Austin Metropolitan Area 2020 Transportation Plan

Austin Transportation Study

(Now called the Capital Area Metropolitan Planning Organization)

Adopted December 1994
Amended as of February 8, 1999

The ATS Vision:

The ATS regional transportation plan and program will provide for the maximum mobility for the people of the Greater Austin Metropolitan Area with the least detrimental effects. It will support the goals of safety, clean air, clean water, and preservation and respect for neighborhoods. It will anticipate future conditions and be realistic, affordable and effective to the community. It will foster the development and maintenance of a metropolitan area with full opportunity for and inclusion of a citizenry which is culturally, economically and physically diverse.

Adoption Resolution

Whereas the *Austin Metropolitan Area Transportation Plan (AMATP)* was prepared in accordance with the requirements of the Intermodal Surface Transportation Efficiency Act (ISTEA) and USDOT federal guidelines; and

Whereas the Austin Transportation Study and participating agencies agreed to cooperatively develop a regional transportation plan for the Austin metropolitan area in order to meet our medium and long range transportation needs; and

Whereas this *AMATP* will serve as a planning tool and not an action plan for a future transportation system by providing a long-term guide for a right-of-way reservation and a mid-term guide for public investment in transportation improvements; and

Whereas implementation of the proposed elements of this plan will require approval from local jurisdictions and participating agencies over the next 25 years, followed by review and possible endorsement by the Austin Transportation Study Policy Advisory Committee of the use of Federal funds for priority projects in its five-year Transportation Improvement Program; and

Whereas the vision of the Austin Transportation Study is as follows:

The ATS regional transportation plan and program will provide for the maximum mobility for the people of the Greater Austin Metropolitan Area with the least detrimental effects. It will support the goals of safety, clean air, clean water, and preservation and respect for neighborhoods. It will anticipate future conditions and be realistic, affordable and effective to the community. It will foster the development and maintenance of a metropolitan area with full opportunity for and inclusion of a citizenry which is culturally, economically and physically diverse.

NOW, THEREFORE, BE IT RESOLVED:

A. That the *AMATP* is adopted as the Long Range Transportation Plan under ISTEA for the Austin Metropolitan Area and supersedes the current (1986) *Transportation Plan for the Austin Metropolitan Area*; and

B. The ATS Policy Advisory Committee shall use the following criteria in its review and endorsement of any transportation projects, whether contained in this plan or proposed in the future:

- Consistency with land use and master plans of local jurisdictions
- Cost effectiveness and fiscal impact
- Traffic demand
- Pedestrian, cyclist, and motorist safety
- Recommendations of implementing agencies and jurisdictions
- Neighborhood impact
- Environmental impact
- Consistency with overall transportation plans and mass transit plans

ADOPTED DECEMBER 12, 1994

Preface

The *Austin Metropolitan Area Transportation Plan (AMATP)* is a planning guide which contains transportation policy and projects for the next 25 years (to 2020). The Plan includes policies and programs for congestion/demand management, transit, bicycles, pedestrians and trails, roadways and freight. The *AMATP* must be revised at least every five years (by 1999).

The *AMATP's* primary use is as a regional long-range plan for federally funded projects, and it also serves as a comprehensive, coordinated transportation plan for all the governmental jurisdictions within the ATS area. Different jurisdictions have different transportation implementation responsibilities under the Plan. These include Texas Department of Transportation, Capital Metro, and cities and counties.

The *AMATP* promotes a change from existing transportation conditions and trends by encouraging alternatives to the single-occupant motor vehicle for travel, especially during "rush hour." This is made necessary by our growing population and the inability to build enough roadways to handle the demand. The question is how much and how fast should we change. We must start from where we are, i.e., heavy dependence on the automobile. We cannot **force** changes in travel behavior, but rather must encourage change through transportation alternatives and programs. Transportation policy alone cannot change transportation trends, changes in land use trends must be made also.

Austin Transportation Study Policy Advisory Committee

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Valarie Bristol, Vice Chair	Travis County Commissioner
Jeff Wentworth	State Senator
Susan Combs	State Representative
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"The contents of this report reflect the views of the authors who are responsible for the opinions, findings, and conclusions presented herein. The contents do not necessarily reflect the views or policies of the Federal Highway Administration, the Federal Transit Administration, or the Texas Department of Transportation."

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Section 1

Introduction

1.0 INTRODUCTION

The *Austin Metropolitan Area Transportation Plan (AMATP)* is the long range transportation plan required by federal law for the Austin metropolitan area that looks to the year 2020. The *AMATP* is a revision of the ATS *Transportation Plan for the Austin Metropolitan Area* adopted in 1986. The *AMATP* considers a wide range of social, environmental, energy and economic factors in determining overall regional goals and how transportation can best meet these goals. The plan identifies congestion/demand management techniques, and transit, bicycle, pedestrian, trail and roadway facilities needed to serve the metropolitan area's expected growth to the year 2020. The *AMATP* should serve as a guide for planning, evaluation, and implementation of transportation projects within the Austin metropolitan area. The *AMATP* is intended to be a flexible guide to implementing local transportation solutions in a logical, rational basis.

1.1 BACKGROUND

1.1.1 The Intermodal Surface Transportation Efficiency Act (ISTEA) and the New Focus in Transportation Planning

The Intermodal Surface Transportation Efficiency Act (ISTEA) was signed into federal law on December 18, 1991. ISTEA places renewed emphasis on transportation planning, programming and project selection by both Metropolitan Planning Organizations (MPOs) such as ATS, and state Departments of Transportation (DOTs). ISTEA focuses transportation planning priority on overall mobility, environmental and community goals rather than on capital investment. A wider variety and balance of transportation modes is sought, as well as an emphasis on the preservation of existing systems over the construction of new facilities. Rules from the U.S. DOT require that the plan be revised at least every five years.

The *AMATP* arises out of requirements set forth in the Metropolitan Planning section of the ISTEA. MPOs are responsible for developing, in cooperation with the State and affected transit operators, a long-range transportation plan and a transportation improvement program (TIP) consistent with that plan. The planning process includes consideration of land use, intermodal connectivity, methods to enhance transit service, and needs identified through the transportation management systems.

Within the ISTEA framework, *AMATP* identifies transportation facilities, including major roadways, transit, and multimodal and intermodal facilities, that based on growth forecasts will be needed in the next twenty-five years. In addition, The *AMATP* includes a financial plan that indicates public and private resources which are reasonably expected to be available and identifies financing techniques to fund transportation projects and programs.

Since the signing of the ISTEA legislation in 1991 and the amendments to the Clean Air Act in 1990, transportation planning has shifted focus from the continuing expansion of roadways to an emphasis on the more efficient use of existing roadways, and other modes of transportation, including transit, ridesharing, bicycle, and pedestrian facilities and congestion demand management techniques.

1.1.2 Previous Long Range Plan - 1986

The adopted April 1986 *Transportation Plan for the Austin Metropolitan Area* emphasized the implementation of capital-intensive roadway and transit facilities to serve Austin's future transportation needs. In the period from 1980-1985, Austin experienced very rapid growth in population and employment, resulting in extensive demands on the existing roadway system. Projections indicated a continuation of this trend; the 1986 plan documented the need for roadway and transit improvements to meet the existing and future transportation needs. The Plan promoted comprehensive transportation goals consistent with existing regional land use goals.

In December 1991 a draft *Transportation Plan for the Austin Metropolitan Area* was presented to the Austin Transportation Study Policy Advisory Committee as a revision to the 1986 Plan. The draft Plan lowered the Year 2020 forecast of population by 500,000 persons and redirected urban growth away from environmentally sensitive areas in western Travis County. Based on the new population forecast and urban pattern, a revised travel forecast indicated the need for additional roadways and public transportation service, particularly in the central city. This draft Plan was not adopted because of the passage of ISTEA and its new Plan requirements. At its meeting in April 1992, the ATS Policy Advisory Committee adopted a motion to direct that the impact and disruption on existing residential neighborhoods from transportation proposals be evaluated and eliminated as much as possible.

1.2 THE AUSTIN TRANSPORTATION STUDY

1.2.1 History and Governing Body

Established in 1973, the Austin Transportation Study (ATS) is the designated Metropolitan Planning Organization (MPO) for the Austin metropolitan area. ATS is governed by a 17-member Policy Advisory Committee (PAC) as listed on page iii.

1.2.2 Study Area

The ATS study area, as shown in Figure 1.1, includes Travis County, and the city limits and extraterritorial jurisdictions (ETJs) of Austin, Round Rock, Cedar Park, Leander, and Hays. This area includes portions of the region that are currently urbanized or are likely to be urbanized by the year 2020, as well as non-urban areas that are logical extensions based on inter-community travel patterns. Figure 1.1 identifies all local jurisdictions within the ATS area.

1.2.3 MPO Purpose and Responsibilities

The purpose of ATS is to coordinate regional transportation planning among the state, three counties, nineteen cities, and Capital Metro and to approve the use of federal transportation funds. ATS is responsible for the promotion of transportation systems which embrace a variety of modes in a manner that efficiently maximizes the mobility of people and goods with minimal energy consumption, air and water pollution, and negative social impacts.

1.3 PLAN PREPARATION AND IMPLEMENTING AGENCIES

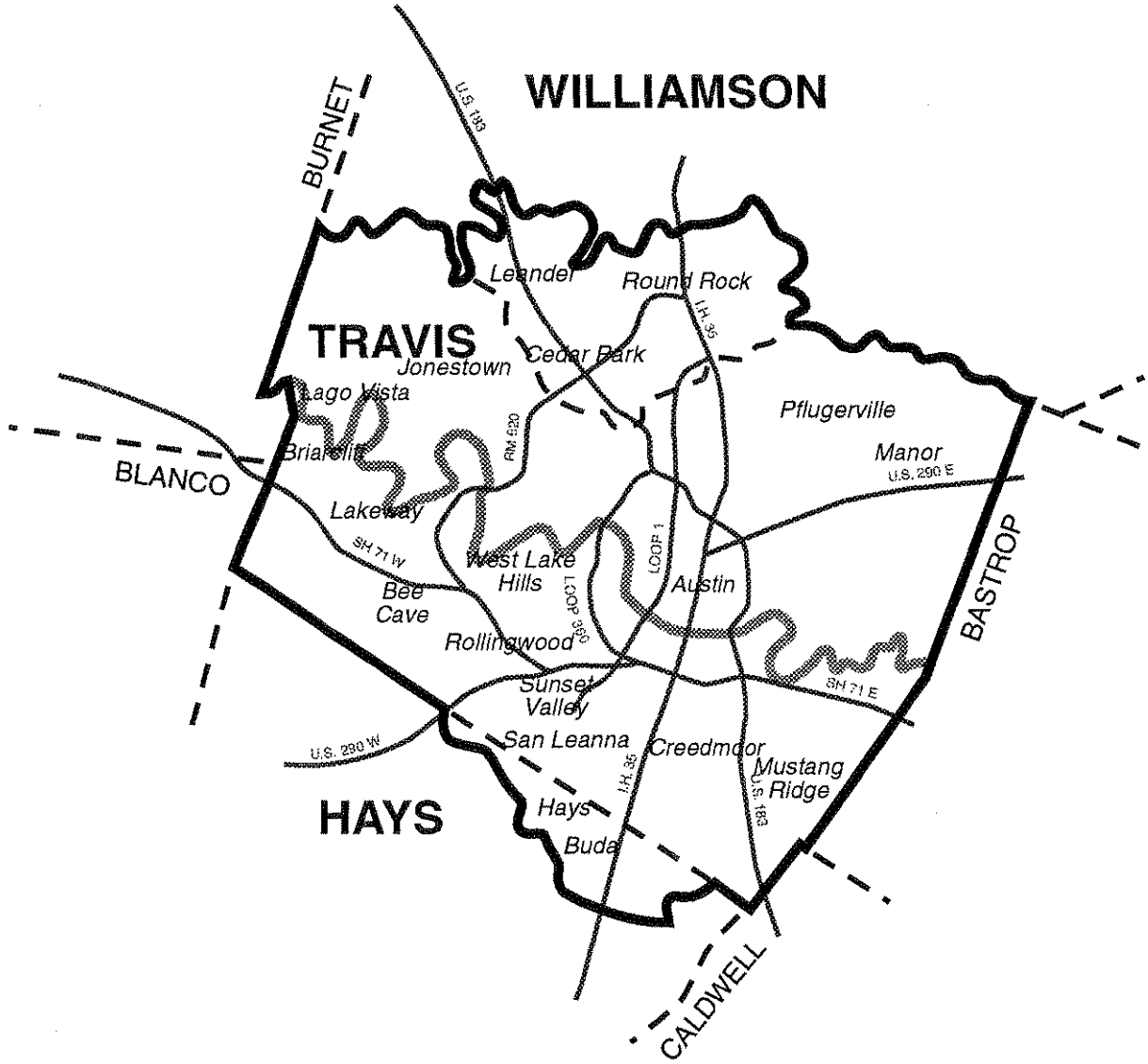
Agencies working with ATS in the *AMATP* preparation include the Capital Metropolitan Transportation Authority (Capital Metro), the City of Austin, Travis County, Texas Department of Transportation (TxDOT), Texas Parks and Wildlife Department, the Federal Highway Administration (FHWA), and the Federal Transit Administration (FTA).

Under contract with ATS, Capital Metro has prepared the Public Transportation Element of the *AMATP* and contributed to the Congestion/Demand Management Element. The City of Austin Department of Public Works and Transportation has been the lead agency in the development of the Congestion/Demand Management Element. The City of Austin Department of Planning and Development prepared the Bicycle and Pedestrian Element and the population and employment forecasts. The City of Austin Environmental Conservation Services Department prepared the air quality emission inventory and forecast. The Travis County Public Improvements and Transportation Department assisted with the development of the Congestion/Demand Management Element and the Bicycle/Pedestrian/ Trail Element. The Texas Parks and Wildlife Department assisted with the trails portion of the Bicycle/Pedestrian/Trail Element. TxDOT has provided the roadway and transit modeling. Other local jurisdictions provided data for preparation of the population forecasts.

Many of the agencies that have been involved in the preparation of the *AMATP* are also the implementing agencies. The recommended actions for most transportation modes require implementation actions by all transportation providers including TxDOT, Capital Metro, Capital Area Rural Transportation System (CARTS), cities, and counties. Actions will also be

requested of public and private employers. All jurisdictions within the ATS metropolitan area will have the opportunity to review and comment on the draft *AMATP* during the public review period.

Figure 1.1
The Metropolitan Area



Section 2

Vision, Opportunities and Constraints

2.0 *VISION , OPPORTUNITIES AND CONSTRAINTS*

2.1 THE ATS VISION

A transportation vision consistent with regional land use and social goals can guide transportation system implementation. The following is the vision which the ATS Policy Advisory Committee (PAC) prepared to guide its work:

> *The ATS regional transportation plan and program will provide for the maximum mobility for the people of the Greater Austin Metropolitan Area with the least detrimental effects. It will support the goals of safety, clean air, clean water, and preservation and respect for neighborhoods. It will anticipate future conditions and be realistic, affordable and effective to the community. It will foster the development and maintenance of a metropolitan area with full opportunity for and inclusion of a citizenry which is culturally, economically and physically diverse.*

2.2 OBJECTIVES

Within a framework of regional land use and social goals, the principal transportation goal is to provide an acceptable level of mobility and accessibility for the region's residents with the least detrimental effects. Within this overall goal, specific transportation system objectives are listed below:

Transportation Plan Objectives:

- Undertake transportation planning within the framework of comprehensive regional planning and support regional growth and development goals.
- Maintain personal mobility.
- Coordinate the provision of facilities for all major modes of travel for a balanced transportation system.
- Be compatible with the unique and sensitive environment in the greater Austin metropolitan area and be consistent with natural resource limitations.
- Be consistent with the area's social, environmental, economic, and energy conservation goals.
- Be consistent with all adopted land use plans and ordinances.
- Ensure that the Austin metropolitan area continues to meet clean air standards.
- Provide for a diversity of life and work styles and travel behaviors for different subareas with a comprehensive multipurpose transportation system.
- Contain transportation policies and programs for three time frames - near-term (1995-2000), mid-term (2000-2010), and long-term (2010-2020). The near-term will emphasize operational (non-construction) programs which reduce congestion and use the existing transportation system more efficiently. The mid- and long-term periods will include those programs plus new capital improvements to the transportation system.
- Be fiscally constrained. The transportation system and programs must be affordable according to projected transportation revenues. A financial plan is being prepared that will demonstrate how the *AMATP* can be implemented. The option of enlarging urban roads as a viable measure to reduce congestion is limited by its high fiscal and social costs.

- Identify implementing agencies and groups for each measure.

- Monitor the Austin metropolitan area's land use development and transportation system and revise the *AMATP* within five years.

2.3 CONCEPTS AND STRATEGY

Both population and the amount of travel have grown rapidly in the Austin metropolitan area. It is forecasted that the 2020 population could be twice the 1990 population. The ATS staff has prepared two forecasts for the distribution of population and employment in the future. These forecasts are not predictions, but only reasonable alternative futures. The ATS transportation plan need not match a trends forecast. We can use the transportation plan and policies to support the kind of metropolitan area desired.

One of the *AMATP* goals is to maintain personal mobility. To achieve that we need to reduce the high proportion of drive-alone travel and to increase transit ridership, ridesharing, bicycling and walking. This is especially important in solving peak period congestion problems. In addition to encouraging other modes, we should reduce the need to travel and spread the peak travel period. Based on the implementation of these measures the recommended size of roadways in the draft *AMATP* is not set to handle the highest peak hour vehicle demand.

The *AMATP* should be a win-win transportation solution for all communities and jurisdictions within the metropolitan area. We are a family of independent communities and neighborhoods with diverse characteristics and the *AMATP* is intended to support the diversity and individuality of personal life choice. The Plan should be responsive to the characteristics and goals, including transportation and land use policies, of each jurisdiction and community while providing a complete and comprehensive metropolitan transportation system. The emphasis of the *AMATP* is on the State and Federal transportation system and it strives to support local jurisdiction plans for other arterials and local transportation facilities.

The ATS Policy Advisory Committee (PAC) has stated its intent to not destroy inner city neighborhoods by widening roadways. Therefore the draft *AMATP* attempts to minimize the expansion of arterials within existing urbanized areas, especially residential areas. In existing urbanized areas the *AMATP* priority is on increasing person carrying capacity rather than motor vehicle capacity.

The City of Austin contains about two-thirds of the existing ATS area population. It is the maturing central city in a growing metropolitan area. The City of Austin is concerned about maintaining a strong and healthy central city. It seeks to develop a compact center city (or dense livable city) that is integrated with its diverse neighborhoods and, on a regional scale, with its suburbs and surrounding communities. To achieve this requires giving greater emphasis to transit, bicycle and pedestrian activity rather than motor vehicle activity in critical areas, such as neighborhoods and mixed use activity centers, of which the largest is the central business district.

The following are some recommended methods to support a dense livable city:

A. Transportation Measures

1. Build the light rail transit system

2. Improve bus service

3. Promote increased transit ridership

4. Improve pedestrian and bicycle facilities

5. Promote ridesharing

6. Promote staggered work hours and telecommuting

7. Limit roadway expansions and parking facilities

8. Increase operational efficiency of roadways

B. Land Use Measures

1. Promote infill development and higher densities in appropriate locations

2. Support development of higher residential densities and commercial nodes within transit corridors

3. Provide incentives to encourage multipurpose activity centers

4. Update zoning, subdivision and site plan ordinances to promote more transit and pedestrian oriented development.

2.4 OPPORTUNITIES AND CONSTRAINTS

In preparing the *AMATP,* it is important to identify opportunities for improving the transportation system and to determine the constraints that might restrict the implementation of identified improvements. Together with other information needed for developing the *AMATP*, a determination of transportation opportunities and constraints is essential to the formation and adoption of goals, objectives, strategies, policies and procedures for the long range plan.

Opportunities for improving the surface transportation system fall into five categories:

- Make public transportation services more convenient and amenable.
- Reduce travel demand and improve the efficiency of transportation operations.
- Improve the safety and availability of bicycle, pedestrian, and trails facilities.
- Expand the roadway system.
- Upgrade the effectiveness of the movement of goods and freight.

Constraints on the implementation and use of the identified improvement opportunities are:

- Citizen preference for the single occupant motor vehicle.
- State and local legal and regulatory barriers.
- Limited availability of funding.
- Restrictions on air, water, and noise pollution.
- Sensitive environmental areas.
- Automobile oriented zoning and subdivision ordinances.
- Concern over the disruption of neighborhoods.
- Conflicting interests among political entities within the metropolitan area.
- Geographic limitations (e.g., steep terrain, pervious and/or expansive soils).

Section 3

Need for AMATP

3.0 NEED FOR AMATP

3.1 ISTEA REQUIREMENTS - PLANNING REGULATIONS

3.1.1 Financially Constrained Plan

ISTEA specifies that the long range transportation plan include a financial plan that demonstrates how future projects and programs can be implemented. Employing a number of reasonable assumptions, local, state and federal funding levels are projected through the year 2020. All regional planning transportation projects included in the *AMATP* are matched with appropriate funding sources. The result is a financially constrained plan that addresses the future regional transportation needs.

3.1.2 Metropolitan Planning Factors

ISTEA requires the following fifteen factors be considered in developing metropolitan plans and programs. These factors are addressed in the *Metropolitan Planning Factors Report.* Each factor discussed in the Report is listed below.

1) Preservation of existing transportation facilities and, where practical, ways to meet transportation needs by using existing transportation facilities more efficiently.

2) The consistency of transportation planning with applicable Federal, State, and local energy conservation programs, goals, and objectives.

3) The need to relieve congestion and prevent congestion from occurring where it does not yet occur.

4) The likely effect of transportation policy decisions on land use and development and the consistency of transportation plans and programs with the provisions of all applicable short- and long-term land use and development plans.

5) The programming of expenditures on transportation enhancement activities.

6) The effects of all transportation projects to be undertaken in the metropolitan area, without regard to whether such projects are publicly funded.

7) International border crossings and access to ports, airports, intermodal transportation facilities, major freight distribution routes, national parks, recreation areas, monuments and historic sites, and military installations.

8) The need for connectivity of roads within the metropolitan area with roads outside the metropolitan area.

9) The transportation needs identified through use of the management systems.

10) Preservation of rights-of-way for construction of future transportation projects, including identification of unused rights-of-way which may be needed for future transportation corridors and identification of those corridors for which action is most needed to prevent destruction or loss.

11) Methods to enhance the efficient movement of freight.

12) The use of life-cycle costs in the design and engineering of bridges, tunnels, or pavement.

13) The overall social, economic, energy, and environmental effects of transportation decisions.

14) Methods to expand and enhance transit services and to increase the use of such services.

15) Capital investments that would result in increased security in transit systems.

3.1.3 Public Involvement Program

The ATS Policy Advisory Committee (PAC) adopted a *Public Involvement Program* in February 1994 containing procedures that ATS follows in the preparation of the *Austin Metropolitan Area Transportation Plan* and the *Transportation Improvement Program.*

The *Public Involvement Program (PIP)* was implemented in order to facilitate communication between elected officials, staff and citizens in the transportation planning process. The program has been a year-long exercise in accessing valuable public input in the development and writing of the *AMATP*. Phase I included the review of the transportation plan concepts, major draft element concepts, and a Public Opinion Survey; Phase II incorporated a draft transportation plan public review period, public hearings, and staff's response to public comment.

Phase I

This phase of the public involvement process included notification and dissemination of all draft Major Concepts of the *AMATP.* Draft reports were available free of charge at the ATS office, and available for public review at all libraries within the ATS metropolitan area, the Travis, Williamson, and Hays County offices, the TxDOT District office, and the ATS Policy Advisory Committee meetings.

- As part of its regular public participation process, the ATS bi-monthly newsletter informs citizens about ATS activities, including the development of the *AMATP*. The mailing list includes over 1700 interested citizens, organizations, and neighborhood groups. ATS held Policy Advisory Committee Meetings once a month during 1994 open to the public and public comment.

- The March/April 1994 ATS Newsletter extensively outlined the Transportation Plan Concepts and work elements. In this same newsletter, ATS staff outlined the timeline for the adoption of the Plan, as well as Plan objectives.

- Three public open house meetings were held on March 29, March 31, and April 6 at the Downtown Austin History Center, South Austin Bedichek Jr. High School, and Round Rock City Hall, respectively. The meetings were held from 5:00 to 8:00 PM and free copies of the Draft Concept Plans were available.

Phase II

The second phase of the public involvement process for the *AMATP* incorporated the same strategies outlined above for the dissemination of the draft Transportation Plan itself. In addition, ATS held two public hearings on the Plan (notices of which were placed in local newspapers) and made presentations to over 20 agencies, interested groups and organizations.

- The July/August 1994 ATS Newsletter summarized the intent of the AMATP, as well as the process governing its production, and invited public comment. The August and September Drafts of the AMATP were mailed with the ATS newsletter to the recipients on the ATS mailing list.

- ATS staff held three public open house meetings on the *AMATP* in order to receive public comment and to allow the public access to the staff involved with writing the plan. These meetings were held from 5:00 to 8:00 PM on September 15, September 22, and September 27, at South Austin's Bedichek Jr. High School, Downtown Austin's Austin History Center, and Round Rock City Hall, respectively.

- Perhaps the most important phase of the citizen involvement process was the compilation of the public hearing, written comments and staff responses. The publication *Comments on Draft Plan* (Volume I) includes the 187 comments received between July 8 and October 31. Volume II contains comments 188-303 received between November 1 and the 28th. ATS staff compiled a *Response to Comments on Draft Plan* report which responds to the comments specifically regarding the *AMATP*.

To conclude, ISTEA, Title I, SEC. 1024(a) mandates that metropolitan planning organizations provide citizens, affected public agencies, representatives of transportation agency employees, private providers of transportation, and other interested parties with a "reasonable opportunity" to comment on the long range plan before its approval. ATS staff has actively solicited public comment and participation for over a year as a tool for the effective planning of the *AMATP* and incorporated many of the ideas and suggestions of the public into the final *AMATP*.

3.2 TRANSPORTATION AND DEMOGRAPHIC TRENDS

3.2.1 Austin Metropolitan Area Trends

The population and the amount of travel has increased significantly in the Austin metropolitan area since 1960. In the last thirty years, population has tripled while employment has more than quadrupled. All of us are traveling a lot more. On a per capita basis, vehicle miles traveled has quadrupled, the number of vehicles owned has doubled, and the number of vehicle trips has increased by 50 percent. Basically, we are driving longer distances, buying more cars, and making more trips. Average vehicle occupancy has decreased by 29 percent. The key factors for the average vehicle occupancy decline seem to be declining family size and increasing vehicle availability. Along with other factors, these trends have shrunk the pool of those available to carpool or use transit. The result is a tremendous increase in automobile use and traffic congestion.

The size of the bus fleet has tripled and transit ridership has quintupled since Capital Metro began operation in 1985. Transit trips currently account for two to three percent of all daily trips, and slightly higher during peak periods.

Of the four basic resources involved in a motor vehicle transportation system, two continue to be abundant and relatively inexpensive - motor vehicles and gasoline. However, the other two - roadway capacity and air quality - are in short supply. Because we will not be able to continue the trend of heavy automobile dependence, we must make changes in the way we travel as the Austin metropolitan area continues to grow. The Austin metropolitan area population is projected to double in the next twenty-five years if the high forecast comes to pass. For more detailed information, refer to the ATS *Transportation Trends 1960 - 1990 Report*.

3.2.2 Population and Employment Forecasts

In April 1994, the ATS Policy Advisory Committee accepted, for transportation modeling purposes, population and employment forecasts to the year 2020 for the Austin metropolitan area. The population totals for Travis, Williamson, and Hays counties were produced by the State Data Center in February 1994, and were based on data from the 1990 U.S. Census. The State Data Center produced forecasts for all Texas counties for four growth scenarios, each with a different assumption about net in-migration: low, mid, high and very high. The ATS forecasts are based on the high scenario.

The three Austin metropolitan area county totals were distributed within the ATS modeling area (slightly larger than the ATS planning area), as shown in Figure 3.1. The distribution was based on existing development ordinances, development trends and the availability of "developable" land within each of 635 traffic serial zones. Within the ATS modeling area the population is forecasted to grow from about 700,000 in 1990 to about 1,363,000 in the year 2020.

Figure 3.2 shows a summary of the high population and employment forecasts from the 1994 trends forecast. The data are distributed by the ten subareas shown in Figure 3.1. Because the State Data Center forecasts an increase in the Williamson County population from 140,000 in 1990 to 520,000 in 2020 under the high scenario, an increase of about 247,000 people (1994 to 2020) is indicated for subarea 6, which includes the Round Rock, Cedar Park and Leander area. This is almost half of the total forecasted metropolitan population increase of 546,000. Growth in other subareas ranges from 8,000 to 68,000. Forecasted growth in the central area is 9,700. For employment, an increase of about 123,000 is indicated for subarea 6, compared to the total forecasted metropolitan employment increase of 277,000. Employment growth in other subareas ranges from 4,000 to 34,000. Forecasted employment growth in the central area is 6,500.

The 1994 forecast data was compared to the 1991 forecast data (also in Figure 3.2). The total population and employment forecasted in 1991 and 1994 are very similar. The 1991 forecast projected a much greater employment total for the Austin central city and a smaller population total for the Williamson Urban area. The transportation system needs of both forecasts are being analyzed and used to prepare recommendations.

3.3 PUBLIC SURVEY RESULTS

A public opinion survey was taken to collect the opinions, attitudes, beliefs and values of residents of the Austin metropolitan area about transportation issues. The survey consisted of three sections: 1) the current travel characteristics of area residents, 2) travel behavior changes people would be willing to make, and 3) transportation improvements wanted by area residents.

A total of 1,500 interviews were conducted during late April and early May 1994 with a random sample of area residents who commute to work or school during the peak traffic hours. The survey results are useful in understanding the characteristics of travel to work and school and in determining where vehicle trip reduction programs might best be directed. A significant number of respondents are willing to try alternatives to driving alone. Following are highlights of the survey results:

1. Eighty-seven percent of area commuters drive their own cars to work/school, and 82 percent never use other means of transportation. Four percent occasionally or regularly carpool; less than one percent vanpool. Nine percent take the bus, but only three percent of those who work rather than attend school ride the bus. Three percent walk, two percent bicycle and less than one percent ride motorcycles or use some other mode occasionally or regularly.

2. The average commute is just less than nine miles each way, consuming about 18 1/2 minutes in the morning and 20 minutes in the afternoon, on an average of 4.96 days per week.

3. About half of the commuters make stops, mainly for groceries or other shopping, on the way to or from work. Of those, almost two-thirds stop three or more times a week.

4. Thirty-six percent of those employed need a car for their job during working hours, most using their own cars.

Figure 3.1
ATS Subareas

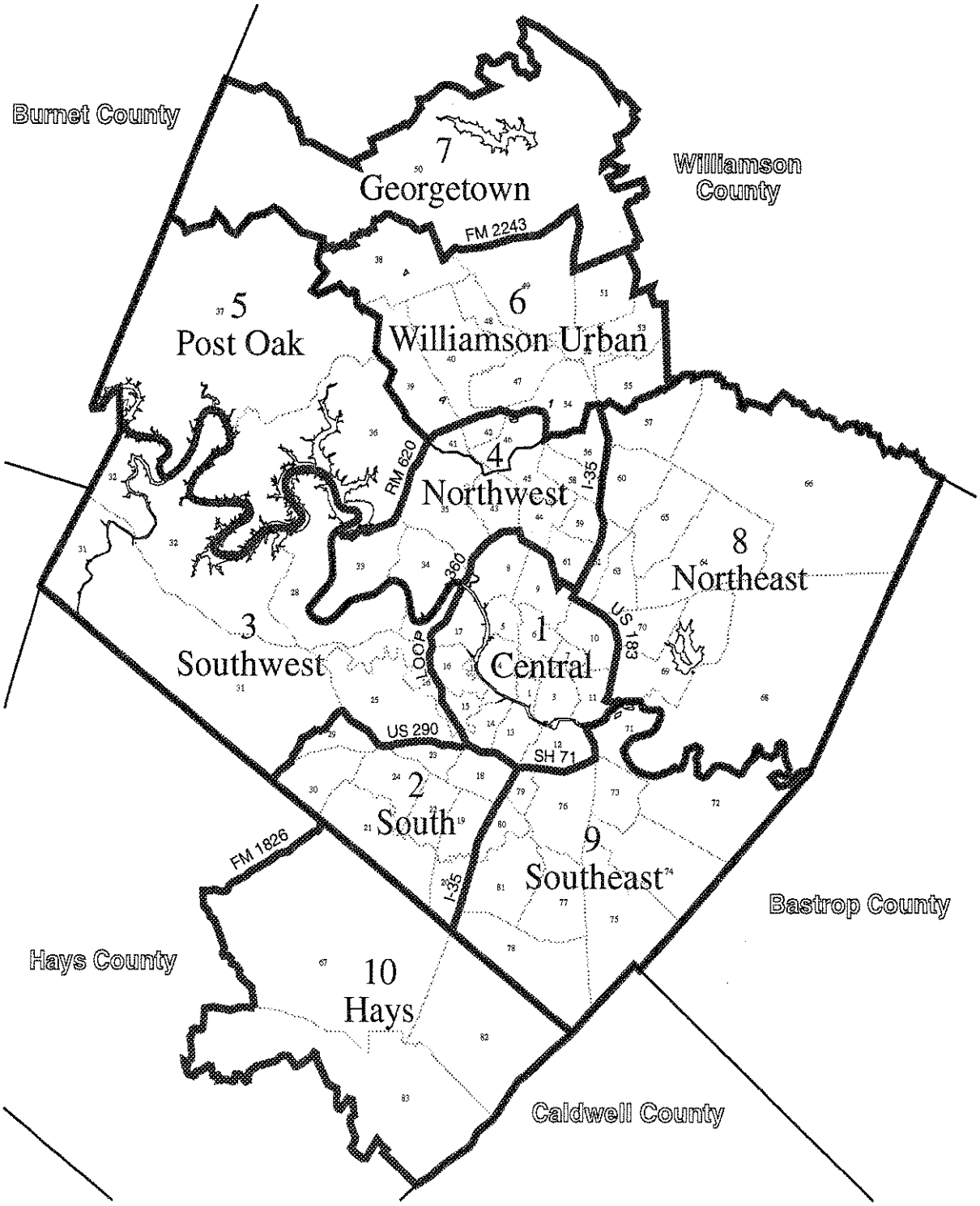


Figure 3.2
Comparison of Population and Employment
By Subareas
1991 & 1994 Forecasts

ATS SUB-AREA NUMBER	ATS SUB-AREAS	1994 ESTIMATED POPULATION	2020 POPULATION	
			1991 FORECAST	1994 FORECAST
1	CENTRAL	304,971	330,786	314,688
2	SOUTH	103,486	147,839	119,052
3	SOUTHWEST	32,414	76,534	57,929
4	NORTHWEST	144,052	204,185	171,401
5	POST OAK	11,298	16,832	19,191
6	WILLIAMSON URBAN	76,436	210,633	323,665
7	GEORGETOWN	25,704	40,235	93,963
8	NORTHEAST	53,867	131,337	119,477
9	SOUTHEAST	45,195	108,257	74,381
10	HAYS	18,380	30,284	68,384
	TOTALS:	815,803	1,296,922	1,362,131

ATS SUB-AREA NUMBER	ATS SUB-AREAS	1994 ESTIMATED EMPLOYMENT	2020 EMPLOYMENT	
			1991 FORECAST	1994 FORECAST
1	CENTRAL	227,502	305,719	234,042
2	SOUTH	17,178	35,719	24,914
3	SOUTHWEST	12,395	31,206	25,077
4	NORTHWEST	74,240	113,071	87,830
5	POST OAK	1,547	3,108	5,470
6	WILLIAMSON URBAN	14,721	79,564	137,593
7	GEORGETOWN	4,795	15,629	38,719
8	NORTHEAST	28,011	75,176	60,618
9	SOUTHEAST	21,145	43,057	39,460
10	HAYS	3,929	9,127	28,781
	TOTALS:	405,463	711,376	682,504

5. Eighty-four percent have free parking available to them at work or school. Of those, 41 percent say they would be much more or somewhat more likely to consider some other way of commuting if they had to pay for parking; 51 percent say that having to pay for parking would make no difference in their commuting habits.

6. Employers are not doing much to encourage alternatives to single-driver daily commuting. Sixty-three percent do offer flexible work hours and 24 percent permit compressed work schedules. Twenty-three percent encourage carpooling and 14 percent offer preferential parking for carpoolers. Eleven percent offer opportunities to work at home instead of the workplace on occasion. Six percent sell or provide bus passes and five percent subsidize use of public transportation. Only nine percent provide emergency transportation for bus riders or carpoolers. In most cases, government agencies account for half or more of those promoting alternative transportation.

7. Most commuters are willing to consider alternatives to driving alone if the conditions were right for them. Sixty-five percent say they would be very or somewhat willing to ride the bus, 73 percent would consider carpools/vanpools, and 31 percent would consider bicycling.

8. Similarly, most commuters indicate that incentives would affect their commuting choices. Sixty-three percent say they would be much or somewhat more likely to consider alternatives to driving alone if they were given a financial incentive to carpool; 57 percent if there were a substantial increase in the cost of gasoline; 51 percent if there were high occupancy vehicle lanes on major roads; 37 percent if they were given a free bus pass by their employer; and 28 percent if there were showers, lockers and safe bike storage at their work site.

9. Despite the openness to alternatives, most respondents focused on automobile travel when asked where they would prefer to see the most emphasis on a list of possible areas for transportation improvements. In order of aggregate ranking, the choices were:

	------RANKED------			
	FIRST	SECOND	LEAST	AVE. RANK
Synchronize the traffic lights	22%	23%	6%	5.38
More east-west thoroughfares	20%	17%	5%	5.14
More buses and public transportation	12%	13%	7%	4.65
More roads and freeways	18%	11%	14%	4.64
Diverting single driver traffic to carpools, public transportation and other modes	8%	8%	9%	4.28
A light rail system	9%	10%	19%	4.09
More and better bike lanes and pathways	9%	10%	20%	4.04
More and better sidewalks	4%	6%	19%	3.78

3.4 AIR QUALITY AND ENERGY CONSERVATION

3.4.1 Air Quality Program

In 1993 the ATS Policy Advisory Committee adopted a three-part air quality program for the Austin metropolitan area which is intended to keep the area in attainment of federal air quality standards. Attainment of federal standards is important to maintain healthy air and to avoid federally imposed sanctions for transportation projects and economic growth in the area. Such sanctions are in effect in the four Texas non-attainment areas of Houston, Dallas-Fort Worth, Beaumont-Port Arthur and El Paso.

The mandate for better coordination of air quality and transportation planning was set by the Clean Air Act Amendments (CAAA) of 1990. The CAAA requires transportation plans and investments in areas that do not attain federal clean air standards to conform to a state's clean air plan. Among other effects, this means that new highways and roads can be built only if the added pollution they are likely to cause is more than offset by other measures, so that continuing improvements are made in air quality. The Austin metropolitan area currently is close to but does not exceed federal clean air standards, and the Texas Natural Resource Conservation Commission (TNRCC) has designated it as a "near non-attainment" area.

The adopted three-part program includes preparation of a detailed pollutant emissions inventory and forecast, a voluntary action program (Ozone Advisory Program) for forecasted high ozone "advisory" days during the "smog season" from April through October, and analysis of long range pollutant reduction measures.

3.4.1.1 Emission Inventory and Forecast

ATS completed an emission inventory of existing air pollution in the Austin metropolitan area and a forecast of emissions to the years 2010 and 2020. This information is vital to developing the most efficient and cost-effective air pollution control program.

The emission inventory includes the pollutants that combine to form ground-level ozone, the principal component of smog. Ozone itself is not directly emitted from any source, but comes from a combination of volatile organic compounds (VOCs) and oxides of nitrogen (NOx). The formation of ozone is strongly dependent on weather conditions, and reaches hazardous levels whenever hot, sunny stagnant conditions arise. These conditions occur an average of about fifteen days a year in the Austin area.

Another aspect of the air quality study is a short-term monitoring program. Until now, TNRCC has been monitoring in only one area of town for ozone. The City of Austin recently began monitoring ozone at an "upwind" site at Bergstrom Air Force Base. This monitor is operated with assistance of the TNRCC, and will not only help us determine how much ozone is formed from local emissions, but also how much is blown in from San Antonio or Houston.

3.4.1.2 Ozone Advisory Program & Voluntary Vehicle Trip Reduction Program (V-Trip)

The voluntary action program, formerly titled Clean Air Metro Austin, now called Austin AIR Force, was initiated jointly by several government and private organization sponsors to try to reduce unhealthy peak levels of ozone in the Austin area.

Ozone Advisories are announced when weather conditions are expected to produce high levels of ozone in the Austin metropolitan area. On those days citizens are urged to help reduce emissions by carpooling, riding the bus, riding bicycles, and avoid running gasoline engines. Other actions include waiting until late afternoon to buy gas, mow lawns or run errands. On days when ozone advisories are issued, Capital Metro offers free fares on all regularly scheduled buses and special transit services with the exception of shuttle service to special events.

A Voluntary Vehicle Trip Reduction Program (V-Trip) is being created to help reduce air pollution emissions and traffic congestion. The two-part program consists of: 1) a list of measures recommended to all metropolitan area employers to encourage alternative modes of travel to work, and 2) a pilot program to be conducted by ATS, Capital Metro, the City of Austin, and TNRCC with selected employers for extensive support of alternative modes of travel. The draft program and list of recommended measures for employers is listed below:

1. Promote Alternative Ways To Travel
   - Ridesharing (carpooling and vanpooling)
   - Transit
   - Bicycle and Pedestrian

2. Promote Congestion Reduction
   - Staggered Work Hours
   - Compressed Work Week
   - Telecommuting

3.4.1.3 Long Range Pollutant Reduction Measures

The Austin metropolitan area currently has only voluntary air quality programs in place; the City of Austin is working in conjunction with ATS, TNRCC, Capital Metro, and other agencies on programs to reduce vehicle trips, encourage alternative fuels, and operate an ozone advisory program. Future regulations will be implemented based on the results of the emission inventory completed under joint agreement by ATS and the City of Austin. Potential regulations would cover Stage I/Stage II vapor recovery systems, RFG (reformulated gasoline), low volatility gasoline which produces fewer emissions due to slower evaporation, and automobile inspection and maintenance. A Stage I vapor recovery system is designed to prevent vapors from escaping when gasoline is transferred from storage tanks to trucks and from trucks to gas stations. A Stage II vapor recovery system is designed to prevent vapors from escaping when gasoline is transferred to automobiles.

Analysis of long range pollutant reduction measures will begin in 1995 after the emission forecasts have been analyzed.

3.4.2 Energy Conservation

ISTEA requires that transportation plans promote energy efficiency and conservation goals and that the transportation system is balanced and intermodal. ATS strategies to conserve energy include a reduction in the dependence on conventional fuel sources and the amount people travel. These strategies are in compliance with federal, state, and local requirements as discussed below.

3.4.2.1 Federal Legislative Requirements

The Energy Policy Act (EPACT) of 1992 was enacted to encourage economic growth, strengthen energy security, and improve environmental quality through the use of alternative fuels. EPACT affects all urban areas with populations of 250,000 or more, which includes the Austin metropolitan area. Except for rental cars, auto dealers, law enforcement, emergency, and off-road vehicles, fleets with more than 20 centrally fueled light-duty vehicles and a total fleet of more than 50 vehicles must convert 20 percent of their fleets to alternative fuel vehicles by the year 1999. Federal fleet conversions are under a tighter schedule.

ATS has identified congestion/demand management techniques (Section 4.3) that improve the efficiency of the traffic network and reduce traffic delays and congestion. These techniques promote conservation of energy resources by encouraging alternative modes of transportation, including carpooling and bicycling, transit improvements and high occupancy vehicle facilities.

3.4.2.2 State Requirements

The *AMATP* conforms to the Texas Alternative Fuels Fleet Requirement. Senate Bills 7, 740, and 769 address the conversion of school district, state agency, metropolitan transit authority, city transit department, regional transit authority, local government, and private fleets. ATS monitors the efforts of the Texas Sustainable Energy Development Council which encourages the development and use of renewable energy resources in Texas. ATS and TxDOT staff cooperate in the planning and improvements processes to ensure that ATS and state plans are compatible.

3.4.2.3 Local Programs

ATS participates in the Clean Cities Program, which promotes the reduction of dependence on petroleum-based imported fleet fuels in the Austin and Travis County area, as specified in the Energy Policy Act of 1992. Participants in the Clean Cities Program include Travis County, the City of Austin, the Texas Department of Transportation, the Capital Metropolitan Transportation Authority, ATS, and others. ATS is expected to maintain a liaison with the Alternative Fuels Research and Education Division of the Railroad Commission, as well as monitor the conversion of fleet vehicles.

3.4.2.4 ATS Initiatives and Strategies

ATS focuses upon specific measures to conserve energy by targeting the demand for energy and facility use. ATS follows the newest strategies to reduce vehicle miles of travel and to reduce congestion and traffic delays, all of which cause higher energy consumption.

V-Trip. ATS developed a Voluntary Vehicle Trip Reduction Program (V-Trip) to improve air quality and reduce traffic congestion, which furthers the goal of energy conservation. This program is described in the Air Quality section (section 2.5.1.2).

Congestion Demand Management. The Congestion/Demand Management Element, Section 4.3, addresses congestion and excess fuel consumption in the Austin metropolitan area. ATS has approved $2.25 million in funding for a Congestion/Demand Management program in the 1995-1997 Transportation Improvement Program.

3.5 LIST OF BACKGROUND STUDIES/REPORTS

3.5.1 Metropolitan Planning Factors Report

3.5.2 Public Involvement Program

3.5.3 Transportation Trends Report

3.5.4 Public Opinion Survey

3.5.5 Emission Inventory and Forecast

Section 4

Plan Elements

Section 4.1

Plan Integration, Implementation and Intermodalism

4.1 PLAN INTEGRATION, IMPLEMENTATION AND INTERMODALISM

Using the strategies discussed in Section 2.0, the Austin Transportation Study (ATS) is cooperating with other area agencies to recommend transportation policies and programs for the next twenty-five years. Section 4.0 of the *Austin Metropolitan Area Transportation Plan* (*AMATP*) focuses on five elements of the planning and implementation process: Public Transportation, Congestion/Demand Management, Bicycle/ Pedestrian/Trail, Roadway, and Freight Movement.

The clear intent of ISTEA legislation is the coordination of facilities across all major modes of travel into a balanced and complementary or intermodal system. Thus, the five elements presented in this section are interrelated and interdependent. ATS, working with member jurisdictions and the public, has developed strategies to address the travel needs of the study area population without sacrificing the community's social, environmental, and economic priorities; the five-element intermodal framework of the *AMATP* is critical to achieving that goal.

Once the *AMATP* is adopted it is important to work with member jurisdictions to ensure compatibility between it and local plans. It is also important to monitor changes in transportation characteristics and land use development patterns. This will allow ATS to know if the adopted policies are successful and will prepare for the next revision of the Plan in 1999.

4.1 PLAN INTEGRATION, IMPLEMENTATION AND INTERMODALISM

A. Integration and Implementation Policies and Programs

Policy A-1: ATS will work with member jurisdictions to achieve compatibility of the Austin Metropolitan Area Transportation Plan (AMATP) with local plans. Adoption of AMATP by member jurisdictions is a necessary condition to be eligible for any federal assistance to that jurisdiction.

Policy A-2: ATS will prepare and adopt a population and employment policy forecast which is consistent with member jurisdiction growth policies and is supported by the AMATP.

- This is intended to support the diversity of land use goals and characteristics of ATS member jurisdictions and communities.
- Policy Advisory Committee (PAC) members and others have criticized the "existing trends" forecasts for being too low in Travis County and in the central subarea and inhibiting the efforts to promote "compact city" growth.
- The *AMATP* need not match a trends forecast; it can be used to support the kind of metropolitan area that is desired.
- See the transit corridor Policies B-3 and B-4 in the Public Transportation Element (Section 4.2).

Policy A-3: Coordinate transportation planning activities with land use and other infrastructure planning activities in cooperation with affected agencies and jurisdictions.

Policy A-4: ATS supports the reduction in travel and the high proportion of drive-alone travel, and an increase in telecommuting and the proportion of transit ridership, ridesharing, bicycling and walking trips, especially during peak periods.

Policy A-5: ATS supports the development and expansion of multi-purpose activity centers throughout the metropolitan area.

- Such centers include commercial, office, recreational and residential development and therefore reduce the need for automobile travel.

Policy A-6: ATS will develop and maintain a data collection program for monitoring changes in the transportation system and land use development characteristics in the metropolitan area.

- Effective metropolitan planning requires extensive information about the transportation system, travel behavior, existing land use and proposed land use.

- Effective metropolitan planning also requires that all agencies involved in the provision of transportation facilities services coordinate their activities and use compatible data.

Examples of steps to implement a data collection program policy are:

a) Develop and support an ongoing transportation data collection program, that includes transportation system characteristics such as:

   - Volume counts (automobile, transit, bicycle, and pedestrian)
   - Transit ridership
   - Travel time and vehicle delay
   - Accident analysis
   - Vehicle miles of travel
   - Vehicle occupancy
   - Vehicle mix
   - Air quality levels
   - Socioeconomic data
   - Origin and destination
   - Peak travel period characteristics
   - Bicycle Transit Linked Trips

b) Conduct a metropolitan area travel survey and comprehensive traffic counts in 1997.

c) Regularly monitor and report metropolitan land use development and population and employment changes.

d) Provide annual reports on characteristics of the transportation system and land use changes.

Policy A-7: ATS will work with TxDOT to implement the management and monitoring systems to meet the content and schedule requirements of ISTEA and the U.S. Department of Transportation. The systems are for pavement, bridge, highway safety, traffic congestion, public transportation facilities and equipment, intermodal facilities and systems, and traffic monitoring for highways.

Policy A-8: ATS will maintain project implementation programs that reflect schedules and agency responsibility for major transportation projects in the ATS area.

- There is a need to outline and publicize the implementation steps and status of major projects so that responsibilities, timelines, and status is clear to all interested parties.

- These implementation programs will provide a bridge between the Long Range Plan (*AMATP*) and the Transportation Improvement Program.

4.1.2 Access to Intermodal Transportation Networks

4.1.2.1 Intermodalism

The term "intermodal" is relatively new to most people and can be confusing even to transportation professionals. Intermodalism originated within the freight shipping industry as the practice of allowing a freight shipment to change modes of transportation during the course of a single trip from origin to destination. The first intermodal activity began with the practice of switching semi-truck trailers from their rubber-tired tractors on the highway to a "piggy back" ride on top of railroad flatcars.

The term "intermodal" has recently taken on a more universal meaning. An intermodal trip is now described as a trip where there is at least one change in mode of transportation experienced in the movement of either *goods or people.* In this section of the *AMATP*, "intermodal" refers only to the *movement of people.* The movement of freight is addressed in Section 4.6 (Freight Movement Element).

4.1.2.2 ISTEA

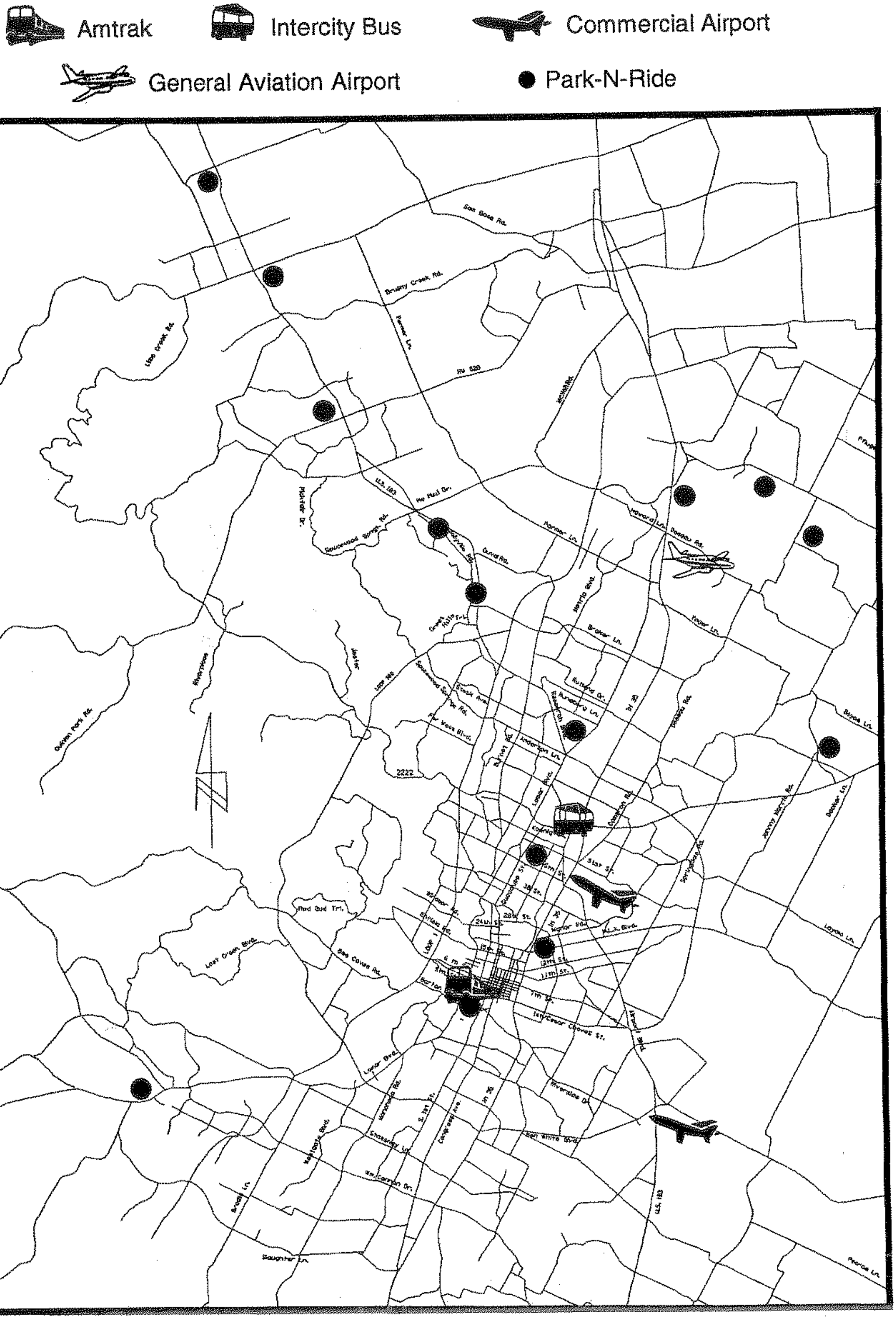
In order for planning to be considered comprehensive, the MPO must consider "international border crossings, and access to ports, airports, intermodal transportation facilities, major freight distribution routes, national parks, recreation areas, monuments and historic sites, and military installations." ISTEA provides a specific requirement that MPOs shall develop transportation plans and programs which " *shall provide for the development of facilities..., which will function as an intermodal transportation system for the State, the metropolitan area and the Nation.*" The goal of ISTEA (factor #7) is to improve the efficiency of the transportation network by focusing on *access.*

4.1.2.3 Access

The term "access" has been used in the transportation field to define physical proximity and ease of approaching a location. However, "access" has other important dimensions that need consideration. Three other characteristics affect the consumer's perception of access: appeal, connectivity and price. An alternative has appeal if it is conveniently located, has ample security and lighting, provides adequate amenities, and offers a high level of service. Connectivity is defined by how directly an individual can reach his destination. Service must be reasonably priced.

Access (proximity, appeal, connectivity and price) influences an individual's decision about which mode of transportation to use. It is difficult to make other transportation modes as appealing as the automobile, because personal automobile use has exceptional access. An individual's choice of transportation is based on perceptions of convenience and price. For example, Southwest Airlines dominates the Texas intercity market because its service is convenient, accessible and reasonably priced. Likewise, a metropolitan area must incorporate all of these characteristics of access in order to have an effective intermodal transportation network. However, the Austin metropolitan area presently has only seventeen (17) locations (see Figure 4.1-1) which can be considered intermodal, and all but five are Capital Metro Park and Ride lots. The remaining two locations as shown on Figure 4.1-1 are

Figure 4.1-1
Intermodal Sites



the future Austin Airport at Bergstrom and the Austin Executive Airpark (formerly Timm's) for private planes. Neither of these two sites currently has intermodal service. Facilities at the new airport are being planned, and the private airstrip has ample room for a park and ride facility that offers excellent access to IH 35. The Amtrak station has only six trains per week in service and is hard to find and inconvenient to most residents of the ATS area.

The 14 park and ride locations are insufficient to provide community-wide access and connectivity. Automobile-to-bus is the only option offered at the park and ride lots and relies on the roadway network to function. Many of these park and ride locations are served by a limited number of bus routes and infrequent service intervals. There are shelters at some locations but no restrooms or other amenities. The service area surrounding each location is so large that many people will not switch modes, since they already have to drive their personal automobile a long distance to reach the intermodal access point. Therefore, commuters continue using automobiles rather than public transportation for the entire trip.

4.1.3 Intermodal Policies and Programs

B. General

Policy B-1: ATS will support and make available federal funds for the development of intermodal passenger facilities in each of the ATS sub-areas.

- Traffic congestion within each neighborhood is not a major concern to commuters. However, it is important to give people access to a network that connects origins in one area with destinations in another. To accomplish this, each area needs at least one high quality access point. Such a facility will serve to connect the neighborhood areas to the intermodal network of roads, trails, and railways.

- This development is also necessary to demonstrate the intent to provide intermodal access, in compliance with the ISTEA requirements.

Policy B-2: ATS will work to build public support for the completion of an integrated regional fixed guideway system that supports compact mixed-use communities around transit stations. The system should include facilities for light rail transit as outlined in Section 4.2 and the design of the system should be amenable to an increase in regional and intercity commuter rail operations.

- Fixed guideway provides the metropolitan area with an alternative to the roadway network. Fixed guideway transit stations should be highly accessible and effectively linked to other modes of transportation throughout the region.

- Fixed guideway stations should be designed with ample parking for motor vehicles and bicycles in suburban areas, because a majority of citizens in these areas will access the station by automobile or bicycle.

Policy B-3: ATS will encourage member jurisdictions to create Park/Bike-and-Ride facilities to provide better access for transit and carpools. Park and Ride facilities should also be created wherever HOV lanes are considered.

- Study Park and Ride demand, especially in sub-areas 4, 6, and 7. A thorough investigation should indicate significant "latent demand". Commercial property owners have recently observed that the parking

lots designated for their customers are being used by commuters as unofficial Park and Ride locations.

Policy B-4: Evaluate passenger rail routing and terminal alternatives.

- The location of the current Amtrak station offers few opportunities for intermodal access. It is hard to find and is not convenient to most of the City. Relocation of the station is a viable option. If the rail freight line is rerouted (see Freight Element), numerous opportunities for improvement will be available, including possibly locating these facilities at the new airport.

C. Access to Airports

Policy C-1: ATS encourages the use of alternatives to single-occupant vehicles by airport commuters from both the local and regional areas. The design of the new airport should reflect the goal of good intermodal access.

- The trip to the new airport will be about twice as long as the current trip for many airline passengers. They should be given incentives to use some form of mass transit (e.g., bus, private shuttles, light rail, commuter/regional/intercity rail). These facilities need to be closely integrated with those of the airport.

- The relocation of the airport to a more remote location provides Austin with an excellent opportunity to establish a true intermodal facility and to get airport commuters out of the habit of relying solely on automobiles, thereby decreasing congestion on major arterials.

- Institute alternatives early to capture riders before they develop the habit of using single occupant vehicles to travel to the new airport. Make sure the alternative vehicles are equipped with baggage handling capabilities.

- Inform the public of the alternative ways to get to the airport. Get this information to the public using the mass media, travel agencies, and the transportation providers.

Policy C-2: Remove the permit "freeze" on private airport shuttles, currently enforced by the City of Austin.

- The City's current policy interferes with the goal of intermodalism. It is a legal barrier that prevents participation by the private sector in providing cost-effective alternatives to single occupant vehicles.

Policy C-3: ATS encourages the coordination of shuttle and transit routes and schedules with flight schedules wherever possible, in an effort to make alternative modes of transportation more appealing.

- Conduct an origin/destination survey for local airport passengers. Identify which areas generate the most airport passenger traffic to assist with most efficient shuttle and transit service design.

Policy C-4: ATS recognizes the need to provide proper and sufficient signs to guide passenger vehicles and truck freight traffic into and out of the airport.

- Member jurisdictions should adopt policies that clearly define the routes to and from the airport which best accommodate each type of traffic. Plans should be made to integrate easy access from SH 71 and US 183 and SH 130, all of which will intersect near the airport.

D. Access to Freight Distribution Routes - (See Section 4.6 - Freight Element)

4.1.4 List of Background Studies and Documents

4.1.4.1 Design Criteria for Intermodal Access

4.1.4.2 Report on Airport Access

4.1.4.3 Survey of Local Transportation Providers

Section 4.2

Public Transportation Element

4.2 PUBLIC TRANSPORTATION ELEMENT

4.2.1 Introduction

The Austin Transportation Study places major emphasis on public transportation for meeting future mobility needs in the Austin metropolitan area. The Capital Metropolitan Transportation Authority supports the strengthening of public transportation, and has adopted the following mission statement:

> "We envision a multimodal transportation system which provides ease of mobility throughout the Austin metropolitan area and which contributes to clean air and water, a sense of community, preservation and enhancement of our neighborhoods and inner-city, and healthy economic development. Our mission is to seek our vision through:
>
> - Effective public transportation systems.
> - Effective traffic management programs, particularly those aimed at reducing single-occupancy vehicle travel and peak-hour congestion.
> - Planning and development to encourage walking and biking.
> - Leadership in urban planning."

Capital Metro has identified five goals for the 1994 *Austin Metropolitan Area Transportation Plan (AMATP)* Public Transportation Element:

- Support the ATS vision.
- Support land use planning.
- Reduce single-occupant vehicle travel.
- Develop an affordable public transportation plan.
- Create a public transportation system which is accessible to all segments of the community.

4.2.1.1 ISTEA Requirements

Federal regulations include several transit-related planning factors that are to be considered in the development of a regional transportation plan.

Land Use

The form and quality of urban growth can best be managed when transportation and land use policies are mutually supportive. Numerous studies have documented the inter-relationship of transportation infrastructure investments and development activity. Transportation improvements can facilitate population and employment growth, but in and of themselves are not sufficient to produce desired land use patterns. Such patterns are achieved through concerted land use and transportation policy and planning.

The regional transportation plan should recognize the likely effect of land use policies and development on transit investment decisions. As ATS member cities are able to focus urban growth within their respective corporate limits, transit investments begin to yield higher returns in terms of ridership and cost-effectiveness. Lower yields on transit investments may be

expected if the preponderance of regional growth is allowed to continue in unincorporated areas at the city edge. Therefore, commitments to construct major transit investments should be coordinated with the development of land use policies that focus growth within well-defined urban boundaries, while enhancing the existing neighborhoods' quality of life.

Expansion, Enhancement, and Increased Use of Transit Services

Federal planning guidelines stress the importance of expanding, enhancing and increasing the use of transit service. The policies, programs, facilities and services outlined in the following pages focus on a variety of measures to create substantial transit capacity, improve mobility and promote transit use.

Capital Investments that would result in Increased Security in Transit Systems

Public transportation operates in a public environment. To be an attractive transportation choice for a significant cross section of the community, transportation facilities and systems should foster an environment in which patrons are safe and secure. While passenger security is an important consideration, it is one of many factors that determine the relative attractiveness of transit service. The public transportation plan should promote the concept of transit stops and stations as mixed-use activity centers that provide an attractive, secure and safe atmosphere for patrons and non-patrons alike.

4.2.1.2 Challenges and Opportunities

Many challenges and opportunities confront public transportation within the Austin metropolitan area. Capital Metro's service area of 505 square miles and population of over 550,000 covers only a portion of the ATS study area (see Figure 4.2-1). About half of the Service Area is outside of the higher density urbanized area and is sparsely developed. The 1994 *AMATP* Public Transportation Element is intended to provide broad transit planning guidance for the entire ATS study area over the next 25 years, addressing the following challenges and opportunities.

Creating Livable Community

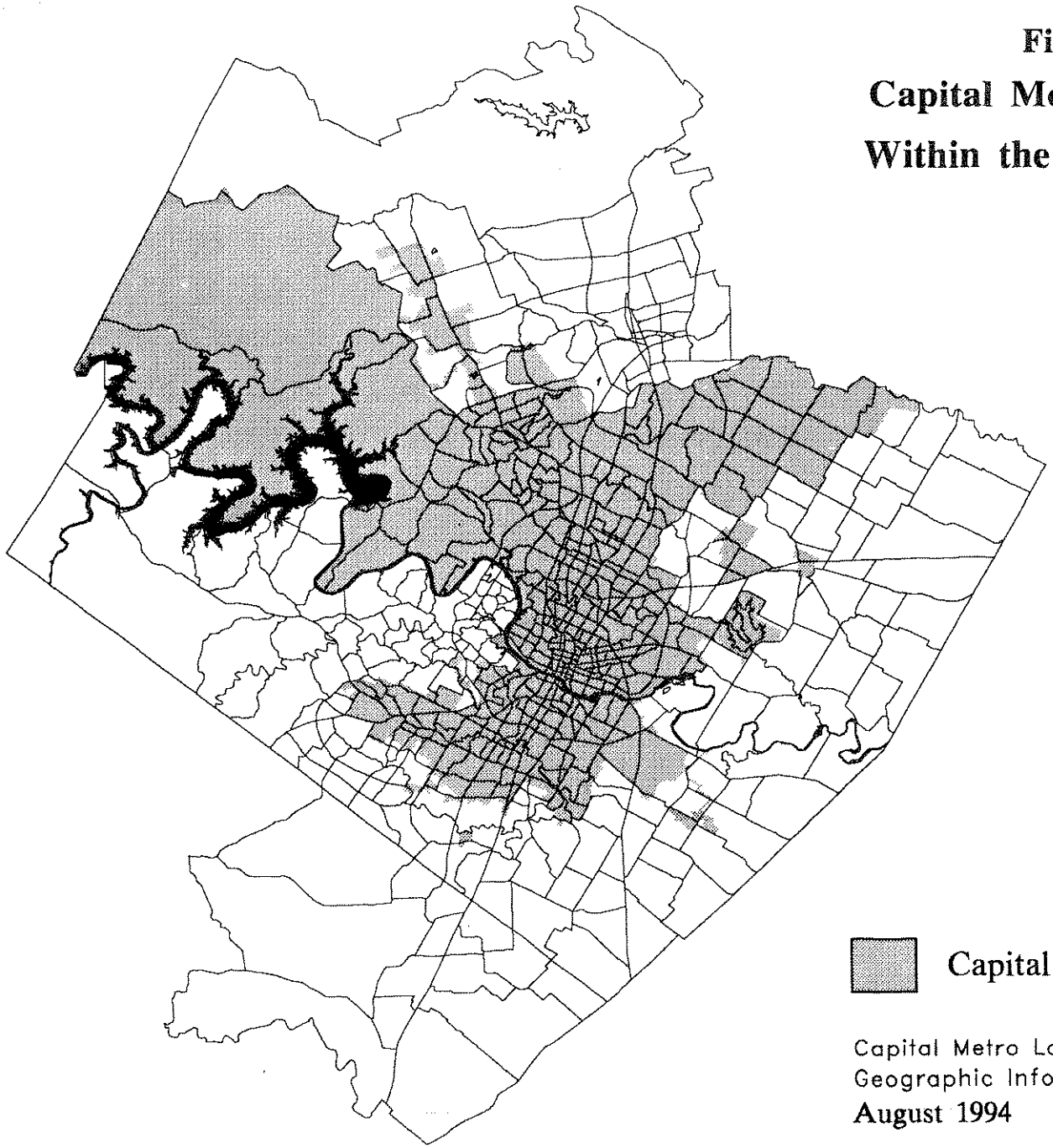
Neighborhood Vitality and Control. Austin is rich in its diversity of cultures and sub-cultures, each with the desire and ability to create distinct life styles. Transportation plays a major role in the quality and health of neighborhood life, and local communities must be given greater control in the provision and appearance of transportation services that traverse their neighborhoods. This must be balanced with the overall mobility needs of the metropolitan community as a whole.

Environmental Quality. The need for improved mobility is inseparable from the need for overall quality of life. Transportation solutions must present not only an improvement in mobility; they must also protect and enhance the metropolitan area's quality of life.

Connecting Land Use and Transportation Policy

Transport Efficient Land Use Patterns. Regional economic competitiveness is strengthened by a transport-efficient land use pattern which combines a compact, well-mixed downtown with several outlying, high-density areas - all linked by an extensive public transit system. The system should be designed with sufficient capacity to accommodate existing and facilitate proposed major activity centers. Transit facilities should be integrated into activity centers and along higher-density corridors. This pattern of transportation investment builds upon existing urban infrastructures, supports more efficient land development patterns and consequently strengthens the tax base of ATS member cities.

Figure 4.2-1
Capital Metro Service Area Within the ATS Study Area



Capital Metro Service Area Communities	
Austin	Manor
Cedar Park	Pflugerville
Jonestown	San Leanna
Lago Vista	Travis Co. Pt. 2
Leander	Williamson Co. Pt. 1 & 2

Miles

0 5 10

Capital Metro Service Area

Capital Metro Long Range Development Department
Geographic Information System
August 1994

The existing pattern and trend toward widely separated and segregated land uses has encouraged a dramatic escalation in trip making within the metropolitan area. The challenge over the next several decades will be to foster more mixed-use development which invites a higher proportion of walking, bicycling and transit trips, and diminishes the need for single-occupancy vehicle trips. Transit stops and stations, integrated with pedestrian and bicycle routes, can function as centers around which mixed-use residential, retail and commercial activity can be developed.

Downtown Revitalization. The core area of Austin, which contains the central business district, the state capital complex and the University of Texas (UT) Main Campus, constitutes the primary economic engine for the Austin metropolitan area. Improved access and circulation to and around the central core will be one of transit's major responsibilities in the coming decades.

Other Activity Centers. In addition to the central core, other major activity centers are emerging throughout the ATS region. Providing cost-effective transit access and circulation to and around these centers, many of which are beginning to develop in suburban areas, will become an increasingly important function for transit in the future.

Diversifying Travel Behavior

Mode Share. Transit trips have traditionally accounted for only a small fraction of total daily travel. However, the ATS commuter survey indicated that 65 percent of respondents would be willing to use transit. Through initiatives aimed at customer comfort, safety, competitive travel times, and better route and schedule information, the overall mode share for transit could be increased. Adoption of transit-oriented design guidelines and more transport-efficient land development patterns would also encourage a modal shift away from single-occupant vehicles (SOVs).

Intelligent Transportation Systems. Transit service will greatly benefit from new technologies aimed at improved signal timing, automatic vehicle location, real-time schedule monitoring and customer information systems, and more convenient access to transportation services and facilities.

Corridor Capacity and Congestion Levels. Many arterial roadways and highways in the metropolitan area have become congested as a result of the preponderance of SOV travel. Transit can be effective at moving large numbers of people within existing street rights-of-way, with a resulting increase in people-carrying capacity as opposed to vehicular capacity. Sound traffic engineering principles exist for the integration of higher-capacity transit service with other traffic operations, and must be applied to ensure that congestion levels, particularly at intersections, are improved for all travelers.

Interstate Highway 35 is a unique transportation challenge because of its multiple functions and excessive congestion. High capacity transit service designed to relieve some of the commuter traffic from IH-35 would create additional capacity for the movement of goods, which is expected to become an increasingly significant function with the advent of the North American Free Trade Agreement (NAFTA).

Cost-Effectiveness. Major transit improvements must compete at least partially on the basis of cost-effectiveness, as do all other major transportation projects. The Major Investment Study (MIS) process requires consideration of many other factors besides cost-effectiveness.) Traditional measures such as cost per ride and farebox recovery that gauge the effectiveness of capital and operating investments should continue to be important evaluation tools. Because of its greater carrying-capacity, transit improvements can also

result in a variety of cost savings through avoided roadway construction, avoided parking construction, and avoided vehicle accidents. These measures of effectiveness should also be incorporated into the MIS process.

To the degree that transit investments can support the development of more efficient land-use patterns, transit improvements can also be evaluated in terms of reduced infrastructure requirements and an enhanced tax base for member jurisdictions.

Parking Management. Employee parking in the downtown, state capital and UT areas is currently provided at no or low cost to the employee. A significant opportunity exists to improve transit ridership by encouraging public agency and private sector employers to develop parking management and SOV trip reduction plans. Higher levels of transit usage reduce the amount of parking spaces required, thereby permitting other, non-automobile related land uses to flourish.

Allocating Resources

The "3-C" Process. Comprehensive, Cooperative and Continuing..., these have long been the guiding principles of transportation planning. The provision of transportation services is currently spread among all levels of government, with almost every agency faced with critical transportation funding needs. In the coming years, more creative sharing of transportation funding resources and responsibilities could contribute to more effective and efficient provision of transportation services.

Balanced Funding Program. Federal transportation legislation has given local jurisdictions like the ATS increased authority over which transportation projects are approved and how they are funded. ATS has an opportunity over the coming decades to achieve the desired balance between roadway, transit, pedestrian and bicycle infrastructure investments. Previously adopted long range transportation plans, like the 1986 ATS plan, are being re-evaluated in part because of funding constraints and the need to achieve a balanced pattern of transportation investments.

Providing Essential Mobility

There are many people throughout the metropolitan area who, for a variety of reasons, rely on transit. Commuters, persons with disabilities, elderly citizens, lower income citizens, choice riders, people who live in rural areas - all of these groups have a traditional stake in the quality and availability of transit service. Serving the mobility needs of these constituents over the next 25 years will be an essential responsibility for public transit.

4.2.2 Public Transportation Policies and Programs

A. Support the ATS Vision.

Policy A-1: ATS supports the development of transit services that preserve the cultural and physical diversity of Austin area neighborhoods.

- Transit stations should form small centers of public life, creating gateways into neighborhoods. They should blend into the pedestrian and bicycle network, and reflect the cultural identity of the neighborhood.
- Bus stops should be easy to recognize and pleasant, with enough activity around them to make people feel comfortable and safe.

- Smaller transit vehicles should be used for neighborhood oriented service.

- Even within high-capacity transit corridors, there will be locations where higher-intensity or mixed-use land development patterns are not appropriate.

Policy A-2: ATS supports the implementation of transit plans that enhance environmental quality.

- ATS encourages transit operators to utilize clean fuel options.

- Overall, the transit "presence" should be aesthetically positive.

B. ATS supports land use planning.

Policy B-1: ATS encourages the adoption of land development guidelines by member jurisdictions that focus growth within the corporate limits of ATS member cities. ATS specifically requests that, by 1995, the City of Austin, in conjunction with Capital Metropolitan Transit Authority, evaluate what changes would be needed in the City of Austin Master Plan in order to provide a plan that reflected a "compact city" approach to future growth.

- As an example, the City of Austin recently established a citizens coordinating group to update planning principles and policies for the land use decision-making process.

Policy B-2: ATS supports the development of procedures that will promote collaboration between Capital Metro and other public, private and community-based organizations in the land development review processes of member jurisdictions.

- Coordination can be enhanced through site design and roadway design criteria developed by member jurisdictions in coordination with Capital Metro. Site Design criteria should include: easy pedestrian/bicycle access to transit routes; for commercial projects, building orientation that invites pedestrian activity and parking priority for van/car pools; and corresponding reductions in off-road parking requirements. The roadway design criteria should include: bus turnouts on major arterials and shopping facilities; bus stop pads that save the regular roadway; street geometrics for buses, especially at intersections/turns; and comprehensive integration of bicycle routes into street/roadway system. Where traditional subdivision development continues to occur, provisions should be made for transit linkages.

- Member jurisdictions are encouraged to dedicate appropriate staff for the purposes of (i) ensuring compliance with transit access criteria in the subdivision and plan review process and (ii) coordinating with Capital Metro.

Policy B-3: ATS supports public/private sector coordination to identify infill and redevelopment opportunities, including joint development projects, that support transport-efficient land use patterns.

Policy B-4: ATS supports the designation of transit based land use corridors.

- A transit service classification system should be adopted and utilized by ATS member jurisdictions to help guide land use decisions. An example of such a classification system is shown in Table 4.2-1.
- High-capacity fixed-guideway transit service can support higher levels of land use and should become primary corridors for residential and employment growth. An illustration of the "principal transit corridors" is shown in Figure 4.2-2.
- As transit based land use corridors develop, the type and intensity of transit improvements should reflect the level of demand within the corridor. Higher levels of transit service can, in turn, afford opportunities for additional corridor development.

C. ATS supports the reduction of single occupant vehicle (SOV) travel.

Policy C-1: ATS supports preferential treatment for transit and other high occupancy vehicles (HOV) such as vanpools and carpools.

- Express transit routes should be routed onto HOV lanes if and when such lanes are constructed along IH-35, U.S. 183, Loop 1, or other roadways.
- High-capacity, high-demand transit corridors should have exclusive rights-of-way and preferential signal treatment to ensure safe and convenient operations.
- Carpool and vanpool vehicles should be given preferential parking spaces.

Policy C-2: ATS supports the development of a parking management plan for the downtown, State Capital Complex, and University of Texas Main Campus areas.

- Parking policies should encourage transit and HOV trips, discourage the all-day warehousing of SOVs, and encourage the availability of short term (shopping, service) parking.

Policy C-3: ATS supports public agency and private sector initiatives such as subsidized transit pass programs, transportation management associations (TMAs), employer sponsored jitneys, and parking cash-out programs.

Policy C-4: ATS encourages member jurisdictions to support more mixed-use development which invites a higher proportion of walking, bicycling and transit trips, and diminishes the need for single-occupancy vehicle trips.

Policy C-5: ATS supports the creation of intermodal transfer centers which facilitate the development of a seamless transportation network.

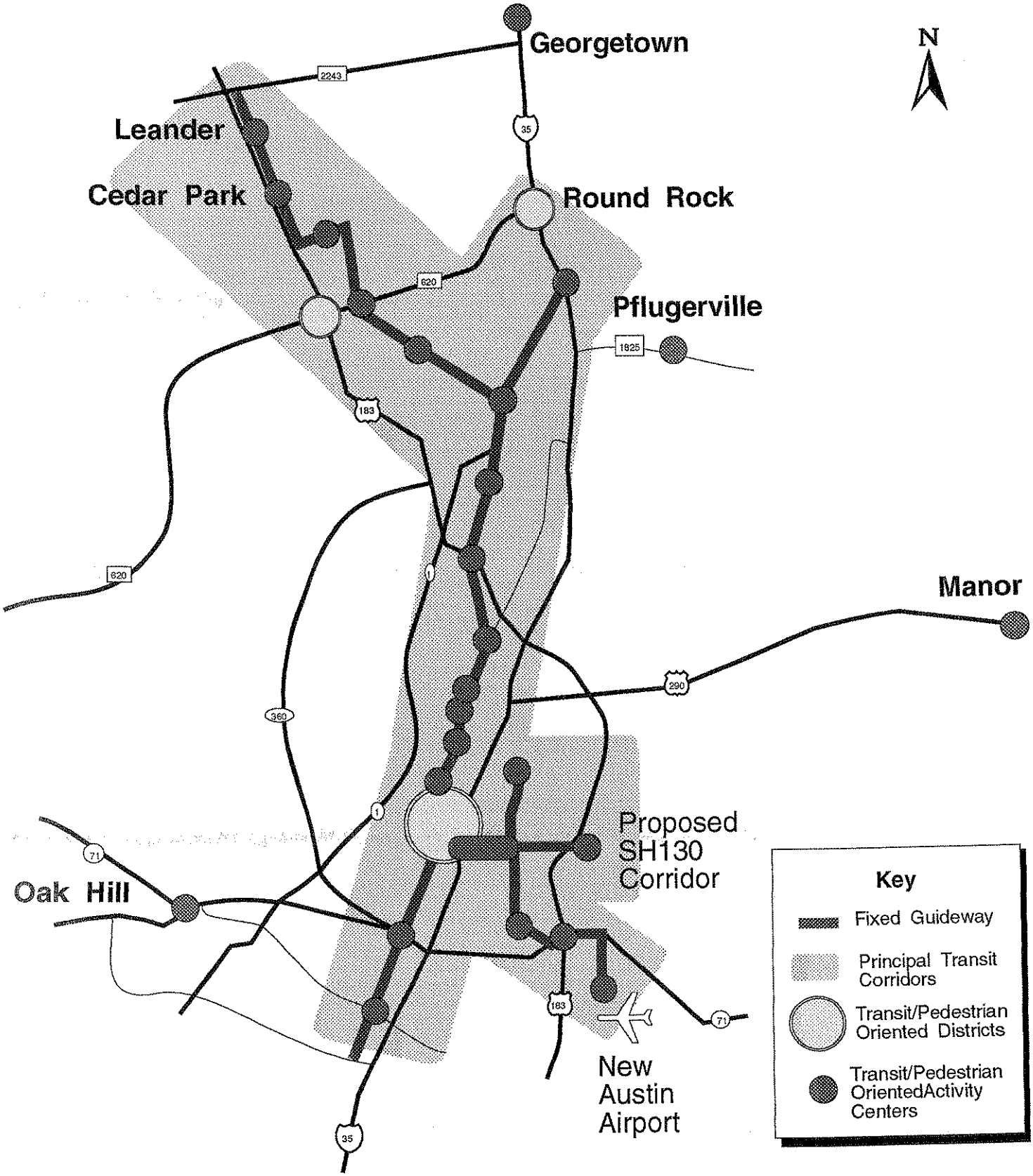
- The new Austin airport should be developed as a national model of intermodalism.

Table 4.2-1
Transit Based Land Use Development Patterns

	Principal Transit Corridor	Major Transit Corridor	Suburban Transit Corridor	Local Transit Service	Transit/ Pedestrian Oriented District (T/POD)	Transit/ Pedestrian Oriented Activity Center (T/POAC)
Types of service	Fixed guideway: light rail busway, etc.	Limited/express bus Local service	Express bus Local service	Local service	Fixed guideway Express service Local service	Some circulator service.
Level of service	Provides the most frequent service with 5-7 min. between vehicles in the peak hour and 10 min. in the off peak hour.	Provides frequent service with 10 min. service all day.	Local service will be at least every 20 min. in the peak and less than 30 min. in the off-peak. Express service will be 10 min. in the peak and less than 30 min. in the off-peak.	Service will be at least every 15 min. in the peak hour and 20-30 min. in the off peak.	Has features of primary, major, local, and circulator service.	N/A
Frequency of stations	Major stations are located every 1 mile and minor stations are every 1/4 mile.	Stations are located every 1/4 mile.	Stations are located along the park-and-ride lots and along future transit routes.	Stops are located every 1/4 mile.	Stops are located every 300'-600'.	N/A
Density of housing/ employment	Supports high density housing and/or employment centers along the entire corridor,especially at transit stations.	Supports medium density housing and employment centers along the entire corridor.	Supports lower density housing and employment except around park-and-rides where multi-family housing and higher density employment is encouraged.	Supports lower density housing and employment.	Supports the highest level of density for housing and employment within the area.	Supports high density housing and employment around major station facilities, transfer centers and park-n-ride lots.
Area of influence	1/2 mile in each direction.	1/4 mile in each direction.	1 mile in each direction.	1/4 mile in each direction.	Area of influence varies by the size of the district.	1/4 mile radius.
Types of improvements	High level of station improvements, bike parking facilities, pedestrian amenities, ticket machines, signal preferential treatment, off-street bus/rail transfer stations, park-n-ride lots.	Shelters, curb extensions, pedestrian amenities, signal preferential treatment, Transportation Systems Management, sidewalks.	Pedestrian/bicycle amenities, bike parking facilities, bus separated lanes, lighting at stations, park-n-ride lots.	Improvements and amenities based on local need.	High levels of infill and mixed-use activity, pedestrian and bicycle improvements, sidewalks	High levels of infill and mixed-use activity, pedestrian and bicycle improvements, sidewalks

Principal Transit Corridors

Figure 4.2-2



D. ATS supports the development of an affordable public transportation plan.

Policy D-1: ATS supports using a variety of local, state and federal transportation funding sources to support transit operations, maintenance and infrastructure investments.

- Operating and maintenance requirements must be fully met as new capital improvements and costs are introduced.

E. ATS supports creating a public transportation system which is accessible to all segments of the community.

Policy E-1: ATS supports the provision of special transit services for persons with disabilities and elderly persons who rely on public transportation and are not able to use mainline transit services.

Policy E-2: ATS encourages the use of low-floor transit vehicles, the development of infrastructure to enhance accessibility and the development of accessible communication systems to enhance accessibility for all riders.

Policy E-3: ATS supports the continuation of transit fare policies that keep public transportation services affordable and convenient to riders.

Policy E-4: ATS supports the continuation of public transportation services for rural citizens.

F. ATS supports the development of a regional passenger rail system on existing Union Pacific Railroad right-of-way to increase mobility and assist in maintaining environmental quality.

Policy F-1: ATS encourages continued coordination with Union Pacific to pursue shared track operations (freight and commuter rail) on the existing freight mainline.

Policy F-2: ATS encourages coordination with Capital Metro regarding shared station facilities for intercity and intracity passenger rail systems at the McNeil Switch and 3rd Street/Congress Avenue locations.

- Shared facilities would further the goals of interconnectivity and intermodalism in the ATS planning area.

- Shared major transfer centers could lower capital costs for both systems.

Policy F-3: ATS encourages the investigation of a common, shared train technology for the regional and intercity systems.

- Common, shared technology would allow flexibility in trainset assignments and maintenance.

- Common, shared technology could lower initial capital investment in the two systems.

Policy F-4: ATS supports the development of a transit federation.

- A transit federation would ensure coordinated regional scheduling, advertising, marketing, and seamless fare and transfer operations.

- Membership in the transit federation would include members of the Regional Rail District; Capital Metro; San Antonio's VIA Transit; local and rural transportation providers in the Austin-San Antonio Corridor; local governments; recreational, retailing, and educational facilities; and the public.

4.2.3 Facilities and Service

The major elements of the long term transit network are illustrated in Figure 4.2-3. The Public Transportation Element contains specific transit facility and service recommendations. Table 4.2-2 shows current transit service levels by service type, along with the recommended 2010 and 2020 improvements. Figure 4.2-4 presents current and forecasted daily transit boardings, and Figure 4.2-5 shows forecasted daily boardings for each segment of the long term fixed-guideway network.

The following text describes the different types of recommended facilities and services. Table 4.2-3 describes the different types of transit service.

Fixed Guideway - refers to busways or light rail transit service that can accommodate up to 4,000 passengers/hour in the peak hour direction with 7.5-minute headways along a corridor. Although local service may exist, the primary function of the corridor is that of line haul. It operates as a limited-express to express type service. Given the nature of continually evolving guideway technology, the specific type of service is generic to allow flexibility. As a corridor develops, higher capacity transit service can be gradually introduced.

Figure 4.2-3

Long Term Transit Network

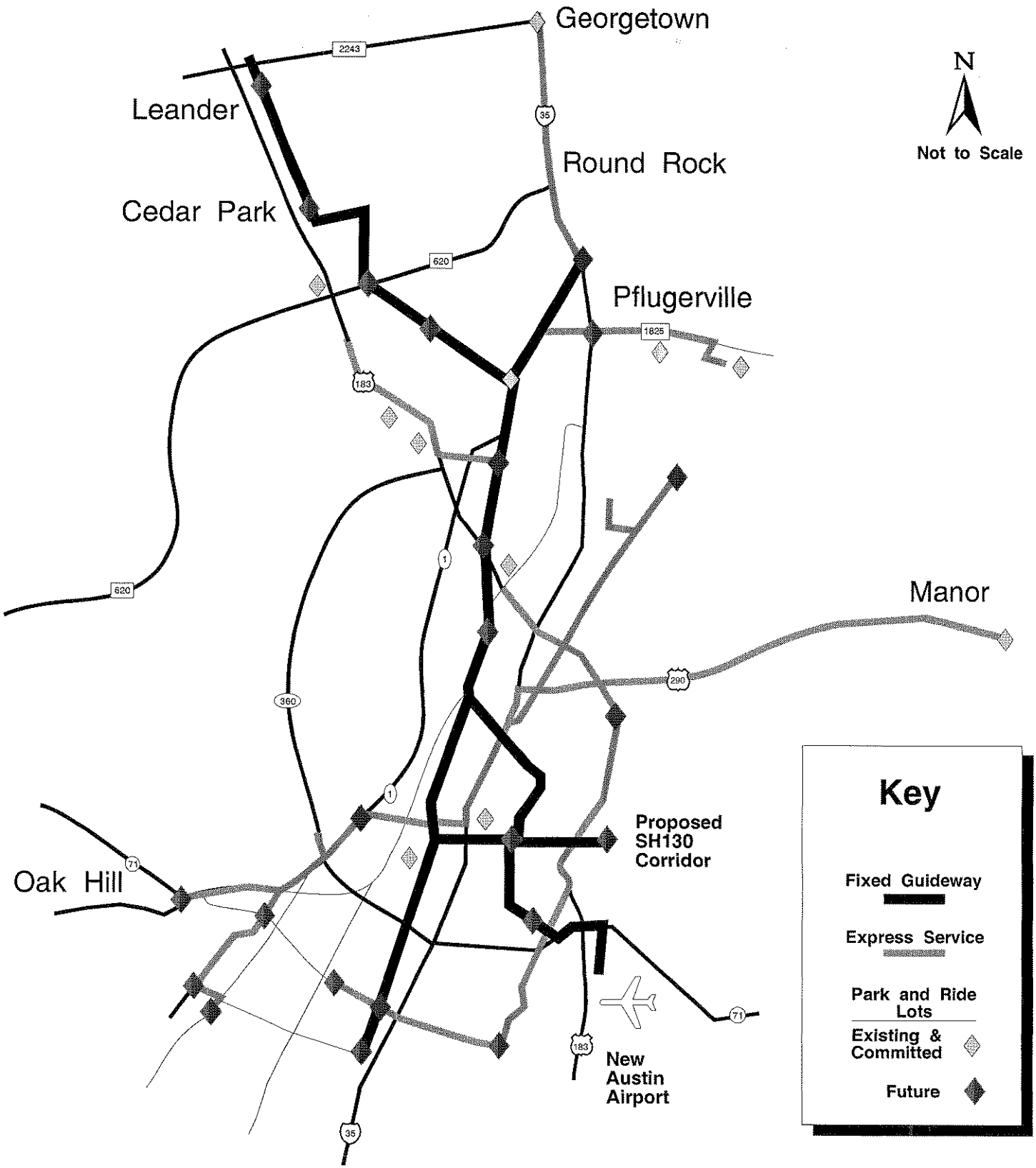


Table 4.2-2
Public Transportation Plan

SERVICE/FACILITY TYPE	EXISTING & COMMITTED	YEAR 2010	YEAR 2020
Fixed Guideway	none	North Central/Northwest (Starter Line) (FG 1)	Continued
		Bergstrom Line (FG 2)	Continued
		South Congress Line (FG 3)	Continued
		Cedar Park/Leander Line (FG 4)	Continued
		North Extension (Round Rock) (FG 5)	Continued
			SH 130 Connection
			Robert Mueller Line
Bus-Only Lanes	none	Brazos, 1st to 11th	Continued
		Colorado, 1st to 11th	Continued
Park/Bike-and-Ride Lots	Leander	Continued	Continued
	Cedar Park	Continued	Continued
	Lake Creek	Continued	Continued
	Pavilion	Continued	Continued
	Balcones Woods	Continued	Continued
	North Lamar Transit Center	Continued	Continued
	Downtown Dillo Lot	Continued	Continued
	Oak Hill	New (Oak Hill Replacement)	Continued
	Pflugerville High School	Continued	Continued
	Pflugerville Elementary	Continued	Continued
	HEB: IH-35 at Wells Branch	New (IH-35/Wells Branch Replacement)	Continued
	IH-35/11th	Continued	Continued
	Mopac/Parmer	Continued	Continued
	6 UT P-n-R lots (Sites TBD)	Continued	Continued
	Georgetown	Continued	Continued
		Mopac/5th-15th	Continued
		Mopac/William Cannon	Continued
		Mopac/Slaughter	Continued
		IH-35/Slaughter	Continued
		Shady Hollow (Brodie/Wildwood)	Continued
		Georgetown/IH-35	Continued
		Springdale/US 183	Continued
		Braker/RR (FG 1)	Continued
		US 183/RR (FG 1)	Continued
		Anderson Ln/RR (FG 1)	Continued
		IH-35/4th (FG 1)	Continued
		Pleasant Valley/5th (FG 1)	Continued
		Riverside/Montopolis (FG 2)	Continued
		Congress/William Cannon (FG 3)	Continued
		Parmer/McNeil (FG 4)	Continued
		Parmer/RM 620 (FG 4)	Continued
		Brushy Creek/US 183 (FG 4)	Continued
		Co.Road 272/US 183 (FG 4)	Continued
		MoPac/IH-35 (FG 5)	Continued
			SH 130/Au&NW RR (FG 6)
			Pleasant Valley/William Cannon
			Cameron Rd/Parmer Ln
Express Services	10 Suburban To Downtown	Reduced to 4	Continued
	1 Crosstown	Continued	Continued
		3 Suburb to fixed guideway station	Continued
			1 Crosstown

NOTE: FG = fixed guideway
Any of the fixed guideway corridors may, prior to the implementation of fixed guideway service, be operated with bus-only lanes.

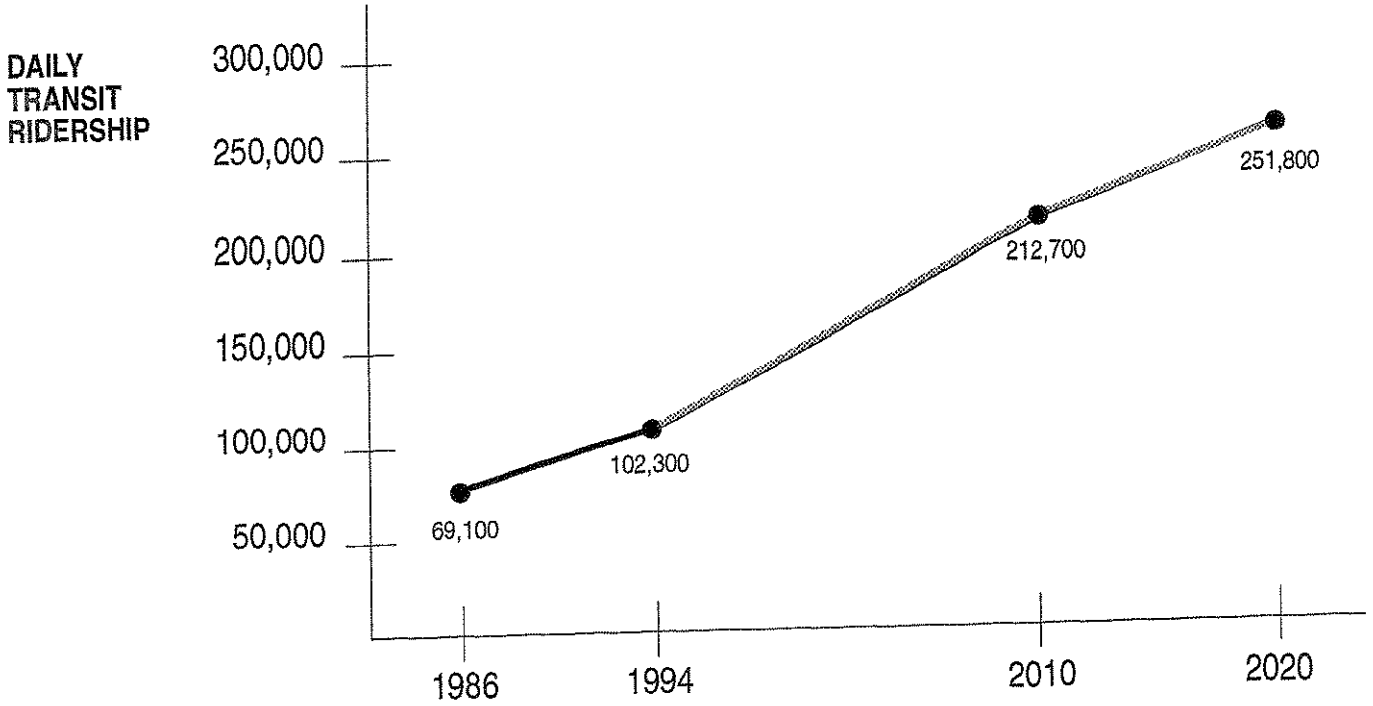
Table 4.2-2
Public Transportation Plan

SERVICE/FACILITY TYPE	EXISTING & COMMITTED	YEAR 2010	YEAR 2020
Major Transfer Centers	Highland Mall	Transfer activity reduced	Continued
	North Lamar	Transfer activity reduced	Continued
	New (Northcross Replacement)	Continued	Continued
	William Cannon/ Woodhue	Continued	Continued
	Bluff Springs/William Cannon	Continued	Continued
	ACC Riverside Campus	Continued	Continued
		Downtown	Continued
		Springdale/US 183	Continued
		Mopac/Parmer (FG 1)	Continued
		Braker/RR (FG 1)	Continued
		Anderson Ln/RR (FG 1)	Continued
		Justin/Lamar (FG 1)	Continued
		20th/Whitis (FG 1)	Continued
		IH-35/4th (FG 1)	Continued
		Pleasant Valley/5th (FG 1)	Continued
		Pleasant Valley/Riverside (FG 2)	Continued
		Bergstrom/New Airport (FG 2)	Continued
		Congress/Ben White (LRT 3)	Continued
		Congress/William Cannon (FG 3)	Continued
Local Services	24 Radial	Expanded in the southwest, south, Pflugerville, Round Rock, and along the Anderson Mill, Cedar Park, Leander corridor and any other areas warranting service	Continued
	8 Cross-Town		
	6 Feeder		
	10 UT Radial	Continued	Continued
Circulator Service	3 Downtown 'Dillo Routes	2 Additional Central Area Dillo Routes	Continued
	3 UT Shuttle Routes	Continued	Continued
		RM 620/US 183 Circulator	Continued
		Employer-Sponsored Neighborhood Shuttles	Continued
Teleride	Anderson Mill	Introduction of limited Fixed Route Service	Replaced with Fixed Route Service
	Leander/Cedar Park	Intoduction of limited Fixed Route Service	Replaced with Fixed Route Service
	Far South Central	Intoduction of limited Fixed Route Service	Replaced with Fixed Route Service
		New zones may be established	New zones may be established
Special Transit Service	Systemwide	Continued	Contined
Travel Demand Management	90 Vanpools	Additional 300 (20/year)	Additional 200 (20/year)
	Bicycle Racks on All Buses	Continued	Continued
	Rideshare Matching	Expanded	Expanded
	VTRIP Program	Expanded (more employer initiatives)	Expanded
	Free Fare on High Ozone Days	Continued	Continued
	Guaranteed Ride Home	Continued	Continued
		Parking Management Program	Expanded
Transportation Systems Management	Intersection Improvements	Continued	Continued
	Bus Pull-Outs	Continued	Continued
		Queue-jumper lanes	Continued
Intelligent Transit Systems (ITS)	Automatic Vehicle Location	Continued	Continued
	Advanced Signal Timing	Continued	Continued
	Customer Information Systems	Continued	Continued
	Smart Cards	Continued	Continued

Table 4.2-2
Public Transportation Plan

SERVICE/FACILITY TYPE	EXISTING & COMMITTED	YEAR 2010	YEAR 2020
Administration and Other Operations Other Transportation Support			

Figure 4.2-4
Current & Forecasted Daily Transit Ridership *
Based on "Trends" Land Use Forecast



Source: Capital Metro/Austin Transportation Study Staff,1994

* Includes fixed guideway, express, UT, local/Dillo service.
Does not include vanpools, carpools, STS or Teleride ridership.

Figure 4.2-5

Fixed Guideway Network Forecasted Year 2020 Daily Link Volumes

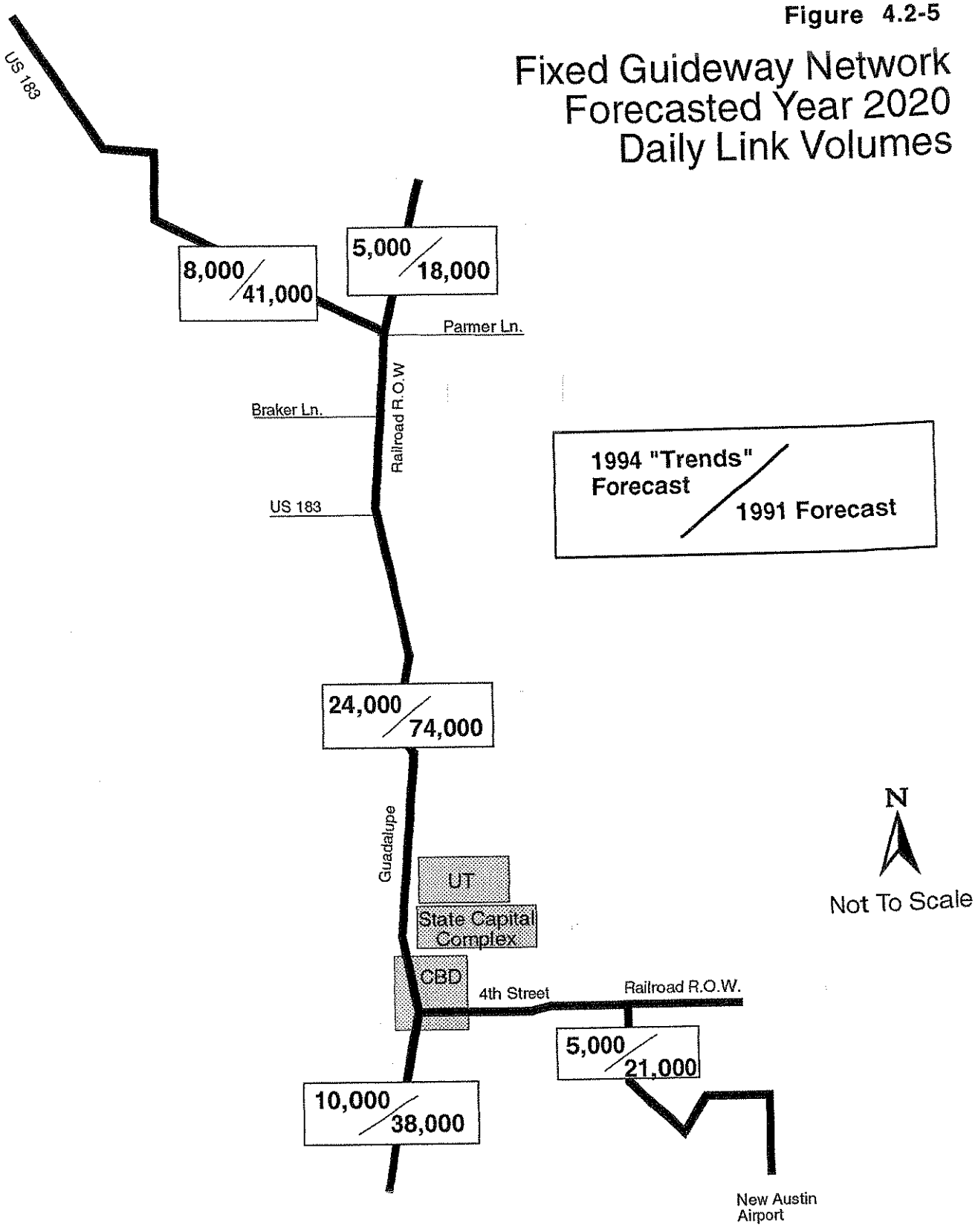


Table 4.2-3
Description of Transit Service Types

Transit Service Types	Function	R-O-W Operation	Avg. Oper. Speed (mph)	Vehicle Capacity	Peak Hour Headways (minutes)	Dbl-Trk R-O-W Req'ts (ft)	Transportation Nodes Served
Fixed Guideway	Line-haul trips in heavily traveled corridors	varies	20-30	45-150	5	24-50	park-n-ride lots; transfer centers
Commuter Rail	Line-haul trips in heavily traveled corridors	Reserved ROW w/grade separations at intersections	40-50	100	20-30	25-40	park-n-ride lots; transfer centers
Light Rail	Line-haul trips in heavily traveled corridors	along major roadways or RR ROW on shared and/or reserved track/lanes	20-25	150	5-7.5	25/35	park-n-ride lots; transfer centers
Busway 1	Line-haul trips in heavily traveled corridors	exclusive	35-40	45-65	2-5	25/70	park-n-ride lots; transfer centers
Busway 2	Line-haul trips in heavily traveled corridors	exclusive	35-40	45-65	5-10	25/75	park-n-ride lots; transfer centers
Electric Trolley Bus	Line-haul trips in heavily traveled corridors	on shared or reserved traffic lanes	15-20	45	5-10	24	park-n-ride lots; transfer centers
Express Bus	Line-haul trips from fringe areas; serves mostly home-based work trips	On major roadways in mixed traffic or on HOV lanes	20-30	45	5-10	12	park-n-ride lots, kiss-n-ride lots
Local Bus	serves mostly home-based trips	along local streets in mixed traffic flow or reserved lane(s)	10-15	45	5-15	12	transfer centers; local bus stops
Radial	serves mostly home-based trips	along local streets in mixed traffic flow	15-20	45	5-10		transfer centers; local bus stops
Crosstown	serves mostly home-based trips	along local streets in mixed traffic flow	15-20	45	10-15		transfer centers; local bus stops
Feeder	serves mostly home-based trips	along local streets in mixed traffic flow	15-20	45	5-10		transfer centers; local bus stops
Circulator	serves periphery residential/ parking lot shuttle service	along local streets in mixed traffic flow or reserved lane(s)	5-10	25	5-10		fringe parking or residential; TPODs

Bus-Only Lane - refers to a traffic lane on a street that is reserved for transit vehicles and designated by special signage and striping.

Park-and-Ride Lot - refers to any designated parking lot that is serviced with express or limited-express transit service.

Express Service - refers to non-stop service between two distant points, usually from a suburb or fringe area, coupled with park-and-ride lots, to the central core. Express service may also operate between suburban activity centers. Operating speeds should be, at a minimum, 2 to 3 times that of local service.

Major Transfer Center - refers to a multimodal transportation node that connects two or more transit routes with pedestrian, bicycle or automobile modes of travel. The transfer distance between different modes of transport should be no more than 300 feet wherever possible, with an absolute maximum of 600 feet.

Local Service - refers to transit service, usually by bus, that accommodates boardings and alightings roughly every 300 to 1,000 feet, depending on density levels. The average operating speed is usually between 10 and 25 miles per hour.

Circulator Service - refers to local stop, high frequency transit service for high density, pedestrian oriented districts. The service may include a shuttle or park-and-ride function from some periphery parking area to the high density activity area.

Teleride - refers to demand response service, usually provided with cabs, in an area where density levels do not warrant fixed route service. The three existing teleride zones are planned to be replaced with fixed route service during the coming years. New teleride zones may be established in other sparsely developed areas.

Special Transit Service (STS) - refers to demand response service, specifically for elderly citizens and persons with disabilities.

Travel Demand Management (TDM) - refers to an approach for alleviating traffic congestion by reducing travel demand, in contrast to increasing the supply. This program includes parking management, free fares on ozone advisory days, bikes on-board transit vehicles, vanpools, ridematching services, V-Trip (voluntary vehicle trip reduction initiative program), guaranteed ride home, and employer education.

Transportation Systems Management (TSM) - refers to relatively low cost improvements to the street network at key points, usually at intersections, that improve transit operations. Bus pullouts, intersection improvements and queue jumper lanes are incorporated where appropriate.

Intelligent Transportation Systems - includes the use of automatic vehicle location systems, advanced signal timing, and other new and emerging advanced public transportation system technology.

4.2.4 List of Background Studies and Documents

4.2.4.1 Capital Metro: Five Year Service Plan, 1994.

4.2.4.2 University of Texas Shuttle: Five Year Service Plan, 1994.

Section 4.3

Congestion/Demand Management Element

4.3 CONGESTION/DEMAND MANAGEMENT ELEMENT

4.3.1 Introduction

The purpose of the Austin Metropolitan Area Transportation Plan (AMATP), Congestion/ Demand Management (CDM) Element is to increase vehicular occupancy, reduce vehicle trips, and improve mobility and safety by reducing peak hour vehicle travel demand and implementing operational improvements to the transportation network. This will in turn reduce air pollution and fuel consumption and result in a safer, more efficient transportation system.

The CDM Element includes:

- Preparation and implementation of a Congestion Management System (CMS)
- Travel demand reduction measures
- Roadway operational improvements

ATS, the Texas Department of Transportation (TxDOT), the City of Austin, and other member jurisdictions and interested parties will discuss, develop, and implement a Congestion Management System (CMS) for the Austin metropolitan area. The CMS will be used to enact and monitor potential strategies for reducing travel demand and improving operational efficiency in order to reduce congestion.

Travel demand reduction measures can lead to changes in travel behavior. The recommended travel demand reduction policies in the next section are listed in order from easily implemented, voluntary activities to more restrictive government-regulated programs. Highly restrictive policies, such as auto restricted zones, are not recommended at this time. Research has shown that travel demand reduction initiatives such as parking management, ridesharing (with guaranteed ride home for emergencies), alternative work hours, bicycling, transit and telecommuting can substantially reduce vehicle trips.

Operational improvements can help increase the efficiency of the roadway and transit system through measures such as traffic signal synchronization, intersection improvements, one-way flow, and High-Occupancy Vehicle (HOV) lanes.

The federal requirements of the Intermodal Surface Transportation Efficiency Act (ISTEA) of 1991 and rapidly increasing demand on the transportation system in the Austin metropolitan area provided the basis for the CDM structure. These two issues are discussed below.

4.3.1.1 ISTEA Requirements

The Austin metropolitan area is considered a Transportation Management Area (TMA) by the federal government. This is an area having a population of at least 200,000 people. According to ISTEA, the Metropolitan Planning Organization in a TMA must include a Congestion Management System (CMS) as part of their planning process. The CMS is defined as a systematic process that provides information on transportation system performance, and identifies and implements strategies to alleviate congestion and enhance the mobility of persons and goods. A CMS also includes methods to monitor and evaluate the effectiveness of implemented actions. The CMS will result in the identification and implementation of on-going strategies that improve the efficiency of existing and future transportation facilities.

The following is the federal government's compliance schedule for implementing the CMS in an attainment TMA (one that has air quality conditions within federal limits):

By October 1, 1994:

- The State shall develop a work plan that does the following:

  1) Identifies major activities and responsibilities.

  2) Includes a schedule demonstrating full operation and use of the CMS by 10-1-96.

  3) Describes the most critically congested areas requiring analysis.

- Data collection activities shall be initiated.

By October 1, 1995:

- CMS design completed or underway in accordance with the State's work plan.

- Full-scale data collection shall be underway.

By October 1, 1996:

- The CMS shall be fully operational and shall identify projects and programs for consideration in the development of the metropolitan and statewide Transportation Plans and Improvement Programs.

ISTEA also requires that transportation plans be financially constrained. This limits the availability of resources for providing sufficient peak-hour Single Occupant Vehicle (SOV) roadway capacity. These ISTEA requirements direct that peak hour congestion must be addressed through more vigorous congestion management strategies.

4.3.1.2 Increasing Demands on the Transportation System

In most urban areas of Texas, increased auto use and ownership have significantly outpaced highway infrastructure investments resulting in more urban traffic congestion, excessive air pollution and fuel consumption, higher accident rates, and increased levels of frustration and delay. In Texas, from 1960 to 1990, daily person trips per person and daily vehicle trips per person have increased approximately 13 percent and 25 percent, respectively. In the large urban areas (greater than 200,000 persons) approximately half of these trips started during the peak hours between 7:00 AM and 10:00 AM or between 3:00 PM and 6:00 PM. Furthermore, from 1960 to 1990, driver-only person trips in large urban areas increased from 63 percent to 71 percent.

The Austin metropolitan area is included among the large urban areas of the state and has experienced similar 30-year trends:

- Average vehicle occupancy declined by 29 percent (i.e., more motorists are driving alone)

- The average number of vehicles per capita doubled

- Average trip length more than doubled

- The amount of arterial vehicle miles traveled quadrupled

- The population tripled

Furthermore, a doubling of the population to 1.3 million persons is estimated by the year 2020. Most of the arterial corridors and intersections within the Austin area are already experiencing

unacceptable levels of congestion. The increase in travel demand will further aggravate our currently congested roadway network and will reduce traffic safety, mobility, and air quality.

4.3.2 Congestion/Demand Management Policies and Programs

A. ATS, TxDOT, the City of Austin, and other member jurisdictions will cooperatively develop and implement a Congestion Management System (CMS) for the ATS area.

Policy A-1: ATS supports the development and use of a regional congestion management system (CMS), as required by ISTEA, to enhance the effectiveness of travel demand reduction measures and operational improvements for the Austin metropolitan area's transportation system.

Policy A-2: ATS encourages its member jurisdictions to participate in the regional CMS to monitor and quantify traffic congestion, to evaluate roadway system performance, and to develop congestion management strategies within their own jurisdictional boundaries.

Policy A-3: ATS will make federal funds available to transportation providers to help them develop and implement congestion management initiatives that respond to strategies identified by the CMS, including travel demand reduction and roadway operational improvements.

B. ATS supports the implementation of Travel Demand Reduction Measures.

Policy B-1: ATS supports the completion of the ATS Voluntary Vehicle Trip Reduction (V-Trip) Pilot Project; and will help fund the establishment of a full-scale ATS V-Trip program based on the Pilot.

Policy B-2: ATS encourages member jurisdictions and public agencies to implement trip reduction programs for their employees through the ATS V-Trip program.

Policy B-3: ATS encourages major private sector employers to follow the lead of ATS member jurisdictions to implement trip reduction programs for their employees through the ATS V-Trip program.

- There are approximately 145,000 people who work for major employers (an organization or employment center with at least 250 employees) in the City of Austin alone.

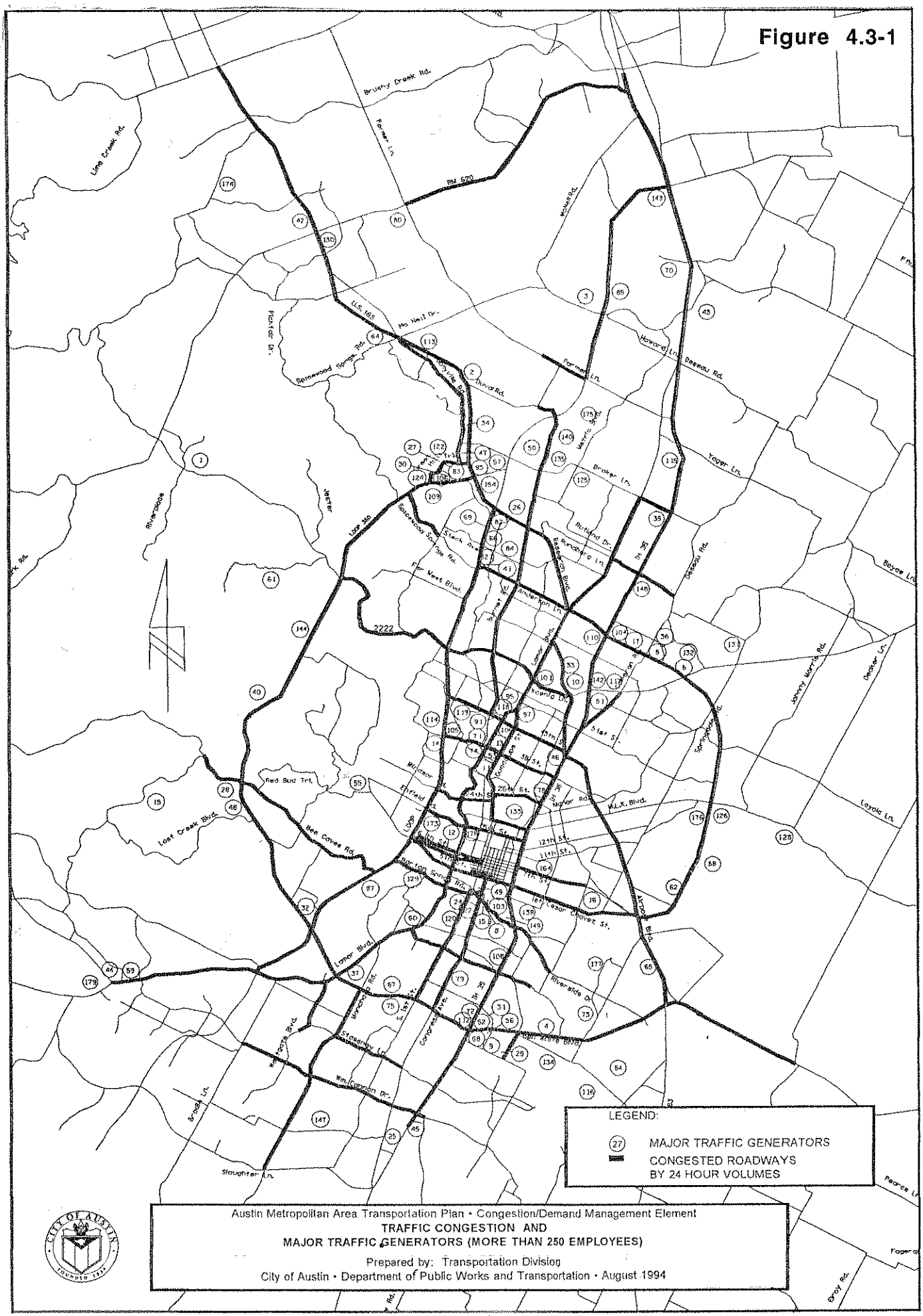
Policy B-4: ATS supports the development and implementation of a region-wide commuter education program with two major objectives:

- To encourage motorists to use alternative modes of transportation other than the single occupant vehicle. Alternative modes of transportation may include carpooling/vanpooling, public transit, bicycling and walking.

- To emphasize the requirements of the Clean Air Act and the purpose of the ATS Ozone Advisory Day Program.

Policy B-5: ATS encourages all member jurisdictions to adopt growth management and trip reduction ordinances requiring proposed subdivisions and office buildings to implement congestion management techniques. ATS also encourages multi-use activity centers, parking management, and access management to minimize traffic volumes to and from a site.

Figure 4.3-1

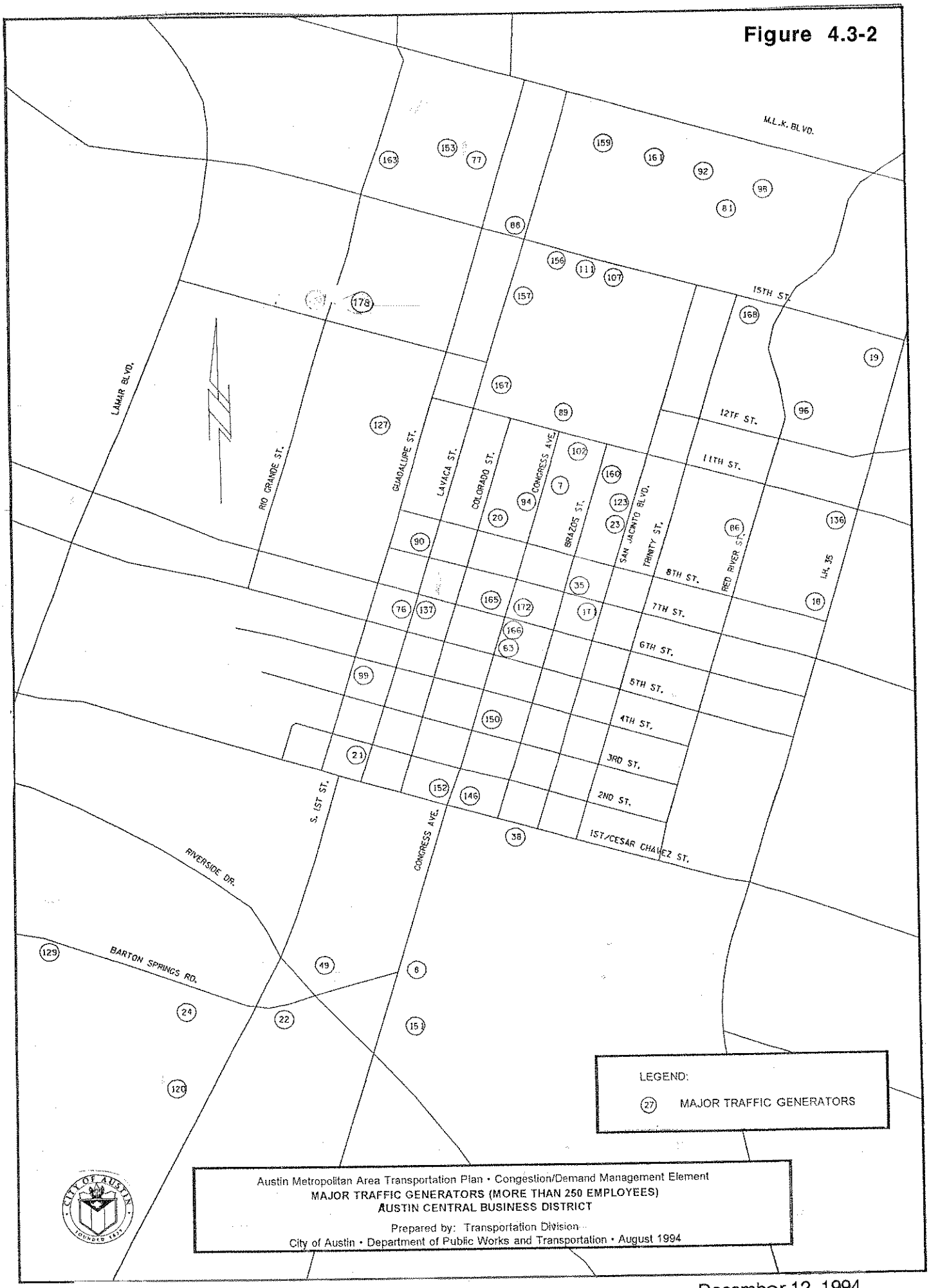


Austin Metropolitan Area Transportation Plan • Congestion/Demand Management Element

TRAFFIC CONGESTION AND
MAJOR TRAFFIC GENERATORS (MORE THAN 250 EMPLOYEES)

Prepared by: Transportation Division
City of Austin • Department of Public Works and Transportation • August 1994

Figure 4.3-2



Austin Metropolitan Area Transportation Plan • Congestion/Demand Management Element
MAJOR TRAFFIC GENERATORS (MORE THAN 250 EMPLOYEES)
AUSTIN CENTRAL BUSINESS DISTRICT

Prepared by: Transportation Division
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Policy B-6: ATS supports parking fees for single-occupant vehicles, and incentives that encourage the use of public transportation, carpooling, bicycling and walking. ATS supports investigating the feasibility of establishing a central business district parking management authority.

Policy B-7: ATS and its affected member jurisdictions, in cooperation with TxDOT and the Texas Turnpike Authority, will investigate the feasibility of implementing a Road Pricing Pilot Project on a selected roadway within the ATS area.

- Expected benefits from road pricing include reduced congestion and increased revenues. Road pricing provides a mechanism for controlling the level of congestion on the facility and the funds collected can be used for construction and maintenance.

C. ATS supports the implementation of Roadway Operational Improvement Measures.

Policy C-1: ATS encourages all member jurisdictions to participate in the Austin metropolitan area's Traffic Management Team (TMT) to address transportation construction, operational, and safety problems.

- The TMT has been working since 1984 to coordinate the efforts of TxDOT, the City of Austin, and the Capital Metropolitan Transportation Authority (CMTA).

Policy C-2: ATS supports the establishment of an integrated metropolitan incident management program that provides unified guidance for police, fire, rescue, and transportation agencies for assisting motorists in disabled vehicles, cleaning up spills, accident rescue, and wreckage removal.

- The objective is to improve safety conditions, expedite rescue efforts, and reduce traffic congestion associated with random incidents (e.g., breakdowns and accidents) occurring on the region's roadway system.

- According to a study performed by the Texas Transportation Institute, just over half of all vehicle occupant delay costs experienced on congested freeways and principal arterials are due to random incidents.

Policy C-3: ATS encourages member jurisdictions to implement roadway operational improvement projects, such as traffic signal synchronization and Transportation Systems Management (TSM) projects, to reduce traffic congestion and improve traffic flow.

- Traffic signal synchronization is one of the highest priorities as evidenced by the ATS Public Opinion Survey.

- A 1994 study by the General Accounting Office reported that air pollution is reduced when cities install new traffic control systems and upgrade the timing of existing signals. Nationwide experiences have shown that improved signal timing can reduce air pollutants by 14 - 20 percent.

- Data collected by the City of Austin indicate that approximately 80 intersections experience excessive delay in the morning peak period (7:00 to 8:30 AM) and 100 intersections in the afternoon peak period (4:30 to 6:00 PM).

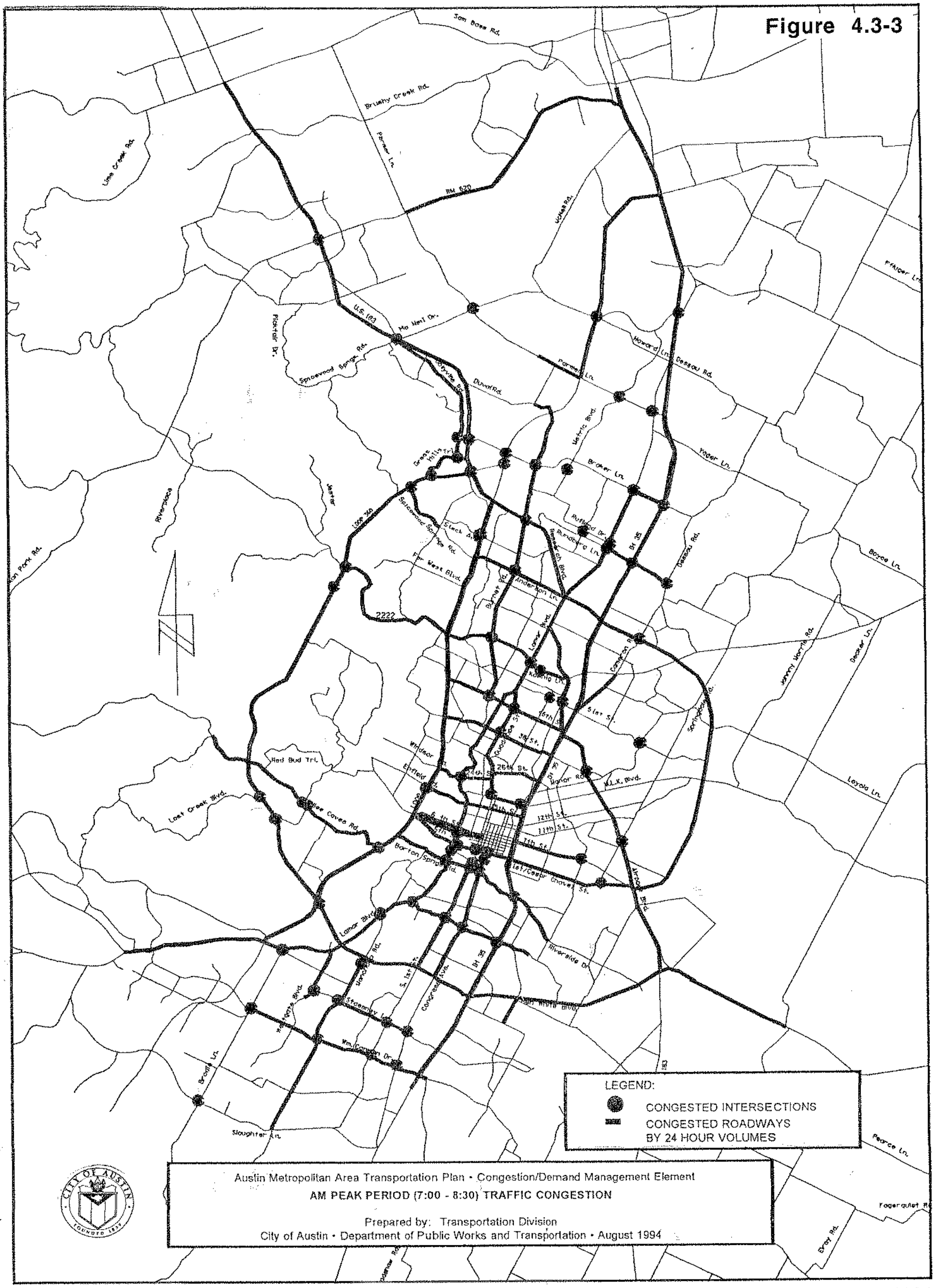

Figure 4.3-3

Austin Metropolitan Area Transportation Plan • Congestion/Demand Management Element

AM PEAK PERIOD (7:00 - 8:30) TRAFFIC CONGESTION

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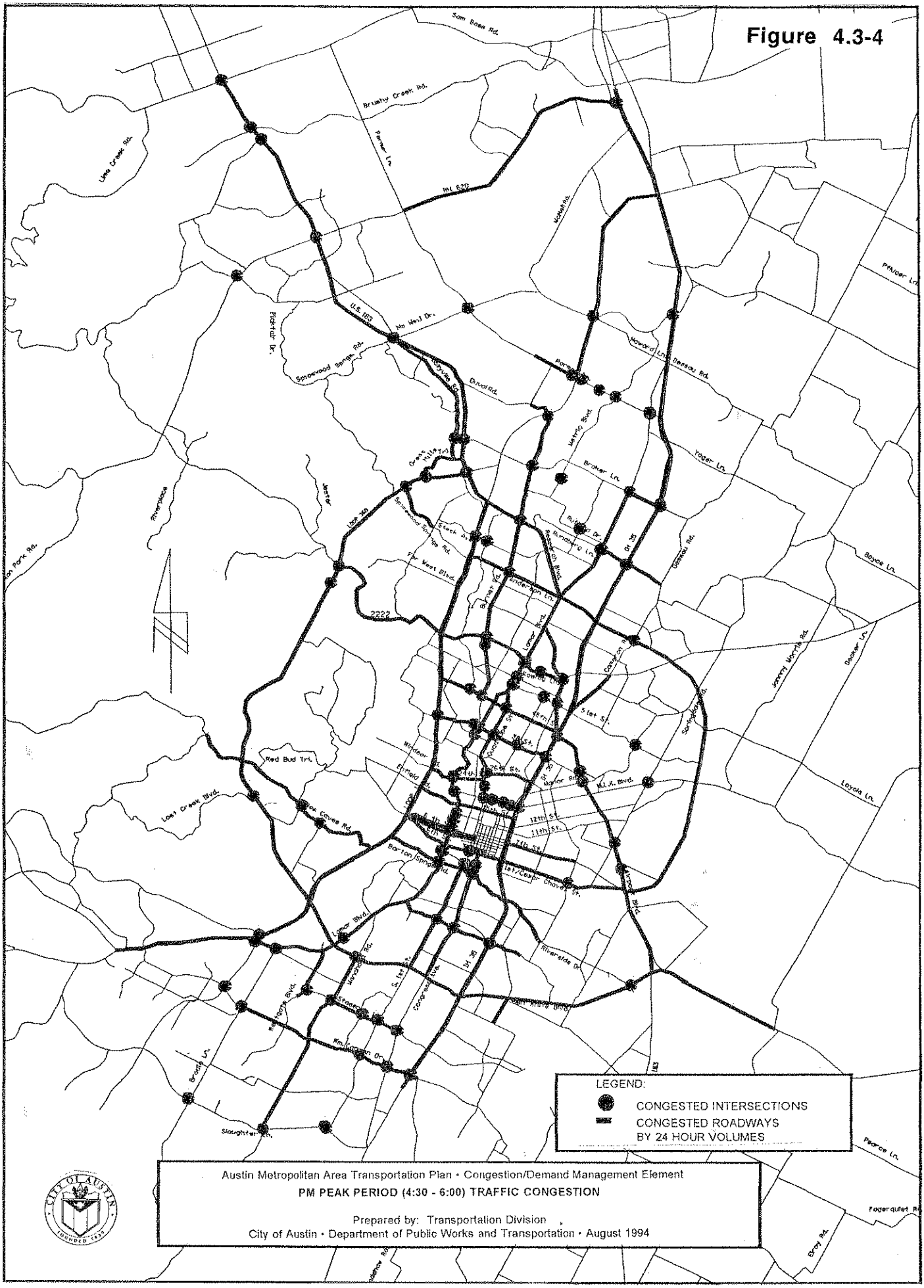
Figure 4.3-4
LEGEND:
CONGESTED INTERSECTIONS
CONGESTED ROADWAYS
BY 24 HOUR VOLUMES
Austin Metropolitan Area Transportation Plan • Congestion/Demand Management Element
PM PEAK PERIOD (4:30 - 6:00) TRAFFIC CONGESTION
Prepared by: Transportation Division
City of Austin • Department of Public Works and Transportation • August 1994

- TSM projects have two primary benefits: 1) They avoid the costs of major roadway capacity improvements (e.g., roadway widenings) and the impacts of such improvements on neighborhoods; and 2) They help reduce fuel consumption, traffic congestion, and air pollution due to vehicle emissions.

- TSM projects are less disruptive roadway capacity improvement measures such as reversible flow lanes, one-way streets, intersection improvements, ramp metering, and bottleneck removal.

- The City of Austin recently implemented seven TSM projects (at a total cost of $700,000) to add left turn lanes and right turn bays, and to upgrade signal mast arms at selected locations. The estimated savings in commuter travel time and reduced fuel consumption attributed to these projects is $1.8 million per year.

Policy C-4: ATS supports High Occupancy Vehicle (HOV)/High Occupancy Toll (HOT) lanes to increase the person-carrying capacity of major arterials and freeways. ATS and its member jurisdictions will study the feasibility and implementation of HOV/HOT lanes at selected locations in the Austin metropolitan area.

- The Houston-Galveston area HOV network has greatly expanded since its inception in the mid 1980s. By late 1993, 58 miles of the proposed 96 mile network were in operation.

- The HOV system in the Houston area served over 78,000 daily person trips in December 1993, with just less than 10,000 vehicles parked in the associated park-and-ride lots.

- On an average day in the Houston area, a 20-mile round trip made by an HOV takes approximately 15 minutes less time than the same trip made driving alone.

Policy C-5: ATS supports the current efforts of the City of Austin and TxDOT to implement Intelligent Transportation System (ITS) technology to enhance or improve the efficiency of new or existing major arterial and freeway facilities and transit operations.

- Estimates of the benefits of IVHS technology were cited in an article titled "Technology and the New Transportation" (Washington Times, 23 May 1994). Assuming current traffic levels, the article states that IVHS has the potential:

  1. To reduce traffic fatalities eight percent by the year 2011.

  2. To cut travel times in half in certain congested areas.

  3. To reduce fuel consumption by 10 percent.

  4. To reduce auto pollution emissions by as much as 15 percent.

Policy C-6: ATS encourages all member jurisdictions to require that utilities (water, wastewater, telephone, etc.) be placed outside the pavement area of major and minor arterial roadways.

- The objective is to decrease occurrences where work for utility construction and maintenance temporarily reduces roadway capacity, particularly for roadways which carry significant traffic.

4.3.3 List of Background Studies and Documents

4.3.3.1 Congestion Management System Work Plan

4.3.3.2 Transportation Trends: 1960 - Present

4.3.3.3 Congestion Management Techniques

4.3.3.4 Congestion/Demand Management Technical Report

4.3.3.5 Austinplan: Transportation Plan for Implementation