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1981 COMPREHENSIVE PLAN

CITY OF PLANO, TEXAS

1981 COMPREHENSIVE PLAN

CITY OF PLANO, TEXAS

ADOPTED SEPTEMBER 28, 1981

PLANNING DEPARTMENT
CITY OF PLANO
JANUARY, 1982

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I. INTRODUCTION

The City of Plano is nearly 110 years old as an incorporated municipality but almost all the City's growth has taken place during the past two decades. The original settlements in the Plano Area date back to the 1840's and are related to the colonization efforts of the early days of the Republic of Texas. The Peters Colony, a land settlement company composed of W.S. Peters and eight others, was granted the right to colonize a large tract of North Central Texas in 1841 by the President of the Republic. Land grants were made to settlers and the land company gained an equal area of land for its efforts.

The Plano vicinity, with fertile blackland prairie and tree lined creeks providing timber and water, attracted a number of families. By the 1850's, the Community showed signs of development, having achieved mail service and a post office named Plano, a term erroneously thought to be Spanish for "plains". In 1871, the H.&T.C. Railroad was built through Plano and in 1876 Plano became an incorporated village.

From the period of its incorporation until after World War II, a period of 75 years, Plano prospered as a trading center for the surrounding agricultural area. In addition to trade facilities, Plano became a center for agricultural service with cotton gins, a cottonseed oil mill and similar facilities. With the transportation which existed by road and highway during its early years, and with service by two railroads, Plano was secure as an agricultural center. The distance to Dallas, 18 miles, was sufficient to make Plano a separate, self-contained trade center. But the travel time between Dallas and Plano was reduced by the construction of U.S. Highway 75 (Central Expressway) to about 25 minutes, thereby substantially changing the future potential of the Community.

So long as the Dallas-Collin County Area in the vicinity of Plano remained predominantly agricultural, Plano continued as an agricultural trade center with a modest population. The economic character of Dallas County began to change abruptly from agricultural to an urban industrial base in the 1930's. The World War II

industries which located in the Dallas area triggered a suburban expansion which is still in progress. Grand Prairie and Garland were the first suburban communities in Dallas County to experience the stimulus of the industrial expansion.

Recent acceleration of growth northward from Dallas has had a significant impact on the rate of population increase in Plano. The decreasing availability of developable land to the south in Richardson and North Dallas has created a shift of development emphasis to the Plano area. The provision of highly-regarded school facilities in Plano and the lack of controversy over factors such as busing have also made the Community attractive to many families seeking to locate in the Dallas area.

The interest in and demand for housing in the Plano area has been matched with an aggressive development and home building industry which resulted in the addition of approximately 1,800 new dwelling units to the City's housing inventory in 1980. Responding to the demand for developable land, the City has expanded its boundaries and is planning for expansion to its ultimate boundaries.

This Comprehensive Plan represents major changes in the future direction of the City of Plano, both in residential life-styles and in non-residential development.

In the past 20 years, residential development in Plano has almost entirely consisted of single-family housing on lots of 7200 square feet or greater. Today, zoning requests are being approved for much smaller single-family lots, townhouses, patio homes, and apartments, leading to a more dense residential form. This plan assumes that these trends will continue and intensify.

Likewise, the City previously planned for its high-intensity commercial and industrial development to occur along the southern edge of the City and in the Central Expressway corridor. Two major factors have revised this thinking--the proposed extension of the Dallas North Tollway to State Highway 121, and the proposed

proposed creation of a very large multi-use office and industrial park in the far northwest corner of the City. The Comprehensive Plan now calls for high-density commercial and residential uses in the tollway corridor, and redirects the thoroughfare plan to focus traffic routes on the multi-use park, as well as continuing to provide for access to the south, where many Plano citizens will continue to work.

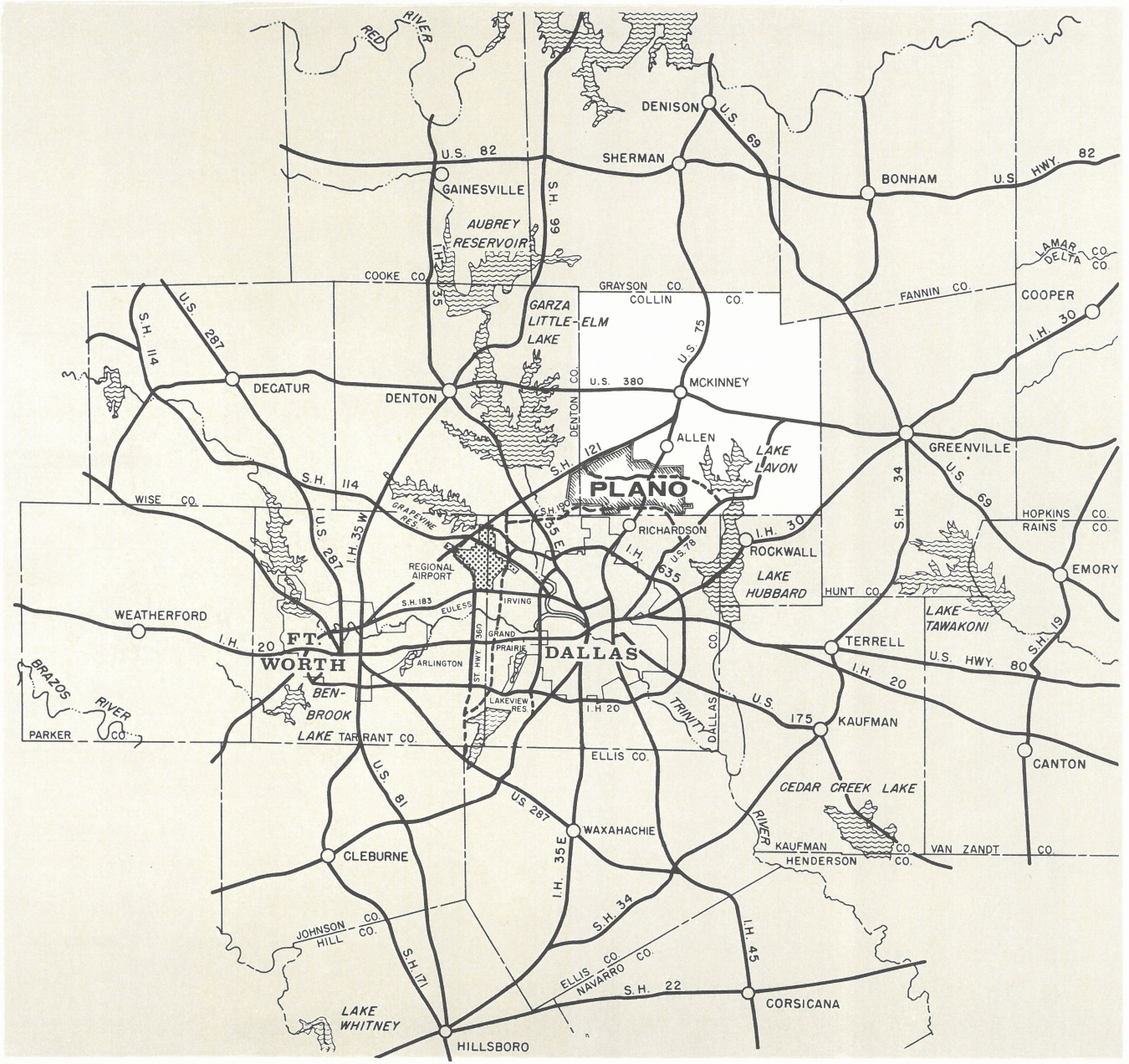
This study is a revision of the structuring elements of Plano extended to what are expected to be the City's ultimate boundaries. Plano's geographic relationship to the Region and the Dallas-Fort Worth Metropolitan Area is becoming fixed. The nature of the urban development which occurs within Plano's municipal boundaries will establish the character, convenience and service economy of the Community for many years in the future. The relationship of urban land use, transportation facilities, parks and open spaces, and municipal service facilities is the special concern of this report.

II. THE REGION

The total regional area (Plate 1) which influences Plano's future can be defined by varying boundaries depending upon the features and factors being considered. At least two regional areas tend to lend themselves to ready comparison and to be important for projection purposes. These are the original Dallas Standard Metropolitan Statistical Area covering a total of 6 counties, and the original North Central Texas Council of Governments' Area covering 10 counties. The trend of each regional area provides some basis for comparison and for evaluating the future potential of Plano.

THE REGIONAL POPULATION CHANGES - The two central urban counties of Dallas and Tarrant have for many decades been the fastest growing counties in the Region. Only since the 1950-1960 period have the fringe counties of the Region shown substantial population increases. Most of the outlying counties lost population from about 1920 to the 1950-1960 period as a result of changes in the agricultural economy and the more efficient development of agriculture. Table 1 shows the population changes from 1910 to 1980 for the 10 counties making up the initial North Central Texas Council of Governments' Region. Collin County (in which Plano is located) ranked fourth among the 10 counties in size in 1970, and third in 1980. The major upward shift in population growth in Collin County between 1960 and 1980 reflects an urbanization trend which became significant in the area 15 years ago.

Between 1960 and 1970 Collin County experienced the greatest 10 year population increase it had ever had. Then, from 1970 to 1980, Collin County's population gain was triple that of the previous 10 year period. Between 1910 and 1960 the population fluctuated moderately downward and by 1960 there were about 8,000 fewer residents in the County than resided in it in 1910. The recent population gain reflects the influence of the nearby large urban centers of Dallas and Fort Worth. The proximity of the large urban centers is expected to continually influence the future of Collin County and Plano.



CITY of PLANO and COLLIN COUNTY
RELATIONSHIP TO THE REGION

CITY of PLANO, TEXAS
PLANNING DEPARTMENT

PLATE 1

TABLE 1

POPULATION CHANGE

TEN COUNTY COG REGION*, 1910 to 1980

County	1910	1920	1930	1940	1950	1960	1970	1980
Collin	49,021	49,609	46,180	47,190	41,692	41,247	66,920	144,490
Dallas	135,748	210,551	325,691	398,564	614,799	951,527	1,327,320	1,556,549
Denton	31,258	35,355	32,822	33,658	41,365	47,432	75,633	143,126
Ellis	53,629	55,700	53,936	47,733	45,645	43,395	46,823	59,743
Johnson	34,460	37,286	33,317	30,384	31,390	34,720	45,769	67,649
Kaufman	35,323	41,276	40,905	38,308	31,170	29,931	32,392	39,015
Parker	26,331	23,382	18,759	20,482	21,528	22,880	33,888	44,609
Rockwall	8,072	8,591	7,658	7,051	6,156	5,878	7,046	14,528
Tarrant	108,572	152,800	197,553	225,521	361,253	538,495	716,316	860,880
Wise	26,450	23,363	19,178	19,074	16,141	17,012	19,687	26,575
TOTAL	508,864	637,913	775,999	867,965	1,211,139	1,732,517	2,371,794	2,957,164

Source: U.S. Census

* COG Region has been expanded to 16 Counties to include Hood, Hunt, Navarro, Palo Pinto, Erath, and Somervell Counties.

Other important factors contributing to Plano's growth in recent years have been the availability of a quality school system which has not been impacted by law suits and court orders related to enrollment and operation, the fact that many of the problems of the larger central cities of the Region have not been evident in Plano, and the availability of water, sewer, and other municipal services.

SOURCES OF REGIONAL POPULATION CHANGE - The population gain in an area results from two factors; namely, (1) natural increase (the number of resident births less the number of resident deaths), and (2) the gain or loss resulting from migration to or from the area. The trend in births and deaths and the resulting natural increase for the 20 year period from 1961 to 1980 for the Dallas Area is shown by Table 2. The

TABLE 2

BIRTHS, DEATHS AND NATURAL INCREASE

DALLAS AREA*, 1961 - 1980

Year	Births	Deaths	Natural Increase
1961	28,809	8,469	20,340
1962	29,009	9,270	19,739
1963	29,091	9,552	19,539
1964	29,026	9,828	19,198
1965	27,143	9,762	17,381
1966	27,205	10,456	16,749
1967	27,820	10,449	17,371
1968	29,421	11,447	17,974
1969	32,022	11,720	20,302
1970	33,531	11,625	21,906
TOTAL 1961 - 1970	293,077	102,578	190,499
1971	31,875	11,722	20,153
1972	29,124	12,200	16,924
1973	28,690	12,336	16,354
1974	28,657	12,027	16,630
1975	28,485	11,917	16,568
1976	28,026	11,934	16,092
1977	29,646	12,254	17,392
1978	30,279	12,854	17,425
1979	33,402	12,899	20,503
1980	36,043	13,447	22,596
TOTAL 1971 - 1980	304,227	123,590	180,637

Source: Vital Statistics - Texas Department of Health

*Dallas Area consists of Collin, Dallas, Denton, Ellis, Kaufman and Rockwall Counties (1970 SMSA).

Dallas Metropolitan Area experienced a natural increase gain of 190,499 persons for the 1961-1970 decade, while the period from 1971-1980 showed a natural increase gain of 180,637. The natural increase gain for Collin County between 1961 and 1970 was 5,984 people, and the gain from 1971 to 1980 was 11,740. There has been a decrease in the rate of natural increase in the entire Region, while Collin County has nearly doubled its natural population increase.

Comparison of the natural increase gain with the total population gain for the various areas in the region indicates that the in-migration exceeded the natural increase in all areas. The in-migration gain for the Dallas Metropolitan Area was 228,840 persons between 1960 and 1970 as contrasted to a natural increase gain of 190,499. The six county Dallas Area experienced an overall population increase of 401,317 between 1970 and 1980, of which 180,637 resulted from natural increase and 220,680 was in-migration gain. For Collin County, the net in-migration gain was 19,689 persons between 1960 and 1970 as contrasted to the natural increase for the decade of 5,984 persons. Between 1970 and 1980 the net in-migration gain for Collin County was 65,830 as contrasted to a natural increase of 11,740 people. The population gain from in-migration in Collin County (particularly in Plano) has been several times the rate of in-migration gain in the overall Dallas Area, indicating the increasing attractiveness of the Plano-Collin County Area for urban investment. The large gains from in-migration reflect the expanding economy of the Region since the preponderance of all in-migrants were persons in their productive years seeking employment or related economic opportunity in the area.

Table 3 shows the trend in births, deaths, and natural population increase for Collin County for the periods of 1961-1970 and 1971-1980. The number of births annually in Collin County has been increasing while the annual number of deaths has remained fairly uniform, resulting in a significant gain in natural population increase.

TABLE 3

BIRTHS, DEATHS AND NATURAL INCREASE

COLLIN COUNTY, 1961-1980

Year	Births	Deaths	Natural Increase
1961	915	435	480
1962	981	504	477
1963	1,029	476	553
1964	1,018	503	515
1965	977	458	519
1966	1,023	507	516
1967	1,089	538	551
1968	1,183	562	621
1969	1,383	599	784
1970	1,543	575	968
TOTAL 1961-1970	11,141	5,157	5,984
1971	1,426	597	829
1972	1,498	612	886
1973	1,584	661	923
1974	1,651	563	1,088
1975	1,700	590	1,110
1976	1,671	609	1,062
1977	1,851	627	1,224
1978	2,068	735	1,333
1979	2,266	675	1,591
1980	2,426	732	1,694
TOTAL 1971-1980	18,141	6,401	11,740

Source: Vital Statistics - Texas Department of Health

The gain in the annual number of births has occurred despite a change in the birth rate from about 23 births per 1,000 residents in 1970 to 17 births per 1,000 residents in 1980. The expanding population of the area resulted in an actual increase in the number of births even though the birth rate has declined.

The birth trend reflected by Table 3 for Collin County is in sharp contrast to trends found in most metropolitan areas of the Nation and indicates the in-migration of a relatively youthful and vigorous population. The increasing birth trend in Collin County is also in contrast with the birth trends in the overall Dallas Area as shown by Table 2.

AGE COMPOSITION - The changes in the age composition for the Dallas Area and for Collin County are shown by Tables 4 and 5. The percentage of the population represented by each age group classification remained relatively stable for the Dallas area between 1960 and 1970. For Collin County, however, there was a significant trend toward a younger population. In many other areas of the Nation, there has been a trend toward an aging population; however, it is apparent that the major in-migration of younger people to the Dallas Area and to Collin County has given a youthful character to the area's population. The performance of the Prime Labor Force Group is especially worthy of attention because this category represents the most productive age group from the standpoints of employment and production of children. It is also important to note that the High School, College, New Family Category, which precedes the Prime Labor Force Age Group chronologically, showed significant gains during the decade. It is obvious that the Prime Labor Force Group will continue to be sustained by the transfer of many of the present youth to that category in the future. Although the 1980 census statistics are not yet available, it is expected that the trends shown from 1960 to 1970 have continued over the past decade, with the Plano population remaining relatively younger than that of Dallas. The age composition characteristics of the Dallas Area and Collin County population as reflected by Tables 4 and 5 establish an extremely favorable condition for continued population increase and the expansion of the economic activity of the Region. The favorable conditions reflected by population composition will continue to accrue to the benefit of Plano.

TABLE 4

CHANGES IN AGE COMPOSITION, DALLAS AREA* - 1960-1970

Age Group	1960		1970	
	Number	Percent of Total	Number	Percent of Total
Young (0-14 Years)				
Under 5	130,831	12.1	147,778	9.5
5 - 9	116,005	10.7	162,461	10.4
10 - 14	98,516	9.1	158,664	10.2
Sub-Total	345,352	31.9	468,903	30.1
High School, College, New Family (15-24)				
15 - 19	74,403	6.9	137,079	8.8
20 - 24	72,779	6.7	137,640	8.9
Sub-Total	147,182	13.6	274,719	17.7
Prime Labor Force (25-44)				
25 - 34	158,375	14.6	234,307	15.1
35 - 44	151,503	14.0	185,353	11.9
Sub-Total	309,878	28.6	419,660	27.0
Older Labor Force (45-64)				
45 - 54	120,671	11.1	162,066	10.4
55 - 59	47,437	4.4	64,582	4.1
60 - 64	36,485	3.4	53,478	3.5
Sub-Total	204,593	18.9	280,126	18.0
Elderly (65 & Over)				
65 - 74	51,433	4.7	71,805	4.6
75 & Over	25,163	2.3	40,737	2.6
Sub-Total	76,596	7.0	112,542	7.2
TOTAL	1,083,601	100.0	1,555,950	100.0
Median Age	28.2		26.3	

Source: U.S. Census
*Dallas Area includes Collin, Dallas, Denton, Ellis, Kaufman and Rockwall Counties.

TABLE 5

CHANGES IN AGE COMPOSITION, COLLIN COUNTY - 1960-1970

Age Group	1960		1970	
	Number	Percent of Total	Number	Percent of Total
Young (0-14 Years)				
Under 5	4,089	9.9	7,044	10.5
5 - 9	3,799	9.2	7,255	10.8
10 - 14	3,926	9.5	6,601	9.9
Sub-Total	11,814	28.6	20,900	31.2
High School, College, New Family (15-24)				
15 - 19	3,249	7.8	5,516	8.2
20 - 24	2,211	5.4	5,195	7.8
Sub-Total	5,460	13.2	10,711	16.0
Prime Labor Force (25-44)				
25 - 34	4,258	10.3	10,712	16.0
35 - 44	4,785	11.7	7,063	10.6
Sub-Total	9,043	22.0	17,775	26.6
Older Labor Force (45-64)				
45 - 54	5,071	12.3	5,941	8.9
55 - 59	2,341	5.7	2,730	4.1
60 - 64	2,083	5.0	2,484	3.7
Sub-Total	9,495	23.0	11,155	16.7
Elderly (65 & Older)				
65 - 74	3,444	8.4	3,917	2.5
75 & Over	1,991	4.8	2,462	3.3
Sub-Total	5,435	13.2	6,379	9.5
TOTAL	41,247	100.0	66,920	100.0

Source: U.S. Census

FUTURE EMPLOYMENT IN THE REGION - The single most important factor which will contribute to the continued growth of the Dallas-Fort Worth Region is employment expansion. Employment is the major contributor to the in-migration which has caused rapid growth and movement into the area. It is expected to continue to exceed the natural increase as a source of population gain. Some of the significant features of regional employment which will influence Plano's future, are discussed below.

MANUFACTURING - The Region is expected to continue to expand in manufacturing activity and employment. Within the Region some relocation will occur in certain types of manufacturing activities. Those industries with more moderate pay scales such as textiles, wood products, leather products, apparel, home furnishings, and furniture will tend to relocate or direct their expansion toward the smaller communities removed from the central densely developed areas.

It is also probable that continuing automation will increasingly affect employment in a wide range of industries. Automation will reduce the rate of employment growth in some industries while at the same time increasing the output per worker. Automated industries will tend to be the highest paying industries. A compensating feature of automation should be an increased concern for product development, which also requires skilled and well paid personnel.

Manufacturing in the Dallas-Fort Worth area will continue to represent a significant portion of the total employment of the Region. However, it is expected to increase at a slightly reduced rate as a result of some manufacturers expanding or locating within the general Region but beyond the higher competitive salary area found in the central counties of the Region.

Increases in manufacturing employment are expected to be relatively minor in Plano because of the low number of blue-collar workers which live in the Plano area. The high cost of housing in Plano will continue to force lower-paid manufacturing employees to live in other parts of the Region.

NON-MANUFACTURING - Non-manufacturing activities are actually of greater importance in the Dallas-Fort Worth Area than in most urban areas. It was predominantly non-manufacturing activities which created the growth stimulus for the area. The diversity and depth of non-manufacturing activities is an important factor contributing to the continued growth of the Region. Some of the important segments of the non-manufacturing employment include the following:

1. Finance and Banking is one of the primary growth segments of the Region. Within the Region, particularly in Dallas, are found several of the nation's leading banks, a Federal Reserve Bank, major mortgage firms, investment underwriters and stockbrokers, numerous home and regional insurance offices and a concentration of savings and loan associations. The financial expertise and resources of the area are capable of stimulating further economic expansion.

   Future income gains, industrial expansion, and population growth can be expected to multiply and increase the importance of finance-related activity. Automation is expected to affect some levels of employment in financially oriented activities but continued increase in number and quality of employees in the finance field is anticipated.

2. Wholesale Distribution has long been a very strong employment segment of the area's economy. While Collin County has not yet shared significantly in the area's distribution industry, improvement of transportation to the Dallas-Fort Worth Regional Airport will likely influence expansion of wholesale distribution activity in Collin County and in Plano.

3. Transportation, Communication, and Utilities are expected to continue to grow to serve the expanding regional commercial and industrial base. While automation may cause slight adjustments in the rate of employment growth in this category, it will continue to be an expanding and significant part of the Region's employment base.

4. Retailing will continue to rise as a result of higher personal income and in-migration of a productive worker group. As the population of Plano grows, the number and size of retail outlets will continue to increase, resulting in one or more additional shopping centers of regional scale located in Plano.

5. Service Employment is expected to become an increasingly important segment of the employment base. The various professions and other personal and business services including motels, entertainment, and amusement are all prime expansion sources for the Region and some of this expansion will accrue to the Plano Area.

6. Government Employment at all levels from local to State and Federal categories is expected to increase in the Region. The growth of Plano will particularly generate increases in municipal and school employment. It is anticipated that the governmental category will continue to increase in the area.

7. Construction activity will continue at a high level despite occasional fluctuations resulting from changes in fiscal policy and economic adjustments. Much of the building inventory of the Region is of recent construction, but a need to begin replacing functionally obsolete facilities will soon be added to the substantial need for new construction in residential, commercial, industrial and transportation fields. This replacement construction will provide additional stimulus to the construction employment.

8. Mining and Agriculture are not expected to be major factors in the future employment requirements of the area. Agricultural employment in the Region is expected to continue to decline as Collin County becomes more urbanized.

It should be recognized that the full impact of our national energy posture cannot be fully evaluated, and that the decisions and changes relative to the long-range energy problems could, and likely will, influence

employment in the Region. It appears that the nation's energy problems have created conditions favoring significant employment shifts from the north and midwest to the area, and have actually accelerated the rate of employment growth.

III. POPULATION RESOURCES OF PLANO

Plano has had a history of an increasing rate of population growth each decade since 1930. The population growth trends in Plano, until 1960, were in contrast to the declining population of Collin County. Since 1960 both the County and City have grown rapidly, but Plano's rate of increase (383.7 percent from 1960 to 1970 and 304.7 percent between 1970 and 1980) was substantially more rapid than that of the County (38.4 percent gain between 1960 and 1970 and 115.9 percent between 1970 and 1980). Numerically, the population gain between 1970 and 1980 in Plano represented a greater population increase than is represented by all the growth since its founding. The numerical change in population shown by Table 6 reflects only a portion of the population transformation experienced by the City and the County.

TABLE 6

POPULATION CHANGE

CITY OF PLANO AND COLLIN COUNTY

1900 - 1980

	City of Plano			Collin County		
Year	Number	Change	Percent of Change	Number	Change	Percent of Change
1900	1,304	480	-----	50,087	13,324	-----
1910	1,258	- 46	- 3.5	49,021	- 1,066	- 2.1
1920	1,715	457	36.3	49,609	588	1.2
1930	1,554	- 161	- 9.4	46,180	- 3,429	- 6.9
1940	1,582	28	1.8	47,190	1,010	2.2
1950	2,126	544	34.4	41,692	- 5,498	- 11.7
1960	3,695	1,569	73.8	41,247	- 445	1.1
1970	17,872	14,177	383.7	66,920	25,673	38.4
1980	72,331	54,459	304.7	144,490	77,570	115.9

Source: U.S. Census

Changes also occurred in the age composition, the birth rate, in-migration, ethnic composition, education, and income levels of the population which will significantly influence the Community's future. The following discussion examines the recent changes in Plano's population resources.

SOURCES OF POPULATION CHANGE

Natural Population Increase - The trends in births, deaths, and natural population increase in Plano from 1961 to 1970 and from 1971 to 1980 are shown by Table 7.

Comparison of Table 7 data with that of Table 3, which reflects the trends in Collin County, will show a distinct difference between the Plano natural increase and that of the County. The trend in births in both the City and County has been strongly upward. Plano has represented approximately one-third to one-half of the County's annual births, but it has accounted for about 55 percent of the overall population gain for Collin County between 1960 and 1970 and 70 percent of the gain between 1970 and 1980, indicating the substantial in-migration gain in the City.

Plano had a natural population increase of 2,439 people from 1961 to 1970 and a gain of 7,226 people from the same source from 1971 to 1980. The natural increase in 1961 was 70 persons while by 1980 the annual natural increase had risen to 1,078. It should also be noted that, despite the substantial increase in births, the birth rate in Plano dropped from about 31 births per 1,000 residents in 1970 to about 15 births per 1,000 residents in 1980. The major gain in births in Plano reflects the youthful characteristics of the people moving into the Community. It can be expected that the annual number of births will continue to climb in Plano, resulting in a continuing and substantial gain in school enrollment as long as heavy in-migration continues.

TABLE 7

NATURAL POPULATION INCREASE

CITY OF PLANO, 1961 - 1980

Year	Births	Deaths	Natural Increase
1961	100	30	70
1962	157	33	124
1963	212	48	164
1964	212	36	176
1965	235	42	193
1966	293	51	242
1967	323	68	255
1968	371	54	317
1969	477	71	406
1970	560	68	492
TOTAL 1961-1970	2,940	501	2,439
1971	522	76	446
1972	563	107	456
1973	690	110	580
1974	713	103	610
1975	786	106	680
1976	830	117	713
1977	932	132	800
1978	1,047	170	877
1979	1,145	159	986
1980	1,263	185	1,078
TOTAL 1971-1980	8,491	1,265	7,226

Source: Vital Statistics - Texas Department of Health

In-Migration Gain - The growth of population in Plano during the past decade is largely attributable to the gain in in-migrants. Of the total population gain of 14,177 during the 1960-1970 period, 11,738 persons represent the in-migrant gain and 2,439 represent the natural increase gain. Between 1970 and 1980 the in-migrant gain in Plano was 47,230 people and the natural increase gain accounted for 7,226 people.

AGE COMPOSITION - The general age characteristics of the residents of Plano, between 1960 and 1970, are reflected by Table 8. In 1960 there were 45.6 percent of the people in the City under 25 years of age. By 1970, the same age group represented 52.4 percent of the population. In contrast, 29.6 percent of the population was 45 years and over in 1960 and by 1970 the same age group represented only 12.8 percent of the population.

The most striking gain occurred in the Prime Labor Force Group (24-44 years) which increased from 24.8 percent to 34.8 percent of the population between 1960 and 1970. The numerical gain in the Prime Labor Force Group represented over 37 percent of the total population gain of the City. The major increase in the Prime Labor Force Age Bracket is especially significant in that the age group represents that segment of the population which is in its most productive years economically and which tends to be most productive in terms of children. A continued in-migration of people in the Prime Labor Force Category will assure a continued rapid population increase in Plano.

As long as the heavy in-migration in the Prime Labor Force Age Group continues, the age composition of Plano will be very youthful as compared with most other urban areas. A 1979 survey confirmed the fact that Plano continues to be a young community; the average age of the head of household is 35. The 1980 census figures show that Plano has an average household size of 3.24 persons.

It should be recognized that a significant decline in the in-migrant factor will cause a rapid shift to a higher ratio of older people and a reduction in births. As available land for development in Plano becomes

TABLE 8
POPULATION AGE DISTRIBUTION COMPARISON
CITY OF PLANO - 1960-1970

Age Group	1960		1970	
Young (0-14 Years)	Number	Percent of Total	Number	Percent of Total
Under 5	435	11.8	2,470	13.8
5 - 9	372	10.1	2,357	13.2
10 - 14	331	8.9	1,809	10.1
Sub-Total	1,138	30.8	6,636	37.1
High School, College New Family (15-24)				
15 - 19	266	7.2	1,128	6.3
20 - 24	281	7.6	1,613	9.0
Sub-Total	547	14.8	2,741	15.3
Prime Labor Force (25-44)				
25 - 34	516	14.0	4,269	23.9
35 - 44	401	10.8	1,946	10.9
Sub-Total	917	24.8	6,215	34.8
Older Labor Force (45-64)				
45 - 54	399	10.8	1,063	6.0
55 - 59	180	4.9	362	2.0
60 - 64	167	4.5	274	1.5
Sub-Total	746	20.2	1,699	9.5
Elderly (65 & Older)				
65 - 74	222	6.0	393	1.1
75 & Over	125	3.4	188	2.2
Sub-Total	347	9.4	581	3.3
TOTAL:	3,695	100.0	17,872	100.0

Source: U.S. Census

scarce, it can be expected that in-migration will slacken. The change in the number of children and in school enrollment will tend to react quickly to any reduction in in-migration to Plano. The drop in the birth rate between 1970 and 1980 has been significant; from 31 children per 1,000 residents in 1970 to approximately 17 children per 1,000 residents in 1980.

For the period over which this plan is projected, it is estimated that the birth rate in Plano is likely to reach a fairly stable level at about 13 or 14 children per 1,000 residents. Any drastic shift in age composition toward a greater ratio of elderly could result in an even greater decline in the birth rate.

ETHNIC COMPOSITION - In 1970, there were 891 Black residents of Plano, 5.0% of the total population. By 1980, there were 2,383 Black residents, 3.3% of the population. Likewise, the Spanish Origin segments of the population increased from 736 persons in 1970 (4.1% of the total) to 2,522 persons in 1980 (3.5% of the total). Also of interest is the rapid increase in people of Asian origin, to 844 persons and 1.2% of the total population. Despite the large increases in absolute numbers, the minority population is declining in proportion to the total Plano population. This decline can perhaps be explained by the trends in housing costs. High home prices have a limiting influence on minority immigration in that it appears that only the middle to upper income segment of the population can afford housing in the area.

EDUCATIONAL STATUS - An important indication of the overall skill and economic ability of the population is suggested by the educational attainment of adults. Table 9 compares the educational status of the adult population (25 years and over) of the City of Plano for 1960 and 1970. There was a dramatic change in the level of educational attainment of adults in the City over that period. The change obviously reflects the educational level of the in-migrants to the City. The percentage of the population having attained a high school education or greater rose from 42 percent of the population over 25 years of age in 1960 to 73.4 percent in 1970. The percentage of the population having completed 4 or more years of college had a particularly significant change from 7 percent of the population in 1960 to 18.1 percent in 1970.

TABLE 9

EDUCATIONAL STATUS OF POPULATION
25 YEARS OF AGE AND OVER - 1960-1970

	City of Plano			
	1960		1970	
Years School Completed	Number	Percent of Total	Number	Percent of Total
No School Years Completed	8	0.4	58	0.7
Elementary School				
1 - 4	146	7.2	182	2.1
5 - 7	340	16.9	521	6.1
8	232	11.5	330	3.8
High School				
1 - 3	442	22.0	1,200	14.0
4	539	26.8	3,113	36.2
College				
1 - 3	166	8.2	1,638	19.0
4 or More	141	7.0	1,555	18.1
TOTAL	2,014	100.0	8,597	100.0
Median Years Completed	10.9		12.7	

Source: U.S. Census

As this trend of increasing educational attainment continues in the City of Plano, it will have a major influence on the character of the City. Persons with a higher educational attainment can be expected to require a more significant inventory of cultural, educational, and social facilities. These same people will be increasingly concerned about the environmental quality of the Community and can be expected to have a major interest in parks and open spaces. It is also likely that the higher educational level of the population will be reflected in an increased income level which will in turn influence the cost and quality of housing and other facilities. There is strong evidence that an increasingly higher educational level is already having a significant influence on many facets of the City.

INCOME LEVEL - The median family income in the City of Plano rose from an annual $5,634 in 1960 to $12,110 in 1970 (Table 10). Comparison with the income trends in Collin County shows that the income level of the City of Plano has been significantly above that of the County. The median income level of the City also ranked high among the other communities in the Dallas-Fort Worth Area. While part of the income rise resulted from general inflationary trends, a substantial amount of the gain represented a genuine increase above the inflation rate.

The rising trend of income has continued in Plano. A 1979 survey found the median family income to be $25,000. It can be expected that this trend will continue, if only because the high price of housing in Plano requires the purchaser to have a high income.

The continuing rise in the income level of people living in Plano will influence the demand for housing, services, and retail sales in the area. The higher income level of the residents is expected to have effects similar to the rising educational level on the demand for cultural, social, recreational, and health services.

EXISTING POPULATION DISTRIBUTION - The population of Plano is estimated to be 77,250 persons as of January 1, 1981. The distribution of the current population in the City, on the basis of one dot equaling 20 per-

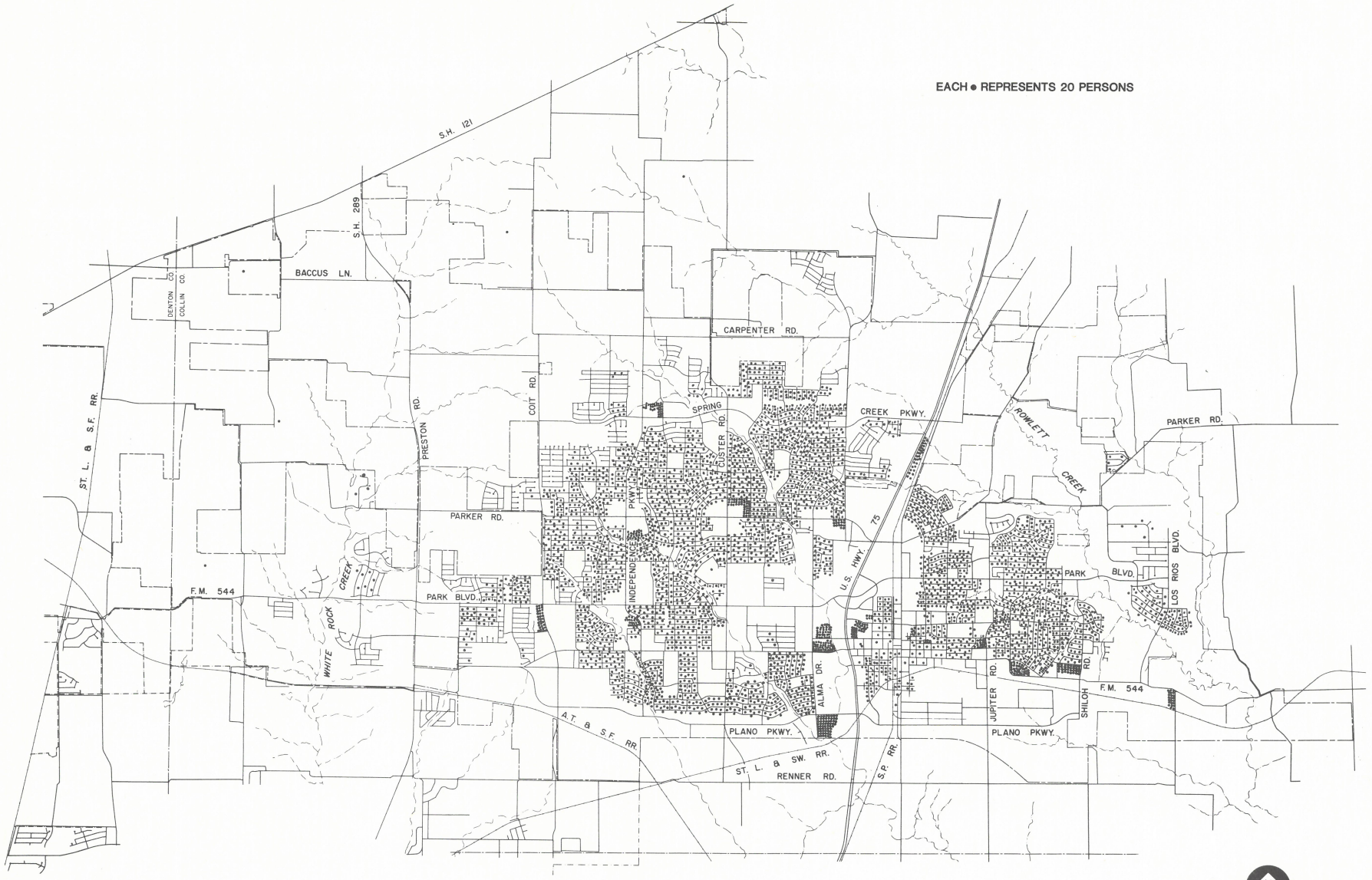
sons, is shown by Plate 2. Over two-thirds of the population of Plano now reside west of U.S. Highway 75. Within the next decade it is expected that three-fourths of the residents of the City will reside west of the highway as a result of the availability of land for residential development to the west. The location of new streets where no population is shown on Plate 2 reflects the location of current subdivision development in the City where future new residents will locate.

TABLE 10

TREND IN FAMILY INCOME DISTRIBUTION - 1960-1970

	City of Plano			
	1960		1970	
Income	Number	Percent of Total	Number	Percent of Total
Under $1,000	34	3.4	20	0.4
$ 1,000 to $1,999	91	9.2	74	1.6
$ 2,000 to $2,999	86	8.7	100	2.2
$ 3,000 to $3,999	108	11.0	60	1.3
$ 4,000 to $4,999	95	9.6	124	2.7
$ 5,000 to $5,999	127	12.9	165	3.6
$ 6,000 to $6,999	107	10.8	148	3.2
$ 7,000 to $9,999	119	12.0	769	16.9
$10,000 and Over	121	12.2	3,109	68.1
Total	989	100.0	4,569	100.0
Median Income	$5,634		$12,110	

Source: U.S. Census



CITY of PLANO, TEXAS
PLANNING DEPARTMENT

PLANO, TEXAS

EXISTING POPULATION DISTRIBUTION - 1981

PLATE 2

The current population density resulting from the development arrangement and the type of housing in Plano is from 4,000 to 6,000 persons per square mile. Gross densities in the range indicated are considered to be moderate and are expected to increase in the future as a result of the location of apartment developments, cluster housing, and other housing types mixed with the single-family residences in neighborhood areas.

The population distribution pattern east of U.S. Highway 75 is generally compact when allowances are made for non-residential urban uses such as schools and parks which occur in the residential portions of the Community. The population distribution pattern west of U.S. Highway 75 is presently less compact and somewhat irregular. The existence of non-contiguous development to the north and west is tending to create a service condition which may be relatively expensive for the Community. The provision of water and sewer service and highway access across substantial vacant area in order to tie non-contiguous development into the present system creates an inefficient municipal service condition which will be reflected in the overall cost of service in the Community.

IV. PROJECTED FUTURE POPULATION OF PLANO

It has been indicated that Plano has a complex relationship to the entire Dallas-Fort Worth Region, and that the future of the Community will be directly related to the growth and development of the Region. Population growth will respond to gains in employment both in the Region, in Collin County, and in the City of Plano. The City's geographic relationship to the large Dallas employment centers is particularly significant in relation to its future development. It should be recognized that Plano tends to be competitive with a number of other outlying communities in the Dallas-Fort Worth Urban Region for population growth. It is also obvious that the Community has had a competitive advantage during the last 10 years. The quality of life and the general environmental character of the Community will have a major bearing upon the City's future competitive position as it relates to the other communities of the Region.

The increasingly difficult urban problems which are arising in the major urban centers of the Region have already created a tendency for migration to outlying communities such as Plano. It is anticipated that the trend for migration to smaller communities in the Region will continue for some time and that Plano will continue to experience a substantial population gain as a result of the trend. It must be recognized that these same problems which are providing impetus for migration into Plano will ultimately cause migration out of Plano in the future, unless they are anticipated and dealt with by the citizens of Plano before they can cause a deterioration in the Community's quality of life.

The strong employment position of the Dallas-Fort Worth Region as related to the State of Texas has been previously summarized. In 1970, there were 1,045,300 employed persons in the combined Dallas and Fort Worth Metropolitan Areas. The North Central Texas Council of Governments projects that this same area will have 2,056,000 employees by 1990. The combined Dallas and Fort Worth Metropolitan Areas contained 2,377,623 people in 1970 and the regional employment was at a ratio of 2.27 resident persons per employee. In 1960 the population-employment ratio for the same Region was 2.5 persons per employee. The large number of

people who commute into the Region from surrounding areas contribute to the low population-employee ratio. It is anticipated that, due to an increase in employed women and a lower birth rate, the ratio of population to employed persons in the Region will continue to drop and that by 1990 the population-employee ratio will be about 2.0 to 1. Based on the projected employment for the Region, a population of 3,675,000 people is expected to reside in the area by 1990. The Region's population (combined Dallas and Fort Worth SMSA's) is expected to experience population increase in accordance with projections by the North Central Texas Council of Governments. It should be noted that a gradual slowdown in the rate of population growth in the Region is anticipated by the following projections:

1970	1975	1980	1985	1990	2000
2,377,623	2,686,400	2,974,878	3,400,000	3,675,000	4,066,000

Collin County and Plano can be expected to gain an increasing share of the regional population growth as a result of the availability of land for development and the increasing complexity of the problems arising in the urban centers of Dallas and Fort Worth. One growing problem in Plano which could adversely influence the growth rate is the inadequacy of Regional highway connections for handling the growing employment traffic.

The degree to which Plano is expected to participate in the Regional growth is indicated by Table 11. It is expected that by 1990 the City of Plano will have a population of about 140,000 people. After 2000, growth will continue but it is expected that the availability of land and a general reduction in the growth rate can be anticipated which will result in a slowing in the rate of population increase in Plano.

While the population projections reflected by Table 11 indicate a reasonable assessment of Plano's future growth potential, it should be recognized that a number of factors could alter the trend. The availability of water to supply a population over four times as large as the 1980 population could become a factor. Transportation adequacy in relation to the rest of the Region could also influence future growth. Likewise,

inadequate sewage treatment capacity could drastically curtail growth. Trends toward increasing housing density may also alter the current projections.

TABLE 11

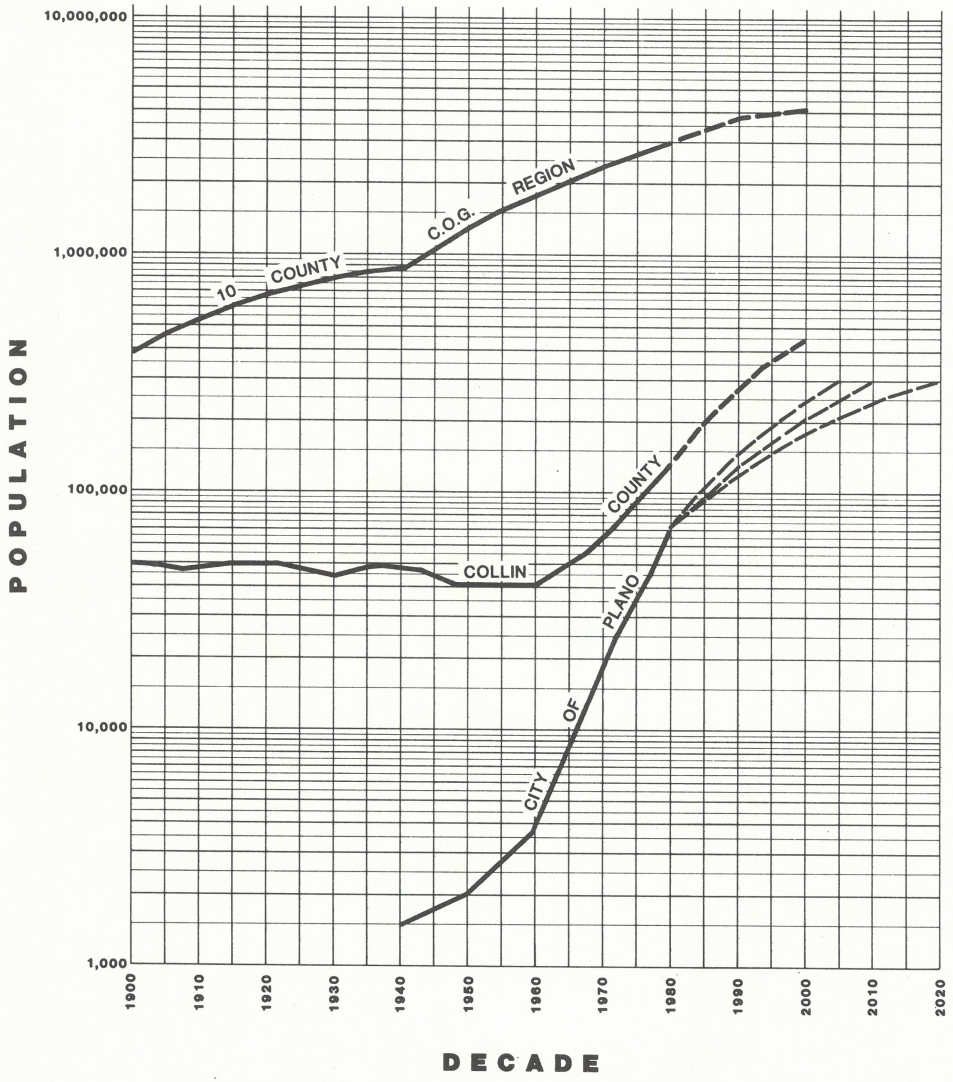
PROJECTED POPULATION
CITY OF PLANO

LOW ESTIMATE		MEDIAN ESTIMATE		HIGH ESTIMATE	
Year	Population	Year	Population	Year	Population
1960	3,695*	1960	3,695*	1960	3,695*
1970	17,872*	1970	17,872*	1970	17,872*
1980	72,331*	1980	72,331*	1980	72,331*
1985	98,000	1985	104,800	1985	111,000
1990	125,000	1990	140,000	1990	150,000
1995	152,500	1995	175,000	1995	200,000
2000	180,000	2000	210,000	2000	250,000
2005	215,000	2005	250,000	2005	300,000
2010	250,000	2010	300,000	2010	305,000

*Actual Population

The changes in the number of people that will reside in Plano and the characteristics and income level of the population, along with the above factors, will influence the type of community structure which evolves. Planning for Plano's future should take cognizance of all the changes outlined in order to be reasonably assured of meeting the future Community needs and to assure that the Community will continue to benefit and improve as a result of its strong population growth trends.

The range of population growth potential based upon a median growth rate and a high growth rate are illustrated by Figure 1 on a semi-log chart which emphasizes the rate of change and relates Plano's projected growth to that of Collin County and the Region.



The median growth rate as shown by Figure 1 and Table 11 is the basis for the planning projections made in following sections of this report.

Despite the possibility of changes in Plano's growth rate, it is considered desirable to base the physical planning of the City on the concept that it is probable that at least 80 percent of the Planning Area will achieve urban development and that Plano will become one of the major elements of the Dallas-Fort Worth Urban Region.

FIGURE 1

AMOUNT & RATE OF POPULATION GROWTH

V. GEOGRAPHIC CHARACTERISTICS

The area within which the future population of Plano is expected to reside has become fairly well established as a result of annexation and agreements as to common boundaries with adjacent municipalities. Figure 2 illustrates the area which Plano is expected to include within its municipal jurisdiction. It appears unlikely that Plano's boundaries will extend beyond the area delineated until or unless territory is transferred to Plano from the jurisdiction of adjacent municipalities, an action which appears remote at present.

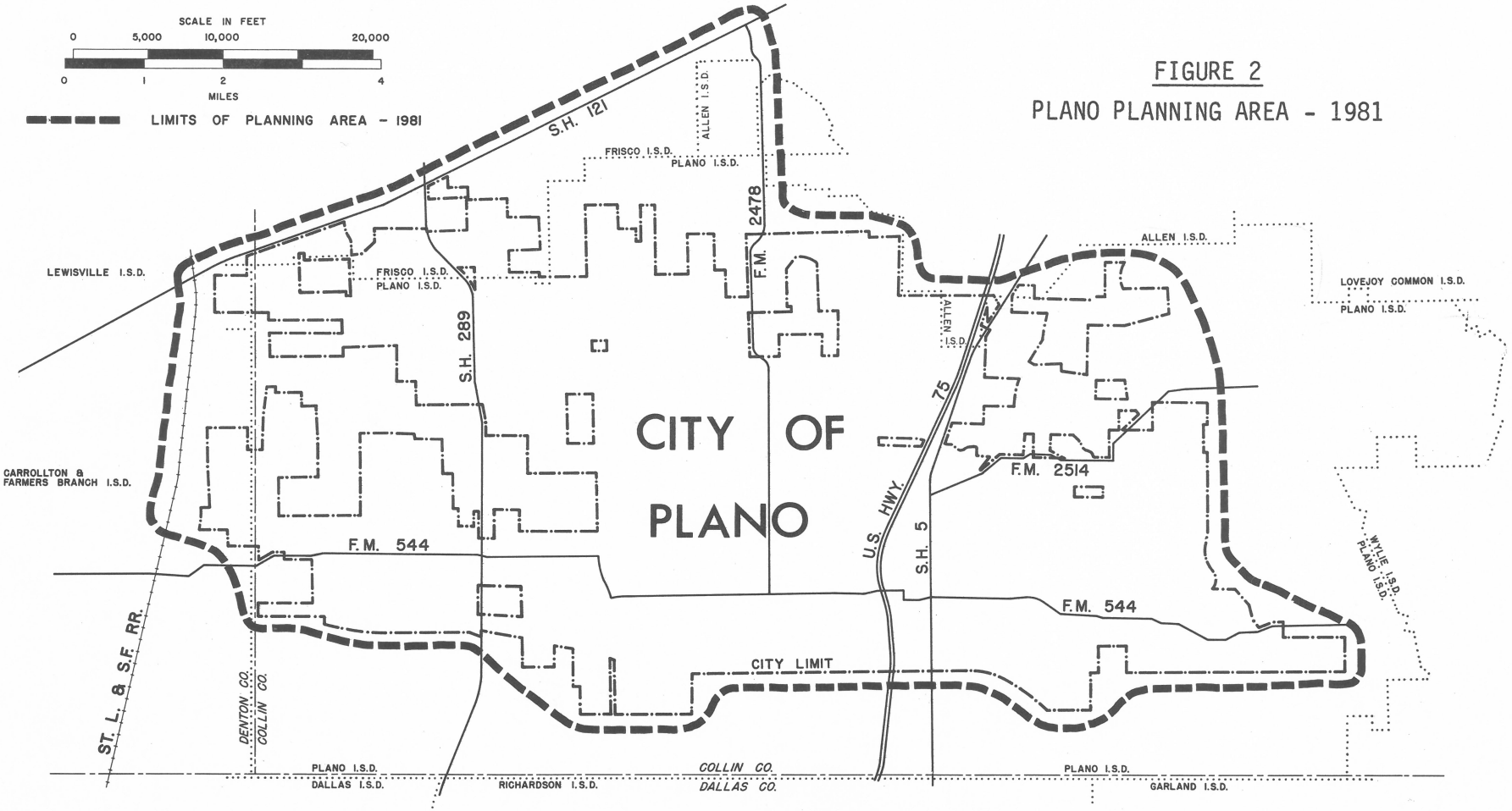


FIGURE 2

PLANO PLANNING AREA - 1981

The delineated Planning Area and area of future municipal responsibility shown by Figure 2 contains approximately 74 square miles. When the entire area is annexed to Plano, the City's boundaries will be common with those of Parker, Murphy, Richardson, Dallas, Hebron or Carrollton, Frisco and Allen. The Plano municipal area will extend from Richardson and the Santa Fe Railroad on the south to State Highway 121 and Frisco on the north. The western boundary of the City will be along the St. Louis & Santa Fe Railroad. The eastern boundaries will touch Allen, Parker and Murphy.

The close geographic relationship which will exist between Plano and its neighboring municipalities will require increasing communication and coordination to assure orderly development of the entire urban area surrounding the City. Coordination of land use and thoroughfare planning will be especially desirable and essential.

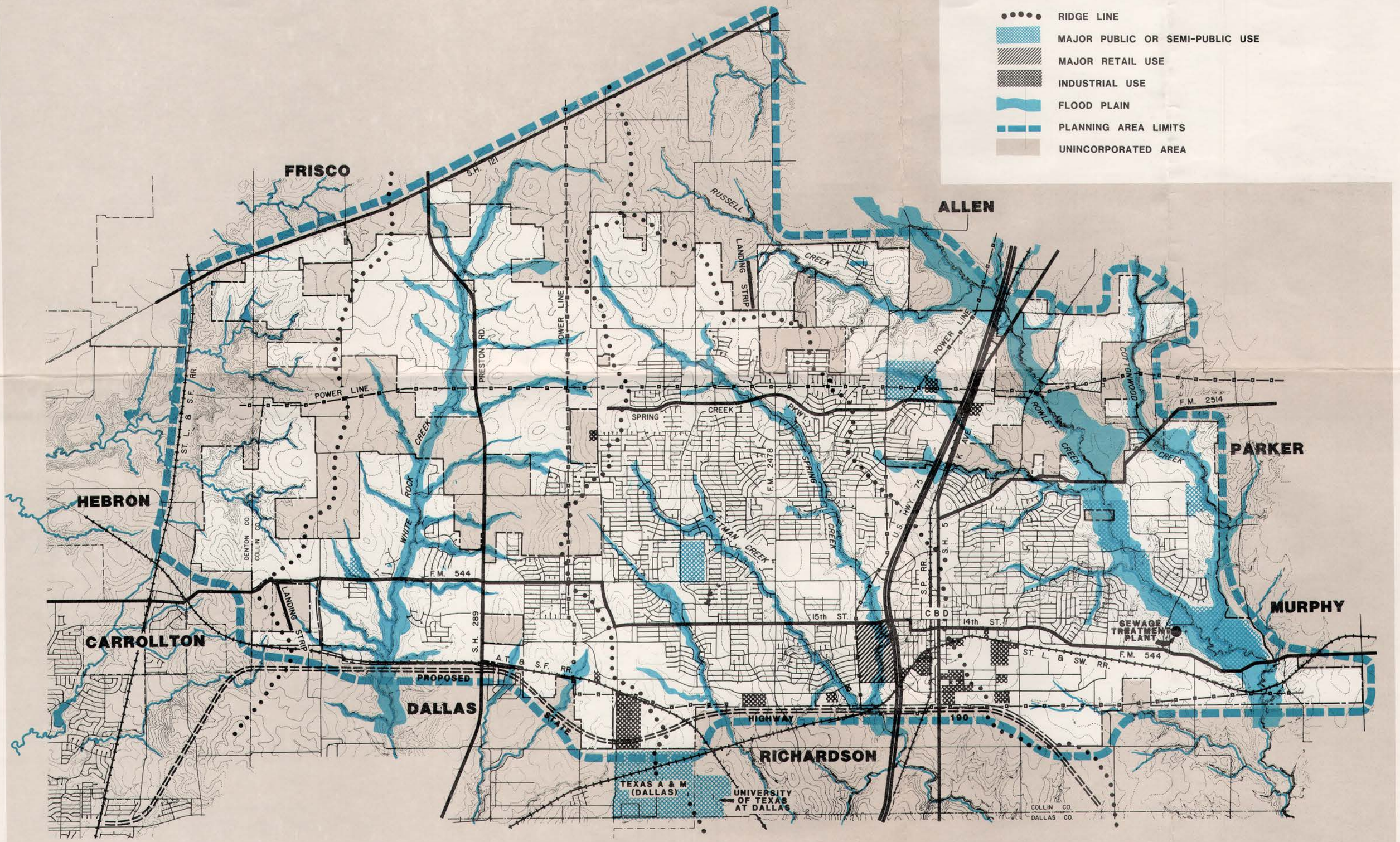
The boundaries for Plano which have evolved from its growth and annexation efforts are for the most part quite logical and appropriate. The western boundary will be the St. Louis & Santa Fe Railroad, which provides a clear jurisdictional division. The northern boundary along State Highway 121, which is destined to become an important regional thoroughfare, is also a readily identifiable boundary. A portion of the northern boundary, east of Custer Road, is not as distinctly delineated as the State Highway 121 portion. The eastern boundary along the common boundary with the City of Parker is also not clearly identifiable. The eastern portion of the southern Plano boundary follows the common Plano-Richardson boundary along an irregular alignment to a point where the boundary intersects and follows the agreed alignment of the proposed State Highway 190 westward to near the Santa Fe Railroad where the boundary dips south to Renner Road. At Renner Road, the boundary touches the city limits of Dallas and continues along Renner Road to Coit Road (F.M. 3193) and about one-half mile beyond where the boundary turns north to the Santa Fe Railroad. It is obvious that much of the southern boundary east of Coit Road is irregular and not as clearly identifiable as would be desirable. The remainder of the southern boundary follows the Santa Fe Railroad which will provide the common boundary between Plano and Dallas.

The Plano Independent School District boundaries are also shown in relation to the City of Plano Planning Area. The preponderance of the Plano Planning Area is served by the Plano Independent School District. The northern portion of the Planning Area from the Denton county line east to Custer Road and south of State Highway 121 is in the Frisco Independent School District and a small portion of the Planning Area east of Custer Road is in the Allen Independent School District. Conditions exist which could provide a basis for adjusting the Plano and Allen Independent School District's boundaries by an exchange of land in the area east of Custer Road. The portion of the City located in Denton County is in the Lewisville Independent School District.

The Plano Independent School District extends beyond the Plano Planning Area into territory which is in the Dallas, Richardson, Murphy, and Parker municipal jurisdictions.

Plano is located in the southwestern quadrant of Collin County and is tied to the Dallas-Fort Worth Region by U.S. Highway 75 (Central Expressway). As the community has grown, there has been increasingly heavy dependence upon U.S. Highway 75 as the primary means of access to the Region. The high capacity thoroughfare access provided by U.S. Highway 75 (to and through Dallas) has been a major factor stimulating the growth of Plano and its sister city (Richardson) to the south. While the north-south access provided by U.S. Highway 75 has been a major stimulus to the Community's development, it is becoming increasingly evident that the primary dependence for access to the Region on a single highway could become a deterrent to future growth. The need for supplemental routes of access to the various parts of the Region must be recognized as one of the important requirements related to continued urban expansion in Plano.

Plate 3 shows the physical and topographic characteristics of Plano's site and also indicates certain man-made features of the area. About two-thirds of Plano's site is drained by Rowlett Creek (a branch of the East Fork of the Trinity River) and by several of the tributaries to Rowlett Creek. A major portion of the western part of the Community area lies in the White Rock Creek drainage system which is not a tributary of



N

SCALE IN FEET

0 1000 4000 8000

0 1/2 1 1 1/2

SCALE IN MILES

CONTOUR INTERVAL - 10 FEET

CITY of PLANO, TEXAS
PLANNING DEPARTMENT

PLATE 3

PLANO, TEXAS

PHYSICAL FACTORS INFLUENCING DEVELOPMENT

the East Fork but flows southward through Dallas to the main stem of the Trinity River. The western-most portion of Plano's Planning Area is in the Indian Creek drainage area, flowing westward to the Elm Fork of the Trinity River. The drainage system arrangement results in a series of shallow valleys separated by ridges arranged in general northwest to southeast alignment. The highest elevation in the Plano Area is found in the northern portion of the Community's Planning Area along a ridge which runs parallel to Preston Road and which separates the White Rock Creek drainage system from the Rowlett Creek system. The higher elevations range upward to approximately 780 feet above sea level. The lowest terrain in the Community is found along Rowlett Creek in the southeast part of the City where the elevation is approximately 500 feet above sea level. The 280 feet of slope diagonally across the Community provides the basis for an excellent drainage system and results in a relatively moderate amount of flood plain area.

The preponderance of Plano's site is on open prairie which is either in agricultural cultivation or in grassland. Some tree cover exists along the stream valleys, particularly along the Rowlett and White Rock Creek Valleys, but for the most part the preponderance of the Community's site is open land.

The portion of the Planning Area in the Indian Creek drainage area is very rough, with deep gullies and steep hills. In many ways, the area can be considered to be ecologically sensitive, unlike the rolling prairie which predominates in Plano. Before any detailed planning and development work is done in this drainage area, additional topographic and ecological study will be needed to determine the impact of development on the land.

The general soil types in the Plano Area are shown by Figure 3. Practically all of the Plano site occurs in the Houston Black and Austin soils. The Houston Black Clays are a predominant soil type across the Blackland Prairie Region of Texas which exists as an elongated strip of land extending from near San Antonio northward to the vicinity of the Red River. The Houston Blackland Clays are dark gray to black calcareous clays found largely on the undulating prairies. The expansive characteristics of the blacklands create some building

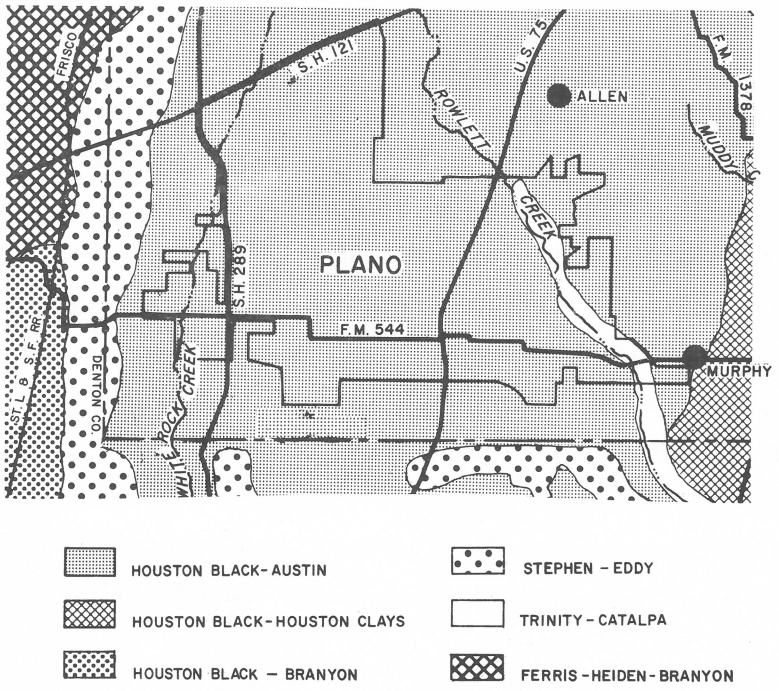


FIGURE 3
GENERAL SOIL GROUPS

problems. The black clay soils expand extensively under wet conditions and contract as they dry, resulting often in a deeply cracked surface during dry periods. In addition to the very high shrink-swell factor of the Blackland Clays, they are relatively tight and lack permeability. The lack of permeability is particularly significant where septic tanks are used because the tight soils fail to absorb the septic tank effluent, particularly during wet weather. The low permeability of the Blackland Clays is of special significance relative to the tendency toward the development of large lots which are not served by sanitary sewer. It is highly probable that any areas developing with septic tanks will result in the creation of future sanitation problems in the drainageways which flow through Plano. It should be recognized that sanitary sewer service is essential for urban type development throughout the Blackland area and that the lack of sanitary sewer is a constraint on development.

The basic surface material in Collin County is from the Upper Cretaceous Period referred to as the Austin Group, and the Blackland Clays which are exposed on the surface in the Plano Area are derived from the

Austin Formation. The Austin Group ranges upward to 600 feet in thickness, but in the Collin County area, which is near its northward limits, the formation is somewhat more shallow. Chalky limestone of a soft and often crumbly character is a typical subsurface material. The Austin Chalk is generally eroded along the stream valleys, many of which have exposed limestone chalk material at the base of the channel. While the Austin Chalk is considered to be a poor construction material, it does provide good bearing for foundations and in the Plano Area provides adequate bearing for nearly any type of construction. No geologic faults are known to exist in the Plano Area and except for the special engineering considerations required for structures placed directly on the Blackland Clays, no constraints to urban development or construction are considered to exist in the Plano Area from the existing soils or geologic conditions.

The general location of the areas subject to flooding are indicated on Plate 3. These areas should be treated with concern as development occurs since the accommodation of surface storm waters is an extremely important consideration and any major encroachment upon the stream valleys could result in the creation of expensive and undesirable drainage problems. The total flood plain area represents about 4 percent of Plano's Planning Area. In many cases the major tree cover of the Community is related to the areas subject to periodic inundation. Wherever possible it will be desirable to preserve the tree cover and to protect the stream valleys for drainage and open space purposes. The preservation of the open space can be accomplished by allocating the preponderance of the low areas to either public park or private open space use.

The Plano Area is served by four railroad lines, two which have a general east-west orientation and two which run north-south through the City. The Santa Fe Railroad is located in the southwestern portion of the Community and the St. Louis & Southwestern (Cotton Belt) extends in a general east-west alignment across the southeastern part of the City area. The Southern Pacific traverses the City in a north-south direction near U.S. Highway 75, while the St. Louis & Santa Fe Railroad will ultimately form the western boundary of the City. The existence of the rail lines along the southern edge of the City has had a major influence on the industrial development pattern and will continue to influence the future industrial land use arrangement.

The availability of service from these railroads is considered to be a significant industrial development asset to the Community.

Another significant form of land use which exists on the southern boundary of Plano consists of the campus of the University of Texas at Dallas and the facilities of the Texas A&M University Research and Extension Center. The proximity of the two large educational institutions must also be recognized as potentially large future traffic generators which will require improved thoroughfare access.

The location of two small air landing strips in the Plano Area are shown on Plate 3. One landing strip is located in the southwest corner of the Planning Area near the County line. A second landing strip is located in the northern part of the Planning Area near Bethany Cemetery.

One or both of the landing strips listed are considered to be temporary uses of the land and likely to be changed in use as urban development takes place. The landing strip located in the southwest corner of the Planning Area is close enough to the Addison Airport to create some air traffic conflict. It is a residential airport development, likely to remain for a long period of time. The northern landing strip, although commercially used, is expected to change to residential use over the long term because no supporting facilities are planned for the land adjacent to it. Any development which may be permitted near this landing strip should take into account the fact that the air field will continue to operate for an undetermined number of years.

Another feature of importance is the proposed location of State Highway 190 along the southern border of the City. The proposed freeway is intended to traverse an area generally considered appropriate for industrial use. The noise and air pollution which may be generated by the freeway will create the least problem in the industrial area and the availability of the freeway should generate major economic benefits. The high capacity east-west thoroughfare access which could be provided by State Highway 190 would be a

valuable supplement to the present regional highway system since some type of major east-west thoroughfare access is considered essential to Plano's continued expansion.

From the evaluation of the physical features of Plano's site illustrated by Plate 3, there appear to be few constraints on the development and expansion of Plano except that of highway access previously mentioned. One factor not illustrated by Plate 3 (water supply) could also evolve as a restricting feature. Plano's water supply is from Lake Lavon by agreement with the North Texas Municipal Water District. The District serves several fast growing towns and cities which collectively have the potential of acquiring a population equal to that of the City of Dallas. The North Texas Municipal Water District is planning for an expansion of its raw water supply from sources outside the Trinity system. If Plano and other cities such as Richardson, Garland and Mesquite sustain their rapid growth rates, the demand for municipal water could exceed the supply very soon unless the expansion of the North Texas Municipal Water District's raw water supply is achieved.

VI. LAND USE

The increasing urban population in Plano will demand larger amounts of land to provide space for housing, businesses, industry, recreation, transportation, and other forms of urban use. The conversion of rural or vacant land to urban use influences the economy and determines the future character of the Community. In Plano, there has been a major conversion of rural land to urban use in recent years and this trend can be expected to continue and possibly accelerate.

To a considerable degree the character, efficiency, and general future quality of Plano will be determined by the relationship of the various forms of urban land use which evolve. The demand for streets, sanitary sewer, water supply, fire and police protection, and many other services required in urban areas will be determined by the magnitude and relationship of the land uses in the Plano Area. Determination of the nature, location, and extent of existing and future urban land use is essential to all urban planning efforts which are intended to shape a convenient, functional, economical, and environmentally pleasant community.

For the purposes of determining the extent, type, and location of existing land use in Plano and the changes which have taken place periodically since the first land use survey in 1963, parcel by parcel examinations of the status of development of all land in the Plano Area were conducted in 1973, 1977, and 1980. Each parcel of property within the corporate limits and in the area considered for future expansion was examined and the type and extent of use found thereon was recorded and mapped.

The use of each parcel of land was classified into one of several general land use categories. The categories to which the various land uses were allocated are summarized by the following list:

RESIDENTIAL USES	Single-Family Residences - One-Family units, including single-family attached, with accessory buildings.
	Two-Family Residences - Two-Family units and related accessory buildings.
	Multiple-Family Residences - Apartments, rooming houses and accessory buildings.
	Mobile Homes - Trailer houses, mobile homes and other relocatable housing.
RETAIL/OFFICE USES	Stores, Shops, Offices, and Service Uses.
COMMERCIAL USES	Building Material Yards, Garages, Machinery Yards, and Warehouses.
INDUSTRIAL USES	Light Industrial - Storage and light processing uses.
	Heavy Industrial - Heavy processing, salvage yards, etc.
PARKS & OPEN SPACE USES	Playgrounds, Playfields, Parkways, and Recreational Areas.
PUBLIC & SEMI-PUBLIC USES	Schools, Churches, Cemeteries, Hospitals, and Other Institutions.
TRANSPORTATION USES	Railroad Rights-of-Way, Yards and Switching Facilities, Highways, Street and Alley Rights-of-Way.
VACANT OR AGRICULTURAL LAND	Land not found under use for urban purposes.

In 1963 the City of Plano was estimated to have a population of 6,000 persons. In 1973 it was estimated that the City had a population of 30,000 and in 1980 the City's population reached 72,331. Comparison of the amount of land used in 1973 and in 1980 with that used in 1963 (see Table 12) indicates the substantial amount of city building which took place in Plano in recent years. The opportunity for continuing guidance of the land use pattern of Plano is illustrated by the large area changes which occurred between 1963 and 1980. In 1980, the amount of land which had been converted to urban use represents a 900 percent increase over

the area in urban use in 1963. This was an addition of over 20 square miles of developed urban land in the approximately 17 year period between 1963 and 1980.

TABLE 12

COMPARISON URBAN LAND USE
CITY OF PLANO PLANNING AREA
1963, 1973, AND 1980 BY CATEGORY

	1963		1973		1980	
Land Use Category	Acres Used	Percent Developed Area	Acres Used	Percent Developed Area	Acres Used	Percent Developed Area
Single-Family Residence	377.5	32.1	1,815.7	36.3	4,690.0	40.0
Two-Family Residence	10.7	0.9	11.8	0.2	51.9	0.4
Multi-Family Residence	3.7	0.3	136.4	2.7	199.1	1.7
Mobile Home	---	---	60.1	1.2	63.9	0.5
Retail/Office	18.1	1.5	144.1	2.9	413.3	3.5
Commercial	5.2	0.4	102.6	2.0	90.8*	0.8
Industrial, Light & Heavy	71.7	6.1	212.8	4.2	354.3	3.0
Railroad	128.2	10.9	187.8	3.7	202.5	1.7
Public & Semi-Public	86.9	7.4	343.3	6.8	963.7	8.2
Parks & Playgrounds	15.8	1.3	267.2	5.3	1,475.0	12.6
Streets & Alleys	459.5	39.1	1,738.7	34.7	11,735.0	27.6
TOTAL DEVELOPED AREA	1,177.3	100.0	5,020.5	100.0	11,735.0	100.0
Vacant or Agricultural	10,047.7		35,537.0		35,497.0	
TOTAL PLANNING AREA	11,255.0		40,557.5		47,232.0	

Land Use data 1963 and 1973 by Marvin Springer & Associates; land use data 1980 by City of Plano Planning Department.
*Reduction in acreage caused by reclassification of some uses from Commercial to Retail.

The Plano Planning Area was expanded from 11,225 acres in 1963 to 47,232 acres in 1980, and the current Planning Area, as delineated by Figure 2, is considered to represent the maximum area in which Plano is expected to expand. The total developed urban land in the Plano Planning Area increased from 1,177 acres in 1963 to 11,735 acres in 1980.

From the comparisons shown by Table 12, the largest increase in any land use category occurred in the area used for single-family dwellings. Multi-family dwellings (apartments) also experienced a major area increase from 3.7 acres in 1963, to 136 acres in 1973, and to 199 acres in 1980. Retail and commercial forms of land use also made significant gains in response to the service demands of a growing population.

The increase in schools and churches is reflected in the major gain in area devoted to public and semi-public use. The strong effort of the City of Plano to achieve a park and open space system is indicated by the increase in park area from 15.8 acres to 267 acres between 1963 and 1973, and to 1,475 acres in 1980.

While there was substantial gain in the land area devoted to streets and alleys, the percentage of the total developed area devoted to streets and alleys has decreased. The decrease in the percentage of the total developed area found in streets results primarily from the longer blocks and more efficient subdivision design of the new development.

A more specific evaluation of land use changes in Plano's Planning Area is shown by Table 13 which indicates the area of urban land used per 100 persons in 1963, in 1973, and in 1980. The total amount of urban land used per 100 residents has decreased significantly in recent years as a result of several changes in the Community's development. This decrease has resulted from more dense residential development.

The most significant change in the land use relationships occurred in the area used for street and alley purposes, where the 7.66 acres per 100 persons used in 1963 dropped to 6.05 acres per 100 persons in 1973 and to 4.47 acres per 100 persons in 1980. The acreage required for street purposes is expected to decrease only slightly more because demands for more and wider major thoroughfares will nearly balance with the developments which will utilize less street and alley paving.

TABLE 13

LAND USE RELATED TO POPULATION

CITY OF PLANO - 1963, 1973 AND 1980

Land Use Category	1963 Acres Used	1963 Acres Used Per 100 Persons	1973 Acres Used	1973 Acres Used Per 100 Persons	1980 Acres Used	1980 Acres Used Per 100 Persons
Single-Family Residence	377.5	6.29	1,815.7	6.32	4,690.0	6.48
Two-Family Residence	10.7	0.18	11.8	0.04	51.9	0.07
Multi-Family Residence	3.7	0.16	136.4	0.47	199.1	0.28
Mobile Home	--	--	60.1	0.21	63.9	0.09
Retail/Office	18.1	0.30	144.1	0.50	413.3	0.57
Commercial	5.2	0.09	102.6	0.36	90.8*	0.13
Industry, Light & Heavy	71.7	1.20	212.8	0.74	354.3	0.49
Railroad	128.2	2.14	187.8	0.65	202.5	0.28
Public & Semi-Public	86.9	1.45	343.3	1.19	963.7	1.33
Parks & Playgrounds	15.8	0.26	267.2	0.93	1,475.0	2.04
Streets & Alleys	459.5	7.66	1,738.7	6.05	3,230.5	4.47
TOTAL DEVELOPED AREA	1,177.3	19.63	5,020.5	17.46	11,735.0	16.22
Vacant & Agricultural Land	10,047.7	--	35,537.0	--	35,497.0	--
TOTAL PLANNING AREA	11,225.0		40,557.5		47,232.0	

Land use data 1963 and 1973 by Marvin Springer & Associates; land use data 1980 by City of Plano Planning Department.
*Reduction in acreage caused by reclassification of some uses from Commercial to Retail.

The total area used for residential purposes rose from 6.63 acres per 100 persons in 1963 to 7.04 acres in 1973, but has now declined to 6.92 acres in 1980. The recent decline in residential acreage per 100 persons is caused by the higher density single-family developments constructed in recent years. The decline can be expected to continue as newly approved medium-density patio homes, townhouses, "zero-lot-line" developments, and apartments are constructed.

Retail and office land use per 100 persons experienced a significant change from 0.3 acres to 0.5 acres between 1963 and 1973, and had increased to 0.57 by 1980. The 0.57 acres per 100 persons is a high ratio for retail land use and is expected to represent the approximate peak for the retail category. A ratio as high as 0.57 acres of retail land use per 100 residents has not been found in any other city in the Southwest. The amount of land used for retail purposes and the comparatively high ratio of retail land to the population probably results from a tendency to overbuild in order to provide for an expected larger future population. The currently high ratio of retail land per 100 residents can be expected to ultimately decline to a ratio of 0.5 as the population increases to balance with the retail development.

EXISTING LAND USE ARRANGEMENT - The arrangement of urban land use and the general status of development in Plano as of 1963 is shown by Plate 4. Comparison of Plates 4, 5, and 6, which show the existing land use arrangement as of 1963, 1973, and 1980, indicates the extent of Plano's expansion and provides some suggestion as to what can be expected during future years. In 1963 all of the developed area of Plano, with the exception of one subdivision, was located east of U.S. Highway 75. The preponderance of all the retail land use in 1963 was located in the Central Business District, and industrial development had just started to take place along the St. Louis & Southwestern (Cotton Belt) Railroad in the southern part of the City. There were large areas of vacant and agricultural land within the City which intervened between a number of the existing developments, indicating the need for a more compact land use arrangement.

Plate 5 shows the arrangement of the land use as of 1973 and Plate 6 updates the land use to 1980. Among the land use changes which have occurred in recent years are the following:

1. Collincreek Mall, under construction in 1980 and completed in 1981, has had a significant impact by creating the largest retail center in Plano.

2. There has been a major increase in shopping centers west of U.S. Highway 75. In 1973 only one retail center existed, but by 1980 thirteen centers were complete or partially developed.

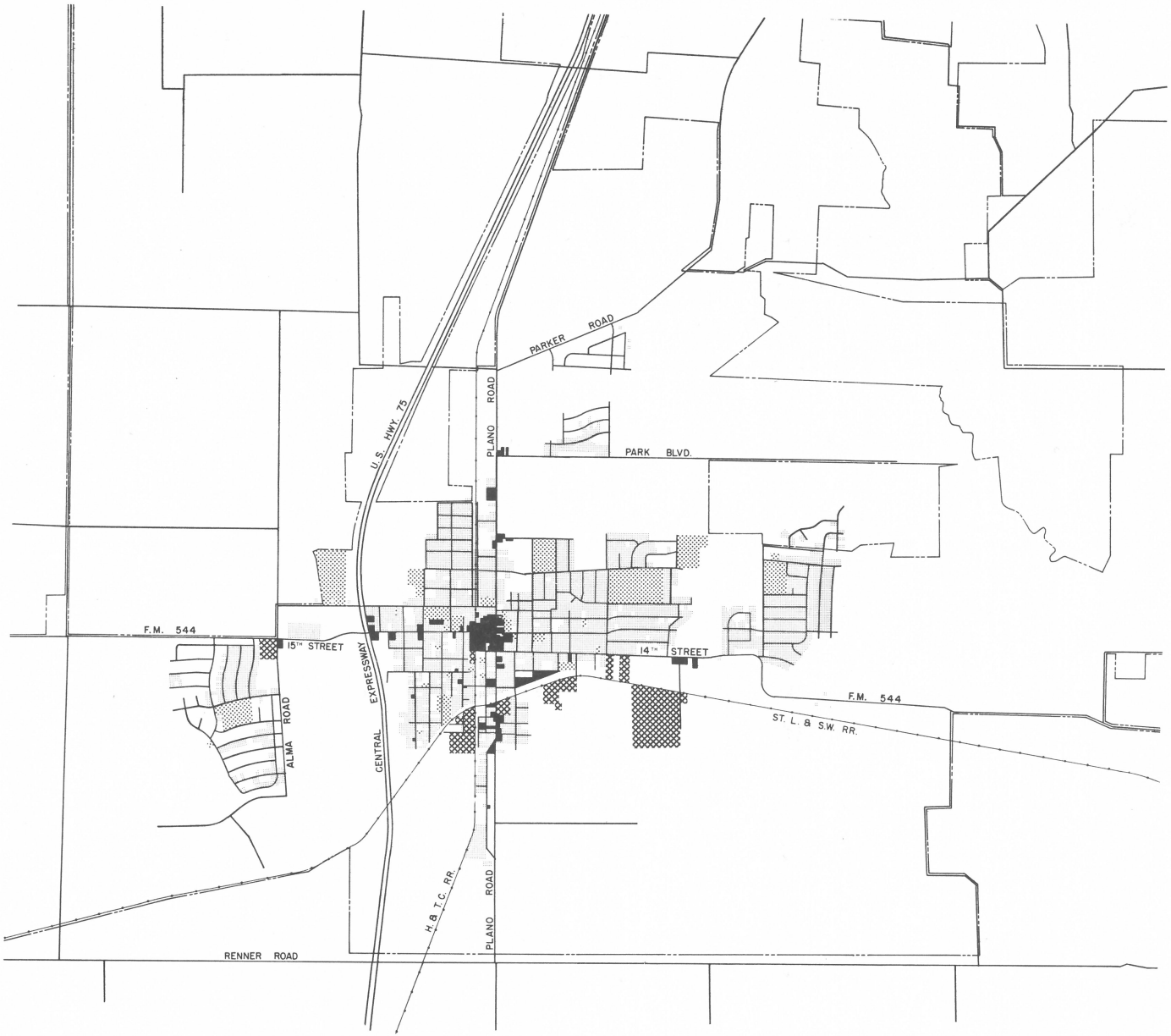
3. Three distinct residential expansion areas have become evident since the early land use study. One residential expansion area is located westward from U.S. Highway 75, generally along FM 544. The second area is located on the west side of U.S. 75, and extends in a northward direction. These two have experienced the greatest growth in recent years. The third residential expansion area is eastward from U.S. Highway 75.

4. There is evidence, from a comparison of Plates 4, 5 and 6, that the residential development in Plano is filling in, becoming more compact and easier to serve. The construction of the White Rock Creek trunk sewer has created a new residential development area which will be separated from the other areas for a number of years. Utility extension policies should attempt to maintain as compact an expanding residential pattern as possible by encouraging logical and orderly extensions of service.

5. There has been an increase of industrial use along the southern part of the City, though the increase has been spotty and moderate.

6. A substantial increase has occurred in the number of school and park sites, with park area expansion being particularly significant in the past five years.

The established land use arrangement and the area available for development indicate that Plano's southern boundary will contain a large portion of its future industrial growth, while the residential expansion will be to the north.



RESIDENTIAL AREA
PUBLIC & SEMI PUBLIC AREA
COMMERCIAL & RETAIL AREA
INDUSTRIAL AREA

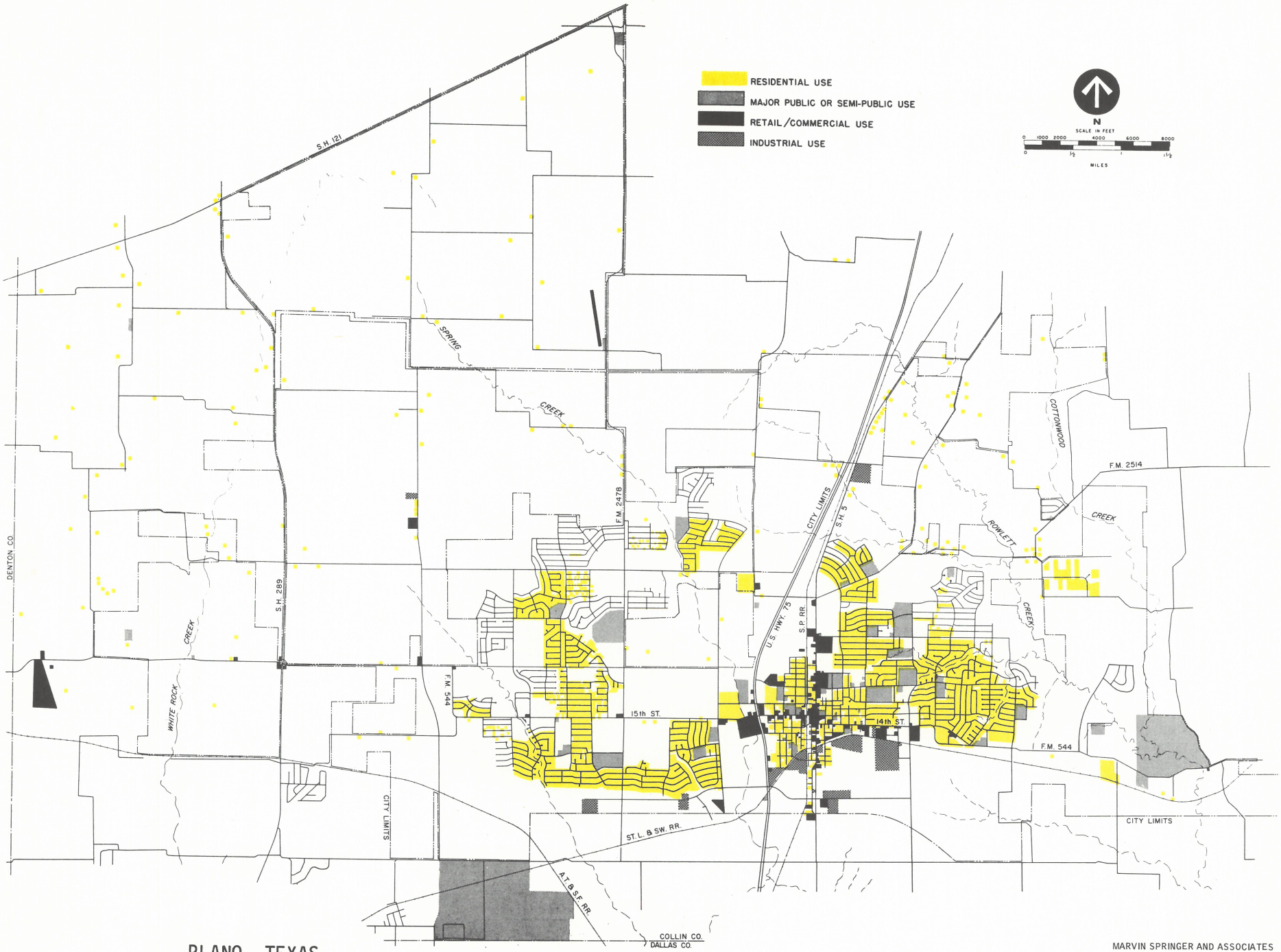
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PLANO, TEXAS

EXISTING LAND USE - 1963

MARVIN SPRINGER AND ASSOCIATES
URBAN PLANNING CONSULTANTS
DALLAS * TEXAS

PLATE 4

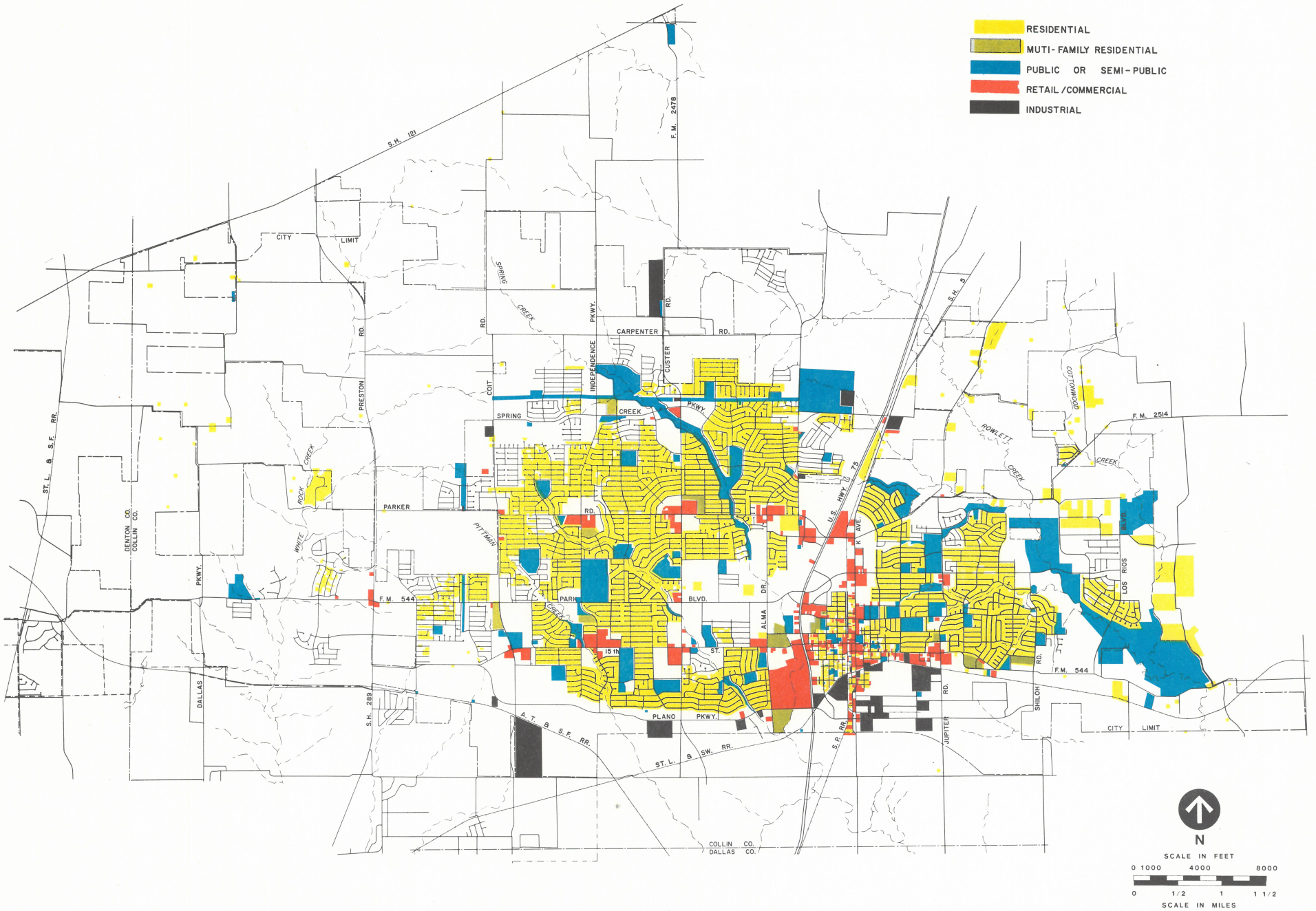


PLANO, TEXAS

EXISTING LAND USE - 1973

MARVIN SPRINGER AND ASSOCIATES
URBAN PLANNING CONSULTANTS
DALLAS * TEXAS

PLATE 5



PLANO, TEXAS

EXISTING LAND USE - 1980

CITY of PLANO, TEXAS
PLANNING DEPARTMENT

PLATE 6

FUTURE LAND USE REQUIREMENTS - The future requirement for various categories of urban land use in Plano will be directly related to the future population of the Community. Table 14 shows the statistical projection for the various land use categories based upon several stages of future development, ranging from a population of 105,000 people in 1985 to a possible population of approximately 210,000 people in about the year 2000.

In making the projections reflected by Table 14, it is assumed that the City of Plano will be able to expand throughout the 47,232 acres which are included in its Planning Area. The rate at which the future expansion occurs may vary but the range of projections permits adjustment as growth rates change.

TABLE 14

PROJECTED LAND USE REQUIREMENTS

CITY OF PLANO, TEXAS

	1980		FUTURE PROJECTIONS			
Land Use Category	Acres Used	Acres Used Per 100 Persons	Acres Required Per 100 Persons	Acres For 105,000 People	Acres For 175,000 People	Acres For 210,000 People
Single-Family Residence	4,690.0	6.48	5.30	5,565	9,275	11,130
Two-Family Residence	51.9	0.07	0.43*	450	750	900
Multi-Family Residence	199.1	0.28	0.30	315	525	630
Mobile Home (1)	63.9	0.09	--	--	--	--
Retail/Office	413.3	0.57	0.50	525	875	1,050
Commercial	90.8	0.13	0.40	420	700	840
Industry, Light & Heavy	354.3	0.49	0.50	525	875	1,050
Railroad	202.5	0.28	0.20**	203**	250**	250**
Public & Semi-Public	963.7	1.33	1.25	1,310	2,190	2,625
Parks & Playgrounds	1,475.0	2.04	1.30	1,365	2,275	2,730
Streets & Alleys	3,230.5	4.47	4.25	4,465	7,440	8,925
TOTAL DEVELOPED	11,735.0	16.22	14.43	15,143	25,155	30,130

(1)Mobile Homes will probably become modular housing (single-family) in the future, and are included in the Single-Family Residence category.
*Includes Townhouse and similar medium density development.
**Assumes basically stable railroad situations except for annexation.

While several adjustments are expected in the ratio of land use required to support the future population, the overall land use requirements are expected to vary only slightly from those indicated by Table 14. In 1980, 16.2 acres of urban developed land were used per 100 persons in Plano and in the future the ratio is expected to be approximately 14.4 acres per 100 persons.

Some of the anticipated adjustments in land use requirements include the following:

1. The medium density housing is expected to increase substantially from the current level. Mobile home development is expected to become a type of modular or manufactured housing in the future, and mobile homes in their present form are expected to cease to be a factor in Plano's housing inventory. Single-family dwellings, at somewhat higher densities, are expected to remain as the largest single form of land use in Plano. Because of the policy of limiting multi-family development to 20% of the dwelling units in a neighborhood, the land use requirement projected for multi-family residences is not expected to increase.

2. Some adjustment in the retail standards are also expected, resulting from a leveling off of the retail area in relation to population and an absorption of any existing over-development which has been created in anticipation of future growth. The future standard projected for retail/office use is 0.50 acres per 100 persons.

3. Commercial land use is expected to increase, resulting in a future projection of 0.40 acres per 100 persons.

4. From the standpoint of industrial land needed to serve the population, development is expected to continue at its present level. However, the creation of the Commercial Employment area in northwest Plano expands the amount of land available for industry and office development. This proposed

development will have a regional service area, and will not have a direct relationship to Plano's population.

5. No significant increase in the amount of land devoted to railroad use is expected, except for minor lead track and spur extensions to accommodate industry and for any annexation of existing railroads.

Attention is directed to the projected land use requirements for retail/office area. The present area zoned for retail and office use in Plano is nearly adequate to accommodate a population of 550,000 or more people. It is obvious that even with vigorous retail development in Plano, a substantial amount of the land which is zoned for retail purposes is not likely to be used for that purpose. Continued expansion of the retail zoning which is unrelated to the sound probability of its use for retail purposes will result in some future land use problems for the Community. It should be recognized, however, that despite the over-allocation of land for retail purposes, there will be a need to provide for additional retail space in Plano. The complexity of the retail zoning problem makes it especially important that a full range of retail facilities be planned for Plano but that care be exercised as to the size and location of the facilities. The Future Land Use Plan shown on Plate 17 along with other features of the Comprehensive Plan indicates the recommended geographic location for future retail areas to serve Plano's development. It is recognized that the recommended locations of retail centers can be subject to future adjustment; however, when such adjustment appears desirable the change should be considered as an adjustment and not an addition to the retail land inventory.

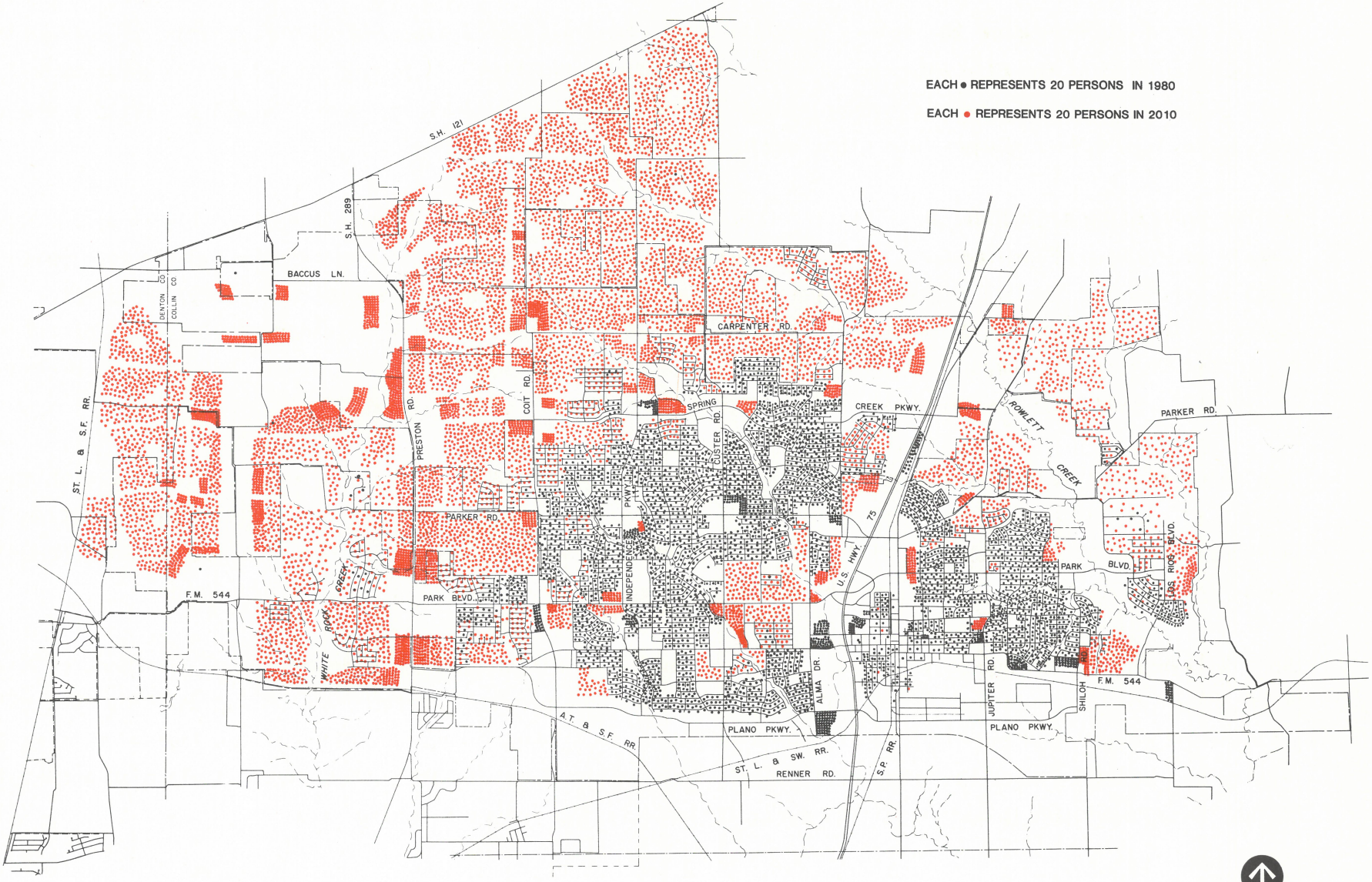
The total projected land use for an ultimate population of 300,000 people in the City of Plano indicates the need for at least 43,890 acres of urban development. The total Planning Area of Plano contains 47,232 acres and, when allowances are made for land which will be held for future development, flood plain areas and unanticipated uses, it is obvious that, if the City of Plano is to reach the 300,000 population projected, virtually all of the additional land in the Planning Area must be added to the City.

The place of residence of the future population of Plano will be influenced by the ability to serve the various sections of the City with sanitary sewers and other utilities. It is logical and will be substantially more economical to encourage the development of the portions of drainage areas in which sanitary sewer service exists before moving into other drainage areas.

FUTURE POPULATION DISTRIBUTION - Plate 7 illustrates the distribution of the place of residence of 300,000 people in the Plano Planning Area. The distribution pattern assumes that the preponderance of the development will occur in the Rowlett Creek drainage system and its tributaries of Pittman Creek, Spring Creek, and Russell Creek, and in the White Rock Creek area. About 25 percent of Plano's future population is expected to reside east of U.S. Highway 75, about 40 percent of the future population will reside between U.S. Highway 75 and Coit Road, and the remainder is expected to locate west of Coit Road.

The population distribution pattern anticipates an interspersal of dense housing areas in keeping with the policy of not concentrating large tracts of dense housing in one area. It is probable that additional dispersed areas of dense housing will develop in outlying areas in the future, but such housing is proposed to be incorporated into each neighborhood design as an integral element of the neighborhood.

Very little vacant or sparsely populated land is indicated within Plano's Planning Area. Whether, or how soon, Plano is likely to exceed 300,000 population cannot be precisely determined. It is unlikely that all of the land within the Planning Area will be utilized for many years. However, Plano is the logical municipal entity to plan and direct the urban development of the entire Planning Area. For physical planning purposes Plano should continue to establish its jurisdiction over the entire Planning Area.



PLANO, TEXAS

FUTURE POPULATION DISTRIBUTION

CITY of PLANO, TEXAS
PLANNING DEPARTMENT

PLATE 7

VII. THOROUGHFARES AND TRANSPORTATION

A substantial portion of Plano's rapid growth over the past 15 years can be attributed to U.S. Highway 75, which connects it with other communities of the Region and the State. U.S. Highway 75, as a connecting thoroughfare to the Dallas area, is the main transportation facility upon which Plano presently depends and is its main tie to the Region. At least two other highways in the Plano Area offer additional access to the Community and should be recognized as part of the existing thoroughfare framework. State Highway 121, located on the north boundary of the Plano Planning Area, will gain future importance as a direct connection to the Dallas-Fort Worth Regional Airport. State Highway 289 (Preston Road) provides north-south access through the western portion of Plano. It is expected that other regional highways designed to serve the Plano Area will be developed by the Texas Department of Highways and Public Transportation, and Plano's local thoroughfare system must be coordinated with the evolving regional highway system and with the air and rail transportation facilities which serve the Community.

In 1975, the North Central Texas Council of Governments assembled a consolidated Regional Thoroughfare Plan based upon the Regional Transportation Plan of the Texas Department of Highways and Public Transportation and the Thoroughfare Plans of the separate counties and cities in the Region. Plano's Thoroughfare Plan has been coordinated with the Regional Plan as to standards and facilities. In addition, the Plano Thoroughfare Plan has been coordinated with the Collin County Thoroughfare Plan, and the plans of all the adjacent cities.

It is essential that a major thoroughfare system be developed in Plano which is capable of handling the expanded vehicular traffic that future growth will create. Plano's future thoroughfare system must recognize and utilize the existing street and highway facilities, and provide future thoroughfares designed to accomplish the following objectives:

1. Provide a structural framework for future growth and development which allows for the creation of logical community units bounded by high capacity major thoroughfares.

2. Minimize the traffic movements through residential areas or neighborhood units.

3. Provide right-of-way, pavement, alignment and intersection standards capable of handling future traffic volumes.

4. Provide a guide to the expenditure of funds on major thoroughfares and highways as future growth in the area requires improvement and additions to the thoroughfare system.

5. Provide a guide to the subdivision of land and a basic framework for the organization of urban land uses in the Community.

6. Provide a thoroughfare development concept around which all agencies responsible for thoroughfare development in the Plano Area (State, Federal, County, City, and the private developers) can coordinate their development and improvement efforts.

7. Provide an adequate local thoroughfare system which is interconnected with the regional highway system.

8. Coordinate thoroughfare development with adjacent municipalities.

9. Minimize the land and pavement required to properly handle the anticipated increases in vehicular traffic.

10. Minimize the environmental impact of vehicular transportation on living quality of the Community.

VEHICULAR REGISTRATION AND TRAFFIC - The degree to which traffic is likely to increase in the Plano Area in the future is indicated by the trends in vehicular registration and other factors related to change in the area.

Vehicle ownership in Collin County has been increasing for the past several decades at a more rapid rate than the population. The following table indicates the previous trend in vehicle registration in Collin County and illustrates the changes which have taken place during the past two decades. Vehicle registration data is only available by counties; however, the Collin County data can give a good indication of the

vehicular registration trends in Plano. The ratio of persons to motor vehicles, as shown by Table 15, clearly indicates the influence of the increasing population on vehicle registration.

TABLE 15

COLLIN COUNTY VEHICLE REGISTRATION, 1951-1981

Year	Population	Total Registration	Persons Per Passenger Vehicle
1951	41,692	16,015	3.4
1961	41,247	22,150	2.6
1971	66,920	44,759	2.3
1981	144,490	101,847	2.1

The ratio of people to motor vehicles has been decreasing for several decades, and it is anticipated that the ratio in the future will approach one vehicle for each two persons. In 1981, there was one passenger vehicle for each 2.1 persons in Collin County.

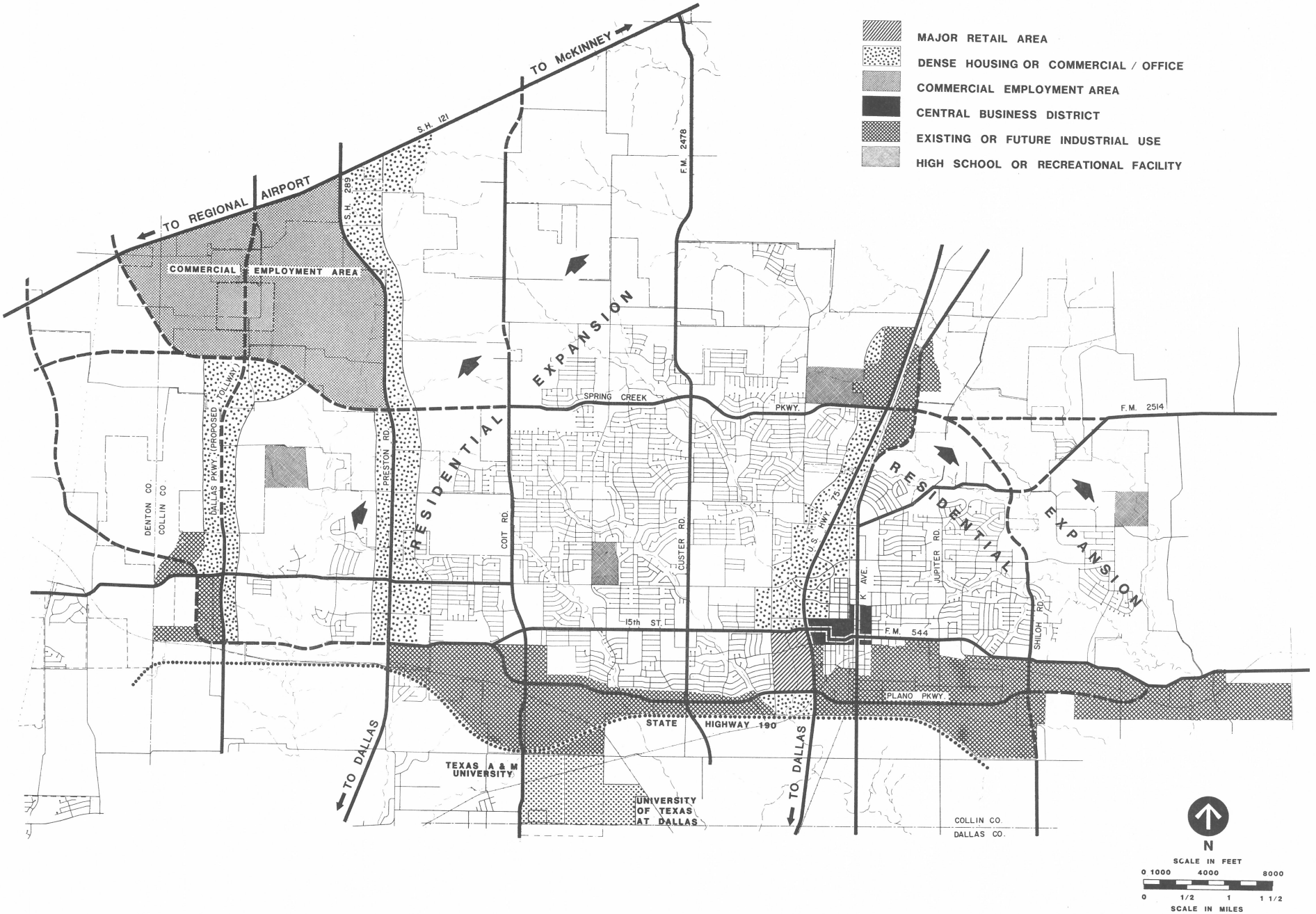
It is probable that the ratio of persons per passenger vehicle will continue to decline slightly in the Plano Area, to approximately two persons for each passenger vehicle. Some of the factors influencing the number of motor vehicles which will exist in Plano in the future involve the energy problem, the ratio of adults to children in the population, and the income level. Mobility will continue to be an important factor in the economic and social life of Plano and it is likely that the motor vehicle will continue to be the primary source of transportation for the population. It is assumed that there will be technological changes in the powering of motor vehicles in the future and that the availability of energy sources to fuel the future types of engines or motors will make it possible for the individual motor vehicle to continue to be the most important means of private transportation in Plano.

Although mass transit studies are taking place in the Region, such studies are primarily aimed toward service to the larger central cities of the Region. It is likely to be a number of years before transit can become a supplemental form of movement for the residents of Plano. As Plano's population density increases, it is likely that consideration of some form of transit will begin to arise. Whatever the future form of transit or personal transportation may be, it is important that an adequate thoroughfare system be developed so that the movement of people and goods essential to the economic and social life of the Community can be accommodated.

A major increase in the number of motor vehicles in Plano during the next 20 years can be expected. The most significant increase in traffic volumes in the City will result from the movements made by the increasing number of passenger vehicles (up to 105,000) which will be owned by the residents.

It is presently estimated that five trips are made daily for each passenger vehicle in Plano. At least 70 percent of all vehicle trips are likely to have the place of residence as either the point of origin or the destination of the trip. By 1990, it can be expected that over 350,000 passenger car trips will be made daily within the City of Plano. In addition to the internal passenger vehicle trips there will be commercial vehicle movements both internally and externally and a substantial volume of passenger vehicles passing through the Community to other points in the Region. The preponderance of the traffic movements which will be made in the Plano Area in the future will, however, result directly from the increased number of residents and the increased activity related to places of shopping, entertainment, employment, and social activity within the City.

FOCAL POINTS OF FUTURE TRAFFIC GENERATION - Plate 8 shows the expanded areas of urban growth which are expected to influence traffic generation in the Plano Area. Several types of land use areas are indicated as points of major traffic generation and have been recognized in Plano's Thoroughfare Plan. Among the significant future traffic generators are the following:



PLANO, TEXAS

MAJOR FUTURE TRAFFIC GENERATORS

CITY of PLANO, TEXAS
PLANNING DEPARTMENT

PLATE 8

1. The existing Downtown District of Plano along with the civic facilities located in it will continue to be a major focal point of traffic. The streets in and around the Downtown District were generally fixed in width by conditions existing at a time when Plano was a significantly smaller City than it is at present. There will always tend to be some problems of peak hour traffic congestion in the older central part of Plano, but many of the problems can be relieved by regulation of on-street parking and by providing alternate routes around the area for through traffic.

2. Retail shopping areas, particularly those of regional shopping center size, will be major traffic generators. Collincreek Mall will have a great impact on the surrounding street system, as will at least one additional center which is likely to locate along the State Highway 289 (Preston Road) axis or on the extension of the Dallas North Tollway. Another major retail-commercial concentration is expected at the intersection of Preston Road and State Highway 121.

3. Commercial and industrial areas can be anticipated to be points of high traffic generation in the future. The location of the major industrial development of Plano along the southern border of the City, on an elongated east-west axis, will enable the industrial area to be approached by several major thoroughfares, thereby tending to reduce the congestion which the peak period employment traffic to and from industrial areas normally creates. Special attention to access and circulation will be required in the development of commercial areas along U.S. Highway 75 and the extension of Dallas North Tollway.

4. The Commercial Employment area in northwest Plano will be a major traffic generator. With a projected employment of 150,000 workers, careful attention must be given to internal street design, in order to avoid excessive rush hour congestion. The proposed campus-like style of the development, and its regional employment characteristics, will help avoid the concentration of traffic on any

single external thoroughfare. However, as the development progresses, traffic volumes can be expected to require larger thoroughfares with more stringent access control.

5. Residential expansion is expected to be particularly heavy to the west and northwest of the existing development of Plano. The new residential areas both to the east and west of U.S. Highway 75 will be major sources of traffic generation. The preponderance of all future internal traffic movement in the City will have the place of residence as either the point of origin or the point of destination.

6. Although schools are not heavy traffic generators, short period peak load conditions are created by them, in particular by senior high schools, and the future planning and development of the community should provide adequate vehicular access to the schools which are planned to be located throughout the residential area.

7. Several institutions of higher education exist near Plano including the University of Texas at Dallas and the Texas A&M University Research and Extension Center on Coit Road. Each of these institutions has the potential of substantial peak period traffic generation and their potential demands should be recognized.

8. Recreational areas both within the City of Plano and those which are located outside in the Region are significant points of traffic generation. The Multi-Purpose Center at Alma Drive and Spring Creek Parkway is an example of such a facility. Lake Lavon and Lake Ray Hubbard to the east of Plano are examples of outlying facilities which generate substantial traffic during specific periods.

9. In addition to the largely internal traffic movements, there will continue to be a strong north-south movement through the Plano Area because the Community sits astride the U.S. Highway 75 north-

south artery. Preston Road is also a major north-south artery and the extension of the Dallas North Tollway into Collin County offers the possibility of additional north-south traffic capacity.

10. East-west movements in the Plano Area are currently provided largely by F.M. 544, which has been partially upgraded to urban standards and is scheduled for more improvement. Spring Creek Parkway is being developed to perform an east-west traffic function in accordance with the Thoroughfare Plan.

REGIONAL THOROUGHFARE CONSIDERATIONS - The importance of Plano's transportation relationship to the Region has become increasingly evident as the City has expanded. A large percentage of the residents of Plano are employed in Dallas or outside Plano in other communities of the Region. The trip to work and the trip from place of employment to place of residence represents a very large portion of the overall traffic movement and is that part of the area traffic which creates the greatest problems and generates the heaviest demands on the thoroughfare system. There is evidence that, at the present time, the peak traffic movements on the primary regional system (U.S. Highway 75, F.M. 544, and portions of Preston Road) represent the approximate capacity of the system as it exists.

It is obvious that a four fold increase in the population of Plano, which currently appears possible, will greatly expand the requirements for thoroughfare facilities, particularly those which relate the City to the Region. Any measures which can make the present or future transportation system more efficient, protect its long-range capacity, and reduce the relative demand for motor vehicle movements should be diligently pursued. Simply, the more needs of the residents of Plano that can be supplied in Plano, the more adequate the present and future thoroughfare systems are likely to be. The employment of an increasing percentage of Plano's residents in Plano or nearby could be the equivalent of huge expenditures for new and enlarged thoroughfares in meeting the future needs for transportation. The fewer people who have to travel out of the Plano Area for employment, the less will be the peak period demand on the regional thoroughfare system for moving people to and from work.

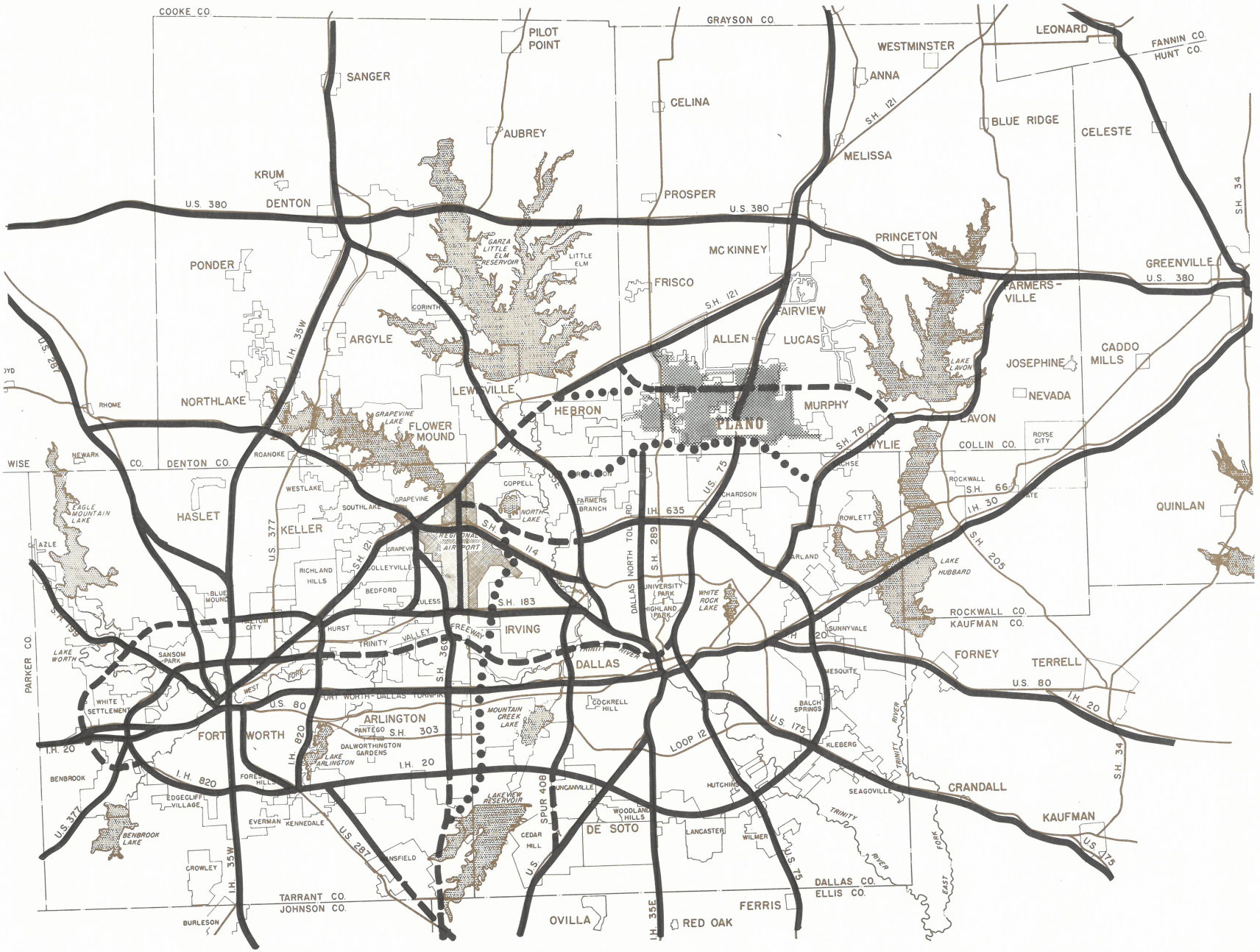
A strong effort to increase the ratio of Plano residents employed in Plano could assist the growing transportation problem. Other steps which could improve transportation efficiency include:

1. Car and van pooling to increase the number of riders per vehicle.
2. Express bus operation to identifiable centers of employment for Plano residents.
3. Staggering the hours of beginning and ending the work day to reduce the short peak period traffic demand.
4. Provision of local bus service in Plano.

Coupled with such measures for improving thoroughfare efficiency, there must be a major effort to add to and expand the regional thoroughfare connections to Plano and to the surrounding areas. As Plano grows, space must be provided for the development of an internal thoroughfare system which is related to and supportive of the regional system.

The importance of Plano's relationship to the evolving regional thoroughfare system is illustrated by Plate 9. Some of the thoroughfares shown on Plate 9 exist and are indicated by solid lines, while others are proposed or under planning or are at the present time only recommendations. Those thoroughfares illustrated by Plate 9 which are of greatest importance to Plano include the following:

1. U.S.Highway 75 - The connection between Dallas and Plano and between the Plano Area and the Sherman-Denison Area along U.S. Highway 75 is the most important existing regional highway link serving the Community. The urbanization generated along U.S. Highway 75 north from Dallas has absorbed most of the peak hour traffic capacity of the thoroughfare. Consideration is being given to methods for improving the north-south capacity in the U.S. Highway 75 corridor. Current plans now include widening to eight lanes from IH 635 to FM 544, and to six lanes up to Parker Road.



REGIONAL THOROUGHFARE RELATIONSHIP

MARVIN SPRINGER AND ASSOCIATES
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DALLAS * TEXAS

PLATE 9

2. State Highway 121 - State Highway 121 provides direct access to the north entrance to the Dallas-Fort Worth Regional Airport; the relationship of State Highway 121 to the northern Plano Area will become increasingly important as development extends into the northern area. It is anticipated that ultimately State Highway 121 will be upgraded to freeway status west of S.H. 289, and to a six-lane facility east of S.H. 289. Via State Highway 121, the Plano Planning Area is nearer to the Dallas-Fort Worth Regional Airport than are a number of towns in the eastern and southern part of Dallas County. The State Highway 121 route to the Regional Airport, if developed with adequate access control, should remain relatively uncongested as compared with some of the more direct highway routes from Central Dallas to the Airport.

3. State Highway 289 - The importance of State Highway 289 (Preston Road) to Plano is increasing. The Plano area which will be served by this highway is now coming into development and it is important to assure that urbanization does not adversely influence the potential capacity of the highway. The access which State Highway 289 provides to Interstate Highway 635 (L.B.J. Freeway) is important to Plano, and the improvement of F.M. 544 westward will increase its importance.

4. Interstate Highway 635 (L.B.J. Freeway) - At the present time Interstate Highway 635 is the nearest circumferential route around Dallas which serves Plano. It is possible by the Interstate Highway 635 route to intersect nearly all of the radial highways leading to and from Dallas without traversing the center of the City. During peak traffic periods, Interstate Highway 635 operates at or above capacity and there is an obvious need to supplement its capacity.

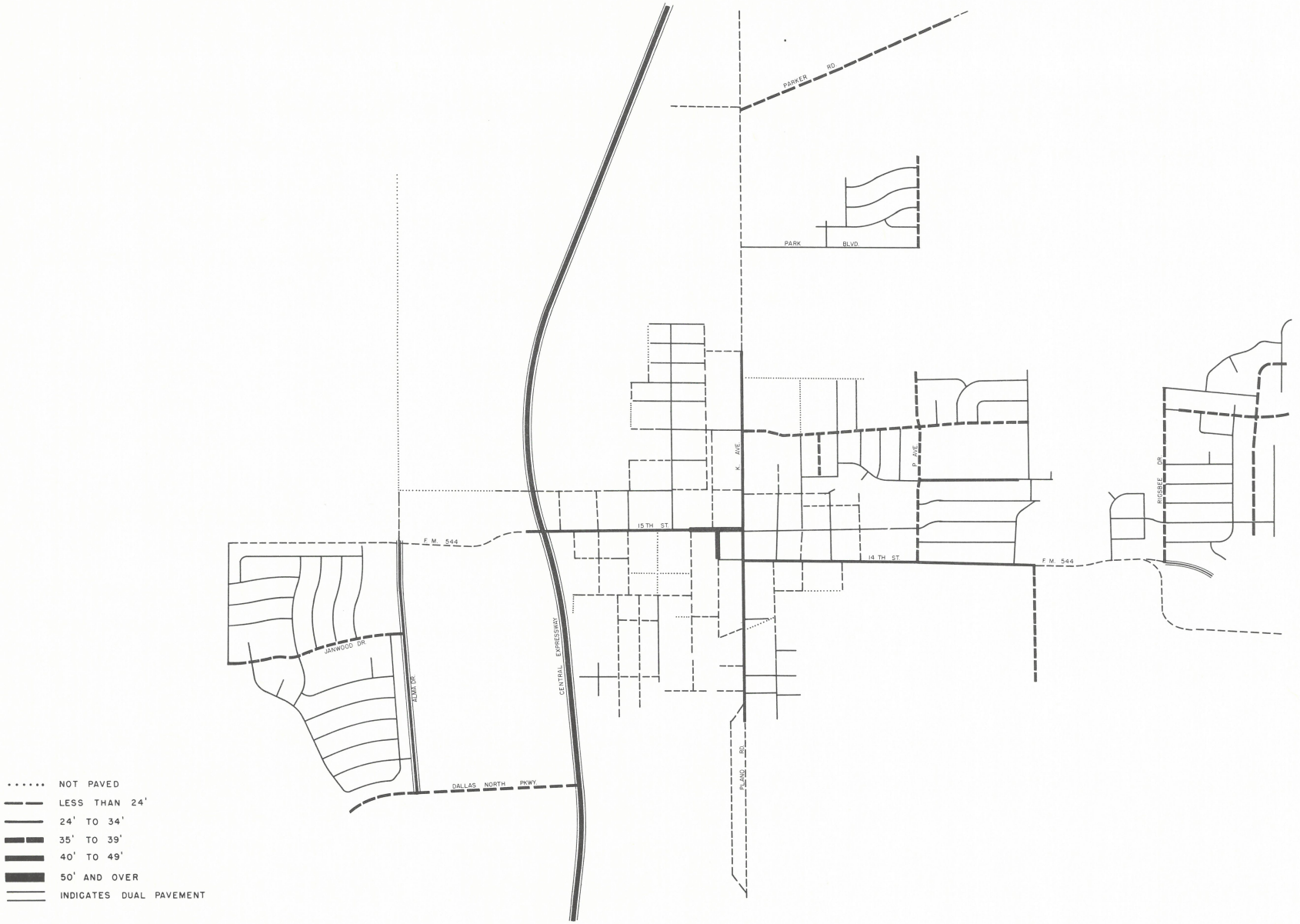
5. State Highway 190 Freeway - This proposed freeway, which will connect Plano to State Highway 78 in Garland, and to Interstate Highway 35 in Carrollton, will be of major significance in connecting the City to the regional thoroughfare system, and in providing an alternative to Interstate Highway 635. The general route of the proposed State Highway 190 is shown by Plate 9.

6. Spring Creek Parkway - An east-west thoroughfare which would traverse northern Plano and connect the area with the regional thoroughfare system has been planned for some time. With the proposed Commercial Employment development, it assumes additional significance as a major route to bring workers to this employment center. Presently, portions of this east-west artery (Spring Creek Parkway) are being constructed as part of the local development effort. Spring Creek Parkway is the highest standard locally sponsored thoroughfare being developed in Plano and is considered to be a very essential element of the Regional Thoroughfare Plan.

7. Dallas North Tollway - Currently, the Texas Turnpike Authority is planning to extend the Dallas North Tollway from Interstate Highway 635 to Frankford Road in Dallas, with the service roads to be extended to F.M. 544. It is anticipated that, at some time in the current decade, the Tollway will be extended to State Highway 121. In order to provide for this, it is essential that right-of-way be obtained or reserved, and a large portion of the right-of-way has already been protected.

The improvement of connections to the regional system shown by Plate 9 would significantly enhance the thoroughfare accessibility of the Plano Area and increase its attractiveness to industry and other types of development.

Substantial thoroughfare development has taken place in Plano since the completion of its first Comprehensive Plan. Plate 10 illustrates the status of existing street pavement in Plano as of 1963, when many streets did not meet urban standards. The 1963 Plano street system consisted of a pattern of east-west and north-south streets which generally followed a grid arrangement. The blocks created by the street system in the original town area were small and the streets were generally discontinuous along the railroad and at other locations. Two significant north-south arteries, Central Expressway (U.S. Highway 75) and Plano Road (K Avenue), existed in the Community. F.M. 544 provided the only significant east-west access in the Community.



PLANO, TEXAS

EXISTING STREET PAVEMENT - 1963

MARVIN SPRINGER AND ASSOCIATES
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DALLAS * TEXAS

PLATE 10

Street development which has occurred since the 1963 Comprehensive Plan has met urban standards. In accordance with the initial Thoroughfare Plan, a system of major thoroughfares spaced approximately at one mile intervals is evolving, and within the major thoroughfare grid, local streets, often with curvilinear alignments, are being created. In most cases the street system is arranged to discourage through traffic in the local neighborhood areas. Some thoroughfare improvement has taken place in the older part of the Community where such streets as 15th Street, 14th Street, and portions of G Avenue and L Avenue have been expanded to at least four lane facilities.

Since 1963 there has been the addition of about 340 miles of local streets and major thoroughfares improved to full urban standards. The supervision of the platting design and the arrangement of the new street system has been an important function of the Planning & Zoning Commission.

THOROUGHFARE STANDARDS - The projected population growth in Plano indicates the importance of providing an adequate thoroughfare system to accommodate the movements of people and goods essential to the overall Community welfare. A number of factors influence a thoroughfare's ability to carry traffic safely; among these are alignment, right-of-way width, and the design of the roadway pavement section. Other factors related to the capacity of a thoroughfare include conflicts such as the introduction of driveways and other points of access into the roadway, frequency of intersections, and the nature and density of adjacent land use.

The right-of-way width of a thoroughfare is generally determined by the pavement section required to perform the function for which the thoroughfare was designed, plus allowance for space for parkway purposes and other functions such as utility locations and visibility areas. Depending upon the type of cross section design, drainage may also influence the right-of-way width. Generally, the number of traffic lanes provided in the design of the pavement section is the major factor affecting the vehicular capacity of a thoroughfare. The following standards are recommended for the development of thoroughfares in Plano and are referenced on

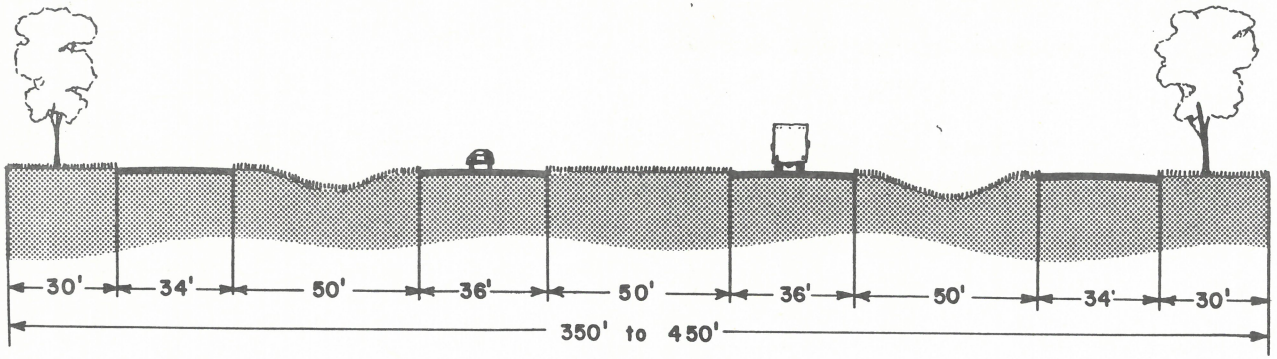
the Thoroughfare Plan. The proposed thoroughfare standards are separately referenced to a coding developed by the North Central Texas Council of Governments for the Region.

The alternate standard coding indicated for each thoroughfare is a descriptive symbol which may eventually become uniform in the Region. The symbol consists of a combination of letters and numbers and is interpreted as follows:

1. The first letter is a P, M or C.
   P - Principal Arterial (with regional significance)
   M - Minor Arterial (with local significance)
   C - Collector
2. The number following the first letter indicates the number of lanes specified; for example, the number 6 indicates a 6 lane facility.
3. The second letter in the symbol designates whether the thoroughfare is divided by a median barrier or is undivided; the letter D indicates divided while the letter U means undivided.
4. The third letter indicates the access design characteristics. Where frontage roads are proposed, the letter F appears, while the letter A designates partial access control.

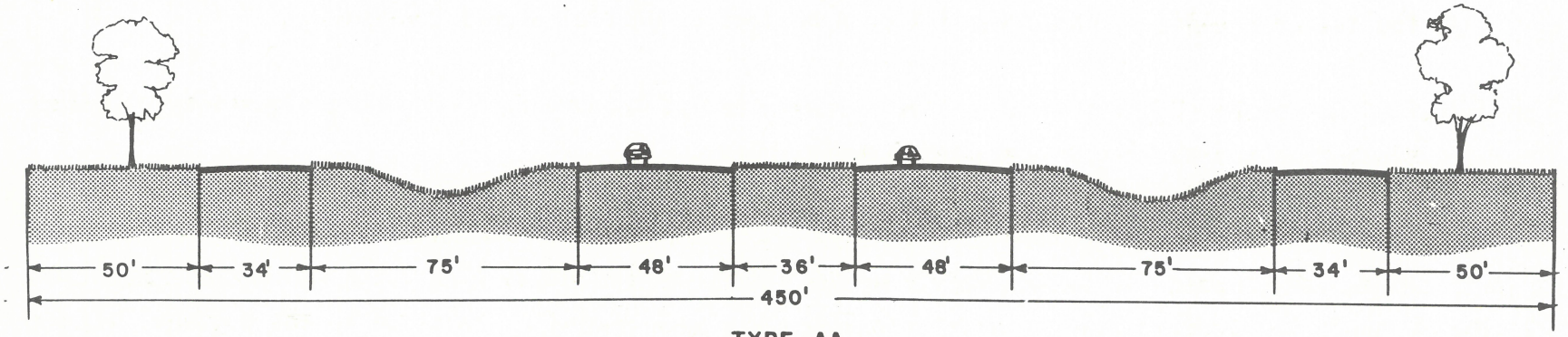
For example, the symbol (P6DF) indicates a principal arterial thoroughfare (regional significance) with 6 lanes, divided by a median barrier and with frontage roads.

Thoroughfares designed to the standards indicated are expected to be adequate to accommodate the local traffic volumes anticipated to be generated in the future in the Plano Area. Facilities to handle the externally generated traffic volumes will depend heavily upon decisions relative to the Regional Highway System. The recommended pavement and right-of-way widths for each type of street and thoroughfare shown on the Thoroughfare Plan (Plate 11) are outlined as follows:



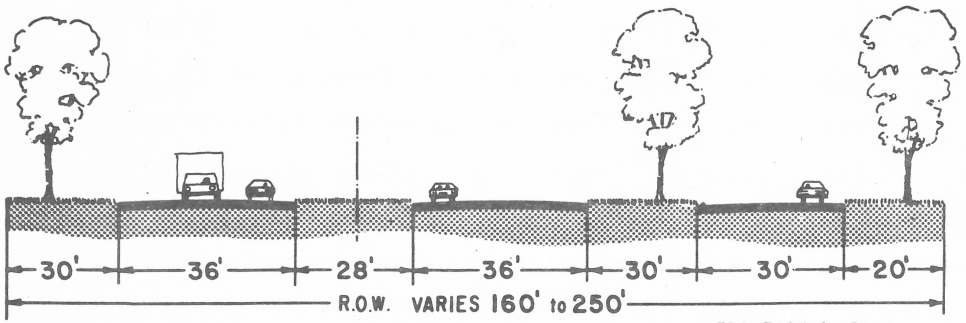
TYPE T
(P6DF)
TOLLWAY - REGIONAL

TYPE T (P6DF) - The Type T thoroughfare is proposed to be the extension of Dallas North Tollway. The pavement section is proposed to consist of two divided 36-foot wide roadways with a 50 foot center median, and three-lane service roads on each side. The extra width in the median is proposed to provide space for a future transit way or commuter rail line. The Type T right-of-way standard will range from 350 to 450 feet depending on the width needed for necessary overpasses and toll plazas.



TYPE AA
(P8DF or P8DA)
FREEWAY – REGIONAL

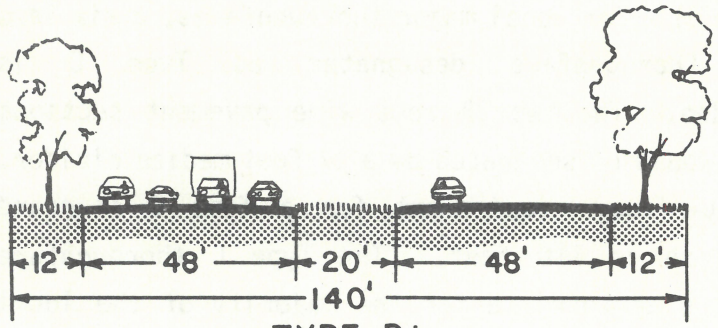
TYPE AA (P8DF or P8DA) - The Type AA thoroughfare is a freeway with two divided 48 foot wide roadways and a marginal parkway area 50 feet wide. The section may or may not have 3 lane service roads on each side. The Type AA thoroughfare will have fully controlled access to the main roadway, with grade separations at cross streets. The right-of-way standard can vary from 450 feet to 700 feet depending on the width needed for grade separation.



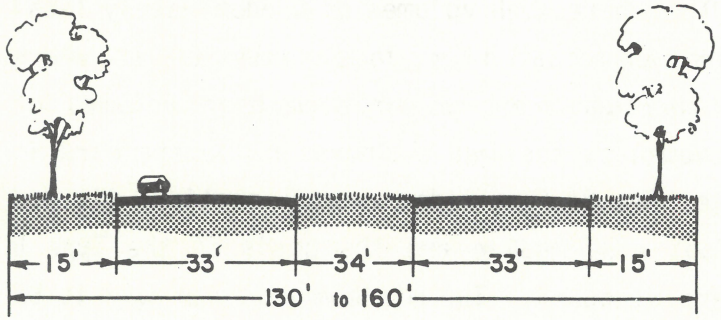
TYPE A
(P6DA) & (P6DF)
EXPRESSWAY - REGIONAL

TYPE A (P6DA or P6DF) - The Type A thoroughfare is proposed as an expressway section which may or may not have frontage roads. The pavement section is proposed to consist of two divided 36 foot wide roadways with a 28 foot center median and marginal parkway spaces ranging from 15 to 24 feet in width. The Type A right-of-way standard will range from 160 to 250 feet in width depending upon the need for acceleration and deceleration lanes, whether frontage roads are required, and the design of the grade separations. A wider marginal area will provide space for planting trees to insulate the impact of high traffic volumes from the adjacent urban development. The expressway type thoroughfare is designed to limit the points of intersection to reduce the amount of marginal interference with traffic movements and thereby retain a high capacity and a reasonable operating speed on the thoroughfare.

Intersections and left-turn lanes are limited to spacing of at least one-fourth mile intervals. Grade separations at points of heavy cross traffic are planned. Access to adjacent commercial properties is by privately constructed acceleration and deceleration lanes. Housing which faces a Type A thoroughfare will have access by service road.



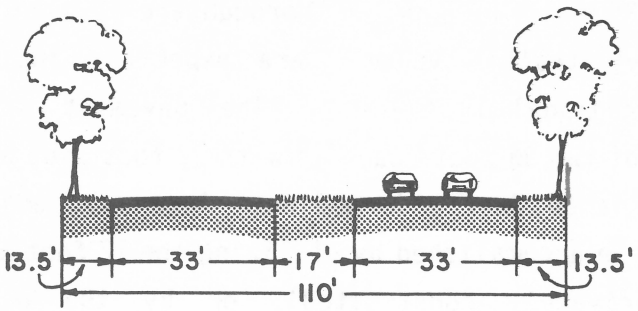
TYPE B+
(P8DA)
REGIONAL ARTERIAL



TYPE B
(P6DA)
REGIONAL - ARTERIAL

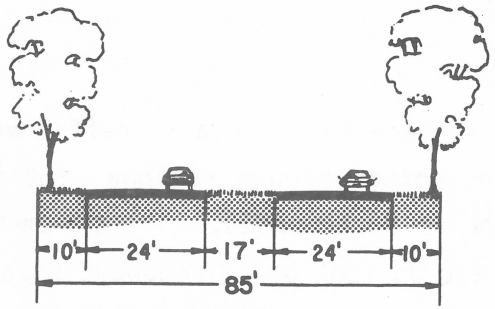
TYPE B+ (P8DA) - The Type B+ thoroughfare is used where very heavy traffic volumes are expected, including through regional movements. The pavement section consists of two 36 foot roadways with 12 foot wide access lanes and a 20 foot wide median. Access to adjacent land will be accomplished by utilizing the 12 foot access lanes (privately constructed), or by the use of acceleration and deceleration lanes which the developer may build. The right-of-way width is a minimum of 140 feet, with additional right-of-way necessary for grade separations. Intersections and left-turn lanes are limited to spacing of at least one-fourth mile intervals. Grade separations at points of heavy cross traffic are planned.

TYPE B (P6DA) - Where fairly heavy traffic volumes are anticipated including through regional movements, the Type B section is recommended. The pavement section would provide two 33 foot paved roadways separated by a 34 foot median divider. The Type B thoroughfare standard has a minimum right-of-way of 130 feet in width.



TYPE C
(M6D)
MAJOR
THOROUGHFARE

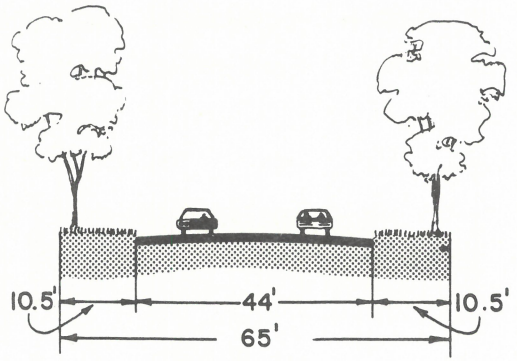
TYPE C (M6D) - For local major thoroughfares, a six lane divided thoroughfare designated as Type C is recommended. The two 33 foot wide pavement sections proposed would be separated by a 17 foot median divider. The right-of-way requirement for a Type C standard thoroughfare is 110 feet. The Type C thoroughfare standard is appropriate for the majority of the local arteries which function primarily within Plano.



TYPE D
(M4D)
MAJOR OR
SECONDARY THOROUGHFARE

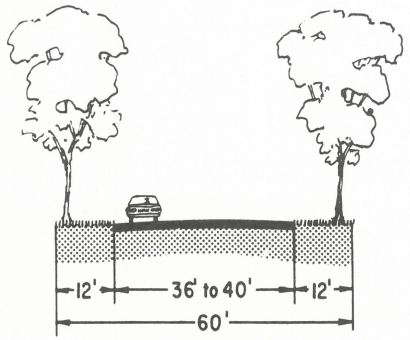
TYPE D (M4D) - Where high volumes of predominately local traffic are anticipated on local arteries or where secondary thoroughfares may involve high volumes of turning movements, the Type D thoroughfare standard is appropriate. Two 24 foot wide pavement sections divided by a 17 foot wide median are the basis of the Type D thoroughfare standard. The minimum right-of-way is 85 feet of width. Residential lots adjacent to a Type D thoroughfare should not have direct access to the street without utilizing circular drives, and they should be designed with a larger setback than is normally required.

TYPE E (M4U) - The Type E thoroughfare standard is intended to serve as both a moderate capacity thoroughfare and a secondary street. It is proposed that the Type E section be used where four moving lanes of traffic



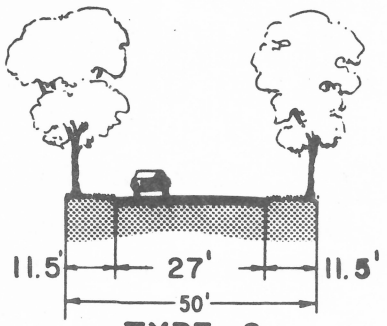
TYPE E
(M4U)
MAJOR OR SECONDARY THOROUGHFARE

are required but right-of-way restrictions limit the use of divided roadway sections, or where it is not anticipated that a divided roadway will be needed. The right-of-way width standard for a Type E section is 65 feet. The application of the Type E section is also suggested for industrial areas where heavy truck movement can be anticipated and for business areas where the right-of-way is restricted, or where at some time it may be appropriate to operate the streets paired as one-way thoroughfares. Where the Type E thoroughfare acts as a residential neighborhood collector, developers are encouraged to design subdivisions so that the sides of houses face toward the street. Lots which back to the Type E roadway will effectively split the neighborhood in two because of the screening required adjacent to the street. Lots facing the street should not have direct access without utilizing circular drives, and they should have larger than normal setbacks.



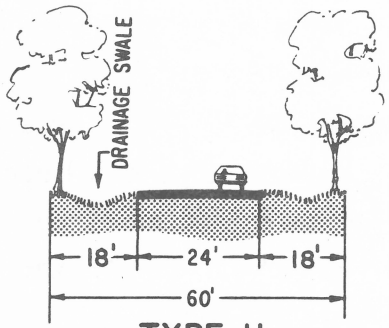
TYPE F
(C2U)
COLLECTOR STREET

TYPE F (C2U) - Where collector streets are limited to approximately one mile in length and connect internal neighborhood streets to major thoroughfares, the Type F street, which utilizes a minimum 60 foot right-of-way and has a 37 foot wide pavement, is required. The thoroughfare provides two travel lanes and two parallel parking lanes. The Type F section is applicable to collector streets and certain commercial and industrial streets where low to moderate traffic volumes are anticipated. The Type F standard is also appropriate for multi-family housing areas where periodic on-street parking facilities are needed.



TYPE G
RESIDENTIAL or LOCAL

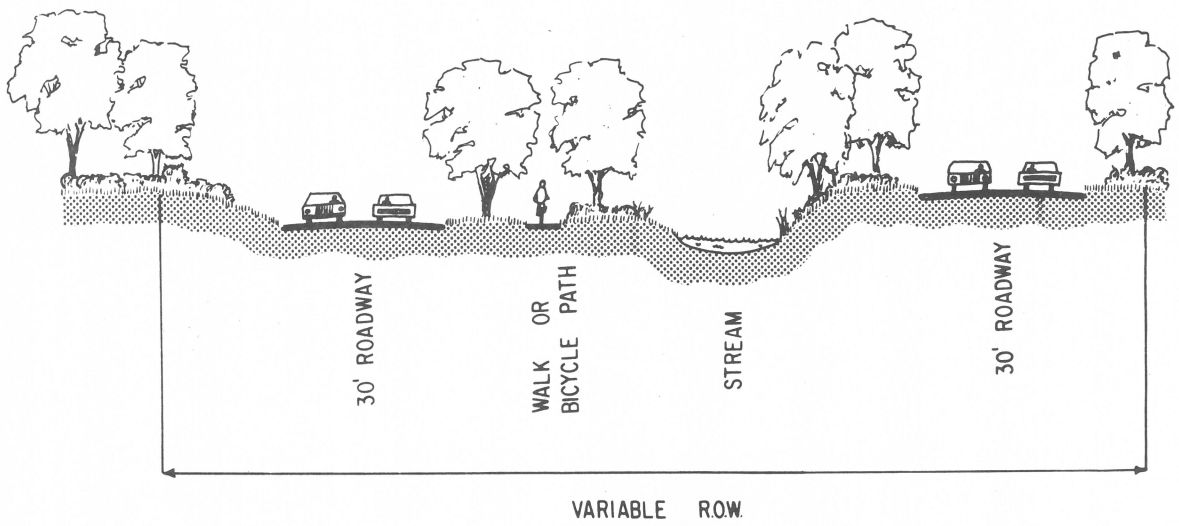
TYPE G - Local or minor access streets in residential areas have rights-of-way 50 feet in width and minimum pavement widths of 27 feet. This standard local thoroughfare is the type of street which has been built for residential use in Plano for at least 20 years. The paved section allows for two travel lanes with one parking lane. In conditions of heavy on-street parking in residential areas, the capacity of the minor street would be reduced to one moving lane. Experience has shown that the Type G section is adequate where the street system is designed to prohibit through traffic movements and where the number of houses served by each street is limited. Some modification of the Type G pavement section may be appropriate in special cases but the 50 foot right-of-way standard should be maintained as the minimum.



TYPE H
ESTATE STREET

TYPE H - In certain areas of Plano, country type estates on fairly large lots have been developed. It is possible that additional development of this type may be created where a special type of thoroughfare would be appropriate. The Type H section illustrates an estate type thoroughfare which requires a 60 foot right-of-way and provides a 24 foot pavement without curb and with the surface drainage provided in swales or ditches parallel to the roadway. In most cases, the drainage swales should be constructed as sod gutters and maintained as part of the adjacent lawn or yards of the homes fronting upon them. The setback of residences and other structures must be sufficiently deep in the estate areas so that no on-street parking would be expected, and where the estate type section is

used, parking should be prohibited on the roadway. It is further recommended that the estate type section not be used where lots of less than two acres in size are created or where the driveway intersections occur more frequently on one side of the road than 250 feet, because the driveway intersection will require a culvert in the drainage swale and closer spacing would complicate drainage and create a poorly designed road.



PARKWAY DEVELOPMENT

PARKWAY DRIVES - A special type of thoroughfare could be appropriate in some locations in Plano where stream valleys become the location of thoroughfares. In the proposed parkway arrangement, a single or divided pavement may exist only on one side of the stream, or there may be a pavement section on each side of the stream as shown by the cross section diagram. The use of the parkway thoroughfare section, where appropriate, will preserve the drainage capacity of the stream, assure that the adjacent housing is above the flooding level, and conserve the trees and park-like character of the area. It will also provide a linear park link between major recreational open space and other park areas related to the drainage system. The incorporation of a pedestrian or bicycle trail in the parkway arrangement is also recommended. The right-of-way standard for parkways will vary depending upon the characteristics of the stream valley and the desired park and open space functions related to the flood plain area.

THE THOROUGHFARE PLAN - Plano has had a Thoroughfare Plan which has been generally followed in thoroughfare investments over the past 15 to 20 years. Any revision must recognize the investments which have been made in thoroughfare development, the changing land use trends of the Community, and the necessity of giving consideration to the regionally oriented traffic which affects the Plano Area.

Previous Thoroughfare Plans have been based on land uses which would locate the City's employment areas in a band along the southern boundary of the City, and on either side of U.S. Highway 75. However, the pending development of a major employment center in northwest Plano makes it necessary to improve the linkage between the residential areas east of U.S. Highway 75 and the Commercial Employment area in the northwest.

Accordingly, the Thoroughfare Plan has been revised to allow for the northwesterly curvature of Shiloh Road and Los Rios Boulevard to tie into Spring Creek Parkway and Carpenter Road, thereby providing a loop system which can not only provide excellent access between east Plano and northwest Plano, but also enhance the access of employees who may be living south of Plano in east Richardson and Garland.

The Commercial Employment area, by providing a new destination for employment-related traffic, has revised the directional characteristics of Plano's traffic. Previous plans assumed that most of the employment-related traffic in Plano would be moving to the work place in a southerly direction. As the Commercial Employment area develops, a large amount of traffic will be moving north and west from the residential area to the work place. This revision of the Thoroughfare Plan takes this change into account.

The Thoroughfare Plan for Plano is shown by Plate 11. The recommended thoroughfare type or standard is indicated for each major and minor thoroughfare on the Plan. The following describes the function for specific thoroughfares indicated on Plate 11.

EXISTING PROPOSED

FREEWAY

REGIONAL ARTERIAL THOROUGHFARE

LOCAL MAJOR THOROUGHFARE

SECONDARY OR COLLECTOR

LOCAL RESIDENTIAL STREET

INTERCHANGE OR GRADE SEPARATION

RAIL-STREET GRADE SEPARATION

THOROUGHFARE TYPE
SEE THOROUGHFARE SECTION OF THE COMPREHENSIVE PLAN FOR DETAIL DESCRIPTION

N

SCALE IN FEET
0 1000 4000 8000

0 1/2 1 1 1/2
SCALE IN MILES

CONTOUR INTERVAL - 10 FEET

FRISCO
STATE HWY. 121
F.M. 2170
ALLEN
HEDGCOXE RD.
RUSSELL CR.
CARPENTER RD.
S.P. RR
S.H. 289
SPRING CREEK PKWY. EXTENSION
ALT. 1
ALT. 2
DENTON CO.
COLLIN CO.
TOLLWAY
NORTH DR.
INDIAN CR.
A.T. & S.F. RR. (FRISCO)
ST. L. & S.F. RR.
MARSH LN.
MIDWAY RD.
DALLAS PKWY.
PARKER RD. EXTENSION
SPRING CREEK
CUMBERLAND PKWY.
ALMA RD.
MEADOW DR.
PRESTON RD.
CROSSBEND RD.
U.S. HWY. 75
ALT. A
PROPOSED EXTENSION SPRING CREEK PKWY.
ALT. B
COTTONWOOD CREEK
PARKER
PARKER ROAD
PARKHAVEN DR.
ROUNDROCK TR.
SPRING BR. CREEK
BAFFIN BAY PL.
COUNTRY PLACE DR.
COIT RD.
MISSION RIDGE RD.
PARK BLVD.
JUPITER RD.
ROYAL OAK DR.
ROWLETT CREEK
SAN GABRIEL DR.
LOS RIOS BLVD.
HEBRON
A.T. & S.F. RR.
F.M. 544
WILLOW BEND DR.
WHITE ROCK CREEK
WINDING HOLLOW DR.
DRIVE
OLD SHEPARD PL.
ELDORADO DR.
OHIO DR.
15TH ST.
NORMAN RD.
WHITSITT
PKWY.
CUSTER RD.
ALMA EXWY.
P. AVE.
S.H. 5
18TH ST.
14TH ST.
"K" AVE.
"J" AVE.
"N" AVE.
RIGSBEE DR.
SHILOH RD.
ROBIN RD.
GLENCLIFF
PITTMAN CR.
CENTRAL EXWY.
ROSEMEADE PKWY.
CARROLLTON
DALLAS
PRESTON RD.
PLANO PKWY.
PROPOSED STATE HWY. 190
RENNER RD.
ST. L. & S.W. RR.
RICHARDSON
NORTH STAR RD.
BRAND RD.
MURPHY RD.
PARKER
NOV. 81 DGS

PLANO, TEXAS

MAJOR THOROUGHFARE PLAN

CITY of PLANO, TEXAS
PLANNING DEPARTMENT

PLATE 11

FREEWAYS AND EXPRESSWAYS

1. U.S. Highway 75 (Central Expressway) - This existing four lane freeway bisects the present developed portion of Plano and is an important regional connection. As with all freeways, the access restrictions create a barrier to free movement across it. The east-west crossings of the highway are restricted to existing interchanges. To enhance access to the freeway, a number of existing ramps need to be relocated or reversed. The freeway is loaded to a point of serious congestion during the morning and evening peak traffic periods, but current plans are to widen it to eight lanes as far north as FM 544,and to six lanes from FM 544 to Parker Road. Efforts should be made to extend the widening to Spring Creek Parkway.

2. State Highway 190 - This proposed freeway will greatly improve the access to the Plano Area. Provision should be made for interchanges to the important north-south thoroughfares which will intersect it such as Coit Road, Preston Road, and Custer Road.

3. State Highway 121 - State Highway 121 is located on the immediate north boundary of the Plano Planning Area and is currently developed as a rural two lane highway. It is anticipated that the urban development in Collin County and adjacent Denton County, plus the relationship of the highway to the Dallas-Fort Worth Regional Airport, will create a demand for upgrading the thoroughfare to a freeway at least as far north as Preston Road. The Thoroughfare Plan continues the road northward as a Type B thoroughfare. As growth continues to the north, State Highway 121 may ultimately be upgraded to freeway status all the way to McKinney. It is recommended that a cooperative effort be made by the communities of Collin County to protect State Highway 121 for future improvement as a primary route throughout the County.

4. Dallas North Tollway - It is anticipated that ultimately the existing Dallas North Tollway will be extended northward through Plano to State Highway 121. The Tollway will attract additional through traffic from the developing cities to the north, as well as a high volume of commuter traffic from Plano. The Tollway will not provide access to adjacent land, and service roads are proposed to provide this access. Every effort should be made to induce the Turnpike Authority to provide interchanges and toll plazas at State Highway 190, FM 544, Parker Road, Spring Creek Parkway, and State Highway 121, in order to provide adequate access to the tollway for Plano residents. It should be recognized that in designing the land uses adjacent to the Tollway, an attempt was made to balance the traffic to be generated by development with the capacity of the Tollway and its adjacent roadways. Requests to increase the traffic generation by changes in land use should be scrutinized very carefully, and they generally should not be approved without a concurrent reduction in traffic generation from another parcel of land in the tollway corridor.

5. Spring Creek Parkway - The major east-west regional artery through Plano is Spring Creek Parkway. It is anticipated that it will ultimately extend from an intersection with State Highway 121 on the west to the vicinity of Wylie on the east. Alternative routes are shown at each end of Spring Creek Parkway because of uncertainty over the plans of adjacent cities.

   On the west, Alternative 1 takes Spring Creek Parkway north to State Highway 121 within the confines of the Planning Area. Alternative 2 takes the Parkway west to link up with a similar expressway now under consideration in Carrollton. Alternative 2 is the better route; however, until Carrollton actually begins construction of the planned parkway, there will be no assurance that Alternative 2 is possible. Accordingly, until it is definite that Alternative 2 can be accomplished, Alternative 1 will remain the preferred route. Alternative 1, being located in Plano, can be completed by the City without depending on any other governmental entity. Because the regional function of Spring Creek Parkway is so important, it is imperative that it connect

with State Highway 121. It is essential that Plano insure that this connection occurs. If Alternative 2 is constructed, then Alternative 1 would become an extension of Midway Road at a Type C standard.

On the east, Alternative A takes Spring Creek Parkway in a direct route across Rowlett Creek, to tie into Parker Road in the City of Parker. Because this route is dependent on favorable action by the City of Parker, and is therefore not assured, Alternative B is proposed, which uses the extension of Shiloh Road to connect the Parkway to Parker Road within the city limits of Plano. The extension along Alternative A will require State, County, and local joint efforts to complete it.

REGIONAL ARTERIALS

1. Coit Road - A portion of this north-south thoroughfare has been developed as a farm-to-market road (F.M. 3193). The thoroughfare is projected completely across Plano in a north-south alignment and extends through Richardson into Dallas where it interchanges with Interstate Highway 635. A minimum of 130 feet of right-of-way is provided for Coit Road.

2. Preston Road (State Highway 289) - Preston Road is one of the historical highways in north Texas and extends from the vicinity of the Red River south to Dallas. The widening and improvement of Preston Road has been extended to the Collin County line in Dallas County. Preston Road is destined to become a very important thoroughfare in western Plano and is proposed to be improved as a Type B+ thoroughfare with special control of intersection frequency to maximize and protect its capacity. Through much of Plano it is proposed that parallel secondary thoroughfares on either side of Preston Road be provided to assist with local traffic movements and provide additional access for the anticipated land use development. Space for grade separations should be provided for major thoroughfare intersections along Preston Road.

3. Plano Parkway - This thoroughfare is to be connected to F.M. 544 on both the eastern and western ends. A major function of the thoroughfare will be to provide an east-west industrial by-pass route along the southern part of the City. Grade separations are proposed where Plano Parkway intersects important regional arteries such as Coit and Preston Roads. It is expected that the completion of Plano Parkway will divert much of the through traffic presently on F.M. 544.

4. 14th-15th Streets - Portions of 14th and 15th Streets are the route of F.M. 544 through the original development of Plano and the streets are the primary east-west access to Downtown Plano. Existing improvement on the streets varies from a Type C standard to a Type E with the older central portion of the thoroughfare having the narrower pavement and right-of-way. It is recommended that 15th Street west of Avenue G and 14th Street east of Avenue K be eventually developed to a Type C standard.

5. State Highway 5 (Avenue K) - This thoroughfare is the old north-south highway through Plano and has a number of restrictions in its right-of-way width. The continuity of the thoroughfare and the fact that it provides access to the Downtown Area makes it an important element of the thoroughfare system. It is proposed that State Highway 5 be developed at a minimum Type E standard through the central part of Plano. The north and south extensions of this thoroughfare should be upgraded to a Type C standard. The intersection of State Highway 5 and Spring Creek Parkway is to be moved to the east in order to alleviate congestion occurring because of the close proximity of U.S. 75, the railroad, and State Highway 5.

6. Los Rios Boulevard - Carpenter Road - The thoroughfare plan shows two treatments for the connection of these roads. The first treatment turns Los Rios Boulevard smoothly into Carpenter Road (shown in dashed lines), and it is the planned alignment. The second treatment extends Los Rios Boulevard north and Carpenter Road east, to intersect with each other (shown in dotted lines). This treatment

represents the planning in the County thoroughfare plan. Depending on whether adjacent cities will reserve right-of-way for the County alignment, it is probable that both alignments will be ultimately constructed.

A number of secondary and collector thoroughfares are shown on Plate 11. The secondary thoroughfares are proposed to be of either Type D or E standard and to provide intermediate traffic facilities with continuity for 2 to 3 miles.

Collector thoroughfares are intended to connect internal neighborhood areas with major thoroughfares at the neighborhood boundary; they should not have continuity for over one mile. Collector streets should be offset within the neighborhood to eliminate the possibility of the collector streets attracting through traffic movements which should use the major or secondary thoroughfares. Collector streets are proposed to be of the Type F standard.

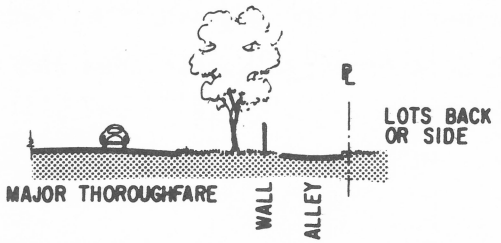
Secondary streets may be expanded to provide divided roadways and protected left turn lanes at high volume intersections or adjacent to shopping centers or other high traffic generating land uses where heavy left turning movements can be expected. In many cases, the locations of secondary or collector streets indicated on Plate 11 are subject to design adjustment when the detailed development plans of an area are prepared and approved. Careful consideration should be given to the location of all secondary and collector street intersections with major thoroughfares.

LAND USE AS RELATED TO MAJOR THOROUGHFARES - The ultimate efficiency of the Plano Thoroughfare System will be largely determined by the manner in which the land adjacent to each major thoroughfare is developed. By regulating the points of access to adjacent property and by providing widely spaced intersections along the thoroughfares, it is possible to design the maximum traffic carrying capacity into each thoroughfare.

Major thoroughfares usually attract large volumes of traffic, and it is not desirable to front residential lots directly upon such thoroughfares. The frequency of driveways which usually results from this practice tends to impair the traffic carrying efficiency of a thoroughfare. Where the subdivision pattern provides lots fronting upon a major thoroughfare, there will always eventually be pressure for the conversion of such areas to strip retail or commercial uses. This same pressure will sometimes occur where lots are platted to face secondary thoroughfares. It is obvious that the frontage of all major thoroughfares in a city cannot be reasonably used for retail and commercial purposes because the demand for such use in any community is not sufficient to utilize more than a very small portion of such frontage.

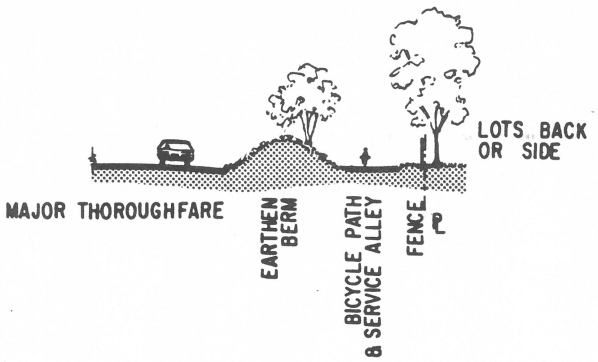
Careful treatment of the subdivision arrangement adjacent to a major thoroughfare can contribute greatly to the safety and capacity of the thoroughfare and, at the same time, protect the adjacent property from the adverse influence of heavy traffic movements. Several methods of subdivision are available for protecting the residential areas from adverse traffic influence. Lots may be backed upon the major thoroughfare and screened, frontage roads may be designed, or cul-de-sacs, courts and loop streets may be used. A strip park as a buffer which could contain a pedestrian or bicycle trail could also be utilized to separate the major thoroughfare from the residential development. Every effort should be made to achieve a desirable and compatible relationship between the urban land use and the thoroughfare system.

THOROUGHFARE EDGE DESIGN - Protecting the traffic capacity of major thoroughfares and at the same time protecting residential areas adjacent to major thoroughfares from the adverse impact of heavy traffic poses design problems. Several methods of separating residential areas from major thoroughfares are possible and some are indicated by the following sketches:



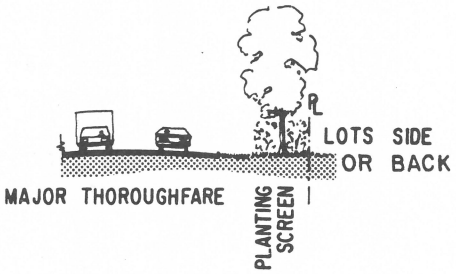
SECTION A

SECTION A illustrates a wall separating an alley and the rear of residential lots from a major thoroughfare.



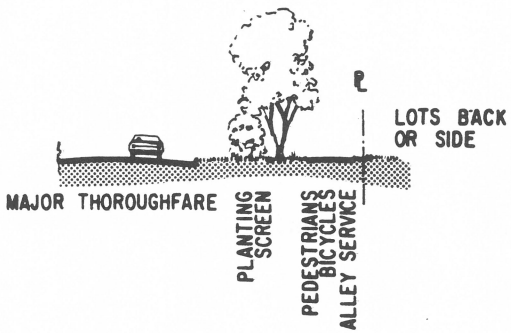
SECTION B

SECTION B illustrates an earthen berm separation which serves as both a visual and noise screen between the major thoroughfare and the residential lots. A combination service alley and bicycle path is also indicated parallel to the earthen berm.



SECTION C

SECTION C - The use of a planting screen to insulate lots which back or side upon a major thoroughfare is indicated by Section C. In most cases, the arrangement shown will require additional right-of-way.



SECTION D

SECTION D - The provision of a pedestrian walk or bicycle path separated from a major thoroughfare by a planting screen is shown by Section D. A wider right-of-way would be required to provide the pedestrian walk or bicycle path area and allow space for the screening.

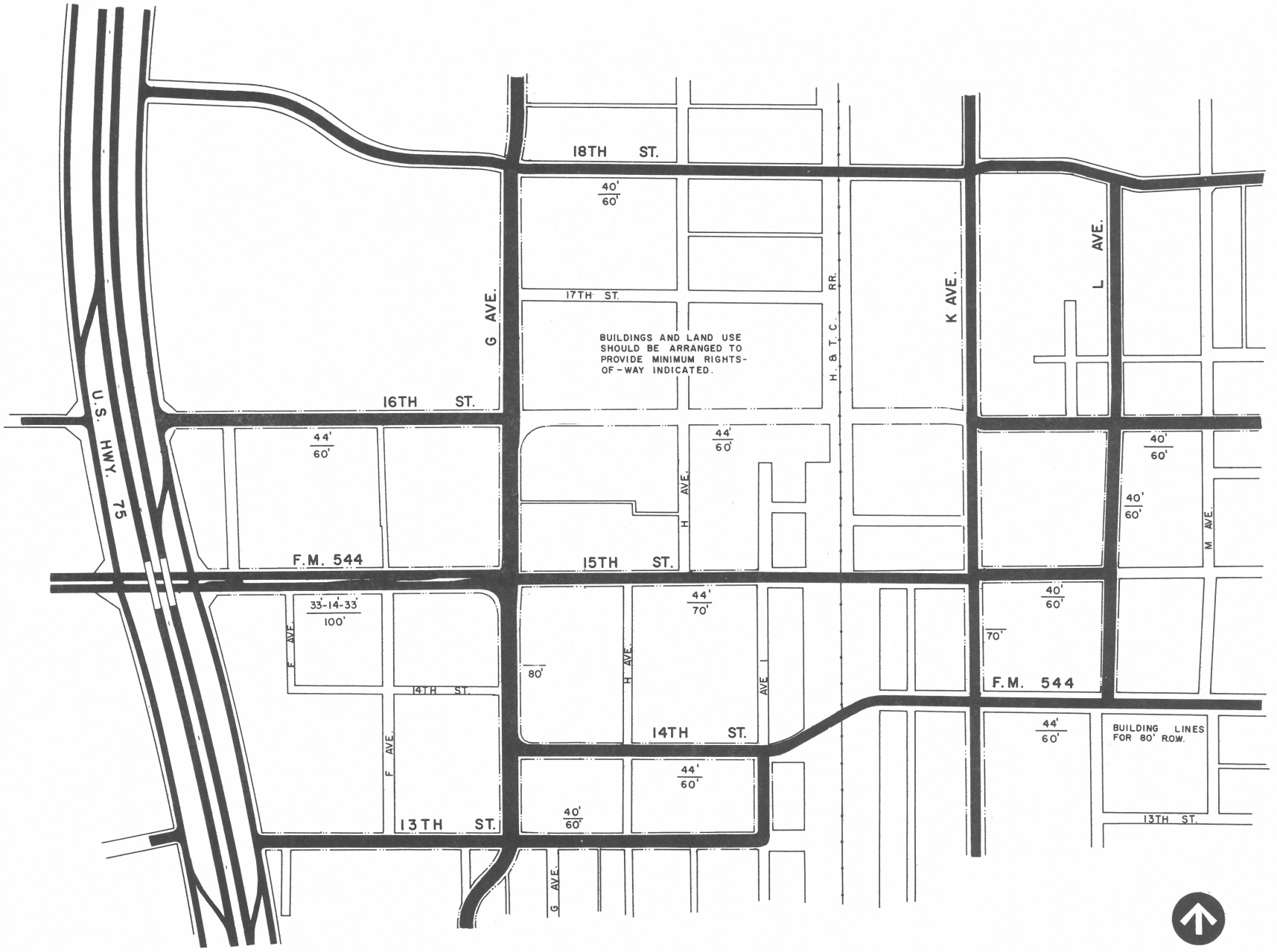
Crosswalk provisions and left and right turning lanes should always be considered in the design of major thoroughfare intersections. Preference should be given to the storage capacity of left turn lanes at major intersections over the capacity of turning lanes serving private developments such as shopping centers. The median opening cuts for entrances and minor streets should be as widely spaced as possible. It will be desirable to space median openings on major thoroughfares at least 400 feet apart and in no case should such openings be closer than 220 feet.

DOWNTOWN THOROUGHFARE PLAN - One of the obvious problems inherent in Plano's Downtown Area is the location of the Southern Pacific Railroad, which divides the Business District. It is possible that time will prove the railroad location to be a fortunate one, since any rapid transit service to Dallas could utilize the direct route of the railroad. When and if such transportation improvements are achieved, the Plano terminal could be located directly in the Downtown District. In the interim, it is considered desirable to encourage continued development on both sides of the railroad and to seek changes in some of the facilities located on the railroad right-of-way. Plate 12 indicates the thoroughfare system for Downtown Plano which was approved in 1977, with some modifications which have been approved since that time.

The approved Downtown Thoroughfare Plan proposes the following:

1. F.M. 544 (15th Street) from Central Expressway to G Avenue is proposed as a six lane divided thoroughfare (Type C) without left turn access. Building lines should be established to protect a minimum 100 feet of right-of-way in this section.

2. Fifteenth Street from G Avenue to K Avenue is proposed to have a minimum of 44 feet of pavement. A right-of-way at least 70 feet wide should be protected from encroachment in this section.



PLANO, TEXAS

DOWNTOWN THOROUGHFARE PLAN

CITY of PLANO, TEXAS
PLANNING DEPARTMENT

PLATE 12

3. G Avenue acts as a distributor street connecting with 14th and 18th Streets for movements around the Central Area, supplementing the capacity of 15th Street from the end of the six lane divided roadway to L Avenue.

4. Building lines should be established to protect the indicated minimum rights-of-way from encroachment.

MASS TRANSPORTATION - As the City continues to grow, it may become both necessary and desirable to relieve vehicular traffic congestion with some form of mass transportation.

To provide transit service to and from destinations in Dallas County, a park-and-ride service may be appropriate. Park-and-ride could perhaps best be provided through a regional effort involving Richardson, Plano, Allen, and McKinney.

Transit service within Plano could be provided through a system of transit ways which would have direct access from freeways and the tollway extension, in order to bypass rush-hour congestion. Grade separations and access ramps built solely for buses and van pools would be highly desirable. It may be necessary to utilize a portion of the electric power line easements for transitways as well as hike-and-bike trails.

In addition, space could be available in the tollway corridor for either a bus transit way or a light rail facility.

VIII. PARKS, OPEN SPACE AND SCHOOLS

Urban development makes it essential that a park system be created which is designed to preserve open space, conserve ecologically sensitive areas, and provide for passive and active recreational needs. Observation of urban development in the Region clearly demonstrates the need for preserving an open space structure as the Community develops. Plano is faced with major land use change, and much of its future character and environmental quality will be determined by how well the Community is organized around an open space structure.

Along with the thoroughfare system, parks and community open spaces will create a framework for the future urban development of Plano. The role of parks and open space in structuring the future community is usually not as fully recognized as is the influence of the thoroughfare system; however, parks and open spaces which are planned, provided and developed as Plano grows will be just as important as the thoroughfare system in determining the future character and amenities of the City.

The provision of adequate parks and open space as Plano develops is not only important because of the need for recreation and environmental preservation, but also because of changes which have been occurring in the way of life of people residing in urban areas. The opportunity exists in Plano to create significant pedestrian-bicycle circulation facilities related to linear parkways and thereby achieve an attractive energy conserving local movement system.

SCHOOL PLANNING CONSIDERATIONS - The Plano Independent School District covers all of the Plano Planning Area in Collin County except an irregular strip along State Highway 121 on the north. The School District also extends south to the Dallas County line to include parts of the City of Richardson and the City of Dallas; east of the Plano city limits it extends into the Parker and Murphy areas. The Plano Independent School District must work jointly with the other cities, in addition to the City of Plano, in planning and

providing future school facilities for the sections of those cities that are within the School District but outside Plano.

Likewise the City of Plano must work closely with the Frisco, Lewisville, Allen, and Plano Independent School Districts, all of which extend into the corporate limits of the City, to coordinate the provision of adequate school sites.

Elementary and secondary school facilities are among the most important community facilities provided in an urban area. The importance of the school to the community can be measured by the educational program carried on within the facility, and also by the service rendered for recreational and related activities which involve children, young people, and, in fact, the entire population.

The school should become an integral part of the residential area in which it is located. In the application of such a concept, where the city is appropriately made up of a series of neighborhood units, the elementary school should become the focal point of each neighborhood area. The neighborhood generally has its own defined boundary and characteristics which separate it from other similar areas. The school assists in defining the neighborhood since it provides the educational facility and preferably adjoining recreational facility in the form of a municipal park or playground. Thus, the school building and grounds and related park facilities are major elements to be considered in the planning and development of neighborhood units. Plano is already making excellent progress in creating joint school-park developments.

The function of a school building or a school site is influenced by a wide variety of factors beyond the actual site. Careful consideration must be given to the subdivision of property within the defined neighborhood by planning a street system that provides adequate vehicular routes and pedestrianways to the school site with minimum conflicts between the two types of movements. The existence of adverse types of land use, such as industrial or retail activities, can create conditions distracting to the educational

process. These and other similar factors are beyond the direct control of the School Board, but they can be handled by cooperative planning for school sites in conjunction with community planning activities of the municipal government. Among the planning factors which are considered important to school site locations are the following:

1. The major thoroughfare system of the city, which generally delineates the boundaries of neighborhood units, should influence the location of elementary school sites in that the elementary schools should be located to minimize the number of small children who must cross major arteries or heavily traveled intersections on the trips to and from school. Middle schools and high schools serve older children in areas which include several neighborhood units, and the existence of major thoroughfares adjacent to or near secondary schools is not considered an adverse factor in their location. The extensive use of the automobile for access to senior high schools makes it desirable to locate such facilities either on or near a major thoroughfare.

2. If possible, elementary and secondary schools should be located near the center of the service area which the site and building is intended to serve. This factor should be particularly considered in relation to the selection of an elementary school site.

3. The existence of commercial or industrial land uses within the logical service area of the school generally adversely affects the school environment. Likewise, any major change in land use, such as conversion of single-family residential areas to multi-family uses, can materially alter the school load and must be considered in projecting school site needs and locations.

4. As neighborhoods age, typically the school population also ages. Eventually an elementary school may have so few children in its attendance zone that it is no longer feasible to utilize the school. School buildings should be designed with the possibility of adaptive re-use in mind, so

that, in the event school closings do occur, the buildings can be converted to other uses. Often school buildings become community centers.

EXISTING PARKS AND SCHOOLS - The important relationship between the school-park function in the community makes it appropriate to consider both facilities as interrelated. Joint use of school and neighborhood park sites offers many advantages to the community. Parks, playgrounds, and other types of community open space are becoming increasingly significant in the present day urban environment. The requirements for active play space and recreational facilities as an integral part of the neighborhood have become increasingly important as cities expand. The more dense and compact an urban area becomes, the more essential is the provision of parks and open spaces. The location, development, and physical arrangement of schools, parks, and other open spaces will, to a considerable degree, determine the future character and quality of Plano's urban environment and its comparative advantages as a quality community in the Region.

Plano's growth since 1963 has required a substantial expansion of park and school facilities. Plate 13 shows the location of existing park and school sites in relation to the developed areas of the Community.

The age composition of the population which is moving into the Plano Area assures a continued increase in school age children for a period of time. The Plano Independent School District has responded to the increasing school enrollment and has provided new schools and new school sites. Generally, the new school sites have been acquired in advance of development and in many cases the City has acquired an adjacent park site.

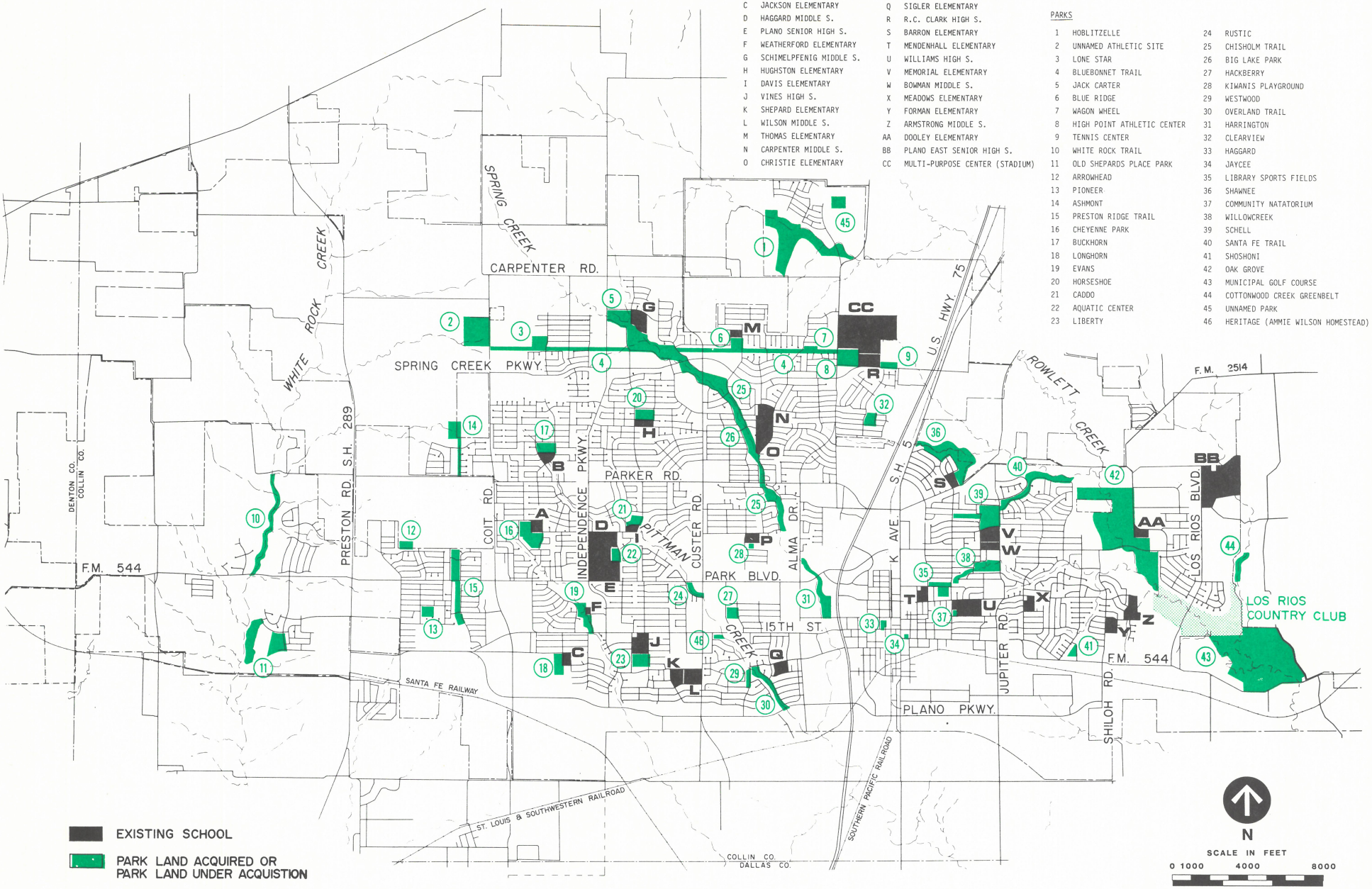
The nature of the existing park sites varies from developed neighborhood parks such as Westwood and Horseshoe Parks to linear parks such as Chisholm and Bluebonnet Trails. The total park system now includes 43 sites constituting over 1,400 acres including the Municipal Golf Course. At least 35 park sites have been developed including athletic fields, linear parks, a golf course, and playgrounds. The neighborhood park-school

combination which exists at many locations is a highly desirable relationship. The City-School cooperation represented by the acquisition of adjoining park and school sites should be continued and has been adopted as policy by the Parks & Recreation Board. The addition of linear parkway links between the school and park sites will further enhance the Community's open space structure and provide a place for the development of pedestrian and bicycle trails which are removed from heavy street traffic. A number of opportunities exist for the creation of linear parkways along major drainage ways, utility easements, and street rights-of-way.

CHANGING FACTORS INFLUENCING PARK AND SCHOOL NEEDS - The demand for schools and certain park facilities in Plano will be influenced by the age composition of the population. It has been indicated that the annual birth rate in Plano has declined from about 31 births per 1,000 residents to 15 births per 1,000 residents. The change in the birth rate has been camouflaged by the high in-migration of young families, and the full significance of the change has not yet become apparent in Plano.

One of the obvious changes which results from the declining birth rate is a reduction in the average number of students per household, resulting in an expansion of the service area of schools. Where an elementary school used to be filled to capacity by serving only the residents in a square mile, the same size school can now, in many cases, serve one and one-half to two square miles of single-family residence development. The change will mean a reduction in the number of schools or in the school building space needed to serve the Plano Area. A wider spacing of schools will probably be appropriate in the future.

This reduction in the number of school children per household will result in elementary schools serving larger land areas than the normal square mile neighborhood units. Where more than one neighborhood unit is served by a single elementary school, a fairly large percentage of the students may be required to cross major thoroughfares in going to and from the school. When it can be anticipated that the expanded service area of an elementary school or middle school will generate substantial pedestrian or bicycle crossing of



PLANO, TEXAS

EXISTING PARK AND SCHOOL SITES

CITY of PLANO, TEXAS
PARKS and RECREATION

PLATE 13

major thoroughfares, the crossings should be controlled and the subdivisions designed to concentrate the students at specific crossing points.

The concept of utilizing the major electrical transmission lines as linear parks offers an opportunity to create pedestrian-bicycle routes to schools which could provide an effective way of creating some controlled and safe crossings of thoroughfares. The placement of schools in proximity to the major transmission lines and the design of the local street system to function with this arrangement will make possible the creation of an effective linear park system in Plano.

Greater convenience for pedestrians and bicyclists should be encouraged as a method of making the physical structure of Plano more attractive and energy efficient. The growing adult population increases the demand for places to walk, jog, and cycle. The linear parkways could serve these needs. As the adult population ages, park and recreation needs will change, necessitating some modifications and additions to existing facilities.

PARK, SCHOOL AND OPEN SPACE PLAN - The projected land use for Plano when the City reaches 300,000 people indicates a minimum need for 3,660 acres of park and open spaces. The desirable Park Land Standard in Plano is 3,700 to 4,000 acres.

The Park, School, and Open Space Plan for Plano adopted by the Parks & Recreation Board in December, 1981, is shown by Plate 14. Each park site is identified by a number and each school site is identified by a letter. Plate 14 provides the basis for future park, school, and open space decisions, and indicates the open space structure planned for the City of Plano. Table 16 summarizes the park open space standards incorporated into the Park, School, and Open Space Plan.

TABLE 16

PARK & OPEN SPACE STANDARDS

Classification	Acres Per 1000 People	Size Range	Population Served	Service Area
Neighborhood Parks	2.5	*Min. 7.5 to 10 Acres	2,000-10,000	1/4-3/4 Mile
Community Park	2.5	25-100 Acres	10,000-50,000	1/4-2 Miles
Athletic Facility	**2.2	30+ Acres	1 Field/2,400	Entire City
Linkage Park	N/A	Variable	Not Applicable	Entire City
Large City Parks	5.0	50+ Acres	1 For Each 50,000	Entire City
Special Areas & Facilities		Includes linear parkways, plazas, historical sites, flood plains, downtown malls, and small parks. No standard is applicable.		

*Neighborhood park site recommended to be 10 acres when not adjacent to school.
**Athletic Policy Space Standard 5.35 acres/2,400 residents.

Among the significant features of the Park, School, and Open Space Plan are the following recommendations:

1. Continued park and open space development in the Rowlett Creek flood plain. The Municipal Golf Course, Los Rios Country Club, and Oak Grove Park represent excellent utilization of the substantial flood plain area. A large addition to the park area is being added in the flood plain north of Parker Road.

2. Continued acquisition and development of White Rock Trail as a linear parkway adjacent to White Rock Creek for its entire length through the City.

3. Continued acquisition and development of the electric transmission line rights-of-way in north and west Plano is proposed for linear parks incorporating pedestrian-bicycle trails and landscaping. Meandering of the trail, earth berms and low plantings should be used to create a park-like atmosphere.

4. Ten parks are designated as high-use athletic parks with lighted fields and tennis courts. These locations are indicated by a special symbol on Plate 14. Because of the planned high-intensity uses, these parks are not as suitable for low-density residential areas as would be desired. Accordingly, the Land Use Plan (Plate 17) attempts, where appropriate, to project commercial or moderate to high density residential development for property adjacent to these parks. This land use policy, however, has not been applied to potential facilities on school campuses.

5. The Parks & Recreation Board has adopted a set of recommended uses and design criteria for each park classification. Table 17 lists potential improvements to be included within the Park system. This table is not intended to be all inclusive, as additional uses may be added as the needs of the population change.

6. The park and school sites are shown by symbol on Plate 14 in relationship to logical neighborhood areas which they would serve. It should be recognized that a number of factors, including the future population density and birth rate, will significantly influence the distribution of school sites and the areas they serve. It is probable that fewer school sites will be needed than are indicated due to changes in age composition of the older neighborhood areas as well as declining family size. The basic structure of open space shown by Plate 14 should be observed even if

TABLE 17

PARK CLASSIFICATION & IMPROVEMENTS

	NEIGHBORHOOD	COMMUNITY	ATHLETIC FACILITY	LINKAGE	LARGE CITY	SPECIAL PURPOSE
Size	7.5 to 10 ac.	25 to 100 ac.	30+ ac.	Variable	50+ ac.	Variable
Service Zones	1/4-3/4 miles	1-2 miles	City	City	City	City
Adjacent to Schools	A	A	A	A	A	A
Playground	A	A	A	A	A	A
Irrigated	A	A	A	A	A	A
Off-Street Parking	A	A	A	N/A	A	A
Shade Shelter	A	A	A	A	A	A
Landscaped Area	A	A	A	A	A	A
Picnic Areas	A	A	A	A	A	A
Restrooms	A	A	A	A	A	A
Pavilion	A	A	A	A	A	A
Natural Area	N/A	A	A	A	A	A
Hike & Bike Trail	A	A	A	A	A	A
Lake	A	A	A	A	A	A
Par Course Exercise Equipment	N/A	A	A	A	A	A
Concession/Restroom	N/A	A	A	N/A	A	A
Lighted Volleyball, Basketball Courts	A	A	A	A	A	A
Unlighted Athletic Fields	A	A	A	A	A	N/A
Lighted Multi-Purpose Fields	N/A	A	A	N/A	A	N/A
Lighted Tennis & Racquetball Courts	N/A	A	A	N/A	A	N/A
Camping	N/A	N/A	N/A	N/A	A	A
Amphitheater	N/A	A	A	A	A	A
Recreation Center	N/A	A	A	A	A	A
Swim Pool	N/A	A	A	N/A	A	A
Landscape Botanical	N/A	A	N/A	A	A	A
Museum	N/A	N/A	N/A	N/A	A	A
Zoo	N/A	N/A	N/A	N/A	A	A
Historical Sites	N/A	N/A	N/A	N/A	A	A
Golf Course	N/A	N/A	N/A	N/A	A	A

A - Applicable

N/A - Not Applicable

development densities are altered, although individual site locations would need to be re-evaluated.

7. Because of the changing characteristics of the population, locations of school sites shown on Plate 14 are subject to change at any time to meet the needs of the four School Districts.

IX. EXISTING AND FUTURE PUBLIC FACILITIES

A variety of public buildings are needed to house the various governmental functions and services which a municipality provides for its residents. Some buildings, by the nature of the functions housed, require a generally central location to the entire city while other buildings are related to specific service areas within the city. The City Hall is an example of a public building requiring a location convenient to all the city, while a fire station should be located to serve a specific area.

As the city has grown, the sites used for public buildings have expanded to house the increased size and variety of services required. The location of the existing public buildings serving Plano, exclusive of school and recreational facilities, are shown by Plate 15. Plano will continue to be faced with increasing demands for both centrally located and dispersed public building space as the City grows.

Plano has acted to meet its public building needs in recent years and is continuing to expand its public facilities as funding and agreement on the new facilities are achieved. The rapid growth of the Community will place continuing emphasis on the provision of expanded public building space. To provide a basis for the many public building decisions which must be made in Plano over the next 20 years, the following projections of building and facility space needs are outlined:

A. Municipal Building Complex (City Hall) - The municipal building complex now contains 43,000 square feet of floor space, which is expected to be adequate until 1985. The capability exists to expand the present facilities to more than 102,000 square feet in five floors, which would be adequate until some time after the year 2000.



PLANO, TEXAS

PUBLIC BUILDING SITES

CITY of PLANO, TEXAS
PLANNING DEPARTMENT

PLATE 15

B. Police and Courts Building - The Police and Courts Building contains 12,500 square feet, with 20,000 additional square feet under construction. This floor space is expected to be adequate until 1990. Ultimately, a Police and Courts Building of approximately 45,000 to 50,000 square feet of floor space will be required. The present site is not considered adequate for the needed future expansion, and additional land will need to be acquired.

A joint police substation/fire station is planned for the area of Hedgcoxe Road and Preston Road to serve the needs of the western portion of the City. City health officials or other governmental workers may also be housed there.

C. Fire Stations - The existing fire station sites will need to be supplemented in the future by other station locations to provide adequate protection for the entire Plano Planning Area. By careful spacing and planning of future fire station sites, it should be possible to provide a good standard of fire protection for the entire City with a total of ten stations. Only the far northeast portion of the City will have less than ideal fire coverage, but the area is largely flood plain, and the homes which will be built in the area can be reached quickly from nearby stations.

D. Libraries - Based upon the Library Board's recommended standard of 0.45 square feet of library floor area per capita (three-fourths of the standard recommended by the American Library Association), the future library needs for Plano are expected to be as follows:

1. 105,000 People - 47,250 Square Feet
2. 175,000 People - 78,750 Square Feet
3. 300,000 People - 135,000 Square Feet

The growth in library patronage in Plano closely parallels the population growth. Two libraries are now in existence, containing approximately 30,000 square feet. Increasing patronage of the two libraries, coupled with the projected population growth, indicates that a third library will be needed in West Plano by 1985. Ultimately, a total of five libraries are expected to be required in the Community. The present concept of developing Community libraries of generally equal resources on a service area concept appears to be well adapted to Plano's needs.

E. Municipal Service Center - The increase in City equipment, maintenance supplies, and material stock piles which will be required to maintain a reasonable level of service to the expanded area and population in Plano necessitates an expansion of the Service Center facilities. Construction of the West Side Service Center is now under way. It is expected that the two existing Service Center sites will be sufficient to provide for the ultimate needs of the City. However, residential densities which exceed those projected, as well as the increasing cost of moving equipment across the City, may eventually cause a need for a third Service Center site of at least 25 acres. The Service Center facilities should, if possible, be located in an industrial or commercial area or immediately adjacent to such an area.

F. Cultural and Social Center (Civic Center) - Plano does not presently have an adequate place of public assembly where meetings, art exhibits, plays, large social events and some dining could occur. It is recommended that the long-range plans provide for a flexible Community Auditorium Building with a range of facilities to meet the needs of a major place of assembly and other cultural, art, and social activities. An early decision concerning a site for the Community Center would be desirable; consideration of a site related to U.S. Highway 75 is recommended. An alternate site could be at the Athletic Complex north of Spring Creek Parkway but there could be some conflict between the uses at this location.

The locations of existing and proposed future municipal public buildings and service facilities are shown by Plate 15. Included in the facilities shown are the Municipal Complex (City Hall) Site, Libraries, Fire Stations, Police and Courts Building, and Service Center Sites. The general service radius of 1½ miles for residential areas and one mile for the Commercial Employment area is indicated around the 10 fire stations as a guide to future site selections. The fire station sites are numbered generally in accordance with the likely priority for their construction.

X. CENTRAL BUSINESS DISTRICT

The Downtown Area in Plano is generally delineated as being between L Avenue, G Avenue, 14th Street and 16th Street. The Primary Area or Core of the District tends to be east of the Southern Pacific Railroad which has a north-south alignment through the District. New retail and commercial uses have developed west and north of the Core Area adjacent to 15th Street and along K Avenue.

Continued growth of Plano will place the original Downtown Area in an increasingly competitive relationship to other development. Efforts should be made to keep the Downtown Area as the heart of the Community. It is important to the entire Community that the Downtown Area remain a viable economic entity. Because of competition from neighborhood shopping centers, the regional mall, and developing business districts along the tollway and U.S. 75, the major retail functions will become less significant in the Downtown Area. Although some retailing will be retained, the future land use of the Downtown Area is expected to be primarily office use, much of it related to the municipal government complex.

Any plan for Downtown Plano is dependent on the cooperation and enthusiasm of the owners of property in the downtown area. At this time, no consensus has been expressed as to what should be done with Downtown Plano, or even as to whether anything needs to be done. Until such a consensus is reached, no Central Business District Plan can be put together. However, at such time as it becomes apparent that a plan is needed, the following points are suggested for consideration:

1. Any improvement of the Downtown Area would be best accomplished by private enterprise, with the City government assisting that development as needed. Such assistance could include preparation of design guidelines, designation of the area as a tax increment district, and assistance in rehabilitation and code compliance.

2. It is desirable that streets be allocated certain specific functions in the Downtown Area. All functions cannot be accommodated conveniently on a single street. Some streets should be primarily for moving traffic, while others can be used primarily for pedestrians, parking and access. For example, 16th Street, Avenue J, 14th Street, Avenue K, and Avenue L may function primarily as traffic carriers, while 15th Street and 15th Place are designated mainly for parking and access to the commercial businesses. It is important that the Downtown Area be oriented toward the pedestrian shopper, while also accommodating the automobile.

3. Various forms of open space presently exist in the Downtown Area which can be utilized to create pleasant areas and an improved pedestrian environment, and to bring unity into the existing development. The general environmental character of the Downtown Area will be determined more by the treatment of open space than the remodeling of buildings or any reconstruction that may occur. The railroad frontage through the Central Area is generally open and unobstructed by buildings or other uses. Considerable open space exists along the trackage, and an opportunity is presented to utilize this space for additional off-street parking and landscaping, thereby converting an area which has a tendency to visually separate the Central Area into a visual asset. The treatment proposed along the Railroad has been partially accomplished by the parking area adjacent to J Avenue. The addition of trees and possibly a screening barrier adjacent to the main line railroad track would be desirable.

4. When, and if, regional rapid transit should be introduced into the Dallas-Fort Worth Area, the rail right-of-way could be important to connect Plano's Central Area with Dallas and other cities in the Metropolitan Area. The location of a terminal adjacent to the Downtown Area would be a substantially reinforcing element to the Area, and the proper treatment of the railroad right-of-way would create an attractive gateway for those persons leaving or entering the Downtown Area by rail.

5. The development expected to be ultimately generated by Collincreek Mall is projected to spread toward the Downtown Area from U.S. Highway 75. Development of an adequate thoroughfare system which functionally links the Downtown Area with the area of mall-generated development will greatly enhance the economic life of Downtown Plano.

XI. HISTORIC PRESERVATION

In 1979, the City first formally recognized a need for historic preservation. Recognizing that continuing development was destroying many of the older structures, the City Council created the Historical Landmark Committee and instructed it to prepare a Historic Preservation Plan. The Plan was approved in 1981.

Two types of historic designation are recommended, designations for individual buildings or sites, and group designations for groupings of buildings. Individual designations should be based on extensive documentation of the building's historic importance, its architectural integrity as an example of a specific time period, and its economic feasibility for rehabilitation. Group designations should include both historic structures and structures which would not be considered individually historic, but which provide a complimentary setting for the historic buildings.

In order to achieve the goal of historic preservation, a number of activities must be carried out by the City government, the Historical Landmark Committee, and private individuals and organizations.

Actions by the City would include relating zoning patterns to the historic nature of the older parts of town, providing adequate staff and funding to support preservation-related activities, preparing neighborhood preservation plans and design district plans, and providing for tax abatement or other financial programs for designated landmarks.

The Historical Landmark Committee will need to take an active roll in persuading owners of potential landmarks to request historic designation. A successful preservation program for Plano is predicated on voluntary cooperation of the property owners. It therefore becomes necessary for the Committee to be active in promoting preservation among private property owners.

Private non-profit organizations must play a very active role in preserving the history of Plano. Some of the actions these groups should take are as follows:

1. They will need to provide research assistance to property owners who are seeking landmark designation for their qualifying buildings. They may also have to prepare economic feasibility and development option studies for certain sites in order to illustrate the advantages of preservation to property owners.

2. A revolving fund will need to be established for the purpose of purchasing threatened buildings outright and moving them, or for purchasing options to delay destruction until a buyer can be found, or for acquiring facade easements. Emphasis for funding sources should be placed on local foundations and individuals.

3. It is the role of private organizations to match buildings and people. Thus, when a historic structure is offered for sale, a private organization should attempt to find a sympathetic buyer to preserve it.

4. Public support is essential for a successful preservation program. Private organizations should set up a plan for public education so that the general public can understand both the desire for preservation and the advantages of it.

For detailed information concerning historic preservation in Plano, including a listing of those buildings and sites deemed to be historic, reference is made to the publication, "Plano, Texas: Preservation Plan," published October, 1981.

XII. HOUSING

Several years ago it became apparent that housing in Plano seemed to be developing to meet the needs of only one group of people, those in the upper-middle income range. A citizens committee was appointed, known as the Citizens Governmental Advisory Committee, to study the housing being provided in Plano. This committee made its report in 1978, with several of its recommendations being accepted.

By 1980, inflation in land prices and development costs had made it much more difficult to provide housing which could be afforded by most of the people desiring to live in Plano. Another committee, the Housing Advisory Committee, was appointed to investigate the new types of housing and ownership which could be appropriate for the Community, and to make recommendations concerning actions the City Government could take to promote affordable housing for all groups of people. The deliberations of this body are continuing.

Few cities the size of Plano have had the foresight to address housing problems. Both of these committees have done much valuable work in meeting the housing needs of Plano, and many of their recommendations are embodied in this Plan.

About 95% of Plano's housing inventory has been built in the past 20 years, and it is anticipated that there will be an increase of almost 100% in housing units in the next decade, at which time the population will be 140,000. The opportunity exists for the City to exercise some reasonable influence on the type, value, and quality of the new housing stock to be added, thereby influencing the nature and character of the Community.

As the population of Plano grows and changes, the demand for various types and sizes of housing units will also change. In order to determine these future demands, projections have been made of the estimated change in age composition, as shown in Table 18.

TABLE 18

PROJECTED AGE COMPOSITION

Age Group	1960 Number	1960 Percent of Total	1970 Number	1970 Percent of Total	1980 Number	1980 Percent of Total	1990 Number	1990 Percent of Total
Young (0-14 Yrs.)	1,138	30.8	6,636	37.1	23,146	32.0	38,500	27.5
High School & College (15-24 Yrs.)	547	14.8	2,741	15.3	10,126	14.0	18,900	13.5
Prime Labor Force (25-44 Yrs.)	917	24.8	6,215	34.8	28,571	39.5	47,600	34.0
Older Labor Force (45-64 Yrs.)	746	20.2	1,699	9.5	8,318	11.5	26,600	19.0
Elderly (65 & Older)	347	9.4	581	3.3	2,170	3.0	8,400	6.0
Total Population	3,695	100.0	17,872	100.0	72,331	100.0	140,000	100.0

Projections by Marvin Springer & Associates, 1978

The projection assumes a continued strong in-migration of persons in the Prime Labor Force Age Group. Despite continued in-migration of young families, there will be an accelerated increase in the percentage of Elderly and Older Labor Force Groups. The anticipated increase in the number of elderly residents is significant to the future housing supply in that there is expected to be over 14 times as many elderly citizens in 1990 as existed in 1970.

Another important change indicated by Table 18 is that the percentage of children in the population will be lower as a result of smaller families and older families. The increase in the number of older families and elderly individuals, plus an increase in the number of small families, indicates that condominium and cooperative apartments, townhouses, patio homes, and other housing types which require little yard maintenance, will be more attractive.

Based upon the trends in housing cost and the type and size of dwelling units being constructed in Plano, it is likely that the future population will be predominantly in the upper-middle to upper income groups. Confining all future housing to the higher value types will result in Plano gradually becoming a high income community where many local employees must reside elsewhere and commute to Plano to work. Creating an economically stratified community in the higher income ranges will likely have an adverse influence on potential industrial development in Plano with the result that a very large portion of the cost of government and government services will be borne by the ad valorem tax on residential property.

Based upon a continuation of current trends of in-migration and the cost and nature of housing construction taking place in Plano, projections of probable future household income were made and are shown by Table 19. A continuation of present trends suggests that the demand for housing through 1990 can be expected to be predominantly in the higher value groups, based on the anticipated income levels of the in-migrants. The number of households with incomes under $10,000 annually are expected to decrease, while the largest gains are expected to be in the income categories over $25,000.

It should be noted that the income projections are in 1977 dollars and that the inflation factor could substantially increase the dollar amounts shown. It is, however, considered desirable to evaluate the influence of the projected income levels on the basis of a stable dollar.

TABLE 19

PROJECTED HOUSEHOLD INCOME DISTRIBUTION

Income Group	1960	1970	1980	1990
Less Than $5,000	414*	378	246	126
$5,000 to $6,999	234	313	416	422
$7,000 to $9,999	119	769*	1,964	633
Sub-Total (Less Than $10,000)	767	1,460	2,626	1,181
$10,000 to $11,999	NA	788	2,323*	1,941
$12,000 to $14,999	NA	995	2,456	3,333*
$15,000 to $24,999		1,207	6,346	13,500
Sub-Total ($10,000 to $25,000)	NA	2,990	11,125	18,774
$25,000 to $49,999	NA	114	4,911	20,250
$50,000 and Over	NA	5	227	2,109
Sub-Total ($25,000 and Over)	NA	119	5,138	22,359
Total Households	989	4,569	18,889	42,188
Median Household Income	$5,634	$12,110	$22,600	$27,550

Projections by Marvin Springer & Associates, 1978
All Projections are in 1977 dollars.
*Subsidy Threshold - Indicates income levels below which ability to acquire housing is likely to become quite difficult.

On the basis of the income projections, those households projected to reside in Plano who might experience serious difficulties in acquiring housing are not expected to increase significantly even when the subsidy threshold is increased to include those households with incomes of nearly $15,000 annually.

In 1960 it is estimated that 42% of the households in Plano (those with incomes under $5,000) might be considered to have been at the housing subsidy threshold. In contrast, in 1990 it is estimated that only 15% of the households in Plano will be at income levels which could be classified as the subsidy threshold or below (those with incomes under $15,000). A family in the $15,000 annual income range is considered to be capable of paying $300 per month rent or to be able to afford a dwelling for which interest and principal payments plus taxes and utilities do not exceed approximately $3,750 per year. The term "subsidy threshold" as used herein refers to income levels where 25% of the annual income represents less than the annual cost of either rental or purchase housing. It is obvious that the cost of housing has a direct bearing upon who can be accommodated by the normal housing market process.

It should be noted that a significant housing inventory of 23,906 dwelling units existed in Plano as of June, 1980. The range of values represented by the existing housing inventory is rather wide and probably contains a large percentage of the moderate cost housing likely to exist in Plano in the future. The existing housing units, many of which were built in the 1960's and early 1970's, are subject to the same inflationary value pressures as new housing. The maintenance of the existing housing inventory and of the neighborhoods in which the housing is located is expected to become an increasingly important consideration in Plano.

Another important consideration to the stability and long-range quality of the various neighborhoods in Plano is housing mix which may exist in each area. The general concept of incorporating rental housing into neighborhood units in a moderate manner as contrasted to concentrating large masses of apartments in a specific area has been a general policy in Plano for about 13 years.

EXISTING HOUSING INVENTORY - The housing inventory conducted in June, 1980, revealed the following types of housing units in Plano:

Type Unit	Dwelling Units	Percent of Total
Single-Family Detached Units	19,423 23588	81.2
Two-Family Units (Duplexes)	420	1.8
Multiple-Family Units & Townhouses	3,449 5404	14.4
Mobile Homes	614	2.6
Total	23,906	100.0

The existing housing inventory represents about 50 percent of the total number of housing units anticipated to be required by 1990.

The preponderance of Plano's housing inventory is represented by single-family detached units which account for over 81% of the dwelling units. Multiple-family dwelling units (apartments) account for 14.4% of Plano's housing, representing a significant decline from 1970 when 29% of all the dwelling units in Plano were apartments. However, Plano is expected to be subject to a significant increase in multiple-family dwelling construction at periods in the future. A substantial area of multiple-family zoned land exists in various parts of the City and many neighborhoods have the potential for a major increase in the ratio of multiple-family dwelling units to single-family dwelling units.

In 1963, when the first land use survey was conducted, nearly all of Plano's urban development was located east of U.S. Highway 75 (Central Expressway). By 1973 the development west of U.S. Highway 75 was approaching equality with that to the east of the highway. In the past 5 years the development west of U.S. Highway 75 has exceeded that to the east of the highway. The older dwellings in Plano are all located east of U.S. Highway 75 and nearly all the dwellings located west of the highway have been built within the past 10 to 12 years. Neighborhoods 8, 9, 10, and 11 now contain the preponderance of minorities in the Community.

The delineation of the Neighborhood Units included in the survey is shown by Plate 16. The concept of a neighborhood unit being an area bounded by major thoroughfares, railroads, city limit lines, or major terrain features was used as the basic review unit. The development within each neighborhood is largely residential and may contain schools, churches, and parks, with the retail service facilities usually located at the intersection of two major thoroughfares. The internal street system in most neighborhoods is curvilinear or disruptive to discourage through traffic movements and concentrate such movements on the major thoroughfares.

Thirty-five Neighborhood Units covering Plano are shown. Existing features cause some Neighborhood Units to vary in area and configuration but each of the 35 areas shown is considered to be a reasonable unit for planning. Housing units were counted and recorded by type and area occupied for each Neighborhood.

Table 20 shows the housing inventory by neighborhoods by types of housing units. As has been indicated, the overall ratio of multiple-family dwelling units to total dwelling units is relatively low. The relationship of multiple-family units to overall units in some individual neighborhoods, however, tends to be fairly high, and in some situations the amount of land zoned for multiple-family and yet undeveloped also appears rather high.

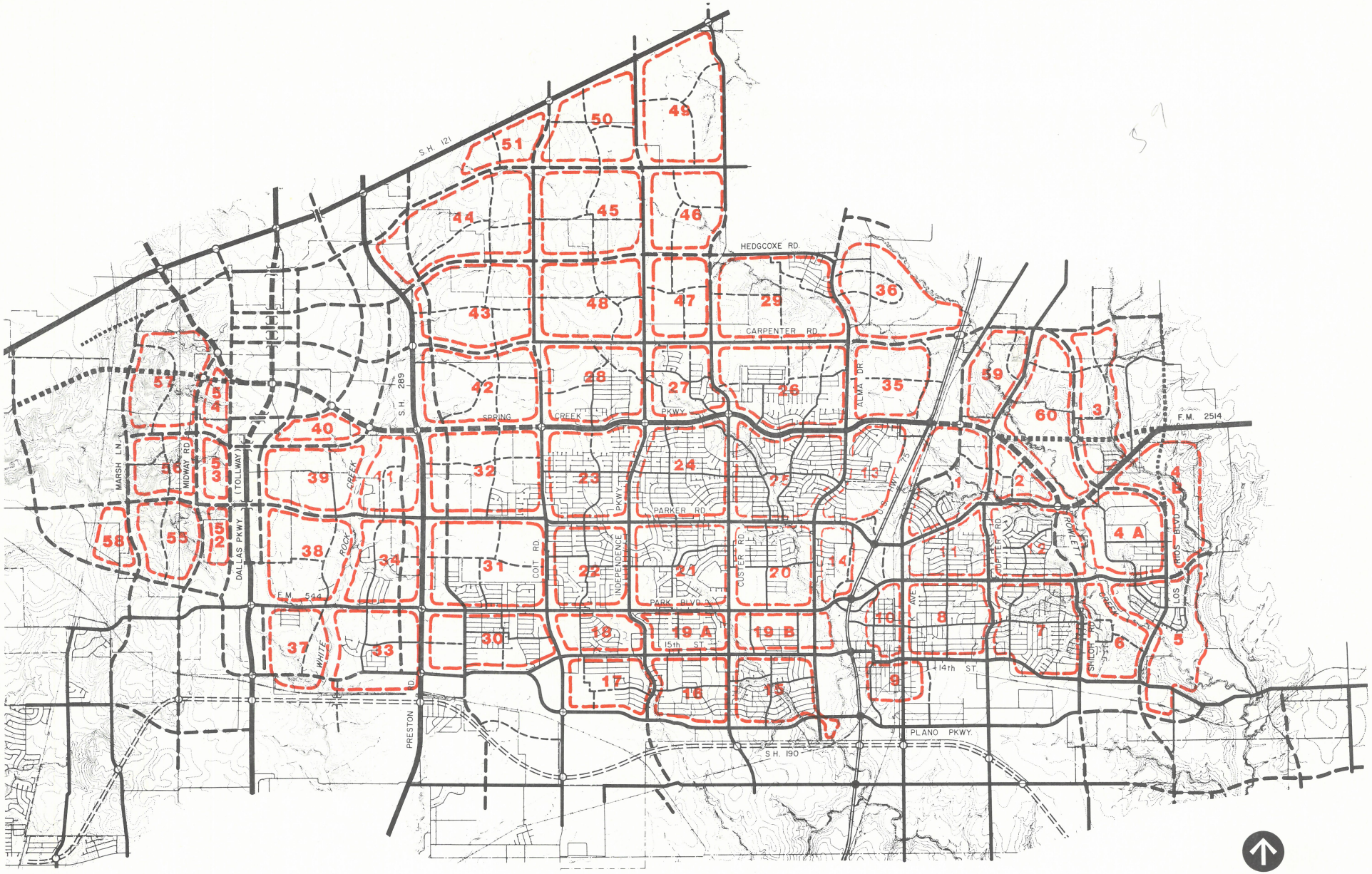
HOUSING POLICIES - In the area of housing, the City of Plano has established the goal of providing for a range of housing suitable to all age groups and many income levels, so that housing is available for new families, families in their productive years, and older and elderly individuals and families. In the process of achieving this goal, a number of housing policies can be implemented. Some of the policies appropriate for Plano are described below.

TABLE 20

HOUSING INVENTORY BY NEIGHBORHOODS

Neighborhood	Single-Family Units	Two-Family Units	Multi-Family Units	Mobile Home Units	Total Units
1	438	---	---	273	711
2	2	---	---	---	2
3	41	---	---	---	41
4A&B	29	---	---	---	29
5	343	---	---	157	500
6	162	---	---	---	162
7	1,754	88	502	---	2,344
8	1,125	38	268	---	1,431
9	285	22	34	41	382
10	219	6	348	---	573
11	588	---	---	---	588
12	834	---	---	---	834
13	406	---	---	---	406
14	179	---	---	143	322
15	1,024	---	468	---	1,492
16	681	52	---	---	733
17	508	---	65*	---	573
18	423	---	208	---	631
19A&B	787	---	632	---	1,419
20	631	---	---	---	631
21	1,407	56	160	---	1,623
22	1,103	---	---	---	1,103
23	827	100	---	---	927
24	1,527	12	---	---	1,539
25	2,209	46	232	---	2,487
26	1,135	---	---	---	1,135
27	35	---	276	---	311
28	74	---	---	---	74
29	---	---	---	---	0
30	230	---	256	---	486
31	326	---	---	---	326
32	11	---	---	---	11
33	---	---	---	---	0
34	45	---	---	---	45
35	---	---	---	---	0
Area Outside Neighborhoods, East Side of U.S. 75	9	---	---	---	9
Areas Outside Neighborhoods, West Side of U.S. 75	26	---	---	---	26
Totals	19,423	420	3,449	614	23,906

*Includes 65 single-family attached units.



CITY of PLANO, TEXAS
PLANNING DEPARTMENT

PLANO, TEXAS

NEIGHBORHOOD UNITS

PLATE 16

1. Areas of higher-density residences should be interspersed throughout the Community, rather than restricting them to a few specific areas. It is not appropriate to restrict people of differing life-styles and incomes to different parts of the City.

2. The "Plano Lifestyle" of standard single-family housing has predominated for many years, and has been one of the most positive influences on the Community's development. Inflation, however, has made the standard single-family house unaffordable for many people, so that there is a need for other forms of housing. To retain the single-family character of the Community, while providing for other housing types, it is appropriate to insure that not less than 50% of the total residential units in any neighborhood unit should be single-family units.

3. In order to provide for a mix of different types of housing, each neighborhood area should have not more than 40% of its housing units developed at a density greater than 5.5 units per acre, with not more than 20% of the housing units developed at a density greater than 15 units per acre. In some neighborhoods, existing zoning would, if developed, lead to a situation where high-density housing would far exceed the recommended percentages. As opportunities arise, efforts should be made to adjust the zoning to meet these percentages.

4. In the neighborhoods adjacent to U.S. Highway 75, Preston Road, and the Dallas North Tollway, the character of the neighborhoods changes somewhat because it is not considered appropriate to construct low-density residential units adjacent to such high-speed, heavily traveled thoroughfares. Accordingly, in the neighborhoods immediately adjacent to these thoroughfares, the recommended percentages are changed so that not more than 50% of the housing units should be developed at a density greater than 5.5 units per acre, with not more than 30% of the housing units developed at a density greater than 15 units per acre.

5. In order to provide housing for people of all ages (full life-cycle housing), a range of housing types is needed. The housing needed by small children and their families is a very different type from the housing needed by the elderly. Thus, the City encourages the development of varying forms of housing which will meet these needs.

6. It is recognized that lower income families live and work in Plano, and that suitable housing should be provided for them. Observation of other efforts at providing low-income housing has shown that large concentrations of assisted familes typically create difficult social problems for those persons living there. In order to avoid these problems, while still providing a suitable living environment for low-income households, subsidized rental housing should be restricted to a maximum of 20% of the dwelling units in any one housing complex.

7. Inflation has made it difficult to build conventional housing for moderate-income families. The City will continue to encourage innovative types of development at moderate to high densities in order to provide housing for these families.

8. Housing for the elderly is encouraged to assure that as citizens reach retirement age, they can remain in Plano and continue to be part of and contribute to the Community. Retirement housing may be included in any neighborhood unit without regard to the mix of densities outlined above.

Plano is approaching a period when two other types of housing action will become desirable in addition to the application of the above policies. The types of action which should be considered include:

1. REHABILITATION

   There will be a growing need for strong housing rehabilitation efforts in Plano as existing housing and neighborhoods age. One of the major rehabilitation needs will be to upgrade the energy efficiency

of much of the existing housing inventory. A substantial number of the dwelling units in the City, particularly those built prior to 1970, can be assumed to have no, or at most inadequate, insulation. A large portion of the moderate income level housing presently available in Plano is in this age group. In order to assure that older dwelling units will function in the filtering process of the housing market (whereby families move upward to better housing, making their previous dwellings available to those who can afford them), the older dwellings must be made more energy efficient. The cost of energy for heating and cooling can be expected to continue to increase and could readily become a major factor in determining who can afford an older dwelling. In addition, other areas of housing rehabilitation should not be neglected such as plumbing, painting, roofing, and yard and site maintenance.

2. CONSERVATION

Almost 50% of the dwelling units expected in Plano by 1990 already exist, and none could be replaced for anywhere near their original cost. The conservation of the present housing inventory must be considered of equal importance with the achieving of quality in the future housing construction. Provision of amenities such as parks, street surfacing, drainage and street trees are direct ways of encouraging conservation of housing and of neighborhood areas. Regular efforts of volunteer neighborhood associations to encourage interest and concern for specific areas can contribute greatly to an awareness of the need for housing conservation. The generation of pride in Plano as a place to live could be a major factor in a continuing conservation effort.

The most common types of conservation problems occur because maintenance typically is reduced as the owners of a house become elderly. Continual neglect of maintenance ultimately leads to housing deterioration and blighted neighborhoods. At some time in the future the City may need to develop a program to encourage the maintenance of the housing in older neighborhoods.

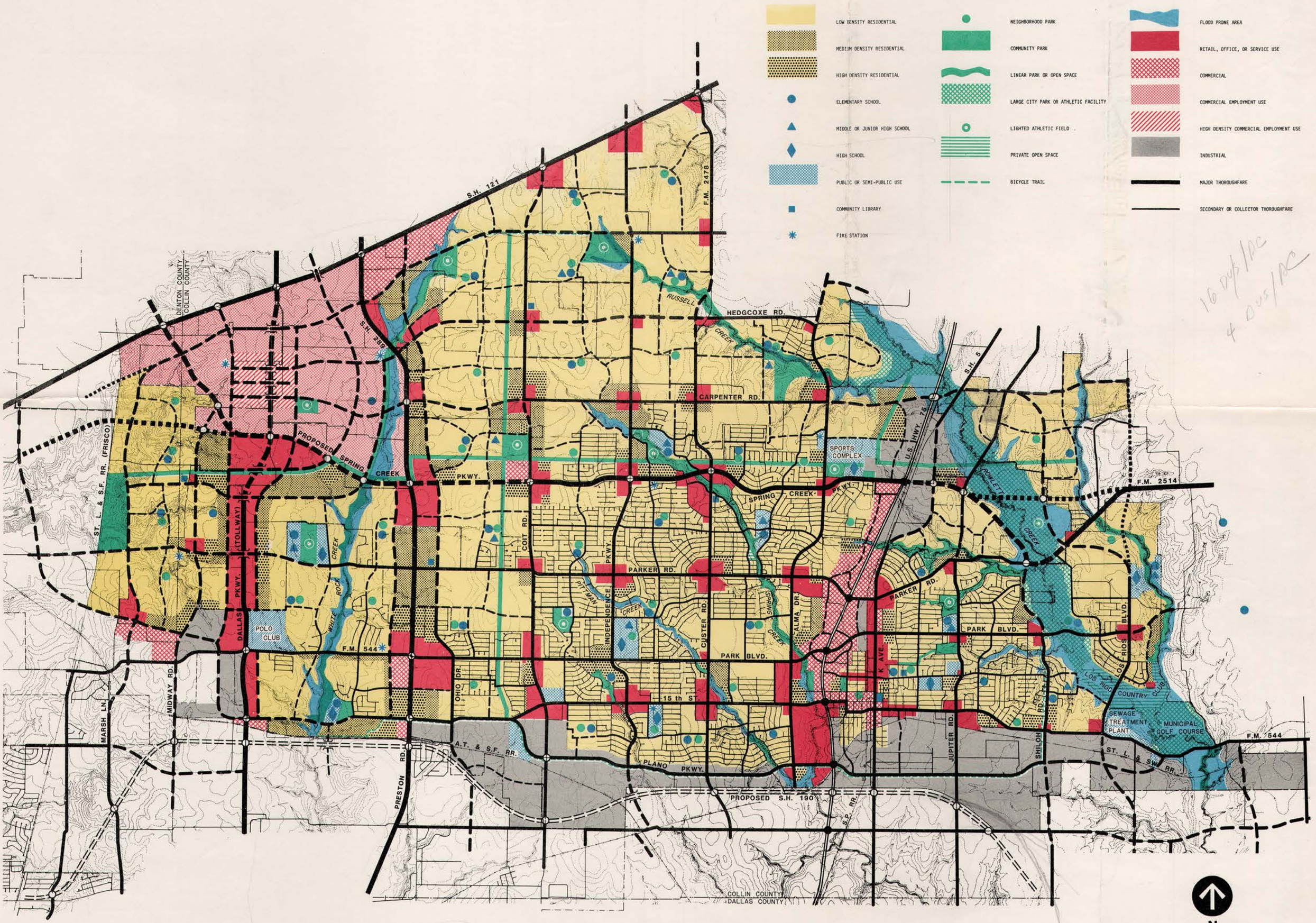
XIII. FUTURE LAND USE PLAN

The general proposed arrangement of major land use types for Plano, when it reaches a population of 300,000 or more people, is shown by Plate 17. The areas indicated for various types of uses are generally in balance with the projected requirements, except that the office/industrial area is larger than the normal projections would indicate for a city such as Plano. Sites for six major regional shopping centers, three on Preston Road, one on U.S. Highway 75, and two on the extension of the Dallas North Tollway, are indicated by Plate 17. At best, it is expected that only three of the sites will be utilized as regional shopping malls, while the other sites will convert to a mixture of high-intensity uses.

The recommended location of schools, parks, fire stations, and other major features of the Comprehensive Plan are shown in relation to the proposed land use pattern and the Major Thoroughfare Plan. The various Community facilities are located and scaled to serve the arrangement of land use indicated. Major changes in the land use pattern or failure of some areas to develop as anticipated will make it necessary to review the need for Community facilities in such areas. For example, should an anticipated residential neighborhood develop as an industrial district, the school and neighborhood playground projected for the area would obviously not be required.

The Land Use Plan is intended to be a general guide for the development and use of land in the future and has as its purpose the following objectives:

1. <u>To set forth a general land use pattern for the Community</u>. The growth potential of Plano indicates that large areas of agricultural land will be converted to urban use as the City expands. The future physical arrangement of Plano should be determined by the projected Land Use Plan.



16 DUS/AC
4 DUS/AC

LI-1

N

SCALE IN FEET

0 1000 4000 8000

0 1/2 1 1 1/2

SCALE IN MILES

CONTOUR INTERVAL - 10 FEET

CITY of PLANO, TEXAS
PLANNING DEPARTMENT

PLANO, TEXAS

FUTURE LAND USE PLAN

PLATE 17

ELEMENTARY SCHOOLS

A BARRON
B CHRISTIE
C DAVIS
D DOOLEY
E FORMAN
F HARRINGTON
G HUGHSTON
H JACKSON
I MEADOWS
J MEMORIAL
K MENDENHALL
L SAIGLING
M SHEPARD
N SIGLER
O THOMAS
P WEATHERFORD
Q WELLS

MIDDLE SCHOOLS

R ARMSTRONG
S BOWMAN
T CARPENTER
U HAGGARD
V SCHELPFENIG
W WILSON

HIGH SCHOOLS

X CLARK
Y VINES
Z WILLIAMS
AA PLANO SENIOR HIGH
BB PLANO EAST SENIOR HIGH

NEIGHBORHOOD, COMMUNITY & LINEAR PARKS

1. ARROWHEAD
2. BIG LAKE
3. BLUEBONNET TRAIL
4. BLUE RIDGE
5. BUCKHORN
6. CADDO
7. JACK CARTER*
8. CHEYENNE*
9. CHISHOLM TRAIL
10. CLEARVIEW
11. COTTONWOOD CREEK
12. DOUGLASS PLAYGROUND
13. EVANS
14. HACKBERRY
15. HAGGARD
16. HARRINGTON
17. HOBLITZELLE
18. HORSESHOE
19. JAYCEE
20. KIWANIS PLAYGROUND
21. LIBERTY
22. LIBRARY SPORTS FIELDS
23. LONE STAR
24. LONGHORN
25. OLD SHEPARDS PLACE
26. OVERLAND TRAIL
27. PIONEER
28. PRESTON RIDGE TRAIL
29. RUSTIC
30. SANTA FE TRAIL
31. SHAWNEE
32. SHOSHONI
33. WAGON WHEEL
34. WESTWOOD
35. WHITE ROCK TRAIL
36. WILLOW CREEK
37-38. UNNAMED PARKS
39-58. PROPOSED PARKS

ATHLETIC FACILITIES & LARGE CITY PARKS

59. HIGH POINT*
60. OAK GROVE
61. PLANO MUNICIPAL GOLF COURSE
62. SCHELL*
63. TENNIS CENTER
64. UNNAMED PARK*
65-68. PROPOSED ATHLETIC FACILITIES
69-70. PROPOSED LARGE PARKS
71. PROPOSED GOLF COURSE

RECREATION FACILITIES

72. AQUATIC CENTER
73. JACK CARTER PARK POOL
74. COMMUNITY NATATORIUM & WILLIAMS RECREATION CENTER
75. VINES RECREATION CENTER

*LIGHTED ATHLETIC FIELDS

PROPOSED / EXISTING

- ELEMENTARY SCHOOL
- MIDDLE SCHOOL
- HIGH SCHOOL
- SCHOOL FACILITY
- NEIGHBORHOOD PARK
- COMMUNITY OR LINEAR PARK
- ATHLETIC FACILITY OR LARGE CITY PARK
- LIGHTED ATHLETIC FIELDS
- RECREATION FACILITY
- BICYCLE TRAIL IN STREET R.O.W.
- PRIVATE OPEN SPACE
- NON-RESIDENTIAL AREA
- FLOOD PLAIN AREA

N

SCALE IN FEET
0 1000 4000 8000
0 1/2 1 1 1/2
SCALE IN MILES
CONTOUR INTERVAL - 10 FEET

CITY of PLANO, TEXAS
PARKS and RECREATION

PLATE 14

PLANO, TEXAS

PROPOSED PARKS, SCHOOLS AND OPEN SPACE PLAN - 1981

2. To create a compact, orderly and economical arrangement of land uses for Future Plano. The economy of government in Plano will be influenced by the future land use arrangement, as will the desirability of the Community as a place to live, work and develop.

3. To establish and protect adequate area for industrial expansion in the future. The protection of adequate future industrial area is difficult, and provisions should be made in the Zoning Ordinance to exclude undesirable uses from proposed industrial areas.

4. To provide a guide for the orderly expansion of utilities as Plano grows. Utility expansion to presently rural areas and the sizing of utilities to accommodate future growth is one of the most difficult municipal problems faced by Plano. The Land Use Plan provides a guide for the decisions which must be made concerning utility services.

5. To provide Community retail centers at appropriate locations related to the residential areas. Care should be exercised to keep the amount of retail area in balance with the population at approximately 5.0 acres per 1,000 persons. Excess retail land can be expected to be used for land uses which may be considered less desirable for nearby residential areas than shopping centers.

6. To provide a basis for decisions relative to future zoning requests. From time to time adjustments may be required in the Land Use Plan. Where adjustments are required as a result of zoning, the change should involve the amendment of the Land Use Plan as well as the Zoning Ordinance.

7. To provide a basis for estimating future Community facilities and services. The location and size of future parks, schools, fire stations and similar facilities should be determined by the Land Use Plan, and these facilities are indicated on Plate 17.

Two major structuring elements are proposed as the framework for Plano's future urban form. One element, the major thoroughfare system, is intended to provide a system of transportation arteries over which movement between the various areas and functional units of the Community can occur and about which the future land use pattern can develop. The second structuring element, the park and open space system, will also influence the land use pattern. It will retain portions of the natural environment in neighborhood areas and protect the natural surface water drainage system.

Both of the structuring elements provide the basis for projecting the Future Land Use Plan shown by Plate 17. Illustrated by the Plan are the intended locations of major categories of urban land use and the principal community facilities related to the land use pattern such as schools, parks, and fire stations. The predominant residential expansion of Plano is expected to occur to the north and west of the original town while the major industrial expansion is projected for the southern and northwestern part of the area. Convenient communication by thoroughfares between all the residential areas and the industrial employment areas will be essential to the smooth function and preservation of both areas.

It should be recognized that the Future Land Use Plan is a guide to development. Facilities such as libraries, parks, and schools are indicated in a general, rather than specific, location. Exact sites are to be determined through negotiation with individual property owners.

The Commercial Employment area in northwest Plano, if developed as it is presently proposed, will have a tremendous effect both on Plano and on the Region. It has the potential of acting as a second "downtown Dallas". Just as the Dallas metropolitan area has extended twenty miles north from its center (creating a building boom in Plano), so may the Commercial Employment area extend urbanization another twenty miles further north. Whereas Dallas is now the central city of the metropolitan area, Plano would become the central city of the extended urban area. As the Commercial Employment area develops, and its economic viability becomes assured, major regional planning problems will become apparent, particularly with regard

to transportation access into the site. At that time, the Plano Comprehensive Plan may need to be revised to address these problems.

The high intensity land use planned in far west Plano is predicated on the extension of the Dallas North Tollway and the development of the Commercial Employment area. If one or both of these projects should not be developed, it may be appropriate to revise the planning for this area to bring the land use into balance with the changed thoroughfare capacities.

The Future Land Use Plan generally omits any medium and high density housing from the area north of Hedgcoxe Road. This is not to imply that none of this type of housing will be permitted there; these areas are expected to develop under the guidelines listed in Chapter XII, Housing. Specific sites for these types of densities are not shown in order to provide flexibility for developers in determining site location.

At intersections where less than four corners of retail, office, or commercial development is shown, the implication is that the number of corners shown is the number which should be developed, but not that the specific corners shown are the only ones designated for such development. For example, if two corners of retail/office are shown on the Plan, any two of the four corners may actually receive retail or office zoning.

The area between Collincreek Mall and K Avenue is considered to be a transitional area. Commercial development generated by the mall is expected to eventually replace the existing housing. However, the area is currently a viable residential neighborhood with a great amount of civic pride. The residents have expressed a desire to remain a residential community. Accordingly, the Plan designates the area as residential. To preserve its residential character, speculative rezoning for commercial uses should be actively discouraged until a majority of the residents of the area are willing for the land uses in their community to change.

The physical City is the product of the efforts of many individuals and groups. Each subdivision that is platted, each home that is built, each industrial plant, school, church, hospital or shopping center represents an addition to the physical City. The composite of all such efforts and facilities creates the Community ás it is seen and experienced by its citizens. If planning is to be effective, it must guide each individual decision whether it be that of a private home owner or of the entire City. The City, in its daily decisions to surface a street, approve a subdivision, amend the Zoning Ordinance, enforce the building code or the housing code, or construct a new utility line, should refer to the basic guides provided by the Plan. The private builder or investor, likewise, should be guided by the broad concepts of the Plan so that his effort becomes part of a more meaningful whole and so that his investment is, over the years, reinforced by the entire Community development.

The usual processes of reviewing and processing zoning amendments and subdivisions and funding capital improvements provide significant opportunities for implementing the Comprehensive Plan. Each zoning and subdivision decision should be weighed against the proposals of the Plan. If decisions are made contrary to the Plan, the action should include the revision of the Plan.

Capital investments made by the City, County, and School District should be determined with the Plan as a background, and any variation from the Plan should be based upon a considered revision of the entire Plan.

The act of subdividing land to create urban building sites is one of the most important and significant city building activities. Much of the basic physical form of the City is created by the layout of streets, easements, alleys, lots, and community parks and school sites. Many of the physical proposals of a Community's Comprehensive Plan can be achieved through the exercise of subdivision control. Such elements of the Plan as major street rights-of-way, drainage easements, school or park sites, and linear parkways can be achieved during the process of subdividing the land.

The future quality of life in Plano and the environment of the Community will be substantially influenced by the manner in which the Comprehensive Plan is administered and maintained. The full benefits of the Comprehensive Plan for Plano can only be realized by maintaining it as a vital up-to-date guide. As changes occur and new facets of the Community's development become apparent, the Plan should be altered, adjusted, and expanded to recognize and encompass such changes and needs.