

Los Angeles County  
Transportation Commission  
**30-Year Integrated  
Transportation Plan**

April 1992

**Los Angeles County Transportation Commission**

**30-Year Integrated Transportation Plan**

Adopted April 1992

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## INTRODUCTION

The mission of the Los Angeles County Transportation Commission is clear, but far from simple: To lead the way to greater mobility in Los Angeles County.

In California, population has grown 25% over the past 10 years. The number of drivers has increased 35%. The number of registered vehicles has increased 40%. The number of vehicle miles travelled has increased 60%. These statistics are abstract measures of trends which Los Angeles County residents need no yardstick to gauge: they experience it daily in the form of more traffic, more time, and more stress.

If no action is taken, the outlook is more of the same: average travel speeds will continue to deteriorate in Los Angeles County. Freeway speed in the rush hour today will decrease another 10 m.p.h. by 2010. Conditions on local and arterial streets are likely to be hit even harder.

The LACTC is planning, designing, and implementing programs which will not only reverse this trend but also provide convenient and safe transportation alternatives which can reduce travel times by 50% or more. This strategy recognizes both the realities and the opportunities for success in Los Angeles County, including not only new rail and improved bus systems, but also extensive highway improvements and incentive programs designed to reduce congestion.

Clearly, for a great number of people in Southern California, public transit is not an option. That is why the range of programs the LACTC is studying, building, or has already implemented is intended to build on the significant investment already made in highways here in Los Angeles County. Improvements in the design, flow, connectivity, and overall capacity of these facilities are complemented by the introduction of attractive high capacity rail and bus alternatives which reduce the number of vehicles travelling on the highways.

The potential impact and sheer magnitude of this undertaking goes far beyond the benefit of improved mobility. The economic impact of a 30-year, \$183 billion transportation program must be carefully managed to maximize its benefit to the local economy. This means jobs, investment, and strengthening the overall economic viability

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of this region. This program also offers an unprecedented opportunity to help clean up Los Angeles' air by reducing congestion and providing high-capacity non-polluting transportation alternatives.

The 30-Year Integrated Transportation Plan described in this document embodies the mission of the LACTC. It presents a framework of planning, policy, and financial strategies which together comprise a balanced, integrated transportation system plan designed to deliver Los Angeles County the best overall return on its investment.

### **WHAT IS THE 30-YEAR PLAN?**

The transportation problem facing Los Angeles County today is deep-rooted and complex: there is no single solution or short-term fix. Achieving significantly improved mobility will require a comprehensive combination of immediate and long-term transportation strategies.

The 30-Year Integrated Transportation Plan ("30-Year Plan") is a strategic planning tool which provides the framework necessary to develop and evaluate the most cost-effective means of meeting this challenge:

- o It establishes a framework of highway, bus, rail, and demand management strategies and matching financial strategies designed to address current and projected mobility needs in Los Angeles County.
- o It provides the guiding vision for day-to-day and year-to-year decision-making to ensure consistency with the LACTC's overall strategy for improving mobility.
- o It enables the LACTC to monitor and measure its progress in this effort.
- o It offers a framework for assessing the viability and impact of new strategies for improving mobility as they are identified during the course of this effort.

The 30-Year Plan is designed to be flexible: as the Commission moves forward and as programs, projects, and policies evolve, the 30-Year Plan is updated to reflect these changes. As the forecast horizon lengthens, this flexibility also accommodates the increasing difficulty in anticipating economic conditions, technological innovation, political climate, and other factors.

## 10-YEAR IMPLEMENTATION PROGRAM

To account for the uncertainty of long-range revenue and cost projections without compromising the LACTC's ability to move forward rapidly with critical investment decisions, the 30-Year Plan includes a 10-Year Implementation Program. Spanning the first 10 years of the 30-Year Plan, this Program begins the process of translating the overall 30-Year Plan strategy into reality.

For fiscal year 1991-92 through fiscal year 2000-01:

- o Resource projections are based on current economic conditions and existing revenue bases; and
- o Programs and projects are identified based on existing LACTC commitments, construction schedules, and the latest planning and engineering studies.

The scope and timing of programs and projects is balanced with revenue estimates to optimize the use of projected resources.

The 10-Year Implementation Program challenges the Commission to pursue strategies required to deliver a balanced program of transportation improvements as quickly and efficiently as possible. And, as a fully-integrated component of the overall 30-Year Plan, it ensures that short-term decisions with long-range consequences are consistent with, and contribute towards, achieving the long-range objectives of the Commission.

## RESOURCE CONSTRAINTS AND OPPORTUNITIES

There are three versions of the 30-Year Plan, each defined by the assumed level of resources available to the LACTC for implementing transportation improvements.

### 1. The Fundable Plan

The Fundable version of the 30-Year Plan ("Fundable Plan") is the basis of most of the discussion in this document. It balances revenues and expenditures using the best available information about future transportation revenues and costs in Los Angeles County. The Fundable Plan was developed using revenue estimated from existing, voter-approved funding sources, and does not assume that any new taxes or tax increases will be imposed over the next 30 years. However, the Plan assumes that the 1992 and 1994 state rail bond issues will be approved (see Financial Component). Existing

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revenue sources are assumed to increase over time by the rate of inflation.

Programs and projects are scheduled in the 10-Year Implementation Program component of the Fundable Plan consistent with resource availability. Revenues and expenditures are optimized: there are no shortfalls, and surpluses are limited to prudent cash balances.

In the second and third decades of the 30-Year Plan, programs and projects are scheduled such that any surpluses and shortfalls are contained to within 5% of revenue projections. This flexibility reflects the increased uncertainty associated with both long-range revenue and cost estimates.

### **2. The Expanded Plan**

The Expanded version of the 30-Year Plan ("Expanded Plan") reflects increases in revenues beyond those assumed in the Fundable Plan. It assumes that reasonable revenue increases will occur in the second and third decades of the 30-Year Plan including a new Federal Gas Tax and another issue of State Rail Bonds. These assumptions permit program expansions and new projects to be added in the second and third decades of the 30-Year Plan. The 10-Year Implementation Program component of the Expanded Plan is the same as that included in the Fundable Plan.

The Expanded Plan challenges the LACTC to pursue new revenue sources in order to implement these additional transportation improvements.

### **3. The Unconstrained Plan**

The Unconstrained version of the 30-Year Plan ("Unconstrained Plan") represents the universe of transportation improvements which have been identified for Los Angeles County. There is no resource constraint. The Unconstrained Plan provides a useful perspective of the magnitude of what needs to be done.

Together, these three versions of the 30-Year Plan provide the framework necessary to effectively undertake the challenge ahead: improving mobility for all of Los Angeles County, now and in the next century.

## **EQUITY AND ECONOMIC DEVELOPMENT**

The \$183 billion investment represented by the 30-Year Plan will provide greatly improved access to jobs, markets, education, and recreation facilities. An investment of this magnitude, coupled with the value of improved access, will also provide significant potential economic impacts. Consequently, the 30-Year Plan must be carefully implemented so as to ensure that the improvements are equitably distributed and the economic impact is managed to maximize community benefit.

Equity with respect to cost of service, quality of service, and access to service will be considered in programming decisions made by the LACTC in the implementation of the 30-Year Plan. In addition, equity considerations will be incorporated in ongoing area-specific needs assessment and service distribution studies conducted by staff.

Economic development opportunities will be aggressively pursued in high-volume transit corridors. Staff will also develop programs for other areas to facilitate economic development in conjunction with transit improvements, with the objective of maximizing the overall benefit to the community. Other transit facilities, such as storage yards and maintenance facilities, will be developed so as not to discourage related economic development.

## **RELATIONSHIP TO OTHER PLANNING AND PROGRAMMING DOCUMENTS AND PROCESSES**

The 30-Year Plan is an important building block for the Regional Mobility Plan, Transportation Improvement Programs, Short Range Transit Plans, and other planning and programming documents impacting Los Angeles County's transportation future. However, the Plan is not a substitute for separate, specific Commission action on these documents. In addition, the fact that a project is included in the 30-Year Plan is not a substitute for Commission action on the project. All review, approval, and regulatory requirements related to each specific project are performed independently of the 30-Year Plan process.

**Figure 1** describes what the 30-Year Plan is and is not. **Appendix A** describes its relationship to other planning and programming documents.

# What It Does and Doesn't Do

Figure 1

## **THE 30-YEAR PLAN:**

- Guides Commission
  - NOT** a static document:
    - Updated to reflect Commission actions/plans
    - Updated every year
    - Complete review every 2 years
- Shows LACTC's capacity to fund highway, bus and rail projects
  - NOT** a replacement for Commission action on each project
- Assumes conservatively estimated costs and reasonably available revenues
  - NOT** a cost or funding guarantee; plan relies on implementing cost economies
- Used as a building block for RMPs, TIPs, SRTPs and other planning/programming documents
  - NOT** a replacement for separate, specific Commission action on these documents

## RECOMMENDATIONS

(Adopted April 22, 1992)

In order to implement the 30-Year Integrated Transportation Plan, it is recommended that the Commission:

- 1.0 **Adopt Fundable Plan** - Adopt the 30-Year Integrated Transportation Plan (Fundable) as a balanced, strategic plan composed of highway, bus, rail and transportation demand management improvements, and matching financial strategies, which will serve as a framework for Commission decisions to meet the mobility needs of Los Angeles County.

Adoption of the 30-Year Plan does not constitute adoption of the programs and policies implicit or explicit in the working assumptions underlying the Plan. Each program and policy included in the Plan must be the subject of separate, specific Commission action (per Recommendation 1.6 below).

- 1.1 **Formal Review** - Formally review the 30-Year Plan every 2 years.
- 1.2 **Annual Update** - Require an annual update to the Commission by staff which includes a:
- o Review of Commission actions
  - o Review of progress toward objectives
  - o Review of changes in assumptions, etc.
- 1.3 **Ongoing Update** - Update the Plan to reflect LACTC actions.
- 1.4 **Building Block** - Use the Plan as a building block for the:
- o Regional Mobility Plan
  - o Transportation Improvement Program
  - o Short Range Transit Plans
  - o Other Key Planning and Programming Documents
- 1.5 **Staff Reports** - Require staff reports to include a section on the impact on the 30-Year Plan.
- 1.6 **Specific LACTC Action** - Require specific action by the LACTC for each project in the 30-Year Plan.

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- 1.7 **Commission Guidelines** - Develop Commission guidelines consistent with the 30-Year Plan.
- 1.8 **10-Year Implementation Program** - Pursue strategies to deliver the 10-Year Implementation Program as a fully integrated component of the overall 30-Year Plan.
- 1.9 **Secure Funds** - Instruct staff to ensure that funds are received to implement the Fundable Plan.
  - o **Additional Funds to Improve Programs** - Instruct staff to develop and recommend to the LACTC strategies to pursue funds in addition to those already included in the Fundable Plan to further improve the timing, quality, and quantity of transportation improvements proposed in the Fundable Plan.
  - o **Income - Producing Strategies** - Instruct staff to seek and aggressively pursue additional revenue opportunities and include an analysis of the economic impact of such opportunities.
- 2.0 **Adopt Expanded Plan** - Adopt the Expanded 30-Year Plan as a goal.
  - o **Seek Additional Funds** - Instruct staff to develop and recommend to the LACTC strategies to seek additional funding needed.
- 3.0 **Cost Containment Task Force** - Implement a Cost Containment Task Force, lead by the Commission's Chair, to develop highway, bus and rail cost reduction measures to assist in the delivery of the 30-Year Plan.
- 4.0 **New Technologies** - Instruct staff to continue efforts to identify innovative and cost-effective technologies and systems for improving the delivery of transportation services.
  - o **Zero-Emission Buses** - In response to the zero-emission bus fleet requirements established in the 1991 Air Quality Management Plan, instruct staff to conduct a review of the current status of zero-emission bus technology and report to the Commission in 90 days with these findings and recommendations for future study. Notice to proceed on construction of the first electric trolleybus lines will not be issued until the LACTC

has received a full report on alternative zero-emission technologies.

- 5.0 **Candidate Corridor Selection** - Through the ongoing planning process, select the transportation improvement(s) for the candidate corridors per the following schedule:
- o **July 1992:** Staff submit recommended Candidate Corridor selection criteria to PMIC for review.
  - o **August 1992:** LACTC adoption of Candidate Corridor selection criteria.
  - o **October 1992:** Candidate Corridor project(s) evaluations presented to Commission.
  - o **November 1992:** First Candidate Corridor project selected.
- 6.0 **Farebox Recovery Ratio Goal** - Instruct staff to conduct a study to determine the feasibility of implementing a systemwide farebox recovery ratio goal to direct the cost-effective management of transportation system operations while emphasizing the integration and interdependence of all elements of the transportation system. Staff will report to the PMIC in June 1992 with its recommendations.
- 7.0 **CEQA Notice of Exemption** - File a Notice of Statutory Exemption for the 30-Year Integrated Transportation Plan finding that adoption of the Plan is exempt from CEQA. This finding will not exempt all individual projects included in the 30-Year Plan from CEQA.
- 8.0 **Programming of new ISTEA Flexible Funds** - Through the ongoing Transportation Improvement Program (TIP) process, the LACTC will determine the appropriate programming of the new federal flexible funds to bus capital, rail capital, highway capital, and Transportation Demand Management (TDM) improvements.

- 9.0 **Equity** - Equity with respect to cost of service, quality of service, and access to service will be considered in all programming decisions made by the LACTC in the implementation of the 30-Year Plan. Equity considerations will be incorporated in ongoing area-specific current and future needs assessment and service distribution studies conducted by staff, beginning with those studies programmed over the next 18 months.

Present a progress report on equity considerations to the Commission on an annual basis, pursuant to Section 1.2, above.

- 10.0 **Economic Development** - Direct staff to prepare proposed measures, with assistance from local jurisdictions, for encouraging economic development in high-volume transit corridors. All other areas will be reviewed on an ongoing basis to develop programs for transit to facilitate economic development. Also, assure that other transit facilities, such as storage yards and maintenance facilities, are developed so as to not discourage related economic development.

Present a progress report on economic development activities to the Commission on an annual basis, pursuant to Section 1.2, above.

- 11.0 **Minority- and Women-Owned Business Program** - Direct staff to prepare policies and procedures wherein:

- o It will be the policy of the Commission to utilize Minority- and Women-owned Business Enterprises in all aspects of contracting relating to procurement, construction and personal services;
- o This policy must apply to the Commission and all of its subsidiaries who may, by their authority, award construction, procurement and personal service contracts;
- o This policy must be fully committed to substantially increase Minority- and Women-owned Business utilization and participation in all phases of the Los Angeles County Transportation Commission's construction, procurement and personal services contracting; and

- o The Los Angeles County Transportation Commission, through its subsidiaries and boards, must ensure that Minority Business Enterprises have the maximum opportunity to participate in the performance of contracts and subcontracts.

Staff will return to Commission in 90 days with recommended policies and procedures and provide annual progress reports to the Commission, pursuant to Section 1.2, above.

## HISTORY

Over the past two years, the 30-Year Plan has evolved from a relatively simple rail capital programming model to a comprehensive multi-modal strategic planning tool incorporating 30-year revenue, capital, operating, and maintenance cost projections for bus, rail, highway, and demand management programs. To date, there have been three releases of full multi-modal 30-Year Plan alternatives. These alternatives have been progressively shaped to reflect substantial public review.

### March 1991

In March 1991, LACTC staff presented the Joint LACTC and SCRTD Board Meeting with a highway scenario and the following three alternative transit scenarios:

1. A baseline scenario, representing the minimum rail and bus investment already in existence or approved by the Commission;
2. An aggressive rail investment scenario accompanied by a moderate increase in bus service; and
3. A scenario recommended by the Bus Operations Subcommittee (BOS) representing an accelerated bus procurement program with less emphasis on rail development.

Each of these alternative scenarios was fundable given reasonable projections of existing revenue sources. Left unresolved was the appropriate balance of investment in the various modes of transportation over the 30-year period required to deliver the best possible transportation system.

### May 1991

In May 1991, an approach which consolidated the March alternatives was presented to the LACTC. The proposed plan funded a basic network of rail service and, consistent with the BOS recommendation, accelerated the growth of bus service in the early years of the Plan while the rail system is being constructed. These improvement strategies were recommended in concert with an aggressive Transportation Demand Management (TDM) program and a highway investment program including 260 miles of carpool lanes.

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The presentation, which for the first time was a single proposed 30-Year Plan, focused attention on the balance of recommended transportation investments. This debate centered on the trade-offs between bus and rail investments, as these two modes share many of the same revenue sources.

At the three successive Planning and Mobility Improvement Committee (PMIC) meetings in which the May 1991 Proposed Plan was reviewed in detail, considerable public support was expressed for adding more rail projects throughout the County. Local jurisdictions supporting the rail projects, which were deleted from the March 1991 aggressive rail scenario, were strongly represented. Cities such as Glendale offered to contribute as much as 30 percent of construction costs in order to have rail projects serving their communities built.

Based on this input, the PMIC requested staff to investigate the financial feasibility of including additional rail projects in the 30-Year Plan by assuming greater local jurisdiction financial and in-kind contributions and, if necessary, shifting modal investment priorities.

### August 1991

In August 1991, LACTC staff presented to the Commission a revised 30-Year Plan reflecting PMIC direction. This Plan proposed:

- o A 50 percent expansion in bus service, increasing the peak fleet from approximately 2,500 buses today to about 3,900 buses in 2010.
- o Restoring six rail projects to the Plan, designated as Candidate Rail Projects, including a combination of financial and in-kind contributions from local jurisdictions. The level of local contribution is sized to reflect both existing transportation investment levels and ability to pay.
- o Maintaining the aggressive TDM and Highway investment programs of the May 1991 Plan, with further refinements achieved through close cooperation with Caltrans in developing the extensive carpool lane network.

The public review period for the August 1991 30-Year Plan was extended by the LACTC from November 1, 1991 to January 1, 1992, in response to the recommendation of the Los Angeles County Board of Supervisors and the request by cities of the San Gabriel Valley and the San Gabriel Valley Association of Cities. This review period included numerous public meetings, presentations to local,

## 30-Year Integrated Transportation Plan

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regional, and state agencies, and cooperative efforts with various organizations to research and evaluate possible alternative approaches to components of the Plan. The principal issues raised during this period include:

- o Concern that the relative level of investment in conventional bus transit is too low.
- o Concern that the relative level of investment in the rail program is too low.
- o Concern that the role of highways in improving mobility is underrepresented as reflected by the proposed investment in new and expanded mixed-flow highway facilities relative to the proposed investment in carpool, bus and rail facilities.
- o Concern that some areas of the county would not receive an equitable share of the overall transportation investment.

In addition, significant review efforts were conducted in two areas:

1. LACTC staff worked closely with SCRTD staff and Supervisor Kenneth Hahn's Office to perform an in-depth review of the August 1991 Plan. The LACTC also provided this joint working group with access to 30-Year Plan computer models, staff, consultants, and other resources during the development of SCRTD's "Transit Now" alternative to the August 1991 Plan.
2. LACTC staff worked with the San Gabriel Valley Association of Cities and the San Gabriel Valley Transportation Coalition to evaluate the adequacy of the proposed transportation investments in the San Gabriel Valley area.

Staff has considered the results of this input and review process, incorporating many of the ideas in the 30-Year Integrated Transportation Plan proposed here.

Overall, these three iterations of the 30-year Plan have provided a valuable opportunity for the public and affected agencies to analyze and critique the Plan, and for staff to revise and refine the Plan. What has evolved is a document which reflects a balanced approach to improving mobility.

## PROPOSAL

**Los Angeles County needs a transportation system that works.**

This requires:

- o Urban rail lines in the densest and most congested corridors.
- o Commuter rail for long-distance regional travel.
- o Buses for access to and from rail stations, local circulation, and express transit service in non-rail corridors.
- o HOV lanes for carpools, vanpools, and express buses.
- o Completion of the freeway system by closing existing gaps.
- o Freeway System Management - ramp metering, detection loops, field surveillance, changeable message signs, and highway advisory radio.
- o Freeway Incident Management - the Tow Service Patrol and major incident response.
- o Preferential treatment for buses in major streets.
- o Transportation Demand Management, including ridesharing, flexible work hours, telecommuting, and incentive pricing to encourage economy of travel and the use of shared-ride transit.
- o Bikeways, pedestrian facilities, and an approach to urban design which respects the mobility needs of people.

It all works together: the result is a balanced, integrated transportation system which offers transportation alternatives and opportunities which significantly improve mobility.

## **System Integration and Balance**

Neither highway, bus, rail, or TDM offer a sufficient stand-alone transportation solution for Los Angeles County. There is no "best" mode of transportation. But there are transportation needs for which each mode of transportation is specialized, or ideally suited, to address. The design of the transportation system must capitalize on the relative advantages of each mode, building an overall system in which the various modes work in concert to deliver the greatest benefit to Los Angeles County.

**Highways** offer the advantage of incomparable travel flexibility. As the venue for automobile travel, they are unlikely to ever play a secondary role to other means of transportation in Southern California.

This role will be enhanced in Los Angeles County with the addition of carpool lanes, signal synchronization, incident management, and other system improvements. Traffic congestion will be eased by the increasing share of trips moving off mixed-flow lanes to carpool lanes and transit alternatives. And as fast, reliable, and convenient transit alternatives are implemented, highways will play an increasing role in providing access to the bus and rail system via park-and-ride lots.

**Buses** offer an inexpensive alternative to automobile travel. An effective bus system is critical to the success of the transportation system in Los Angeles County. Buses provide express service in carpool lanes. They provide local circulation and transit service in corridors not served by rail. And they link travellers with the rail system by providing access to and from rail stations. Employing buses in this fashion takes maximum advantage of their inherent cost and service advantages.

Buses operate on public rights-of-way, minimizing service implementation time and, in most cases, keeping capital costs low by avoiding guideway construction and repair costs. Operating on public rights-of-way also offers the important advantage of service flexibility: buses can operate almost anywhere trucks and cars do. This makes bus service a relatively cost-effective and easily-implemented transportation alternative for many communities.

However, because buses principally operate on streets with other traffic, their speed is constrained by, and often slower than, the general flow of traffic. This reduces the

attractiveness of this transportation alternative for many people.

**Rail** systems can operate two to three times faster than automobiles and buses operating in traffic. They serve densely-developed, heavily-traveled corridors by providing as much as 14 times greater capacity than that offered by a single lane on a mixed-flow highway facility (see **Figure 2**), and significantly more capacity than conventional bus service (see **Figure 3**). And electrically-powered rail provides these advantages without occupying large tracts of land, without generating air pollution, and without increasing congestion.

The capital cost of implementing rail includes the significant investment in a guideway not usually borne by buses and rarely considered by automobile users. But the higher speed, safety, and reliability made possible by the extra investment in a separate guideway makes rail an attractive alternative for automobile users and provides a better quality service for existing bus users. And the fixed investment and focused, high-volume travel patterns which rail creates makes rail a powerful tool to reshape land use patterns over time.

**Transportation Demand Management** provides the means and incentives for people to make choices which make the entire transportation system work better. Carpool and vanpool programs, alternative work hour programs, parking management and market incentive strategies, park-and-ride programs, bicycle and pedestrian facility improvements, and trip reduction programs target the demand for transportation. This reduces trips and vehicle miles traveled, and maximizes use of the carpool lane network and ridership on the evolving bus and rail systems.

A summary of the key components of the 30-Year Plan is presented in **Figure 4**.

# Capacity Comparison

Figure 2

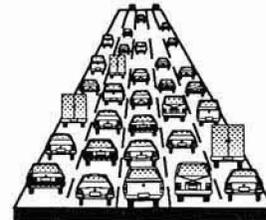
## TRANSPORTATION TECHNOLOGY

## FREEWAY LANE EQUIVALENT\* (ONE DIRECTION)



HOV LANE

=



5 LANES

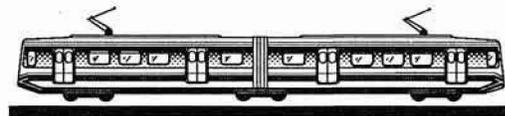


COMMUTER RAIL

=

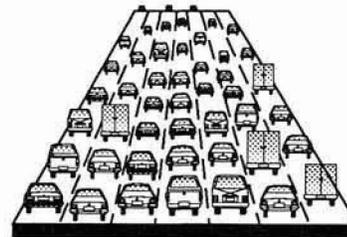


2 LANES



LIGHT RAIL

=

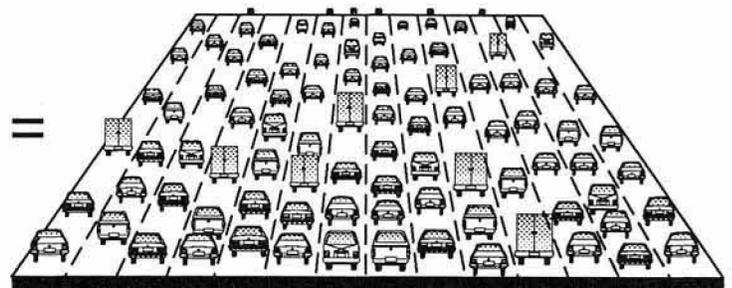


7 LANES



HEAVY RAIL

=



14 LANES

\* One Freeway Lane = 1,700 Cars/Hour/Direction

# Rail: Potential for Increasing Service Without Increasing Congestion

Figure 3

1 Hour of Service  
*In One Direction*  
with

1 Hour of Service  
*In One Direction*  
with

**Heavy Rail**

=

**480 Buses**

**Light Rail**

=

**230 Buses**

**Commuter Rail**

=

**60 Buses**

Assumes both bus and rail are operating at full capacity.

# Summary

## *Fundable Plan*

Figure 4

### Highway Component

- Metro Freeway Service Patrol
- Freeway System Management
- Freeway Incident Management
- Signal Synchronization and Other Transportation Systems Management Improvements
- Over 300 Miles of Carpool Lanes on Major Freeways  
(Over 200 Miles Completed in First Ten Years of Plan)
- Freeway Gap Closures
- Freeway Widening and Other Capacity Improvements
- Park and Ride Lots
- Bikeways
- Soundwalls

### Bus Component

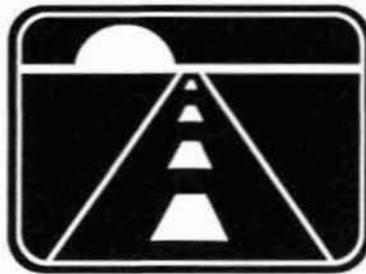
- Adds Over 100 Buses Per Year for First Six Years of Plan
- 1400 Additional Peak Buses
- 100% Clean-Fuel Fleet
- 400 High Capacity Electric Trolleybuses
- 300 Miles of Electrified Bus Routes
- New Express Bus Service on Carpool Lanes with Stations
- Relief of Overcrowding in Congested Corridors
- Expanded Bus Feeder Service to Rail
- Implementation of Americans With Disabilities Act
- Emphasis on Bus Security

### Rail Component

- 400 Miles Total
  - 200 Miles of Urban Rail/ High Capacity Improvements
  - 200 Miles of Commuter Rail
  - Over 300 Miles Operational in the Next 6 Years
- Continued Emphasis on Rail Line Security

### Transportation Demand Management (TDM) Component

- Designed to Reduce Worktrips by 2.4 Million Per Day by 2010
- Ridesharing (Carpools and Vanpools)
- Flexible Work Hours
- Telecommuting
- Incentive Pricing Strategies



Highway Component

## HIGHWAY COMPONENT

### FUNDABLE PLAN

The highway component of the 30-Year Plan focuses on six strategies for increasing mobility in Los Angeles County:

1. Incident Management
2. Carpool Lanes
3. Transportation Systems Management
4. Freeway Gap Closures
5. State Highway System Improvements
6. Bikeway Improvements

### Incident Management

Caltrans estimates that every minute saved clearing a freeway incident eliminates four minutes of delay. The 30-Year Plan includes strategies designed to reduce the duration of freeway incidents by coordinating and improving response time.

- o The Metro Freeway Service Patrol (FSP) is a cooperative project of the LACTC, Caltrans, and the California Highway Patrol. It is designed to reduce congestion and improve mobility and air quality by quickly removing freeway incidents caused by disabled vehicles.

In its first eight months of operation, the FSP served over 90,000 motorists with an average response time of seven minutes. Prior to this program, response time to freeway incidents averaged nearly 20 minutes. The program has earned a 98% approval rating from the motoring public.

The 30-Year Plan proposes to expand the FSP from the existing fleet of approximately 90 tow trucks covering 200 miles of freeway to a fleet of over 180 tow trucks covering the remaining miles of congested freeways.

The approved Freeway Service Patrol program includes a Major Incident Response element. LACTC is currently working on an agreement with the California Highway Patrol, Caltrans, and Mayor Bradley's office to coordinate efforts of the agencies involved in responding to incidents. The focus of this agreement is to help ensure that the agencies can effectively and efficiently communicate with one another when responding to major incidents. LACTC costs for coordinating efforts is currently about \$1 million per year.

### **Carpool Lanes**

The 30-Year Plan proposes to build over 200 miles of new carpool lanes in the next 10 years, and over 300 miles by the end of the Plan. These lanes will all be added without removing any existing mixed-flow traffic lanes. This network of carpool lanes is illustrated in **Figure 5**. The proposed construction schedule is shown in **Figure 6**.

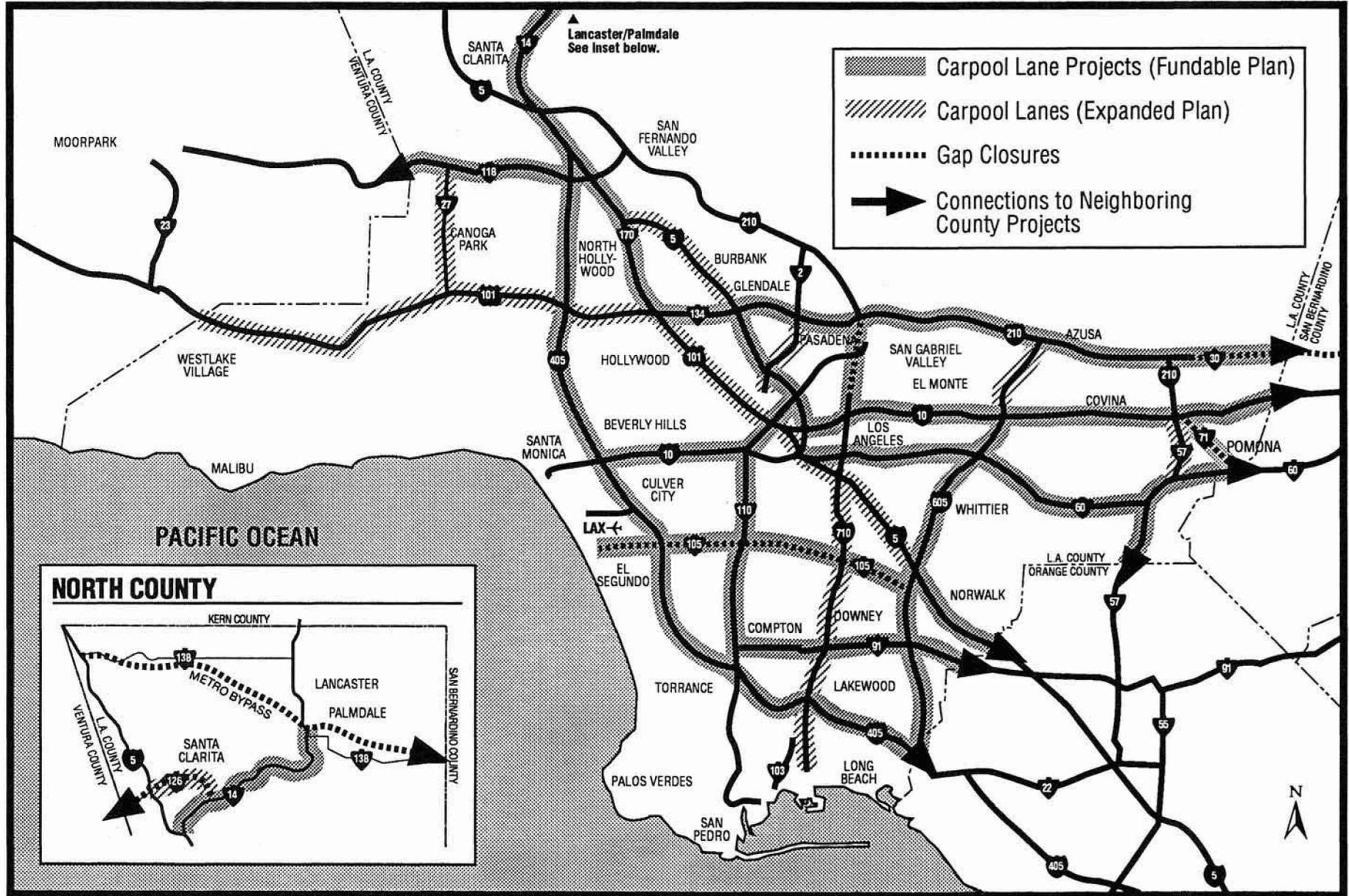
Carpool lane projects were identified in a cooperative effort with Caltrans, consistent with the following LACTC-approved criteria:

- o Congested corridors which will not be served by Metro Rail by 2000.
- o System connectivity.
- o Cost-effectiveness.
- o Safety.
- o Public agency input, coordinated through LACTC Area Teams.
- o Relationship to congested corridors.
- o Maximum benefit without regard to difficulty of construction.

The 30-Year Plan funds freeway-to-freeway interconnections for carpool lanes following the 10-year early implementation phase of the carpool lane system. Inclusion of interconnectors may occur prior to this time: the decision to include interconnectors will be made on a case-by-case basis as the carpool lane network is constructed, weighing cost effectiveness and system connectivity considerations.

# Carpool Lane Program

Figure 5





## 30-Year Integrated Transportation Plan

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The carpool lane network will be implemented in concert with an aggressive Transportation Demand Management marketing strategy to ensure public acceptance and use of each new facility.

### **Transportation Systems Management (TSM)**

Transportation Systems Management efforts are designed to reduce congestion on freeways and arterials by making better use of existing capacity. There are two principal categories of improvements:

1. **Freeway System Management.** The 30-Year Plan includes an aggressive program of ramp metering and freeway ramp by-pass lanes for carpools, as well as a complete traffic management program on all the urban freeways consisting of improved detectors and communications, closed circuit TV cameras, roadside radio, changeable message signs, and a fully-modernized centralized traffic operations center. These improvements are proposed for completion in the first four years of the 30-Year Plan.
2. **Arterial System Management.** The 30-Year Plan also proposes funding for TSM measures on the arterial highway system such as signal synchronization, bottleneck elimination, peak hour parking restrictions, and automated traffic surveillance and control systems.

The 30-Year Plan also proposes funding for TSM measures on the arterial highway system such as signal synchronization, peak hour parking restrictions, and automated traffic surveillance and control systems.

### **Freeway Gap Closures**

The 30-Year Plan proposes closing freeway gaps on Route 30 (Foothill Freeway), Route 71 (Corona Freeway), Route 105 (Glenn Anderson Freeway), and Route 710 (Long Beach Freeway), as well as on Route 126 from the Ventura County line to Route 5.

The Plan also includes the Route 138 highway widening (from Avenue T to 165th Street) and other system enhancements such as passing lanes, arterial widenings, and interchange improvements.

### **State Highway System Improvements**

State system improvements include capacity enhancements on the state highway system, such as:

- Passing lanes (Rt. 138)

## 30-Year Integrated Transportation Plan

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- Extensions of existing freeways (Rt. 710)
- Arterial widenings (Rt. 1)
- Freeway connector improvements
- Arterial/freeway interchange improvements

### **Bikeway Improvements**

An aggressive program for improving county-wide bikeways is also proposed in the 30-Year Plan. Priorities for expenditures for the this program will be established in conjunction with the Los Angeles County Master Plan for Bikeways, to be completed in November 1992.

The following improvements are proposed in the 30-Year Plan:

- o The Class I Bikeway System (grade separated paths) will be expanded from approximately 150 miles to over 200 miles.
- o The Class II Bikeway System (on-street lanes and signs) will be expanded from approximately 80 miles to 2,500 miles.
- o Lockers, racks, and bicycle amenities will be added to transit centers and rail stations.

In addition to the recreational benefits, these improvements are designed to encourage bicycle commuting, increase transit ridership, and eliminate unnecessary automotive legs in multi-modal commutes. Over \$250 million is included in the 30-Year Plan for these improvements.

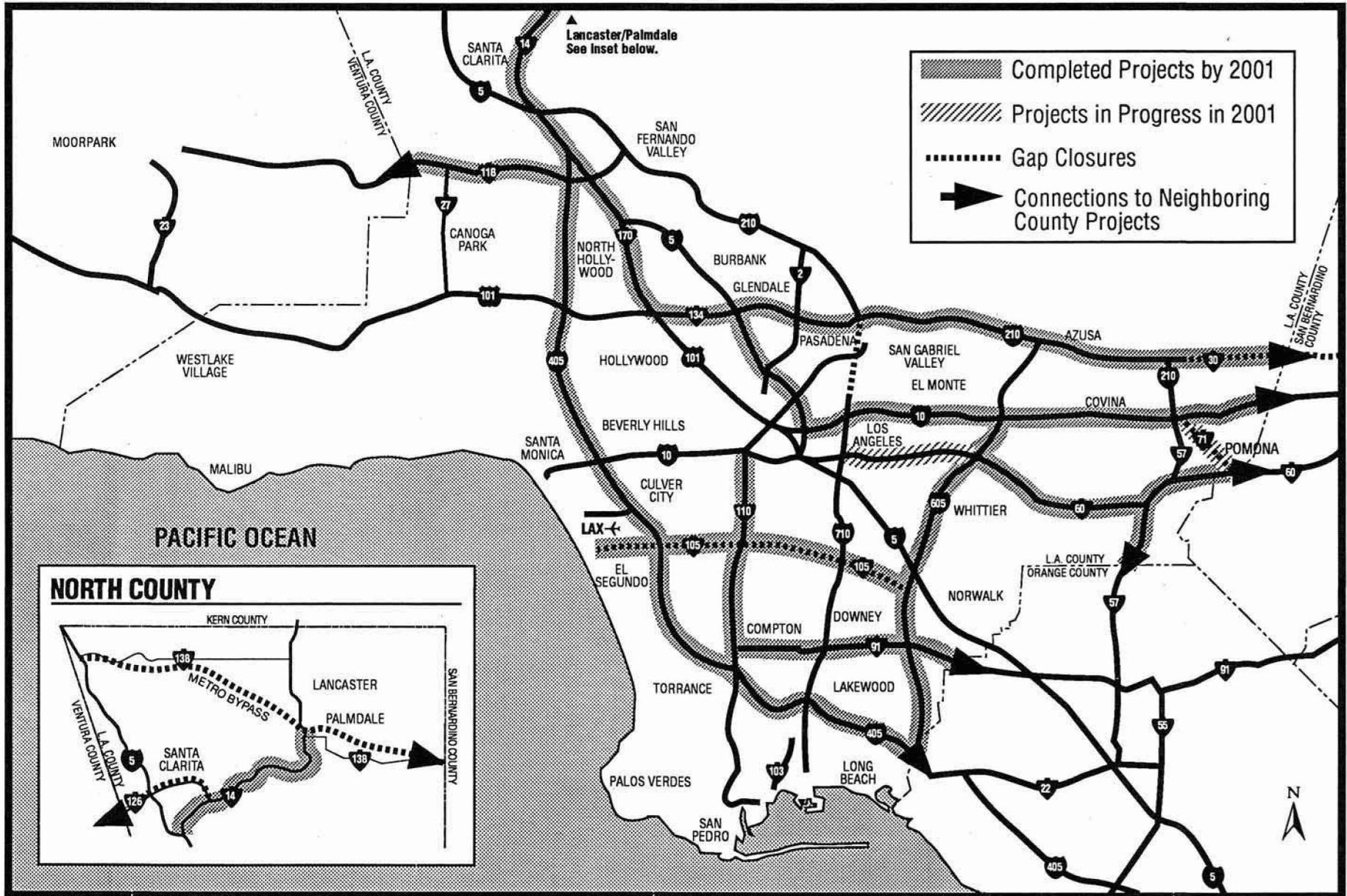
Local agencies are responsible for enhancing the existing Class III Bikeway System (signs).

### **10-YEAR IMPLEMENTATION PROGRAM**

Carpool lanes which will be completed in the 10-Year Implementation Program are shown in **Figure 7**; refer to **Figure 6** for the balance of Highway improvements included in the 10-Year Implementation Program.

# Carpool Lane Program: Fundable Plan-10 Year Implementation Program

Figure 7



## EXPANDED PLAN

Additional Highway Component improvements identified in the Expanded Plan include:

- o Carpool Lanes:
  - Route 2: Route 5 to Route 134
  - Route 5: Route 605 to Route 60; Route 170 to Route 134
  - Route 27: Route 101 to Route 118
  - Route 57: Route 60 to Route 10
  - Route 101: Route 60 to Ventura County Line
  - Route 605: Route 10 to Route 210
  - Route 710: Long Beach to Route 5
- o Gap Closures: Route 126
- o System Improvements: Additional grade separations for Alameda Corridor
- o Park & Ride: Additional park and ride lot spaces countywide

**Figure 5** depicts the additional carpool lanes included in the Expanded Plan.

## UNCONSTRAINED PLAN

Additional improvements have not yet been identified for the Highway Component of the Unconstrained Plan.



Bus Component

## BUS COMPONENT

### FUNDABLE PLAN

#### Expansion Program

A 55% expansion in bus service is proposed for Los Angeles County in the 30-Year Plan.

This expansion occurs in two phases:

Phase 1 Over 100 new buses are added each year for the first six years of the 30-Year Plan.

This rapid expansion is designed to provide necessary transportation capacity while higher-capacity facilities such as the rail system are being built.

Phase 2 The rate of expansion is slowed in Phase 2 to keep pace with the anticipated growth in demand in Los Angeles County, about 1% to 2% per year.

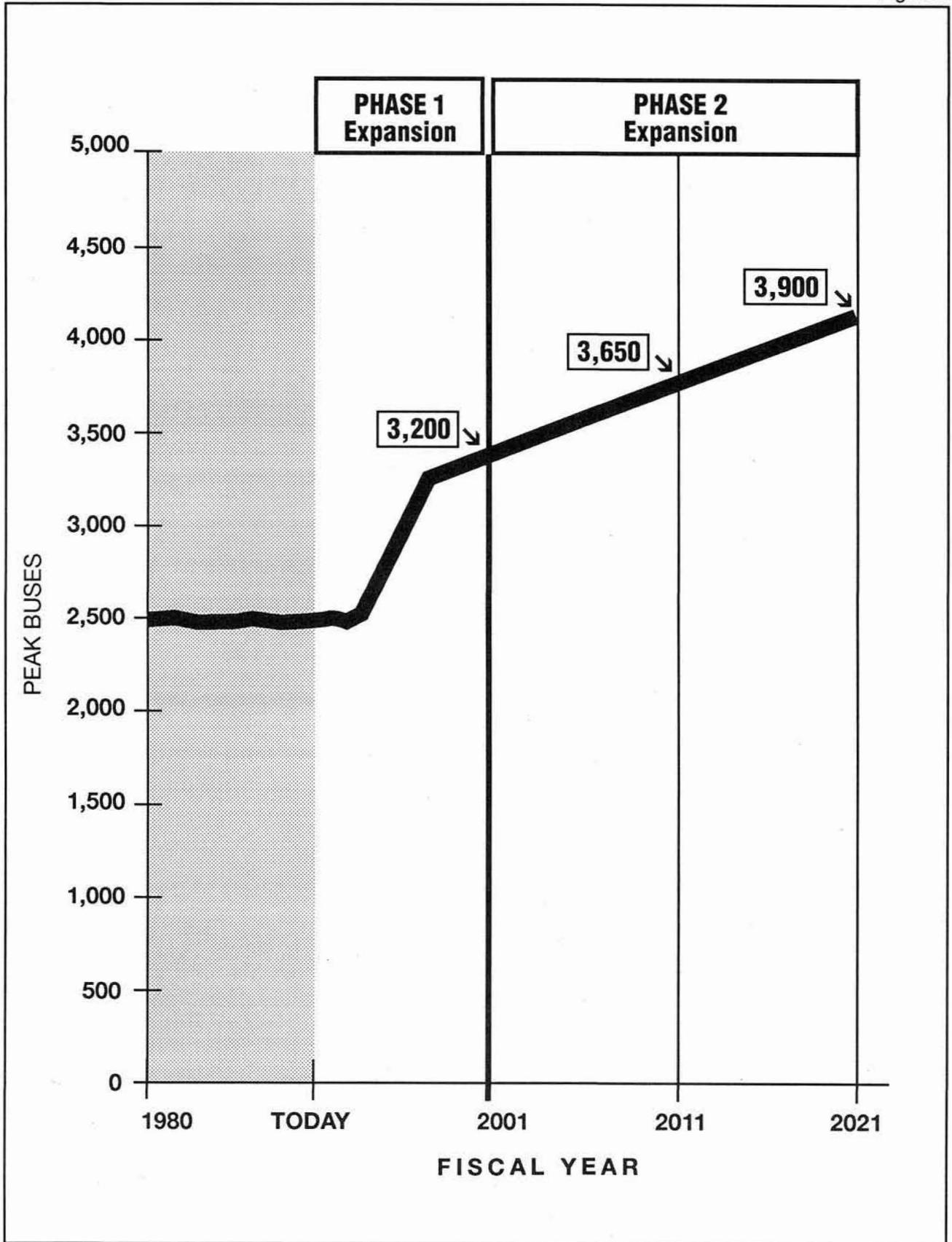
This expansion phase begins after the Metro Red Line, Green Line, Blue Line, the Pasadena Line, the first two extensions east and west of the Orange Line, the entire Commuter Rail system, and high-capacity service in at least one other corridor is operational.

The bus service expansion program represents a dramatic departure from historical trends: over the past 10 years, there has been virtually no increase in the bus fleet in Los Angeles County (see **Figure 8**). It also represents a departure from precedents set in other metropolitan areas building rail systems: in these areas, the bus fleet is typically reduced, often significantly, with the introduction of rail service.

# Bus Fleet Expansion

## Fundable Plan

Figure 8



## 30-Year Integrated Transportation Plan

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The magnitude of this expansion program is summarized below:

### Proposed Expansion of Bus Service

	<u>Today</u>	<u>2001</u>	<u>2011</u>	<u>2021</u>
Peak Fleet	2,500	3,200	3,650	3,900
% Increase	---	30%	45%	55%

In general, this expansion will enhance local circulation services, provide feeder service to urban and commuter rail stations, and take full advantage of the carpool lane network with added express service.

### Freeway Express Bus Program

The Freeway Express Bus Program proposed in the 30-Year Plan represents a significant capital investment in transportation facilities by a highway and bus partnership in order to provide greatly improved transportation services.

Today, about 55 express bus routes operate on portions of the freeway system in Los Angeles County. With the exception of the buses operating on the El Monte Transitway, buses on all these routes operate slowly in mixed-flow traffic during the rush hours.

By 2011, the 30-Year Plan proposes to expand this express bus service by nearly 50%, and operate it on the 300 miles of carpool lanes being constructed on the County's freeways. Approximately 20 major freeway bus stations will be constructed to facilitate access to this service, as well as over 250 smaller on-freeway stations. Freeway express buses will be able to escape rush hour congestion and operate at much higher speed in the new carpool lanes, providing significantly improved travel times.

This component of the 30-Year Plan is based on a conceptual plan developed by the Automobile Club of Southern California. It will be updated when a more detailed plan and implementation schedule are developed by the LACTC. The proposed freeway express bus facilities are illustrated in **Figure 9**.

### Distribution of Service

The 30-Year Plan makes no decisions as to the geographic distribution of the expanded bus service; it simply establishes the financial capacity to maintain existing service and expand new service county-wide.



Per agreement with the cities and bus operators in Los Angeles County, the basis for the distribution of new and expanded bus service will be the programming and allocation process for Proposition C Discretionary funds. These funds will be distributed on a competitive basis by the LACTC based on needs identified with input from the cities and bus operators. These needs will be reviewed on a case-by-case basis with respect to existing and projected transportation improvements in order to create a balanced and integrated overall transportation system. Specific criteria for this competitive process are being formulated. The allocation process will begin when Proposition C funds become available, which is expected in January 1993.

### **Clean-Fueled Buses**

By 2004, all buses in the bus fleet will be clean-fueled. All replacement and expansion buses purchased in the 30-Year Plan are assumed to be powered by either electricity or a clean-burning alternative fuel technology. Of the potential alternative fuel technologies, the most expensive, methanol, was used as the basis for cost estimates in the 30-Year Plan in order to be conservative.

### **Bus Electrification Program**

The 30-Year Plan proposes an ambitious Bus Electrification Program. The implementation of this program must first be approved by the LACTC. A joint SCRTD/LACTC study is underway now.

The proposed Bus Electrification program includes approximately 18 routes, nearly 300 miles of electrified facilities, and 400 peak buses (see **Figure 10**). Most of the buses in the projected fleet are assumed to be articulated buses, which have about 50% more capacity than standard 40-foot buses.

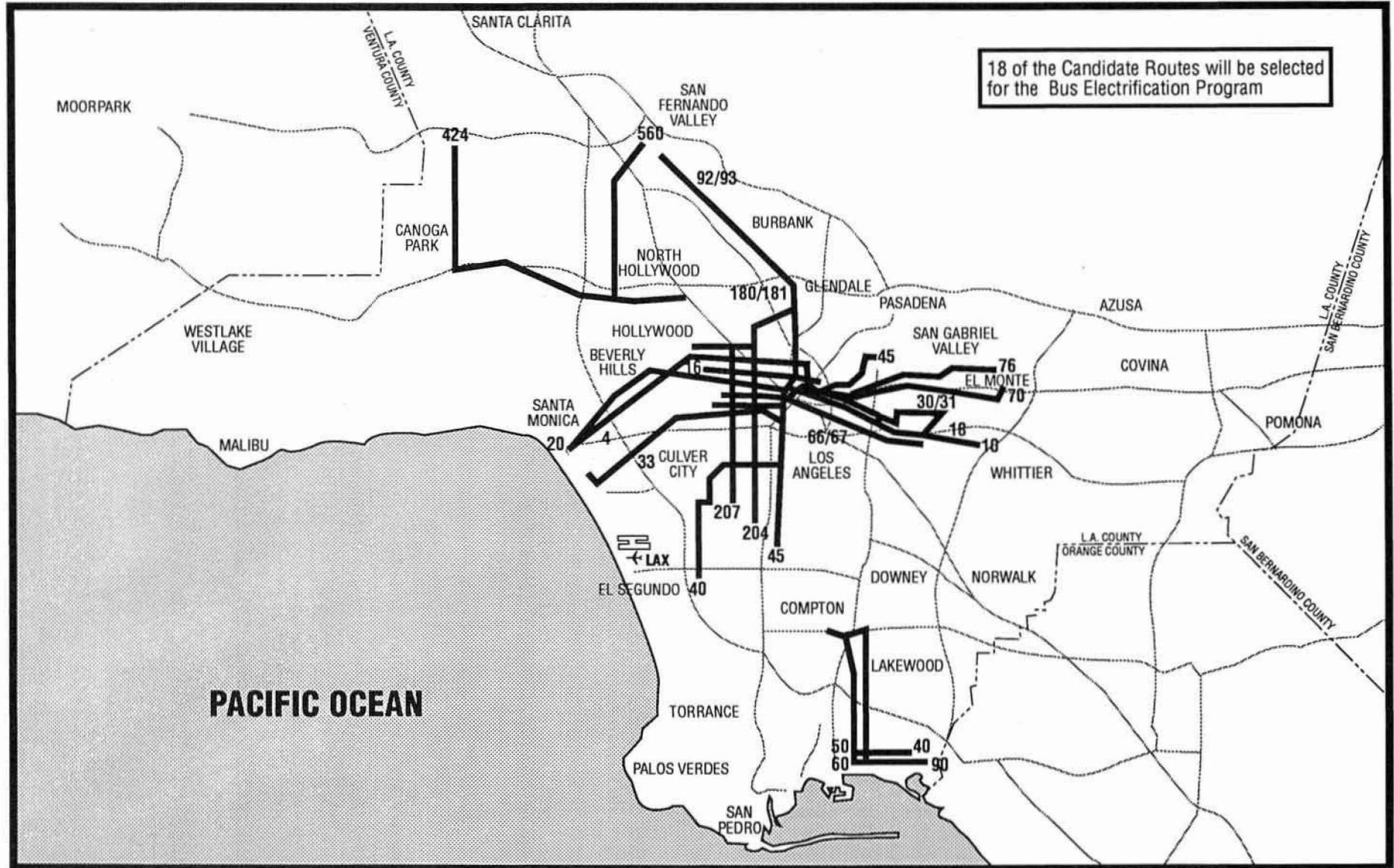
The Bus Electrification Program is designed to supplant existing conventional bus service on high-ridership bus routes. It is not a capacity-expansion program. However, experience in other metropolitan areas suggests that the public finds electric trolleybus service more attractive and ridership may increase by as much as 10%.

Preliminary engineering and formal route selection for the Bus Electrification Program is underway. The first electric trolleybus line is targeted to begin service in December 1994.

# Candidate Electric Bus Routes

## Fundable Plan

Figure10



## 30-Year Integrated Transportation Plan

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The potential for electric buses to play a larger role in public transit in Los Angeles County is not limited to the Bus Electrification Program described above. As technology and economics permit, buses which operate on electric batteries or fuel cells will be purchased to replace non-electric buses in the fleet. These and similar efforts will be aided by funding for applied research on new technologies available through the Proposition C program. The LACTC will keep local jurisdictions abreast of new technologies for efficient use of their local return funds.

The Bus Electrification Program included in the 30-Year Plan responds to the requirement established in the 1991 Air Quality Management Plan that 30% of the County's bus fleet must be electrified by 2010. While staff maintains the importance of compliance with the AQMP, the possibility of identifying a more cost-effective alternative which provides an overall equal or greater emissions reduction is not precluded by the 30-Year Plan. In either case, the LACTC must take separate, specific action to implement a bus electrification or alternative program.

### **Bus Facilities**

The 30-Year Plan contains significant funding for new facilities and facility conversions to handle the expansion in fleet as well as new bus technologies proposed in the Plan.

The Plan also includes the Union Station Gateway Project, as approved by the SCRTD Board of Directors in April 1992. Specific funding sources have yet to be identified for this project, but may include altogether new Federal Section 3 discretionary funds, funding programmed in the Metro Rail Segment 1 budget, and private sector sources.

### **Americans with Disabilities Act**

The Americans with Disabilities Act (ADA) of 1990 requires that public operators of fixed route transit service provide complementary paratransit service to severely disabled individuals unable to use an accessible fixed route system. The complementary service must operate within three quarters of a mile of all fixed routes during the same days and hours of fixed route operation. The Act also requires that all newly-acquired vehicles meet specified accessibility criteria.

Fixed route operators are required to develop a complementary paratransit plan, submit the plan to the U.S. Department of Transportation for review and approval, and begin plan implementation by January 26, 1992. Since several of the largest Los Angeles County fixed route operators offer no paratransit

service and could be forced to curtail fixed route service in order to provide complementary paratransit service, LACTC has agreed to develop a countywide plan to provide the required service, coordinate services between jurisdictions, and fund the ADA-mandated cross-jurisdiction paratransit trips for the severely disabled.

The fiscal impact of ADA on County transit operators has not yet been determined since the number of severely disabled persons has not been determined by the U.S. Census Bureau or any other agency. However, it is estimated that the annual financial impact of providing the service may be as great as 9% to 13% of the combined bus and rail operating budgets.

The 30-Year Plan assumes a \$27 million impact, inflated, beginning in FY 1992-93. This represents approximately 3% of combined bus and rail operating costs, reflecting the substantial existing commitment in Los Angeles County to the paratransit-type services the act promotes. The amount set aside in the 30-Year Plan is also sufficient to meet projected costs of fixed-route operator compliance with ADA.

### **10-YEAR IMPLEMENTATION PROGRAM**

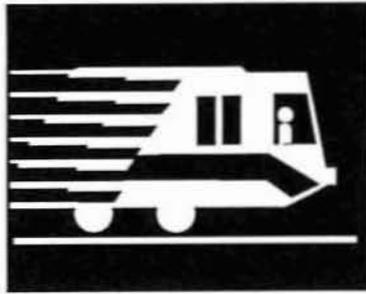
Over 100 buses will be added to the peak bus fleet each year for the first six years of the 30-Year Plan, with a less dramatic rate of expansion to follow for the remainder of the Plan. The distribution and application of these buses will be determined through the Proposition C Discretionary Fund allocation process. Staff will monitor and evaluate the implementation of this program to promote the equitable distribution of service improvements.

### **EXPANDED PLAN**

The Expanded Plan includes the additional assumption that the Bus Electrification Program will be expanded to constitute 30% of the peak fleet, per 1991 Air Quality Management Plan goals. Approximately 1,100 electric trolleybuses would be operating during the peak hour in 2010.

### **UNCONSTRAINED PLAN**

Additional improvements have not yet been identified for the Bus Component of the Unconstrained Plan.



Rail Component

## RAIL COMPONENT

### FUNDABLE PLAN

#### Rail Program Overview

Over 400 miles of urban rail, commuter rail, and similar high-capacity transportation improvements are proposed for Los Angeles County in the 30-Year Plan. A map illustrating these proposed improvements is shown in **Figure 11**. The proposed schedule for these improvements is shown in **Figure 12**.

Improvements can be considered in three categories: Committed Rail Projects, Public-Private Partnership Projects, and Candidate Corridors for high-capacity improvements.

#### Committed Rail Projects

Committed Rail Projects consist of those projects for which the need, financial commitment, and public and political support are clearly in place. This category includes:

- o Operating rail lines.
- o Projects under construction.
- o Projects with significant external funding commitments.
- o Projects of regional significance essential to system connectivity.

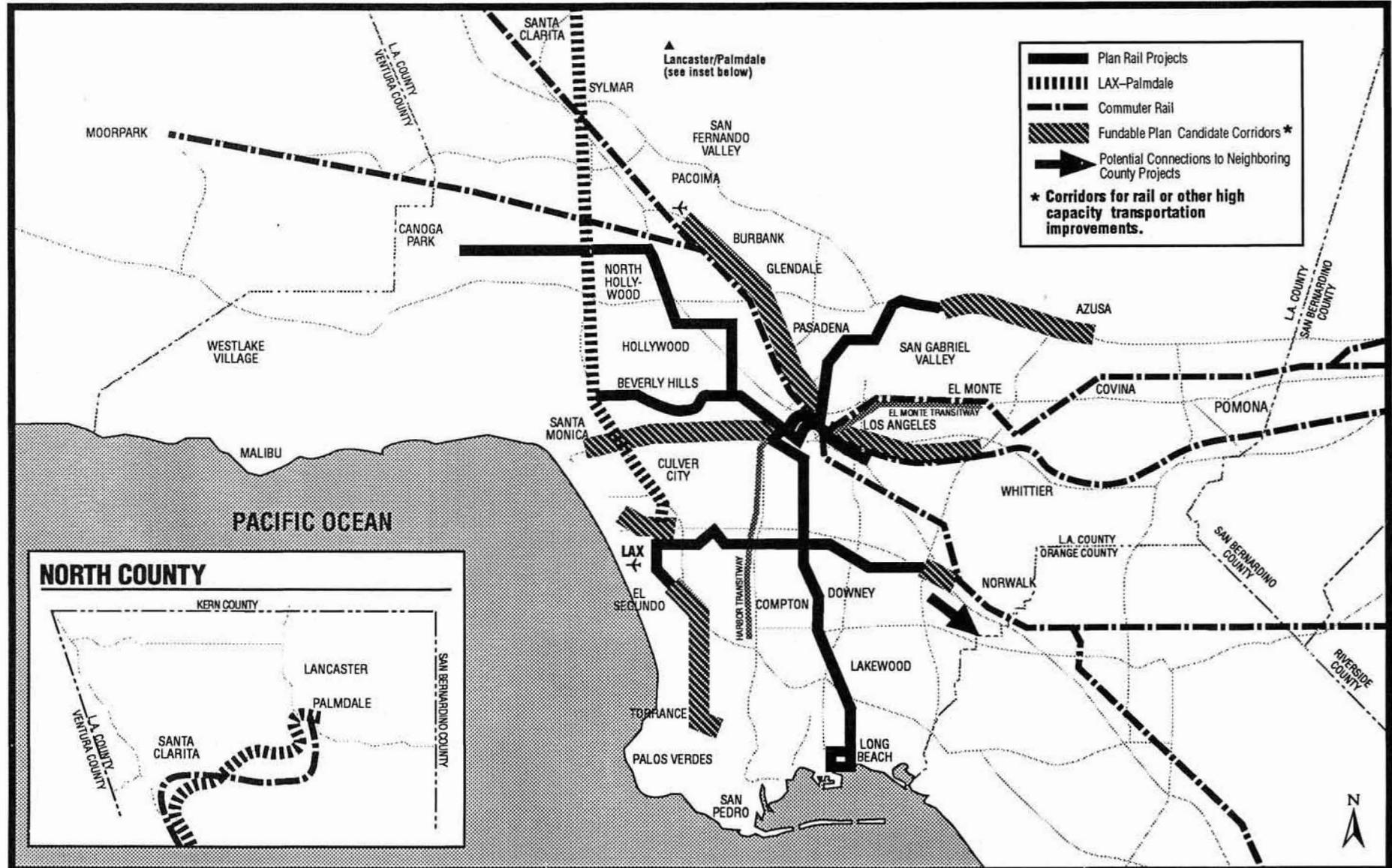
Committed rail projects include the following:

- o Red Line: Segments 1, 2, and 3: under construction (Segments 1 & 2) and under final design (Segment 3 to North Hollywood), with significant Federal funding commitments. Segment 3 includes the North Hollywood segment as well as the east (to East L.A.) and west (to Pico/San Vicente) extensions (also known as the Orange Line - see below).
- o Orange Line: East and West Extensions (to Atlantic/I-5 and Westwood Village, respectively): funds are earmarked in 1991 Federal ISTEA legislation for Segment 3 (see above).

# Rail Projects & Candidate Corridors

## Fundable Plan

Figure 11

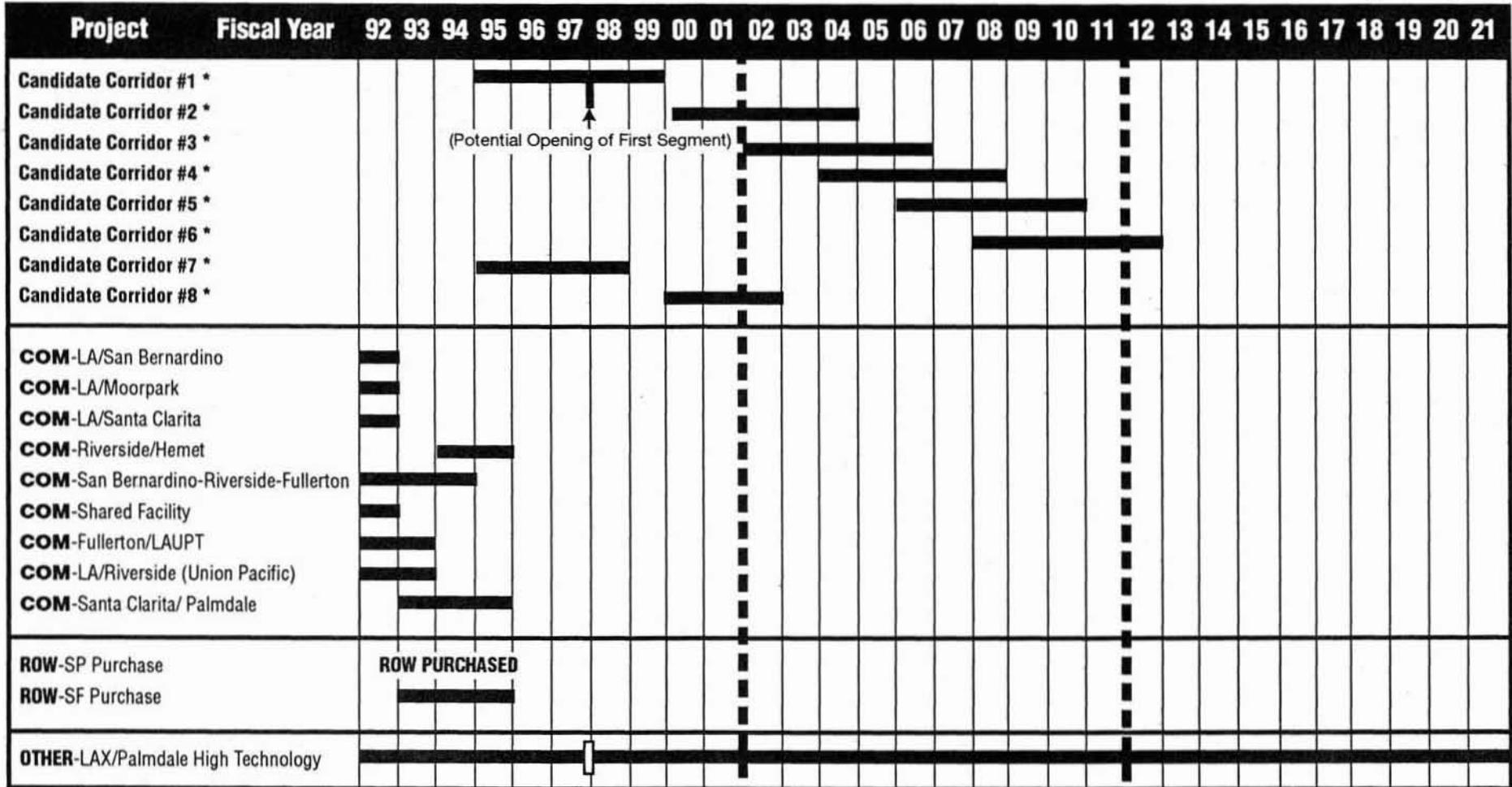




# Rail Project & Candidate Corridor Schedule

## Fundable Plan

Figure 12 (2 of 2)



\* Where applicable, segments of corridor will open prior to construction of entire project to accelerate revenue operations.

## 30-Year Integrated Transportation Plan

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- o San Fernando Valley East-West Transit Project: North Hollywood to Sepulveda: 50% State Rail Bond funding commitment in 1990 State Transportation Improvement Program. Sepulveda to Canoga Park: included in LACTC's commitment to the overall East-West Transit Project, pending outcome of the EIR and Public-Private Partnership initiatives.
- o Pasadena Line: Union Station to Sierra Madre Villa: 50% State Rail Bond funding commitment in 1990 State Transportation Improvement Program.
- o Green Line: Norwalk to El Segundo: under construction.
- o Commuter Rail: Lines serving downtown Los Angeles and San Bernardino; Moorpark; Santa Clarita; the San Gabriel Valley; Riverside and Hemet; and San Bernardino, Riverside, and Fullerton: under construction with significant State Rail Bond funding commitments.
- o Blue Line Downtown Connector: 7th and Flower to Union Station: Regional significance (project is essential to prevent severe bottlenecking in downtown Los Angeles as more rail lines are opened).
- o Right-of-Way Protection Program: Includes Southern Pacific, Santa Fe, and Union Pacific purchases: Regional significance.

### **Public-Private Partnership Projects**

Examples of projects which are proposed to be privately financed in part or in whole include:

- o LAX-Palmdale: Connecting LAX and Palmdale airports along the median of I-405, I-5, and Route 14: Requests for Proposals have been issued to finance, in part or in whole, the design and construction of this project.
- o Burbank Monorail: Downtown Burbank to Universal City via the Burbank Media District.
- o AGT Connector to Dodger Stadium: Connects Dodger Stadium and the nearest station on the Pasadena Light Rail Line.
- o Witmer and/or Bixel Station on Metro Rail Segment 1: Located in Central City West Area.

### Candidate Corridors

Candidate Corridors are those corridors which have sufficient existing and projected travel demand and congestion to warrant some form of high-capacity transportation improvement. This improvement could range anywhere from an all-bus solution to a fully grade-separated rail facility supported by a feeder bus system serving the stations. The full range of potential transportation improvements, from the status quo to the most capital-intensive alternative, is provided in **Figure 13**.

We have identified eight Candidate Corridors in the Fundable Plan corresponding to the alignments described below (in alphabetical order):

1. El Segundo to Torrance.
2. Green Line Multi-Modal Transportation Center to Westchester Parkway.
3. Green Line to Orange County Rail Connection.
4. Downtown Los Angeles to the Burbank-Glendale-Pasadena Airport area.
5. Downtown Los Angeles to USC.
6. Route 60 Corridor in the San Gabriel Valley.
7. Sierra Madre Villa to Azusa in the San Gabriel Valley.
8. USC to Santa Monica.

For each of these Candidate Corridors, the planning and community review process to identify the best transportation solution (see **Figure 14**) is at various stages of completion. In some cases, the cooperative effort of planners and the communities in the corridor has already narrowed the range of acceptable solutions to one or two technologies. In other cases, the process of identifying the range of possible transportation solutions is just beginning. (See **Appendix B** for the status of planning process in each Candidate Corridor.)

As an initial basis for discussion and cost estimation, rail technology is assumed for each of the Candidate Corridors. Investment is allocated to each Candidate Corridor on the basis of rail costs in order to (1) demonstrate the level of dollar investment warranted in each corridor, and (2) establish a

# Candidate Corridors:

## *Range of Possible Transportation Improvement Alternatives*

Figure 13

The range of possible alternatives may include one or more of the following:

**No Project:** No transportation improvements implemented.

**Transportation Systems Management (TSM):** Projects and policies are identified to improve use of existing transportation facilities including street improvements (such as restriping) and signalization improvements (such as ATSA).

**Mixed-Flow Bus Operations:** Buses operating on surface streets in mixed traffic.

**Priority Bus Operations:** Buses operating on surface streets in dedicated lanes with priority signalization.

**HOV Bus Operations:** Buses operating in High Occupancy Vehicle freeway lanes with carpools.

**At-Grade Busway:** Buses operating in a lane physically separated from other traffic with or without priority treatment at major intersections.

**Grade-Separated Busway:** Buses operating on a facility excluding all other traffic and fully grade-separated.

**Grade-Separated Busway with Bus-Trains:** Same as Grade-Separated Busway, but buses are joined with couplers, similar to rail cars. (Small horizontal bracing wheels pressing outward on busway curbs guide the bus and permit safe, high-speed operations. Buses can uncouple and leave the busway for in-street operation. This is comparable to the O-Bahn concept in Germany and Adelaide, Australia.).

**Electric Trolleybus Operations:** (applicable to all above).

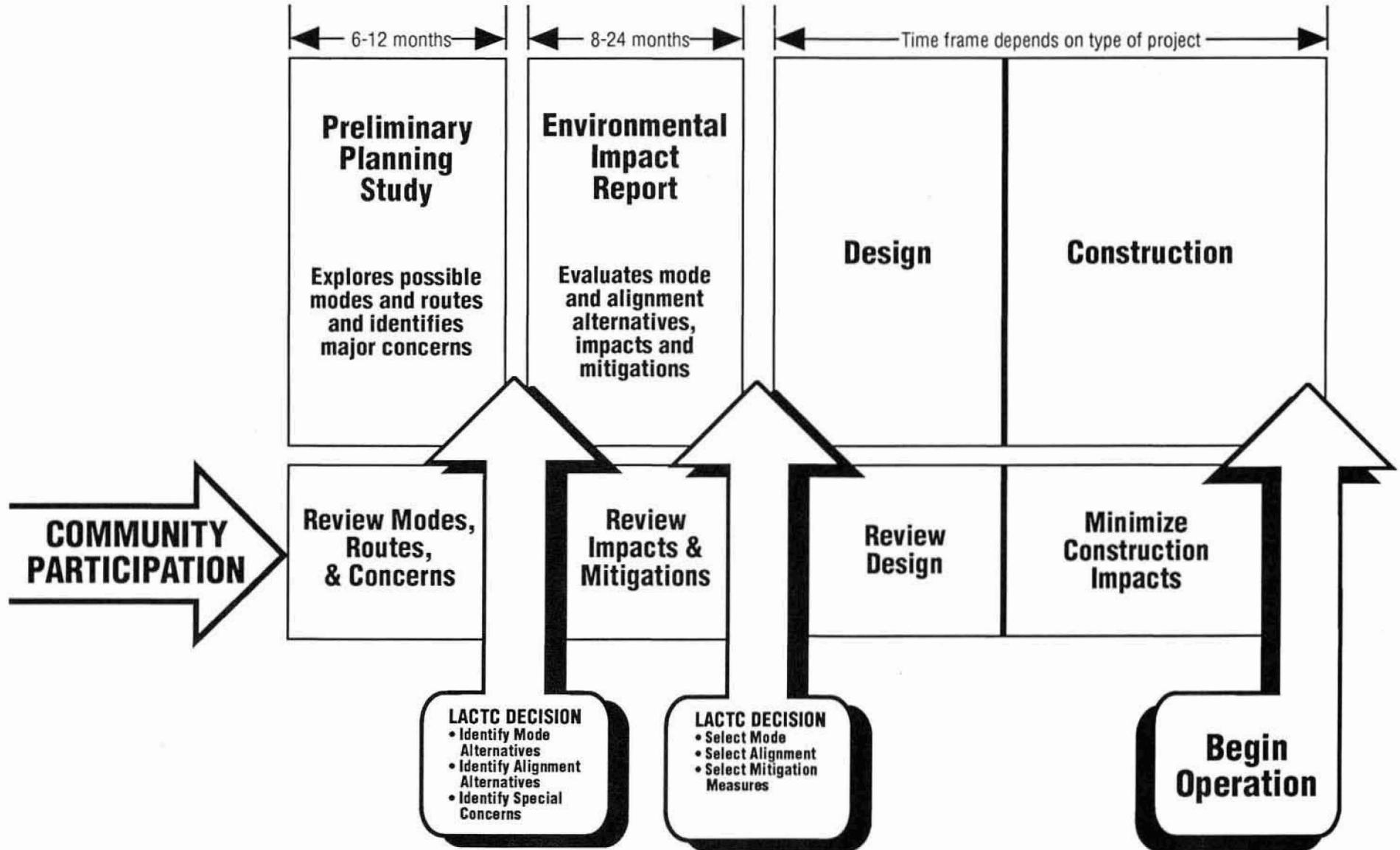
**Mixed-Flow Rail Operations:** Rail service operating on or adjacent to surface streets with non- or partial-priority signalization.

**Priority Rail Operations:** Rail service operating on a separate right-of-way or surface street with priority signalization.

**Grade-Separated Rail Operations:** Rail service operating on or in a grade-separated facility excluding all other traffic (including subway, trench, fill, or aerial configurations).

# Phases of Project Development

Figure 14



## 30-Year Integrated Transportation Plan

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conservative basis for proceeding with planning by reserving maximum financial capacity in the 30-Year Plan and thereby preserving the flexibility of the communities, planners, and Commissioners to identify the best transportation solution for each corridor.

Planning processes already underway in each Candidate Corridor will continue until the best transportation solution is identified. For all other corridors in which this planning process has yet to begin, the same selection process will be used to ensure that what the communities need and want is effectively addressed. In either case, staff will work closely with the communities to ensure that the transportation improvements in these corridors are accessible to residents in a reasonable and equitable fashion.

### **Project Segmentation**

#### **Pasadena Light Rail Segmentation**

Because of recession-related sales tax shortfalls and the delay in securing Santa Fe rights-of-way, the Pasadena Light Rail Project has been delayed for two years in the March 1992 30-Year Plan. It is now scheduled to begin operations from downtown Los Angeles to Sierra Madre Villa in July 1997 (i.e. FY 1997-98). To mitigate the impact of this delay on providing necessary service in this corridor, a preliminary segment extending to Del Mar could begin revenue operations in July 1996. The decision to segment will be made by the LACTC with community input prior to the construction phase of this project. Regardless of the decision to segment, continuous construction will occur on this project to complete the full length to Sierra Madre Villa.

#### **Candidate Corridor Segmentation Clarification**

The March 1992 Proposed 30-Year Plan includes the assumption that service in Candidate Corridors will be opened in segments. This enables revenue operations to begin earlier on intermediate segments of the project rather than waiting for the entire project to be complete. Continuous construction is assumed to occur for the entire project. This approach is analogous to the segmentation of the Metro Red Line and the practice in other metropolitan areas constructing major rapid transit improvements. As with the Pasadena Light Rail Project discussed above, the decision to segment will be made by the LACTC in conjunction with the communities concerned prior to the construction phase of the project.

### **Commuter Rail Electrification**

Measure 14 of the 1991 Air Quality Management Plan requires a 90% reduction in rail-related NOx (oxides of nitrogen) emissions by 2010 through electrification of rail operations in the Southern California Air Basin. The Regional Rail Electrification Task Force, established in 1991, developed a timeline, cost, and funding plan which meets this requirement.

Consistent with the Task Force's findings, the 30-Year Plan assumes all commuter rail lines will be electrified by 2010. The Plan includes \$3.85 billion (inflated) for the electrification of commuter rail, of which the LACTC is assumed to be responsible for approximately \$300 million. About \$3.55 billion is expected from State and Federal funds, electric utility rate bases, and financial contributions from the freight railroads.

With the electrification of commuter rail in the Southern California Air Basin, all of Los Angeles County's urban and commuter rail operations will be electrified by 2010.

### **10-YEAR IMPLEMENTATION PROGRAM**

The rail projects and other high-capacity improvements which will be completed in the 10-Year Implementation Program are shown in **Figure 15**.

### **EXPANDED PLAN**

**Figure 16** depicts the additional corridors targeted for high-capacity improvements in the Expanded Plan. These corridors include:

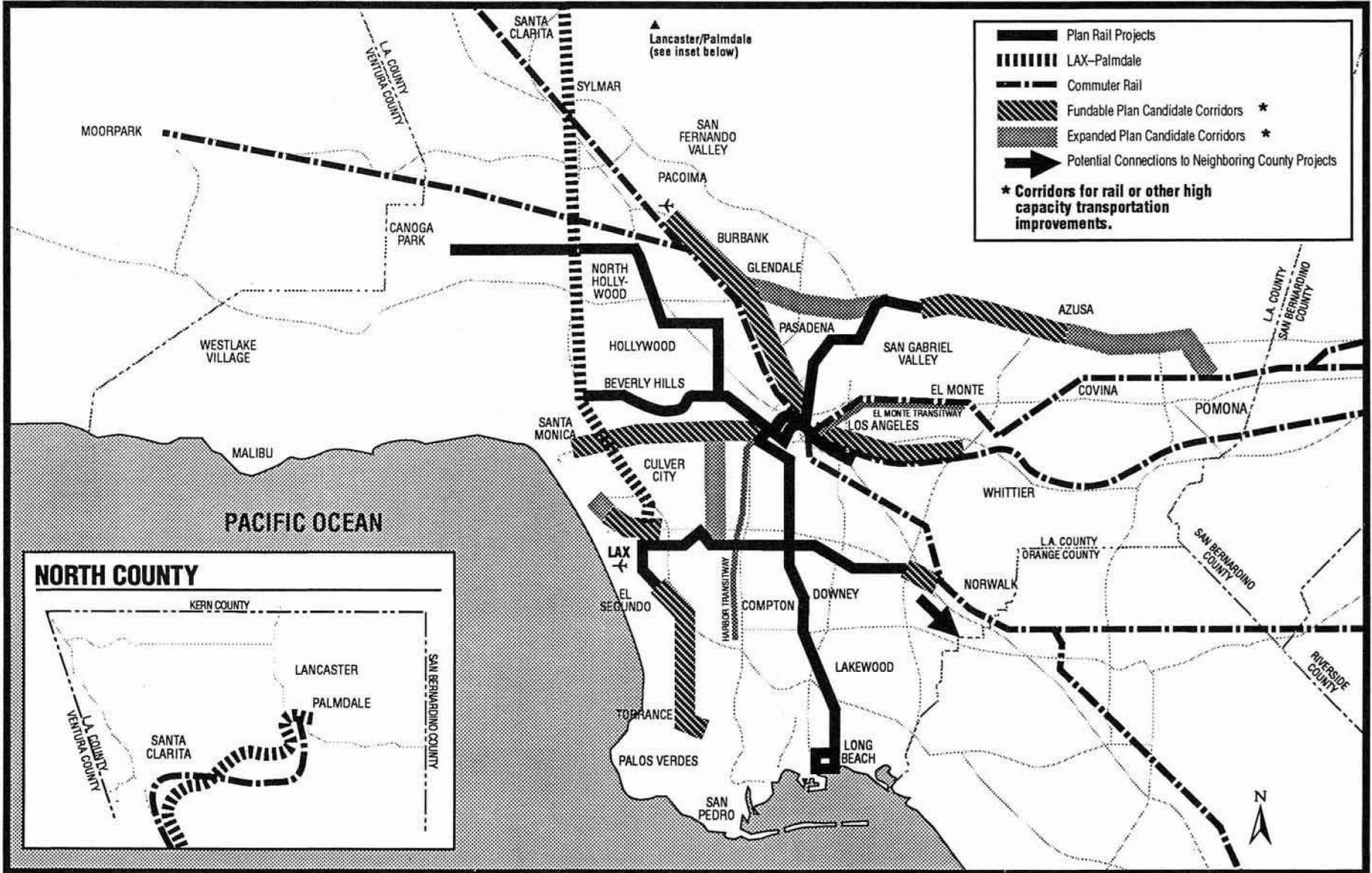
1. The Tri-Cities Corridor linking the cities of Burbank, Glendale, and Pasadena.
2. An extension of the Sierra Madre Villa to Azusa Corridor in the San Gabriel Valley to the Pomona Valley, providing a connection to Los Angeles-San Bernadino Commuter Rail service.
3. The Crenshaw Corridor providing a mid-city connection between the Green Line and the Exposition Corridor.
4. A corridor extending from Westchester Parkway to Marina Del Rey.



# Rail Projects & Candidate Corridors

## Expanded Plan

Figure 16



Assuming the required additional funds are secured, these corridors would undergo the same technology selection process described for the Candidate Corridors. As in the Fundable Plan, these projects are costed in the Expanded Plan assuming rail technology in order to preserve maximum financial flexibility in selecting the appropriate technology.

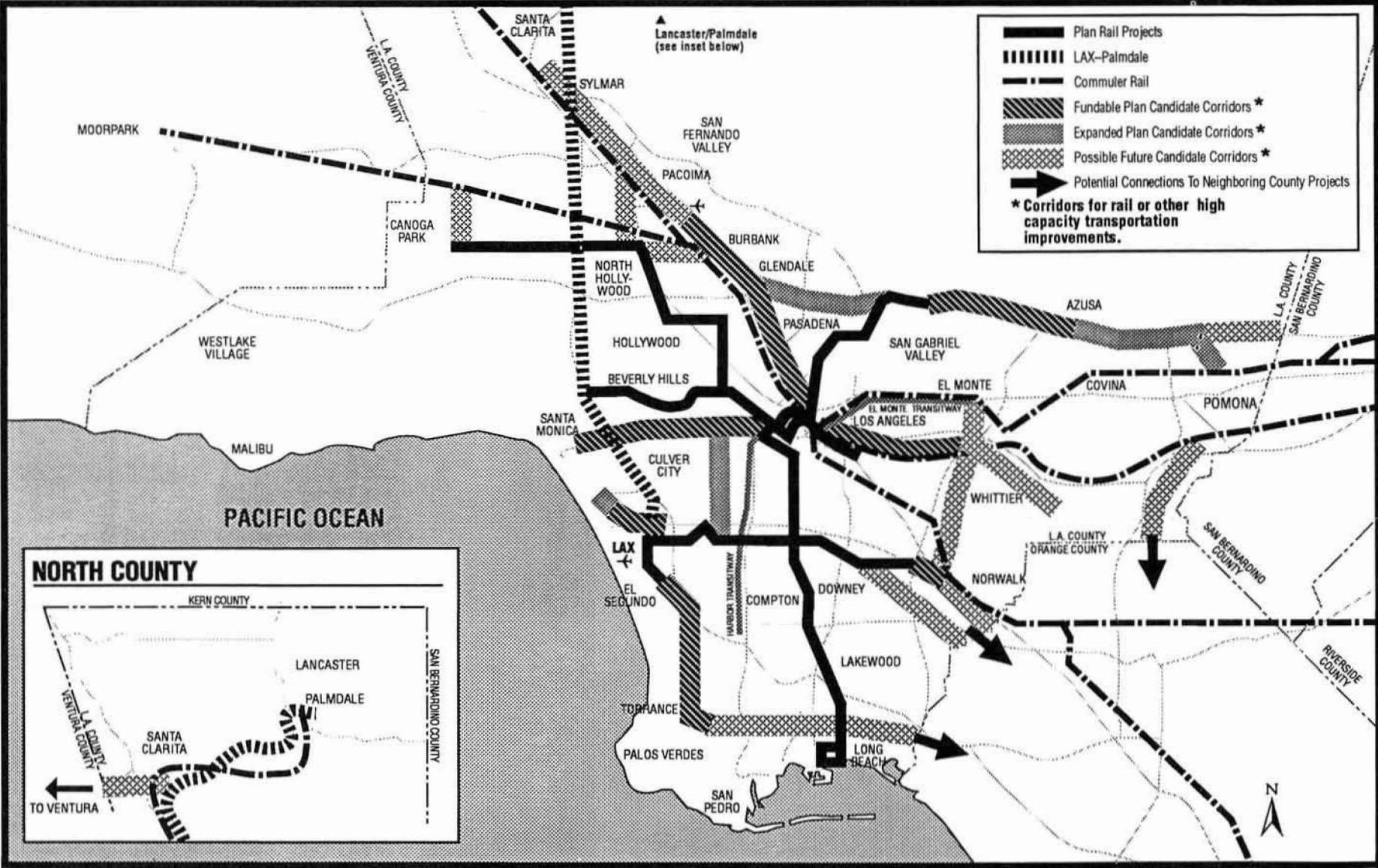
### **UNCONSTRAINED PLAN**

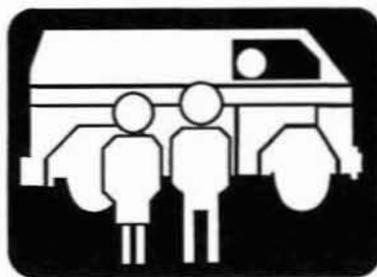
**Figure 17** depicts the balance of projects identified to date which could be targeted for high-capacity improvements, pending further study and the development of additional funding sources.

# Rail Projects & Candidate Corridors

## Unconstrained Plan

Figure 17





TDM Component

## TRANSPORTATION DEMAND MANAGEMENT COMPONENT

### FUNDED PLAN

While the highway, bus, and rail programs proposed in the 30-Year Plan increase the supply of transportation options, the Transportation Demand Management (TDM) Program targets the demand for transportation by creating incentives to reduce single-occupant auto trips and trip-making overall. The purpose of the TDM Program is to:

- o Enhance the attractiveness of ridesharing as an alternative to single occupant automobile travel;
- o Maximize ridership on the evolving bus and rail systems and carpool lane network; and
- o Reduce overall trips and vehicle miles traveled.

To achieve these results the LACTC is currently developing a comprehensive TDM program with strategies that include an aggressive vanpool program, large-scale alternative work hour implementation, bicycle and pedestrian enhancements in commercial facilities, major park-and-ride programs, area-wide trip reduction programs, market incentives, and parking management programs.

TDM is traditionally viewed as a congestion reduction strategy. But more recently TDM has also been embraced as an air quality strategy. The TDM Program proposed in the 30-Year Plan recognizes that mobility concerns are LACTC's first priority, but that contributing to Los Angeles County's share of emission reductions is important as well.

The 1989 Regional Mobility Plan (RMP) developed by the Southern California Association of Governments established air quality-related mode split goals subsequently incorporated in the mandates set forth in the 1991 Air Quality Management Plan: 13.6% of all peak period work trips must be made by transit, and an additional 45.7% of all peak period work trips must be absorbed through implementation of TDM strategies.

The proposed bus and rail improvements in the 30-Year Plan achieve a projected 10 to 11 percent share of peak period work trips assuming present day TDM levels of effort. The 30-Year Plan relies on the significant proposed investment in the TDM Program to divert

three to four percent of peak period work trips to transit, closing the gap with the 13.6% transit goal. The TDM Program investment is also designed to close the gap with the overall 45.7% peak period work trip TDM goal established in the RMP. A change in trip-making of this magnitude will require significant behavioral changes by the travelling public over time. See **Figure 18**.

### **10-YEAR IMPLEMENTATION PROGRAM**

A detailed TDM Program implementation schedule is being developed following LACTC adoption of the Draft TDM Program in April 1992.

### **EXPANDED PLAN**

A 40% expansion in TDM Program funding is proposed in the Expanded Plan. This would be used for expanding the vanpooling effort and encouraging maximum use of the extensive carpool lane network.

### **UNCONSTRAINED PLAN**

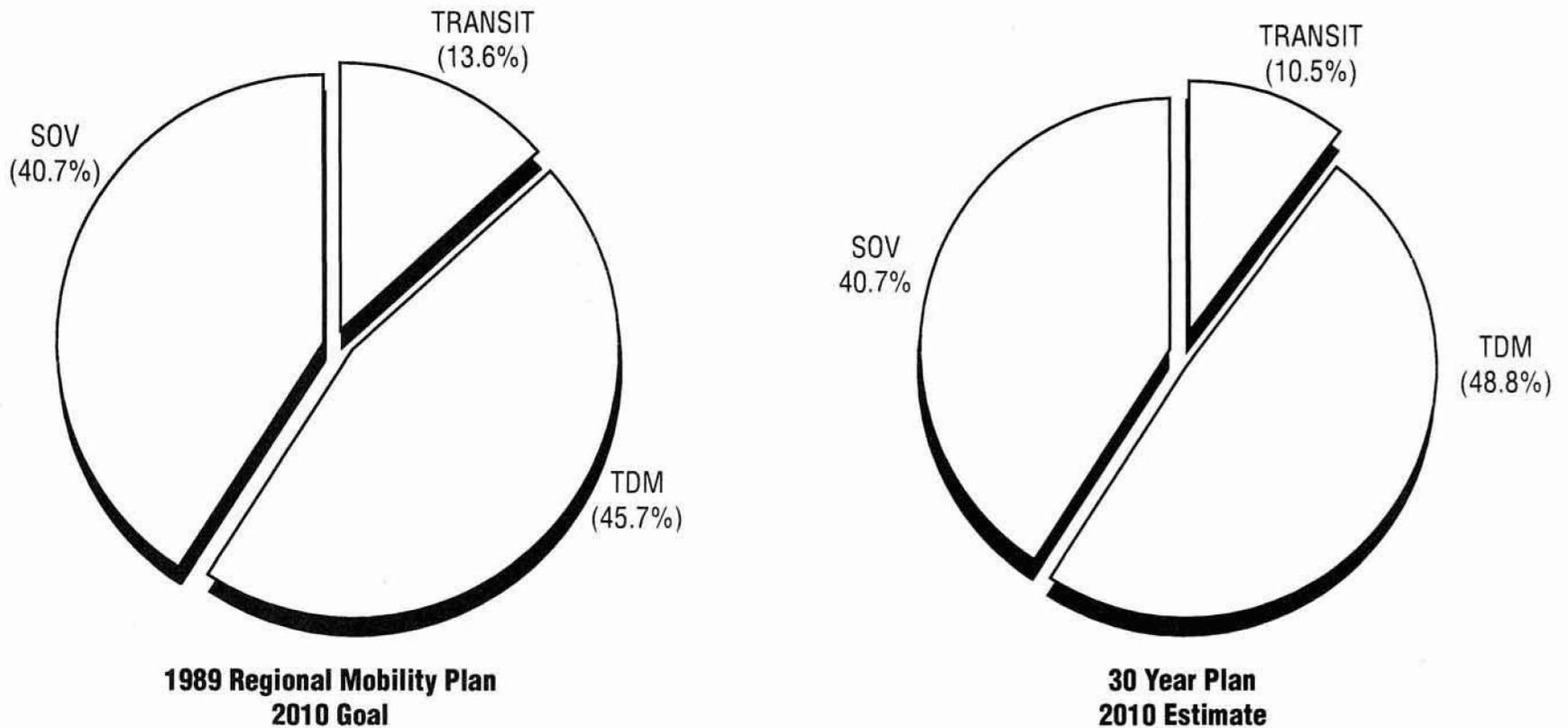
No additional resources are assumed for the TDM Program in the Unconstrained Plan.

# TDM Program

## Fundable Plan

Figure 18

### Projected 30 Year Plan Mode Split Compared To 1989 RMP



Source: SCAG: 1989 Regional Mobility Plan (RMP); LACTC: Proposed 30 Year Plan

## Impacts of Plan

## IMPACTS OF PLAN

The projects and programs proposed in the 30-Year Plan will improve mobility, help clean up the air, and have a significant impact on the local, national, and international economy. A summary of the key impacts of the 30-Year Plan is presented in **Figure 19** and described below.

### MOBILITY IMPACTS

By the year 2010, the 30-Year Plan will include over 350 miles of rail and other high-capacity improvements, 300 miles of carpool lanes, and nearly 50% more bus service than exists today. These alternatives to single occupant auto travel will offer significant improvements in speed and ease of access for all travelers.

By 2010, the population of Los Angeles County will increase by about 15% over today. Total daily work trips are projected to increase about 25% by 2010, but single occupant vehicle trips will only increase about 16%. The difference will be made up by the increasingly effective transportation system: bus and rail ridership will increase over 60%, and carpool trips will increase 40%.

The average rush hour travel speed estimated in the 30-Year Plan for alternatives to the single occupant automobile will be over 35 miles per hour. For the drive-alone freeway commuter not making use of the carpool lane network, average rush hour freeway speed will decrease slightly, from an average of 29 m.p.h. today to about 28 m.p.h. in 2010. However, if the alternatives proposed in the 30-Year Plan were not available, freeway commuters would face a 17 m.p.h. average speed.

These improvements in travel conditions also have important air quality and productivity implications, as well as representing an important catalyst for economic growth in Los Angeles County.

### AIR QUALITY IMPACTS

The principal focus of the programs included in the 30-Year Plan is to improve mobility in Los Angeles County. However, an important result of improving mobility will be improvement in air quality.

# Impacts of Plan

Figure 19

	1991	2010 * No Build	Percent Change From 1991	2010 * Proposed Plan	Percent Change From 1991
<b>Population (millions)</b>	<b>8.9</b>	<b>10.2</b>	<b>+15%</b>	<b>10.2</b>	<b>+15%</b>
<b>Total Daily Home Based Work Trips (millions)</b>	<b>5.20</b>	<b>--</b>	<b>--</b>	<b>6.48</b>	<b>+25%</b>
Bus and Rail Trips	0.41	--	--	0.68	+63%
Carpool Trips	1.02	--	--	1.41	+40%
Single-Occupancy Vehicle Trips	3.77	--	--	4.39	+16%
<b>Average Rush Hour Freeway Speed (m.p.h.)</b>	<b>29.0</b>	<b>17.0</b>	<b>-41%</b>	<b>28.0</b>	<b>-4%</b>
<b>Average Rush Hour Commuter Speed (m.p.h.)</b>	<b>29.0</b>	<b>17.0</b>	<b>-41%</b>	<b>35.5</b>	<b>+22%</b>

<b>Local Employment:</b>	<b>Over 45,000 jobs each year (Capital Program only)</b>
<b>Commuter Delay Avoided:</b>	<b>200 million person-hours saved per year in 2010</b>
<b>Productivity Loss Avoided:</b>	<b>\$2 billion (FY 91 dollars) saved in 2010 (Approximately 1% of LA's gross county product)</b>
<b>Tons of Pollutants Removed:</b>	<b>1,100 metric tons per day (includes vehicle emission efficiencies)</b>

\* 2010 is the forecast year for which most comparative data is available.

## 30-Year Integrated Transportation Plan

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The strategies proposed in the 30-Year Plan reduce pollution by using clean-fuel or electric vehicle technologies in conjunction with reducing congestion and single-occupant automobile trips. The principal strategies include:

- o Construction of over 300 miles of carpool lanes on the freeway system.
- o Construction and operation of 200 miles of commuter rail lines, all of which will be electrified.
- o Construction and operation of 200 miles of urban rail or comparable high-capacity transportation improvements. All of the urban rail facilities will be electrically-powered, and any non-rail high capacity improvements will at a minimum employ clean-fuel technology vehicles.
- o A 55% expansion of the bus fleet coupled with a 100% conversion to clean-fuel and electric alternatives.
- o Extensive Transportation System Management improvements to improve efficiency of existing highway facilities in addition to doubling the Metro Freeway Service Patrol and other incident management efforts.
- o An aggressive Transportation Demand Management Program to increase ridesharing and the use of the bus, rail, and carpool facilities as well as reduce trips overall.

The 30-Year Plan includes a number of components which address specific strategies identified in the Air Quality Management Plan (AQMP):

- High Occupancy Vehicle (Carpool) Lanes
- Transit Improvements
- Traffic Flow Improvements
- Non-Recurrent Congestion (i.e. Incident Management)
- Rail Consolidation to Reduce Rail Crossings (e.g. Alameda Corridor)
- Highway and Freeway Capacity Enhancement
- Railroad Electrification
- High Speed Rail
- Zero Emissions Urban Bus Implementation
- Trip Reduction Strategies

## 30-Year Integrated Transportation Plan

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A 10 to 11 percent share of all peak hour work trips will be achieved in the 30-Year Plan. In conjunction with other transportation and land use measures specified in the AQMP, this is expected to meet approximately 97% of the Reactive Organic Gases (ROG) emission reduction goal established in the 1991 AQMP.

### **ECONOMIC IMPACTS**

Collectively, the programs proposed in the 30-Year Plan rank as the largest metropolitan public works project in the United States. The expenditure of \$183 billion in Los Angeles County over the next 30 years will influence economic growth locally, nationally, and internationally.

Initial estimates indicate that the capital investment program alone will constitute nearly 15% of all local capital investment. It will generate over 45,000 jobs each year in Los Angeles County, and nearly 140,000 jobs across the United States. Over the life of the 30-Year Plan, approximately 1.4 million jobs will be generated in Los Angeles County, and 4.2 million jobs nationwide.

These estimates will be refined in conjunction with an in-depth analysis of the full economic impact of the 30-Year Plan currently underway. The results of this study will provide data on specific economic and employment impacts of the 30-Year Plan by industry, as well as information as to how much of the local investment may "leak" out of Los Angeles County and why. The study will be completed in April 1992.

The LACTC is taking action to maximize local economic benefits by stemming investment leakages outside of Los Angeles County. In December 1991 the Commission approved the development of a Local Business Enterprise (LBE) preference policy. The policy would allow the Commission to give local businesses preference in competitive contract awards.

The LACTC is also constrained by State and Federal laws which discourage placing local investment restrictions on businesses bidding on competitive contracts. The Commission is actively working with the Federal and State lawmakers to develop legislation giving the LACTC the authority to draft and implement geographical investment requirements (e.g. "Buy America") on all Commission contracts.

LACTC has recently considered alternative recommendations for procurement of rail transit vehicles for the Metro Green Line, as well as other future lines. A special Los Angeles Light Rail Vehicle Task Force has been established to address issues surrounding vehicle procurement and creation of meaningful, long-

term jobs. The Task Force has recommended further exploration of Southern California industry involvement in the development not only of rail cars for Los Angeles, but also in the advancement of the surface transportation industry, such that Southern California emerges as a supplier and exporter to the world market for advanced technology transportation products.

Economic impacts of the 30-Year Plan can also be expressed in terms of productivity. The mobility improvements implemented in the Plan by 2010 will save approximately 200 million person-hours per year simply by reducing time spent in traffic. This represents about \$2 billion (current dollars) in productivity loss avoided in one year.

And beyond the tangible economic impacts described above, a significant, effective investment in a balanced transportation system is a powerful indication of community commitment and foresight, making Los Angeles County more attractive to business and labor force alike.

# Financial Summary

## FINANCIAL SUMMARY

### FUNDABLE PLAN

The Fundable Plan includes revenue estimates based on current economic conditions and existing revenue bases, and projects these estimates forward for 30 years. The first ten years of the Plan (the 10-Year Implementation Program) is structured such that expenditures meet revenue availability. In this ten-year period, new revenue sources are not anticipated and existing revenues increase only by amounts committed in legislation or programming documents.

In the second and third decades of the 30-Year Fundable Plan, programs and projects are scheduled such that any surpluses and shortfalls are constrained to within 5% of revenue projections. This flexibility is necessary given the uncertainty of long-range revenue and cost estimates. Overall, a projected shortfall in the second decade suggests that strategies for new revenue sources must be pursued to have a fully fundable program over the next 30 years. Potential new funding sources that could be used to meet these needs are described in the Expanded Plan below.

The Fundable Plan calls for a \$183 billion investment in transportation in Los Angeles County over 30 years. As shown in **Figure 20**, this investment includes both capital and operating expenses for all modes.

Of the \$183 billion included in the Fundable Plan, \$108 billion is for projects with LACTC funding commitments. An additional \$75 billion in planned projects is included in the Plan based on the anticipated financial capacity of LACTC to fund these projects. The committed and planned project costs by mode are shown in **Figures 21 and 22**, respectively.

This investment will require full participation by all four funding partners: federal, state, local and private sector. **Figure 23** illustrates these funding shares. Especially noteworthy is the local funding share, which constitutes 74% of the overall transportation program resources, representing the significant commitment of local sales tax dollars to transportation in Los Angeles County.

# Uses of Funds/30 Years

## Fundable Plan

Figure 20

(\$ Billions)

	CAPITAL	O & M	TOTAL
HWY	26.3	*	26.3
TDM	4.1	1.4	5.5
BUS	14.5	58.6	73.1
RAIL/HIGH CAPACITY CORRIDOR	55.6	22.6	78.2
<b>TOTAL</b>	<b>100.5</b>	<b>82.6</b>	<b>183.1</b>

\* Estimated capital and operating costs for freeways, streets and roads not programmed by LACTC equals approximately \$58 billion.

# Committed Projects

Figure 21

PROJECTS	ESCALATED PROJECTS COSTS (\$'S BILLIONS)		
	CAPITAL	OPERATIONS	TOTAL
<b>RAIL</b> * Right of Way * RED LINE - Seg. 1, 2, and 3 and Ext. to San Fernando Valley * ORANGE LINE * BLUE LINE - 7th Flower to Long Beach/Pasadena * GREEN LINE - Norwalk to El Segundo * Commuter Lines	24.0	15.3	39.3
<b>BUS</b> * Maintain 2,500 Peak Fleet Buses (Current Level)	9.1	45.3	54.4
<b>HIGHWAY (1)</b> * HOV - Rte 10, 14, 30, 110, 118, 210, and 405 * Gap Closures - Rte 30, 105, and 138 * System Improvements - State * TSM - Local * Soundwalls * HSOPP * Inter-Regional Roads * Incident Management (Current Level) * SAFE * Regional Bikeways (Current Level)	13.8	0.0	13.8
<b>TRANSPORTATION DEMAND MANAGEMENT</b> * Current Level	0.0	0.6	0.6
<b>TOTAL COMMITTED PROJECTS</b>	<b>46.9</b>	<b>61.2</b>	<b>108.1</b>

**NOTES:**

1. Highways categories consist of projects funded wholly or partially in the 1992 STIP or that have Commission action.

# Planned Projects

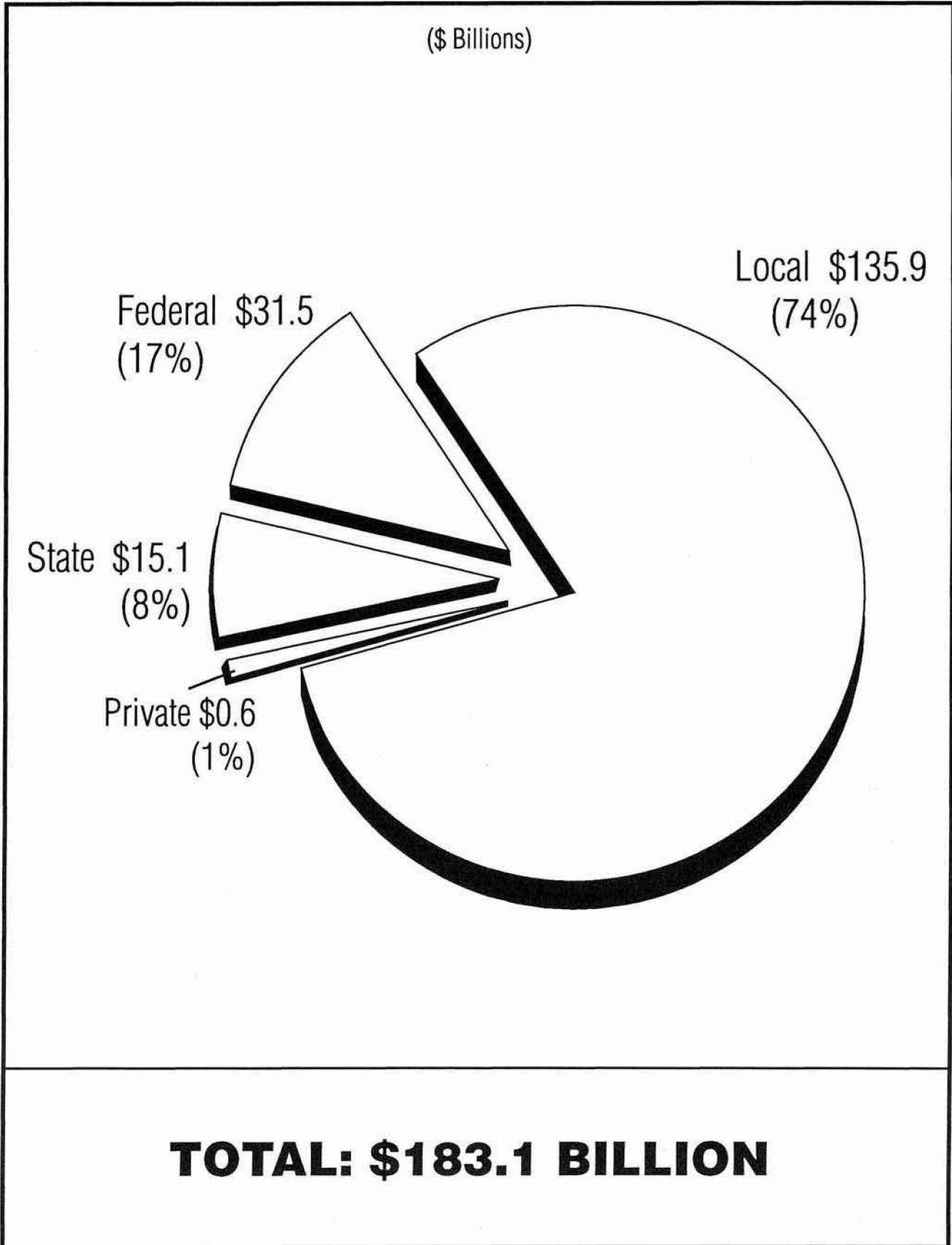
Figure 22

PROJECTS	ESCALATED PROJECTS COSTS (\$'S BILLIONS)		
	CAPITAL	OPERATIONS	TOTAL
<b>RAIL</b> * Candidate Corridor Projects	31.6	7.3	38.9
<b>BUS</b> * Expand Peak Fleet to 3,900 by FY 2021 * Bus Electrification * Clean-Fueled Fleet	5.4	13.3	18.7
<b>HIGHWAY</b> * HOV - Rte 5, 10, 14, 57, 60, 91, 110, 134, 170, 405, and 605 * Gap Closures - Rte 71, 126, 138, and 710 * TSM - State * System Improvements - Local * Park & Ride * Bus-on-Freeway * Incident Management (Strategic Level) * Environmental Enhancement and Mitigation * Regional Bikeways (Strategic Level) * Intelligent Vehicle Highway Systems	12.5	0.0	12.5
<b>TRANSPORTATION DEMAND MANAGEMENT</b> * Shared-Ride Programs * Marketing Strategies	4.1	0.8	4.9
<b>TOTAL PLANNED PROJECTS</b>	<b>53.6</b>	<b>21.4</b>	<b>75.0</b>

# Sources of Funds/30 Years

*Fundable Plan*

Figure 23



In developing the Plan, emphasis was given to maximizing state and federal funding to LACTC while meeting all conditions tied to these funding sources. For example, local matching requirements and the eligibility of modes for a particular source are considered in optimizing funding in the Plan. Certain funding sources are relatively flexible (e.g., they can be used for different modes and for operating or capital expenses) while others have very specific requirements on how they are to be used. A matrix showing the eligibility of modes for key funding sources is provided in **Figure 24**.

The allocation of key revenue sources by mode is shown in **Figure 25**.

Successful completion of the programs and projects in the 30-Year Plan will require LACTC, its funding partners, and transit operating agencies to continue their aggressive pursuit of transportation funding for the County.

### **Key Assumptions**

The 30-Year Plan relies on numerous assumptions which reflect the best available estimate of future trends in revenues and costs over the next 30 years. Existing Commission policy guides the development of the assumptions; however, there are many areas requiring future policy decisions. In order to prepare the 30-Year Plan, LACTC staff have assumed that certain policy decisions will be made.

Potential future policy decisions that would be addressed by the Commission to implement the Plan are outlined in the Detailed Assumptions Listing in **Appendix C**. The Plan and the assumptions upon which it was developed do not replace Commission action on policies. The Plan will be updated periodically to reflect separate, specific Commission actions.

The key assumptions used in developing the Plan are summarized below. A detailed listing of assumptions by mode is included in **Appendix C**.

# Eligibility of Modes for Funding Sources

Figure 24

REVENUE SOURCES	RAIL		BUS		HIGHWAYS	TDM
	CAPITAL	OPERATIONS	CAPITAL	OPERATIONS		
<b>LOCAL</b>						
Proposition A (1)	\$		*	\$		*
Proposition C (1)	\$	\$	\$	\$	\$	\$
TDA - Article 4	*	*	\$	\$		
Local Agency Funds	\$	*	*	*	\$	*
Farebox		\$		\$		
Financing	\$		\$		\$	\$
Other	\$	\$	\$	\$	\$	\$
<b>STATE</b>						
Flexible Congestion Relief	\$				\$	\$
Proposition 116	\$					
Proposition 108	\$					
State Transit Assistance	*	\$	*	\$		
TSM	*				\$	*
State and Local Partnership	\$				\$	
Inter-Regional Roads					\$	
Soundwalls					\$	
HSOPP					\$	
<b>FEDERAL</b>						
FTA - Section 3	\$		*			
FTA - Section 9	\$	*	\$	\$		
FTA- ISTEPA	\$		\$		\$	\$
Fed. Highway Demo Projects					\$	
<b>PRIVATE</b>						
Private/Joint Venture	\$	*				

NOTES: \$ Revenue allocated to this mode. \* This mode is eligible for these revenues although none have been allocated to it. (1) Exclusive of local return.

# Funding Source Allocations

Figure 25

REVENUE SOURCES	ESCALATED \$'S MILLIONS		MODE
	FY 1992 AMOUNT	30 YEAR TOTAL	
<b>LOCAL</b>			
Proposition A	350	31,829	Bus and Rail
Proposition C (Escrowed totals included)	350	31,727	Bus, Rail, Highway, TDM
TDA - Article 4	165	14,985	Bus
Local Agency Funds	0	2,180	Rail and Highway
Farebox	295	33,880	Bus and Rail
Financing	0	16,976	Bus, Rail, Highway, TDM
Other (1)	275	10,391	Bus, Rail, Highway, TDM
<b>STATE</b>			
Flexible Congestion Relief (2)	191	7,386	Rail, Highway, Local Streets and Roads, and TDM
Proposition 116	35	713	Rail
Proposition 108	79	1,497	Rail
State Transit Assistance	18	1,227	Bus and Rail
TSM (2)	23	664	Highway
State and Local Partnership	0	389	Rail and Highway
Inter-Regional Roads (2)	0	485	Highway
Soundwalls (2)	9	185	Highway
HSOPP (2)	47	4,940	Highway
<b>FEDERAL</b>			
FTA - Section 3	128	7,069	Rail
FTA - Section 9	111	9,535	Bus and Rail
FTA - ISTEPA	0	6,002	Bus, Rail, Highway, Local Streets and Roads, and TDM
Federal Highway Demo Projects	0	451	Highway
<b>PRIVATE</b>			
Private/Joint Venture	0	589	Rail
<b>TOTAL</b>	<b>2,076</b>	<b>183,100</b>	

NOTES: 1. The other category includes miscellaneous revenues not shown above (e.g., LA City funds, Benefit Assessments, Article XIX, TCI).

2. Flexible Congestion Relief, Inter-Regional Roads, Soundwalls, TSM, and HSOPP are funded with 50% federal and 50% state dollars, but for simplicity are shown as a state revenue above.

## 30-Year Integrated Transportation Plan

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- Proposition A

Proposition A revenue estimates were forecasted by UCLA in November 1991. Proposition A revenues are allocated to programs as prescribed in the ballot initiative: 35% for rail programs, 40% to be distributed at the LACTC's discretion to transit programs, and 25% to be distributed to local jurisdictions for transit programs. In the 30-Year Plan, all Proposition A 40% discretionary funds are assumed to be allocated to bus programs, consistent with existing Commission policy.

- Proposition C

Proposition C funds, also forecasted by UCLA in November 1991, are assumed to be available in January 1993 (FY 1992-93), pending successful resolution of litigation. Proposition C revenues are allocated according to guidelines developed by the LACTC which are consistent with the ballot language.

- Inflation Rates

Annual inflation rates are assumed for capital and operating costs and revenues for all modes. Operational inflation rates were provided by UCLA in their Proposition A sales tax revenue forecast and average 4.2% per year for the first decade, 4.75% for the second decade, and 4.78% for the third decade. Capital cost inflation is assumed to be 82% of the operating inflation rate, based on a longitudinal study of the relationship of the Construction Cost Index (CCI) to the Consumer Price Index (CPI).

- Local Jurisdiction Funding

The Plan assumes that local jurisdictions will participate in funding portions of the capital program. Approximately 25% of the costs for projects in the candidate corridors are assumed to be funded with local jurisdictions' contributions. However, this contribution would be voluntary and would be considered as one of the ranking criteria in a project selection process to be developed by the LACTC external to the 30-Year Plan process.

- Benefit Assessments

A benefit assessment district was established around the existing Segment 1 stations of the Metro Red Line several years ago. A legal challenge to the benefit assessment districts was posed, delaying receipt of revenues. A State

## 30-Year Integrated Transportation Plan

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Supreme Court ruling in favor of the district has recently been provided, making benefit assessments a viable funding source. Consistent with the court findings on benefit assessments on Segment 1, the Plan assumes \$57 million will be available in FY 1992-93.

Benefit assessment districts around stations on Segment 2 and the North Hollywood segment of Segment 3 represent an integral part of the funding program proposed for these projects. Revenues representing approximately 4% of the total capital cost of Segment 2 and the North Hollywood segment of Segment 3 are assumed to be available beginning in FY 1997-98. No other benefit assessment districts are assumed in the 30-Year Plan.

- Senior Lien Bonds

The Plan assumes that senior lien bonds will be issued throughout the Plan as needed to support the capital programs for all modes. Bonds are issued in each year they are needed to meet capital requirements, to the extent a debt service coverage of 1.15 is met. The Plan assumes that 25-year term bonds are issued at an interest rate of 7.2%. Debt service on the bonds is paid primarily with Proposition A and Proposition C revenues.

- Capitalized Operating Costs

The Plan includes the use of revenue bond proceeds to fund operating costs of rail lines for the initial two years of operation. Operating costs are funded in this manner only where such costs are related specifically to rail lines financed with revenue bonds.

- State Rail Bonds

The Plan includes Proposition 108 and 116 revenues earmarked or approved for Los Angeles County. The plan includes revenues from the June 1990 ballot for Proposition 116 and Proposition 108 and assumes that rail bond proposals authorized in 1990 for presentation to the voters in 1992 and 1994 will also be passed.

## 30-Year Integrated Transportation Plan

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- Federal 1991 ISTEA

The federal reauthorization bill signed by the President in November 1991 includes an additional \$670 million for transportation in the County during the FY 1992-93 through FY 1997-98 authorization period. The Plan assumes reauthorization of these revenues for the balance of the 30 years, adding a total of \$5.4 billion in new revenues to the Plan.

The Plan initially assumes 50% of these funds will be applied to the Highway and TDM programs, and 50% will be distributed to the Bus and Rail programs. The total amount distributed to the LACTC assumes successful outcome of pending state legislation to direct these funds by formula to the regional and county transportation commission level. Projects, and therefore the share of funding among modes, will be selected for funding through the LACTC Transportation Improvement Program (TIP) process.

- Joint Development

Joint development revenues are assumed to accrue to rail projects that appear to have potential for public/private development and that are not assumed to have benefit assessment district financing. These revenues are estimated to equal approximately 3% of the total capital cost of construction. Revenues are generated for fifteen years, beginning with the first year of revenue operations.

- Rail Project Cost Estimates

Costs for rail projects that have LACTC/RCC approved plans and budgets are estimated by RCC and contain cost contingencies that vary by project, depending on how near to completion the project is. Rail projects for which detailed budgets have not been developed required estimates to be made using the best available data. These estimates include a 30% cost contingency. All recent actions by LACTC on rail development, including changes in the Green line and the potential development of an "L.A. Car", are incorporated in the Plan.

- Program Reserve

An overall program reserve to accommodate unanticipated changes in project scope is included for bus and rail capital programs. The amount represents 2.5% of the total capital costs in the first decade of the Plan, 5% in the second decade, and 10% in the third decade. The reserve is applied

## 30-Year Integrated Transportation Plan

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on top of project cost estimates which already include contingencies.

- Security Costs

Security costs for bus and rail are estimated to be more than \$8 billion over the next 30 years based on existing security costs and projected needs. To meet the changing security requirements of the bus and rail programs, funds for security are assumed to be pooled without designation to rail or bus programs. The funds would be allocated at the discretion of LACTC through the multi-year TIP programming process, updated annually, to the bus or rail programs most in need.

- Cost Containment

The 30-Year Plan incorporates as a matter of sound public policy a cost containment component. Through aggressive management of costs, staff believes the \$6 billion 30-year savings target established in the August 1991 Plan can be achieved. These savings are assumed to accrue proportionally to projected annual expenditures in rail and bus operations and capital programs beginning in FY 1993-94.

Example strategies which could contribute to achieving this target include:

1. Convert 30% of the bus fleet to high-capacity articulated vehicles.
2. Full value engineering review of rail construction projects.
3. Increased competition in service provision contracts.
4. Joint procurement and standardization policies.
5. Identify a less expensive alternative to methanol-fueled buses.

Staff recommends that a Cost Containment Task Force be established by May 1992 to study these options, identify additional strategies, and develop an implementation plan to achieve this savings target. This Task Force would be led by the LACTC Chairperson.

The Cost Containment component recognizes that continuation of "business as usual" with no innovation in the implementation

## 30-Year Integrated Transportation Plan

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and delivery of transportation services over the life of the 30-Year Plan is neither acceptable nor likely. In the event these savings are not achieved, adjustments will be required to maintain a fundable 30-Year Plan.

- Research & Development (R&D)

Funds for special planning studies on new technologies, such as Intelligent Vehicle Highway Systems (IVHS) SMART Street research, are included in the 30-Year Plan and projected forward for 30 years. The principal source of funding for these studies comes from federal IVHS and ISTEA grants. LACTC funds currently devoted to technology studies such as bus and commuter rail electrification are also projected forward for 30 years. These funds are available for additional R&D efforts.

The assumptions regarding State Rail Bonds and Proposition C revenues are important to the Plan and merit further discussion. A brief analysis of their impacts on the Plan is provided below.

### State Rail Bonds

The Plan includes state rail bonds approved by the voters in June 1990. The Plan also assumes the voters of California will approve two additional state rail bond measures -- one in November 1992 and another in November 1994 (as authorized by the California Legislature in 1989.) This assumption is consistent with the California Transportation Commission's action to program \$3 billion statewide from all three rail bond measures in the 1990 and 1992 STIPs. The CTC has approved \$1.5 billion in state rail bonds and this amount has been authorized for Los Angeles County rail projects in the STIPs.

If the state rail bond measures are not approved in 1992 and 1994, \$1.05 billion in Los Angeles County rail projects will be in jeopardy. In particular, state rail bond funding for the San Fernando Valley East/West rail project, the Pasadena Line and the North Coast extension would be at risk. However, the CTC would revisit the 1992 STIP and would have to reprogram highway funds from small urban and rural counties to backfill the rail programs in major metropolitan counties if the bond issues are not approved. Any remaining shortfalls to the LACTC rail program would have to be made up from local funds.

A detailed analysis of the impacts of potential voter disapproval of 1992 and 1994 state rail bonds is included in **Appendix D**.

## 30-Year Integrated Transportation Plan

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### Proposition C Funding

The voter-approved Proposition C sales tax for transportation is assumed to be available beginning in January 1993. The sales tax has been the subject of lawsuits since its passage in November 1990, but the Appellate Court recently delivered a unanimous decision upholding the tax. The State Supreme Court may hear the case if this decision is appealed.

If the tax is invalidated by the Supreme Court, the transportation improvements in the 30-Year Plan will be impacted as follows:

- o No bus expansion.
- o No rail construction beyond the initial Blue Line segment, Green Line segment, and Metro Red Line Segments One, Two, and Three. In addition, Metro Red Line Segment Three will be delayed three years.
- o Rail operations will not be fully funded beyond FY 1995-96.
- o No additional carpool lane and freeway gap closure projects will be undertaken beyond those programmed in the STIP. Projects in the second and third decade of the Plan will depend on statewide funding available in the STIP.
- o The TDM program will be reduced by approximately 50%.

In addition, without Prop. C as a source for local match, LACTC's ability to leverage state and federal funds with local dollars will be severely limited.

### **EXPANDED PLAN**

The Expanded Plan assumes that reasonable revenue increases will occur in the second and third decades of the 30-Year Plan, including a new Federal Gas Tax and additional State Rail Bonds. These assumptions permit program expansions and new projects to be added in the second and third decades of the 30-Year Plan.

The Expanded Plan calls for \$203.5 billion investment over the next 30 years, which results in \$20.6 billion in additional funding required to complete the plan.

## **ADDITIONAL REVENUE SOURCES**

While transportation funding has increased dramatically in the past two years, LACTC must continue to pursue additional funding in order to implement the new programs and projects included in the Expanded Plan and to address potential unforeseen funding needs in the second decade of the Fundable Plan. There are numerous potential sources of funds to be considered. The most viable of these are:

- Parking Taxes and Fees
- New Federal Gas Tax
- Additional State Rail Bonds
- Additional State Gas Tax

Individually or in combination, these sources of funds could address future funding needs.

The Expanded Plan would require further consideration of additional local sources of funds to generate the additional \$20.6 billion required over the next 30 years. Additional local resources would include:

- Emissions Trading
- Value Capture, including Joint Development projects
- Private Sector Initiatives
- Development Related Fees

Descriptions of each of these potential funding sources are provided in **Appendix E**.

## **UNCONSTRAINED PLAN**

The Unconstrained Plan includes all potential transportation improvements identified for the County. No resource constraints are assumed, and no analysis of costs or revenues has been conducted. The Unconstrained Plan provides a perspective of the magnitude of transportation needs in the County.

# Appendices

## APPENDIX A

### RELATIONSHIP OF 30-YEAR PLAN TO OTHER PLANNING AND PROGRAMMING DOCUMENTS

The 30-Year Integrated Transportation Plan provides a building block for other planning and programming documents. These include the following documents developed by the Southern California Association of Governments (SCAG), the officially designated regional planning agency:

- o The SCAG Regional Mobility Plan (RMP)
- o The SCAG Air Quality Management Plan (AQMP)
- o The SCAG Regional Transportation Improvement Program (RTIP)

The following plans and programs are required by statute to be developed by the LACTC and must conform to the SCAG Regional Mobility Plan and SCAG Air Quality Management Plan:

- o The LACTC Congestion Management Program (CMP)
- o The LACTC Los Angeles County Transportation Improvement Program (TIP)
- o The LACTC Short Range Transit Plan (S RTP)

The following LACTC plans are not required by statute and therefore do not have a formal requirement to conform to the SCAG planning documents. However, in order to fund and implement projects listed in these documents, they must be included in both LACTC documents listed above, which must conform to the SCAG planning documents. The LACTC plans not required by statute are:

- o The LACTC Congested Corridor Action Plan (CCAP)
- o The LACTC 30-Year Integrated Transportation Plan

**Strategic Framework:** The LACTC Congested Corridor Plan and the LACTC 30-Year Integrated Transportation Plan provide the LACTC with a strategic framework, in addition to the SCAG RMP and AQMP, to guide the development of the LACTC CMP and TIP for submission to SCAG and the implementation of mobility strategies. The 30-Year Plan also will be used to evaluate the financial impact of projects and programs.

## 30-Year Integrated Transportation Plan

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Separate Action Required for Programs and Projects: These LACTC plans do not replace separate LACTC action required to fund and implement projects nor LACTC action required for the development and approval of the LACTC CMP and TIP for submission to SCAG. These LACTC strategic plans will be instrumental for input to the SCAG updates of the air quality plan (AQMP) and Regional Mobility Plan (RMP).

Environmental (CEQA) Exemption for 30-Year Plan: It is recommended that the LACTC file a Notice of Exemption to the California Environmental Quality Act (CEQA) because the 30-Year Plan is a funding feasibility study which involves no actions, nor commits the parties to any actions affecting environmental resources, until the environmental suitability of each project's objectives has been certified by the appropriate agencies. Thus, according to a legal opinion by the County Counsel of Los Angeles, the 30-Year Plan is exempt from CEQA, the California environmental law, under:

- o Section 15262 and 15306 as it is characterized by data collection, research, feasibility studies, and resource evaluation activities, which do not result in serious or major disturbances to an environmental resource, and is a funding study to guide possible future actions which the Los Angeles County Transportation Commission has not yet approved, adopted, or funded; and
- o Section 15061.b.3 under the general rule that CEQA applies only to projects which have the potential for causing a significant effect on the environment. As it can be seen with certainty that there is no possibility that this project (the 30-Year Plan) may have a significant effect on the environment, the project is not subject to CEQA.

The following is a brief description of the plans and programs listed above and how they relate to the 30-Year Plan:

### SCAG Regional Mobility Plan

SCAG's Regional Mobility Plan (RMP) is a 20-year planning document which addresses mobility issues in the SCAG region. The RMP has four separate elements: growth management, transportation demand management, transportation systems management, and facility development. The RMP incorporates the transportation measures of the AQMP.

## 30-Year Integrated Transportation Plan

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The LACTC is required to conform with the RMP when submitting projects for the Regional Transportation Improvement Program (RTIP). The 30-Year Plan is a strategic planning tool for the LACTC and is not intended to mirror the RMP for the life of the Plan. Projects in the first five years of the 30-Year Plan are in the 1989 RMP and the 30-Year Plan has been shared with the SCAG RMP task force, which is preparing the 1992 SCAG Regional Mobility Plan.

### SCAG Air Quality Management Plan

The SCAG Air Quality Management Plan (AQMP), as required by statute, must be developed and adopted by SCAG and approved by the South Coast Air Quality Management District (SCAQMD). The AQMP is designed to meet all federal and state air quality emissions standards.

The 30-Year Plan (the Fundable Plan, except as noted) addresses the following requirements of the Air Quality Management Plan (AQMP):

- o High Occupancy Vehicle (HOV) Facilities
- o Transit Improvements
- o Traffic Flow Improvements
- o Non-recurrent Congestion
- o Rail Consolidation to Reduce Rail Crossings (Expanded Plan)
- o Highway and Freeway Capacity Enhancement
- o Railroad Electrification
- o High Speed Rail
- o Zero Emissions Urban Bus Implementation
- o Trip Reduction Strategies

### SCAG Regional Transportation Improvement Program (RTIP)/LACTC Los Angeles County Transportation Improvement Program (TIP)

The LACTC is required by state statute to develop and approve the Los Angeles County portion (Los Angeles County TIP) of the SCAG Regional Transportation Improvement Program. The TIP and RTIP include all transportation projects which potentially receive state and federal funds. The TIP is financially constrained based on reasonably available funding sources. The LACTC TIP must conform to the SCAG Regional Mobility Plan (RMP) and is submitted for approval to SCAG, who also determines the RTIP's consistency with the Regional Mobility Plan.

The Los Angeles County portion of the RTIP includes a transit portion funded with Federal Transit Administration (FTA) funds. This transit TIP is approved by SCAG and then transmitted to the FTA. The Los Angeles County TIP also includes a state funded rail

## 30-Year Integrated Transportation Plan

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transit capital program and a state and federally funded highway improvements program which is approved by SCAG and then submitted to the California Transportation Commission for approval and incorporation into a State Transportation Improvement Program (STIP). The final STIP is then included in the SCAG RTIP and submitted to the Federal Highway Administration for approval.

The LACTC Transportation Improvement Program projects must be drawn from and be consistent with the SCAG Regional Mobility Plan, as highlighted above. The 30-Year Plan will incorporate TIP decisions made at the LACTC, SCAG, CTC and federal levels.

### LACTC Short Range Transit Plan (S RTP)

The S RTP is a 3 to 5 year federally-required short range planning document for bus and rail transit projects and programs. The LACTC develops a county-wide S RTP which incorporates S RTP's from all the Los Angeles County's transit operators. The capital improvements and operating costs component of the S RTP is considered for inclusion in the LACTC TIP. Once included in the LACTC TIP, S RTP-generated projects will be incorporated in the 30-Year Plan.

### LACTC Congestion Management Program (CMP)

The Congestion Management Program is a new state requirement which requires counties to develop a planning process which addresses congestion relief in a coordinated manner. The LACTC is the designated Congestion Management Agency (CMA) for Los Angeles County. The CMP links transportation, land use and air quality decisions under one program. Through the development of a sophisticated database, the CMP evaluates capital projects of the 30-Year Plan to determine if they are consistent with meeting the goals of the CMP.

### LACTC Congested Corridor Action Plan (CCAP)

The CCAP defines strategies and projects for eleven transportation corridors with the heaviest arterial, freeway and transit congestion in Los Angeles County. The CCAP can be considered as LACTC's work plan which leads to implementing the goals and strategies of both the 30-Year Plan and the CMP.

All of the plans and programs listed above, including the 30-Year Plan, are part of a continuing, coordinated and comprehensive planning and programming process within the SCAG region. The 30-Year Plan would give the LACTC an additional strategic tool in which to accomplish its mission to improve mobility in Los Angeles County.

## APPENDIX B

### STATUS OF CANDIDATE CORRIDOR PLANNING PROCESSES (in alphabetical order)

o **El Segundo to Torrance.**

Route refinement study completed in May 1990. Study presented to local jurisdictions for review and comment. When the EIR is prepared, a full range of transportation improvement alternatives will be studied.

o **Green Line Multi-Modal Transportation Center to Westchester Parkway.**

Preliminary engineering activities on this project are suspended pending resolution of issues raised by the Los Angeles Department of Airports. LACTC organized an interagency task force to evaluate the adopted EIR alignment and develop service alternatives addressing the airport issues and transportation needs in the area.

The alternatives developed by the task force include No Project, All Bus, Light Rail, and a technology-neutral rail alternative through LAX Parking Lot B. These alternatives will be examined in a Supplemental EIR expected to be completed in January 1993.

[Note: In December 1991 the LACTC voted to include as part of the Green Line (Norwalk-El Segundo) a multi-modal transportation center serving the airport area (precise location to be determined in the supplemental EIR). The remainder of the originally-adopted North Coast Extension line from the transportation center to Westchester Parkway constitutes the new North Coast Extension project.]

o **Green Line to Orange County Rail Connection.**

The Preliminary Planning Study is underway. Three route alignments and No Project and Light Rail alternatives are being studied (this is considered an extension of the Green Line). A draft of this study will be issued in April 1992.

o **Downtown Los Angeles (Taylor Yard) to the Burbank-Glendale-Pasadena Airport area.**

The Preliminary Planning Study evaluated Light Rail, Advanced Rail Technology (e.g. Monorail), and Local Bus Circulator alternatives. Light Rail was the selected alternative for further study in the EIR.

In response to the request of cities of Glendale and Burbank, the scope of study corridor was extended in the EIR to evaluate continuing light rail north to the Burbank-Glendale-Pasadena Airport area. The Draft EIR will be completed in May 1992. This line will serve the Glendale Transportation Center, the Burbank Transportation Center, and the Burbank-Glendale-Pasadena Airport area which are being designed by the cities to accommodate light rail. The 30-Year Plan reflects the full project under study in the Draft EIR. LACTC staff will work with the cities of Burbank and Glendale to identify new funding sources that will ensure completion of the entire project.

o **Downtown Los Angeles to USC.**

The Preliminary Planning Study evaluated No Project and Light Rail alternatives for this corridor (this is considered an extension of the Blue Line project). Based on this study and the associated public review process, the LACTC adopted light rail as the preferred mode for further study in the EIR. A draft EIR will be issued in March 1992.

o **Route 60 Corridor in the San Gabriel Valley.**

Cities are being asked to consider participation in a Preliminary Planning Study. A transit needs assessment for this area is being prepared as background for the Orange Line alternatives study.

o **Sierra Madre Villa to Azusa in the San Gabriel Valley.**

The Preliminary Planning Study is underway. Analysis is being done on a "null alternative" which assumes express bus service along this corridor, as well as a number of rail alternatives. This study will be complete by April 1992.

o **USC to Santa Monica.**

The Preliminary Planning Study identified a number of alternative transportation modes for this corridor, including light rail, transitway (HOV Bus Operations), electric trolleybus, and bikeway (implementable in conjunction with the previous three alternatives). This study will be completed in April 1992. The results will be presented to the LACTC for action on the preferred service alternatives for further study in the EIR.

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## INTRODUCTION

### PURPOSE

The purpose of this appendix to the 30-Year Integrated Transportation Plan is to provide a detailed listing of assumptions used in developing the Plan. The Plan was prepared using a cash flow model which relies on numerous assumptions. The assumptions reflect the best available estimate of future trends in revenues and costs over the next 30 years.

### FUTURE POLICY DECISIONS

Existing Commission policy guides the development of the assumptions; however, there are many areas requiring future policy decisions. For purposes of preparing the Plan, we have had to assume that the following key policy decisions will be made. The Plan provides the flexibility and the financial capacity for future policy decisions. As these specific policy and project decisions are made by the Commission, the Plan will be adjusted accordingly.

Examples of potential future policy decisions that would be addressed by the Commission to implement the Plan are:

- Programming Proposition C funds. Prop. C funds are programmed within the Plan to rail and bus capital and operations by decade on an as-needed basis, within the ballot guidelines. Prop. C funding for park-and-ride lots and the Transportation Demand Management program are included in the Plan. Actual programming of Prop. C funds will be decided by the Commission through the multiyear TIP programming process, updated annually, using the Commission adopted Prop. C guidelines.
- Leveraging State and Federal funds. The Plan assumes that local funds are used to the maximum extent available to match state and federal funds. By leveraging these funds, more projects can be constructed and operated over the next 30 years. LACTC will need to adopt policies regarding the desired and optimal funding mix for projects as they move toward implementation.
- Use of long term debt. The Plan assumes that senior lien bonds will be issued in each year they are needed to meet capital requirements, constrained by Commission debt service

## 30-Year Integrated Transportation Plan

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coverage ratio limitations. Debt service on the bonds is assumed to be paid with Prop. A and Prop. C revenues. This assumption facilitates the acceleration of construction projects to the schedules assumed in the Plan. Actual revenue bond issues will be the subject of Commission action.

- o Programming the new flexible federal (ISTEA) funds. The Plan assumes 62% of the new flexible federal funds will be applied to the Highway and TDM programs and 38% will be distributed to the bus and rail programs. Specific LACTC programming actions will be required through the TIP programming process to determine the allocation of these funds.
- o Establishing local agency funding requirements for Candidate Corridors. Each of the candidate corridors is assumed to be funded with local agency contributions of approximately 25%. Local funding commitments will be one of several considerations in the LACTC project selection process (to be developed and approved by the LACTC in a separate process).
- o Establishing service levels for all programs. A balance of transportation services among all modes was sought in the Plan. Assumed service levels were determined using existing studies and plans for various programs and projects, to the extent they were available. Additionally, substantial public input over the past 12 months has been reflected in the Plan. Decisions on specific increases in service levels and new services will be made by LACTC as these programs are developed through the planning processes. For example, transit service levels are documented in Short Range Transit Plans which are adopted by LACTC.

The Plan and the assumptions upon which it was developed do not replace Commission action on policies. Specific actions will be required throughout the implementation of the Plan. The Plan will be updated periodically to reflect separate, specific Commission actions.

To clearly identify assumptions that will require a future policy decision by LACTC, the notation Policy Decision appears in the description of each assumption where these decisions are required.

**ORGANIZATION OF THIS APPENDIX**

The assumptions listing was prepared for use in conjunction with the 30-year cash flow spreadsheets. The cash flow model consists of capital and operating sources and uses of funds for the four elements of the Plan:

- Highways
- Transportation Demand Management (TDM)
- Rail Transit
- Bus Transit

The listing is generally organized by line items as they appear in the cash flow spreadsheets. Sources of funds are grouped by local, state, and federal revenue sources. This assumptions listing is focused on the Fundable Plan, so no Expanded Plan sources or uses of funds are included. Certain items are repeated in the listing because they appear more than once in the cash flow.

## HIGHWAY AND TDM CASH FLOWS

### GENERAL ASSUMPTIONS

**Capital, Operating, and ROW Inflation.** A 4.5% annual inflation rate is applied to all capital and operating costs for highway and Transportation Demand Management (TDM). All highway right-of-way costs are inflated at 5% for FY 1992-93, 6% for FY 1993-94, and 7% for FY 1994-95. For FY 1995-96 and thereafter, right-of-way costs are escalated at 8% per year. These rates reflect the recent decline in right-of-way escalation rates and the anticipated increase in escalation rates in the future.

**Air Quality Goals.** The focus of the highway portion of the Plan is upon Air Quality enhancing projects, such as Carpool Lanes and Transportation Systems Management (TSM) efforts. The Highway cash flows also include TDM efforts beneficial to Air Quality Goals.

### SOURCES OF FUNDS

**Federal Highway Demonstration Funds.** Federal Highway Demonstration Funds are generally assumed to be \$10 million per year for selected projects through 1997. Thereafter, the revenues are increased every five years at the capital inflation rate to coincide with assumed increases in the federal reauthorizations.

**Proposition 116 (Alameda Corridor, Bikeways).** Prop. 116, passed by State of California voters in June 1990, authorizes Los Angeles County to receive \$80 million for the Alameda Consolidated Transportation Corridor Project. Per LACTC policy, these funds are not available until an agreement is reached with the Union Pacific, Southern Pacific, and Santa Fe Railroads to consolidate freight rail operations in the Alameda Corridor. It was also assumed that Los Angeles County would receive \$5 million of a \$20 million statewide pool of Prop. 116 funds for Regional Bikeways.

The Alameda corridor project is funded at its initial \$501 million cost estimate for the project identified in a 1989 DMJM/M&N study. After conceptual design was complete, DMJM/M&N updated the cost for the Alameda corridor to \$1.3 billion. Revenues could not be identified to support the added costs. The 30-Year Expanded Plan includes full funding for the Alameda Corridor at the higher cost.

**Environmental Enhancement Mitigation Funds.** The Environmental Enhancement and Mitigation (EEM) Program was established to fund environmental enhancement and mitigation projects that are directly or indirectly related to the expansion or construction of transportation facilities, over and above what would be deemed to be normal mitigation. The Program, which is funded from the Prop. 111 gas tax, is assumed to generate \$2.5 million of revenue for ten years, beginning in FY 1992.

**SMART Streets/Intelligent Vehicle Highway Systems (IVHS) Funds.** The Plan assumes that \$10 million a year in discretionary grants will be available from the federal government for IVHS projects beginning in FY 1993. The Plan assumes an increase to \$15 million per year in FY 2002 and continues this level of funding for the remainder of the Plan. According to the Federal Highway Administration, these new federal IVHS funds can be used in Los Angeles County for the expansion and refinement of SMART corridor technologies. Currently, there are no plans to test automated highways in Los Angeles County. This research will be conducted on test tracks elsewhere in the nation.

**Local Agency Funds.** The Plan assumes that local cities will provide a 50% match for discretionary Prop. C revenues applied to Local System Improvement and Local TSM projects. **POLICY DECISION**

**Service Authority for Freeway Emergencies (SAFE).** The Service Authority for Freeway Emergencies receives \$1 from each vehicle registration in the county from the Department of Motor Vehicles (DMV). This will annually generate approximately \$7.2 million in revenue for the first 10 years of the program. Thereafter, the Plan assumes 2% annual increases in automobile registration growth to reflect DMV projections. The Plan assumes that incident management will be an eligible expenditure of SAFE funds only after the callbox system is funded. Unallocated SAFE revenues carry over to the next year and earn interest at the short-term interest rate. **POLICY DECISION**

**The State and Local Partnership Program.** The funds for this program come from the increase in the state gasoline tax and weight fees implemented with the approval of Proposition 111. This is a "matching" program with the state share not to exceed 50 percent of a project's costs. The Plan assumes that the highway program will net 15% of the inflated construction costs (right-of-way and design costs are specifically excluded) of Proposition C-eligible projects from the State and Local Partnership Program. Presently, the State and Local Partnership Program is yielding 29% of state participation in projects in the program; however, LACTC staff projections indicate that this matching rate will decrease in future years.

**The 1992 STIP.** The STIP contains projects in five programs: Flexible Congestion Relief, Interregional Road System, Commuter & Urban Rail Transit, Intercity Rail, and Retrofit Soundwalls, and lists major projects (costs greater than \$300,000) within these programs to be funded during the seven years. The STIP represents a project delivery schedule, and projects that take longer than seven years for project development may go on the long lead list but cannot go into the STIP. The 1990 STIP revenues included in the Plan for FY's 1992-93 through 1998-99 are obtained from the fund summary for the 1990 Updated STIP and the California Transportation Commission (CTC) action at its March 1992 meeting on the 1992 STIP. Future STIP revenues for FY 1997-98 and beyond are described within each program listed below. Each source of funds listed below is available for highway projects in the Plan and is funded through the Prop. 111 state gas tax and federal gas taxes.

**Flexible Congestion Relief (FCR).** The Flexible Congestion Relief program was intended to reduce or avoid congestion by increasing the capacity of the transportation system. FCR revenues are committed in the 1992 STIP through FY 1999. FCR Funds are assumed to be increased from a base of \$200 million a year, beginning in FY 2000 and again in FY 2002 and every five years thereafter. The federal share of this revenue source is assumed to increase every five years by the CPI, through the end of the Plan. Beginning in FY 1999-00, the Plan assumes that a portion of the FCR funds will be used for local highway system improvements to major arterial streets and roads. POLICY DECISION

**Interregional Road System Program.** The Interregional Road System program was set up to make improvements for interregional traffic on state highways outside urban limit lines. The statute specifies about 100 sections of state highways that are eligible for funding through the program. Caltrans nominates these projects for the STIP. These funds count toward meeting county minimums in whatever counties they are programmed. The Interregional Road System Program is assumed to yield a constant \$25 million per year for Los Angeles County projects beginning in FY 1997-98 and increasing every five years thereafter. The federal share of this revenue source is assumed to increase every five years by the CPI through the end of the Plan. All unallocated Interregional Road revenues are transferred to the FCR fund annually.

**Traffic Systems Management Program (TSM).** The programming procedures for the TSM program were placed in law by the Transportation Blueprint legislation of 1989. Each annual TSM

## 30-Year Integrated Transportation Plan

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plan is a single-year priority list of projects eligible for funding under the TSM program. Each individual TSM plan is not restricted to a particular level of funding, but the Legislature did place a 10-year statewide funding target for the TSM program of \$1.0 billion in the Blueprint legislation. The Plan assumes that the TSM Program will yield \$26 million per year for Los Angeles County for the first 10 years, then \$40 million per year thereafter. After FY 1998, carpool lanes are assumed to be eligible expenses for TSM program funds.

**Freeway Maintenance (HSOPP).** Highway System Operation & Protection Plan (HSOPP), includes rehabilitation and safety projects and other small improvements Caltrans might need to make as owner and operator of the state highway system. These projects are proposed by Caltrans and the total funding level is approved by the CTC.

**Proposition C.** In November 1990, the voters of Los Angeles County approved an additional half cent sales tax for transportation. The ballot guidelines and programming of Proposition C funds in the 30-Year Plan are as follows:

<u>Fund Category</u>	<u>Ballot Guidelines</u>	<u>Amount Programmed in Cash Flows</u>	
		<u>Bus and Rail</u>	<u>Highways and TDM</u>
Discretionary	40.0%	40.0%	0.0%
Security	5.0%	5.0%	0.0%
Commuter Rail & Transit Centers	10.0%	8.0%	2.0%
Local Return	20.0%	3.0%	0.0%
<u>Transit-Related Highway Improvements</u>	<u>25.0%</u>	<u>2.0%</u>	<u>23.0%</u>
Total	100.0%	58.0%	25.0%

However, because of litigation pending against the increase in sales tax, the Plan assumes that Proposition C will be escrowed until January 1993. In addition, specific modal splits consistent with the ordinance requirements and the Commission Prop. C guidelines will be made by the Commission through the TIP programming process. **POLICY DECISION**

**Park-and-Ride.** Twenty percent of the 10% earmarked in the ordinance for Commuter Rail and Transit is allocated to the Park-and-Ride program.

**Transit-Related Highways Uses.** Twenty five percent of the Prop. C revenues are earmarked in the ordinance for transit-related highway uses. The primary use of these funds in the Plan is for an accelerated carpool lane construction program on L.A. County freeways. From this allocation, the Transportation Demand Management Operations program is funded first, before debt service requirements are met. Subsequently, debt service requirements for the accelerated carpool lane program, Local System Improvements, and Local TSM projects are funded. The remainder of the revenues fund projects as needed on a last-dollar-in basis. The specific mix of projects using this funding source will be made by the Commission through the TIP programming process. **POLICY DECISION**

**Combined Road Plan Cash Account.** The funds in this account are committed to local system improvements and local TSM projects by existing LACTC action. The Plan reflects LACTC policy actions. These revenues were derived from an exchange of Regional Federal-Aid Urban apportionment with the cities of San Jose and Irvine.

**Proposition A Rideshare Account.** The funds in this account are committed by LACTC action to fund transportation air quality control measures such as TDM. The revenues are derived from exchanges of Proposition A local return funds for Regional Federal-Aid Urban funds.

**Retrofit Soundwall Funds.** Retrofit soundwall funds are a subset of FCR revenues. At the time of STIP adoption, the California Transportation Commission determines how much FCR funds will be made available for soundwalls based on statutory requirements and statewide need.

**Federal ISTEA Flexible Formula Funds.** The \$880 million of ISTEA formula revenues anticipated in the 30-Year Plan includes \$210 million of Surface Transportation program formula funds for continuing the local program Federal Aid Urban (FAU) and Federal Aid Secondary (FAS) programs at a level equivalent to 110% of the FY 1990-91 program levels. The remaining \$670 million of ISTEA revenues are split evenly between the Highway/TDM and Bus/Rail components of the 30-Year Plan. If it is assumed that the local program from ISTEA revenues is expended for streets and roads, 62% of ISTEA revenues are found in the Highway/TDM component of the 30-Year Plan. This revenue source is similar to other federal sources in that the Plan assumes that every five years the total amount

## 30-Year Integrated Transportation Plan

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available will increase by the capital inflation rate to reflect anticipated increases in the federal reauthorizations. Specific programming decisions will be made by the Commission through the TIP programming process. **POLICY DECISION**

**Senior Lien Bonds.** Proposition C funds are leveraged with Senior Lien Bonds in the Highway Financial Plan in every year of the Plan beginning in fiscal year 1993. Bonds are issued each year they are needed to meet capital requirements, to the extent that the debt service coverage ratio of 1.15 is met and that Prop. C is available to meet annual debt service. **POLICY DECISION**

**TDA Article 3.** The State Transportation Development Act is a 1/4 cent sales tax-based revenue source that provides capital and operating assistance to eligible transit operators. Article 3 of the Act dedicates 2% of the funds for bicycle and pedestrian facilities. Per previous LACTC policy actions, the Plan allocates 30% of Los Angeles County TDA Article 3 revenues to the construction of Regional Bikeways and assumes that these revenues will increase by the annual forecasted growth rate in sales tax revenues beginning in fiscal year 1993.

**USES OF FUNDS**

**1990 STIP.** Projects from the 1990 Updated STIP are included in the Plan. New projects from the 1992 STIP as approved by the California Transportation Commission (CTC) in March 1992 also are included in the Plan.

**Freeway Incident Management.** Incident Management covers all incidents and accidents which cause delay on the freeway system. This element consists of the Tow Service Patrol and Major Incident Response Plans.

- **Metro Freeway Service Patrol** The tow service patrol program will reduce delay from automobile accidents and stalls during peak commute hours. The Plan funds all of the following proposed phases during the peak hour commutes:

Phase 1 =	By Fiscal Year 1992-93 104 trucks covering 256 center line miles or 2.5 miles per truck	
Phase 2 =	By Fiscal Year 1993-94 37 trucks covering 107 center line miles or 3.6 miles per truck	<b><u>POLICY DECISION</u></b>
Phase 3 =	By Fiscal Year 1994-95 48 trucks covering 167 center line miles 3.5 miles per truck	<b><u>POLICY DECISION</u></b>
All Stages	189 trucks covering 530 center line miles 2.8 miles per truck	

Additionally, the Plan proposes funding tow service patrol (approximately \$2 to \$3 million annually) for weekend peaks on major routes into and out of Los Angeles County. The cost of coordinating emergency response teams in small cities is proposed to be covered by LACTC's tow service patrol program.

To date, the Commission has approved Phase I of the program. Future phases will require subsequent Commission action.  
**POLICY DECISION**

- **Major Incident Response Plans.** The approved Freeway Service Patrol program includes a Major Incident Response element. LACTC is currently working on an agreement with the California Highway Patrol, Caltrans, and Mayor Bradley's office to coordinate efforts of the agencies involved in responding to incidents. The focus of this agreement is to help ensure that the agencies can effectively and efficiently communicate with one another when responding to major incidents. LACTC costs for coordinating efforts is currently about \$1 million per year.

The proposed Response Plans could coordinate emergency services such as hazardous material response teams and truck tow trucks. The Plan assumes that the costs for executing the response plans during major incidents will be born by Caltrans through the central control facility proposed in the Transportation Systems Management section. Enhancement to the approved Freeway Service Patrol program will take specific Commission action. **POLICY DECISION**

**Transportation Systems Management (TSM)** refers to managing existing freeway and major arterial routes from a central control facility using a variety of electronic tools, including:

- Ramp metering
- Communications Network (Fiber Optics)
- Field surveillance equipment (closed circuit television)
- Changeable message signs
- Highway advisory radio
- Detection loops
- Signal Synchronization
- Peak hour parking restrictions
- Surface street bus priority

These tools are designed to provide for effective traffic management systems in major urbanized areas.

- **Transportation Systems Management (State)**

The Plan calls for spending funds immediately to bring the ultimate freeway TSM system on-line while project design and development are undertaken for the HOV lane system.

All 511 miles of the freeway system will be covered by TSM measures by June 1994.

The Plan assumes that operating costs for freeway TSM measures will be covered by the Caltrans operating budget. No TSM (State) uses are included in the Plan for the second and third decades.

- **Transportation Systems Management (Local)**

The local TSM program synchronizes an estimated 10,000 existing traffic signals over 30 years. Additionally, the Plan includes revenues to fund the following projects on a competitive, 50% local match basis with Proposition C:

- Local agency signal synchronization
- Interagency signal synchronization
- Automated traffic surveillance and control (ATSAC)
  - Central traffic operations center
  - Video monitoring
  - Real time operator assisted signal coordination capability

These and other eligible projects will require specific Commission action. **POLICY DECISION**

**High Occupancy Vehicle (HOV) Carpool Lanes.** The Plan includes the early carpool lane implementation plan presented to the LACTC in June of 1991. Projects in the early implementation plan were selected considering the following factors:

- Congested corridors that will not be served by Metro Rail mass transit by the year 2000
- System connectivity
- Cost effectiveness
- Community acceptance
- Safety
- Projects that add new lanes rather than taking away existing lanes
- A program that reflects LACTC Area Team input, relates to congested corridors, and involves providing maximum benefits as opposed to constructing easy projects

The system connectivity analysis included an integration of Los Angeles County projects with other counties. The Funded Plan will provide 300 center line miles of HOV lanes in Los Angeles County. HOV project costs are based upon estimates provided by Caltrans, District 7 for the Congestion Management Program, Capital Improvement Plan, and are adjusted as project development produces more accurate cost estimates.

## 30-Year Integrated Transportation Plan

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The following carpool lanes will be completed in the first decade of the Plan:

- Rte 5 (Rte 170 to Rte 14 and Rte 134 to Rte 10)
- Rte 10 (Baldwin Ave to SBD City Line)
- Rte 14 (Rte 5 to Ave P-8)
- Rte 30 (Rte 57 to Foothill)
- Rte 57 (Orange City Line to Rte 60)
- Rte 60 (Rte 605 to SBD City Line)
- Rte 91 (Rte 110 to Orange City Line)
- Rte 110 (Harbor Transitway)
- Rte 118 (Rte 5 to Ventura City Line)
- Rte 134 (Rte 170 to Rte 210)
- Rte 170 (Rte 101 to Rte 5)
- Rte 210 (Lake to Rte 57)
- Rte 405 (Orange City Line to Rte 5)
- Rte 605 (Rte 405 to Rte 10)

The number of persons per car required for a carpool lane is an operational issue to be decided by LACTC and Caltrans as carpools lanes are implemented. Also specific Commission action is required to implement this carpool lane program. **POLICY DECISION**

**Gap Closures/New Freeways.** Gap closure project costs are based upon estimates provided by Caltrans, District 7 for the LACTC Congestion Management Program, Capital Improvement Plan. The freeway gap closures needed to complete the Los Angeles County Freeway system are:

- Rt. 30: Route 66 to San Bernardino County Line.
- Rt. 71: Holt/Valley Boulevard to Route 60. This project will connect San Bernardino County's Rt. 71 project to Route 10.
- Rt. 105: The Glenn Anderson Freeway is under construction and scheduled for operation in 1994.
- Rt. 126: A newly aligned freeway on Route 126 would serve the Santa Clarita Valley from the Ventura County line to State Route 14 in Santa Clarita. The segment from Route 5 to Route 14 is included in the Expanded Plan.

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- Rt. 138: The Route 138 Metro Bypass gap closure from Route 5 near Gorman to Route 15 in San Bernardino County removes long haul traffic between the Grapevine and San Diego from the Los Angeles metropolitan area and serves Lancaster and Palmdale. Right-of-way costs for this project are partially funded. Construction costs are not included because of lack of funding.
  
- Rt. 710: Route 710 requires a connection from Rt. 10 to Rt. 210. Completion of this segment will improve mobility in the central and San Gabriel Valley areas of Los Angeles County.

**System Improvements (State & Local).** State System improvement project costs are based upon estimates provided by:

- Caltrans, District 7 for the Congestion Management Program, Capital Improvement Plan;
- The 1990 Updated STIP; and
- The 1992 STIP.

Additional funds are required to fund system improvements beyond the 1992 STIP.

Projects included in this category are:

- Passing lanes (Rt. 138)
- Extensions of existing freeways (Rt. 710)
- Arterial widenings (Rt. 1)
- Freeway connector improvements
- Arterial/freeway interchange improvements

The Local System Improvement program has been allocated revenues, but no projects have been identified. Project selection criteria will be developed by LACTC and project funding identified through the TIP programming process. **POLICY DECISION**

**Alameda Consolidated Transportation Corridor or LA/Long Beach Truckway.** The Alameda Corridor project is funded at its initial \$501 million cost estimate for the project as identified in a 1989 DMJM/M&N study. After conceptual design was complete, DMJM/M&N updated the cost for the Alameda Corridor to \$1.3 billion. Revenues could not be identified in the Plan to support the added costs. The 30-Year Expanded Plan, which requires new revenues, includes full funding for the Alameda Corridor at the higher cost.

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Proposition 116 earmarked \$80 million for the Alameda Corridor, and these funds are included in the Plan. However, per existing Commission policy, the LACTC will support expenditure of these funds only after a satisfactory right-of-way agreement is reached with the Union Pacific, Southern Pacific and Santa Fe railroads. The Alameda Corridor project costs are summarized in the cash flow under the "system improvements - state" line item.

**Transportation Demand Management (TDM/Ridesharing).** The Plan assumes that an increased commitment in TDM will be needed to meet the mode split required by the regional air quality goals. The Plan is estimated to achieve a 10.5% mode split by 2010, whereas the SCAG Regional Mobility Plan (RMP) calls for a 13.6% mode split in 2010. The Plan assumes the difference -- 3.1% -- will be met by TDM measures. In addition, the RMP assumes that 45.7% of all peak period trips by 2010 will be addressed by use of high occupancy vehicles, transit, and trip elimination strategies.

To achieve these results, the LACTC staff is currently developing a comprehensive TDM program with strategies that include an aggressive vanpool program, large-scale alternative work hour implementation, bicycle and pedestrian enhancements in commercial facilities, major park-and-ride programs, area-wide trip reduction programs, market incentives, and parking management programs.

**Park and Ride Facilities.** Projected costs are based upon estimates provided by Caltrans District 7. Caltrans estimates that by 2010, the region will need 45,000 additional spaces to meet the Regional Mobility Plan (RMP) needs. 15,000 of these spaces are already funded in the 1990 STIP, and an additional 13,000 spaces are funded in the Plan. Project selection criteria for the additional 13,000 spaces will be developed by LACTC.

### **POLICY DECISION**

For the Expanded Plan the following estimates were calculated for the remaining 17,000 spaces. At an estimated cost of \$3,000 per space (construction) plus \$1,000 per right-of-way and a contingency factor of \$1,000 per space for double-decked parking facilities in some areas. The need for funds was calculated as follows:

+ 45,000 spaces needed (RMP)	
- 15,000 already in STIP (STIP)	
- <u>13,000</u> funded in 30-Year Plan (Fundable)	
17,000 spaces needed for RMP goal	
17,000 spaces x \$5,000/space = \$85 million current \$'s	
	needed in Expanded
	30-Year Plan

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**Freeway Express Bus Stations.** The Plan includes capital expenditures for Freeway Express Bus stations and stops. Since a comprehensive plan for Freeway Express Bus stations is not yet developed, estimates were prepared using planning information prepared by the Auto Club and cost data supplied by Caltrans based on a similar project on Route 105.

Costs are estimated as follows: 120 minor transfer stations @ \$3 million each, plus 24 major transfer stations @ \$7 million each. The 30-Year Plan makes no decisions as to the geographic distribution of the expanded bus service, it simply establishes the financial capacity to maintain existing service and expand new service countywide.

**Retrofit Soundwalls.** The Retrofit Soundwall program funds retrofit soundwalls to be built alongside state highways where a freeway was first located after homes were already built and where noise levels exceed federal standards. Priorities in the program are set by Caltrans according to a strict formula established in state statute and based on noise levels, traffic increases since the freeway opened, number of residents living within the noise zone, and cost for soundwalls. Caltrans estimates that the ultimate retrofit soundwall system can be built in 20 years and these costs are included in the Plan. Non-retrofit soundwalls would be paid for at the time of constructing new facilities that would involve expansion of existing freeway rights-of-way.

**Interregional Road System.** Caltrans has provided estimates for the total need to make improvements for interregional traffic on state highways outside urban limit lines. The present Plan spreads these costs over a 30-year period.

**Freeway Rehabilitation (HSOPP).** Caltrans information based on the four-year HSOPP is projected out over the entire Plan and includes rehabilitation and safety projects and other small improvements to the freeway system.

**Environmental Enhancement & Mitigation.** Projected costs are based upon revenue estimates. Per the Prop. 111 legislation, \$10 million per year is available statewide over the next ten years. The Plan estimates that Los Angeles County's fair share, based upon population, would be 25%, or \$2.5 million per year. Revenue received is expected to be expended in accordance with schedules supporting approved applications. Accordingly, the Plan assumes the costs are the same as revenue. The Plan assumes that LACTC will apply for grants for mitigations related to LACTC projects.

**POLICY DECISION**

**Service Authority for Freeway Emergencies (SAFE).**

**Capital.** Projected costs are based upon estimates provided by SAFE staff of the LACTC. The plan assumes a one-time capital cost of approximately \$12 million to install cellular phones during FY's 1992 and 1993. Costs of equipment, system installation, and the costs of the removal of the existing callbox system are based upon quotes from vendors who have installed similar systems in five other California counties. Beginning in FY 2002 the Plan assumes that \$.75 million a year will be spent to rehabilitate and/or replace the system.

**Operations and Maintenance.** SAFE reported cost estimates reflect actual contracts to be executed with L.A. Cellular and the California Highway Patrol (in final stages) and include estimates for preventive and corrective system maintenance through FY 2002. Maintenance estimates were derived from historical cost experience of cities that have a new call box system. Costs beyond FY 2002 were extrapolated from these initial projections.

**Regional Bikeways.** The existing bikeway system consists of:

Class I	- Grade separated paths	=	150 miles
Class II	- On street lanes and signs	=	80 miles
Class III	- Signs only	=	<u>270</u> miles
Total			500 miles

(Source: Los Angeles County Regional Bike Map)

Proposed Regional Bikeway Improvements include:

	<u>Current Miles</u>	<u>30-Year Goal</u>	<u>(\$millions)</u>
Class I	150	50 (additional miles)	\$150
Class II	80	2,500 (additional)	100
Class III	270	N. A.	N. A.

Local Agencies will be responsible for Class III bikeways.

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Los Angeles County's most significant effort will be on the Class II system. The cost for regional bikeways was calculated as follows:

\$ 85 million for R.O.W. acquisition and design  
\$ 15 million for striping and surfacing  
\$150 million for Class I trails  
Total: \$250 million (current \$'s)

Project selection criteria will be developed by LACTC. **POLICY DECISION**

**SMART Corridor/Intelligent Vehicle Highway Systems (IVHS).** The Plan assumes that \$10 million a year from the federal government will be available to fund an IVHS system in the first decade. Beginning in FY 2002 this amount increases to \$15 million per year. Currently, no specific projects have been identified for this program; however, all revenues are "expended" in the Plan on these yet-to-be identified projects. It is envisioned that these funds will be used to expand SMART Corridor technology. Currently LACTC, Caltrans, the City of Los Angeles and others are meeting to identify specific locations for expansion of the SMART Street system.

## BUS AND RAIL CASH FLOWS

### GENERAL ASSUMPTIONS

**Capital Inflation.** A 30 year annual average inflation rate of 3.77% is applied to capital cost items. The rate varies by decade as follows: first decade 3.46%, second decade 3.91%, and the third decade 3.94%. The rate is based on a LACTC study of the relationship of the Construction Cost Index (CCI) to the Consumer Price Index (CPI) which found that the CCI was approximately 82% of the CPI.

**Operating Inflation.** A 4.58% average annual inflation rate, based upon the November 1991 UCLA sales tax forecast for the LACTC, is applied to revenues and operating costs. The Plan assumes that the rate averages 4.58% over thirty years. The rate varies by decade as follows: first decade 4.2%, second decade 4.75%, and the third decade 4.78%.

**Proposition C.** 58% of the new 1/2¢ sales tax for countywide transportation programs was allocated to bus and rail-related uses. The remainder of Prop. C is allocated to cities (the Local Return component) and transit-related highway programs. The Prop. C forecast was prepared by U.C.L.A. in November 1991 and was adjusted for aerospace exemptions.

<u>Proposition C</u> <u>Fund Category</u>	<u>Ballot</u> <u>Guidelines</u>	<u>Amount Programmed in</u> <u>Bus and Rail Cash Flows</u>
Discretionary	40.0%	40.0%
Security	5.0%	5.0%
Commuter Rail & Transit Centers	10.0%	8.0%
Local Return	20.0%	3.0%
Transit-Related Hwy Improvements	25.0%	2.0%
<b>Total</b>	<b>100.0%</b>	<b>58.0%</b>

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The 58% share of Prop. C is allocated based on funding needs as follows:

	<u>FY 1991-2000</u>	<u>FY 2001-2010</u>	<u>FY 2011-2019</u>
Rail Capital	25.00%	33.00%	28.00%
Bus Capital	1.00%	2.00%	2.00%
Rail Operations	9.00%	18.75%	21.60%
<u>Bus Operations</u>	<u>23.00%</u>	<u>4.25%</u>	<u>6.40%</u>
Total	58.00%	58.00%	58.00%

Note that the relative share of the allocations between bus and rail capital and operating requirements shifts over time to meet evolving system needs as projects are built and operations begin. Additionally, the availability of new federal funding through the ISTEA legislation has allowed for increased flexibility in the use of Proposition C funds. For example, little Proposition C funds are allocated to Bus Capital because new ISTEA funds are available for this purpose.

Because of litigation pending against the increased sales tax, the Plan assumes that Proposition C funds will be escrowed until January 1993. Also, separate action through the TIP programming process, consistent with the Prop. C guidelines, needs to be taken by the Commission to program specific Prop. C funds to specific projects. **POLICY DECISION**

**Bus Service Levels.** The Plan includes a needs-based bus service growth component as reflected in the 1991 Bus Needs Study by Subhash Mundle and Associates. This Plan was modified in part to reflect SCRTD's Transit Now proposal (see 30-Year Plan April 1992 PMIC agenda item for details). The Plan also assumes all buses are clean-fueled, powered by either methanol or electricity by FY 2004-05.

**Cost Containment.** This component of the Plan assumes that continuation of the "business as usual" with no innovation in the implementation and delivery of transportation services over the life of the 30-Year Plan is neither acceptable nor likely. A \$6.0 billion dollar target has been established for this program. These savings are assumed to accrue proportionally to projected annual expenditures in rail and bus operations and capital programs. A LACTC Cost Containment Task Force will guide the implementation of this goal. **POLICY DECISION**

**Americans with Disabilities Act (ADA).** The fiscal impact of ADA on the County's transit operators has not been determined. An informal survey indicates that the annual impact may be as great as 9% - 13% of the combined bus and rail operating budgets. The Plan assumes a \$27 million annual impact by FY 1993, and is inflated annually thereafter. The cost of this program is split between the operating (80%) and capital (20%) programs.

**ISTEA.** The Intermodal Surface Transportation Efficiency Act of 1991, signed by the President in November 1991 includes an additional \$880 million in new revenues for transportation. Of this amount \$210 million is earmarked to continue the local Federal-Aid Urban (FAU) program. The remaining \$670 million in the Surface Transportation Program and Congestion Mitigation and Air Quality flexible funds for transportation will be available to the County during the FY 1992-93 through FY 1997-98 authorization period. The Plan assumes re-authorization of these revenues for the balance of the 30 years, adding a total of \$5.4 billion in new revenues to the Plan.

The Plan initially assumes 50% of the remaining \$670 million will be applied to the Highway and TDM programs, and 50% will be distributed to the Bus and Rail capital programs as needed. The total amount distributed to the LACTC assumes successful outcome of pending state legislation to direct these funds by formula to the regional and county transportation commission level. Projects will be selected for funding through the LACTC Transportation Improvement Program (TIP) process. **POLICY DECISION**

**BUS CAPITAL SOURCES OF FUNDS**

**Prop. A Local Return.** 25% of Prop. A is returned to local jurisdictions for use in transportation programs at their discretion. Municipal bus operators receive a portion of their city's Local Return money for bus capital expenditures. Prop. A Local Return projections for this use were based on historical experience.

**Prop. A Discretionary.** 40% of Prop. A is available for transit programs at the LACTC's discretion. All 40% Prop. A Discretionary funds are assumed to be available for bus transit only. No Prop. A Discretionary funds were assumed to be expended on bus capital or on rail programs.

**Prop. C.** Prop. C funds are allocated within legislated guidelines based on program needs. See *General Assumptions*.

**TDA Article 4.** The State Transportation Development Act is a  $\frac{1}{4}\text{¢}$  sales tax-based revenue source that provides capital and operating assistance to eligible transit operators. The annual Article 4 revenue stream, which LACTC is responsible for allocating within L.A. County, is calculated as 51.86% of Proposition A, multiplied by 92.2%. The resulting amount reflects the total pool of Article 4 funds available. TDA Article 4 allocations to bus capital are based on historical expenditures of Article 4 on capital (21% of the amount available).

**Cost Containment.** See *General Assumptions*.

**STA.** No State Transit Assistance funds are assumed to be available for bus capital based on historical uses of STA.

**Federal ISTEA Formula Funds.** A share of all new ISTEA funds based on bus capital needs will be available for bus capital expenditures. The additional revenues provided through the 1991 ISTEA reauthorization bill are assumed to continue over the next 30 years.

**Section 9 Capital.** These federal formula-based transit operating and capital funds are based on population and transit operating statistics. The Plan assumes current Federal funding levels will be continued, and that L.A. County's share will increase as new rail service is implemented.

**Senior Lien Bonds.** The Plan assumes that senior lien bonds pledged by Prop. C revenues will be needed to support bus electrification and maintenance facilities purchases over the next 30 years. Bonds are issued each year they are needed to meet capital requirements, to the extent debt service coverage of 1.15 is met (see Financing Payments below). **POLICY DECISION**

**COPS.** Certificates of Participation (COPS) pledged by federal Section 9 formula funds and TDA Article 4 funds are assumed to be issued throughout the Plan as needed for bus capital requirements to the extent debt service coverage of 1.50 is met (see Financing Payments below). The Plan assumes a 6.8% rate and a 15 year term for the COPS. The term is based on a blended average life of vehicles, facilities, and equipment.

**BUS CAPITAL USES OF FUNDS**

**General Assumptions**

**Transit Operators.** The plan includes the following transit operators:

- SCRTD
- Long Beach Transit
- Santa Monica Municipal Bus Lines
- Other
  - Arcadia DAR
  - Claremont DAR
  - Commerce Municipal Bus Lines
  - Culver City Municipal Bus Lines
  - Foothill Transit
  - Gardena Municipal Bus Lines
  - La Mirada DAR
  - Los Angeles DASH
  - Montebello Municipal Bus Lines
  - Norwalk Municipal Bus Lines
  - City of Redondo Beach
  - Torrance Transit

**Clean Fuels.** AQMD requirements are assumed to be met by converting vehicles and facilities to clean fuels (methanol and bus electrification) and by increasing transit service so that work trips on transit as a percentage of all regional trips increases by the year 2010.

**Vehicle Replacement Schedule.** Vehicle replacement is based on the following retirement practices used by LACTC and the transit operators:

- Transit buses (35 and 40 foot) - 12 years or 500,000 miles
- Electric articulated buses (60 foot) - 18 years
- Dial-A-Ride vehicles - 5 years
- Support vehicles - 5 to 12 years, depending on type of vehicle and usage

**Vehicle Costs.** Total vehicle costs, including wheelchair lifts, for each technology are presented below (in 1992 dollars). All buses purchased after July 1, 1991 are assumed to be methanol-fueled.

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### Buses

•• 40-foot Diesel	\$200,000
•• 40-foot Methanol	250,000
•• 60-foot Electric (Articulated)	600,000

### Dial-A-Ride Vehicles

•• Station Wagons	\$ 12,500 - \$18,600
•• Vans (with wheel-chair lift)	21,500 - 54,800

### Support Vehicles

•• Automobile & Pick-up Trucks	\$ 7,500 - \$14,000
•• Heavy Duty Trucks	22,200 - 38,100
•• Vans	21,200 - 59,400

**Vehicle Fleets.** Fleet expansion will be required to meet AQMD's goal of increasing home-to-work trips made by transit. The peak fleet, or the total buses required to operate at full service, was estimated as the immediate need identified by SCRTD and other transit operators. The peak fleet estimate was escalated to a full fleet, or total peak fleet plus spares. The full fleet was calculated by multiplying the total number of peak fleet vehicles by one plus the spare ratio. The spare ratio for diesel and methanol buses is assumed to be 20% for SCRTD beginning in FY 1994. A 25% spare ratio is assumed for SCRTD in FYs 1992 and 1993. A 15% spare ratio is assumed for all other operators; the spare ratio for electric buses is assumed to be 15%.

The Plan includes an additional 100 peak buses per year for the first six years of the Plan and is based on a FY 1990-91 peak fleet (for all operators) of 2,510 buses. The rate of expansion is slowed after the first six years to keep pace with the anticipated growth in demand in L.A. County, which is estimated to be 1% to 2% per year.

**Dial-A-Ride (DAR) Vehicles.** The FY 1990-91 DAR fleet operated by the municipal operators is assumed to be 72 vehicles and is increased by about 1% per year. City-sponsored demand response transit services funded primarily with Prop. A Local Return Funds are not included in the Plan.

**Support Vehicles.** Support vehicles are calculated based on the percentage of total support vehicle costs to revenue vehicle costs (transit buses plus dial-a-ride vehicles) for each operator (as estimated by Fleet Maintenance, Inc.), multiplied by the annual

## 30-Year Integrated Transportation Plan

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total revenue vehicle costs. These costs are included in the vehicle cost line item.

The 30-year percentages of support vehicle costs in relation to total revenue for each operator vehicle costs are calculated as follows:

SCRTD	2.88%
Long Beach	1.44%
Santa Monica	1.63%
Other	2.77%

**Spare Components.** Vehicle spare component costs are assumed to be 5% of the revenue vehicle purchase price and are spread evenly over the service life of the vehicle (see replacement schedule above). These costs are included in the vehicle cost line item.

**Equipment.** This category includes costs of minor capital items such as radios, fareboxes and miscellaneous maintenance equipment. Equipment costs are calculated based on the percentage of total equipment costs to revenue vehicle costs for each operator (as estimated by Fleet Maintenance, Inc.), multiplied by the annual total revenue vehicle costs.

The 30-year percentages of equipment costs in relation to revenue vehicle costs for each operator are calculated as follows:

SCRTD	8.74%
Long Beach	2.00%
Santa Monica	23.38%
Other	8.46%

**Facilities.** Maintenance facilities are assumed to have a useful life of 50 years. Renovation and rehabilitation costs of existing facilities will average about 30% of the original construction cost every 15 years. These costs were distributed at 2% per year over the life of a facility and are calculated as the total number of facilities multiplied by the assumed cost of construction times 2%. As bus fleets grow, new facilities will be constructed to house and maintain the additional buses. SCRTD facilities will be constructed after an additional 200 buses are purchased, at a cost of \$30 million (\$15 million for construction and \$15 million for land acquisition costs). All other operators will construct a facility after an additional 100 buses are purchased, at a cost of \$20 million (\$10 million for construction and \$10 million for land acquisition costs).

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**Other.** This category includes data processing and other equipment. Other costs are calculated based on the percentage of total other costs to revenue vehicle costs for each operator (as estimated by Fleet Maintenance Consultants, Inc.), multiplied by the annual total revenue vehicle costs.

The thirty year percentages for other costs for each operator are calculated as follows:

SCRTD	17.70%
Long Beach	1.85%
Santa Monica	17.25%
Other	16.34%

**Electrification.** Approximately 288 miles of bus routes are assumed to be electrified along 18 existing bus lines in the Plan. These routes will require 396 peak fleet (594 equivalent 40 foot buses) articulated electric trolley buses by the year 2005. Total electrification costs, in escalated dollars, are approximately \$928 million, excluding the cost of electric trolley buses. Electrification costs are spread between 1992 and 2005 based on projected cash requirements.

**Union Station Gateway Project.** The Plan includes \$162.9 million for the Union Station Gateway Project, as approved by the SCRTD Board of Directors in April 1992. Specific funding sources have yet to be identified, but may include altogether new Federal Section 3 discretionary funds, funding programmed in the Metro Rail Segment 1 budget, and private sector sources.

**Program Reserve.** This is an overall program reserve to accommodate unforeseen project cost increases. The total represents a contingency on total capital uses of 2.5% in the first decade (1993-2001), 5% in the second decade (2002-2011), and 10% in the third decade of the plan (2012-2021). The percentage by decade is increased to reflect the greater uncertainty of the outer years of the Plan.

**Senior Lien Bonds Payments.** Payments for senior lien bonds to be issued for bus capital facilities and electrification may extend beyond the next 30 years. Payments assume a 7.2% interest rate and 25-year term. Bond issue expense and debt service reserve fund requirements are identical to the assumptions identified in the rail capital program.

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**COP Payments.** Debt payments for Certificates of Participation issued for bus purchases may extend beyond the next 30 years. Payments assume a 6.8% interest rate, a 15 year term, and that all debt is issued halfway through a fiscal year (therefore, the first and last year's principal and interest payment for any one issue are half the annual cost).

**Bond Issue Expense.** Issue expense totals include both senior lien debt and COPs. The issue expense for senior lien bonds is assumed to be 1% for issue amounts over \$50 million and 1-1/2% for issue amounts less than \$50 million. The issue expense for COPs is assumed to be 1.5% for issue amounts over \$50 million and 2% for issue amounts less than \$50 million.

**Bond Reserve Fund.** The bond reserve fund consists of an amount equal to one year's debt service (principal and interest) for each issue.

**BUS OPERATIONS SOURCES OF FUNDS**

**Farebox.** Farebox revenue is calculated by multiplying the farebox recovery ratio by the annual O&M cost. Farebox recovery ratios were developed using information in the transit operators' Short Range Transit Plans. This method of projecting fare revenue assumes that fare revenues increase in proportion to increases in O&M costs.

Cash farebox recovery ratios were assumed as follows:

- SCRTD 41%
- Long Beach 26%
- Santa Monica 43%
- Other 31%

The LACTC requires transit operators to meet a farebox recovery ratio of 38% to be eligible for regional subsidies. This ratio may be met with a combination of cash fares and Proposition A Local Return funds and other local revenues, excluding charter revenues. Proposition A Local Return funds are shown on a separate line item and are assumed to be used to assist municipal operators in meeting the required recovery ratio.

**Proposition A Discretionary.** 40% of Proposition A revenues are available for transit programs at the LACTC's discretion. The Plan assumes that all of the Proposition A discretionary funds are spent on Bus Operations.

**Proposition A Local Return.** 25% of all Proposition A revenues are returned to local jurisdictions for use in transportation programs at their discretion. Proposition A local return revenues projected to be expended on bus operations were based on historical contributions by cities to their municipal bus operations and on continuation of trends identified in the Short Range Transit Plans.

**Proposition C.** Proposition C funds are allocated within legislated guidelines based on program needs. See *General Assumptions*.

**Local General Funds.** Contributions from cities General Funds were projected to be made at the same levels of contribution identified in the Short Range Transit Plans.

**TDA Article 4.** The State Transportation Development Act is the  $\frac{1}{4}$  cent sales tax-based revenue source that provides capital and operating assistance to eligible transit operators. This revenue stream is calculated as 51.86% of Proposition A, multiplied by 92.2% to reflect the Article 4 share. LACTC is responsible for

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allocating these funds within L.A. County. The majority (79%) of Article 4 funds are allocated to bus operations based on historical distributions.

**Other.** Consists of miscellaneous revenues that accrue to transit operations such as charter, advertising and auxiliary revenue. Amounts projected assume continuation of trends identified in the operators' Short Range Transit Plans.

**Local Interest.** Transit operators accrue interest on transit funds held in their accounts. Based on information in the Short Range Transit Plans, local interest was assumed to continue at a constant level beginning in FY 1991-92.

**Cost Containment.** See *General Assumptions*.

**STA-Revenue Share.** A portion of the State Transit Assistance Fund historically applied to bus operations and capital. Recent State legislation makes more STA funds available to the County. The Plan assumes the population share will be allocated to rail operations and that the revenue share will be allocated to bus operations.

**Section 9 - Operating.** Formula-based federal transit operating and capital funds assigned only to bus capital and operating expenditures in the Plan. The Plan assumes current Federal funding levels for capital will be continued, and that L.A. County's formula share for Section 9 capital will increase as new rail service is implemented. Beginning in FY 1992-93, Section 9 allocations to bus operations are assumed to increase annually by the CPI.

**BUS OPERATIONS USES OF FUNDS**

**SCRTD.** Operations and maintenance cost projections are based on a resource build-up model developed by Manuel Padron & Associates. The operations plan driving the cost estimates is based on peak bus fleet requirements identified in the Mundle & Associates report, "An Assessment of Future Transit Bus Requirements in Los Angeles County" and SCRTD's estimated immediate bus needs.

Replacement of the diesel fleet with methanol-fueled buses and electrification of 18 of the most heavily traveled routes (i.e., those with 15-minute headways or less) is assumed in the Plan.

Based on an analysis of the impact of methanol conversion on operating and maintenance costs, a total incremental cost increase of 5% over diesel bus O&M costs was estimated.

Operating costs for articulated electric trolley buses are assumed to be lower than that for diesel or methanol buses.

**Long Beach, Santa Monica and Other Municipal Operators.** Operations and maintenance costs were projected by Manuel Padron & Associates using FY 1990-91 data from the Short Range Transit Plans as a base. Bus service increases were estimated using peak bus fleet requirements identified in the Mundle & Associates report, "An Assessment of Future Transit Bus Requirements in Los Angeles County."

Based on an analysis of the impact of methanol conversion on operating and maintenance costs, a total incremental cost increase of 5% over diesel bus O&M costs was estimated.

**Demonstration Projects.** 5% of the 40% Proposition A Discretionary program is assumed to be available for demonstration projects annually.

**ADA.** Implementation of the Americans with Disabilities Act (ADA) is estimated to cost \$27 million annually (see general Rail and Bus assumptions above), escalated by inflation, throughout the life of the Plan. This assumption is based upon LACTC staff analysis of need to meet the new ADA requirements.

**RAIL CAPITAL SOURCES OF FUNDS**

**Proposition A.** Prop A revenue projections are based on a UCLA Sales Tax forecast prepared in November 1991. 35% of the Prop A proceeds are for rail programs indicated on the Proposition A map.

In FY 1989-90, \$425.3 million in unused funds are available. These were apportioned as follows: \$403.6 for rail capital; \$21.7 for rail start-up operations.

In FY 1989-90 and FY 1990-91, 5% of the 35% rail account was earmarked for start-up operations on the Long Beach-Los Angeles line.

**Proposition C.** Proposition C funds are allocated within legislated guidelines based on program needs. See *General Assumptions*.

**POLICY DECISION**

**L.A. City Funds.** Represents contributions to Metro Rail and the Southern Pacific right-of-way purchase. Assumed contributions are as follows: \$18.3 million for the SP right-of-way purchase; \$134 million (9.2%) for Metro Red Line Segment 1 (which includes the 50% share of the \$200 million cost overrun); \$96 million (7%) of capital costs on Segment 2; \$112 million (10%) on Segment 3; \$297.3 million (6%) on the Orange Line and \$76.1 million (6%) on the Valley Metro Rail extension to Sepulveda.

**Other Jurisdictions.** Consists of local revenue from Ventura, San Bernadino, Riverside and Orange Counties committed to the Southern Pacific and Santa Fe Railroad Right-of-Way Protection program and the SCRRA commuter rail program, including the L.A. - Moorpark, L.A. - San Bernardino, L.A. - Santa Clarita, Shared Facility and Fullerton/Redondo Junction commuter rail facilities.

**Benefit Assessments.** Benefit Assessment Districts have been established around Segment 1 and Segment 2 of the Metro Red Line. Since a legal challenge to the Segment 1 district has recently been resolved by the State Supreme Court, \$57 million in Benefit Assessment revenues are assumed to be available in FY 1992-93. The Plan assumes that collection of further assessments will occur and that revenues will become available beginning in FY 1996-97.

**Public/Private (Joint Development).** Consists of joint development revenues assumed to accrue to rail projects at a rate of three percent of total capital costs. Revenues are generated for fifteen years, beginning with the first year of revenue operations. The 3% represents the low end of joint development experience at comparable transit properties. This line item also consists of

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private revenues for projects that are 100% privately funded, such as the Downtown Circulator, Automated Guideway Connection to Dodger Stadium, and the Witmer Station on Segment 1. Specific Commission action is required for each joint development opportunity. **POLICY DECISION**

**Local Agency Funds.** Each of the Candidate Corridors is assumed to be funded with local agency contributions of approximately 25%. Local funding commitments will be considered by the Commission in developing project sequencing criteria. **POLICY DECISION**

**Cost Containment.** See *General Assumptions*.

**TP&D/STA.** State Transit Assistance Fund. \$54.1 million of STA funds were allocated to Metro Red Line Segment 1 in prior years. No other STA funds are assigned to rail capital.

**Article XIX.** Article XIX (of the State Constitution) Rail Guideway Funds allow state gas tax funds to be used for rail capital projects in those counties such as Los Angeles whose voters passed Proposition 5, which allows those counties to use the state gas tax for rail capital purposes, in addition to highway purposes. The Plan includes amounts in the CTC multi-year funding commitment to the Metro Red Line from Union Station to North Hollywood. The statutory authorization for an Article XIX Guideway Program was discontinued after FY 1992-93 and was succeeded by a new state gas tax program called Flexible Congestion Relief (Proposition 111).

**TP&D/TCI.** Transportation Planning & Development (TP&D) Account - Transit Capital Improvement (TCI) Program. L.A. County is expected to receive its statutory Guideway County Minimum formula amount of 38% of 50% of the TCI funds available statewide. These funds are programmed at the discretion of the California Transportation Commission based upon a statewide competition.

**Flexible Congestion Relief.** A new state program using state gas tax funds made available through Proposition 111, passed by the voters in June 1990. These funds can be used by rail capital, streets and roads and state highway capital projects. A portion of these revenues are earmarked in the 30-Year Plan for rail capital projects beginning in FY 2000-01. Statewide revenue projections are from the California Transportation Commission and the revenues, which are escalated at the capital inflation rate every reauthorization period, must be allocated within five year periods (quinquenniums). The LACTC must take separate action on the programming of FCR funds to specific projects through the TIP programming process. **POLICY DECISION**

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**Proposition 108.** Commuter and Urban Rail Bond funds are available for intercity, commuter rail, and urban rail projects. Proposition 108, passed by the voters in June 1990, authorizes \$1 billion of state General Obligation Bonds; identical \$1 billion rail bond proposals will be presented to state voters in November 1992 and again in November 1994 for a total rail bond package of \$3 billion. The Plan assumes that the remaining two bond measures will pass. Projects receiving Proposition 108 funds must be completed no later than June 30, 2001.

Proposition 108 funds must be matched one-to-one by non-Federal dollars. LACTC received approximately \$1.5 billion of the \$3 billion Prop. 108 program in the 1990 STIP. These funds and projects are included in the Plan.

**State and Local Partnership.** A new, competitive, state program providing \$200 million annually statewide of new state gas tax funds. The state funding share for eligible rail and highway capital projects is a function of the total value of all projects selected for the program, not to exceed a 50% share of state funds to each project's total cost, with a one-to-one required local match to state dollars. This program provided a 29% state funding share for all projects last year. To be eligible, candidate projects are restricted from receiving other state funds. Since this is not a guaranteed 50% state funding program and because most of LACTC's rail projects have other state funds, this funding is being programmed almost exclusively on non-transit (Highway-related) transportation projects in L.A. County. A 15% state funding share is assumed for each project.

**Proposition 116.** Rail Transportation Bond Act funds available for rail development and construction. Proposition 116, passed by the voters in June 1990, authorizes \$1.9 billion in state General Obligation Bonds. Funds are earmarked for LACTC Metro Rail and other urban rail projects; Southern Pacific right-of-way acquisition; and, Southern California commuter rail capital projects for a total of \$626 million.

**Other State Source.** This source includes all non-LACTC funding participation in the commuter rail electrification program. It includes funding from participating counties, state and federal sources, municipalities, Southern California Edison (through rate basing) and the railroads. The decision to fund commuter rail electrification must be made by the LACTC in cooperation with member SCRRRA counties, the railroads, and the utilities. **POLICY DECISION**

**Section 3 New Rail Starts.** This is a discretionary source of federal funds reauthorized every five years. The FY 1989-90 funding level for LACTC is assumed to continue over the life of The Plan, and is escalated every five years to maintain its current dollar value in conjunction with the federal reauthorization periods. Funds are earmarked for the following Metro Rail projects: Segment 1, Segment 2, Segment 3 (North Hollywood & Eastern and Western extensions), the Orange Line, the Valley Extension of Metro Rail from Sepulveda to Canoga Park and the Downtown Connection. Full funding grant agreements are in place for Metro Rail Segment 1 and Segment 2 and are in development for Segment 3.

**Section 3 Rail Modernization.** Beginning in FY 1995-96 (the first year for which eligible costs are anticipated), the Plan assumes that 50% of the rail rehabilitation and replacement costs are funded with Federal Section 3 Rail Modernization funds. These funds are escalated every five years to current dollars in conjunction with the federal reauthorizations.

**Section 9.** These are formula-based federal transit operating and capital funds. \$32.9 million in Section 9 carryover funds are earmarked for Metro Red Line, Segment 1 capital. Approximately \$4 billion in additional Section 9 funds are anticipated for the rail capital program over the next 30 years based on the additional mileage due to the rail openings and L.A. County's increasing share of these funds.

**Federal ISTEA Formula Funds.** Beginning in FY 1993, a share of the new ISTEA funds will be available for rail capital projects. Beginning in fiscal year 1999 and at the end of each five year reauthorization period the Plan assumes that the total amount available will be escalated by the CPI, and then held constant for a four year period. Commission action will be required through the TIP programming process to program ISTEA funds to specific projects. **POLICY DECISION**

**Senior Lien Bonds (1989).** These are senior lien bonds supported by Proposition A sales tax revenues. The last of these proceeds were received in FY 1989-90 and FY 1990-91.

**Additional Senior Lien Bonds.** The Plan assumes that additional senior lien bonds will be issued throughout the Plan as needed to support the rail capital program requirements, to the extent that a debt service coverage ratio of 1.15 is met (see Financing Payments below). Assumptions include:

- 7.2% interest rate
- 25-year term

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- Bond issue expense equal to one percent for issue amounts over \$50 million
- Bond issue expense equal to 1.5% for issue amounts less than \$50 million
- A debt service reserve fund equal to one year's debt service (principal and interest)
- A net debt service coverage ratio of at least 1.15, pledging Prop A and Prop C

Commission approval of additional Senior Lien Bonds will be required on an issue by issue basis. **POLICY DECISION**

**Senior Lien Bonds (1991).** \$580 million in senior lien bonds issued in FY 1990-91.

**Senior Lien Bonds (1993).** \$500 million in senior lien bonds to be issued in FY 1992-93.

**Subordinate Bonds.** Subordinated bonds are pledged by Prop A and Prop C. A composite coverage ratio (including Prop. A and Prop. C dedicated to Rail Capital, Rail Operations, and Bus Operations) of 1.03 is maintained. Assumptions regarding terms, issue expenses, and reserve fund requirements are the same as those for senior lien bonds. A 7.5% interest rate is assumed. Specific action will be required by the Commission on an issue by issue basis. **POLICY DECISION**

**Commercial Paper.** Beginning in FY 1992-93, \$345 million in commercial paper is outstanding for the duration of the Plan.

**Cross Border Lease.** LACTC negotiated a \$33.0 million cross border lease in 1991. A cross border lease is an agreement between an entity of another country and a party with depreciable assets which provides tax benefits to the entity.

**Short-Term Interest Earnings.** Interest earnings accrue on any annual cash surplus. The interest rate is assumed to be 5.5%.

**Long-Term Interest Earnings.** Long-term interest earnings accrue on the Debt Service Reserve Fund. The interest rate is assumed to be 5.5%.

**RAIL CAPITAL USES OF FUNDS**

Rail capital project schedules, costs, and implementation dates are provided in the Plan's gantt chart and project detail sheets.

**Rail Project Capital Cost Estimates.** Costs for rail projects that have met approved plans and budgets are shown as an annual stream of costs. Rail projects for which detailed budgets have not been developed required estimates to be made using LACTC's cost estimation guidelines.

Each line of the cash flow summary is described below.

**SP and Additional ROW Purchase.** The first ROW purchase of \$450 million incurred in FY 1990-91 for rights-of-way and operating rights as negotiated with Southern Pacific. The second ROW purchase is currently under negotiation. A reserve fund has been established for this and other purchases.

**Metro Rail Segment 1, Segment 2 & Segment 3.** The first three segments of the downtown L.A. Metro Rail system called the "Metro Red Line," extending from Union Station to both North Hollywood and Wilshire and Western, and extensions west to Pico/San Vicente and east to East L.A. Segments 1 and 2 are under construction.

**Orange Line.** East (to Whittier Blvd.) and West (to Westwood) extensions of Metro Rail previously referred to as Segment 4 and Segment 5. The initial extensions east and west are referred to as Segment 3 (see above).

**SB 1995.** Fifteen percent of the annual non-federal share of the Metro Rail project is set aside per state law (SB 1995) to be used on the construction of Metro Rail in the Valley. These funds are drawn down when Segment 3 to North Hollywood starts construction.

**10% Capital Reserve - Metro Rail.** Ten percent of the construction procurement contracts of Metro Rail is set aside each year to cover the potential cost overruns on Metro Rail. Per the federal Full Funding Grant Agreement on Segment 1 and Segment 2, the City of Los Angeles and LACTC each contribute 5% of construction costs to the Capital Reserve Account.

**Long Beach - Los Angeles.** The Metro Blue Line light rail facility extending from downtown Long Beach to 7th & Flower in downtown Los Angeles. Operations of the line began in FY 1990-91.

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**Norwalk - El Segundo.** The Metro Green Line light rail facility extending from Studebaker Road and the 605 Freeway in Norwalk to Freeman Avenue in El Segundo. This line is under construction. The Plan includes the cost of the new "LA Car" concept and assumes the cost requirements for a fully automated facility. The Commission must make a specific decision on the technology (automated or non-automated) and the "L.A. Car" concept of this line. **POLICY DECISION**

**Pasadena - Los Angeles.** The Metro Blue Line light rail facility extending from Sierra Madre Villa in Pasadena to Union Station in downtown Los Angeles.

**Commuter Lines.** This category includes the following Southern California Regional Rail Authority (SCRRA) commuter rail projects:

- Los Angeles/San Bernardino
- Los Angeles/Moorpark
- Los Angeles/Santa Clarita
- Riverside/Hemet
- LA/San Bernardino/Riverside/Fullerton
- Shared Facility
- Fullerton/LAAPT
- Oceanside/Fullerton
- Los Angeles/Riverside (Union Pacific)
- Santa Clarita to Palmdale

All commuter rail lines are assumed to be electrified by FY 2009-10. Costs for electrification are shared among the participating counties, state and federal sources, municipalities, the railroads and Southern California Edison (through rate basing.) The cost sharing arrangements (and technical aspects) of the program are described in the "Southern California Accelerated Rail Electrification Program" report prepared by the Southern California Regional Rail Authority. The LACTC share of this project is approximately \$300 million. The decision to fund the commuter rail electrification must be made by the LACTC in cooperation with the member SCRRA counties and other funding participants. **POLICY DECISION**

**Candidate Corridors (8 Projects).** This category includes projects considered as Candidate Corridors. Either bus and/or rail technology may be chosen. For purposes of cost estimation, rail technology is assumed for these corridors. Cost estimation was based on planning studies to the extent they are available for each corridor. The degree of grade separation and preferred technologies identified in these plans are incorporated in the cost

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estimates. Project costs in this category were based on the following rail projects under study:

- Blue Line from Los Angeles to Burbank-Glendale-Pasadena Airport area
- Blue Line - Exposition Boulevard extension from 7th and Flower to USC
- Blue Line - Exposition Boulevard extension from USC to Santa Monica (in 2 segments)
- Blue Line Downtown Connector
- Blue Line extension to San Gabriel Valley (in 2 segments)
- Blue Line extension from Sierra Madre to Azusa (in 3 segments)
- Green Line North Coast extension to Westchester
- Green Line South Coast extension (in 3 segments)
- Green Line extension from Norwalk to the Orange County Commuter Rail station

Specific action must be taken by the Commission to fund projects in the Candidate Corridors. **POLICY DECISION**

**Other Projects.** The following other projects are included in the Plan:

- San Fernando Valley Metro Rail to Canoga Park
- San Fernando Valley Metro Rail to Sepulveda
- Safety Improvements (to all rail programs)
- Other Metro Red Line Station Enhancements
- Santa Fe Right-Of-Way
- Transit Station Enhancements - The 30-Year Plan contains \$120 million for systemwide transit enhancements spread over the four years beginning in FY 1992-93. These funds are set aside in anticipation of site-specific requirements identified during the final design and construction phases of the initial rail program.

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Possible uses include station access improvements, safety treatments, and passenger flow and convenience improvements.

- Other

Specific action must be taken by the Commission to fund these projects. **POLICY DECISION**

**Privately Funded Projects.** Examples of privately funded projects are:

- LAX-Palmdale - Connecting LAX and Palmdale airports along the median of I-405, I-5, and Route 14: Requests for Proposals have been issued to finance, in part or in whole, the design and construction of this project.
- Burbank Monorail - Downtown Burbank to Universal City via the Burbank Media District.
- AGT Connector to Dodger Stadium - Connects Dodger Stadium and the nearest station on the Pasadena Light Rail Line.
- Witmer and/or Bixel Station on the Metro Rail Segment 1 - Located in Central City West Area.

**Program Reserve.** An overall program reserve to accommodate unforeseen project cost increases has been established. The total represents a reserve on total capital uses of 2.5% in the first decade (1992-2001), 5% in the second decade (2002-2011), and 10% in the third decade of the plan (2012-2021). The percentage is increased by decade to reflect greater uncertainty in the outer years of the Plan. The program reserve is applied on top of project cost estimates which already have substantial contingencies included.

**Rehabilitation and Replacement.** Projected rehabilitation and replacement costs based on estimates provided by Robert Peskin of KMPG Peat Marwick. The estimates were projected based on actual costs experienced by the Washington Metropolitan Area Transit Authority (WMATA). Actual WMATA rehabilitation and replacement costs were compared to their original installation capital costs. These percentages were then applied to the LACTC Red, Blue, Orange, Green Line and Commuter Rail costs. The first rehabilitation and replacement costs are incurred five years after the Blue Line begins revenue operations.

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Repair and replacement costs for Private projects are not included in the Plan.

**Senior Lien Bond Payments (1989).** Payments as required per the indenture agreement for the existing senior lien debt.

**Additional Senior Lien Bond Payments.** Payments for additional senior lien bonds to be issued over the next 30 years. Payments assume an 7.2% interest rate and 25-year term for the bonds.  
**POLICY DECISION**

**Senior Lien Bond Payments (1991).** Debt service payments for the 1991 senior lien bonds.

**Senior Lien Bond Payments (1992).** Debt service payments for the 1992 senior lien bonds.

**Subordinated Bond Payments.** Payments for subordinated debt (see terms and conditions described under Subordinated Bonds definition, above). **POLICY DECISION**

**Commercial Paper Program/Cross Border Lease.** These payments consist of interest paid on the Commercial Paper program and of Cross Border lease payments. Approximately \$12.3 million per year will be paid for the commercial paper interest throughout the life of the plan. Annual payments of \$3.2 million for the Lease Revenue bonds will be made for 15 years beginning in FY 1991-92.

**Bond Issue Expense.** Payments to financial institutions for managing bond issues. Bond issue expenses of one percent for issue amounts over \$50 million are assumed, and 1.5% for issue amounts less than \$50 million.

**Bond Reserve Fund.** This fund consists of an amount set aside to guarantee debt service payment. It is equal to one year's principal and interest.

**RAIL OPERATIONS SOURCES OF FUNDS**

**Farebox.** Farebox revenue is calculated by multiplying the number of projected annual trips by the average fare per trip (i.e., average boarding fare). Average boarding fare for all rail lines other than commuter rail is based on the estimated average fare on the Blue Line (\$.52). The commuter rail average fare estimate is based on commuter rail operating experience in other metropolitan areas, adjusted for distance differentials (\$3.24).

Based on these farebox revenue estimates and projected O&M costs at the point of operating maturity (assumed to be 2010 for most lines), a farebox recovery ratio has been calculated for each rail line. Farebox recovery ratios are multiplied by O&M costs to project annual fare revenues in the plan. This method of projecting fare revenues assumes that fare revenues increase in proportion to increases in O&M costs.

To reflect the growth in farebox revenues over time (i.e., prior to operating maturity), the following assumptions were made:

- Red and Orange Line - 20% for the first 3 years of operation; 35% for the next three years; 50% thereafter.
- Blue Line - 9% for the first three years of operation; 15% for the next 3 years; and 40% thereafter.
- Green Line - 10% for the first three years; 20% for the next three years; and 30% thereafter.
- Commuter Rail - 10% for the first year; 25% for the next three year; 40% for the third year; 50% for the fourth year; and 60% thereafter.

Additionally, except for Commuter Rail, fares were escalated in the model by a real increase of 10% in 1995 and 10% in 2001.

**Proposition A Local Return.** 25% of all Proposition A revenues are returned to local jurisdictions for use in transportation programs at their discretion. No Proposition A Local Return funds are assumed to be available for rail operations.

**Proposition A Discretionary.** 40% of all Proposition A revenues are set aside in a discretionary account for distribution by the LACTC. Funds from this account currently flow to 13 fixed-route bus and demand-response transit operators. No Proposition A Discretionary funds are assumed to be available for rail operations.

**Proposition C.** Proposition C funds are allocated within legislated guidelines based on program needs. See *General Assumptions*.

**Local General Fund.** Not applicable for rail operations.

**TDA Article 4.** The State Transportation Development Act is a  $\frac{1}{4}$  cent sales tax-based revenue source that provides capital and operating assistance to eligible transit operators. LACTC is responsible for allocating the revenues generated within L.A. County. No TDA Article 4 funds are assumed to be available for rail operations.

**Other Jurisdictions.** The five counties participating in the Southern California Regional Rail Authority (SCRRA) contribute funds for their share of commuter rail operations. All commuter rail costs and revenues are captured in the 30-Year Plan cash flow.

**Lease and Rent Revenue.** The Plan assumes that the Commission will receive approximately \$5 million annually from rentals of property along the Southern Pacific ROW and some miscellaneous other properties.

**Cost Containment.** See *General Assumptions*.

**STA Population Share.** A portion of the State Transit Assistance fund. Historically applied to bus operations and capital. Recent State legislation makes more STA funds available to the County. The plan assumes the population share of the STA formula will go to rail operations. The revenue share portion of STA is assigned to bus operations.

**Section 9 (Operating).** Formula based transit operating an capital funds. Formula based on population an transit operating statistics. No Section 9 operating funds are assumed to be available for the rail program.

**RAIL OPERATIONS USES OF FUNDS**

Rail operations and maintenance costs are based on operating plans for each of the segments. Patronage forecasts for each rail line were used to develop the operating plans. Patronage forecasts were derived from a set of forecasts which SCRTD completed in March 1990 as a part of the Transitional Analysis for the East and West extensions of Metro Rail (Commuter Rail patronage estimates, operating plans, and O&M costs were developed by the LACTC Commuter Rail Division). The overall regional growth rate of one percent per year was used to adjust the forecasts.

The Plan assumes that during the first two years rail operating costs will be capitalized. The cash flow is adjusted to account for this assumption. The decision to capitalize operating costs will take specific Commission action in conjunction with its decision on future bond issues. **POLICY DECISION**

## APPENDIX D

### ANALYSIS OF FINANCIAL IMPACTS OF PROPOSITION 108 STATE RAIL BONDS ON THE 30-YEAR PLAN

The 30-Year Plan includes LACTC's portion of the \$1.0 billion Proposition 108 state rail bonds approved by the voters in June of 1990. The Plan also assumes the voters of California will approve two additional Proposition 108 state rail bond measures authorized by the California Legislature -- \$1.0 billion in November 1992 and another \$1.0 billion in November 1994. This assumption is consistent with the California Transportation Commission's action to program \$3 billion statewide from all three rail bond measures in the 1990 and 1992 STIPs.

The LACTC received a programming commitment in the 1990 and 1992 STIPs from the CTC of over \$1.5 billion of the \$3.0 billion Proposition 108 state rail bonds. See Table 1 for details.

The CTC programmed about \$500 million in the STIP toward LACTC rail projects from the \$1.0 billion June 1990 Proposition 108 state rail bonds. These funds are available for allocation now. By the end of this fiscal year (June 30, 1992), the CTC will have allocated over \$350 million of the \$500 million programmed to LACTC rail projects.

The CTC programmed \$1.05 billion in the STIP toward LACTC rail projects from the \$2.0 billion legislatively-authorized 1992 and 1994 Proposition 108 state rail bonds (\$1.0 billion each).

As stated in the CTC's 1992 State Transportation Improvement Program, Commission Staff Recommendations dated February 29, 1992, the CTC decided to program all \$3 billion in rail bond projects after consulting with and obtaining consensus among the Administration, and Senate and Assembly leadership. This agreement was reached because:

- o The 1989 Transportation Blueprint Legislation intended a balance among funding sources and emphasis among programs that included at least \$3 billion for rail transit.
- o Projects had to be programmed immediately if they were to proceed to construction in a timely way following voter approval of the bonds.

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- o It was widely assumed in the September 1990 adoption of the 1992 STIP that the voters would pass all three rail bond issues, based on the results of the June 1990 elections.
- o Programming of both rail bonds and the highway programs together would be needed to produce an overall program that made sense and satisfied the statutory county minimum funding distribution.

The major impacts that would occur if the state rail bond measures are not approved in 1992 and 1994 are:

- o The LACTC would have to secure \$1.05 billion of alternative state funds through the CTC STIP programming process for the portions of the projects listed in the attached chart relying on 1992 and 1994 Proposition 108 state rail bonds funds. Specifically, portions of the funding for the following projects would be affected (see Table 1 for details):

<u>Project</u>	<u>1992 &amp; 94 Prop.108 Rail Bonds</u>
•• Blue Line - Pasadena/L.A.	\$ 316.6 M
•• North Coast Extension of the Green Line	77.4
•• San Fernando Valley East/West Rail Project	496.5
•• Metro Red Line, Seg.3 to No. Hollywood	95.0
•• RR Rights-of-Way Purchase	29.5
•• Commuter Rail - Riverside/Hemet and SB/River./Fuller.(SF) Lines	31.7
	<hr/>
Total	\$1,046.7 M

- o In order to meet statutory funding county minimums, the CTC would revisit the 1992 STIP and would have to reprogram highway funds from small urban and rural counties to backfill the rail programs in major metropolitan counties, including Los Angeles, if the bond issues are not approved. Any remaining shortfalls would have to be made up from local funds.

**Table 1**

**PROJECTS FUNDED WITH STATE RAIL BONDS**

<b>Project</b>	<b>1990 Prop 108 State Rail Bonds</b>	<b>1992 &amp; 1994 Prop 108 State Rail Bonds</b>	<b>Total</b>	<b>% of Total Project Cost</b>
o Blue Line - Pasadena/LA	21.2	316.6	337.6	49%
o Green Line - North Coast Extension	29.0	77.4	106.4	50%
o Red Line - East/West SFV to Sepulveda	0	496.5	496.5	39%
o Red Line - Segment 3 to North Hollywood	0	95.0	95.0	n/a*
o RR R/W Purchase - SP, SF & UP	290.5	29.5	320.0	n/a
o Commuter Rail - SCRR				
- Riverside/Hemet	0	25.1	25.1	46%
- SB/Riverside/Fullerton	16.5	6.6	23.1	14%
- All Other Commuter Rail**	113.0	0	113.0	24%
o Rail Stations	21.7	0	21.7	n/a
<b>Total</b>	<b>491.9</b>	<b>1,046.7</b>	<b>1,538.4</b>	<b>n/a</b>

\* A total of \$115 million in state funds is programmed for Segment 3 from Hollywood & Vine to North Hollywood - \$95 million of Proposition 108 funds and \$20 million of state Article XIX gas tax funds.

\*\* LA/San Bernardino, LA/Santa Clarita, LA/Moorpark, LA/Riverside (UP), Shared Facilities, Fullerton/LAUP, Oceanside/Fullerton.

## APPENDIX E

### ADDITIONAL REVENUE SOURCES

*(to supplement Fundable Plan and/or fully fund Expanded Plan)*

#### Parking Taxes and Fees

Parking taxes levied in downtown areas have two impacts on the transit system: first, they can increase transit ridership as the cost of driving increases; second, they can generate revenue for the transit system. A parking tax or fee could be levied by cities within the County and all or a portion of it dedicated to transit uses. The City of Los Angeles currently assesses a parking tax. In the downtown core, an additional parking tax or fee on off-street parking could result in up to \$8 million annually.

#### New Federal Gas Tax

The federal excise tax on gasoline funds transportation programs through the new Federal Transit Administration (FTA) and the Federal Highway Administration (FHWA). Assuming LA County were to get its fair share, a federal gas tax increase of 5 cents per gallon would yield \$165 million annually for local transportation programs.

#### Additional State Rail Bonds

In 1990 the voters in California approved a \$1 billion bond measure for rail programs. Similar bond measures will be voted upon in 1992 and 1994 and are assumed to pass in the 30-Year Plan. State rail bonds must be used for rail projects that are operational by the year 2001. If an additional \$3 billion in State Rail bonds was issued in the second decade of the 30-Year Plan and L.A. County received its fair share, approximately \$1 billion would be available for local rail programs during the ten year period.

Additional State Gas Tax

An increase in the California state gas tax was approved by voters in 1990, raising the gas tax for the first time in almost 9 years. An additional gas tax increase could reasonably be expected to be accepted by voters in the late 1990s. An addition of one cent to the gas tax would yield approximately \$1.1 billion annually to the state. Of this amount, Los Angeles County would receive about \$360 million.

Emissions Trading

The establishment of an emissions trading program would allow LACTC to sell air pollution credits to other emission sources when emissions associated with LACTC's programs fall below the established baseline. South Coast Air Quality Management District (SCAQMD) has not developed a program for emissions trading for transit and the potential revenue that could be generated is not known. LACTC staff is presently developing concepts for discussion with relevant air quality agencies to facilitate implementation of an emissions trading program.

Value Capture

A variety of real estate based revenue generation and cost sharing techniques will be available to LACTC in the future, especially with the growth of the rail program. LACTC's Joint Development staff is studying the applicability of these techniques to specific locations and developing implementation strategies. Lease/sale of development or air rights, density bonuses, negotiated cost sharing, and connector fees are a few of the mechanisms used to generate revenue or share costs of the transit system. Since most of these techniques are site specific and require specific developer agreements, it is difficult to estimate the contributions that could be achieved over the next 30 years.

### Private Sector Initiatives

The private sector will play an important role as a funding partner in transportation in the County over the next thirty years. Initiatives such as the private sponsorship of high speed rail and other advanced rail technologies, rail/bus circulator services, toll roads, employer sponsored transit service, and development of a surface transportation industry in Southern California are the examples of the type of private sector involvement anticipated in the 30-Year Plan.

While the private sector contribution is difficult to estimate, it should not be neglected. LACTC's role is to encourage and provide incentives for private sector participation in meeting the County's mobility needs.

### Development-Related Fees

An impact fee is a charge imposed on new developments to compensate for their impacts on local transportation volumes. A fee is typically assessed on square footage of planned development. Impact fees can be implemented by local ordinance but according to case law, "rational nexus" must be demonstrated in order to meet typical criteria for establishing an impact fee. The LACTC recently curtailed work on a nexus study and is focusing on mechanisms for implementing the congestion management plan that do not rely on fees.