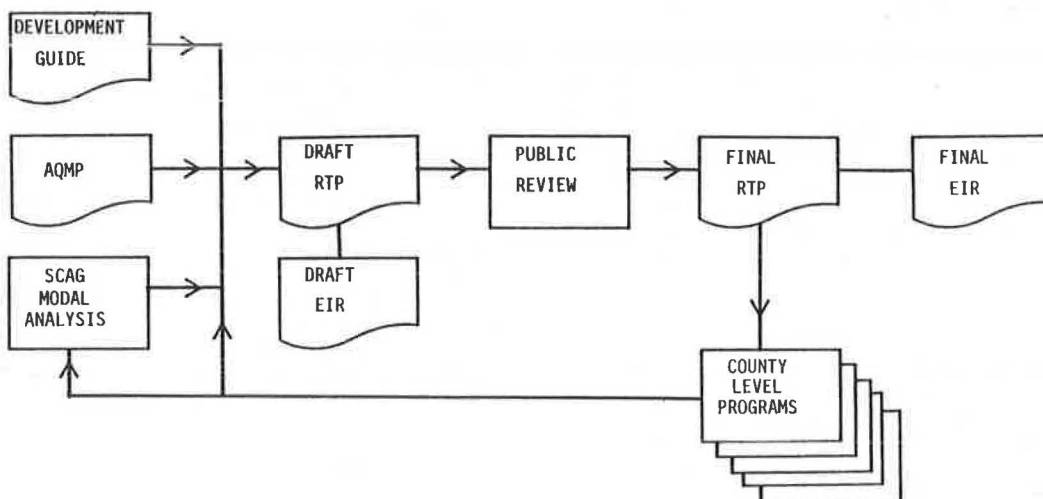


FIGURE 1 Regional transportation plan process.

make the first move and consequently no one spoke out to defend the project.

This lack of commitment is interpreted by state and federal officials as a lack of consensus in Los Angeles. Until federal agencies are convinced that a consensus does exist and that there is a commitment, federal capital funding will continue to flow elsewhere.

The size and complexity of the southern California region are major impediments to developing consensus. The approach to transportation infrastructure development, which has been approved in the Development Guide, breaks the region into subregions of about 1 to 1.5 million people each. It calls for a long-range plan to provide mobility within those subregions and to connect the major centers. Projects and strategies to meet the needs of each subregion and corridor must be pursued. Successful implementation of this type of approach requires strong commitment of all agencies to the plan even if it calls for a project outside of the influence of a particular agency or jurisdiction.

Commitment does not come into being spontaneously. The process by which project-level decisions are made must be designed to generate consensus as a natural by-product. This will require the active participation of all interested entities. Such participation cannot be superficial; it must include specific analytic and decision-making responsibilities. Only if it is involved in the decision-making process can an agency be expected to commit itself to the decisions being made.

Technical justification is also required for building consensus. Here again, an agency cannot be expected to support a decision unless convincing technical arguments can be made that the decision is appropriate.

One final necessary ingredient in building consensus on projects is the support of elected officials. This requires active discussion of projects by the elected officials in a regional forum. Adoption of projects by the policy body of the metropolitan planning organization, SCAG, is a step in this direction.

#### STRATEGY

The process of planning, developing, and implementing the regional transportation system is a complex arrangement of policy and technical decisions. Not only are the issues closely interdependent, they must transcend the local level and withstand the scrutiny of regional, state, and federal decision makers.

The key policy issues must be resolved in a series of consecutive decisions beginning with the most general, basic questions and leading to very specific decisions. The issues can be categorized in three basic groups indicating generally when they should be addressed. No order of priority or importance is to be implied in the categorization, simply chronological order. The three categories can be characterized by the following questions:

- Question 1: What should the transportation system accomplish?
- Question 2: What should be built, and where?
- Question 3: How can the system be financed?

Each of these questions entails a number of policy issues. Addressing the issues one category at a time provides an efficient process through which very specific decisions will ultimately be made. Resolution of the first two questions must be docu-

mented so that subsequent decisions will be based on precise language. Reaching resolution on the first question will make the second question issues much easier to address. In fact, the resolution of the first question will set the parameters for the second question, and resolution of the second question will set the parameters for the third. Without a resolution to questions 1 and 2 it will be very difficult, if not impossible, to reach any resolution on question 3.

#### Question 1: What Should the Transportation System Accomplish?

This question is generic and refers to the transportation system as a whole rather than, for example, just the rail rapid transit element. The question speaks to the fundamental long-range goals of providing transportation infrastructure for the region and thereby sets the framework on which all subsequent decisions are based. It must be asked first so that the subsequent questions can be put into perspective.

Without a documented decision on this question, specific questions become much more difficult to resolve. As a case in point, suppose two rail projects have been proposed in the same corridor. One project will cost \$100 million and carry 10,000 people per day, and the other will cost \$1 billion and carry 100,000 people per day. Which project should be built?

A transportation analyst, attempting to determine the public benefit per dollar expended, calculates the cost per rider of both projects. It is found that the two projects have identical cost-effectiveness measures. One project will maximize patronage but is very expensive. The other project is much less expensive but carries a small number of riders. How does one decide which project is the wisest investment of public funds?

With a clear statement of long-range goals and objectives, the transportation analyst in this example would have little trouble choosing which project should be built. Without such a clear statement, the analyst has no uniform basis on which this, and many similar decisions, could be made. This would lead to a development program that was haphazard and inconsistent.

#### Question 2: What Should Be Built, and Where?

After the issues relating to the first question are resolved, the second question must be addressed. Again, this question speaks to the entire transportation system, although separate programs for developing various elements would be appropriate.

The focus of this question is to structure a program or group of programs that provide for a well-organized decision flow leading project implementation. The challenge is to conceive the best approach for achieving the long-range goals and objectives.

There are a number of transportation programs, such as aviation and ports, that must be dealt with at the regional level. These programs involve a small number of facilities with large regional significance. In ground transportation, however, so much is being developed and so much more is still needed, that several county-level programs are necessary to perform all of the planning and development work. Within each county, long-range planning is performed on a corridor-by-corridor basis. Short-range planning is performed on a subregional basis or on small subareas within subregions.

The organizational structure should enable the

key agencies to provide input in the areas of their unique responsibilities and expertise. For example, SCAG has a responsibility to provide the linkage between urban development and transportation system planning. SCAG is also responsible for long-range transportation planning including defining and assessing needs and ranking transportation corridors in the entire region in priority order.

Similarly, Caltrans and SCRTD have both demonstrated expertise and responsibility in designing guideway transit projects. Caltrans has already built one project and has initiated construction on a second. SCRTD similarly is well into preliminary engineering on a high-capacity rail project. These two agencies should be relied on for project development and construction.

Before a project reaches implementation, it must pass through a number of key decision points. If each decision made along the way receives broad-based support from the region, the viability of the project is enhanced. Lack of regional support of any key decision point can jeopardize the entire project.

The following key decision points define the transportation planning process. This process is specifically designed to cover the development of major capital highway and transit projects. It is, however, an appropriate process to follow in planning for other types of projects as well.

- Adopt a regional transportation plan (system planning),
- Initiate corridor and area planning,
- Initiate project planning, and
- Add projects to the regional transportation plan.

These key decisions can be made by a number of different agencies in the region. The necessary ingredients for the decisions to be supported by the region are (a) agreement about which agency is responsible for any specific decision, (b) sufficient technical analysis and compliance with state and federal regulations, and (c) opportunity for all affected agencies and jurisdictions to participate in and influence the analytic work and concurrent policy discussions leading to the decision.

Following the transportation planning process are project development and operations. These activities include

- Preliminary engineering,
- Final design and construction, and
- Operations.

### Question 3: How Can the System Be Financed?

Although question 3 is asked after question 2, it cannot wait until after the entire process described is completed. It must be asked at each funding decision point throughout the process. For some potential projects, such as the Harbor Freeway Transitway, this question must be resolved very early.

Funds available for transportation investment are limited for the region and come from a variety of sources. Depending on the fundamental long-range transportation goal of the region, current estimates of available funds may or may not be adequate to construct all that is needed. If they are not, perhaps a reevaluation of the Development Guide and its

growth projections is needed. Another strategy is to aggressively seek additional funds from existing or new sources so that the fundamental goal can be accomplished. A third approach would be to reconsider the criteria for evaluation, which aid in determining the fundamental goal, and to change their priorities. Two of these strategies represent policy changes that would then be reflected in subsequent revisions of the Development Guide or the RTP.

Another strategy to improve the financing picture is to reduce total demand on the transportation system. This can be done through demand management techniques. Higher parking costs and increased fuel taxes are two examples of techniques to shift people out of single-occupancy automobiles to ridesharing or transit. These techniques can generate additional revenues for transportation. Another possibility is to rely more heavily on telecommunications to allow people to work at home, reducing peak-hour demand.

These strategies have the potential to improve travel in the region, yet they carry with them some significant social impacts. The region needs to examine these social impacts and determine the extent to which the techniques are justified.

### CONCLUSIONS

Answers to the three questions described previously will help to streamline transportation planning in the region.

The answer to the question, "What should the transportation system accomplish?" is a set of goals and specific objectives. If possible, the goals should identify the first-priority consideration in transportation planning.

The answer to the question, "What should be built, and where?" is not a map but a well-defined transportation planning process or project delivery system. This process must include specific policies and criteria for making decisions.

The answer to the question, "How can the system be financed?" can be found in policy actions taken by elected officials representing the metropolitan planning organization. These policy actions include decisions on tax increases, demand management, and other strategies that affect both revenues and overall travel.

SCAG is currently revising its regional transportation plan to incorporate the recommendations presented in this paper. When the plan is adopted, more specific information on goals, objectives, and policies will be available. The authors hope to discuss these issues further in other papers after adoption of the regional transportation plan.

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