



Long Range Transportation Plan

1997 Update

Summary of Process and Overview

*never
adopted
by Board*

**TAKING OUR VISION TO
2020**



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*Section I***INTRODUCTION****A. LOS ANGELES COUNTY METROPOLITAN TRANSPORTATION AUTHORITY (MTA)**

Formed in April, 1993, the Los Angeles County Metropolitan Transportation Authority (MTA) is the principal public transportation agency in Los Angeles County. The MTA has primary responsibility for the planning, funding, constructing and operation of ground transportation in Los Angeles County including: (1) bus and rail transit services; (2) urban rail construction; (3) highway, arterial street and traffic flow management funding; (4) transit centers and park-n-ride facilities development; (5) alternative types of transportation; (6) research and development of alternative energy sources for vehicles; and (7) air quality, environmental impact, land use, and economic development decisions relating to transportation.

B. MTA's LONG RANGE TRANSPORTATION PLAN

The Long Range Transportation Plan (LRTP) is the MTA's strategic transportation plan for Los Angeles County. The LRTP establishes the framework that will guide the MTA in fulfilling its mission through the implementation of achievable solutions to the transportation challenges facing Los Angeles County.

The LRTP reflects the mission adopted by the MTA Board of Directors in February 1994:

"The mission of the Los Angeles County Metropolitan Transportation Authority is to design, construct, operate and maintain a safe, reliable, affordable and efficient transportation system that increases mobility, relieves congestion, and improves air quality to meet the needs of all Los Angeles County residents."

1. What the Plan Does

- The LRTP is both a policy and a funding document. It serves as the MTA's long range strategic planning tool providing both vision and a framework for the evaluation of complex policy choices and funding decisions.
- The LRTP weaves diverse programs and projects of the MTA into an integrated long term strategic document utilizing multi-modal (highway, transit, programmatic) solutions to address the mobility challenge facing Los Angeles County.
- The LRTP provides sequencing of project implementation to effectively manage the County's travel demand.
- The LRTP provides a format for funding decisions and a financing plan to accomplish the mobility goals of the plan.

2. What the Plan is Not

- The LRTP does not replace specific actions and decisions by the MTA Board of Directors.
- The LRTP does not replace the development of an annual budget.
- The LRTP does not obligate funds or issue debt for specific projects.
- The LRTP doesn't contain specific project priorities.

3. Federal Intermodal Surface Transportation Efficiency Act (ISTEA) and the LRTP

One of the most significant changes brought about by the Federal Intermodal Surface Transportation Efficiency Act (ISTEA) is the requirement that long-range transportation plans be financially constrained. Specifically, the law states that the 20-year regional plan will "include a financial plan that demonstrates how the long range plan will be implemented, indicates resources from public and private sources that are reasonably expected to be made available to carry out the plan and recommends any innovative financing techniques such as value capture, tolls, and congestion pricing."

The financial assumptions included in the LRTP ensure consistency between MTA objectives and budget decisions, with federal, state and local transportation funding processes. It provides a benchmark against which the MTA can monitor and measure progress in meeting its objective. The investment envisioned in the LRTP will require full participation by the three funding partners: the federal, state and the local sectors.

C. REVIEW AND READOPTION OF THE LRTP

The MTA Board adopted the Long Range Transportation Plan in 1995 (hereinafter referred to as the 1995 LRTP) with the recommendation that it include an annual financial update, a formal review, and readoption of the LRTP by the Board every two years.

Since the adoption of the 1995 LRTP, significant changes have occurred which may have far-reaching and permanent impacts on the MTA in providing solutions to the transportation problems facing Los Angeles County.

The biennial review and readoption of the LRTP (hereinafter referred to as the LRTP Update) will analyze these changes and offer options and recommendations to optimally address the impacts of these changes.

The biennial readoption process will include:

- Review of the approved projects or a baseline listing of what is fiscally feasible;
- Review/evaluation of changing economic conditions;
- Development of refined estimates of project costs;
- Updated transportation demand models and forecasts;
- Revised revenue and economic growth projections;
- Changes needed to reflect MTA Board actions/regional policies; and
- Changes needed to reflect the fare lawsuit settlement.

The LRTP Update will involve an extensive community outreach program (see Figure I-1) involving a broad spectrum of people in Los Angeles County. MTA Board Members, local elected officials, interested parties and the public will be invited to review and comment on the results of planning and financial analyses conducted to date and also provide input for future steps.

D. OVERVIEW OF THE PUBLIC/COMMUNITY OUTREACH PROCESS FOR THE LRTP UPDATE

Three rounds of meetings will be held during the course of the LRTP Update process to gain input from as many interested individuals, organizations, and elected officials as possible. During each round, MTA staff will meet with and/or conduct meetings or workshops with federal/state elected officials or their representatives; local representatives from each of the eight Councils of Government (COG) (San Gabriel Valley COG, South Bay Cities COG, North County Transportation Coalition, Malibu/Las Virgenes, Westside Cities, Arroyo Verdugo Transportation Coalition, Southeast Los Angeles County COG (SELAC), and the City of Los Angeles); the community-at-large (via workshops in each of the eight COG areas); and three Stakeholder Focus Groups composed of representative organizations and transit user groups. Individuals representing organizations with a broad-based interest in transportation issues have been organized into the following three focus groups: Business/Labor; Academic/Environmental; and Transportation User Groups. Discussions with each of the groups described above will provide balanced, regional feedback to the LRTP Update. Please see Figure I-2, Community Outreach Program Process graphic which describes the three rounds of community outreach activities.

In addition to well-publicized meetings (press releases, meeting announcements, and notices on buses), an informational Hot Line will be activated to provide general information and meeting schedules.

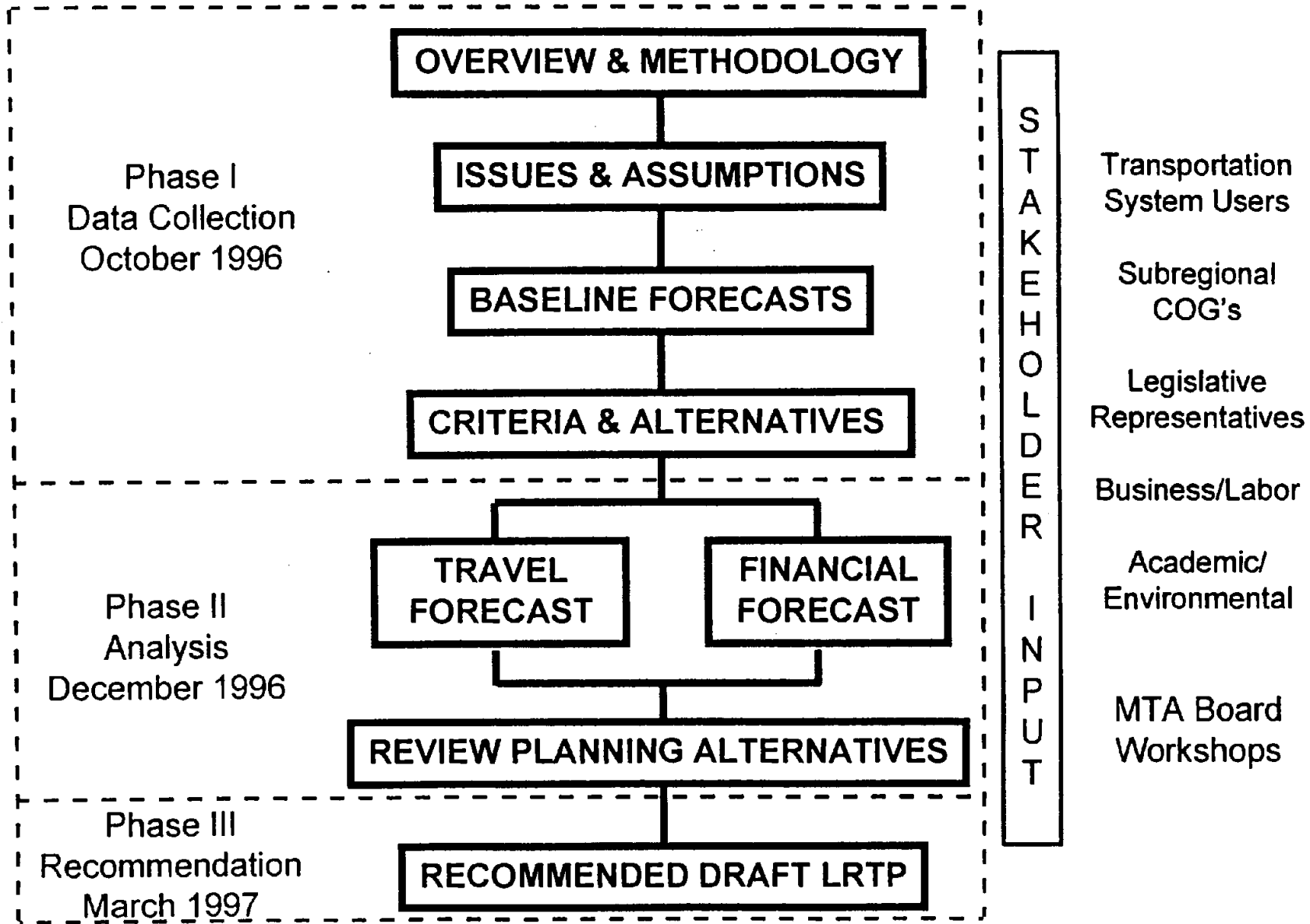
All timely input gathered will be documented and analyzed. Results of the analysis will be taken back to the various groups in draft form for final comments, before the final draft report is transmitted to the MTA Board of Directors for discussion and adoption in March of 1997. Where feasible, input received will be incorporated into the staff recommendations. Where input is not feasible for inclusion, the reasons for exclusion will be explained and documented. The final draft LRTP Update document will include an unedited summary of comments/input (with staff analysis, if appropriate) received through the Community Outreach process. The comments will be broken down as to date, venue, and group. This will be attached to the final draft document in the form of an appendix.

E. FARE LAWSUIT SETTLEMENT

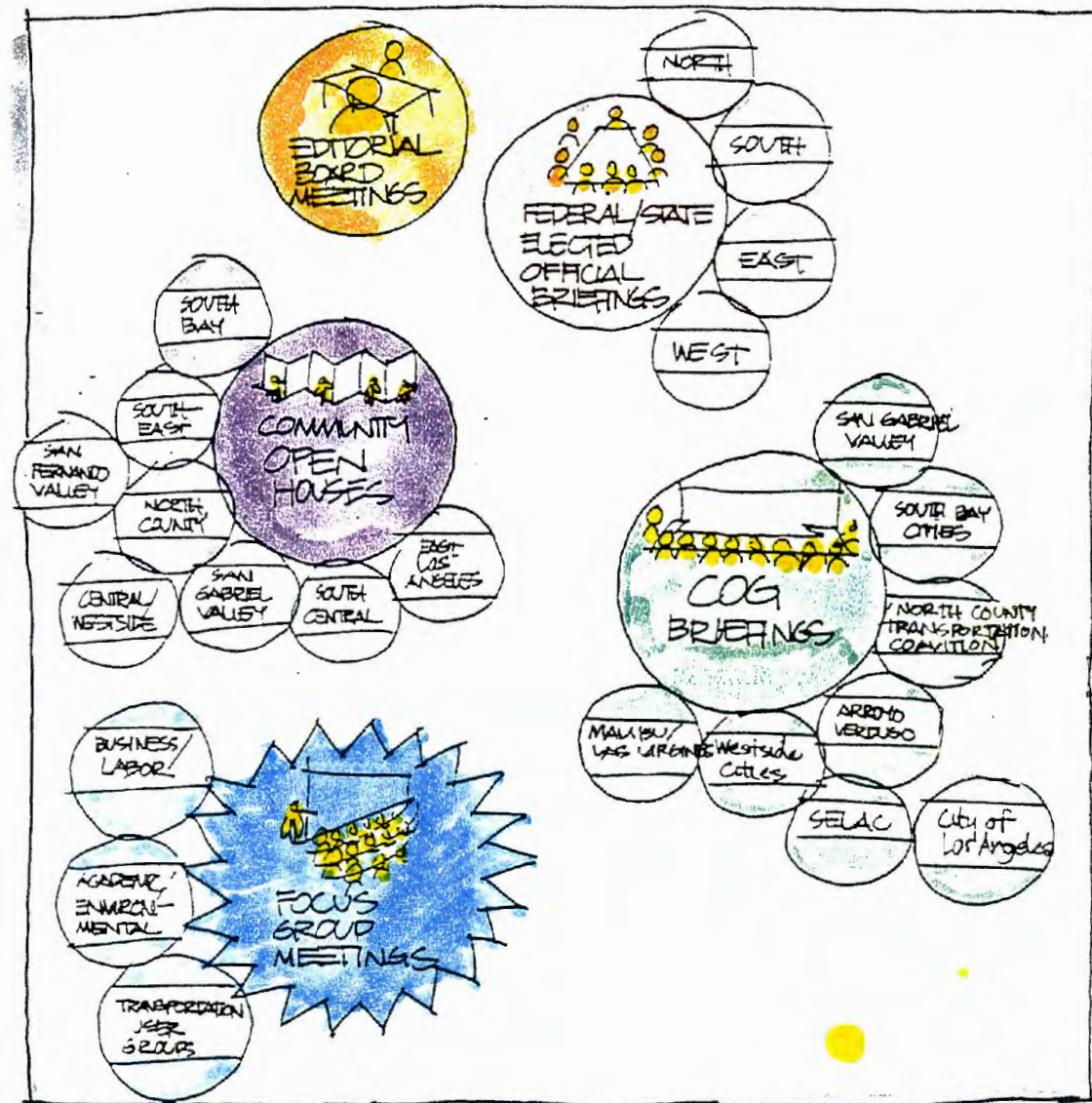
On September 25, 1996, the MTA Board reached a tentative settlement of the class action lawsuit for bus riders by the NAACP Legal Defense and Educational Fund. The settlement requires the commitment of additional funds and resources to accelerate bus service improvements and expansion as well as evaluation of fares and passes. These impacts will be analyzed during Phase II of this process and presented along with the initial public output in the first draft plan.

FIGURE I-1

MTA LONG RANGE TRANSPORTATION PLAN

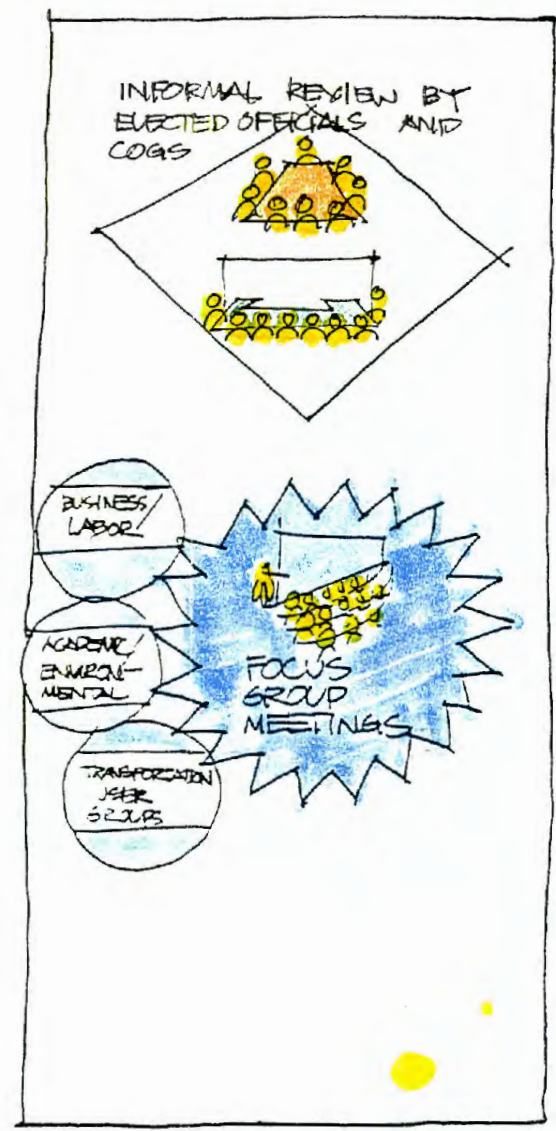


LACMTA / LONG RANGE TRANSPORTATION PLAN UPDATE / COMMUNITY OUTREACH PROGRAM



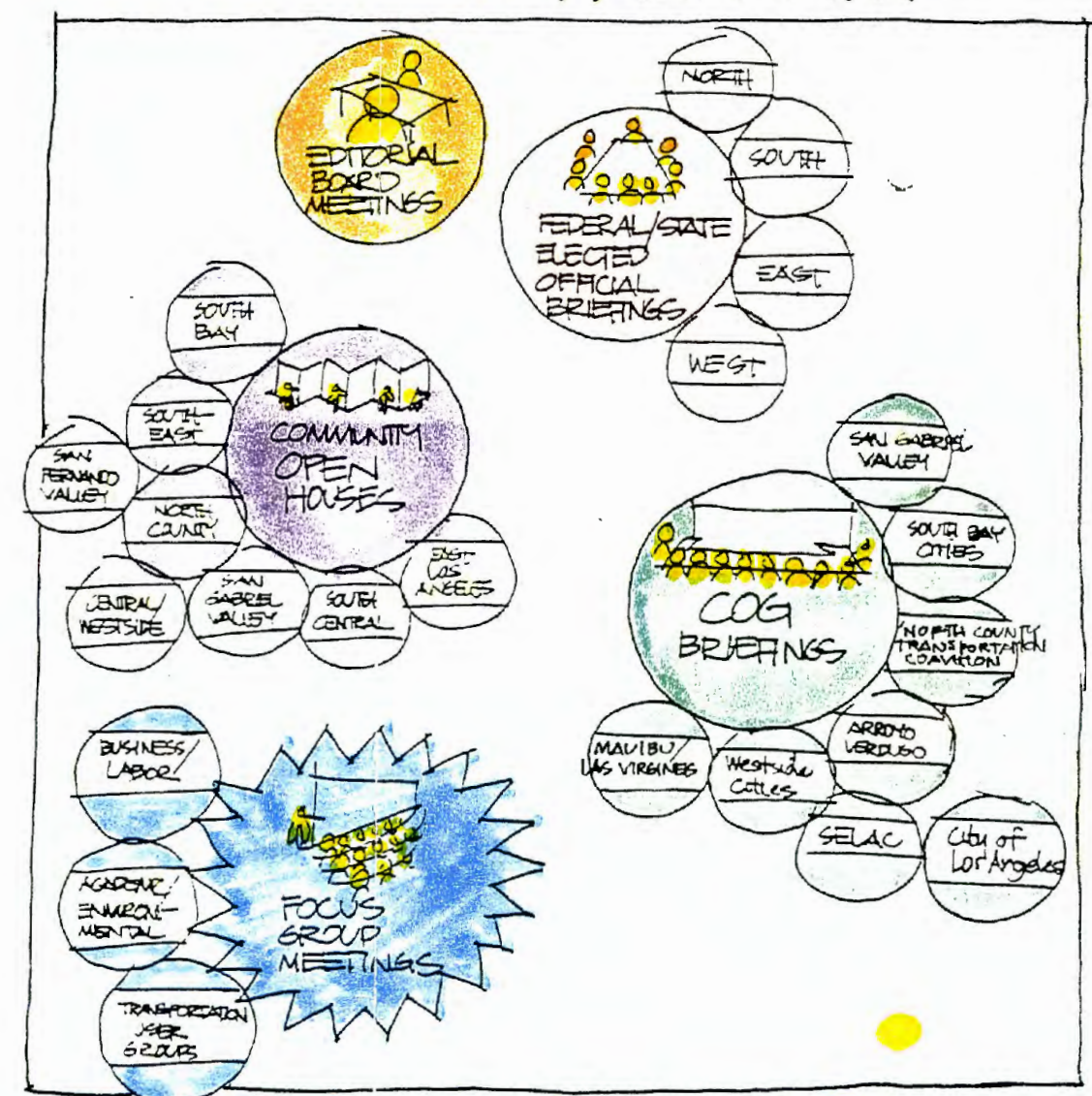
ROUND I / ISSUES AND ALTERNATIVES

▷ OCTOBER 7 - NOVEMBER 1, 1996



ROUND II / ALTERNATIVES REVIEW

▷ DECEMBER 9-13, 1996



ROUND III / REVIEW DRAFT LONG RANGE TRANSPORTATION PLAN

▷ JANUARY 27 - FEBRUARY 14, 1997

*Section II***MAJOR ELEMENTS OF THE LRTP****A. OVERVIEW OF THE LRTP'S DEVELOPMENT**

MTA's 1995 LRTP was developed as a result of a number of major steps. These steps are described below along with a discussion of how they will be used for the LRTP Update.

Defining the mobility challenge. Using demographic forecasts provided by the Southern California Associated Governments (SCAG), the MTA's travel demand model was used to establish the "baseline" condition. The model determined how population and employment projections in Los Angeles County would affect the transportation network in the year 2015, given no new transportation projects being implemented beyond what already existed or had a funding commitment.

SCAG has released updated demographic forecasts for the year 2020 which will be incorporated in the transportation model for the LRTP Update. The transportation model will also include the additional projects beyond the "baseline" in the adopted 1995 Plan. This update process will lead to a revised assessment of the transportation problems in the year 2020 - in other words, an updated "mobility challenge." Additional discussion of the updated mobility challenge is included in Section III.

Determining MTA's financial capacity. The 1995 estimate of expected revenues available to fund current commitments and additional projects and programs was analyzed. Project costs were updated and a financial model was used to determine the MTA's capacity to fund projects. The financial analysis is described more fully in Section IV.

Updated information on revenues and project costs will lead to revised forecasts for the LRTP Update. Findings from the February 1996 annual financial update are described in this section's financial summary.

Defining alternatives. Transportation projects, programs and strategies were developed and analyzed for their effects on improving the transportation network.

For the LRTP Update, new packages of alternatives will be tested. Development of these new options will be done with extensive public input.

Analyzing impacts of projects and programs. Using a computer travel demand model, indices for mobility, air quality, and cost-effectiveness were calculated for each of the alternatives. Qualitative criteria were also employed in evaluating alternatives that

were not quantified in the computer model. Additional discussion of evaluation tools is included in Section III.

The LRTP Update is anticipated to use a similar evaluation process.

Developing the Long Range Transportation Plan. A set of effective alternatives totaling \$72.4 billion was adopted in the 1995 LRTP, based on the process described above. Major projects and programs are listed Figure II-1, MTA Long Range Transportation Plan Projects/Programs Chart; major projects are also illustrated in Figure II-2, MTA Long Range Transportation Plan Major Projects Map.

The following pages summarize each of the major project and program elements of the 1995 LRTP and describes progress that has occurred since the plan was adopted. The financial element is then discussed.

B. MAJOR PROJECTS AND PROGRAMS IN THE 1995 LRTP

The 1995 LRTP classifies major projects and programs in the following categories:

- ***Transit*** (includes bus and rail transit);
- ***Highway*** (includes highway improvements and incident management/freeway service patrol);
- ***Multimodal*** (includes signal synchronization/Intelligent Transportation System (ITS) /bus speed improvements; transportation demand management; Alameda Corridor/goods movement; regional surface transportation; transit centers; and non-motorized transport); and
- ***Transportation policy***

1. TRANSIT ELEMENT

a. Bus Transit

The main bus transit strategies in the 1995 LRTP included the following:

- Addition of 300 buses countywide to improve service in areas of high demand;
- Increasing and improving service in outlying and suburban areas through the provision of smart shuttles and a "mobility allowance" program;
- Reallocation of 140 buses from modifying service as rail lines are opened;
- Bus priority and preference treatments on 130 miles of key bus lines; and
- Development of an Advanced Technology Transit Bus (ATTB).

Bus Transit Status Highlights:

- The MTA has prepared a Bus System Improvement Plan to improve and enhance transit services throughout the County. Additional service on overcrowded routes is one of the initiatives in the plan. This new program is adding 51 new buses to the MTA service on overcrowded lines, with additional buses being provided by the Municipal Operators.
- The MTA has contracted out thirteen transit lines to reduce operating costs and improve efficiency. MTA is in the process of selecting operators for several demonstration "Mobility Allowance" projects, which replace low productivity lines with more efficient and effective alternative services.
- The MTA has funded several smart shuttle projects that will utilize advanced transit system technologies. A request for proposal for the Los Angeles City Smart Shuttle project has been circulated with responses due in November.
- Restructuring studies in all major areas of the county have been funded, initiated, and/or completed. The first phase of the San Fernando Valley Area Restructuring Study has been implemented.
- The MTA has implemented major bus service realignments to coincide with the opening of the Metro Green Line in 1995 and the Metro Red Line Segment 2, Wilshire Boulevard Stations, in 1996.
- The MTA is working toward full implementation of the Advanced Technology Transit Bus (ATTB). The total funded project cost is \$51.25 million (80% Federal, 20% MTA). The first prototype bus is scheduled for completion in September 1996, and final testing will be completed on 6 prototype buses by the end of 1998. These buses will have low or zero tailpipe emissions, meet Americans with Disabilities Act requirements, reduce bus operating costs, and meet the passenger-capacity requirements of the MTA.
- The MTA recently settled a lawsuit which specified fares, increased bus security and added buses over the next few years.

b. Urban Rail Transit

The main Urban Rail Transit elements included in the 1995 LRTP are as follows: (Please see Figure II-3, MTA Long Range Transportation Plan Rail Projects for map of rail transit lines).

- Completion of the Metro Green Line and Metro Red Line extensions to the east (First and Lorena), west (Pico and San Vicente), and north (North Hollywood);
- Construction of the San Fernando Valley East-West line from North Hollywood to the I-405 Freeway, the Metro Red Line western extension from Pico/San Vicente to the I-405 Freeway, and the eastern extension of the Metro Red Line from Indiana to Atlantic;
- Construction of the Metro Blue Line from Union Station to Sierra Madre Villa in Pasadena;
- Development of a connection between the Metro Green Line Aviation Station and the Los Angeles International Airport (LAX), funded with non-MTA funds; and

- In case additional funds become available, continuing work on the Crenshaw Corridor, the Exposition to USC line, the 10/60 Corridor, the Los Angeles-Burbank-Glendale Line, the Downtown Connector, and the San Fernando Valley East-West western extension.

Urban Rail Transit Status Highlights:

- The Metro Green Line opened in 1995, and the Metro Red Line extension to Western Avenue opened for revenue service in 1996. Construction is underway way on the Metro Red Line extension to North Hollywood, a portion of which will open in 1998.
- Final engineering work is near completion for the Metro Red Line East Side Extension. Engineering feasibility work has been completed on an alternative Metro Red Line Mid-City Segment alignment.
- A Major Investment Study EIS/SEIR is underway for the San Fernando Valley East-West Corridor.
- Cost containment analysis was completed and a budget adopted on the Metro Blue Line extension from Union Station/Gateway to Pasadena.
- A preliminary plan was completed and work was initiated on a Major Investment Study (MIS) for Crenshaw Corridor Rail Transit.

c. Commuter Rail Transit

The 1995 LRTP calls for the continued support and improvement to the Metrolink system.

Commuter Rail Transit Status Highlights:

- Route miles have grown from 201 to 358, extending service to Lancaster and Oxnard as well as San Bernardino, Riverside and San Juan Capistrano.
- Daily ridership has grown from 13,000 to 23,000.
- Saturday service has been implemented from San Bernardino to Los Angeles.
- All initially-authorized capital projects of the five-corridor, five-county State 1402 program have been completed within budget.
- Intercity service has been extended from San Diego to San Luis Obispo.
- Planning was completed and Phase 1 construction began on the Metrolink Santa Clarita Line right-of-way safety enhancement program.
- New Metrolink stations were completed, several existing stations improved, and additional new stations funded.

d. Alternate Rail Technology (ART)

The 1995 LRTP directed the preparation of a number of studies on the feasibility of ART (referred to as "DMU" for "diesel multiple units in the 1995 LRTP), and identified five potential corridors in which the MTA owns rail right-of-way. These studies are to include analysis of the technology, potential funding, and feasibility.

Alternate Rail Technology Status Highlights:

An ART Feasibility Study was completed in two phases. The first phase analyzed issues relating to ART vehicles, and the second evaluated the Los Angeles/Burbank/Glendale Corridor as a prototypical location. At the November 1995 MTA Board meeting, ART was adopted as a demonstration technology in an appropriate corridor.

e. Gateway Intermodal Transit Center

The 1995 LRTP included the development of a major intermodal center at Union Station. This facility was to include a bus plaza, portal pavilion, and park-and-ride facility.

Gateway Intermodal Transit Center Status Highlights:

The MTA constructed and is operating the Patsaouras Transit Plaza, providing access between Metrorail, Metrolink, Intercity Rail Service, buses, and a parking facility.

2. HIGHWAY ELEMENT**a. Highway Improvements**

The adopted 1995 LRTP calls for the following:

(Please see Figure II-4, MTA Long Range Transportation Plan Highway/HOV Projects for locations of projects)

- Construction of a 278.8 (center lane mile) HOV system, including HOV interchanges at "key" locations;
- Construction of a joint Caltrans-CHP Transportation Management Center to monitor and control freeway traffic conditions and provide the "brain" for the smart system on the freeway; and
- Gap closures on the Route 30 and I-710, and major widenings on Route 138 near Palmdale and Route 126 in Santa Clarita.

Highway Improvement Status Highlights:

- Over 100 miles of the HOV system have been opened, with completed segments along Route 91, I-110 Transitway, Route 134, Route 170 and I-405.
- Over 50 HOV miles are under construction, including segments along Routes 14, 30, 57, 60, 118, and I-405.
- Design is underway for a segment of Route 14 and the Route 710/Firestone interchange; a project study report is being prepared for the Harbor Freeway Transitway extension.

- The Route 30 freeway gap closure project has been fully funded in Los Angeles County, and funding committed for widening Route 126, part of the Route 138 widening project, and Avenue P-8.
- Funding has been programmed for HOV segments along I-5, Route 14, and I-405, as well as for the Route 57/60 HOV interchange.
- The MTA has funded the creation of the Transportation Management Center (TMC), and is currently doing a study of a co-located facility in coordination with Caltrans, the CHP, the County, and other affected agencies.
- The MTA developed a HOV System Integration Plan to ensure that priorities developed in the 1995 LRTP are designed and implemented in the most cost effective manner possible.

b. Incident Management/Freeway Service Patrol

The 1995 LRTP called for the continued operation of the Freeway service patrol and call box system, while also identifying the need to expand the major incident response capabilities in the County.

Incident Management/Freeway Service Patrol Status Highlights:

The MTA has funded a coordinated interagency Major Incident Response program to supplement its funding and operation of the Freeway Service Patrol (FSP), Freeway Call Box system (SAFE), and the Transportation Management Center to improve incident response.

3. MULTIMODAL ELEMENT

a. Signal Synchronization/Intelligent Transportation System (ITS)/Bus Speed Improvements

The 1995 LRTP calls for development of a system of coordinated, centrally controlled signals on arterials and smart corridors countywide. The system is also planned to have a major emphasis on providing bus speed improvements, especially on those streets with the greatest numbers of buses. The Plan identifies the need for multi-agency planning and implementation of these projects.

Signal Synchronization/Intelligent Transportation System (ITS)/Bus Speed Improvements Status Highlights:

- The MTA has moved from the implementation of timing improvements on individual arterials to the creation of multi-agency traffic "forums" to plan and implement traffic signal improvements on a corridor level. These forums have been provided almost \$150 million to design and implement specific projects identified in plans developed cooperatively with the MTA and the local agencies. These plans include the implementation of improved communications and surveillance equipment, centralized computer controls and operations centers, implementation of

coordinated signal timing plans, and various bus speed improvements. Because of the relatively low level of construction involved, these projects are rapidly being implemented.

- The MTA has led a multi-agency effort to implement a Smart Corridor along the Santa Monica Freeway and adjacent parallel arterials. This sophisticated traffic monitoring, traffic management, and motorist information project will be operational in October 1996.
- Southern California received federal funding to conduct a demonstration project of ITS application on a five county basis, generally encompassing the I-5 corridor from the Mexican border to the northern limits of Los Angeles and Ventura Counties. This project is known as the Southern California Priority Corridor
- MTA was awarded federal funding to implement Project IMAJNE: Inter-modal and Jurisdictional Integrated Network Environment. This project develops a telecommunication system for cities in the Southeast area to link transit, paratransit, arterial traffic signals, and freeway operations.
- The MTA has funded a Bus Priority Pilot Study by the City of Los Angeles to develop and demonstrate technologies which increase bus operating speeds on high priority bus corridors.

b. Transportation Demand Management (TDM)

The 1995 LRTP calls for a variety of TDM activities with an emphasis on market-based projects, modal integration, and transit related advancements. Funding for shuttles was specifically limited to demonstrate self-supported or city-supported concepts, and all funding was to be viewed as a tool to leverage other funds. TDM activities were a major element in the section on policy shift options strategies, which called for the increased use of telecommuting, parking management, land use, and market incentives as modes of reducing trips and encouraging mode shifts.

Transportation Demand Management Status Highlights:

- The MTA has funded a wide range of TDM projects, which have been and are being subjected to analysis to determine the most cost effective way of achieving the targeted mode shift. These projects have included the creation of telebusiness centers (including establishing the Metro Blue Line TeleVillage Project), parking management projects, integrated farecard projects, and shuttle bus services.
- A market research project was funded to develop a database for multijurisdictional transit service restructuring studies, service coordination, and service improvement programs.

c. Alameda Corridor and Goods Movement

The 1995 LRTP identifies the need to provide for the efficient movement of goods in the region. To this end, the plan includes the commitment to provide approximately \$350 million toward the construction of the Alameda Corridor, and a policy to examine the applicability of goods movement improvement in other corridors in the county.

Alameda Corridor and Goods Movement Status Highlights:

- Since the plan's adoption, the MTA began to provide funding to the Alameda Corridor, and has been an advocate and facilitator for other state and federal funds. In addition, the MTA has been actively involved in assisting the interested parties in resolving non-financial issues.
- Several components of the Alameda Corridor are under design. A segment of Alameda Street has been widened, with work to begin shortly on two other segments.
- The MTA has funded a study of the rail grade crossing impacts of the increased rail service from the Alameda Corridor and ports expansion on the San Gabriel Valley. This Freight Grade Crossing Study has been initiated by the San Gabriel Valley Council of Governments.

d. Regional Surface Transportation

The 1995 LRTP recognized the importance of major improvements to the highway system (other than the freeways) for the movement of people and goods. Because of that, the plan identifies a strategy of funding key bottleneck locations and freeway access points, as well as needed inter-jurisdictional arterial improvements. The MTA also participates in some major capital projects which exceed the financial capabilities of the local agencies.

Regional Surface Transportation Status Highlights:

The MTA funded the construction of a number of Regional Surface Transportation projects, primarily focusing on the construction of major arterials and some bus speed improvements. In addition, the MTA participated in several major arterial improvements through federal demonstration projects. One major effort is MTA's study of a roadway reconfiguration project on Santa Monica Boulevard.

e. Transit Centers

The 1995 LRTP stated that provision of comfortable, safe, and convenient transfer points is a major contributor to a cost effective transit system. While the plan did not identify specific sites for transit centers, it calls for the on-going funding of transit centers.

Transit Centers Status Highlights:

The MTA has funded the construction of a number of transit centers during the past few years, including Metrolink stations, the Gateway Transit Mall, the I-105/I-110 transit station, and other strategic transit centers and park-and-ride lots.

f. Non-Motorized Transport

The 1995 LRTP calls for the funding of bikeways with major inter-jurisdictional connections, bottlenecks, and "demonstrated bicycle commute corridors." The plan also calls for construction of pedestrian access to transit centers and stations. Specific locations for these projects were not included in the LRTP since they are to be determined through the MTA'S Call for Projects.

Non-Motorized Transport Status Highlights:

Several projects have been funded in both the pedestrian access and bicycle facility categories, including funding of bikeways, bikeway plans, streetscape projects, greenways, bicycle racks, lockers, and safety/education programs.

4. TRANSPORTATION POLICY ELEMENT

The 1995 LRTP calls for the need to re-examine transportation policies and suggests focusing on five strategies for policy shifts:

- Increasing HOV minimum occupancy from two passengers to three passengers;
- Promoting increased use of telecommuting and teleservices;
- Encouraging local implementation of parking management strategies;
- Focusing land development near transit centers; and
- Considering regional market incentives.

Transportation Policy Element Status Highlights:

- MTA staff has participated in SCAG's REACH Task Force effort which has examined various market incentives. The group recommended that a "HOT" (high occupancy toll) lane demonstration be implemented to introduce the public to pricing strategies. The project would allow solo drivers to pay to travel on existing HOV lanes. The group also has recommended that a Vehicle Miles Traveled fee be implemented in the future because this strategy has the greatest potential for reducing emissions.
- MTA has had some success in promoting telecommuting/teleservices and parking management strategies through the Call for Projects funding process (see discussion under the transportation demand management category).
- MTA used the Congestion Management Program (CMP) to encourage jurisdictions to focus development around transit centers, implement parking management projects, and implement telecommuting and teleservices projects. The CMP allows jurisdictions to earn credits that offset CMP debits created by approval of new development. The most effective credit strategies have included implementing land use policies that encourage mixed-used and higher density development around

transit centers; implementing parking cashout programs and parking surcharges; and implementing various telecommunications strategies which eliminate trips.

- MTA funded a demonstration project to develop transit-oriented districts (TODs) around four Metro Blue Line Stations. The TODs will provide a framework to guide future development within 1/4 miles radius of the stations. Local zoning ordinances are being changed in order to implement each TOD.
- MTA is also promoting land development near transit centers through its involvement in a number of joint development activities at the Metro Blue Line Del Mar and Willow stations; Metro Red Line stations at Hollywood/Highland, Wilshire/Vermont, and Hollywood/Western; and sites at Chatsworth and Van Nuys.

C. FINANCIAL SUMMARY

1. FINANCIAL SUMMARY OF THE PLAN

The 1995 LRTP envisioned a \$72.4 billion investment in Los Angeles County's transportation future, primarily funded with local funds augmented by state and federal revenues. The financial foundations of the Plan are two 1/2 cent local sales taxes; Proposition A and Proposition C.

The state and federal financial assumptions of the Plan presumed policy makers would be successful in their efforts to leverage funds. The plan considers funding necessary for both the operating costs and the construction costs of various projects and services. Projected funding and costs are strategically balanced each year of the Plan to optimize financial mobility benefits. The attached charts describe the 1995 LRTP's sources of funds; uses of funds; a financial summary of the plan; and project and program cost detail (See Figures II-5, Financial Summary - 20 Year Use of Funds; II-6, Financial Summary - 20 Year Sources of Funds; and II-7, Financial Summary).

2. FINANCIAL UPDATE EFFORTS

Since adoption of the plan, some strategic revenue assumptions have not been achieved, such as Federal Section 3 New Starts and implementation of fare increases. The combination of these factors has further damaged MTA's ability to leverage state and federal funds with local funds, leading to project revenue decreases. On the cost side, the MTA has reexamined its construction project costs by completing aggressive cost containment efforts. The MTA also has examined methods to provide transit service more efficiently as part of this cost containment effort.

An analysis was done in February 1996 to update financial projections. (Please refer to Figures II-8, Adopted Plan Vs Update; II-9, Major Revenue Changes; and II-10, Other Revenue Sources and Programs. In addition, Figure II-11 demonstrates funding source eligibility of each MTA program.)

The LRTP update will include a reassessment of all revenues and costs, similar to the 1996 February effort. MTA staff will address recent actions such as the allocation of over \$10 million annually toward bus overcrowding; the proposed "consent decree" resolving the fare lawsuit; and the allocation of any additional funds over predicted revenues toward additional bus service. A summary of the key findings from the February 1996 analysis is provided below, along with a discussion of cost containment efforts.

Revenue Estimates:

- The February 1996 financial update projects a cumulative decline in various revenue sources of 5% from \$72.5 billion to \$68.9 billion.
- MTA fare revenue forecasts were revised downward to reflect the current fare box recovery ratios. This resulted in an 11% reduction in fare revenue (or \$2.0 billion) over the remaining years of the 1995 LRTP which is offset by other revenue and operating efficiencies.
- The revised 1996 revenue forecast projects declines in federal bus capital and operating subventions of \$1.1 billion reflecting the current trend toward phasing out of Section 9 federal operating assistance grants. The LRTP Update can correct for this deficiency by identifying other funds.
- The model inputs were improved to reflect a reduction of federal revenue coming from the Federal Highway Trust Fund. Historically, the Highway Trust Fund has grown at a rate of 1.4 % annually. The model now reflects this lower growth. The reduction in anticipated renewal may cause deferral of highway projects.

Cost Estimates

- Cost figures in the February 1996 update reflect a reduction of \$569 million in the Rail Capital Program. Reduced costs reflect a lower inflation rate in the out-years of the 1995 LRTP and untested aggressive cost containment efforts as described below.
- The Rail Operations Program is reduced by \$756 million or 14% due to the \$398 million cost containment measures implemented by the MTA Board and lower escalation factors over the term of the Plan.

Cost Containment Efforts. During the adoption of the 1995 LRTP, the MTA Board of Directors requested development of a cost containment plan for the MTA for ongoing and future projects. This request resulted in an evaluation of planned projects and services throughout the MTA to determine if costs could be reduced without impacting the delivery of service or project completion dates.

The MTA Board of Directors created a special committee on Cost Containment, Contracts, and Efficiency which acts as a focal point to develop cost cutting strategies and new ways to do business. A particular emphasis was placed on existing contracts that begin to sharply escalate in cost.

To prepare a cost containment program, a multi-departmental task force within the MTA worked with the Value Engineering study group from Fluor Daniel Corporation to consider all viable options to provide the same functions on planned projects at less cost. Several recommendations for cost savings were adopted by the MTA Board of Directors. Among these were:

- Metro Red line east side extension tunneling cost reduction of \$15 million by reducing the depth of cut-and-cover modular construction;
- Reducing the number of L.A. Rail Cars ordered by 22 (reduction from 74 to 52) with an associated cost savings of \$30 million;
- Rail operating cost savings based on updated and "actual use experience" derived from the three years of Metro Red Line operations and adjusting train frequency based on demand from the 1995 LRTP created a \$398.5 million savings over 20 years;
- Cost reductions on the Pasadena Metro Blue line totalling \$193.9 million were achieved partly by delaying the completion date, reducing the number of contracts, and adjusting station platforms and right-of-way needs.

Cost containment has become an integral part of the MTA project evaluation process in the last two years. Board management of contract contingency line items has been increased to improve oversight and expenditure control. This ongoing Cost Containment process will continue to serve as a tool in MTA's project construction planning, operations, and programming departments throughout the MTA to "value engineer" all programs without already affecting delivery of service or mobility.

FIGURE II-1

MTA LONG RANGE TRANSPORTATION PLAN

(\$ millions escalated)

Projects/Programs		Total Cost
TRANSIT CAPITAL		
RAIL	RED LINE Segment 1	1,417.9
	RED LINE Segment 2	1,446.3
	RED LINE Segment 3	
	- North Hollywood	1,310.9
	- Westside to Pico/San Vicente	491.5
	- Eastern to Indiana	979.6
	PASADENA LINE Union Station to Sierra Madre Villa	998.0
	San Fernando Valley East/West	1,081.9
	RED LINE Western Extension to I-405 Fwy.	3,110.7
	RED LINE Eastern Extension to Whittier/Atlantic	1,242.2
	RED LINE Segments 2 and 3 Station Enhancements	100.6
	GREEN LINE Norwalk to El Segundo	722.4
	Metrolink	179.2
	LA Car	257.6
	Miscellaneous Rail/Rehabilitation 1	1,635.4
	Environmental Clearance/Study Costs	416.7
BUS	Replacement/Maintenance/Expansion	3,558.0
OTHER	Union Station Gateway Transit Center	149.6
	Subtotal Transit Capital	19,098.5
TRANSIT OPERATIONS		
RAIL	MTA Rail Operations and Metrolink	5,376.0
BUS	MTA & Municipal Operators	21,853.2
	Subtotal Transit Operations	27,229.2
HIGHWAY/MULTIMODAL CAPITAL		
HOV	Route 5 - Route 134 to Route 14	104.5
	Route 5 - Route 10 to Route 134	443.0
	Route 5 - Orange County Line to Route 605 (interim project)	117.8
	Route 10 - Route 110 to Route 405 (Conversion)	10.7
	Route 10 - Baldwin Ave to Route 605	73.5
	Route 14 - Route 5 to San Fernando Road	13.9
	Route 14 - San Fernando Road to Escondido	62.6
	Route 14 - Escondido to Pearblossom	63.3
	Route 14 - Pearblossom to P8	32.7
	Route 30 - 210 Fwy to Foothill	13.7
	Route 57 - Orange County Line to Route 60	21.9
	Route 60 - Route 605 to Brea Canyon Road	76.2
	Route 60 - Brea Canyon Road to San Bernardino Cty Line	43.1
	Route 91 - OCL to Route 605	0.7
	Route 118 - Ventura County Line to Route 5	42.0
	Route 134 - Route 101/170 to Route 210	32.1
	Route 170 - Route 101 to Route 5	13.4
	Route 405 - Orange County Line to Route 110	79.8
	Route 405 - Route 101 to Route 5	14.8
	Route 405 - Route 101 to Route 10	200.4
	Route 405 - Route 10 to Route 105	133.1
	Route 605 - Orange County Line to Route 10	59.0

Source: 1995 LRTP

FIGURE II-1 (Contd.)

MTA LONG RANGE TRANSPORTATION PLAN

(\$ millions escalated)

Projects/Programs		Total Cost
HOV (cont.)	Route 5/14 Interchange	24.2
	Route 57/60 Interchange	123.7
	Route 10/605 Interchange	29.7
	Route 60/605 Interchange	90.7
	Route 5/405 Interchange	63.1
	Route 118/405 Interchange	54.8
	Route 91/605 Interchange	68.2
	Route 105/605 Interchange	61.8
	Route 170/134 Interchange	63.9
	Route 5/118 Interchange	88.0
GAP CLOSURES	Route 30 - Route 66 to San Bernardino County Line	342.2
	Route 126 - Arterial Widening	46.5
	Route 138 - Avenue T to 90th	30.5
	Route 138 - Widen from 90th to 165th	62.4
	Route 710 - ROW Preservation Only	5.1
	Route 710 - Funding for Project Completion	1,409.6
OTHER PROJECTS & PROGRAMS	Alameda Corridor	1,829.6
	Incident Management (Tow Service)	653.1
	Park and Ride/Transit Centers/DMU/Other	363.8
	Regional Bikeways	301.4
	Regional Surface Transportation Improvements	949.8
	Transportation Demand Management	584.3
	TSM - Freeway and TOS	516.6
	TSM - Local	1,172.7
	Transportation Enhancements	301.8
FUNDING PROGRAMS²	Retrofit Soundwalls	74.5
	Inter-Regional Roads	230.0
	Freeway Rehabilitation (SHOPP)	812.1
	SAFE	178.5
	Environmental Enhancement and Mitigation	20.0
OTHER	Highway Staff Support	195.5
	Subtotal Highway/Multimodal Capital	12,400.3
LOCAL RETURN	Funds used for local transportation improvements	5,398.1
OTHER	Reserve Fund (2nd decade of Plan)	720.5
	Administrative Overhead (Prop A, Prop C, TDA)	983.6
	Financing Payments	6,646.3
TOTAL LONG RANGE PLAN		72,476.5

Notes:

- 1 Includes: Systemwide Rail Costs, Other Projects (ADA, MOW, ART, Safety, Construction Security, and Rail Rehabilitation)
- 2 These are programs that are funded from their own revenue source.

Source: 1995 LRTP



Figure II-3

M MTA Long Range Transportation Plan
METRO Rail Projects

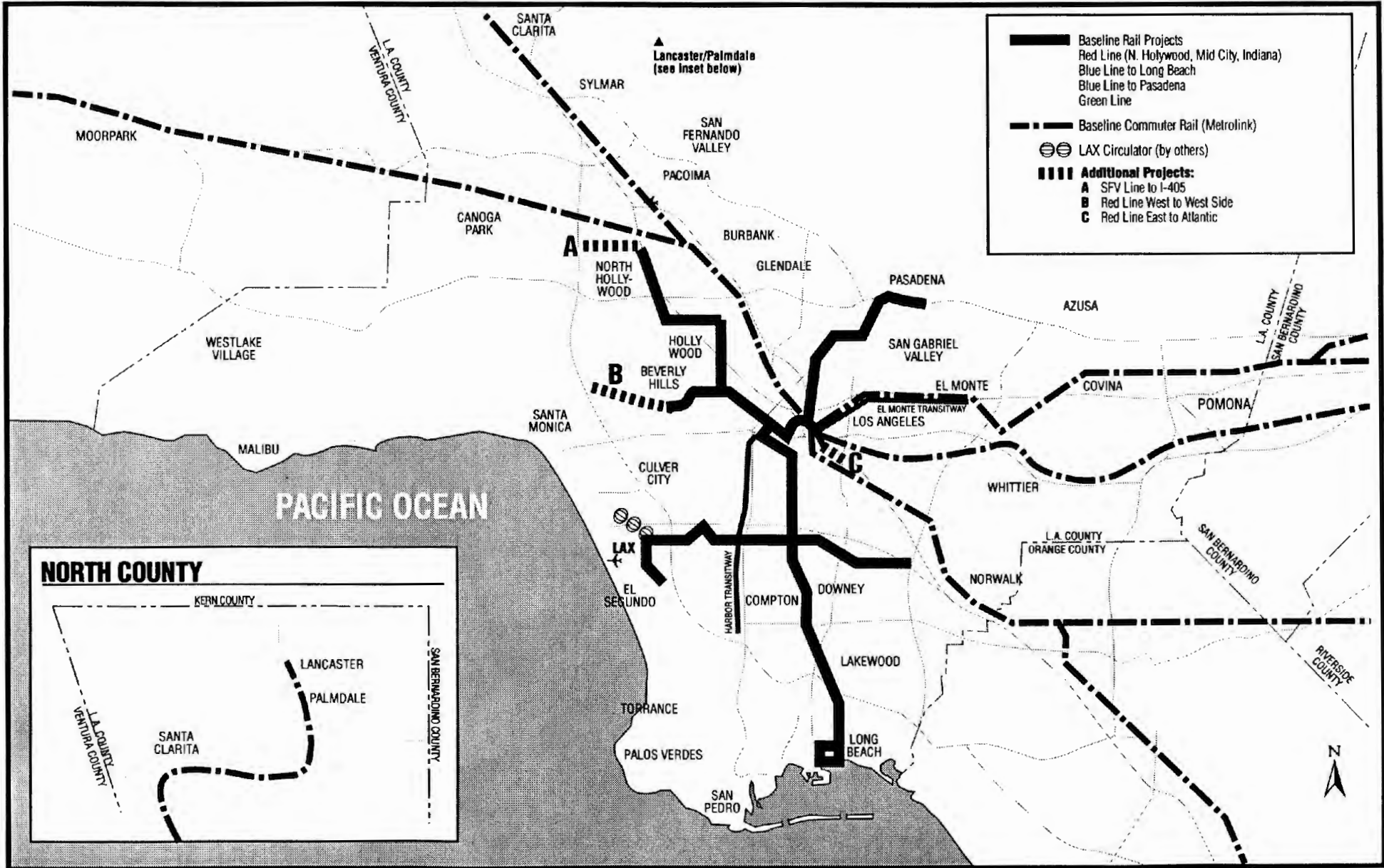


Figure II-4



MTA Long Range Transportation Plan Highway/HOV Projects

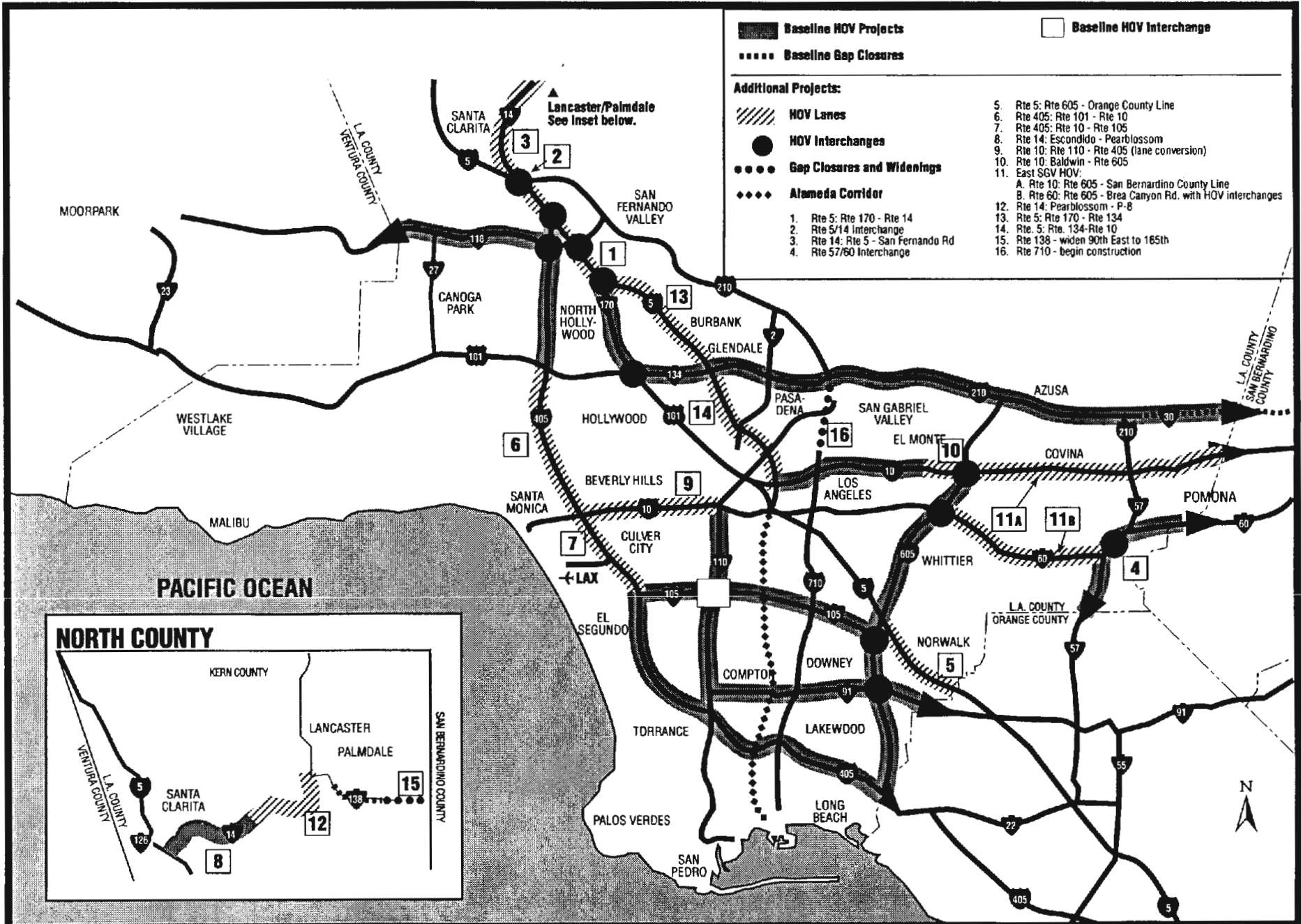
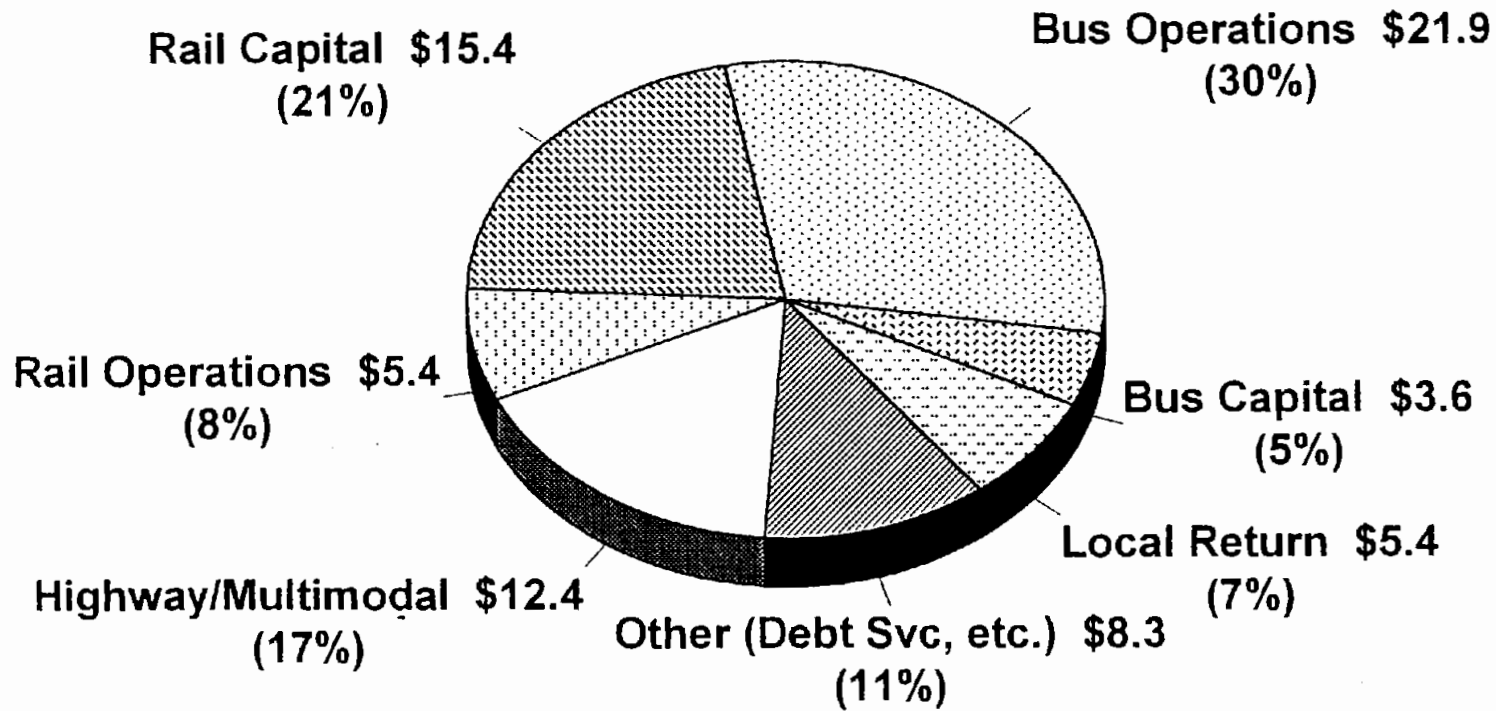


FIGURE II-5

MTA Long Range Transportation Plan Financial Summary - 20 Year Use of Funds

(\$ Billions)



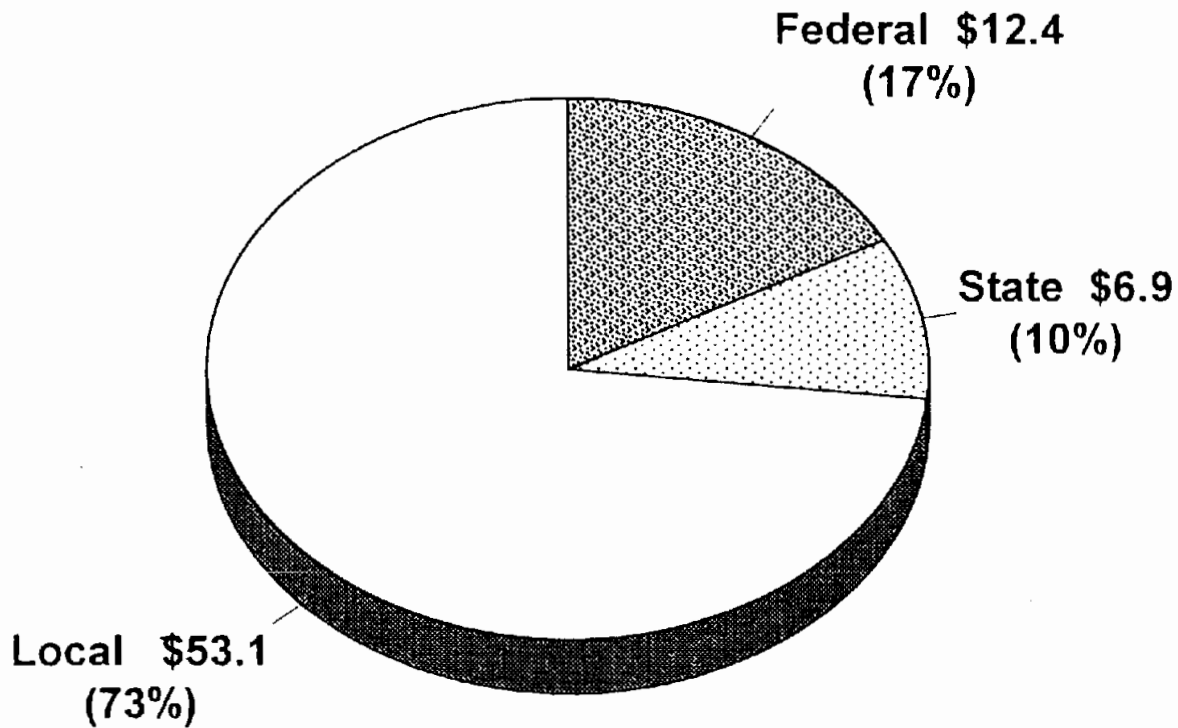
TOTAL: \$ 72.4 BILLION

Source: 1995 LRTP

FIGURE II-6

MTA Long Range Transportation Plan Financial Summary - 20 Year Sources of Funds

(\$ Billions)



TOTAL: \$ 72.4 BILLION

Source: 1995 LRTP

FIGURE II-7

MTA Long Range Transportation Plan

Financial Summary

(\$ millions escalated)

	Local Revenues	State Revenues	Federal Revenues	Total Revenues
<u>All Projects and Programs</u>				
Transit Capital				
Bus	1,233.2	22.6	2,451.8	3,707.6
Rail	7,266.8	1,807.6	6,316.5	15,390.9
Transit Operations				
Bus	20,773.7	262.6	816.9	21,853.2
Rail	5,120.8	229.0	26.2	5,376.0
Highway/Multimodal Capital	5,083.2	4,621.2	2,695.9	12,400.3
Local Return	5,398.1	0.0	0.0	5,398.1
Other (Debt Service, etc.)	8,231.9	0.0	118.5	8,350.4
Total Long Range Plan	53,107.7	6,943.0	12,425.8	72,476.5

FIGURE II-8



**MTA LONG RANGE PLAN FINANCIAL UPDATE AS OF FEBRUARY 1996
FINANCIAL SUMMARY - ADOPTED PLAN VS UPDATE**

20 Years Total
(\$ millions)

All Projects & Programs	Adopted LRP Amount	Financial Update Amount	Change From LRP	
			\$	%
Rail Operations	5,376.0	4,620.4	(755.6)	(14%)
Bus Operations	21,853.2	19,522.1	(2,331.1)	(11%)
Bus Capital	3,707.6	3,357.1	(350.5)	(9%)
Rail Capital	15,390.9	14,821.5	(569.4)	(4%)
Local Return	5,398.1	5,286.7	(111.4)	(2%)
Highway/Multimodal	12,400.3	12,611.2	210.9	2%
Other (Financing Payments, etc.)	8,350.4	8,634.8	284.4	3%
TOTAL	72,476.5	68,853.8	(3,622.7)	(5%)

FIGURE II-9



**MTA LONG RANGE PLAN FINANCIAL UPDATE AS OF FEBRUARY 1996
MAJOR REVENUE CHANGES**

Major Revenues	Adopted LRP Amount	Financial Update Amount	20 Years Total (\$ millions)	
			Change From LRP \$	%
Section 9 Operating	816.9	130.6	(686.3)	(84%)
Fare Revenues	8,529.6	6,563.7	(1,965.9)	(23%)
ISTEA-CMAQ (Total Transit & Highway)	1,418.7	1,094.2	(324.5)	(23%)
Section 9 Capital	2,277.1	1,886.5	(390.6)	(17%)
Section 3 New Starts	4,826.8	4,440.4	(386.4)	(8%)
Other Revenues ¹	54,607.4	54,738.4	131	0%
TOTAL	72,476.5	68,853.8	(3,622.7)	(5%)

NOTE:

1. Refer to Attachment B-Chart 2 for a listing of the components of other revenues.

FIGURE II-10



MTA LONG RANGE PLAN FINANCIAL UPDATE AS OF FEBRUARY 1996

OTHER REVENUE SOURCES AND PROGRAMS

Other Revenues & Programs	Adopted LRP Amount	Financial Update Amount	20 Years Total (\$millions)	
			Change From LRP \$	%
Local Sales Tax Proposition A & C, TDA Article 4, TP & D/STA Program, Bonds - Transit & Highway	39,008.0	38,896.4	(111.6)	0%
Other State Flexible Congestion Relief, Alameda Corridor, Local TSM, Miscellaneous System Improvements, Fwy. Rehab. -SHOPP, Incident Management Fwy. Service Patrol, TDM, Proposition 108, Proposition 116, State ISTEAs, TCI, Inter-Regional Roads, SAFE, State/Local Partnership, TSM (Discretionary), TSM (ISTEA Match), Retrofit Soundwalls	10,968.3	11,185.1	216.8	2%
Other Federal ISTEAs-STP, Section 3 Rail Mod, Federal Highway Demo Projects, ISTEAs - Transportation Enhancements	2,381.4	2,144.4	(237.0)	(10%)
Other Revenue & Program Costs	2,249.7	2,512.5	262.8	10%
TOTAL OTHER REVENUES	54,607.4	54,738.4	131	0%

TA Funding Source Eligibility - Based On Financial Update February 6, 1996

9/20/96

REVENUE SOURCES	Rail		Bus		Highway/Multimodal	
	Capital	Operations	Capital	Operations	Highways	TDM
LOCAL REVENUES						
Proposition A						
Proposition A 35%	A	A				
Proposition A 40%	E	E	E	A		
Proposition C						
Proposition C 5%	E	A	E	A		
Proposition C 10%	A	A	E ₍₁₎			
Proposition C 25%	A		E ₍₂₎		A	A
Proposition C 40%	A	A	A	A		
Bus & Rail Revenue						
farebox	E	A	E	A		
Other Funds						
Local Funds	A	E	E	E	A ₍₃₎	A
Private	A					
Advertising and Auxiliary Revenues				A		
Bonds/Financing Mechanisms						
Benefit Assessments	A	E				
Financing	A		A			

TA Funding Source Eligibility - Based On Financial Update February 6, 1996

9/20/96

REVENUE SOURCES	Rail		Bus		Highway/Multimodal	
	Capital	Operations	Capital	Operations	Highways	TDM
STATE REVENUES						
DA Article 4	A	A	A	A		
Flexible Congestion Relief	A				A	
State Rail Bonds	A					
State Transit Assistance (STA)	E	A	E	A		
Transit Capital Improvement (TCI)	A		E ₍₄₎			
State TSM Match	A		E ₍₁₎		A	E
State & Local Partnership	E				A	
Inter-Regional Roads					A	
Soundwalls					A	
State Highway Operation and Protection Program					A	
FEDERAL REVENUES						
FTA - Section 3	A		A			
FTA - Section 9	A	E	A	A		
STEAM - CMAQ	A	A ₍₄₎	A	A ₍₄₎	A	A
STEAM - STP	A		A		A	A
STEAM - STP Trans Enhance	E		A		A	
Fed. Highway Demo Projects					A	

Notes: A - Revenues allocated to these modes.

E - Eligible for these uses although none allocated.

1 - Transit center uses only.

2 - Proposition C 25% is eligible for construction of transit ways including bus ways, carpool lanes, and operational and interchange improvements.

3 - Ports and Port user fees on the Alameda Corridor are allocated for highway uses in the Long Range Transportation Plan.

4 - Eligible for these uses, excluding rolling stock.

5 - Revenue eligible and allocated for first three years of new service only.

*Section III***METHODOLOGY FOR TRANSPORTATION ANALYSIS**

This section describes the main analytical tools used for evaluation of transportation projects and programs. This section also describes methods used to update the "mobility challenge," which provides the framework for understanding what future transportation problems MTA is trying to solve.

A. EVALUATION TOOLS FOR TRANSPORTATION PROJECTS AND PROGRAMS**1. Travel Demand Simulation Model**

The primary tool used in evaluating the projects and programs in the 1995 LRTP is the MTA's travel demand simulation model. This model uses a traditional four-step process generally employed by travel forecasting models throughout the United States: (1) trip generation, (2) trip distribution, (3) mode choice, and (4) network assignment. This process is graphically depicted in Travel Forecasting Model Process (Figure III-1).

The MTA Model is used to forecast the travel response to transportation system and policy changes based upon currently-known travel behaviors. This behavior modeling is based upon various travel surveys conducted in the Southern California region over the past twenty years including the decennial census, the 1991 Household Travel Survey, and on-board transit surveys. A summary of key data sources used as inputs in the model is presented in Travel Forecasting Model Data Requirements (Figure III-2).

For the 1995 LRTP, the travel demand model was run using demographic forecasts for the year 2015 from the Southern California Associated Governments (SCAG). The model used a transportation network based on existing facilities plus projects already funded or committed which would be in place by 2015. Performance of this baseline condition defined the "mobility challenge" by describing how future travel in the year 2015 would deteriorate significantly.

From this starting point, each alternative transportation project or program was added individually and the model was run to assess incremental changes in performance. Outputs from the model were used to calculate specific performance measures used by the MTA.

2. Performance Measures

Based on the MTA's overall mission statement, measures which quantify impacts to mobility, air quality, and cost-effectiveness were developed for the 1995 LRTP. The MTA intends to use these same measures for the LRTP update. These measures are intended to be applicable regardless of transportation mode, and are as follows:

Mobility Index	Measures person flow in the transportation system. Represents the average vehicle occupancy multiplied by speed. A higher index is desirable since it represents either moving people in fewer vehicles, moving people faster, or both.
Air Quality Index	Measures total mobile source pollutant emissions. Estimates the total weight of carbon monoxide, oxides of nitrogen and reactive organic gases from personal transportation modes. A lower index is desirable since it represents fewer emissions.
Cost-Effectiveness Index	Measures cost of transportation improvement per travel time savings and pollutant emissions reductions.

The basic components of these measures are expressed in Figure III-3. In addition to these three indices, the effect on mode share is also reported. Alternatives increasing the proportion of trips taken by transit or carpool/vanpool (and therefore reducing the proportion of trips taken by single-occupant automobile) are considered more desirable.

3. Federal Evaluation Factors

For projects to qualify for federal transportation funds, local jurisdictions must provide short and long term transportation plans including these projects, addressing 15 "metropolitan planning factors." The MTA used these factors for qualitative evaluation of each individual project or program. These same factors will also be used in the LRTP update process. These factors include:

- Efficient Use of Existing Facilities
- Congestion Relief (both reactive and proactive)
- Effects on Land Use & Consistency with Land Use Plans
- Access to Ports, Airports, and Intermodal Facilities
- Social, Economic, Energy, and Environmental Effects
- Increased Security through Effective Capital Investments
- Connectivity of Roads within/outside the Metropolitan Area
- Efficient Freight Movement
- Energy Conservation
- Inclusion of Enhancement Projects - identifying policies, criteria

- Consideration of all Projects to be undertaken, regardless of funding source
- Transportation Needs identified through six Management Systems
- Preservation of Rights-Of-Way for future transportation projects
- Use of Life Cycle Cost
- Methods to Expand and Enhance Transit Services and Increase Use

In addition, federal regulations require the MTA to ensure that no single user group is adversely affected or discriminated against in carrying out the plan. This is called a "Title VI" population subgroup analysis.

Final Exercise

Once performance of individual projects and programs is analyzed, different scenarios can be developed for testing. These scenarios include different combinations of higher-performing projects and programs. Overall performance can be expressed in terms of the performance of the mobility index, air quality index, cost effectiveness index, mode share, and effect on transportation system speeds.

B. UPDATING THE TRANSPORTATION ANALYSIS

Figure III-4 (table) on the following pages highlights some of the major input assumptions that affect the outcome of the MTA Model travel simulation forecasts. Some assumptions are based upon regulatory mandates and are provided by independent external agencies, which standardize planning activities at the statewide and federal levels. These include the use of the SCAG Growth Forecast, the State Department of Finance population projections, and the decennial U.S. Census. Some are driven by current policy, which includes the transit fare structure and the HOV occupancy requirements. Still others are simply the best available estimate of current trends projected into the future, such as the trends in parking costs, fuel cost and fuel consumption that serve as components of auto operating cost. The model's assumptions on transit fare structure will be modified to reflect the recent settlement of the MTA fare lawsuit.

Also, the MTA has continued to improve its analytical tools since the adoption of the 1995 Long Range Transportation Plan. A panel of modeling experts was convened in January 1995 to provide review and advice on the improvement of the MTA Model. Additional improvements in the modeling software and in the hardware technology provide capabilities that were not available during the 1995 Plan development. Some of these improvements are highlighted in Figure III-4.

C. UPDATING THE "MOBILITY CHALLENGE"

The 1995 LRTP described the "mobility challenge," which was an analysis of what travel conditions would be expected in the future as assessed by the transportation model. Since the Long Range Transportation Plan's adoption in 1995, SCAG has developed updated demographics for the region, and a new planning horizon—year 2020 instead of 2015—is used. While SCAG's new forecast slightly increases the expected population growth in the SCAG region, the population growth within Los Angeles has been revised slightly downward.

The 1996 SCAG Growth Forecast significantly adjusted employment levels in Los Angeles County. Reflecting the loss of employment in the county due to a recession in the early 1990's, the year 2020 forecast of total employment (5.81 million) is less than was previously assumed for the year 2015 (5.94 million). Figures III-5 and III-6 provide comparisons of the prior and updated population and employment forecasts.

The most significant aspect of the SCAG 1996 Growth Forecast for Los Angeles County is the redistribution of population and employment in the future. Compared to the 2015 forecast, year 2020 population in the central core and outlying areas increases while the population in some inner suburbs decreases. This same trend is even more dramatic in the employment projection since the county as a whole has less employment in the current 2020 forecast than in the prior 2015 forecast.

The MTA model was run using these updated demographic forecasts to understand how this may affect our understanding of travel patterns in the future. Figures from III-7 onward summarize year 2020 population and employment densities; highway speeds; travel times to selected destinations; and average speeds by mode type.

*Section IV***METHODOLOGY FOR FINANCIAL/ECONOMIC
ELEMENT ANALYSIS****What and how is the financial modeling done?**

The financial model is a tool to determine the MTA's financial capacity to fund transportation programs and projects. These cash flows establish the funding levels for all projects and programs based on the legal mandates of how the funds received can be used. In the years ahead projections are made on what will be available based on past funding levels, inflation, growth in sales tax, revenue from service, and an assessment of state and federal funding possibilities.

Once the individual project costs are determined, funds are assigned. Consolidated summary tables are developed for groups of projects by transportation mode. (Categories and sources are described in Figure IV-1). These summaries are used to show financial capacity in the long term to the type of projects that can be afforded based on projected revenues. Once the financial capacities are determined, affordable alternatives are developed and evaluated based on performance criteria (mobility, air quality and cost-effectiveness). The plan reflects the projects that perform well when this criteria is applied in conjunction with funding.

There are over thirty separate sources from which the MTA receives funding, illustrated in Figure IV-2. The money for these sources primarily comes from sales and gasoline taxes. Formulas allocating Los Angeles County's share involve such factors as local population, bus revenue hours and miles of passenger railroad tracks and state highway miles.

For certain projects, the MTA depends on other funding sources to contribute a share of the project cost. This is the case for what is called a Full Funding Grant Agreement which MTA has with the federal government on the Red Line project. At the state level, MTA receives specific project funding from seven year State Transportation Improvement Program (STIP).

Figure IV-3 (table) describes the main purposes of the model while distinguishing what the model does not do.

How does the economic health of Los Angeles County come into this plan?

The Long Range Transportation Plan projects public expenditures on transportation related items in Los Angeles County until the year 2020. It is estimated that over \$100 billion will be spent during this time frame to accomplish the goals and projects identified in the plan.

The Long Range Transportation Plan supports the regional economy in five ways:

- Subsidy of transportation costs (makes transportation more affordable);
- Construction of transit and highway projects (creates jobs);
- Bus and rail operations (provides access to jobs);
- Highway improvements; and
- Indirect impacts caused by the increased flow of goods and services in the economy.

An evaluation by an independent consultant will examine the effects of transportation expenditures upon the Los Angeles County economy. This evaluation will forecast the projected impacts of the investments in bus, rail and highway modes. The evaluation will demonstrate the impact on:

- Employment
- Gross regional product;
- Spendable income; and
- Population.

Updating the financial/economic analysis

One of the first steps in the LRTP update is to update all existing information and ensure projected revenues have been checked against the source. Then a series of assumptions regarding future funding are established such as the continued receipt of funding and at what level. These assumptions are made based on economic projections of various governmental agencies like the US Department of the Treasury, California State Controller, California Board of Equalization, and the annual UCLA Business Forecast and Outlook project.

Sometimes the expected level of funding is not received from the other funding sources due to budgetary or political factors beyond the control of the MTA. This makes it necessary to continually evaluate anticipated funding. When change occurs, staff revises the annual revenues and cost projections in the financial model to identify in which years the funding shortfalls will occur. If necessary, those bonds are issued to provide revenue when it is needed and then paid back over a period of years, much like a homeowners mortgage.

The LRTP update process will include an evaluation of how all funding is applied (new projects, operating and capital). This process will entail financial leveraging techniques (bonding, use of funds, timing) that would help maintain all projects and services in the plan. It will involve adjusting the timing and sequence of proposed construction schedules or shifting funding sources to different years than originally planned to achieve an overall balance on the availability of specific funding sources.

The implementation of the all projects and services in the plan is dependent upon the availability of local, state, and federal revenue at the levels projected. Major changes in state and federal policy, or unanticipated shifts in the economy, will impact the

implementation as proposed. The update will include analysis of the impact of fare revenues as agreed upon in the proposed recent settlement of the MTA fare lawsuit.



*Section V****POSSIBLE POLICY DIRECTIONS FOR THE LONG RANGE TRANSPORTATION PLAN ELEMENTS***

The worksheet on the following page has been provided as a method of gathering public input:

- The first column covers three major elements of the LRTP. Within each element is a program (i.e. Transit Element contains bus and urban rail programs).
- The second column includes example projects within each Element and program.
- The column labeled **% in LRTP** shows the percentage each of the Elements and programs represents within the 1995 LRTP. These percentages are roughly based upon funding as applied to projects and exclude local funding.
- Columns labeled Slightly Less, Moderately Less, Much Less, and Slightly More, Moderately More, Much More, are provided to assist you in determining the level of emphasis each Element or program within each Element should be accorded.

Participants are asked to comment on the relative proportion of investment for each Element and program within the Element by checking one of the columns to suggest a change in the LRTP emphasis.

Please keep in mind that there are legal restrictions contained within the various funding sources. Cancellation or termination of any Element or program is not feasible due to statutory, fiscal restrictions and limitations. These restrictions and limitations are summarized for each LRTP Element and program area in Figure II-11. If you agree with the basic levels as indicated in the 1995 LRTP, the columns for change should remain blank. Please feel free to write any specific changes or comments on either the Elements or programs on a separate sheet of paper.

The results of the input received from this exercise will be summarized, analyzed, and incorporated into the next phase of the LRTP process.



**Figure V-1
Long Range Transportation
Plan Elements**

**Policy Framework for Discussion
Worksheet**

Element	Examples of LRTP Projects*	Much Less	Moderately Less	Slightly Less	% LRTP	Slightly More	Moderately More	Much More
Transit					79%			
Bus	Add buses, improve bus service, innovative transit service				43%			
Urban Rail	Metro Red, Blue and Green Lines				35%			
Commuter Rail	Metrolink				1%			
Highway **					12%			
Hwy. Improvements	Freeway gap closures,				5%			
	Carpool lane construction				6%			
Incident Management, Freeway Service Patrol	Freeway incident management				1%			
Multimodal					9%			
Signal Synch./ITS	Signal synchronization program, bus priority techniques, Smart Corridors, Intelligent Transportation Systems (ITS)				1%			
Transportation Demand Management	Market research, telecommuting, parking management, ridesharing				1%			
Goods Movement	Alameda Corridor -Design, implement grade separations, track consolidation projects				3%			
Regional Surface Transit (RST)	Physical street capacity improvements (i.e. widenings), bus lanes				2%			
Transit Centers	Bus, Metrolink, and/or urban rail Transit Centers; park-and-ride lots				1%			
Non-Motorized Transport	Bikeway projects, bus stop improvements, greenways, pedestrian access				1%			
					100%			

*For 1995 LRTP program specifics refer to Section II

**Highway Costs do not include state and local operating and maintenance costs.



APPENDIX A.

GLOSSARY OF TERMS

AA/DEIS	Alternative Analysis/Draft Environmental Impact Statement.
accessibility	A measure of the ability or ease of all people to travel among various origins and destinations.
ADA	Americans with Disabilities Act. A comprehensive civil rights measure signed into law July 1990, to ensure persons with disabilities receive equal access to transportation and other services.
AQMP	Air Quality Management Plan.
ART	Alternate Rail Technology vehicle. Self propelled rail car.
ATTB	Advanced Technology Transit Bus. Light weight low maintenance alternative fueled transit vehicle developed in Southern California by an MTA assisted consortium.
ATU	Amalgamated Transit Union. The union representing the MTA's mechanics and other maintenance employees.
bond	An interest-bearing promise to pay a specified sum of money - the principal - due on a specified date.
busway	A special roadway designed for exclusive use by buses. It may be constructed at, above, or below grade and may be located in separate rights-of-way or within highway corridors.
Caltrans	California Department of Transportation.
capital costs	Nonrecurring or infrequently recurring costs of long-term assets, such as land, guideways, stations, buildings, and vehicles. These costs often include related expenses, for example, depreciation and property taxes. See also operating costs.
carpool	An arrangement in which two or more people share the use, cost, or both of traveling in privately owned automobiles between fixed points on a regular basis. See also HOV.
CBD	Central Business District.

CFP	Multi-year Call for Projects. A primary process for the MTA to select projects for funding with discretionary federal, state, and local revenues.
CHP	California Highway Patrol.
CMAQ	Congestion Management and Air Quality Improvement. A source of federal ISTEA funds.
CMP	Congestion Management Program. A countywide program enacted by the state to improve traffic congestion in California's urbanized areas.
CMS	Congestion Management System. One of nine management systems required under the federal Intermodal Surface Transportation Efficiency Act (ISTEA).
CNG	Compressed Natural Gas.
COG	Council of Governments.
commuter rail	Rail passenger service operated within metropolitan and suburban rail service areas. In Southern California, Metrolink provides this type of service.
corridor	In planning, a broad geographical band that follows a general directional flow or connects major sources of trips. It may contain a number of streets and highways and transit lines and routes.
CPI	Consumer Price Index.
CTC	California Transportation Commission.
DMU	Diesel Multiple Unit. Self-propelled rail car. Also see ART.
EIR	Environmental Impact Report. A detailed report prepared under the California Environmental Quality Act (CEQA) describing and analyzing the significant environmental effects of a project and discussing ways to avoid or mitigate the effects.
EIS	Environmental Impact Statement. The same as an EIR, except prepared under (federal) National Environmental Policy Act (NEPA).
EPA	(federal) Environmental Protection Agency.

express bus service	Bus service with a limited number of stops, either from a collector area directly to a specific destination or in a particular corridor with stops en-route at major transfer points or activity centers. Express bus service uses freeways or busways where they are available.
FAP	Formula Allocation Program. Administered by the MTA, the FAP is the adopted method for allocation of federal, state, and local transit operating subsidies to Los Angeles County bus operators. The current formula allocates funds as follows: 50% based on vehicle service miles and 50% based on "fare units." Allocations are made using audited performance data.
FCR	State Flexible Congestion Relief Program.
FFGA	Full Funding Grant Agreement. A grant agreement with the FTA currently for Metro rail segments.
FHWA	Federal Highway Administration.
fixed costs	A cost that remains relatively constant irrespective of the level of operational activity; expenditures that do not vary with output (e.g., land, guideways, rent).
fixed route transit	Regularly scheduled services operating repeatedly over the same street or highway pattern on a determined schedule.
FSP	Metro Freeway Service Patrol.
FTA	Federal Transit Administration (formally Urban Mass Transportation Administration - UMTA).
FTIP	Federal Transportation Improvement Program.
FY	Fiscal Year.
guideway	In transit systems, a track or other riding surface (including supporting structure) that supports and physically guides transit vehicles especially designed to travel exclusively on it.
HCM	Highway Capacity Manual.
HOV	High Occupancy Vehicle. See also carpool.
HRT	Heavy Rail Transit (e.g., Metro Red Line).

ISTEA	Intermodal Surface Transportation Efficiency Act of 1991 is a federal program that includes funds to continue the FAU program and additional funds for congestion mitigation and air quality improvement.
ITS	Intelligent Transportation System, formerly IVHS, combines modern technology to improve transportation.
JPA	Joint Powers Authority.
LOS	Level of Service. A measure of traffic congestion levels on a highway facility based primarily on the comparison between the facility's capacity and the traffic volume it carries. Increasing levels of congestion are designated along a scale from A to F where A is for best operation (low volume, high speed), and F is for worst conditions.
LRT	Light Rail Transit (e.g., Metro Blue Line).
L RTP	Long Range Transportation Plan.
Metrolink	Name of commuter rail service in Southern California (see SCRRA).
MOA	Memorandum of Agreement.
mobility allowance	Transit service delivery technique that allows for non-fixed route service to operate within low service time periods or areas.
MOU	Memorandum of Understanding.
MPO	Metropolitan Planning Organization.
MTA	Los Angeles County Metropolitan Transportation Authority. Created in 1993 by Assembly Bill 152, the MTA is a 14-member board overseeing the merged entities of the former Los Angeles County Transportation Commission (LACTC) and Southern California Rapid Transit District (SCRTD).
NAAQS	National Ambient Air Quality Standards.
NHS	National Highway System.
operating costs	The sum of all recurring costs (e.g., labor, fuel) that can be associated with the operation and maintenance of the system during the period under consideration. See also capital costs.

origin-destination study	A study of the origins and destinations of the trips of vehicles or travelers. It may also include trip purposes and frequencies.
paratransit	Public or privately operated, regularly or dispatched on demand (delayed or real-time) providing "curb to destination" transit service. normally used in specialized application with user eligibility limitations (e.g., elderly and/or handicapped) or where demand is not sufficient to support fixed route service.
Prop A	Proposition A - Half cent sales tax passed by LA County voters in 1980 to support transit operations and rail construction.
Prop C	Proposition C - Half cent sales tax passed by LA County voters in 1990 to support transit (bus and rail) and transit related highway activities.
PUC	Public Utilities Code.
RME	Regional Mobility Element. SCAG's major policy and planning statement on the region's transportation issues and goals. It is comprised of a set of long-range policies, plans, and programs that outline a vision of a regional transportation system compatible with federal and state mobility objectives. Formerly called the Regional Mobility Plan (RMP).
ROW	Right-of-way.
RST	Regional Surface Transportation.
RTP&D	Regional Transportation Planning & Development (formerly Planning & Programming). Division of the MTA charged with transportation planning and funding implementation for Los Angeles County.
RTIP	Regional Transportation Improvement Program. This plan is required in order for the region to qualify for federal funding, which is the basis for Los Angeles County input into the State Transportation Improvement Program (STIP).
SAFE	Service Authority for Freeway Emergency. Created by the MTA, as permitted by state law, to receive one dollar from each vehicle registration within Los Angeles County. Funds are used to provide expanded and improved emergency call box services along freeways. The activities are accounted for in a Special Revenue Fund.

SCAG	Southern California Association of Governments. The Metropolitan Planning Organization for the counties of Imperial, Los Angeles, Orange, Riverside, San Bernardino, and Ventura.
SCRRA	Southern California Regional Rail Authority. Operates Metrolink.
SHOPP	State Highway Operation and Protection Program.
SIP	State Implementation Plan. A planning document required by the Clean Air Act (CAA) which serves as State's commitment to actions which will lead to the attainment of National Ambient Air Quality Standards.
SLTPP	State/Local Transportation Partnership Program.
smart corridor	Technological communication management and surveillance system integrating highway, pedestrian, and transit modes.
smart shuttle	Flexible routed vehicle assisted by modern technology, such as Automated Vehicle Locator, real-time scheduling, etc.
SOV	Single Occupancy Vehicle.
SRTP	Short Range Transportation Plan. A five-year business plan, completed every three years, which is used for internal planning by operators and the MTA, and is required to be submitted to several government entities.
STA	State Transit Assistance Fund. A Special Revenue Fund used to account for the revenue received by the MTA from the sales tax on gasoline used for transit purposes. The STA fund was created as an amendment to the Transportation Development Act of 1976.
STIP	State Transportation Improvement Program. Adopted by the California Transportation Commission (CTC), and serves as the primary vehicle for programming funds for highway projects.
STP	Surface Transportation Program -ISTEA.
TAC	Technical Advisory Committee to the MTA Board of Directors.
TCI	(state) Transit Capital Improvement Program.
TCM	Transportation Control Measure.
TDA	(state) Transportation Development Act.

TDM	Transportation Demand Management: measures to reduce travel demand and influence travel behavior.
TEA	Transportation Enhancement Act: State funding program for enhancing transit service.
TIP	Transportation Improvement Program. A program document which establishes allocation of funding for Los Angeles County highways and transit.
TMA/TMO	Transportation Management Association/Transportation Management Organization.
TOC	Transportation Operation Center - Coordinates traffic signal activity within a specified area.
TOS	Transportation Operations System - Computer based signal operations system.
TP&D	Transportation Planning & Development account of the State of California.
TPM	Transit Performance Measurement. A program, adopted by LACTC in 1981 in accordance with state law, to monitor system performance of transit operators who receive federal and state formula-driven funds (such as STA, TDA, Section 9).
transit dependent	Individual(s) dependent on public transit to meet private mobility needs (e.g., unable to drive, not a car owner, not licensed to drive, etc.)
TSM	Transportation System Management. A program of operational strategies such as improved communications, surveillance, synchronization, and control systems to maximize the person-carrying efficiency and usage of the existing transportation network.
VMT	Vehicle Miles Traveled. (1) On highways, a measurement of the total miles traveled by all vehicles in the area for a specified time period. It is calculated by the number of vehicles times the miles traveled in a given area or on a given highway during the time period. (2) In transit, the number of vehicle miles operated on a given route or line or network during a specified time period.



APPENDIX B.

SECTION III GRAPHICS



FIGURE III-1

Long Range Transportation Plan

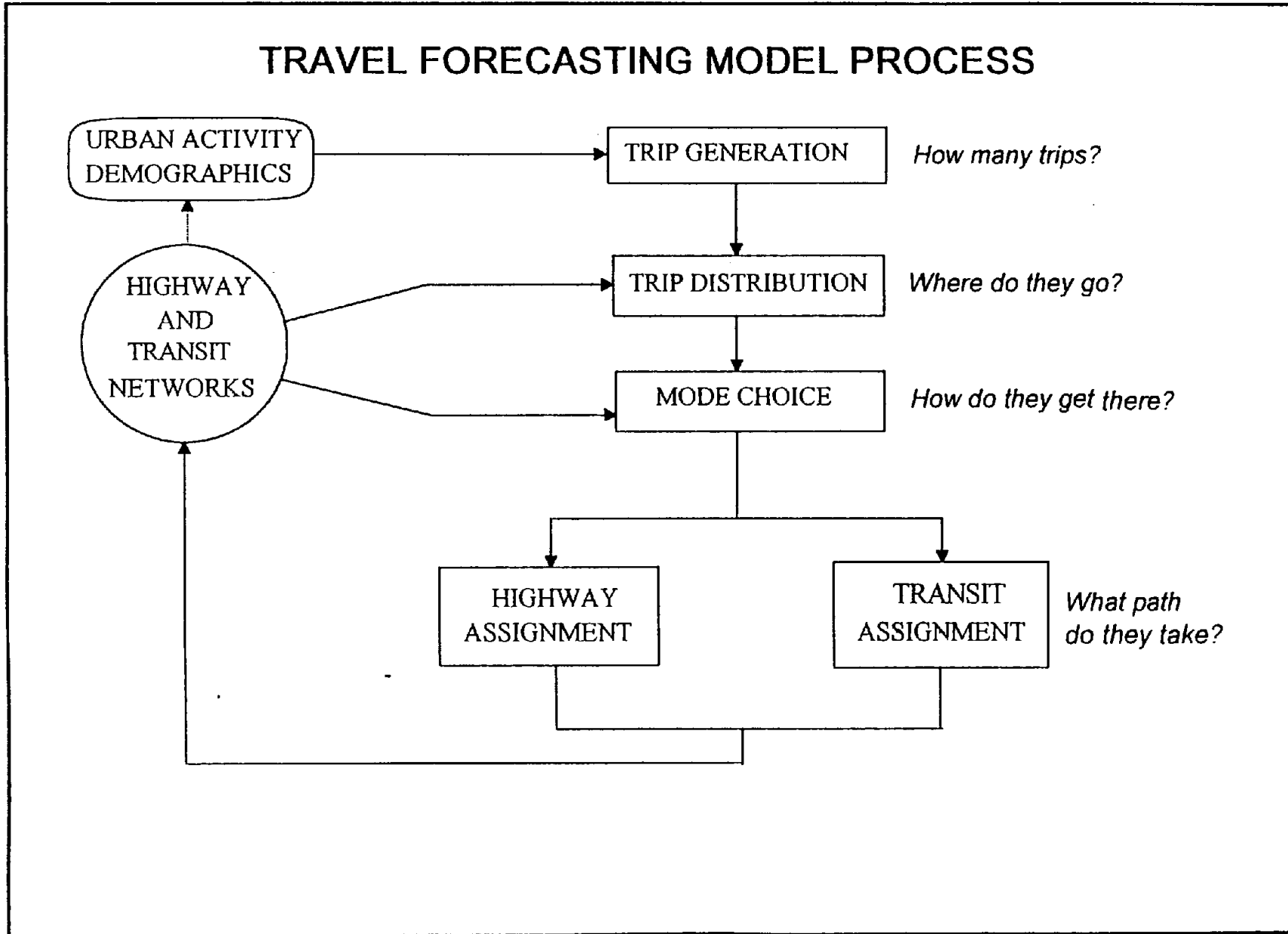


FIGURE III-2

TRAVEL FORECASTING MODEL			
Model Component	Input Data	Data Source	Output Data
Urban Activity	General Plans Population Employment Licensed Drivers	Municipalities Census Bureau/Dept of Finance Bureau of Labor Statistics/Dept of Economic Development Dept of Motor Vehicles	Population, employment, household demographic data by Traffic Analysis Zone
Highway & Transit Networks	Highway facilities Transit services	Caltrans and Municipalities Transit Operators	Zone to Zone travel time and cost by time period
Trip Generation	Population, employment, household demographics	Southern California Association of Governments	Trip productions and attractions by Zone
Trip Distribution	Trip productions and attractions by Zone Zone to Zone travel time	Trip Generation Model Transportation Networks	Zone to Zone trip volumes by purpose
Mode Choice	Zone to Zone trip volumes Zone to Zone travel time Zone demographic data Parking costs Fuel/auto operating costs Transit fares	Trip Distribution Model Transportation Networks Urban Activity Model Parking Posted Rate Surveys Cal Energy Commission Transit Operators	Zone to Zone trips by purpose and mode of travel
Network Assignment	Transportation Networks Zone to Zone trips by purpose and mode	Transportation Networks Mode Choice Model	Volumes on highway facilities and patronage on transit services

MTA LONG RANGE TRANSPORTATION PLAN

Mobility Index

$$\frac{\text{Person Miles of Travel}}{\text{Vehicle Miles of Travel}} \times \text{Speed}$$

Air Quality Index

$$\text{AQI} = \text{ROG} + \text{NOx} + (\text{CO}/7)$$

[Based on countywide total of vehicle trips and vehicle miles traveled]

Cost-Effectiveness Index

$$\frac{\Delta\$ \text{ Capital} + \Delta\$ \text{ O\&M} - \Delta\$ \text{ Non-MTA}}{\Delta \text{ User Benefits}}$$

- Where:
- $\Delta\$ \text{ Capital}$ = Change in Annualized Total Capital Costs
 - $\Delta\$ \text{ O\&M}$ = Change in Annual Operating and Maintenance Costs
 - $\Delta\$ \text{ Non-MTA}$ = Change in Annualized Non-MTA funding composed of federal, state, municipal and private contributions
 - $\Delta \text{ User Benefits}$ = Change in hours of transit and HOV travel time savings; Mobility Index units; and, Air Quality Index units

FIGURE III-4

MTA TRAVEL SIMULATION MODEL ASSUMPTIONS AND IMPROVEMENTS	
Model Component	Discussion
Urban Activity	<p>The SCAG 2020 Growth Forecast (June 1996) is used as the population and employment forecasts for Los Angeles County. This forecast increase the county population from 11.82 million in 2015 to 12.25 million in the year 2020. County employment actually declines from 5.94 million in the prior 2015 estimates to 5.82 million in the new 2020 estimate. In 1995, County population and employment were 9.34 million and 4.12 million, respectively. The 2020 Growth Forecast redistributes both population and employment from what was used to prepare the 1995 LRTP. This includes absolute population reductions in the Santa Clarita, Santa Monica, San Fernando, Beach Cities, and East San Gabriel Valley areas. While there is employment growth in the central and north parts of Los Angeles County, other suburban areas are projected to have less employment in 2020 than was earlier assumed for 2015 – including a decline of more than 100,000 employees in the Beach Cities area. The general trend noted from the 2015 to the 2020 forecast is the concentration of population in the regional core and dispersal of employment to outlying areas.</p>
Highway & Transit Networks	<p>The 1995 LRTP is assumed as the baseline transportation network for the 1997 LRTP Update. This includes 279 miles of HOV lanes, 300 buses added to the current peak fleet, 95 miles of urban rail, 201 miles of commuter rail, 130 miles of arterial bus lanes, highway gap closures and arterial street improvements. To maintain the HOV speed advantage, it has been assumed that all HOV facilities will operate with a 3+ person occupancy requirement during peak periods and 2+ person occupancy during off-peak periods.</p>

FIGURE III-4 (Contd.)

MTA TRAVEL SIMULATION MODEL ASSUMPTIONS AND IMPROVEMENTS	
Model Component	Discussion
Trip Generation	The MTA Travel Simulation Model has been enhanced with a special generator feature that accounts for the added attractiveness of major activity venues. These venues were drawn from listings of the top 25 sites from categories that include airports, hospitals, amusement parks, shopping centers, and colleges/universities. Total L.A. County daily trip generation is estimated at 27.88 million in 1995, increasing to 35.64 million in 2020.
Trip Distribution	The model sequence for the year 2020 will be "equilibrated" to achieve convergence between the trip distribution input highway speed matrix and the highway assignment output speed matrix. This methodology adjustment was suggested during the modeling Peer Review Panel review of the MTA Travel Simulation Model in 1995.
Mode Choice	The 1995 and 2020 Baseline model runs use December 1995 values for transit fares and auto operating costs. The 1995 constant dollar value for these variables will be used in all future year modeling runs. The transit fare structure assumes the implementation of fare zones on the rail system at some future date (consistent with adopted Board policy). The combination of the shifts of population and employment, and the use of the 3+ person HOV occupancy requirement results in an overall year 2020 work transit mode share of 8.22% in Los Angeles County. In 1995, the work transit mode share is estimated at 7.72%.
Network Assignment	The MTA Travel Simulation Model has recently been improved to enable the simultaneous simulation of 2-person and 3+ person vehicles in the same network. While this will not be a factor for the 2020 Baseline run, intermediate year runs will apply the standards from the HOV System Integration Plan in order to maintain HOV speed advantage. The 1995 Plan assumed that all HOV facilities operated with a 2+ person occupancy requirement.



Figure III-5



MTA LONG RANGE TRANSPORTATION PLAN (LRTP) Change In Population Estimates

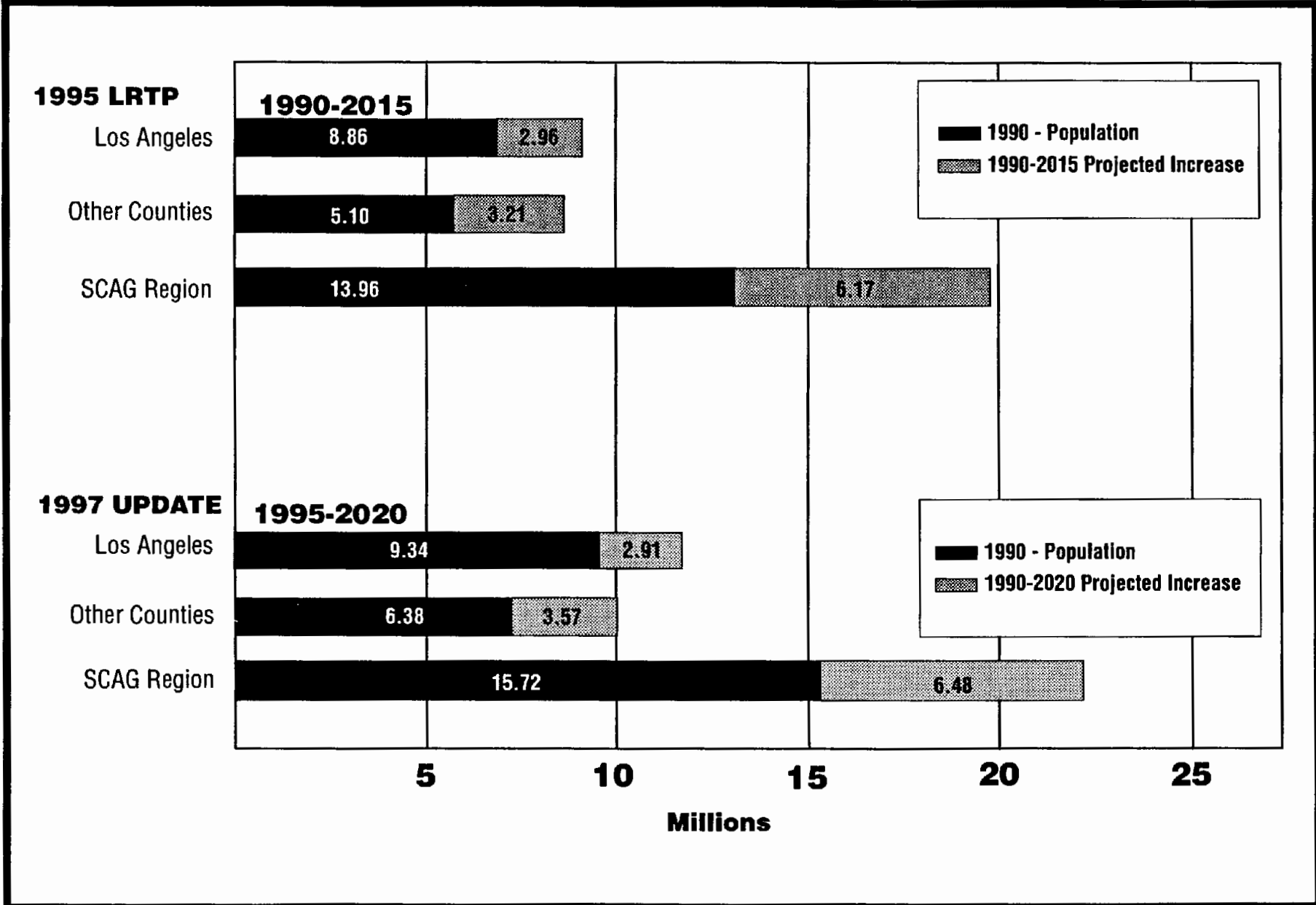
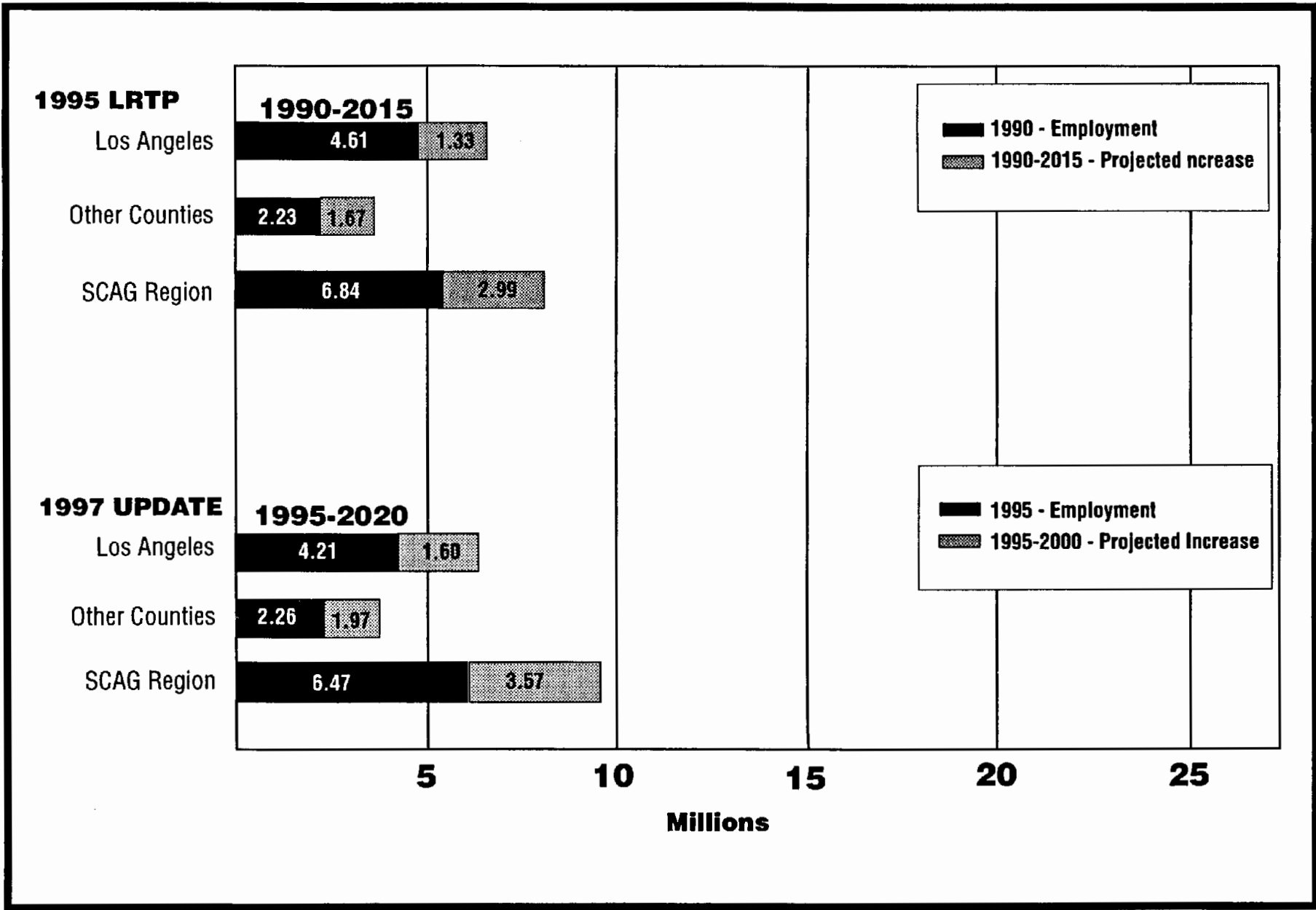


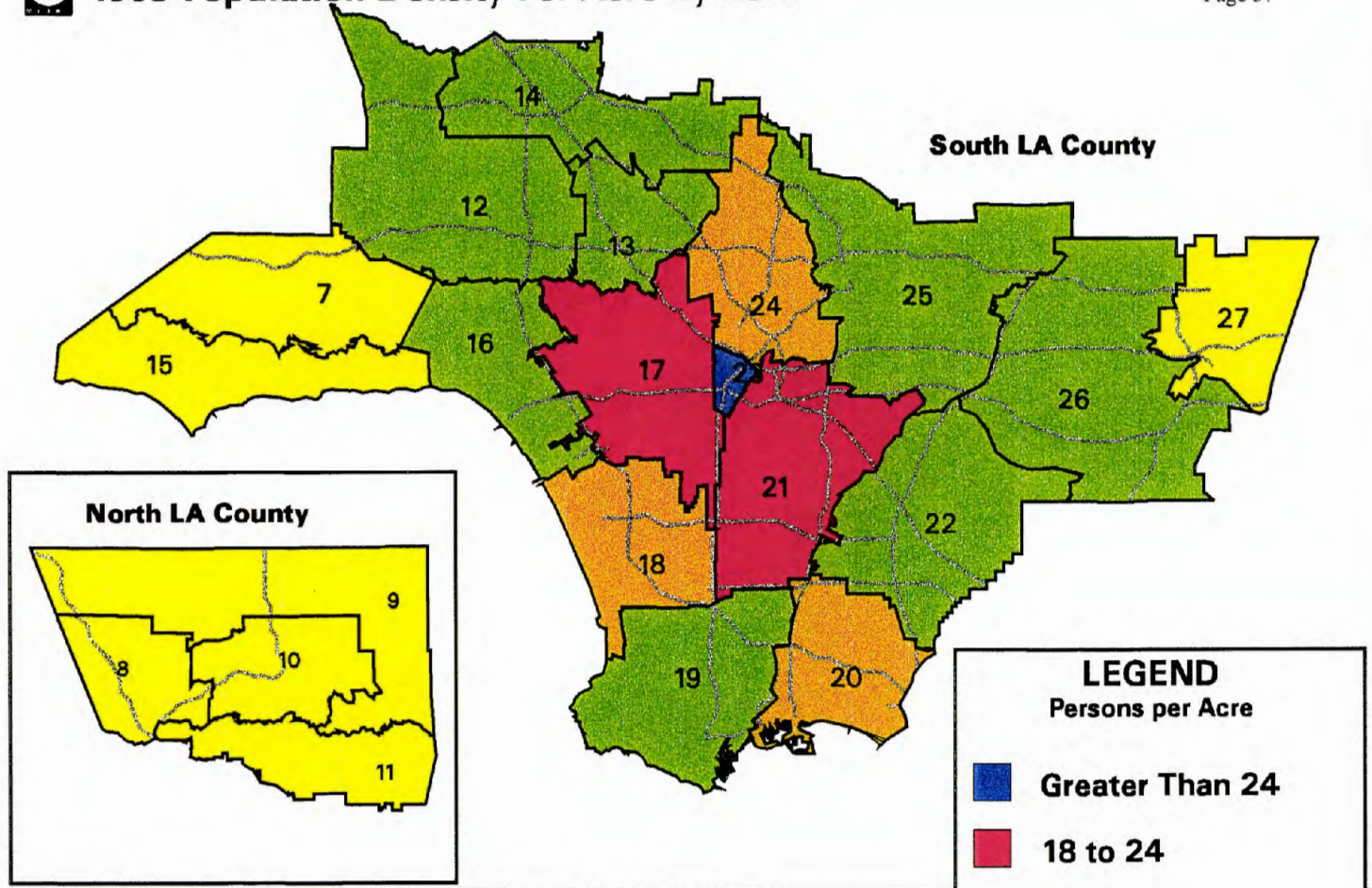
Figure III-6



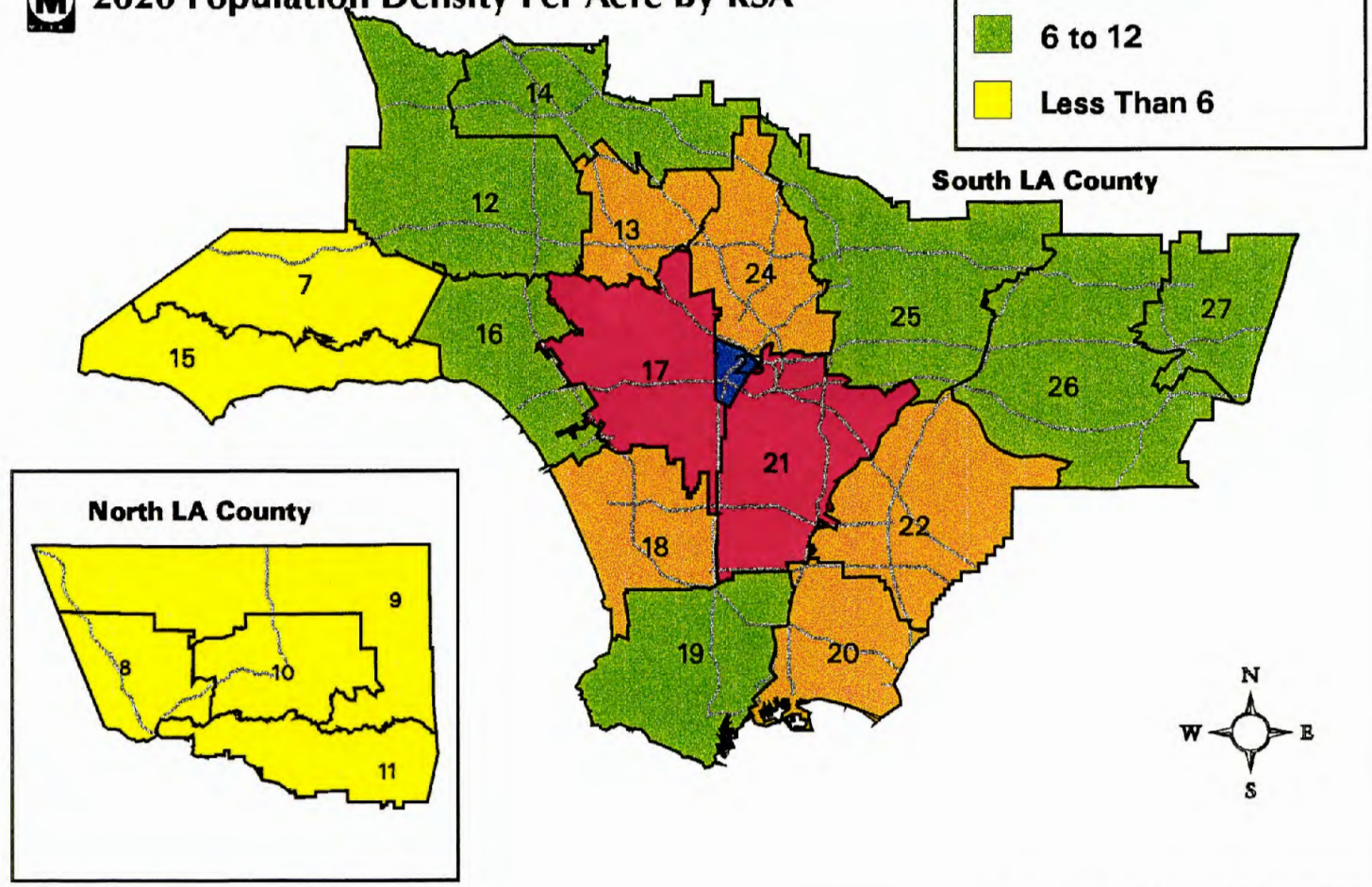
MTA Long Range Transportation Plan (LRTP) Change In Employment Estimates



M 1995 Population Density Per Acre By RSA



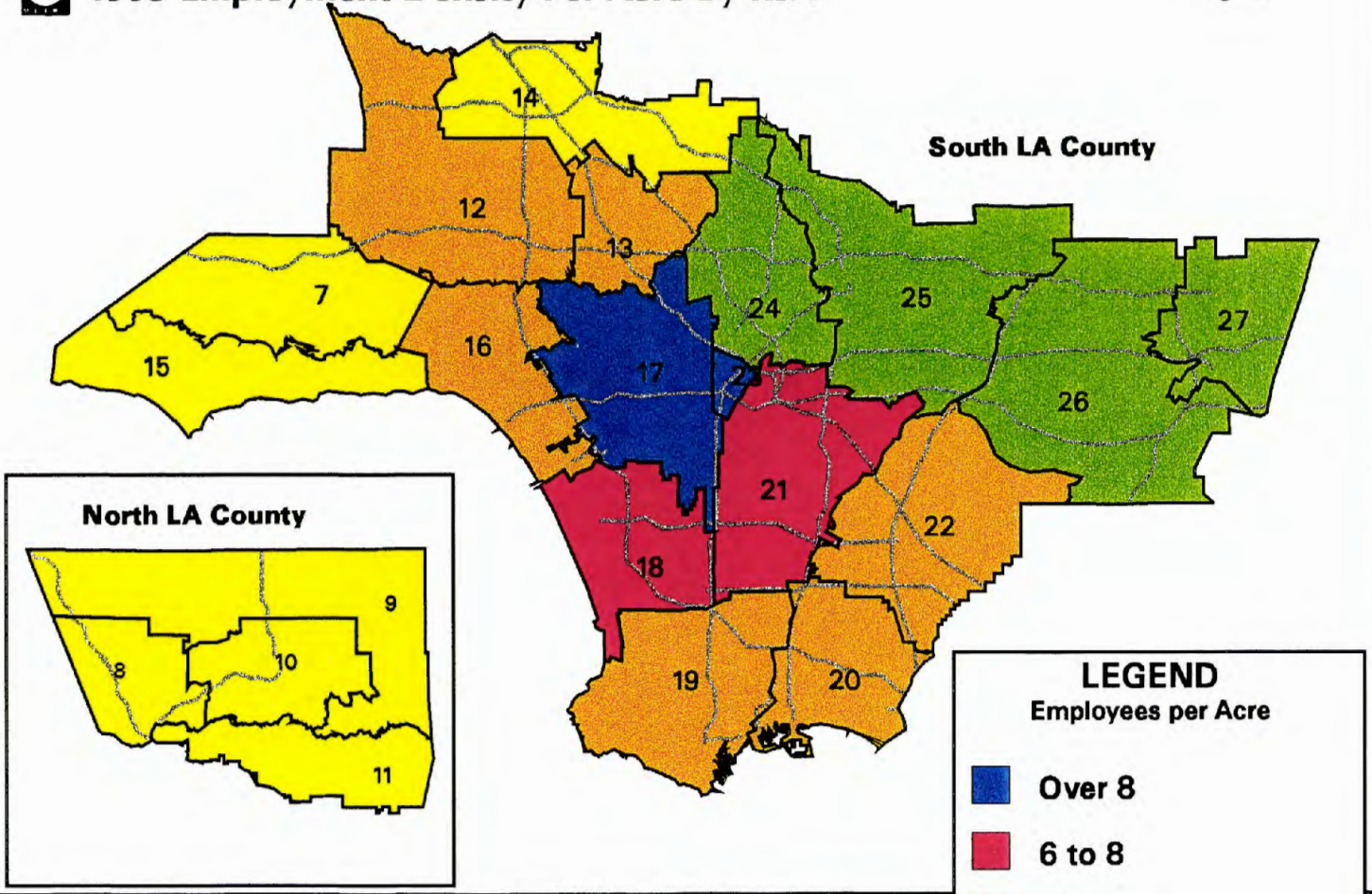
M 2020 Population Density Per Acre By RSA



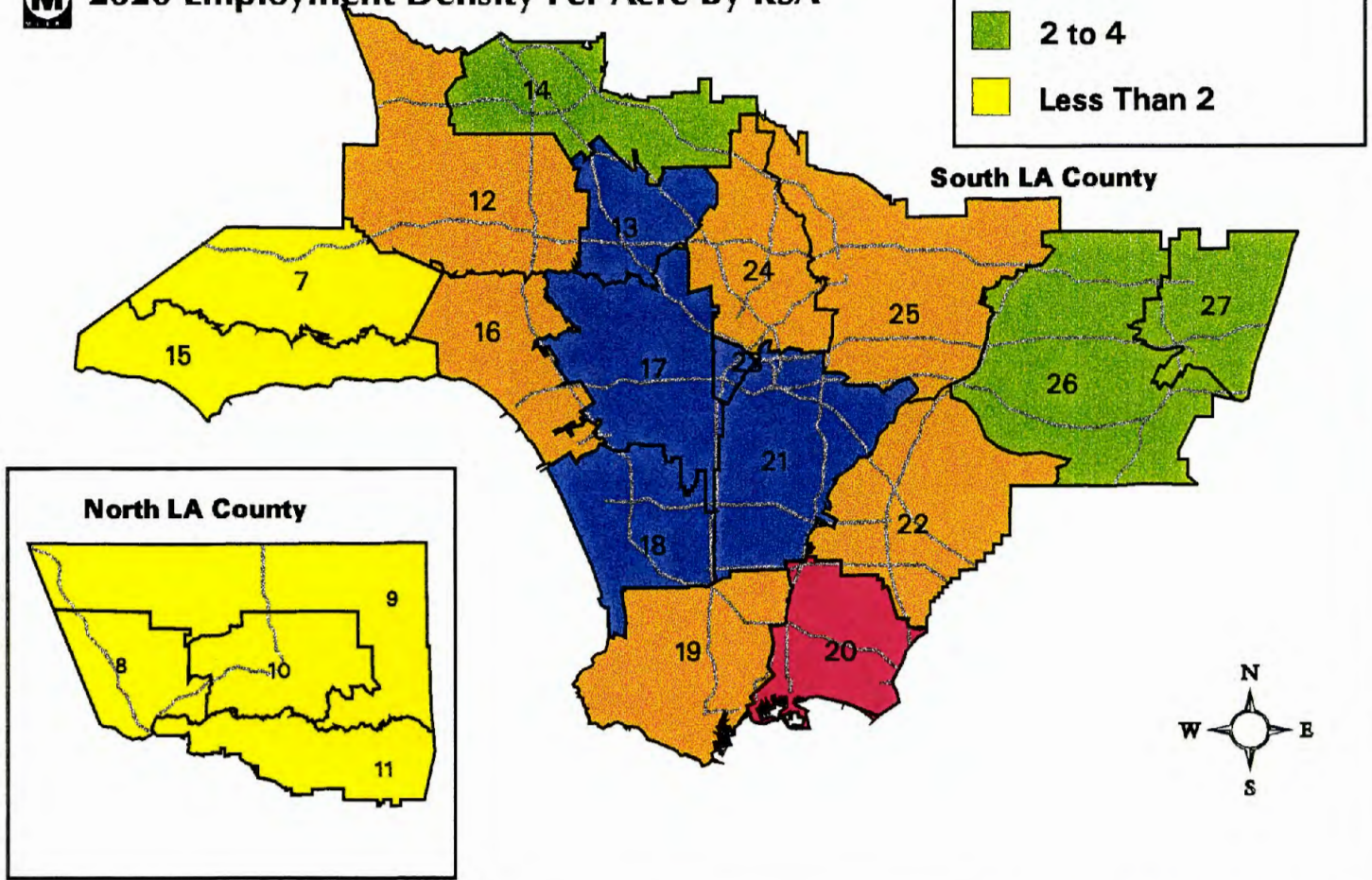




1995 Employment Density Per Acre By RSA

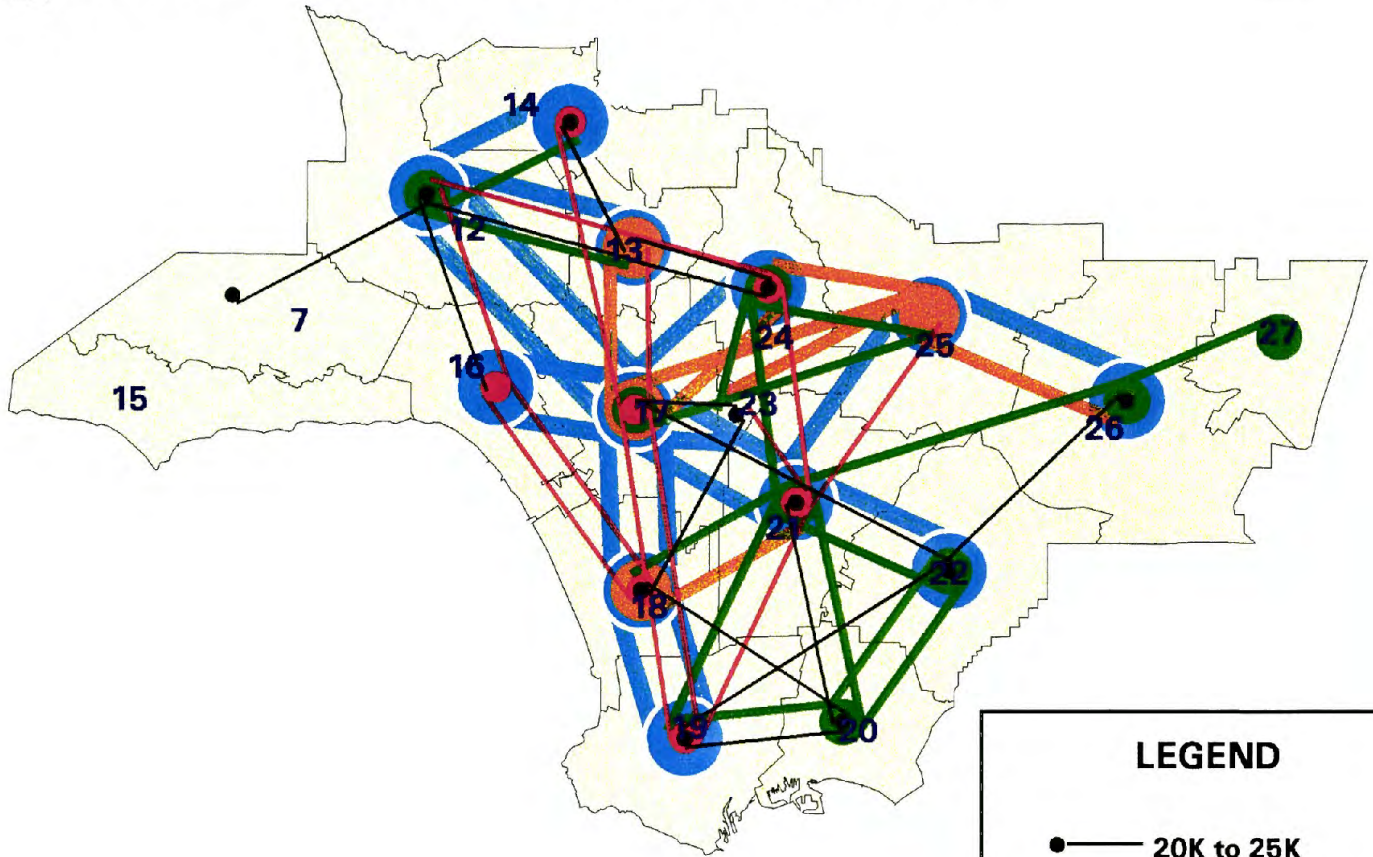


2020 Employment Density Per Acre By RSA





M 1995 HOME-BASED WORK TRIP PATTERNS

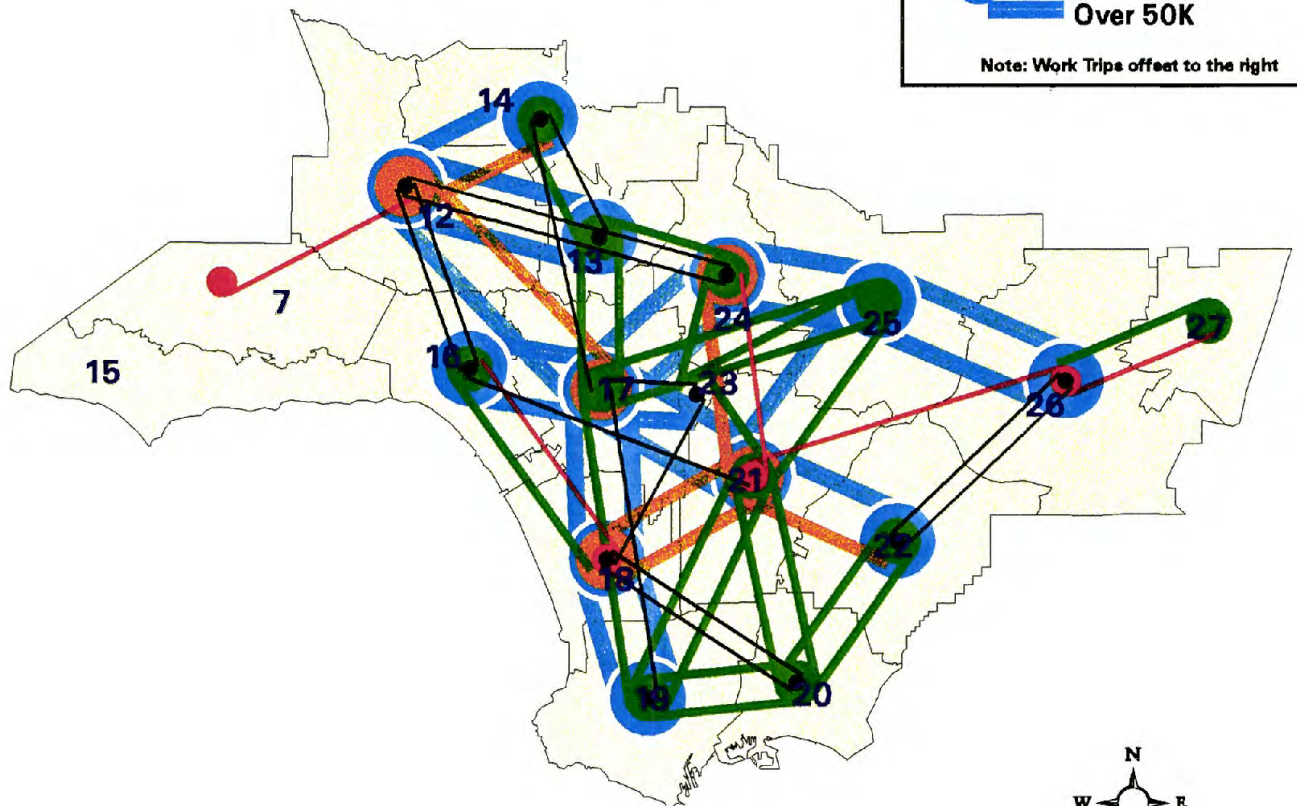


LEGEND

- — 20K to 25K
- — 25K to 30K
- — 30k to 40K
- — 40K to 50K
- — Over 50K

Note: Work Trips offset to the right

M 2020 HOME-BASED WORK TRIP PATTERNS

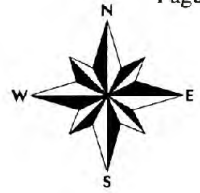






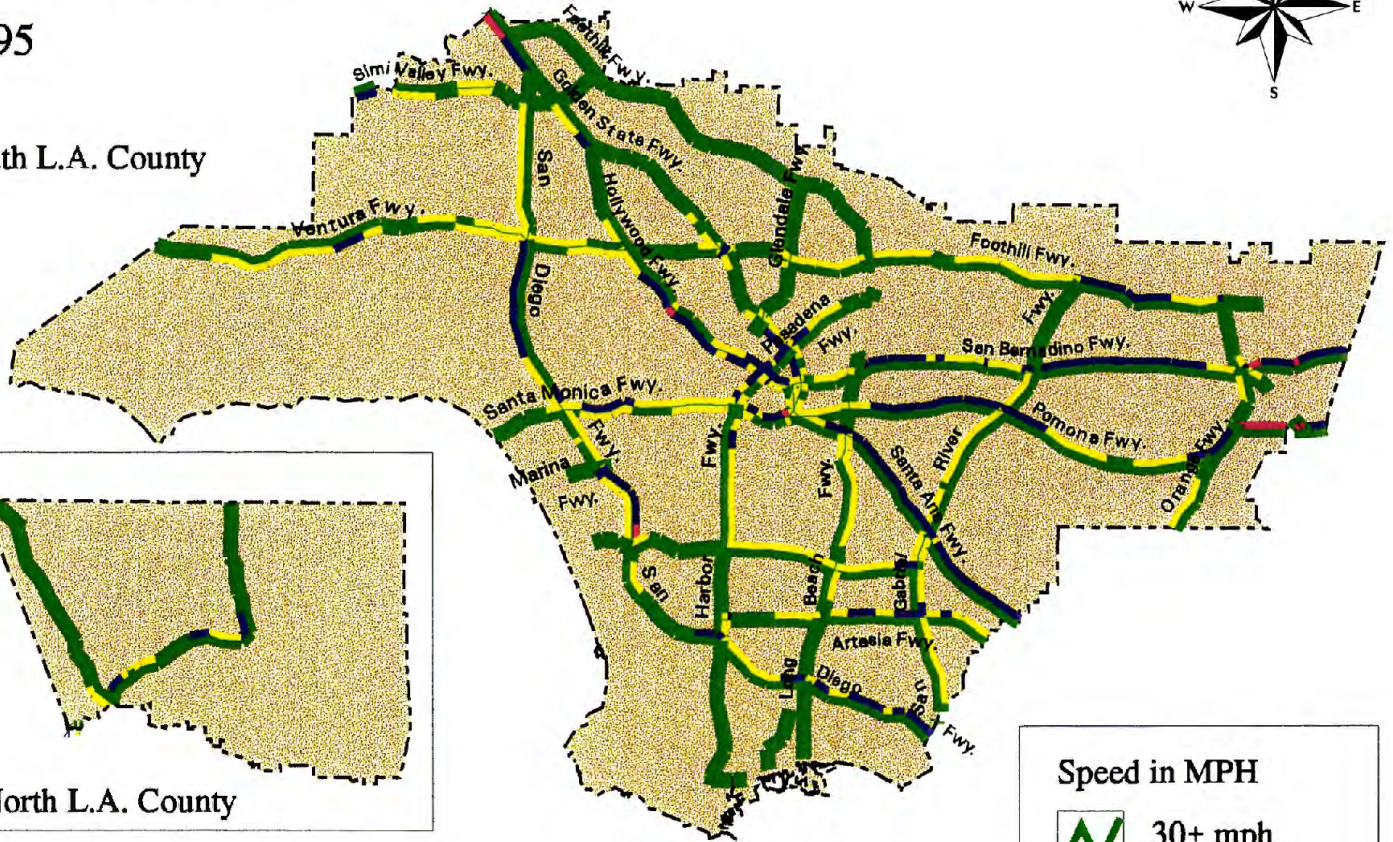
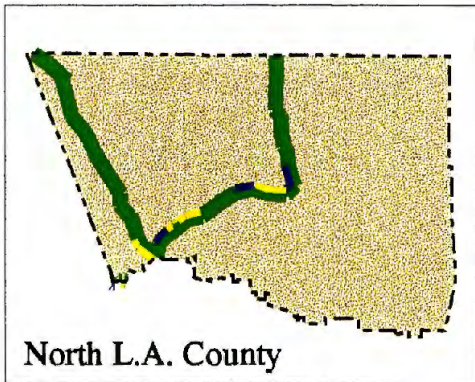
Long Range Transportation Plan

Freeway Speeds for 7-8 AM Peak Hour



1995

South L.A. County



Speed in MPH

30+ mph

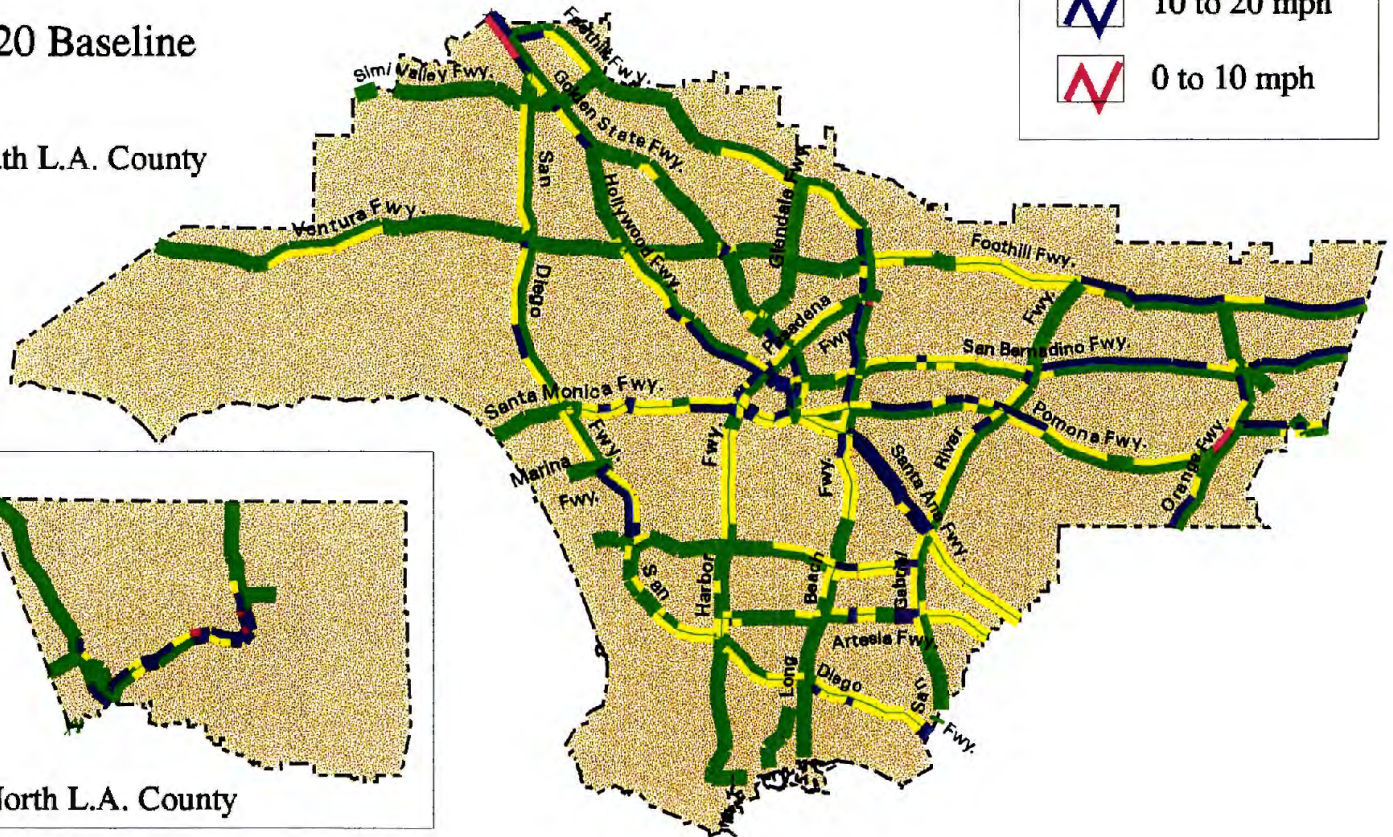
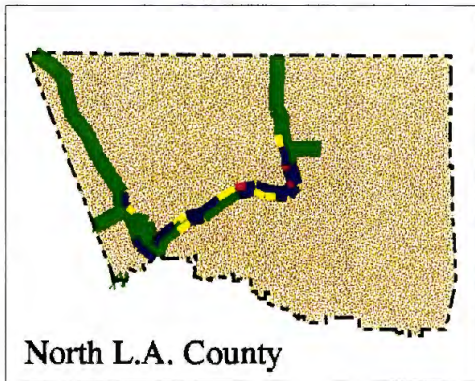
20 to 30 mph

10 to 20 mph

0 to 10 mph

2020 Baseline

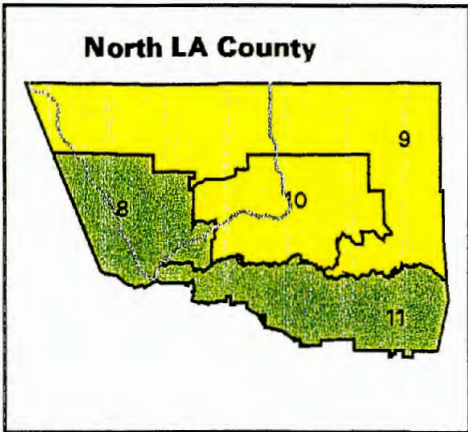
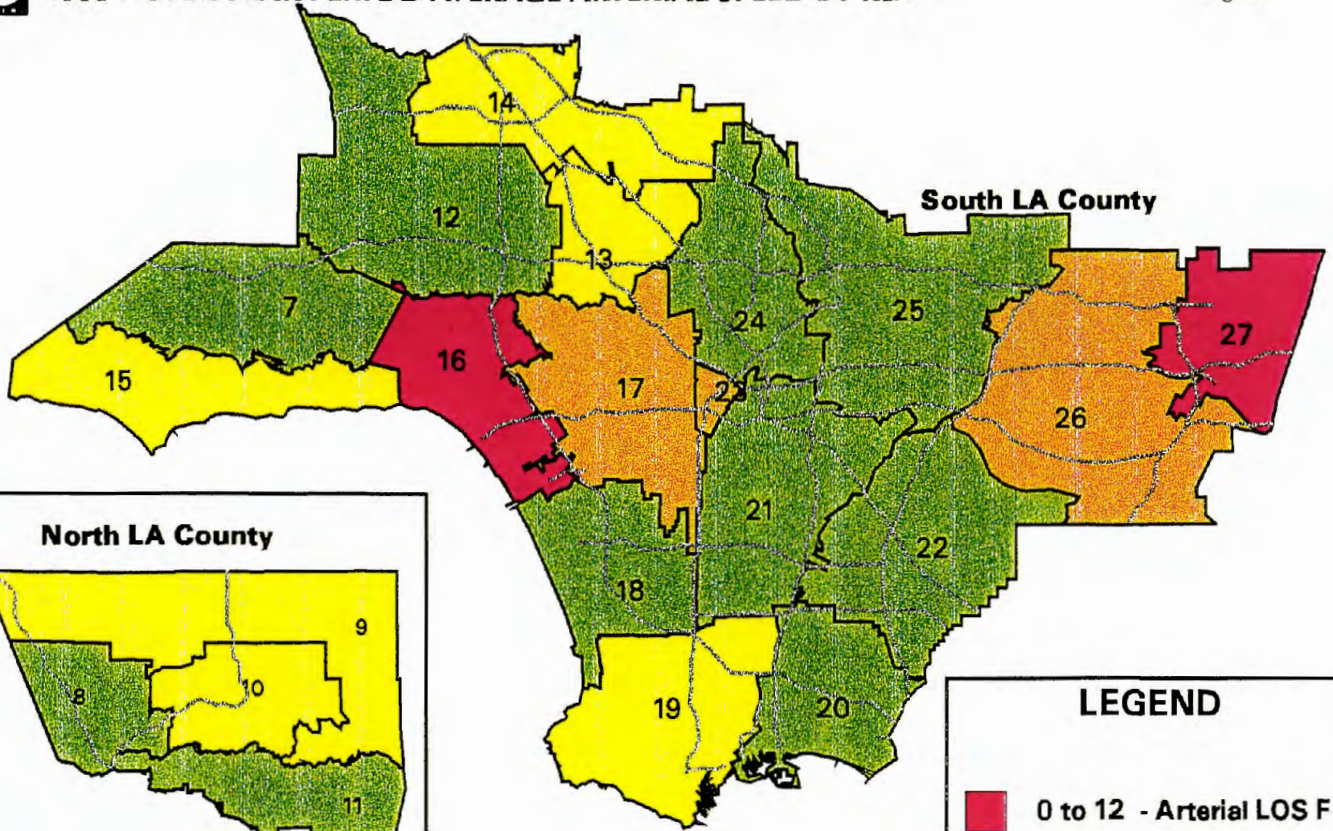
South L.A. County



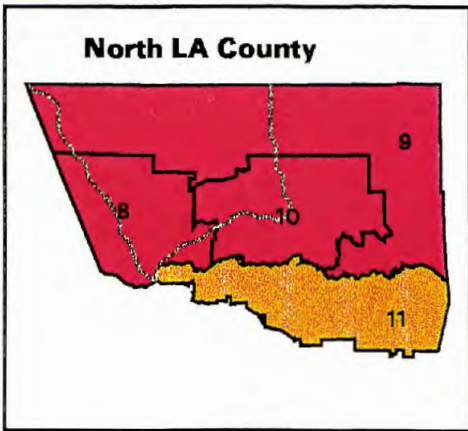
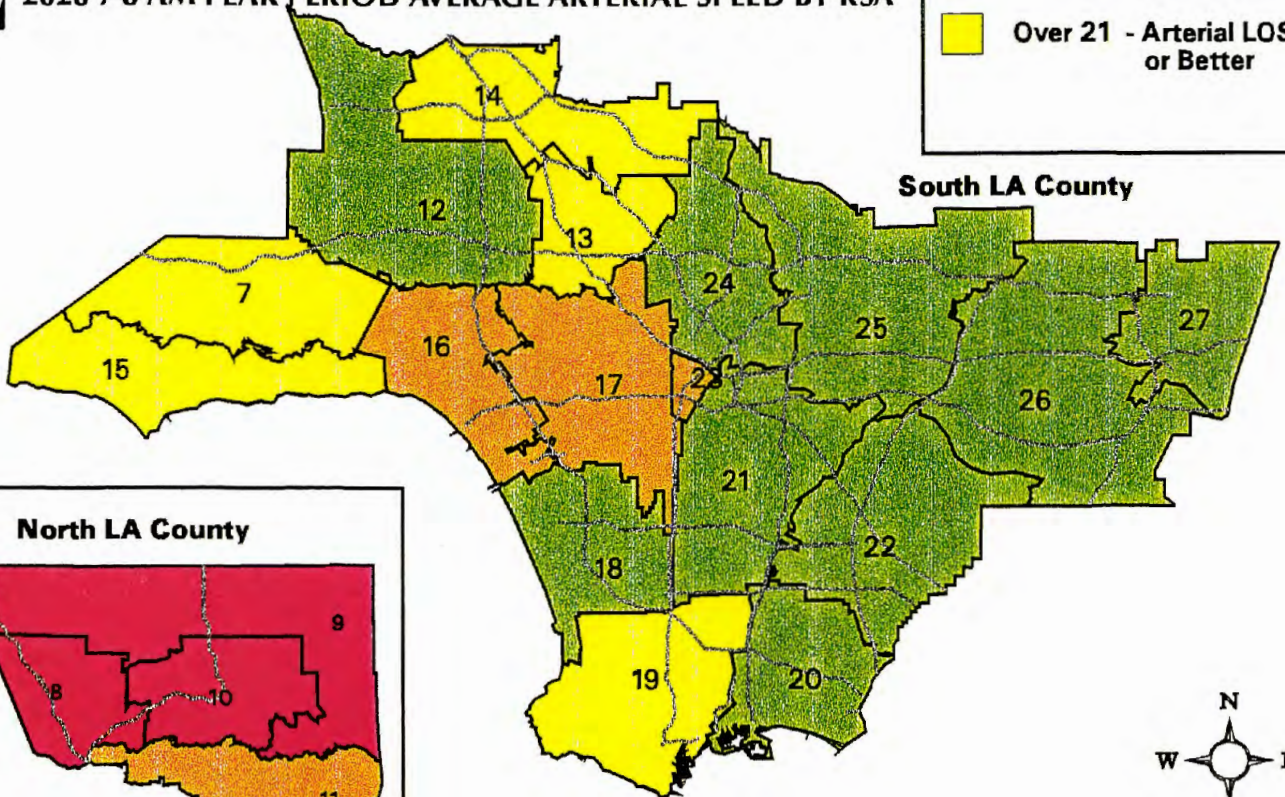




1995 7-8 AM PEAK PERIOD AVERAGE ARTERIAL SPEED BY RSA



2020 7-8 AM PEAK PERIOD AVERAGE ARTERIAL SPEED BY RSA







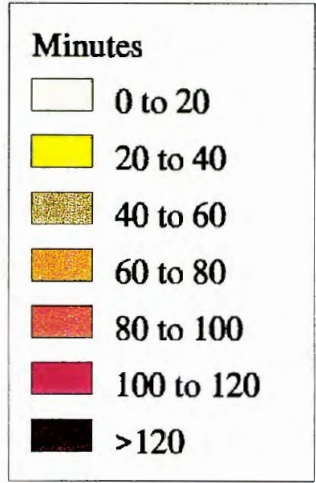
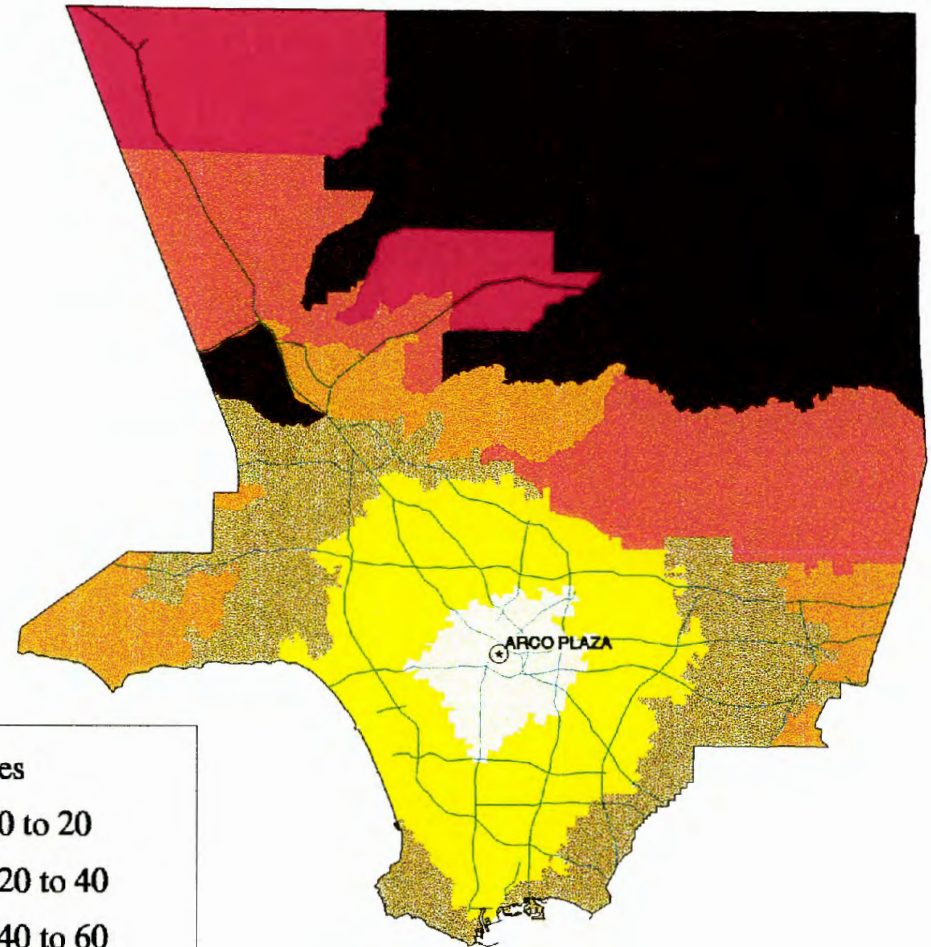
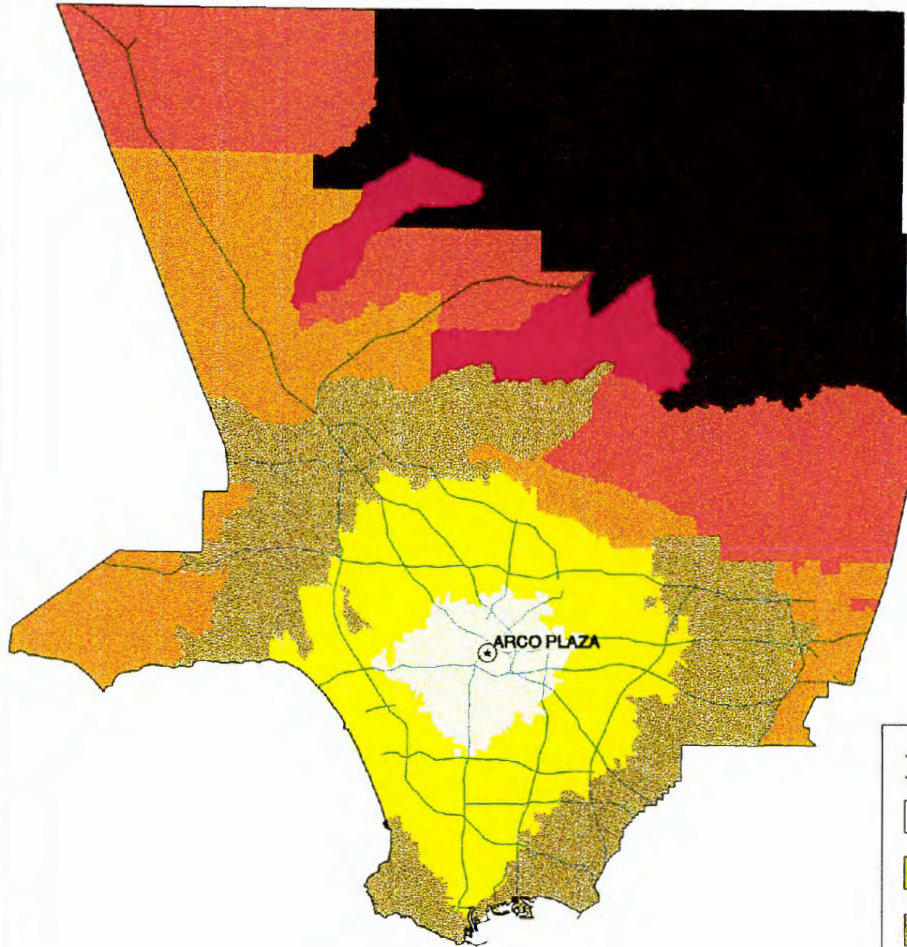
Long Range Transportation Plan

1995 & 2020 Travel Times to Arco Plaza



1995

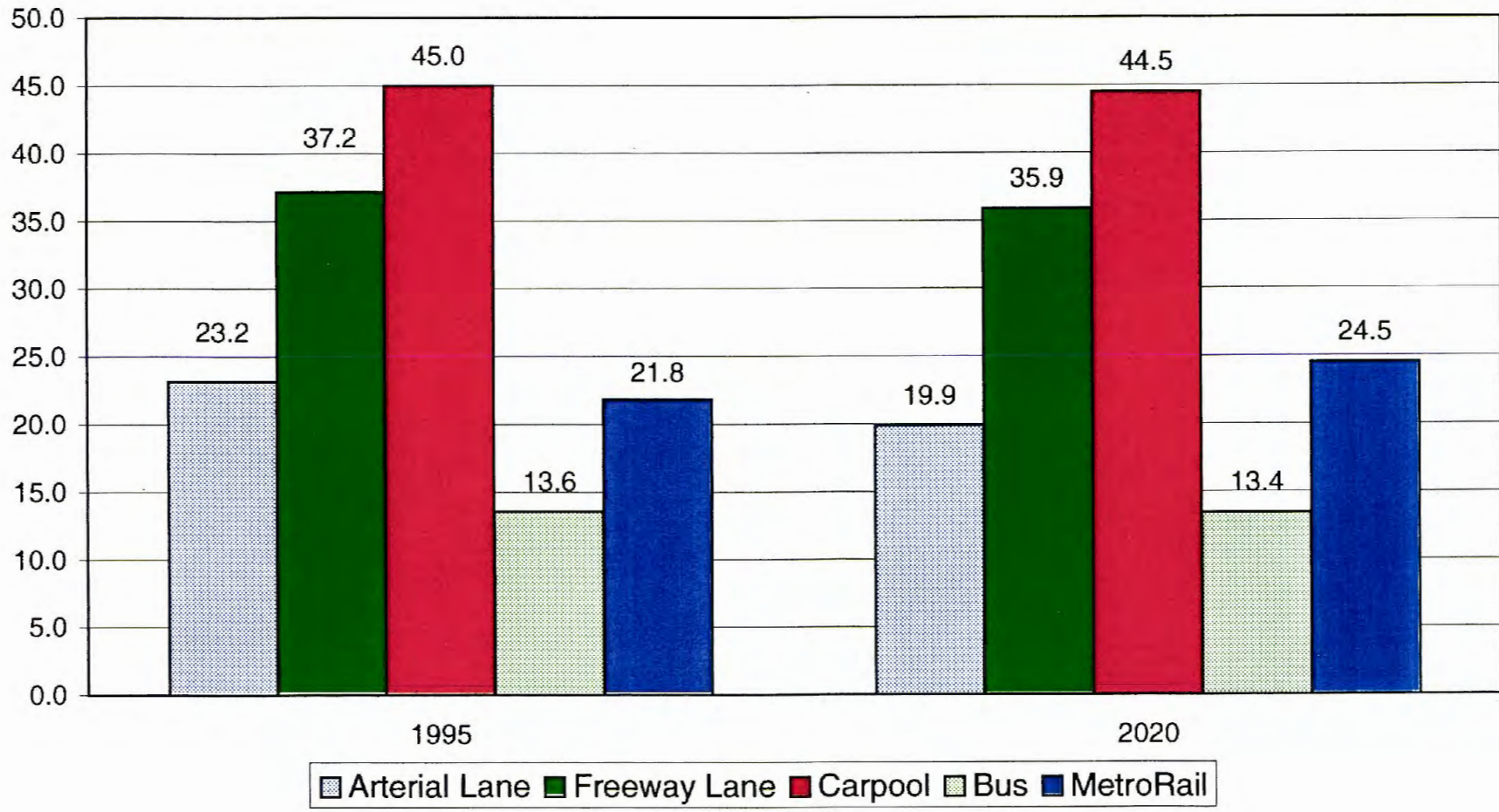
2020





MTA Long Range Transportation Plan

Year 2020 Average AM Period Mode/Facility Speed





APPENDIX C

SECTION IV GRAPHICS



**Long Range Plan
Financial Model**

Summaries By Mode

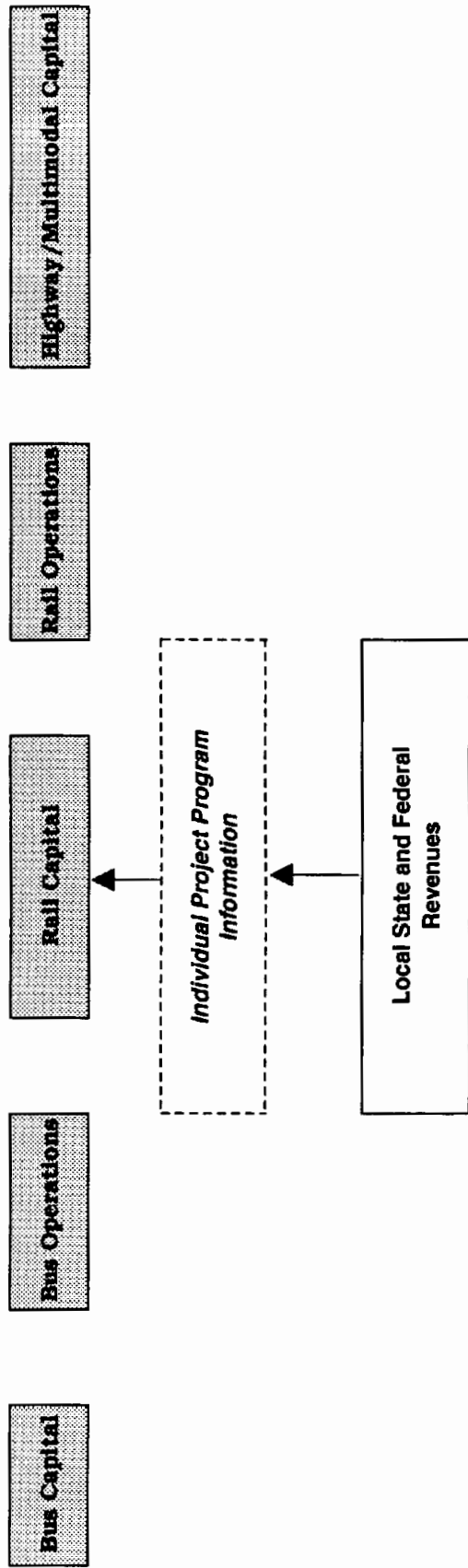
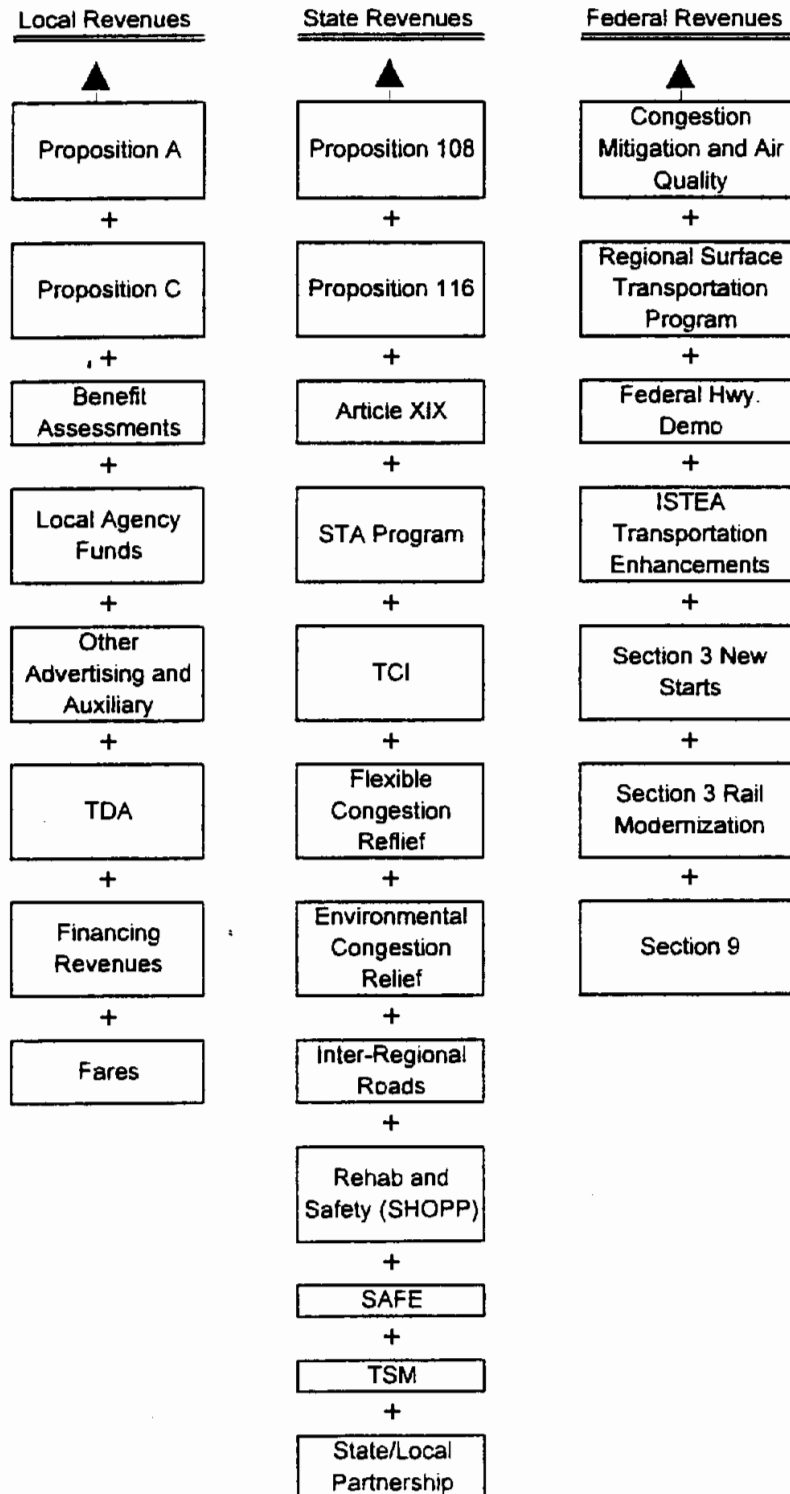






FIGURE IV-2
**Long Range Plan
 Financial Model**



WHAT THE FINANCIAL MODEL DOES AND DOES NOT DO

THE FINANCIAL MODEL...

- **Provides a comprehensive tool** for the analyst to determine the MTA's financial capacity to fund bus, rail and highway projects.
- **Balances revenues & expenditures** using the best available information about future transportation revenues and costs in Los Angeles County.
- **Includes important assumptions** about future costs and revenues.
- **Uses conservative estimates** for costs and revenues, whenever possible
- **Provides a snapshot view** of the funding picture. Accuracy is maintained through an annual financial update and a formal review every two years.
- **Shows the interactive effects** of individual revenue or project changes on all projects and programs in the Plan.

THE FINANCIAL MODEL *DOES NOT*...

- **Automatically calculate costs and revenues.** This information is input to the model from other sources.
- **Automatically issue debt** to balance the cash flows. The analyst programs the model to issue a specific amount of debt in a specific year.
- **Contain "built-in" decisions about MTA priorities and policies.** The analyst, working with other staff, determines the project scheduling or revenue availability.
- **Provide a funding or cost guarantee.** It does provide the best estimate of financial capacity, based on the information available.
- **Replace separate, specific Board action** on any project or program included in the Plan.

