The Crockett

Planning Information Document

FORWARD

Parts 1 and 2 of the Crockett Planning Information Document were initially prepared by the Students of Urban and Regional Planning Laboratory 602, in the Fall of 1980. The following Graduate Students participated in the production of this study:

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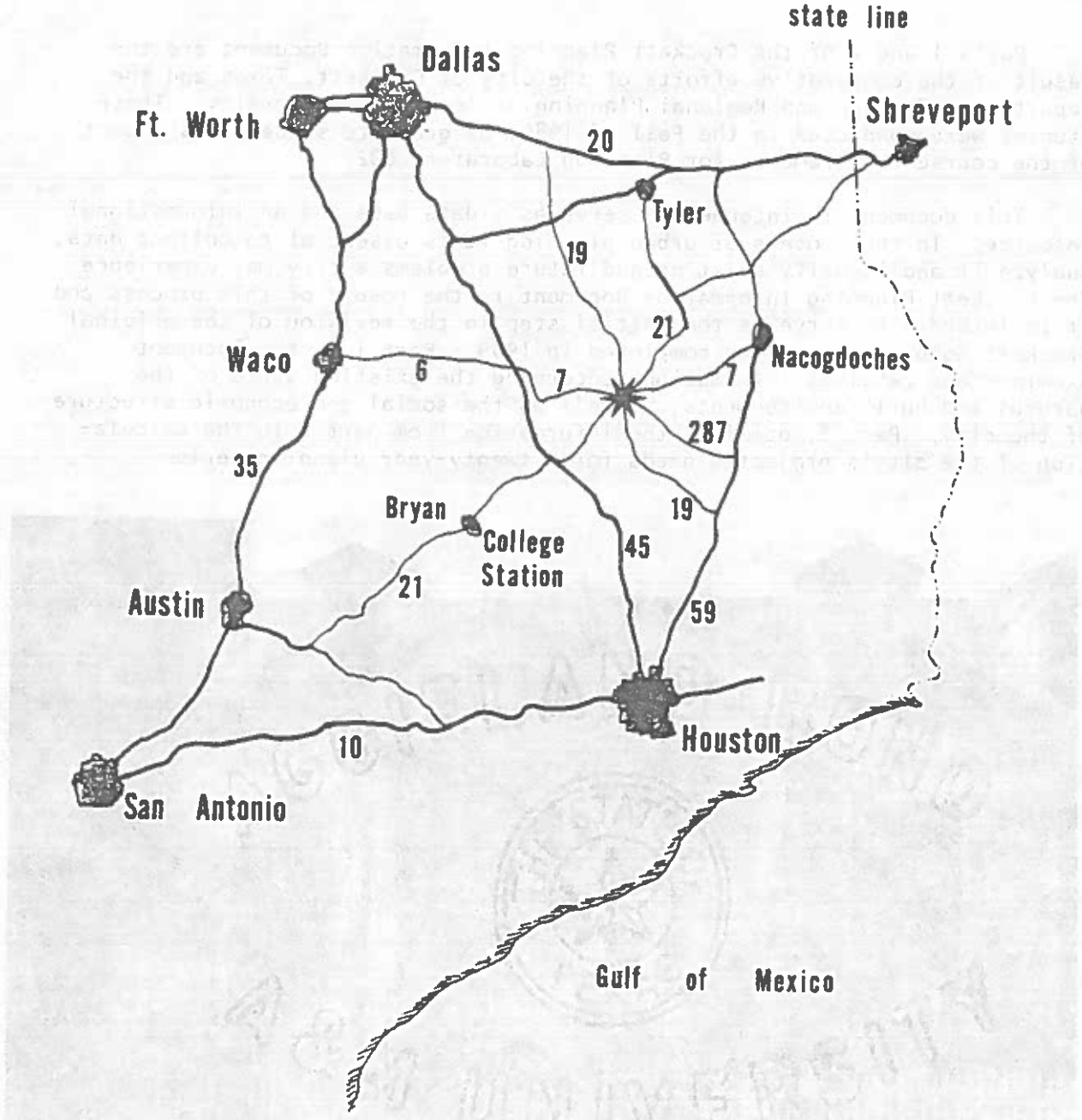
Introduction

INTRODUCTION

Introduction

Parts 1 and 2 of the Crockett Planning Information Document are the result of the cooperative efforts of the City of Crockett, Texas and the Department of Urban and Regional Planning at Texas A&M University. These studies were conducted in the Fall of 1980, by graduate students as a part of the course requirements for Planning Laboratory 602.

This document is intended to serve as a data base and an informational resource. In the process of urban planning it is essential to collect data, analyze it and identify existing and future problems a city may experience. The Crockett Planning Information Document is the result of this process and it is intended to serve as the initial step in the revision of the original Crockett Comprehensive Plan completed in 1969. Part 1 of the Document examines and catalogs information concerning the existing state of the natural and built environments, as well as the social and economic structure of the city. Part 2, utilizes the information from part 1 in the calculation of the city's projected needs for a twenty-year planning period.



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prepared by the
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Texas A&M University, College Station, Texas
1980

North

0 600 1200 2800
Scale

Map 1
Regional Setting

Regional Setting

The City of Crockett is located in Houston County and serves as the county seat. Houston County is located in the east-central area of Texas. Map 1 on the preceding page shows that Crockett is approximately 100 miles north of Houston, and 100 miles south-southeast of Dallas. Within Houston County, Crockett is centrally located and serves as the commercial and governmental hub for the eight communities within the County.

The Planning Area

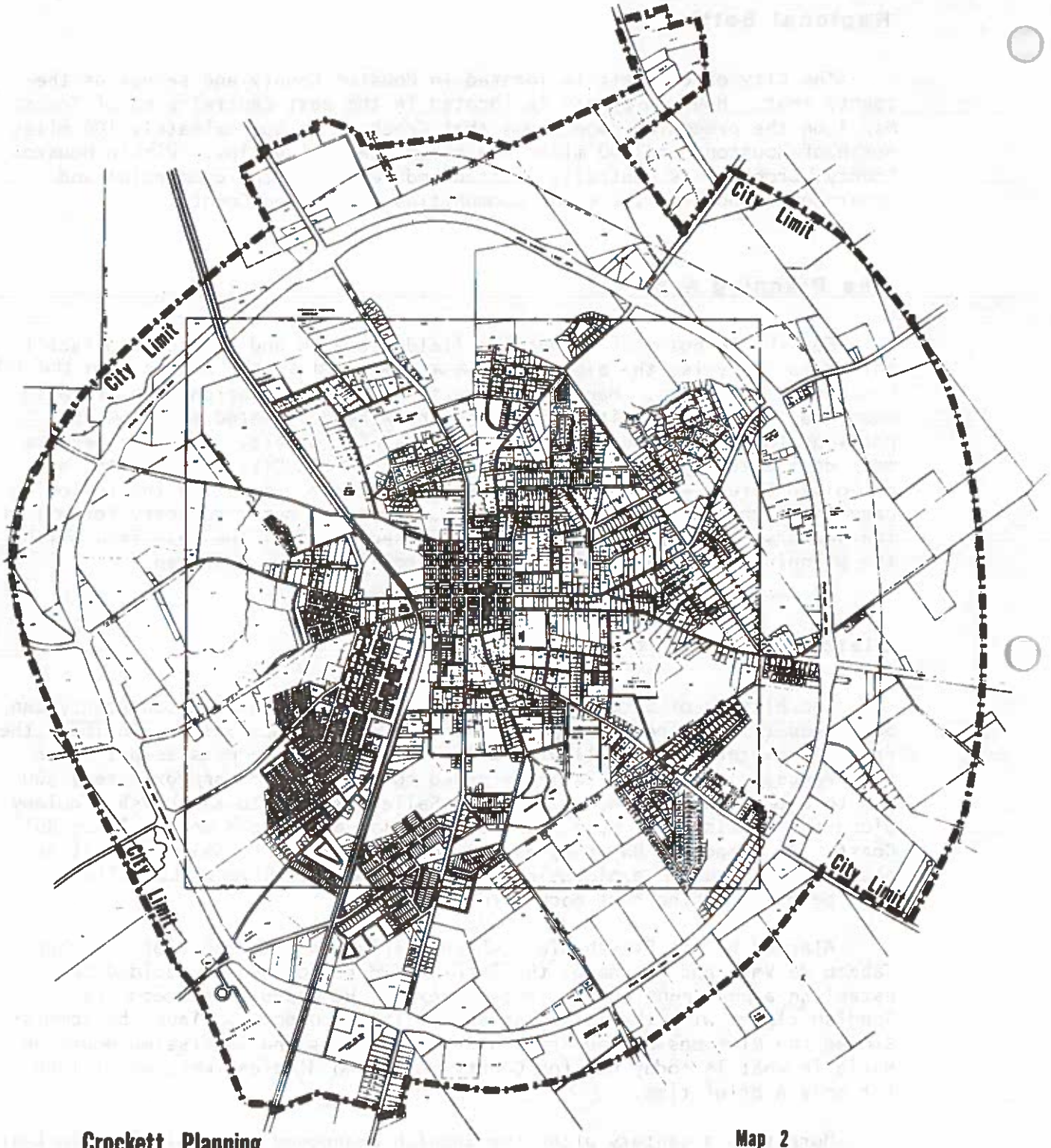
For the purposes of conducting field research and in order to facilitate data analysis, the planning area was defined as all land within the 1980 Crockett city limits. Many of Crockett's regional relationships are also examined. Within the City, four sectors were delineated to allow comparisons to be drawn between various areas of Crockett. The four sectors were delineated by Fourth Street which divides the City north/south, and by Goliad Street which divides the City east/west. Map 2 on the following page shows the delineation of these sectors. The outer boundary for all of the sectors is the city limit. The four sectors form the base from which the planning data for the City has been collected and assessed.

Historical Background

The history of European settlement in Crockett and Houston County can be traced to the expeditions of the French explorer La Salle. In 1682, the French explorer claimed all of the land drained by the Mississippi River for France. In 1684, La Salle returned to America with approximately 300 men to establish a colony. It was La Salle's intent to establish a colony along the Mississippi, however, the party landed instead on the Texas Gulf Coast. At Matagorda Bay they established a fort and La Salle used it as a base camp for future exploration of the Mississippi River. La Salle died before reaching that body of water.

Alarmed by the French claim which overlapped with those of Columbus, Cabeza de Vaca and Coronado, the Spanish Viceroy of Mexico decided to establish a permanent colony in East Texas. He hoped to protect the Spanish claims with the establishment of these outposts. Thus, he commissioned the Missions of San Francisco de los Tejas and Santissimo Mobre de Maria in what is today Houston County. The two Missions were maintained for only a brief time.

More than a century after the Spanish abandoned their missions in East Texas the Republic of Texas was created. At the formation of the Republic, what is now Houston County was still a part of Nacogdoches County. In 1837, however, a letter petitioning the legislature to form a new county was written. In June of that year President Sam Houston signed the Act creating



Map 2

Crockett Planning Area

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North

0 600 1200 2000
Scale

Houston County.

The city was named in honor of Texas hero Davy Crockett. Since its incorporation in 1836, the city has served as the county seat. Its history and economic development is closely tied to that of Houston County. Initially, the county's business was conducted in a log courthouse on the same location as the present courthouse. The log structure subsequently burned and was replaced by a brick courthouse authorized by the state legislature in 1851. In its early history Crockett was a center for stage coaches and trading. By the mid 1850's telegraph lines were present in the city.

The Civil War was devastating for Houston County and Crockett. Of the 6,000 Caucasions in the County when Texas seceded from the Union in 1861, 1,000 joined the army. The community suffered not only severe economic losses from the disruption of trade and commerce but more importantly, it suffered a terrible loss of its human resources. For example, only 9 from one company of 188 men from Houston County were living at the end of the War.

Fire was a regular and horrible occurrence in much of Crockett's early history. In 1864, fire destroyed 22 of Crockett's businesses and the courthouse burned in 1865. Another major fire occured in 1871. The period

of Reconstruction was a time of depression for the City. Crockett's charter was revoked during this period and was not reinvested with the City until 1890.

Through the Twentieth Century the fortune of Crockett has closely followed that of Houston County. The City has continued to serve as the primary business and governmental center for the County.

Sources: Aldrich, A. A. The History of Houston County, Texas. Naulor Company, San Antonio, 1943.

Bishop, Eliza. History of Houston County, Texas: 1687 - 1979. Heritage Publishing Company, Tulsa, 1979.

The Natural Environment

THE NATURAL ENVIRONMENT

Introduction

A study of the natural environment is significant to any comprehensive planning because environmental constraints are very important in determining the location of future land use. This section of the Document encompasses a discussion of the geomorphology and physiography of the Crockett Planning Area. Geomorphology is divided into two sections: geology and soils. Physiography is divided into four parts: topography, water, climate and vegetation.

Geomorphology

Geology

The geology, in terms of bedrock composition, has a decided affect on the growth pattern of a city. For example, the type of bedrock can create building and road construction problems that are extremely difficult to surmount. Mineral resources, within the bedrock, in the vicinity of a city may be a determining factor in the location of certain industries. Since soils are created from the disintegration of bedrock though the process of erosion, the type of bedrock has an influence on indigenous vegetation. Hence, this section discusses the geologic history, geologic formations, minerals and rock and soil relationships of the Crockett Planning Area.

Geologic History

In the paleozoic era, the Houston County area was a land mass called Llanoria. It remained as a land mass until the end of the Triassic period of the Mesezoic era. At this time the Balcones Fault zone occured and shifted the Llanoria land mass downwards which changed the drainage from west to east towards the Gulf of Mexico.

During the Cretaceous period of the Mesezoic era and the Cenezoic era, the gulf waters advanced and receded several times over the Houston County area. The groups of formations deposited during the Cretaceous period were: Buda, Woodbine, Eagleford, Austin, Taylor and Navarro.

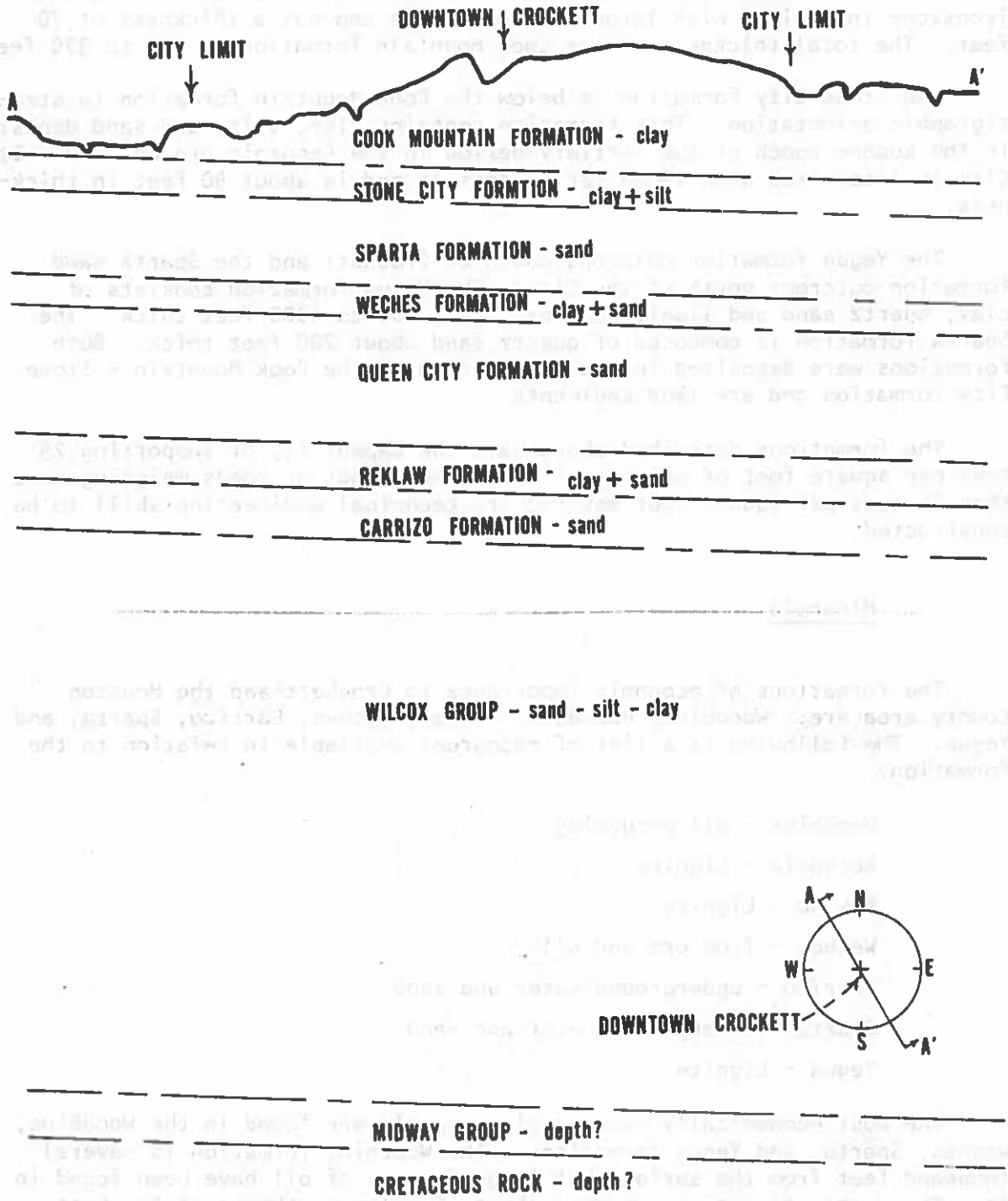
The groups of formations deposited in the Cenezoic included: Midway, Wilcox and Claiborne. Each of these groups are further divided into formations. The Midway group includes the Kincaid and Wills Point formations. The Wilcox group contains the Sequin, Rockdale and Sabinetown formations. The Claiborne group consists of the Carrizo, Reklaw, Queen City, Weches, Cook mountain - Stone City, and Yegua formations.

Geologic Formations

The City of Crockett is located on an outcrop of the Cook Mountain - Stone City formation. Figure 1, on the following page shows the geologic profile for the Crockett Planning Area. The profile is made on a line from the northwest to the southeast through the City. The profile illustrates the relationship of the different groups of formations to each other in a time scale. The youngest rock is at the top of the profile.

The Cook Mountain formation is a marine sediment deposited in the Eocene epoch of the Tertiary period in the Cenozoic era. This formation

FIGURE 1: Geologic Profile



includes four members: Mount Tabor, Spiller, Landrum, and Wheelock. Mount Tabor consists of clay plus marl intermixed with large marine fossils and has a depth of 45 to 100 feet. The Spiller member contains sand plus some lignite with a consistency of clay and has a thickness of 100 feet. The Landrum member includes marl plus clay with limestone lentils of a plastic like consistency intermixed with large marine fossils and has a thickness of 100 feet. The Wheelock member contains marl plus clay with plastic like ironstone intermixed with large marine fossils and has a thickness of 70 feet. The total thickness of the Cook Mountain formation is 325 to 370 feet.

The Stone City formation is below the Cook Mountain formation in stratigraphic orientation. This formation contains clay, silt, and sand deposited in the Eocene epoch of the Tertiary period in the Cenozoic era on land. Stone City is intermixed with large marine fossils and is about 90 feet in thickness.

The Yegua formation outcrops south of Crockett and the Sparta sand formation outcrops north of the City. The Yegua formation consists of clay, quartz sand and lignite approximately 600 to 1000 feet thick. The Sparta formation is composed of quartz sand about 200 feet thick. Both formations were deposited in the same period as the Cook Mountain - Stone City formation and are land sediments.

The formations described above have the capability of supporting 25 tons per square foot of pressure.[1] Thus, buildings or roads weighing more than 25 tons per square foot may require technical engineering skill to be constructed.

Minerals

The formations of economic importance to Crockett and the Houston County area are: Woodbine, Rockdale, Reklaw, Weches, Carrizo, Sparta, and Yegua. The following is a list of resources available in relation to the formation.

Woodbine - oil producing

Rockdale - Lignite

Reklaw - Lignite

Weches - iron ore and oil

Carrizo - underground water and sand

Sparta - underground water and sand

Yegua - Lignite

The most economically recoverable minerals are found in the Woodbine, Weches, Sparta, and Yegua formations. The Woodbine formation is several thousand feet from the surface but large amounts of oil have been found in it. The Weches formation outcrops about 15 miles northwest of Crockett

and can be reached by drilling 400 feet down at the city's lowest elevation. The Yegua outcrops three miles south of Crockett and can be surface mined. Sparta sands outcrop seven miles north of Crockett and are used in the processing of cement.

Rock and Soil Associations

There are three soil associations in the Crockett Planning Area: Sacul, Crockett - Burleson, and Manatachie. The parent material for the Sacul soils are the sandy clays of the Wilcox formation and possibly outwash from the Queen City and Sparta sand formations outcropping north of the City. The Crockett - Burleson soils are formed from outwash of the blackland prairies associated with the Cretaceous formations. The Manatachie soils have parent materials of alluvial origin found in floodplains and are the most recent soils in the area.

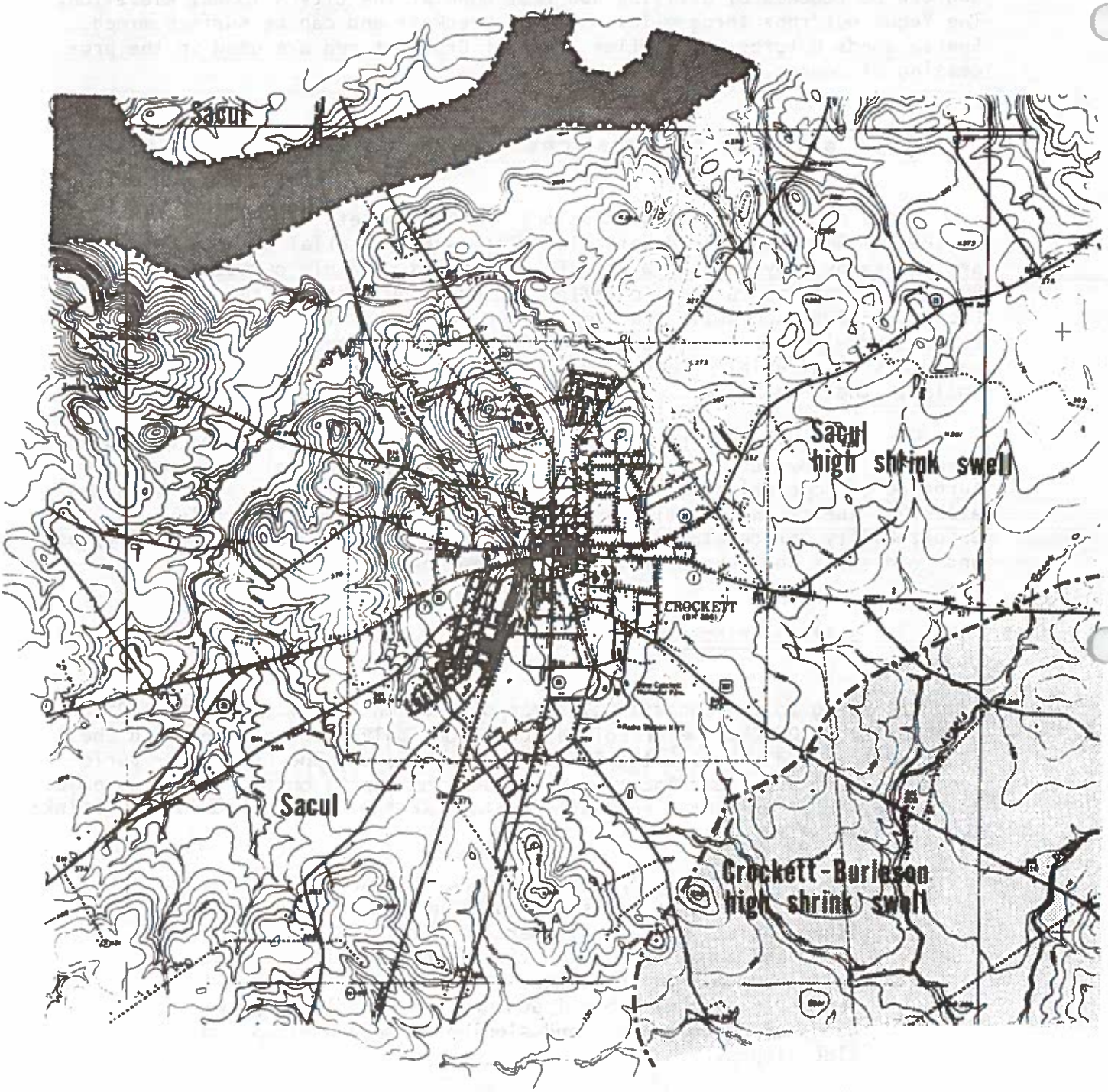
Man as a rule must build his dwellings on the surface of the ground. "Many soils, however, are unsuitable as foundation materials and the disturbance of some soils may have serious consequences for man and environment alike."[2] The characteristics and composition of the soil determine it's unsuitability for development. Thus, it is necessary to consider soil types and to discuss their potential for urbanization.

Soil Descriptions

According to the General Soils Map of Houston County, there are 12 soil associations. Of the twelve soil associations only three are found in the Planning Area and they are the Sacul, Manatachie, and the Crockett - Burleson associations. Their locations are shown on Map 3, on the following page. A description of the three soil associations as shown on the Soils and Shrink-Swell Potential Map.

Sacul Association: Gently sloping to moderately steep upland soils that are slowly permeable. This association consists of about 75 percent Sacul and similar soils and about 25 percent miscellaneous soils. Sacul soils have a thin fine sandy loam surface layer over a red and gray clay subsoil and occur as gently sloping heads of drainage-ways and sloping to moderately steep side slopes.

Manatachie Association: Nearly level soils that are moderately permeable. This association consists of about 70 percent Manatachie and similar soils and about 30 percent other soils. Manatachie soils have a thin grayish brown clay loam surface layer over a gray and brown mottled clay loam.



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North

0 1200 2400 3600
Scale

Map 3

Soils & Shrink-Swell Potential

Crockett - Burleson Association: Nearly level and gently sloping soils that are very slowly permeable. This association consists of about 40 percent Crockett, 40 percent Burleson and 30 percent other soils. Crockett soils have a thin brownish fine sandy loam surface layer over a mottled clay subsoil. Burleson soils have a very dark gray clay surface layer over a gray or olive gray subsoil.

A concise classification and description of the three soil associations is given in Table 1. A brief explanation of certain terms used in Table 1 is as follows:

Hydrologic Group: This term refers to the rainfall runoff potential of a soil. Soils are assigned to one of four groups. In Group A, are soils having a high infiltration rate when thoroughly wet and having a low runoff potential. In group D, at the other extreme, are soils having a very slow infiltration rate and thus a high runoff potential.[3]

U.S.D.A. Texture: This term refers to the relative proportions of sand, silt, and clay particles in a mass of soil. The basic textural classes, in order of increasing proportion of fine particles, are sand, loamy sand, sandy loam, loam, silt loam, silt, sandy clay loam, clay loam, silty clay loam, sandy clay, silty clay and clay.[4]

Unified Classification: In this system, the soils are classified on the basis of their grain size distribution and plasticity characteristics. Soils are identified and classified by a two-letter symbol designation, in which the first symbol identifies the soil as basically a gravel (G), sand (S), silt (M), and clay (C). The second symbol indicates whether the soil is well or poorly graded (w or p); silty, sandy, or clayey (M, S or C); and of high or low plasticity (H or L).[5]

Soils and Their Potential for Urbanization

As a segment of the natural environment, soils play an important role in urban development. Soil characteristics, which are important in urban development include depth of soil to bedrock, soil permeability, and shrink - swell potential. Table 2, shows the soils potential for urbanization in Crockett.

Certain terms used in Table 2 are described on the following page. Most of these terms were taken from the General Soils Map for Houston County unless otherwise footnoted.

TABLE 1: SOIL CHARACTERISTICS

Soil Type	Hydrologic Group	U.S.D.A. Texture	Classification Unified	AASHO
Sacul	D	fine sandy loamy clay	ML[1]	A-4[1]
		shaly clay	CH or MH	A-7
Manatachie	C	loam[2]	Cl, SC[2]	A-4[2]
		clay-loam	SM, SC	A-6
		sandy-clay loam	CL, ML	-
Crockett and Burleson	D	fine sandy loam	SM, CL[3]	A-2, A-4, A-6[3]
		clay	ML, SC	-
		silty clay	CH, MH	A-7-5, A-7-6

Sources:
1. Soil Survey of Anderson County, U.S. Department of Agriculture, Soil Conservation Service, November, 1975. page 70.
2. Soil Survey of Nacogdoches County, U.S. Department of Agriculture, Soil Conservation Service, February, 1980. page 132.
3. Soil - 5, Soil Interpretation Sheet, National Cooperative Soil Survey, U.S.A., March, 1968 and July, 1973. page 3.

Terms:
1. Limitations are classified into slight, moderate, and severe according to the ability of one to surmount the difficulty.
2. Percs slowly: means water moves through the soil too slowly.
3. Permeability: refers to the quality of the soil that enables water to move downward.[6]
4. Shrink-swell: the soil quality that causes it to expand significantly when wet and to shrink when drying.
5. Too clayey: means that the soil is slippery and sticky when wet and that it is slow to dry.
6. Wetness: means that the soil retains water.

TABLE 2: SOILS AND THEIR POTENTIAL FOR URBANIZATION

Soil Association	Depth from Surface (inches)	Permeability Inches Per Hour	Shrink-Swell Potential	Septic Tank Suitability	Community Development		
					Sanitary Landfills	Dwellings	Local Roads and Streets
Sacul	0-8[1] 8-58 58-82	0.63 - 2.0[1] 0.06 - 0.2	Low High	Severe, Percs Slowly	Severe to Clayey	Severe Shrink-Swell	Severe Shrink-Swell
Manatachie	0-60[2]	0.6 - 2.0[2]	Low[2]	Severe[4] Wetness Floods	Severe[4] Wetness Floods	Severe[4] Wetness Floods	Severe[4] Wetness Floods
Crockett Burleson	0-8[3] 8-57 57-73 0-40 40-70	0.6 - 2.0[3] 0.06	Low[3] High	Severe, Percs Slowly	Severe to Clayey	Severe Shrink-Swell	Severe Shrink-Swell

Sources:
1. Soil Survey of Anderson County, U.S. Department of Agriculture, Soil Conservation Service, 1975, p. 70
2. Soil Survey of Nacogdoches County, U.S. Department of Agriculture, Soil Conservation Service, 1980, p. 132
3. Soil-5, Soil Interpretation Sheet, National Cooperative Soil Survey, U.S.A., March 1968 and July 1973, p. 3
4. General Soil Map, Houston County, U.S. Department of Agriculture, Soil Conservation Service, 1974.

Physiography

Topography

The topography of the planning area is varied, ranging from very hilly to flat. In the region northwest to northeast of the center of Crockett the terrain is rather hilly. The highest elevation is around 460 feet above sea level. The region southwest to southeast of the center of Crockett is relatively flat. The lowest elevation is around 250 feet above sea level. Map 4 on the following page illustrates the topography and slopes of the region within the planning area.

An analysis of the slopes is shown in Table 3. Slopes of 0 to 3 percent encompass 72 percent of the study area. Slopes of 3 to 9 percent include 19 percent of the planning area. Slopes in excess of 9 percent are contained in 9 percent of the planning area. Urbanization has occured in each of the slope ranges shown in Table 3.

Slopes of 9 percent or more have been designated as areas that are probably unfit for urban development. Three reasons support this designation: Excessive soil erosion is a significant problem in steep areas. Unstable soils on steep slopes lend themselves to landslides. Flood water management is particularly difficult for high relief areas with unstable soils.

The instability of a slope is determined by the characteristics of the soil type in the area. The Sacul association is commonly found on slopes of 9 percent or more. The Sacul association has a slow infiltration rate which produces a high runoff rate. It also has a high shrink-swell potential. If a soil has the ability to retain large amounts of water as the Sacul soils do, the risk of slump or surface movement increases in direct proportion to the steepness of the slope.

Though Crockett has an occasional flooding problem, if development were to take place on slopes of 9 percent or more, the risk of flooding would increase. An increase in flooding can also be caused by the absence of vegetation. The vegetation has an integral part in retarding runoff rates, and the removal of the vegetation will compound the already high runoff potential of the steep slopes.

Water has often determined where cities will develop. Man is dependent on water for transportation, industrial processes, food and for drinking. Water can also have a negative affect on mans' life. The following section discusses watersheds and areas of potential flooding. Crockett's major drinking water source is also discussed in the section.

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North

0 1200 2400 3600

Scale

Map 4

Topography and Slopes

Slopes:

< 3%, 3 - 9%, > 9%

TABLE 3: SLOPE ANALYSIS

Slope	Total Acreage		Developed		Undeveloped	
	Total Acres	% Total Acres	Acres	% Acres	Acres	% Acres
0-3%	6,721.34	72%	850 12.6%	82.28	5,871.34 87.4%	70.72
3-9%	1,773.69	19%	153 8.6%	14.81	1,620.69 91.4%	19.52
9%+	840.16	9%	30 4%	2.91	810.16 96%	9.76
TOTAL	9,335.19	100%	1,033 11.7%	100	8,302.19 88.93%	100

Source: Slope Analysis Map, Department of Urban & Regional Planning, TAMU, October, 1980.

Watersheds and Flooding

The planning area is divided into two major watersheds. The northwest watershed drains into the Trinity River Basin and the southeast watershed drains into the Neches River Basin. These two major watersheds are divided into 25 minor watersheds. The minor watersheds are divided into 150 sub-watersheds. These divisions are illustrated on Map 5 on the following page.

The southeast watershed has a maximum runoff potential of 4,464.72 cubic feet per second. The northwest watershed's maximum runoff potential is 10,425.20 cubic feet per second. The following is a listing of the minor watersheds and their maximum runoff values in cubic feet per second.

A: 349.45	B: 997.94	C: 842.20	D: 696.31
E: 512.16	F: 312.70	G: 328.38	H: 625.38
I: 369.23	J: 307.13	K: 104.02	L: 965.07
M: 1,238.99	N: 650.07	O: 1,706.08	P: 951.64
Q: 925.12	R: 312.36	S: 478.80	T: 196.09
U: 1,095.37	V: 487.39	W: 373.79	X: 217.85
Z: 141			

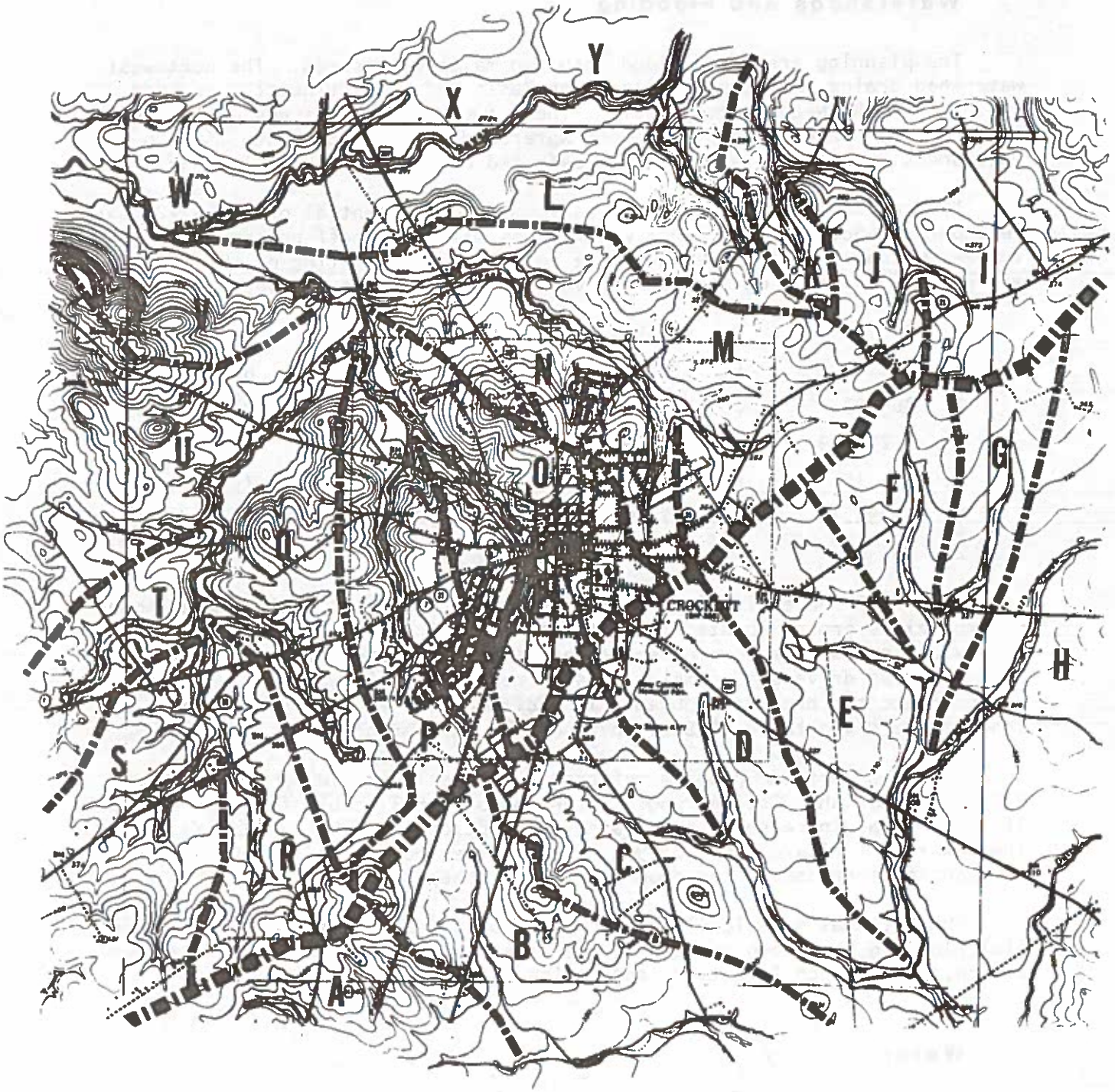
The runoff potential for an area is directly proportional to the amount of impervious ground located in that area. The Crockett planning area has impervious soils. If development takes place the amount of paved surface area, such as driveways, parking lots, streets, and sidewalks will increase and compound the present problem. In addition, these paved areas remove land area and vegetation needed to absorb existing runoff.

An example of the problem referred to above is provided by watershed "D", which has an existing runoff potential of 696.31 cubic feet per second. If there is an increase of paved area by 40 percent in that watershed basin the new runoff figure would be 913.85 cubic feet per second. This is a substantial increase in the amount of water "sheeting" into the basin.

The City has occasional flooding due to intense rains. Areas of potential flooding are shown on Map 5. The creeks most likely to flood are Town Branch, Town Branch Tributary, and Spring Creek.

Water

The City of Crockett's drinking water source is Houston County Lake, located 8 miles northwest of Crockett. The quantity of the water in the Lake is 1,485 acres. The reservoir has a capacity of 20,000 acre feet. The Lake yields seven million gallons of drinking water per day.



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Scale

Map 5

Watersheds & Potential Flooding

Floodplain (100 year)

Major ridge line

Minor ridge line

Houston County Lake has been approved by the Texas Health Department for use as a drinking water supply. Dissolved solids in the Lake constitute 91 miligrams per liter. The PH is 6.5 to 6.8 and heavy metals are materially undetectable.

Climate

The climate of Crockett is subtropical with mild winters and hot humid summers. The warm moist tropical air which flows northward from the Gulf of Mexico dominates the climate of the area almost completely during the spring, summer and fall. In winter, the frequent invasion of polar air masses gives the area a continental climate.

Temperature

During the winter and early spring months, cold spells are of short duration, rarely lasting longer than 48 to 72 hours. The temperature drops to 32° Fahrenhite or below, only about one night in two, during January. Snowfalls are rare and insignificant as a source of moisture. The highest average daily maximum temperature occurs in August at 95.2° Fahrenhite.

Mean annual relative humidity is 84 percent at 6:00 AM, 58 percent at noon and 60 percent at 6:00 PM. Prevailing winds are southerly nine months of the year - February through October. The average date of the last freeze in the spring is March 6. The average date of the first freeze in the fall is November 26.[9]

Rainfall

Rainfall is plentiful and fairly evenly distibuted throughout the year except for a relatively dry period in mid-summer. The average annual rainfall is 43.15 inches. High intensity rains of short duration may occur at almost any time during the year but are most likely to occur in late spring or early fall.[10]

Vegetation

The soil types of the planning area are able to support a variety of vegetation. Native plants supported in the area include:

Loblolly Pine, Short-Leaf Pine, Water Oak, Bahigrass, Bermuda Grass, Indian Grass, Little Bluestem, Sprawling Panicium, Long Leaf Uniola, and Pine Hill Bluestem.

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Map 6

Ecosystem

Woodland Upland
Grassland Upland
Cropland
Developed
Woodland Lowland
Grassland Lowland

Generally, the planning area is not suitable for cultivated crops because of the very strong acid and clayey subsoil. Only the Crockett - Burleson soils are suited to small grain crops such as peas and vetch. Vegetables suited to the planning area as recommended by the Texas Agricultural Extension Service include the following:

> Asparagus, Beans, Beets, Brocoli, Brussel Sprouts, Cabbage, Carrots, Cauliflower, Cucumber, Eggplant, Garlic, Lettuce, Muskmellon, Mustard, Okra, Onion, Parsley, Peas, Pepper, Pumpkin, Radish, Spinich, Squash, Tomato, Turnip, and Watermelon.

Landscaping plant materials recommended by the Extension Service include the following:

> River Birch, Anaqua, Chinese Parasol, Sweetgum, Tulip Poplar, Southern Magnolia, Bradford Flower Pear, Chinese Tallow, Dogwood, Fringetree Mayhaw, American Holly, Possumbow Holly, Japanese Magnolia, Crabapple, Manzinilla Olive, Jerusalem Thorn, Mesquite, Mexican Plum, Flowering Peach, and California Buckhorn.

Vegetation is shown on Map 6.

Sources:
1. Foundation of Engineering, BOCA, 1968, page 362.
2. Detwyler, Thomas R. and Morans, Melvin G., Urbanization and Environment, Belmont, California, Roxbury Press, 1972, page 135.
3. Soil Survey of Nacogdoches County, U.S. Department of Agriculture, Soil Conservation Service, Forest Service and the Texas Agricultural Experiment Station, February, 1980, page 80.
4. Ibid. page 83.
5. Detwiler and Morans, pages 153 and 154.
6. Soil Survey of Nacogdoches County, page 84.
7. Climatological Summary Sheet, U.S. Department of Commerce, Environmental Science Service Administration.
8. Ibid.
9. Ibid.

The Built Environment

THE BUILT ENVIRONMENT

Existing Land Use

Introduction

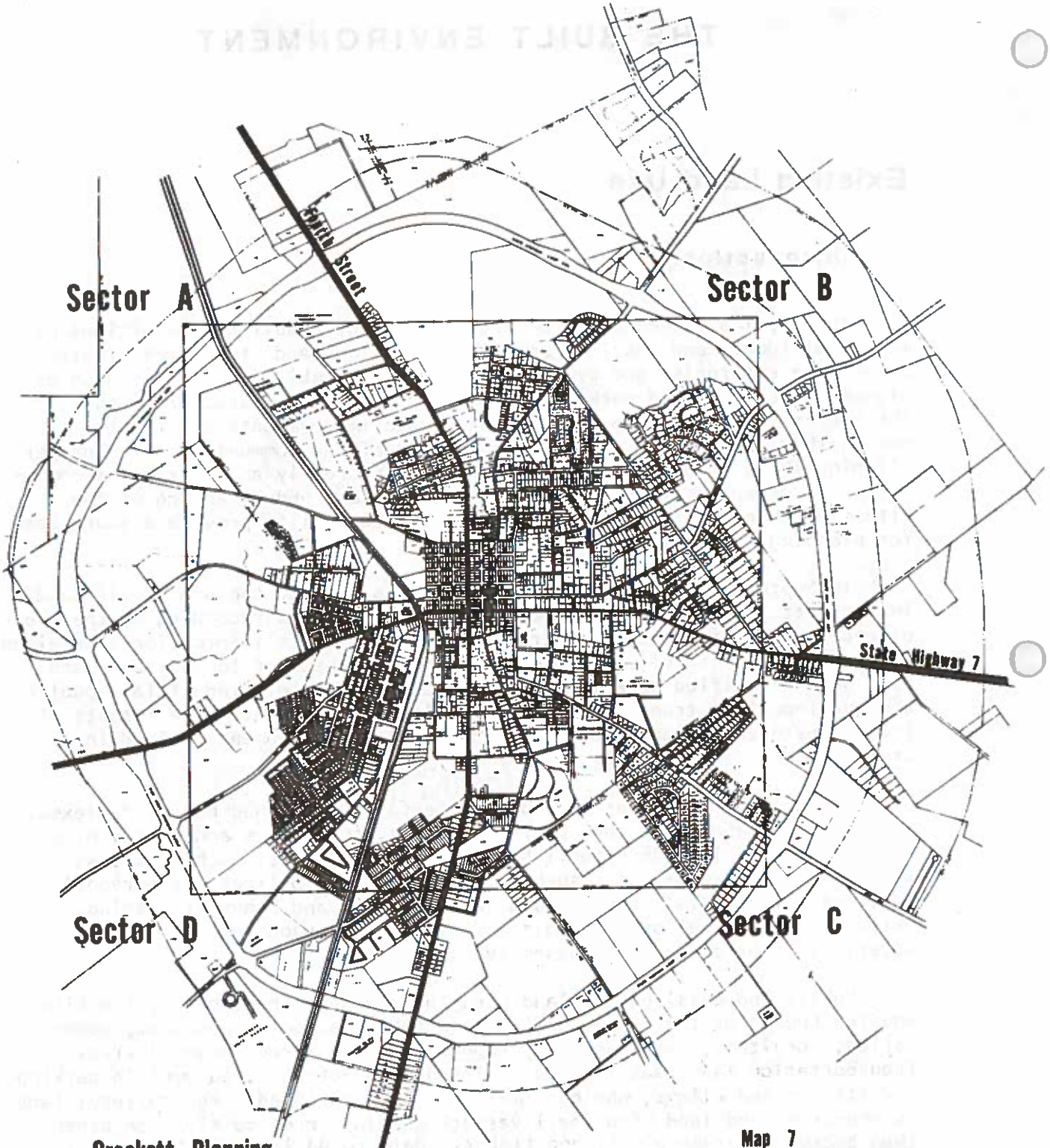
The physical development of Crockett is the result of the actions of many individuals and institutions. The buildings and structures created by private enterprise and by the development of public facilities such as highways, schools, and park areas create the present character of the City. The manner in which these public and private improvements are related to one another really determines the character of the community. With proper planning these relationships can result in an orderly and attractive community. In order to promote orderly growth, a good understanding of the City's existing pattern of development is essential to provide a sound base for planning the City's future development.

In September of 1980, a field survey was made of the use of all land in Crockett. The survey involved the examination and recording of the use of each parcel of property in Crockett, and from this information a detailed land use map of the city was prepared. For purposes of the survey, land uses were classified as either residential, commercial, industrial, public and quasi-public, transportation, agricultural or vacant. The results of the survey give a clear picture of the present development of land in Crockett.

Residential land uses include single-family detached homes, duplexes, mobile homes, apartments and boarding houses, townhouses and condominiums. Commercial uses include establishments such as garages, machine shops, warehouses, and retail uses such as stores, shops, offices and personal services. Industrial uses of land include light and heavy processing, extraction of gravel and minerals, storage of hazardous or flammable materials, fabricating, and assembly.

Public and quasi-public land uses include anything owned by the City, Houston County or the State, and include public schools, churches, cemetaries, hospitals, parks and playgrounds, and other recreational areas. Transportation land uses include railroad right-of-ways, automobile parking, and streets and alleys, whether open for use or closed. Agricultural land is non-urbanized land used for livestock grazing, crop cultivation other than backyard garden plots, and timber. Unimproved land which is not in urban or agricultural use is classified as vacant.

To aid in the gathering and analysis of the land use information, the city was divided into four sections. These planning sectors coincide with



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Map 7

Planning Sectors

the Enumeration Districts used in the 1980 Census of the Population, which divide the city into four roughly equal sections. Map 7 on the preceding page shows the sectors and they are easily identified since the city's major arterial thoroughfares serve as the sector boundaries. Fourth Street divides the city into east and west, and Goliad Avenue divides the city into north and south.

Patterns of Development

Generally, Crockett has a radial pattern of development, characterized by the gridiron street layout of the central business district and the surrounding residential areas, and the convergence of the major streets and highways within the city center. Three factors which have a major influence on the city's land use are the topographic constraints to development, transportation, and activity nodes.

Topographic Constraints

Crockett is located on gently rolling, thickly vegetated terrain, with one soil type predominant in the area. Topographic features which are restrictive to development are the flood plains of creeks and draws in and around the city, and areas of excessive slopes.

Most of the city's development is on land with slopes of less than 9%. Although areas with slopes in excess of 9% may not be totally ideal for all types of development, considerable development is located in areas with a slope range of 9% to 15%. The only area near Crockett where excessive slopes would hinder development is in the Rocky Mount area, west of the city.

Flood plain areas also hinder development, due to the hazard posed by high water during periods of rainfall. Accordingly, development within flood plain areas in Crockett is to be discouraged. No major rivers flow near the city, but several small creeks serve as tributaries to Hurricane Bayou, which runs north of the city. Although these creeks have only intermittant flow, they serve as drainage routes for the city and can rise to dangerous levels during periods of intense rainfall. However, most of Crockett has developed away from these flood plain areas, which are located in the hills of the northern part of the city.

Transportation

Crockett's transportation system is another major influencing factor in dictating the land use patterns of the city. The farm to market and state highways that serve Crockett become major thoroughfares once inside the city limits, and converge to the city center. In Crockett, as in many

American cities, commercial development tends to extend from the city center along these thoroughfares in the form of strip development, as is the case along Fourth Street between Goliad Avenue and Loop 304. Typically the higher the street classification, the higher the land use intensity will be along those streets, and corresponding property values will be higher. The property values, high traffic volumes and noise along these streets generally make them more acceptable to commercial development and tend to discourage residential development, which has traditionally occured along smaller residential streets.

Activity Centers

Two activity centers that have a major impact on their surrounding land uses and the development patterns of the city are the city center and the Eastgate Shopping Center area east of the city on Loop 304. Much of the city's recent residential development, such as the Rolling Acres Addition, Sweet Gum Valley, and Thomasson Acres, in conveniently located between these two activity centers. The city center is convenient to all parts of the city due to its centralized location, although the Eastgate Shopping Center is particularly convenient to the nearby residential developments. If residential development continues in the eastern portions of the city, this activity center will become even more important, which may prompt retail establishments to expand or relocate their businesses to this area.

Another important activity center, but with less impact on Crockett's development pattern, is located on Loop 304 between San Antonio Road and Fourth Street. This area has a mixture of educational, commercial and industrial uses. This area is within easy driving distance of the city center and Eastgate Shopping Center and is close to the High School and Junior High School. However, the area is not as attractive for residential development as the city's eastern sectors due to the presence of industrial activity and the railroad.

Figure 2, on the following page, depicts the amount of land devoted to each category of land use in Crockett. The dominance of residential and transportation land use is evident. Figure 3 on page 29, gives a comparison between the city's land use distribution and that of an "average" city, which can be defined as a city which performs the major social and economic functions of an area, similar to Crockett's position as county seat and major commercial center. Crockett compares favorably to the "average" city in the amount of land devoted to residential, public, and transportation uses, but is deficient in the amount of land devoted to parks. Crockett has an unusually high percentage of land in commercial activity, over three times as much as an "average" city. The city's land use categories will be dealt with in greater detail in this section of the Document.

REDO

FIGURE 2: Existing Land Use

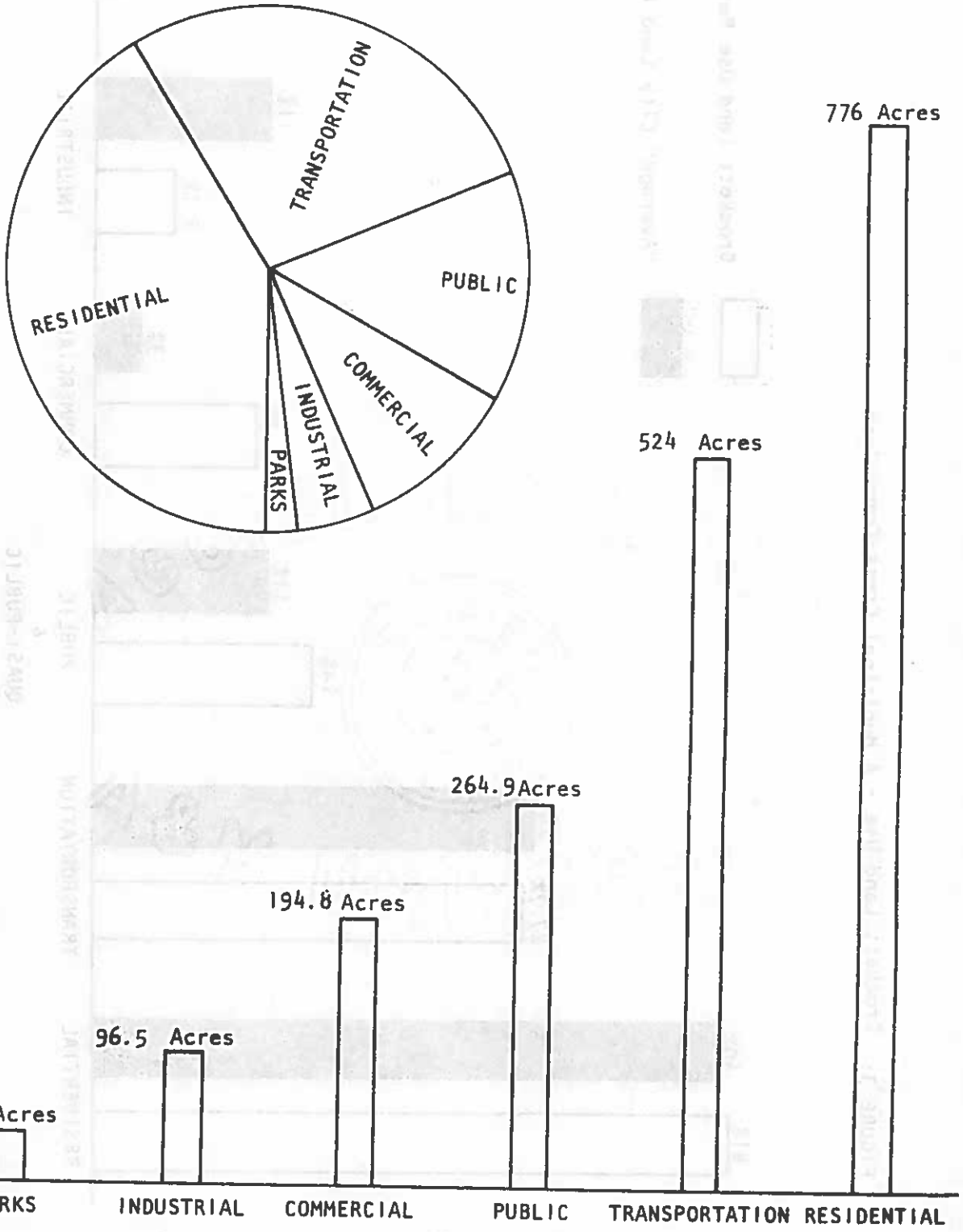
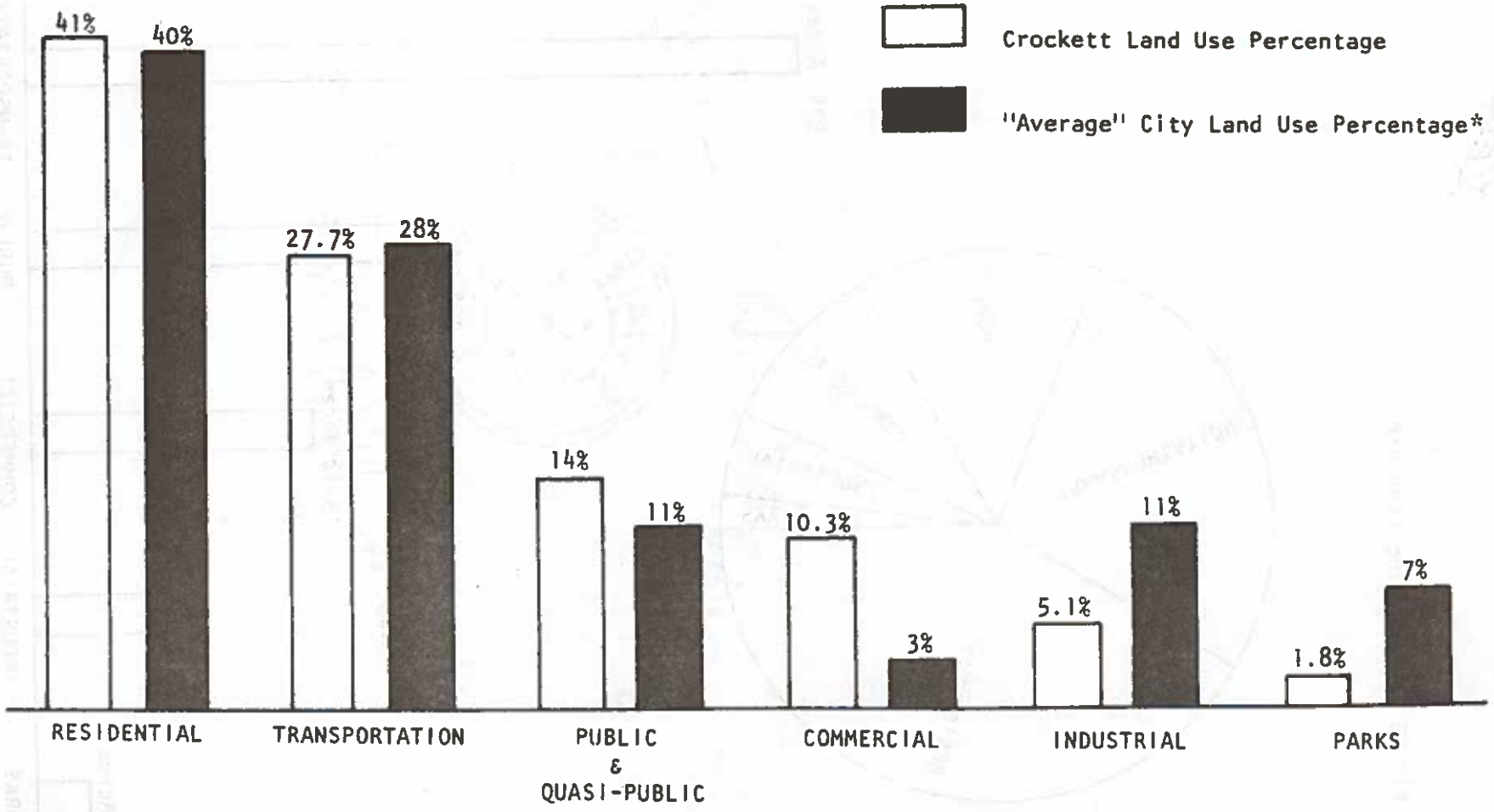


FIGURE 3: Crockett Land Use - A Municipal Cross-Comparison



*Source: Gallion, Arthur B., and Eisner, Simon., The Urban Pattern, Princeton, New Jersey, D. Van Nostrand Company, Inc., 2nd ed., 1963, page 210.

REDO

Agricultural Land Use

Of the 4,732 acres of land within Crockett's city limits, 1,419.6 acres, or 30% of the city's total area, is in agricultural use. The land in this category is situated predominantly on the outer edges of the city. Grazing, crop cultivation, and timber are the major land uses on Loop 304, which surrounds the city. Some agriculture has given way to commercial development in the eastern and southwestern fringes of the city. Outside of the loop and beyond the city limits the predominant land use remains agriculture.

Residential Land Use

As is typical of most cities, residential development is a major use of land within Crockett, with a substantial percentage of this development in single-family units. Of the city's total area, 16.3% or 776 acres, is used for residential purposes, with 41% of the city's developed area in residential land use. A total of 737.2 acres are used for single-family dwellings, with 38.8 acres devoted to duplexes and 0.3 acres used for apartments.

Single-family units represent 95% of the residential uses of land within Crockett. Duplex units and apartments account for the remaining 5%. The high percentage of single-family dwellings in Crockett is not unusual, and compares favorably with other cities of Crockett's size. Duplexes are mostly concentrated in the public housing projects in north and south Crockett. Apartment complexes are usually not found in abundance in small towns without a college or university, and this is certainly true in Crockett's case. With only 13 structures in this category the city's apartment category is almost negligible.

Crockett's overall residential density is not unusually high. However, in the city's southwest sector, small lots typically 40 feet by 120 feet (0.11 acres) in size coupled with the rectangular grid pattern of streets results in a high density pattern. The southwest sector is characterized by blocks that are typically 260 feet square (1.55 acres) in size, often divided into eight to ten lots.

Development density is lowest in the eastern sectors of the city. The neighborhoods are characterized by large blocks divided into several large lots. With the exception of the public housing project on Dodson Drive and the Quail Trail Mobile Home Park, residential land use in this area is predominantly single-family. Several residential blocks are as large as 410 feet by 600 feet (1 acre) near the city center to 110 feet by 125 feet (0.32 acre) in the newer subdivisions such as Rolling Acres and Treyswood Manor. As a result, 70% of the city's residential acreage is located east of Fourth Street in sectors B and C. The eastern sectors remain attractive for residential development not only because of the low density, but also because of convenience to both the city center and the Eastgate Shopping area, churches, and the city's schools.

The Condition of Crockett's Housing

Of the nearly 2,400 residential structures in Crockett, 6% are severely deteriorating or substandard. Severely deteriorating structures are defined as having one or more major structural deficiency or lacking one or more basic facility. Such units are usually unfit for human occupancy. A substandard dwelling is one which is without basic facilities, or has a major or minor deficiencies in such number and to such an extent that the dwelling is considered unfit for human habitation. A substandard unit is probably beyond economic repair or improvement to a minimal desirable standard for health and safety.

The worst housing conditions are found in Crockett's southwest quadrant. One-third of the housing in this sector is deteriorating, with nearly 19% of the sector's dwellings either severely deteriorated or unfit for human habitation. The sector's housing situation is made more difficult by factors such as incompatible land uses, abandoned properties, blocks covered by weeds and junk, and the absence of community facilities such as neighborhood parks, which all add materially to the image of the sector as the city's most severely blighted quadrant and undermines the quality of life one can expect to enjoy there.

By comparison, in the city's eastern quadrants, sectors B and C, 98% of the structures are in a sound condition or in need of only minor cosmetic repairs, with a mere 2% of the dwellings in a severely deteriorated condition. The quality of housing in these two areas is indicative of the fact that much of the housing is relatively new. Home maintenance is obviously strengthened in these two quadrants because the primary residential and business growth pattern for the city is concentrated here. The residents of these sectors apparently feel confident of their investment in their homes and neighborhoods. Crockett's northwest quadrant, Sector A, is composed of older neighborhoods as is represented by the fact that over one-third of the sector's housing is in a deteriorating condition.

Commercial Land Use

Commercial development in Crockett occupies 194.8 acres, and accounts for 10.3% of the city's developed area. This represents an unusually high percentage relative to the "average" city of Crockett's size. An average city has about 3 to 4% of its developed land devoted to commercial activity. Crockett's high percentage of acreage in commercial use may be attributed to its position as the major commercial center for Houston County, and the large tracts of land occupied by some of the city's commercial establishments such as KIVY radio, Big H Mobile Home Sales, and the Eastgate Shopping Center. Nevertheless, Crockett has a very high percentage of its developed acreage devoted to commercial use. Crockett's commercial development is characterized by three major patterns: the city center, strip commercial development, and complexes located along Loop 304.

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North

0 600 1200 2000
Scale

Map 8a

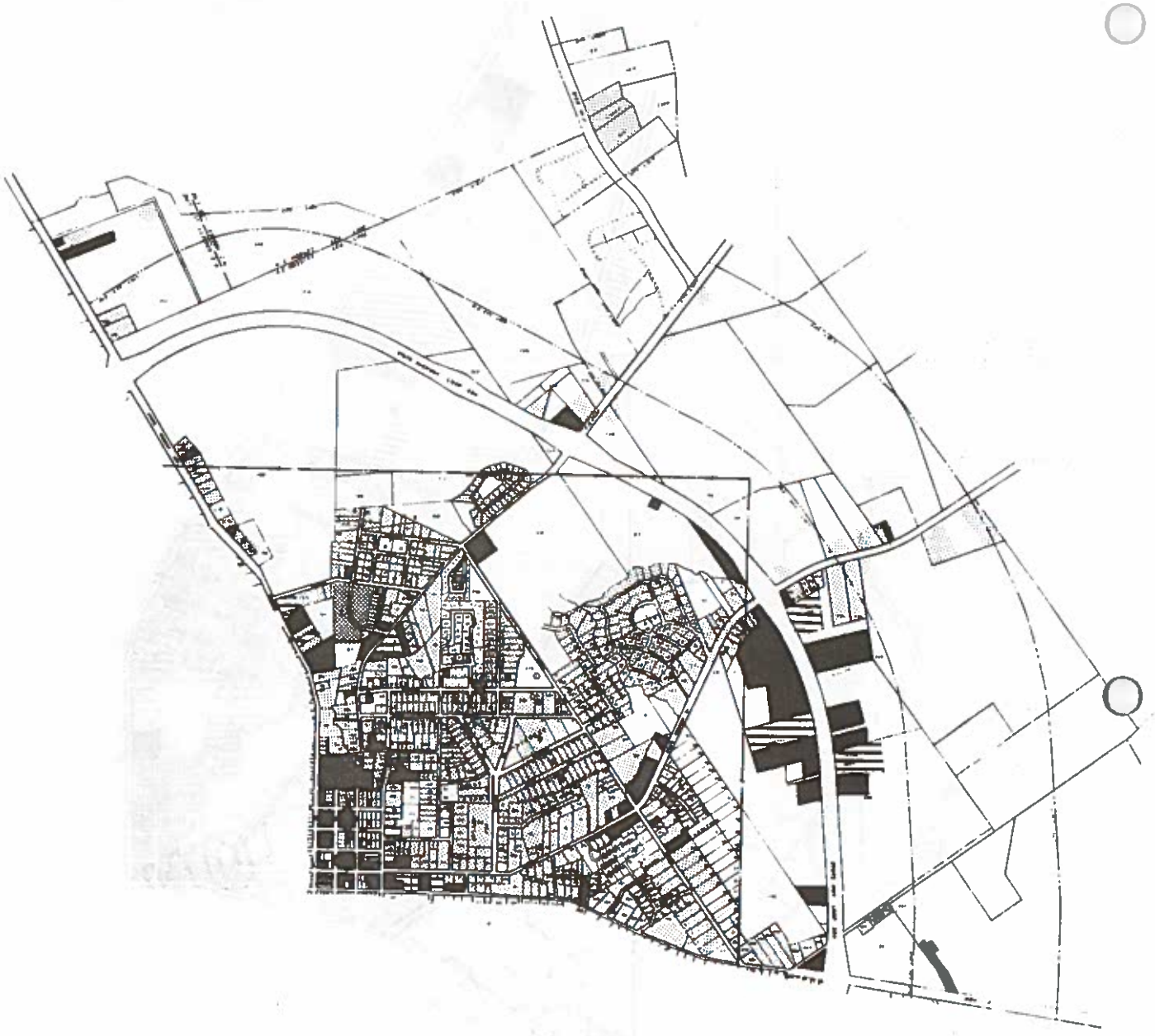
Existing Land Use: A

Single Family

Public & Quasi-Public

Industrial

Commercial



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North

0 600 1200 2000
Scale

Map 8b

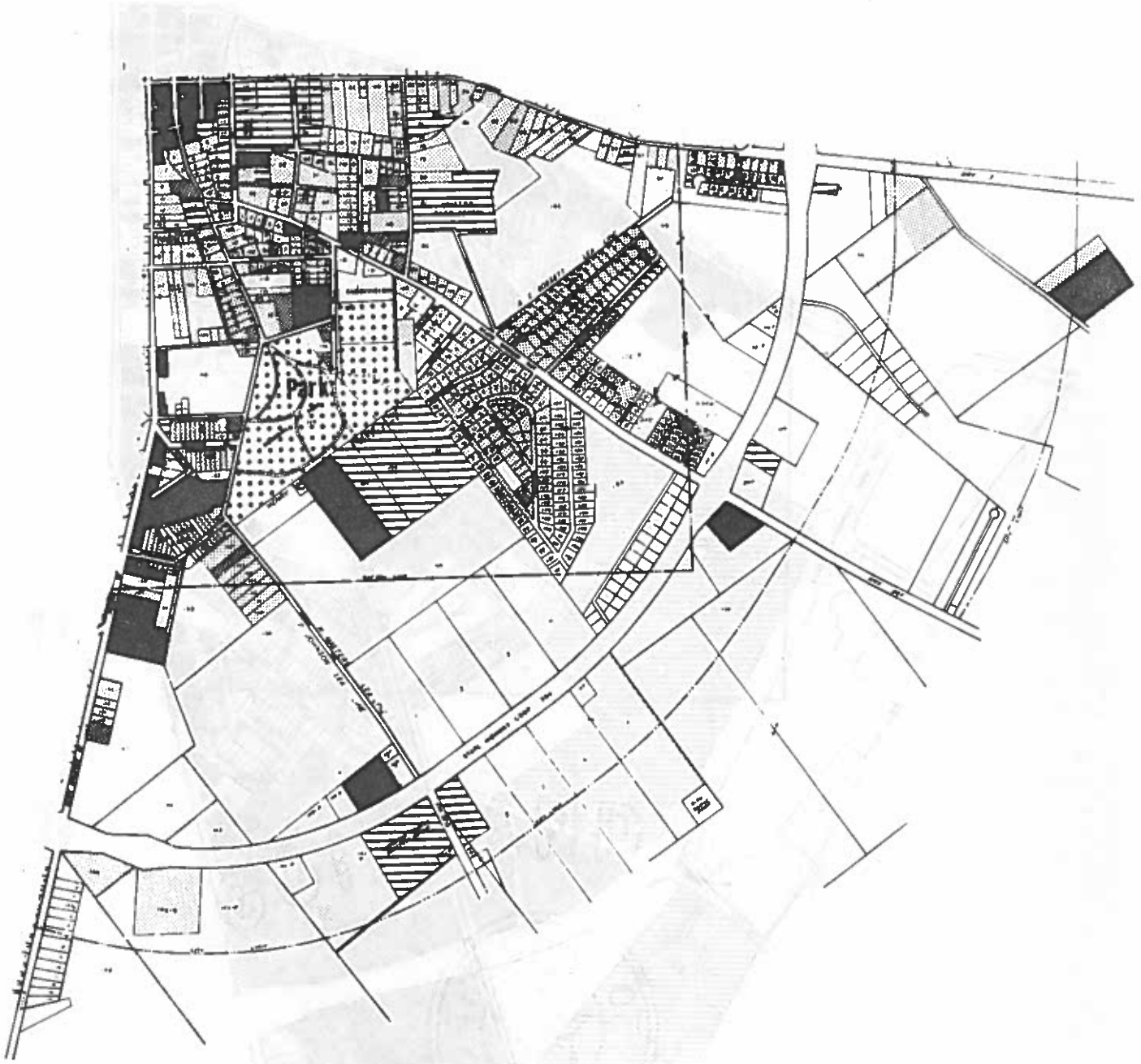
Existing Land Use: B

Single Family

Duplex

Public & Quasi-Public

Commerci



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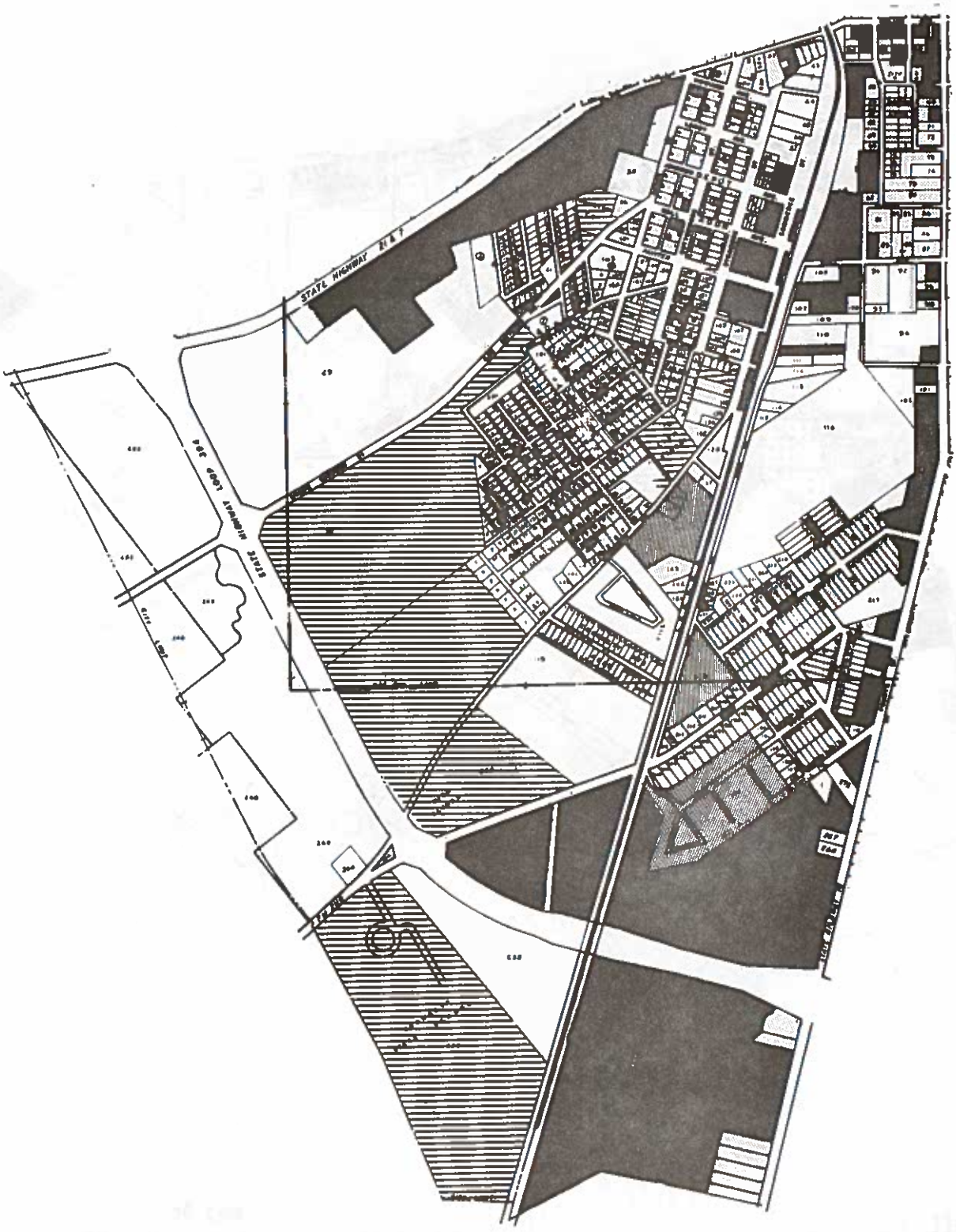
North

0 600 1200 2000
Scale

Map 8c

Existing Land Use: C

Single Family
Duplex
Indust
Public & Quasi-Public
Commerc



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North

0 600 1200 2000
Scale

Map 8d

Existing Land Use: D

Single Family
Duplex
Industrial
Public & Quasi-Public
Commercial

The city center is the hub of Crockett's commercial and governmental activities. The downtown area was platted on a rigid grid pattern as a part of the original city lots. The focal point of the city center is the Houston County Courthouse square, an arrangement typical of many small Texas towns. In addition to the Courthouse, other government and public buildings located in the city center include the post office, city hall, the fire station and the public library. The commercial buildings in the city center are primarily retail outlets, financial institutions and professional offices.

Due to its centralized location, the city center is accessible to all parts of the city. The wide variety of services offered in such a compact area make the city center an attractive place to shop, as long as adequate parking and uncongested traffic flow make it convenient to the shoppers. An economically viable city center is important to Crockett, not only for the revenue generated but also for the tax base it represents.

Apart from the city center, commercial development in cities is often in the form of strip development along major streets. Strip development is geared to the automobile, and unlike the city center, the length of pedestrian travel usually is excessive between different types of shops and stores. Crockett is no exception to this rule. Strip development is prevelant along Fourth Street south of Bell Avenue, and along Goliad Avenue, west of the railroad. Less intense strip development is located on Fourth Street north of the city center, and on Houston Street near the Grace Street intersection. In Crockett, strip commercial development is dominated by truck and car maintenance shops, restaurants, food stores, and agriculturally related establishments.

Commercial development on Loop 304 is concentrated primarily between State Highway 21 and Goliad Avenue on the eastern fringe of the city, and between Huntsville Road and State Highway 19 on the southwestern edge of the city. Due to their distance from the city's residential areas, these commercial centers are accessible only by car.

The area between State Highway 21 and Goliad Avenue is dominated by health facilities and automobile related establishments. The city's largest planned shopping center, Eastgate Shopping Center, is located here, and is especially convenient to the residential areas in eastern Crockett. The commercial uses on the Loop between Huntsville Road and State Highway 19 are primarily related to automobile sales and service, in addition to some warehouse and office uses.

Industrial Land Use

Industrial activities in Crockett cover 96.5 acres of land, accounting for 5.1% of the city's developed land area. Crockett's industrial activity includes concrete batch plants, cotton gins, storage facilities for oil and other flammable materials, and light assembly and manufacturing plants.

REDO

These activities are located primarily in a corridor adjacent to the railroad in the Commercial Street area in the central part of the city, and on Loop 304 between the railroad and State Highway 19. Other industrial activities are scattered throughout the city.

Their proximity to the railroad or a major highway provides these industries with excellent access to the major transportation modes, which bring in raw materials, and provides a means of moving the finished product from plant to market.

Public and Quasi-Public Land Use

Crockett's 111 acres of public and quasi-public land are scattered throughout the city. The municipal buildings, such as the public library, city hall, and the fire station, are located in the city center. Sam Houston Elementary School and the Davy Crockett Intermediate School are conveniently located in the center of the city's east side residential area. The High School and Junior High School occupy a large tract of land at the intersection of Loop 304 and FM Road 2110, across from the Crockett State School.

The major health facilities serving the city are the Houston County Hospital and two privately owned convalescent homes, all located on Loop 304 near the Eastgate Shopping Center.

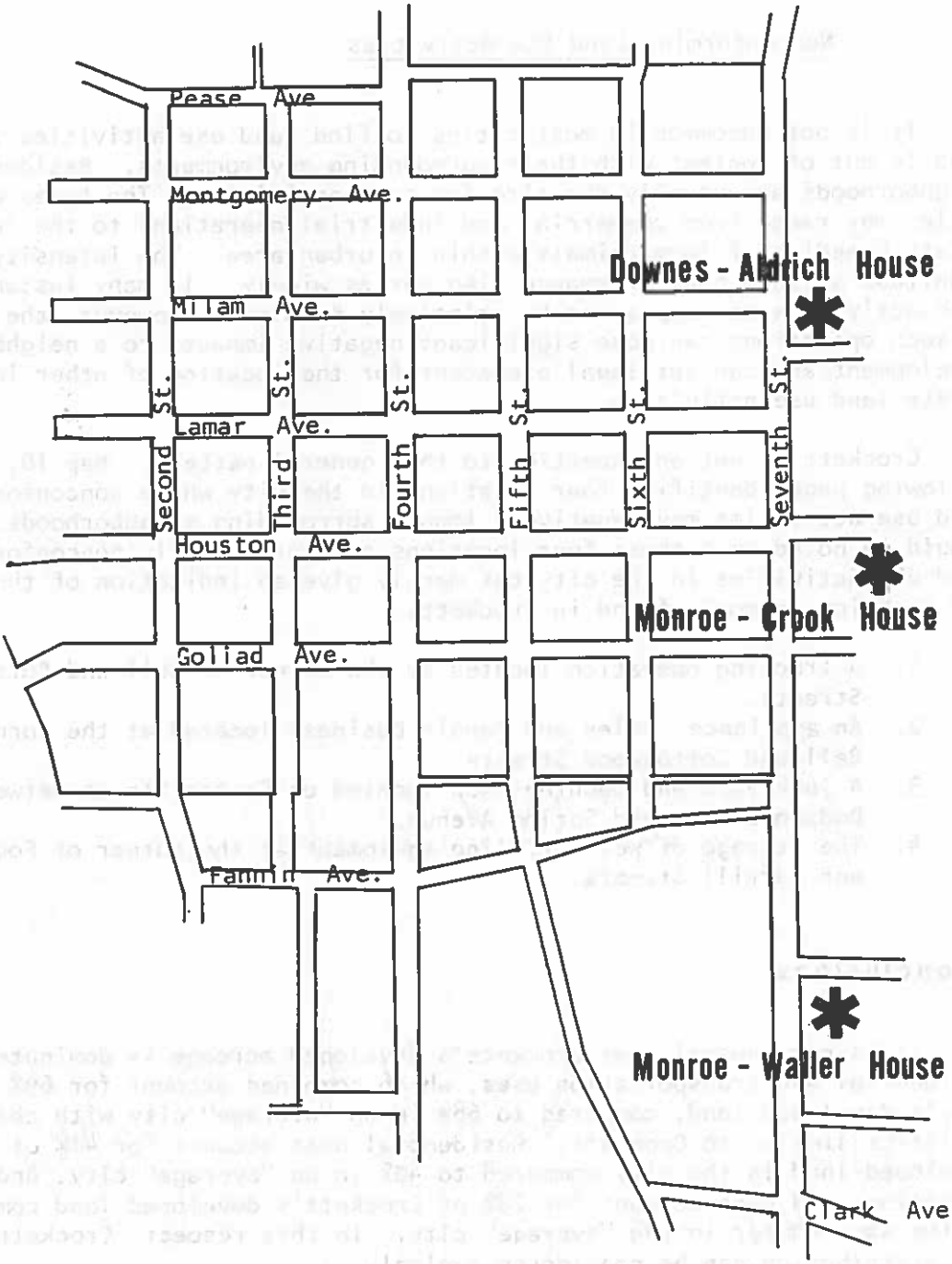
The city is void of neighborhood parks. Memorial Park is the city's only major planned park and open space area, with its 35 acres accounting for only 1.8% of the city's developed area, well below the 7% of developed land area devoted to parks in other cities of Crockett's size. Undeveloped and agricultural acreage within the Loop is the other major source of open space within Crockett. Churches in the city are scattered throughout the urban area and are generally located in residential neighborhoods.

The cemeteries maintenance yard, and sewer and water treatment plants for Crockett are located in the northwest sector, and are generally confined to the areas between the railroad and Fourth Street, north of Goliad Avenue.

Historical Sites and Cultural Resources

The Texas Historical Commission is the administrator of the state program which provides official recognition of buildings or sites which have made a significant contribution to the history of Texas. Crockett has four buildings recognized by the Texas Historical Markers Program. They are shown on Map 9, on the following page, and may be identified as follows:

1. The Monroe - Crook House located at 707 East Houston Avenue.
2. The Monroe - Waller House located at the corner of South Seventh and Clark Streets.



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North

0 600 1200 2000
Scale

Map 9

Historic Sites & Cultural Resources

3. The Downes - Aldrich House located at 206 North Seventh Street.
4. The Allied First National Bank located at 415 East Goliad.

Nonconforming Land Use Activities

It is not uncommon in most cities to find land use activities that are clearly out of context with their surrounding environments. Residential neighborhoods are usually the site for such activities. The types of activities may range from commercial and industrial operations to the inappropriate breeding of farm animals within an urban area. The intensity or magnitude of such nonconformance also varies widely. In many instances, such activities may appear to be relatively harmless. However, the expansion of such operations can pose significant negative impacts to a neighborhood's development and can set legal precedent for the location of other inappropriate land use activities.

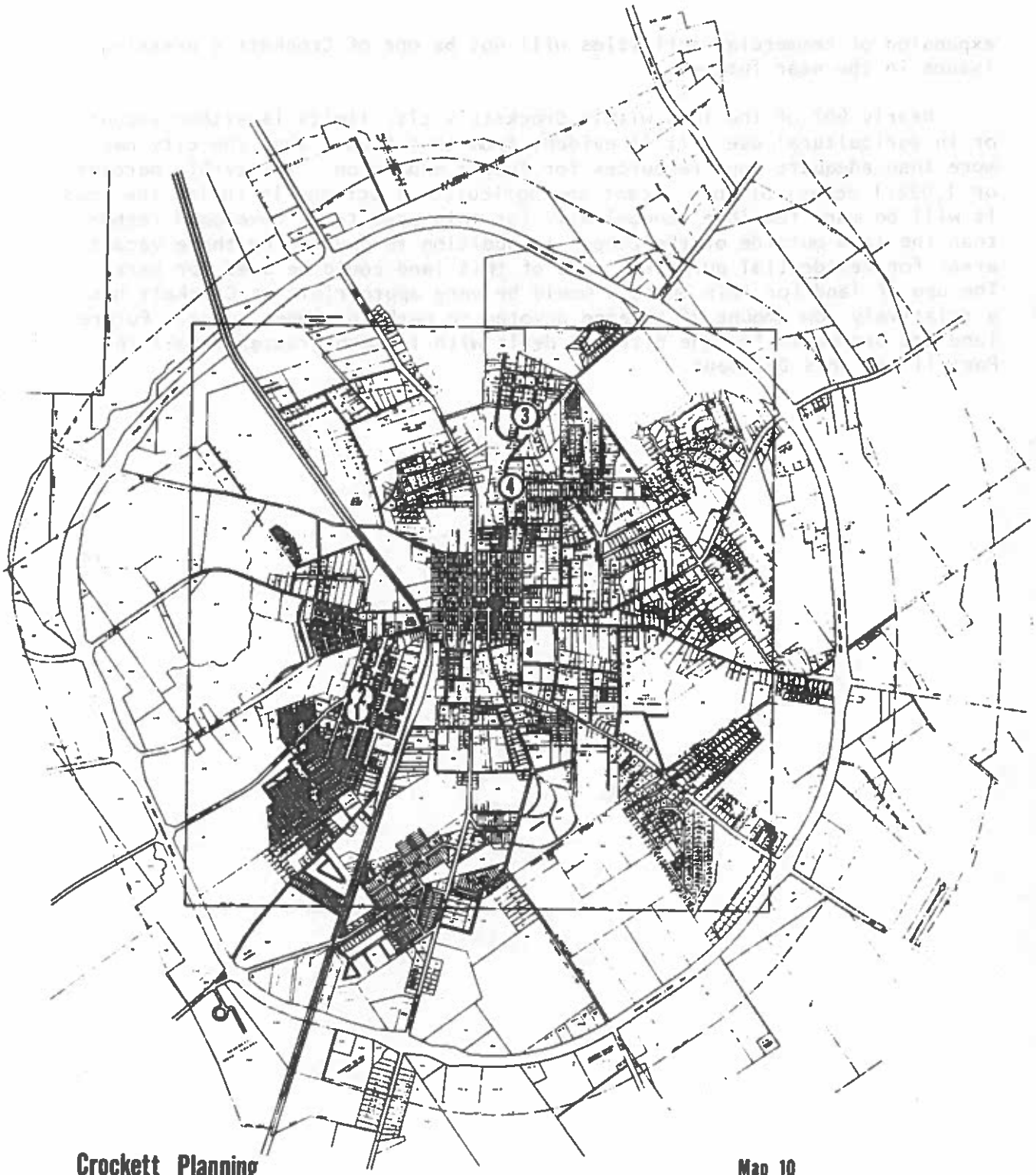
Crockett is not an exception to this general pattern. Map 10, on the following page identifies four locations in the city where nonconforming land use activities may negatively impact surrounding neighborhoods. It should be noted that these four locations are not the only nonconforming land use activities in the city but merely give an indication of the type and location commonly found in Crockett.

1. A trucking operation located at the corner of Bell and Cottonwood Streets.
2. An appliance sales and repair business located at the corner of Bell and Cottonwood Streets.
3. A junk yard and machine shop located on Foster Street between Dodson Street and Spring Avenue.
4. The storage of well drilling equipment at the corner of Fourth and Terrill Streets.

Conclusions

It is not unusual that Crockett's developed acreage is dominated by residential and transportation uses, which combined account for 69% of the city's developed land, compared to 68% in an "average" city with characteristics similar to Crockett. Residential uses account for 41% of the developed land in the city compared to 40% in an "average" city, and transportation land uses account for 28% of Crockett's developed land compared to the same number in the "average" city. In this respect, Crockett's land use distribution can be considered typical.

However, the city has an unusually high percentage of land devoted to commercial uses. Typically a city has between 3 and 4% of its developed land in commercial use, but Crockett has over 10% of its developed land devoted to commercial activities. As a result, setting aside land for



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0 600 1200 2000
Scale

Map 10

Nonconforming Land Use

Note: see text for descriptions

expansion of commercial activities will not be one of Crockett's pressing issues in the near future.

Nearly 60% of the land within Crockett's city limits is either vacant or in agricultural use. It is evident from this figure that the city has more than adequate land resources for future expansion. Thirty-Six percent or 1,022.1 acres, of this vacant and agricultural acreage is inside the Loop. It will be more feasible economically for this area to be developed rather than the land outside of the Loop. In addition to developing these vacant areas for residential purposes, some of this land could be used for parks. The use of land for this purpose would be very appropriate as Crockett has a relatively low amount of acreage devoted to parks and open space. Future land use proposals for the city are dealt with in much greater detail in Part II, of this Document.

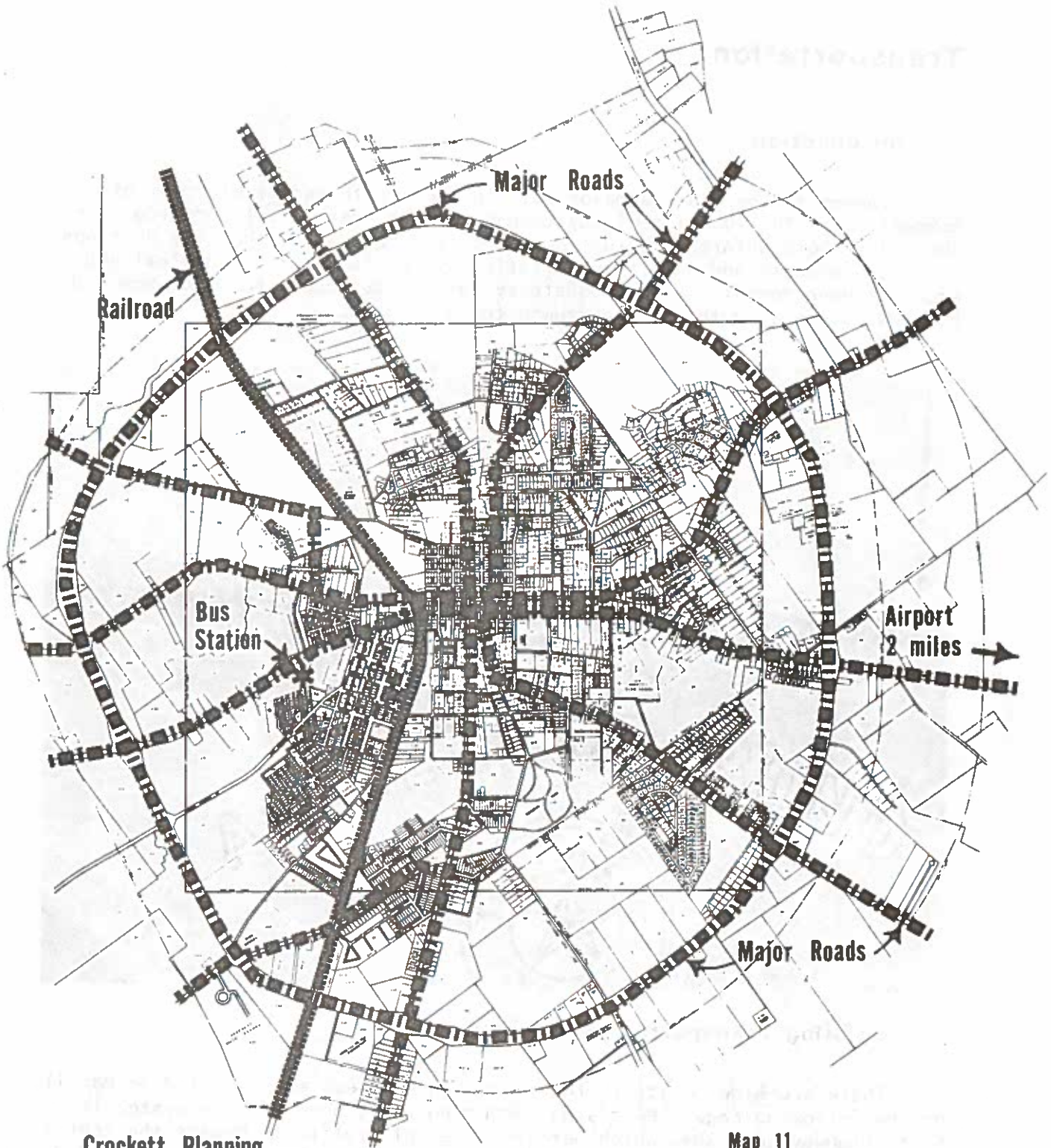
Transportation

Introduction

Transportation plays a major role in the growth and development of communities. The function of any transportation system is to provide access. The major thoroughfares provide the foundation upon which the city develops. Thus, an adequate and safe transportation system is vital to physical and economic development. An inadequate system limits access to land uses and businesses, causing the city's growth to be stunted.

Existing Transportation Systems

There are eight major thoroughfares in Crockett as exhibited on Map 11, on the following page. Most significant to the transportation system is State Highway Loop 304, which permits external traffic to bypass the central city. The major east-west arterial for the city is State Highway 21 and 7, which becomes Goliad Avenue. Fourth Street (S.H. 19) is the major north-



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Map 11

The Transportation System

south arterial for the city. The function of primary arterials such as these, should be to provide for movement of vehicles. Access to such arterials from minor streets is a secondary function. In the case of Fourth Street and Goliad Avenue, there are numerous intersecting curb cuts (driveways and streets), which disrupt the flow of traffic.

The secondary arterials within Crockett include; Navarro Street (F.M. 229), Durrett, Houston Street (S.H. 21), 6th Street (F.M. 2022), Huntsville Road (F.M. 2110), and Bowie Avenue (S.H. 287). Their primary function is also to provide access, but they provide more access than do primary arterials. These secondary and primary arterials provide the foundation of the Crockett transportation system. Other major features of Crockett's transportation system are the Missouri Pacific Rail Line and the Houston County Airport which will be discussed in greater detail in a later part of this section.

Description of the Existing Thoroughfare System

Street Inventory

In order to obtain an overview of Crockett's entire street system, a windshield survey was undertaken in October of 1980. Resulting from the survey were an inventory of the traffic signals in Crockett and a street inventory. These results are shown in Map 12 and Table 4.

Map 12 shows the seven intersections having traffic signals within Crockett. Traffic signals should be installed only where warranted by standards such as those found in the Manual on Uniform Traffic Control Devices. In the 1975 study done by Traffic Engineers Incorporated, four of the seven intersections now having signals did not warrant signalization. These intersections are:

1. Seventh Street at Goliad
2. Seventh Street at Houston
3. Sixth Street at Goliad
4. Sixth Street at Houston

Signalization where it is unwarranted can increase congestion and cause safety hazards. Therefore, it is suggested that the city reevalute the location of traffic signals in Crockett to ensure that they are necessary.

The street inventory was done to ascertain three things:

1. Streets with curb and gutter
2. Street widths
3. Street conditions

Curbs and gutters were included in the inventory because they are important

to the provision of an adequate drainage system. Pavement widths were studied in order to determine which streets need to be widened in order to meet the typical street cross section standards shown in Figure 4. Street conditions were surveyed in order to determine which streets required repairs and how extensive those repairs would need to be. The street inventory has utilized Crockett's planning sectors described in the previous section of this document.

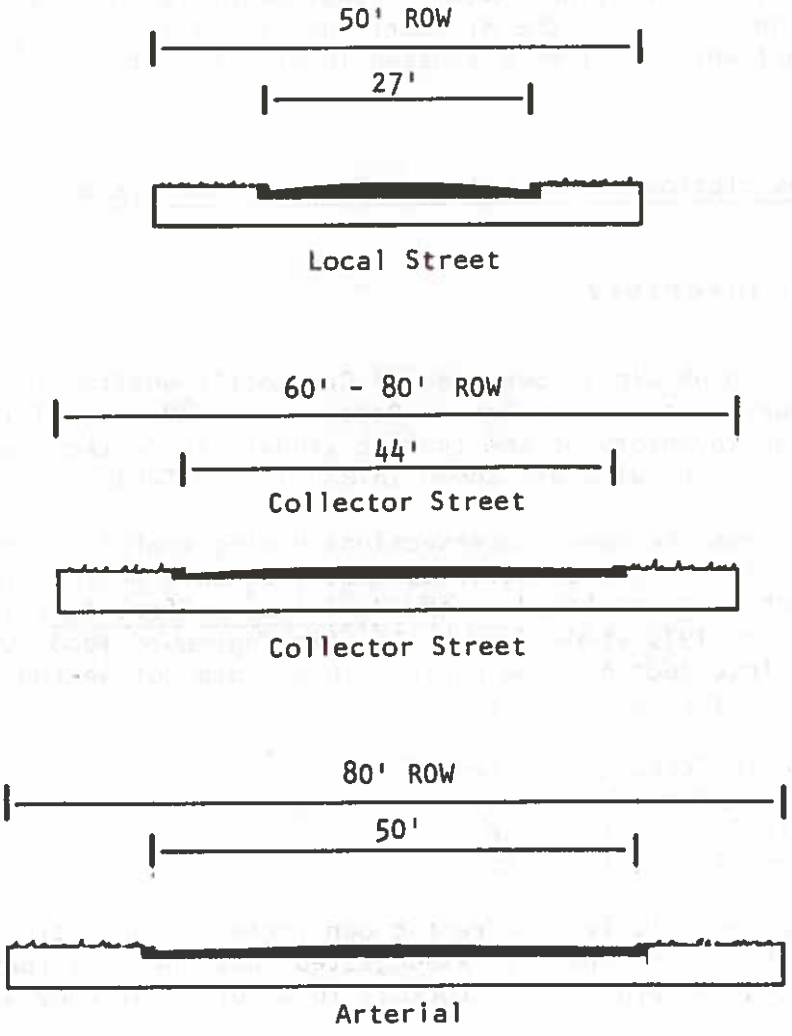
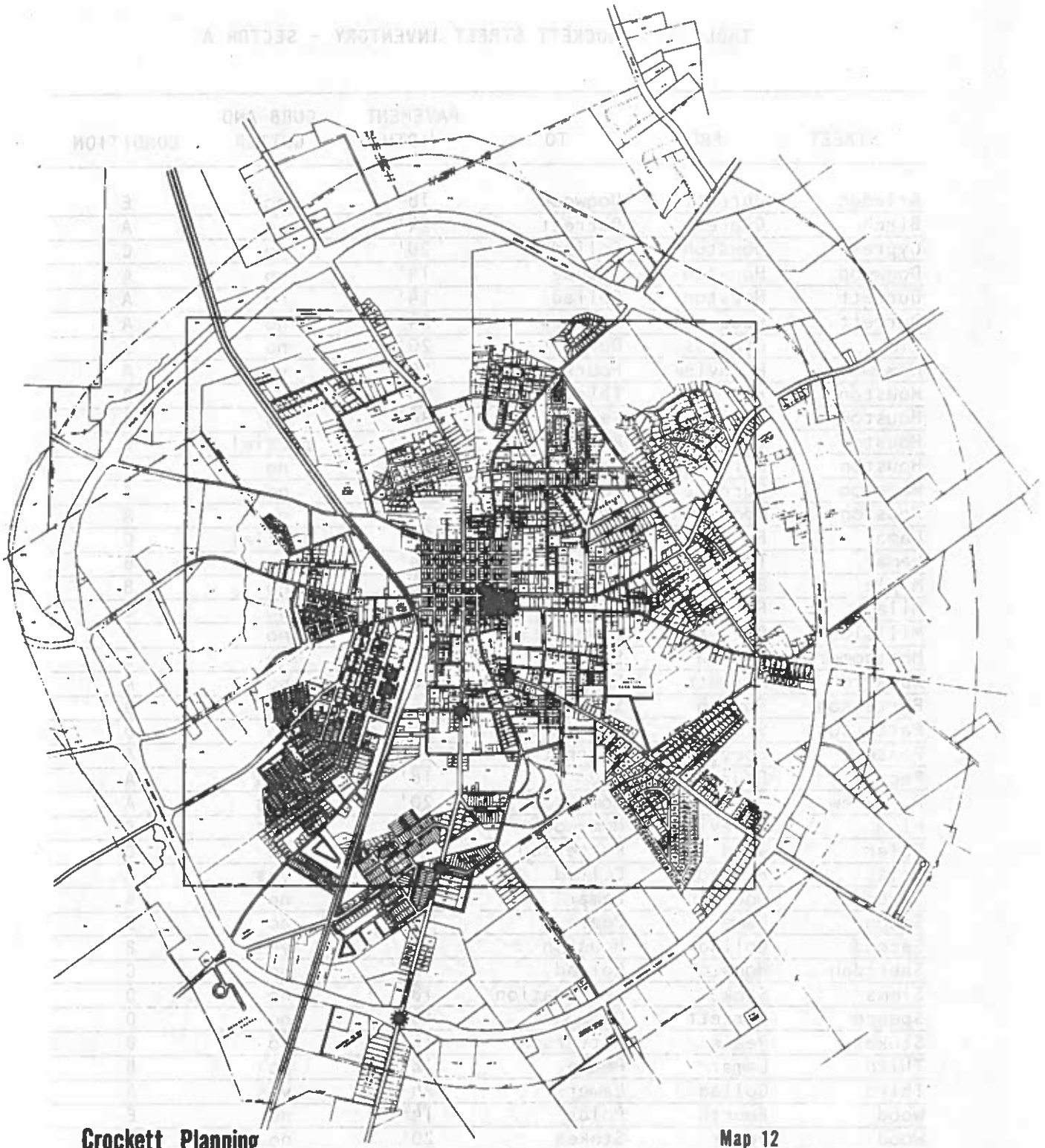


FIGURE 4: Typical Street Cross-Sections

Source: Traffic Engineers, Inc., A Traffic Engineering Plan for Crockett, Texas: Preliminary Report, 1976, p. 32.



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0 600 1200 2000
Scale

Map 12

Signalization

✸ Signals

TABLE 4: CROCKETT STREET INVENTORY - SECTOR A

STREET	FROM	TO	PAVEMENT WIDTH	CURB AND GUTTER	CONDITION
Arledge	Durrett	Dogwood	18'	no	E
Birch	Cypress	Durrett	24'	no	A
Cypress	Houston	Goliad	20'	no	C
Dogwood	Houston	Spence	14'	no	A
Durrett	Houston	Goliad	14'	no	A
Durrett	Houston	Navarro	24'	no	A
Elm	Cypress	Durrett	20'	no	C
Homewood	Pineview	Fourth	20'	yes	A
Houston	Fourth	Third	36'	yes	B
Houston	Third	Second	36'	no	B
Houston	Second	Railroad	36'	partial	B
Houston	Railroad	Durrett	24'	no	B
Houston	Durrett	Loop 304	24'	no	A
Houston	Loop 304	City Limits	24'	no	A
Lamar	Fourth	Third	24'	partial	C
Lamar	Third	Second	14'	no	B
Maple	Birch	Houston	20'	no	B
Milam	Fourth	Third	14'	no	C
Millside	Durrett	termination	18'	no	A
Montgomery	Fourth	Second	16'	no	C
Navarro	Durrett	Loop 304	20'	no	A
Patterson	Fourth	Stokes	25'	no	B
Patterson	Stokes	termination	16'	no	D
Pease	Fourth	Durrett	20'	no	A
Pecan	Fourth	Plum	18'	yes	A
Pineview	Fourth	Homewood	20'	yes	A
Plum	Pineview	Homewood	20'	yes	B
Polar	Wood	Patterson	14'	no	D
Salas	Houston	Goliad	24'	yes	A
Second	Houston	Lamar	20'	no	B
Second	Lamar	Pease	18'	no	B
Second	Goliad	Houston	24'	yes	B
Sheridan	Houston	Goliad	18'	no	C
Simms	Stokes	termination	18'	no	D
Spence	Durrett	Dogwood	18'	no	D
Stokes	Pease	Patterson	16'	no	B
Third	Lamar	Pease	18'	no	B
Third	Goliad	Lamar	24'	yes	A
Wood	Fourth	Polar	14'	no	E
Wood	Polar	Stokes	20'	no	C

TABLE 4: CROCKETT STREET INVENTORY - SECTOR B

STREET	FROM	TO	PAVEMENT WIDTH	CURB AND GUTTER	CONDITION
Ann	Grace	Win	24'	yes	A
Corbell	Rosebud	termination	20'	no	B
Dodson	Spring	Foster	24'	yes	A
Dogwood	Rolling Hills	Woodland	30'	yes	A
Downes	Park	Sixth	18'	no	E
Easy	Grace	Gordon	20'	no	C
El Camino	Rolling Hills	Circle End	30'	yes	A
Eigth	Lamar	termination	16'	no	E
Eleventh	Goliad	Houston	24'	yes	A
Fifth	Goliad	Pease	36'	yes	A
Foster	Dodson	Spring	20'	no	C
Fourth	Goliad	Houston	42'	yes	A
Fourth	Houston	Lamar	24'	yes	C
Fourth	Lamar	Pineview	24'	yes	A
Fourth	Pineview	Loop 304	24'	yes	B
Gordon	Easy	Houston	21'	no	A
Gordon	Redbud	San Jacinto	18'	no	A
Grace	Goliad	Houston	26'	no	A
Grace	Houston	Rosebud	26'	no	A
Grace	Rosebud	termination	20'	no	B
Grace	Tenth	termination	10'	no	E
Harold	Tenth	Pease	21'	no	A
Houston	Fourth	Grace	36'	yes	A
Houston	Grace	Loop 304	36'	no	A
Houston	Loop 304	City Limits	36'	no	A
Lakeway	Win	Goliad	20'	yes	B
Lamar	Seventh	Ninth	22'	yes	A
Lazy Lane	Goliad	Eleventh	20'	yes	A
Milam	Fourth	Sixth	18'	yes	B
Mimosa	Gordon	termination	26'	yes	B
Montgomery	Seventh	Fourth	22'	no	B
Ninth	Houston	Goliad	22'	yes	A
Ninth	Tenth	San Jacinto	18'	no	C
Park	Spring	termination	20'	no	B
Peach	Downes	Spring	16'	no	C
Pear	Spring	Rusk	20'	no	C
Pear	Rusk	Downes	18'	no	E
Pease	Harold	Eighth	20'	no	B
Pease	Fourth	Sixth	18'	no	C
Polk	Seventh	Eigth	22'	partial	A
Quail Trail	Sixth	Terrel	21'	no	E
Redbud	Rosebud	Corbell	26'	yes	B
Redbud	Grace	Gordon	18'	no	A

TABLE 4: CROCKETT STREET INVENTORY - SECTOR B (continued)

STREET	FROM	TO	PAVEMENT WIDTH	CURB AND GUTTER	CONDITION
Rolling Hills	Houston	termination	30'	yes	A
Rosebud	Grace	Redbud	26'	yes	A
Rosewood	Rolling Hills	Valley Lane	30'	yes	A
Runnels	Fourth	Seventh	18'	no	B
Runnels	Seventh	Eighth	16'	no	C
Rusk	Sixth	Park	14'	no	B
San Jacinto	Sixth	Grace	21'	no	A
Seventh	Houston	San Jacinto	32'	yes	B
Seventh	San Jacinto	Terrel	26'	yes	A
Sixth	Goliad	Spring	28'	yes	A
Sixth	Spring	City Limits	22'	no	A
Spring	Fourth	Sixth	24'	no	A
Tenth	San Jacinto	Terrel	18'	no	B
Tenth	Sixth	Terrel	21'	no	D
Terrel	Sixth	Seventh	18'	no	C
Terrel	Seventh	Tenth	22'	no	B
Third	Lamar	Pease	18'	no	B
Third	Goliad	Lamar	24'	yes	A
Triangle	Tenth	Tenth	10'	no	E
Valley Lane	El Camino	Rolling Hills	30'	yes	A
Viewcrest	Houston	termination	32'	yes	A
Win	Goliad	Lakeway	24'	yes	C
Woodland Circle	Rolling Hills	termination	30'	yes	A
		Sector C			
Alamo	Fourth	Fifth	45'	no	B
Anson Jones	Fourth	Fair	24'	no	C
Anson Jones	Fair	Ninth	24'	no	C
Bell	Fourth	Fifth	24'	yes	B
Bell	Fifth	Ninth	20'	no	B
Bonham	Fourth	Fifth	18'	no	C
Bonham	Fifth	Seventh	24'	yes	B
Bowie	Fifth	Seventh	24'	yes	A
Bowie	Seventh	Villageway	24'	no	A
Bowie	Villageway	Loop 304	48'	no	A
Bowie	Loop 304	City Limits	24'	no	A
Briar	Hackberry	Bowie	26'	yes	C
Burnet	Seventh	Eighth	20'	yes	C
Burnet	Eighth	termination	18'	no	D
Burnet	Ninth	Cherry	20'	no	C
Charles	Bowie	Hackberry	36'	yes	C
Cherry	Burnet	termination	18'	no	C

TABLE 4: CROCKETT STREET INVENTORY - SECTOR C

STREET	FROM	TO	PAVEMENT WIDTH	CURB AND GUTTER	CONDITION
Christy Lane	Bowie	termination	18'	no	B
Clark	Seventh	Eighth	18'	yes	B
Clark	Eighth	Tenth	18'	no	B
Culley	Bowie	termination	24'	no	D
Dixie	Goliad	Plantation	24'	yes	A
Eighth	Goliad	Clark	52'	yes	A
Eighth	Clark	Bowie	16'	no	B
Eighth	Bell	termination	15'	no	D
Fair	Anson Jones	Bell	14'	no	E
Fairview	Fifth	Fourth	20'	no	D
Fannin	Fourth	Sixth	28'	yes	B
Fannin	Sixth	Seventh	24'	no	B
Fifth	Goliad	Fannin	28'	yes	B
Fifth	Fannin	Anson Jones	26'	yes	C
Fifth	Park	Loop 304	20'	no	E
F.M. 2712	Loop 304	City Limits	22'	no	B
Forehand	Sander	Frye	28'	yes	B
Fourth	Goliad	Bell	24'	yes	A
Fourth	Bell	Loop 304	24'	no	B
Fourth	Loop 304	City Limits	40'	no	B
Frye	Bowie	Forehand	28'	yes	D
Frye	Forehand	Hooks	28'	yes	B
Glenview	Bowie	Heather	28'	yes	C
Goliad	Fourth	Seventh	32'	yes	B
Goliad	Seventh	Eighth	30'	yes	A
Goliad	Eighth	Ann	24'	yes	A
Goliad	Ann	Jockale	24'	no	A
Goliad	Jockale	Loop 304	50'	yes	A
Goliad	Loop 304	City Limits	26'	no	A
Hackberry	Charles	Briar	24'	yes	C
Heather	Glenview	Meadowlane	28'	yes	C
Hooks	Frye	Parkway	28'	yes	B
Meadowlane	Heather	Bowie	28'	yes	D
Ninth	Clark	Burnet	18'	no	C
Ninth	Burnet	Bowie	36'	yes	B
Ninth	Bowie	Park	20'	no	C
Park	Fifth	Fourth	20'	no	C
Parkway	Hooks	Bowie	28'	yes	B
Plantation	Loop 304	termination	24'	yes	A
Sander	Forehand	Frye	28'	yes	B
Seventh	Goliad	Burnet	24'	yes	B
Sixth	Goliad	Fannin	28'	yes	B
Tenth	Goliad	Burnet	28'	yes	B
Trailwood	Loop 304	termination	30'	yes	D
Villageway	Bowie	Bowie	28'	yes	D

TABLE 4: CROCKETT STREET INVENTORY - SECTOR D

STREET	FROM	TO	PAVEMENT WIDTH	CURB AND GUTTER	CONDITION
Amanda	Oak	termination	28'	yes	B
Ash	Sycamore	Grant	18'	no	B
Austin	Fourth	Loop 304	20'	no	B
Austin	Loop 304	City Limits	24'	no	B
Barnhill	Fourth	Lovers Lane	20'	no	C
Barnhill	Lovers Lane	Rose	24'	yes	B
Bell	Cedar	Railroad	22'	no	C
Bell	First	Fourth	24'	no	C
Bonham	Fourth	Second	14'	no	C
Bowie	Fourth	Third	18'	no	C
Bowie	Third	Second	14'	no	E
Briggs	Austin	Rose	24'	yes	C
Burleson	Cottonwood	Commerce	20'	no	B
Cedar	Painter	Gary	14'	no	C
Cedar	Painter	Goliad	20'	no	C
Commerce	Goliad	Bell	20'	no	C
Commerce	Hall	Loop 304	22'	no	B
Cottonwood	Hall	Bell	22'	no	B
Curtis	Thomas	Austin	20'	no	C
Darius	Commerce	termination	28'	yes	B
Fannin	Fourth	Second	24'	no	C
First	Goliad	Fannin	26'	yes	B
Dunbar	Gary	termination	16'	no	E
Gary	Sycamore	San Antonio	16'	no	E
Goliad	Fourth	Second	32'	yes	B
Goliad	Second	Durrett	24'	yes	B
Goliad	Durrett	Loop 304	48'	no	A
Grant	Ash	Oak	18'	no	B
Grant	Gary	termination	16'	no	E
Hall	Cottonwood	Commerce	20'	no	B
Highway 21 & 7	Loop 304	City Limits	48'	no	A
Howard	Cedar	Cottonwood	20'	no	B
Howard	Cottonwood	termination	18'	no	D
John F. Kennedy	Oak	termination	18'	no	C
Johnson	Cedar	Sycamore	16'	no	C
Johnson	Sycamore	Commerce	14'	no	C
Labelle	Thomas	Barnhill	16'	no	C
Leroy	Cedar	Sycamore	20'	no	B
Lewis Circle	Commerce	Commerce	24'	yes	A
Lovers Lane	Barhnill	Austin	20'	no	C
Lovers Lane	Austin	First	20'	no	D
Magnolia	Sunset	termination	24'	no	E
Oak	Commerce	termination	16'	no	C

TABLE 4: CROCKETT STREET INVENTORY - SECTOR D (continued)

STREET	FROM	TO	PAVEMENT WIDTH	CURB AND GUTTER	CONDITION
Painter	San Antonio	termination	16'	no	C
Pine	Sycamore	Grant	16'	no	B
Rose	Austin	Barnhill	18'	no	C
Rose	Barnhill	Briggs	24'	yes	C
San Antonio	Bell	Loop 304	18'	no	C
San Antonio	Loop 304	City Limits	20'	no	B
Second	Goliad	Fannin	26'	yes	B
Second	Fannin	Bonham	20'	no	C
Second	Bonham	Bell	16'	no	D
Second	Bell	Anson Jones	16'	no	E
Sowescor	Commerce	termination	20'	no	B
Sycamore	Leroy	Burleson	20'	no	B
Sycamore	Burleson	Ash	18	no	C
Sycamore	Ash	termination	16'	no	E
Sunset	Fourth	Magnolia	22'	no	D
Sunset	Magnolia	Lovers Lane	20'	no	B
Third	Goliad	Fannin	30'	yes	B
Third	Fannin	Bowie	14'	no	E
Thomas	Labelle	Curtis	16'	no	E
Wooten	Rose	termination	24'	yes	C
		The Outer Loop			
Loop 304	East Goliad	S. H. 287	26'	*	A
Loop 304	East S. H. 287	F.M. 2712	26'	*	A
Loop 304	F.M. 2712	S.H. 19	26' - 48'	*	A
Loop 304	South S. H. 19	F.M. 2110	48'	*	A
Loop 304	F.M. 2110	San Antonio	26'	*	A
Loop 304	San Antonio	Goliad	26'	*	A
Loop 304	West Goliad	F.M. 2076	26'	*	A
Loop 304	F.M. 2076	F.M. 2029	38'	*	A
Loop 304	F.M. 2029	S. H. 19 & 287	26'	*	A
Loop 304	North S.H. 19 & 287	F.M. 2022	26'	*	A
Loop 304	S. H. 21 & 7	Goliad	26'	*	A

* Curb and butter only at the intersections

The majority of Crockett's streets are without curb and gutter as shown on Map 13. Sectors B and C have the greatest number of streets with curb and gutter, with twenty-seven and twenty-five streets respectively. Curb and gutter in these sectors is probably due to the proximity of the central business district and the fact that the majority of new residential developments in Crockett are located within Sectors B and C. In Sector A, only eight streets have curb and gutter while Sector D has nine streets in this category.

The pavement widths for the major thoroughfares in Crockett are shown in Map 14. Pavement widths for the majority of streets are less than those shown in Figure 4. For the purpose of this report, streets of twenty-four feet in width without curb and gutter were considered acceptable. In Sector A, only Birch Street meets the cross-section standards. In fact, the majority of the streets in Sector A are twenty feet in width or less. Sector B has seven streets which meet the standards. These streets are located primarily in a new subdivision located near Houston Avenue in the eastern portion of the Sector. Almost half of the streets in Sector C meet the suggested pavement width standards. As in the case of curb and gutter, this is due to the fact that Sector C developed at a later date than the aforementioned sectors. Sector D has only five streets that satisfy the suggested standards. Twenty-one of the streets within Sector D are less than twenty feet in width. It is economically unfeasible to require that all of the streets not meeting the suggested standards be widened to the recommended widths. However, consideration should be given to widening those streets with a high volume of traffic or a high incidence of accidents.

The condition of streets were classified according to the following standards:

A - Only regular maintenance required

B - Regular and some additional minor maintenance required

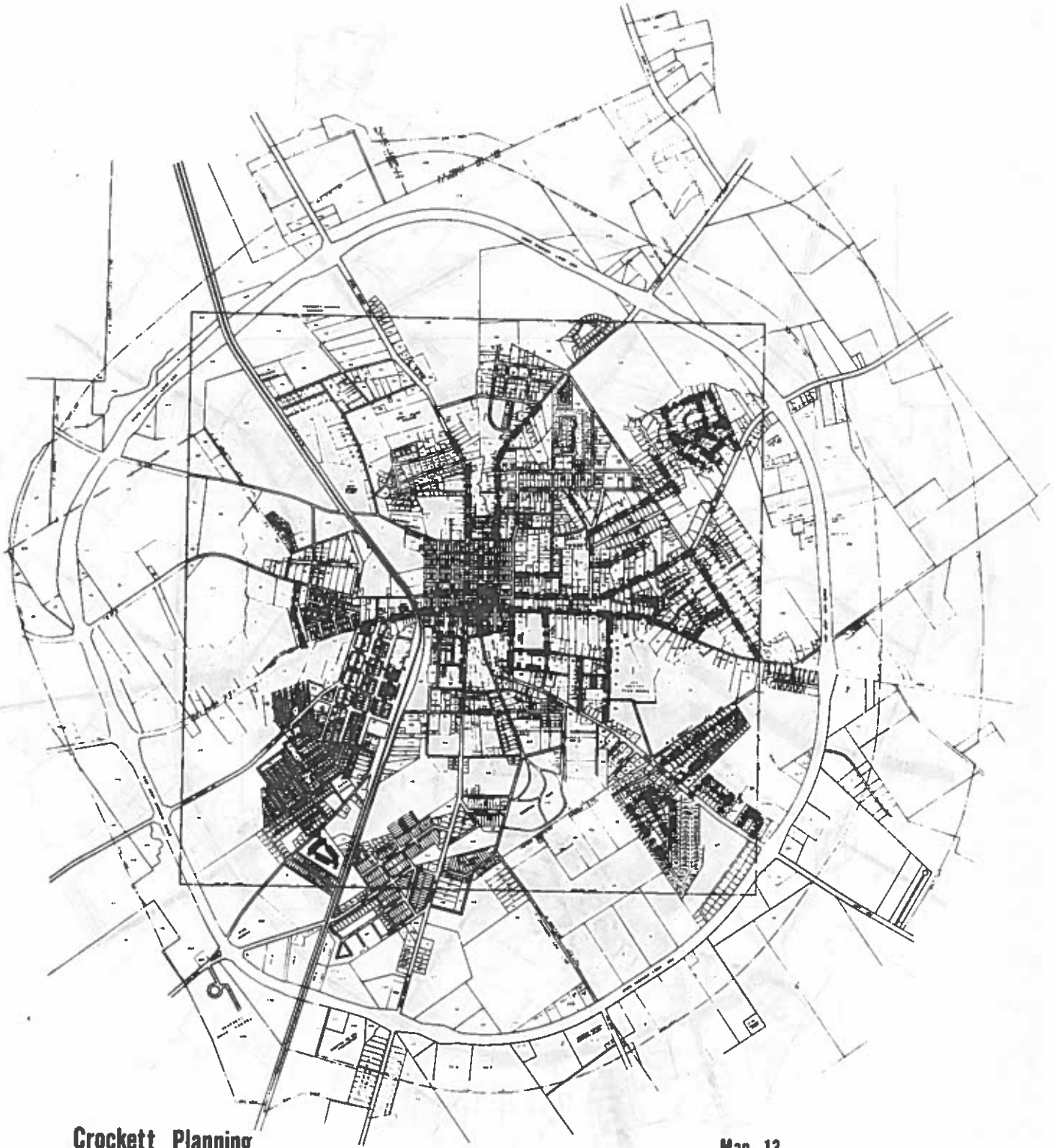
C - Substantial repairs required

D - Major repairs necessary

E - Unpaved or gravel

The condition of the thoroughfares in Crockett are shown on Map 15. In Sector A, only Arledge and a portion of Wood Street are unpaved. A section of Patterson and all of Poplar, Simms and Spence are in need of major repairs.

In Sector B, all of Downs, Eighth Street, Triangle, Quail Trail and portions of Pear and Grace are unpaved. A substantial portion of Sector B's streets need only minor repairs. Only a section of road between Sixth Street and Terrel needs substantial repairs. The streets in Sector B are among the best in the city.



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North

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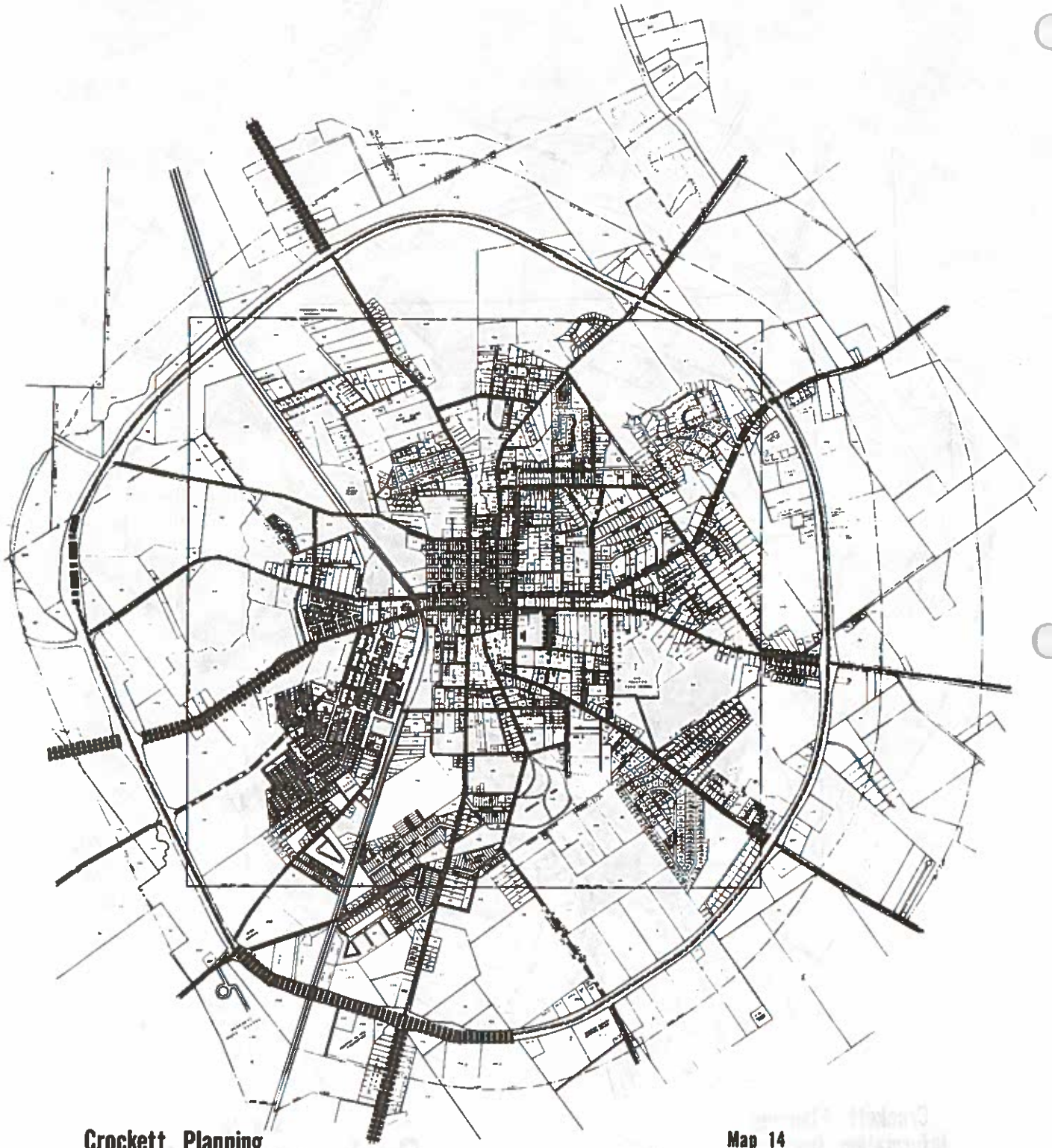
Scale

Map 13

Curb and Gutter

Streets with Curb and Gutter



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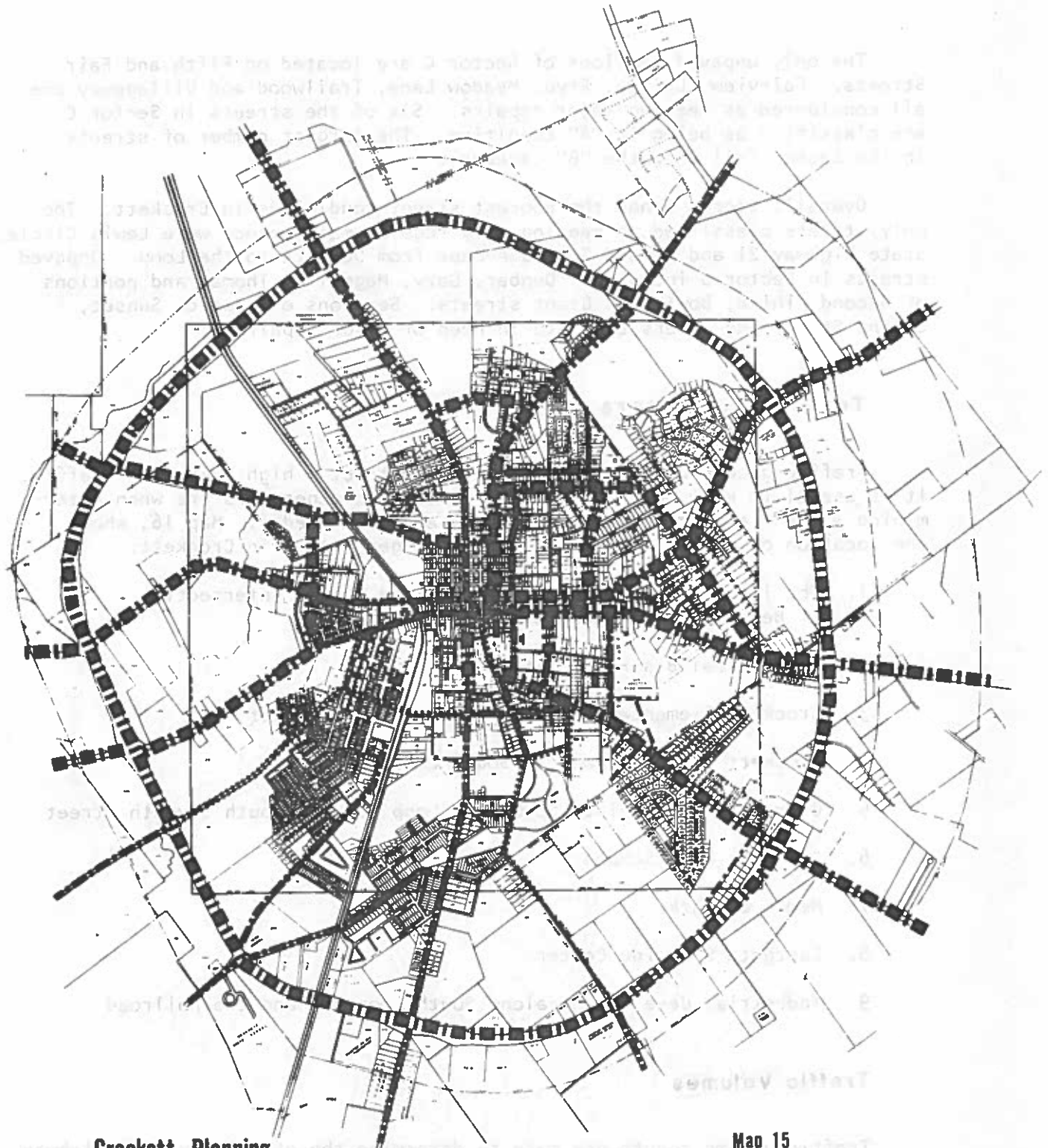
Map 14

Street Widths

- Less than 20'
- 20' to 29'
- 30' to 39'
- More than 40'



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Map 15

Street Conditions

Regular Maintenance
Minor Repairs
Major Repairs
Substantial Repairs
Unpaved / Nonexistent

The only unpaved sections of Sector C are located on Fifth and Fair Streets. Fairview, Culley, Frye, Meadow Lane, Trailwood and Villageway are all considered as needing major repairs. Six of the streets in Sector C are classified as being in "A" condition. The largest number of streets in the Sector fell into the "B" category.

Overall, Sector D had the poorest street conditions in Crockett. The only streets classified as needing only regular maintenance were Lewis Circle, State Highway 21 and 7, and Goliad Avenue from Durrett to the Loop. Unpaved streets in Sector D included: Dunbar, Gary, Magnolia, Thomas and portions of Second, Third, Bowie and Grant streets. Sections of Howard, Sunset, Second Street and Lovers Lane are in need of major repairs.

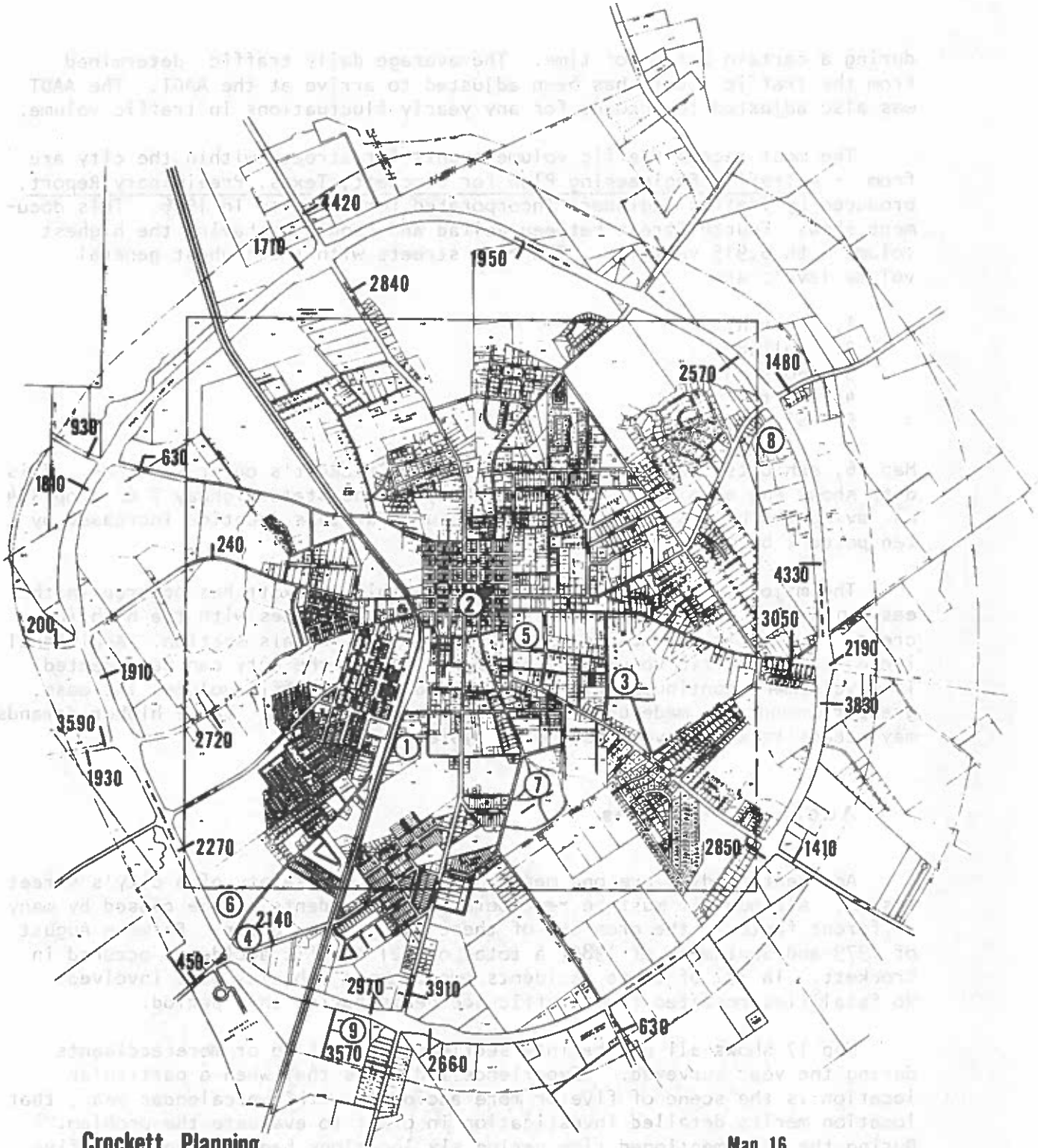
Traffic Generators

Traffic generators are locations that attract a high volume of traffic. It is useful to know what a city's major traffic generators are when determining where transportation improvements are most needed. Map 16, shows the location of the following major traffic generators in Crockett:

1. The industries and businesses located at the intersection of Bell Drive and the Railroad.
2. The Central Business District
3. Crockett Elementary School at South Tenth Street
4. Crockett Middle School at South Loop 304
5. Crockett Intermediate School at Loop 304 and South Seventh Street
6. Crockett High School
7. Memorial Park
8. Eastgate Shopping Center
9. Industrial development along South Loop 304 and the Railroad

Traffic Volumes

Traffic volume counts are made to determine the efficiency of a highway system and traffic demand. The volume counts shown on Map 16 are from the Texas State Highway Department's 1979 Traffic Map for District 12. The figures shown are the Annual Average 24-Hour Traffic Volumes (AADT), which represent the number of vehicles passing a specific point on the highway



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North

0 600 1200 2000
Scale

Map 16

Traffic Volumes & Generators

Note: see text for descriptions

during a certain period of time. The average daily traffic, determined from the traffic count, has been adjusted to arrive at the AADT. The AADT was also adjusted to account for any yearly fluctuations in traffic volume.

The most recent traffic volume counts for streets within the city are from - A Traffic Engineering Plan for Crockett, Texas, Preliminary Report, produced by Traffic Engineers Incorporated for the city in 1976. This document shows Fourth Street between Goliad and Fannin as having the highest volume with 6,915 vehicles. The five streets with the highest general volume levels are:

1. Fourth
2. Goliad
3. Houston
4. Fifth
5. Sixth

Map 16, exhibits the 1979 volume counts for Crockett's outer sections. This data shows the area between State Highway 21 and State Highway 7 on Loop 304 as having the highest AADT. Traffic volumes at this location increased by ten percent between 1978 and 1979.

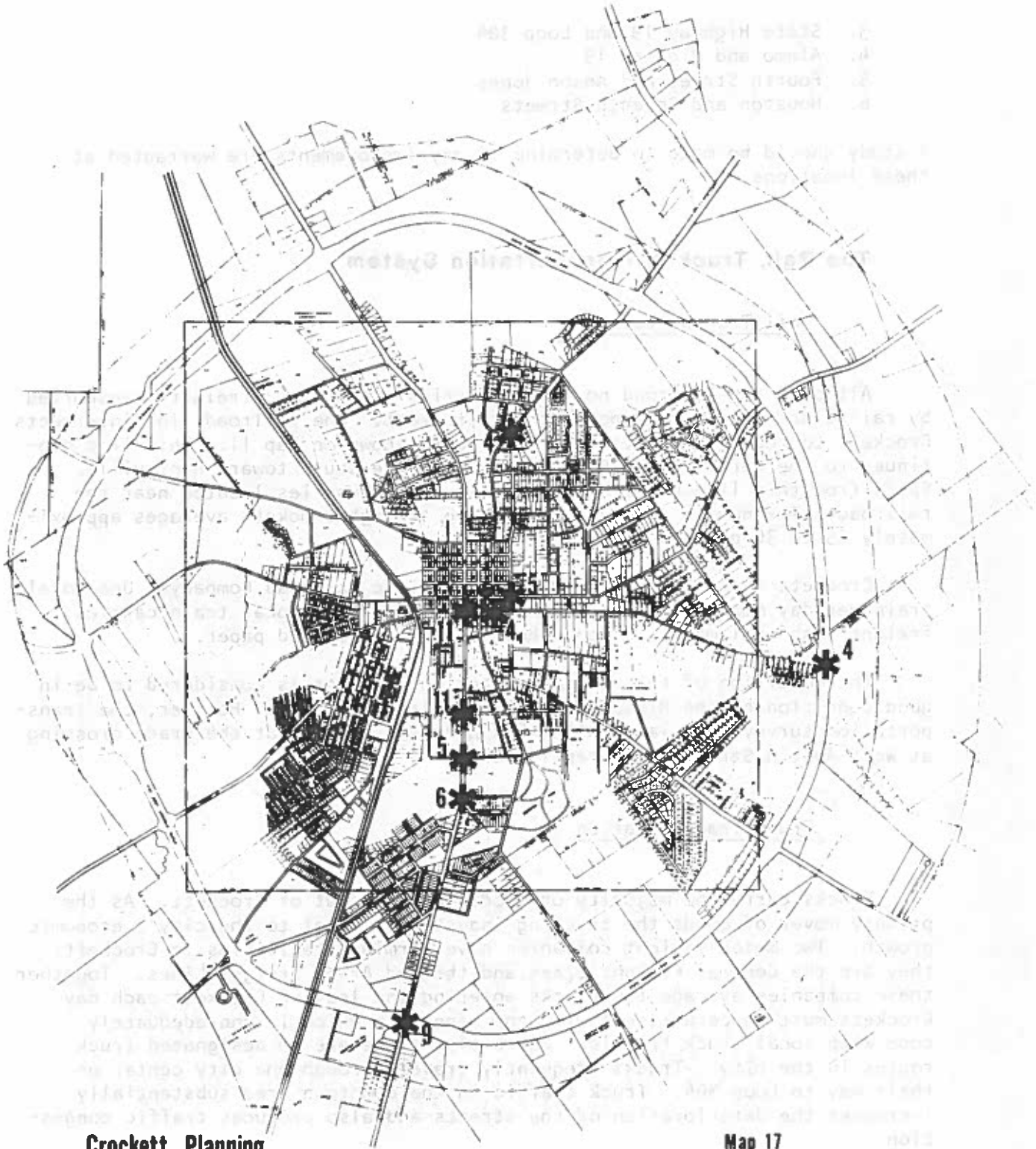
The majority of the new development within Crockett has occured in the eastern section of the city. This development coincides with the high increase in traffic volumes between 1978 and 1979 in this section. Additional increases in traffic volumes on the east side of the city can be expected if development continues its present trends. As traffic volumes increase, greater demands are made upon the transportation system. These higher demands may necessitate improvements to the system.

Accident Patterns

Accident studies are one means of judging the safety of a city's street system. Although it must be remembered that accidents can be caused by many different factors, the greatest of these being human error. Between August of 1979 and September of 1980, a total of 221 traffic accidents occured in Crockett. In 171 of these accidents two or more vehicles were involved. No fatalities resulted from traffic accidents during this period.

Map 17 shows all of the intersections having five or more accidents during the year surveyed. "Experience indicates that when a particular location is the scene of five or more accidents within a calendar year, that location merits detailed investigation in order to evaluate the problem."[1] During the aforementioned time period six locations had occurences of five or more accidents. They were:

1. Fourth Street and Goliad
2. Fourth Street and Bell



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Scale

Map 17

Accidents

✱ Location and number of accidents (Aug. 79 - Aug. 80)

3. State Highway 19 and Loop 304
4. Alamo and Highway 19
5. Fourth Street and Anson Jones
6. Houston and Seventh Streets

A study should be made to determine if any improvements are warranted at these locations.

The Rail, Truck & Transportation System

Rail Transportation

Although the railroad no longer carries passengers, freight transported by rail continues to be important for Crockett. One railroad line intersects Crockett to the west of its downtown, as is shown on Map 11. This line continues to the north toward Palestine and to the south toward Huntsville. Spurs from this line provide rail access for industries located near the railroad. The number of trains traveling through Crockett averages approximately 25 to 30 per day.

Crockett is served by the Missouri Pacific Railroad Company. One local train per day makes stops along the main line. This local train carries freight such as lumber, cotton, chemicals, plastics and paper.

The condition of the railroad track in Crockett is considered to be in good condition by the Missouri Pacific Railroad Company. However, the transportation survey associated with this document found that the grade crossing at West Austin Street needs repair work.

Truck Transportation

Trucks carry the majority of goods into and out of Crockett. As the primary mover of goods the trucking industry is vital to the city's economic growth. Two motor freight companies have terminal facilities in Crockett: they are the Central Freight Lines and the Red Arrow Freight Lines. Together these companies average ten trucks entering and leaving Crockett each day. Crockett must concern itself with the manner in which it can adequately cope with local truck traffic. Currently, there are no designated truck routes in the city. Trucks frequently travel through the city center on their way to Loop 304. Truck traffic in the downtown area substantially increases the deterioration of the streets and also produces traffic congestion.

Air Transportation

Houston County Airport is located approximately three miles west of downtown Crockett on State Highway 7. This facility provides convenient access for both personal and corporate owned light aircraft. The airport is capable of serving more traffic than it presently serves. Inadequate maintenance is one reason for the underutilization of the facility which is owned and operated by Houston County. The runway was resurfaced in 1979. However, scrap metal beneath the runway is permeating the paved surface and is destroying it. Major repair work is needed on the facility's hanger and the driver and parking area remain unpaved.

One of the major deficiencies of the airport is the absence of fueling service for aircraft. Fuel was provided at the facility until the early 1970's. This service was discontinued with the energy shortage. Thus, the airport is not as attractive as it might be to both personal and corporate aviation. Houston Intercontinental Airport is less than two hours by automobile from Crockett.

Bus and Taxi Service

Continental Trailways provides bus service to and from Crockett by way of Palestine and Huntsville. From these two cities bus service is available to other Texas and out of state locations. Taxi service is available from one independent operator in Crockett.

The Courthouse Square

The Houston County Courthouse is located in downtown Crockett on the block bounded by Goliad, Houston, Fourth and Fifth Streets. Traffic on these streets enter the square and then circle the courthouse in one direction. The present design of the courthouse street system is shown on Map 18. This area of the city is easily accessible from all other parts of Crockett as most of the major streets are oriented toward the city center. The streets around the courthouse experience some of the highest traffic volumes found in Crockett.

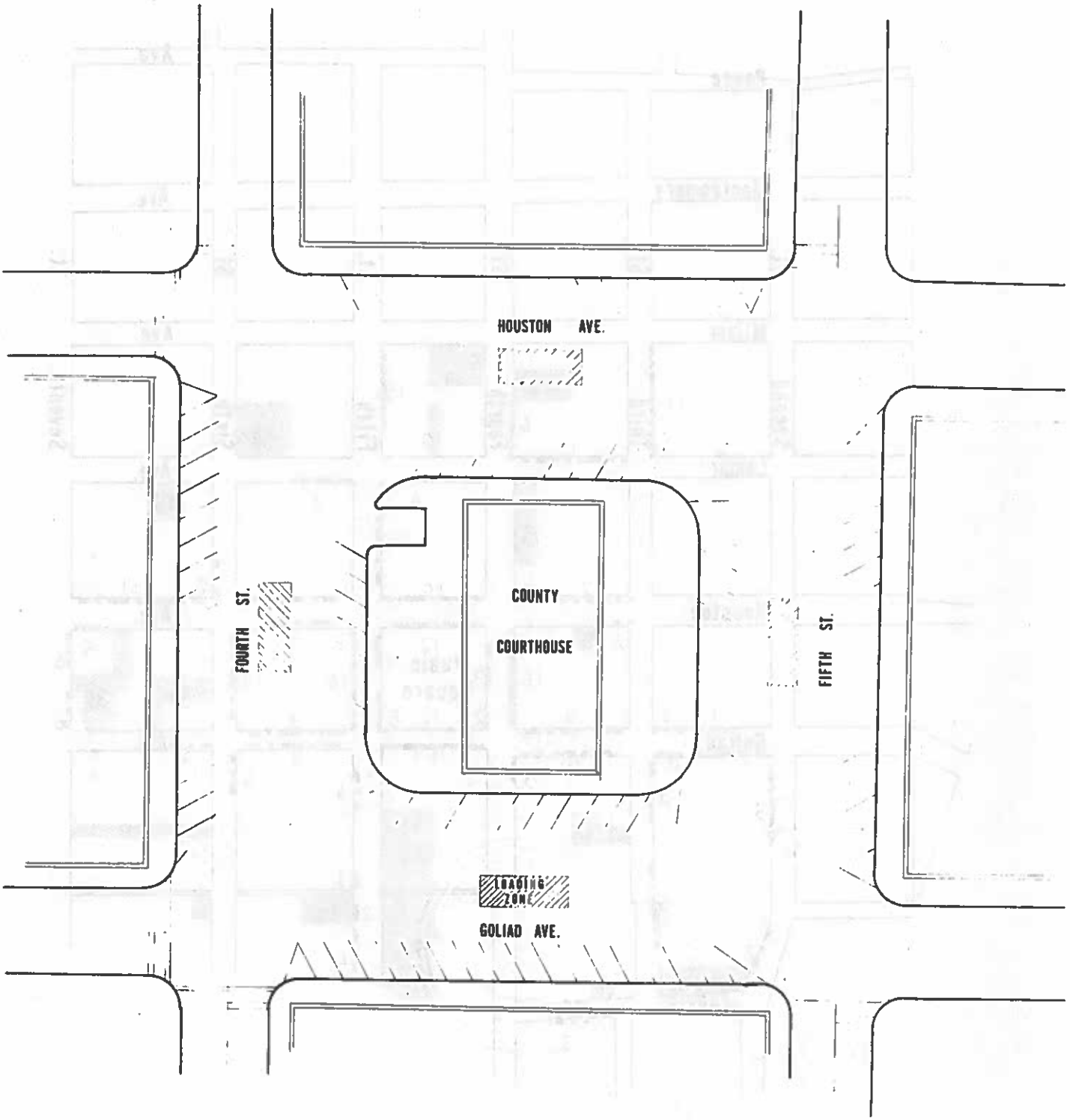
The Existing Thoroughfare System

The courthouse square presents the most critical transportation problem for Crockett. Highways 7, 12, 21 and 287 all intersect there. Thus, all traffic not using Loop 304 must pass through the city center. Trucks make heavy use of the square. Local traffic traveling to other parts of town will often pass through the courthouse square even when a shorter route is possible. This problem is largely caused by the fact that the major thoroughfares pass by the courthouse.

The high volume of traffic and the street design around the courthouse make this a dangerous area for motorists as well as for pedestrians. Between August of 1979 and September of 1980, eleven auto accidents occured at the intersection of Fourth Street and Goliad Avenue - the southwest corner of the square. This was the highest accident rate found at any intersection during that period. A major problem for drivers is the absence of guidance markings. The traffic pattern is confusing, especially for drivers unfamiliar with Crockett. Another significant problem is the fact that loading zones are provided in the middle of the street to service the businesses facing the courthouse. These trucks obstruct traffic and pose a real safety hazard because individuals unloading and loading the trucks must avoid moving traffic.

The Existing Parking System

The availability of convenient parking spaces in the central city is absolutely necessary for the downtown to remain the center of activity for



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Map 18

Existing Courthouse Square

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0 600 1200 2000 Scale

Map 19

Downtown Parking

Lot — Parallel

Reserved — Angle

Crockett. Map 19 shows the existing parking available in the downtown. There are a total of 703 spaces. This figure is three spaces less than were available in 1967. Half [354] of the spaces available are on-street parking.

The publication entitled: A Traffic Engineering Plan for Crockett, Texas, Preliminary Report, included a 1975 parking inventory for the downtown.[1] This study found that the parking around the courthouse and along Houston Street and Goliad Avenue was adequate to serve the downtown businesses. The north side of the square was found to be at capacity but continuing to provide good turnover. However, the turnover for the other three sides of the square was not as high. The study suggested that this slow turnover could be the result of employee parking. Peak parking demand was found to occur from 10:00-10:30 a.m., and from 2:00-2:30 p.m. During this period 74.5 percent of the spaces available were occupied.

Crockett is currently constructing a 176 space parking lot on the block bounded by Lamar, Milam, Fifth and Sixth Streets. It is intended to be used for employee parking, however, a portion of the lot could be used for public parking. This lot should reduce the problem of employees parking near the courthouse.

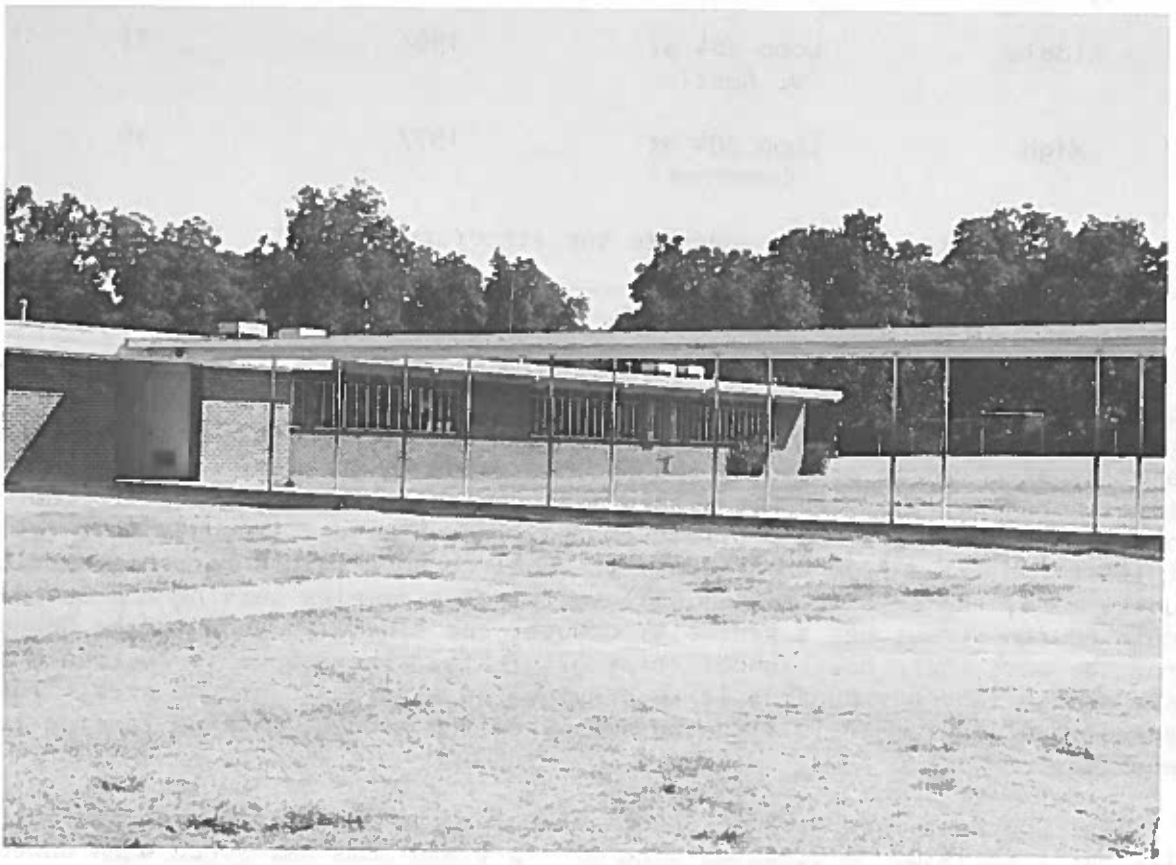
The parking around the courthouse on both sides of the street causes several problems. Cars must back out into the flow of traffic. Often, this can be difficult to accomplish. This parking interference reduces the capacity of the streets around the courthouse. Additionally, the parking on the inside of the circle forces pedestrians to cross the street twice even though no designated crossings exist. Parked cars also block the vision of drivers entering the square. In sum, the design of the square is a major problem that should be addressed by the city.

References: 1. A Traffic Engineering Plan for Crockett, Texas: Preliminary Report. Traffic Engineers Incorporated, 1975.

Community Facilities

Introduction

The purpose of this section is to discuss four general types of existing community facilities in Crockett: schools, parks and recreation, fire fighting facilities, and public buildings. The data base for this section was attained through research, on-site inspection, and interviews with persons in Crockett, during the Fall of 1980. From this data a perspective for the determination of the needs for the community facilities can be attained.



Schools

The Crockett Independent School District [ISD] is comprised of four educational facilities and a pre-kindergarten day care center. In addition, there are two private schools within the city. The condition and age of the schools range from the renovated 50 year old intermediate school to the

newly constructed high school. A detailed breakdown of the grade schools is given in Table 5, below:

TABLE 5: EDUCATIONAL FACILITIES

Type	Location	Year Built	Number of Classrooms
Elementary	400 S. 10 St.	1965	21
Intermediate	304 S. 7 St.	1930*	21
Middle	Loop 304 at W. Austin	1963	21
High	Loop 304 at Commerce	1977	30

* A six classroom wing was added to the structure in 1950.

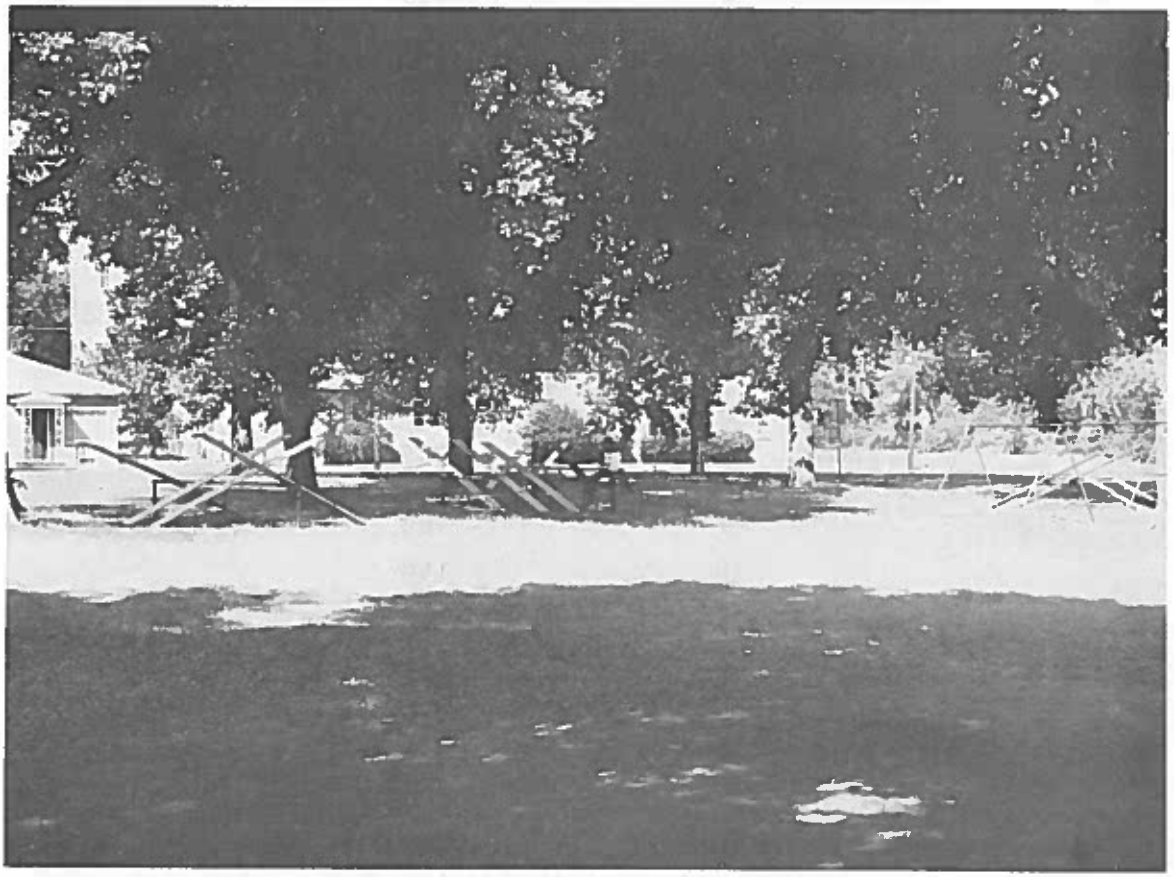
Crockett Elementary School was built in 1965, and it is located at 400 south Tenth Street. The School serves the kindergarten through the second grade levels. The major disadvantage of the facility is its location. The majority of children attending the school reside on the west side of the city; therefore, they are not within a convenient walking distance to the school. The Crockett ISD provides bus service; however, students must reside at least two miles from their present school to be eligible for this service. Furthermore, there is an inadequate system of sidewalks serving the School. South Fourth Street has a sidewalk; however, no sidewalks lead to the School from the west where most school trips originate. The School is fortunate to have enough land surrounding it to provide for a safe playground area. The recreational equipment is situated away from the street, thus no fencing is required.

The Crockett intermediate School occupies the former high school facility built in 1930. A detached wing of six classrooms has since been added to the structure which now has a total of 21 classrooms. The original building has undergone substantial renovation on the inside including the provision of air conditioning.

Of the four public schools, the intermediate school is the closest to the city center. Located at 304 S. Seventh Street, the school serves the third, fourth and fifth grades. Because of its location next to heavily traveled streets, the lack of fencing around the large playground presents a dangerous situation.

Crockett's Middle School and High School are located along the Loop southeast of the city center. The Middle School is a 21 classroom facility built in 1963, and serves the sixth, seventh and eighth grades. Crockett High School is the newest public education facility in the city. Built in 1977, the School has 30 classrooms in addition to numerous special activity rooms and athletic fields.

Crockett has two private educational facilities in addition to the public schools. They are the Crockett Christian Academy and the Crockett Carden School. The Carden School is the larger of the two with an enrollment of 70 students. Established in 1973, the Carden School is located in a remodeled house on Seventh Street between Milam and Montgomery Streets. The School has six classrooms and educates children ranging in ages from pre-kindergarten through the fifth grade level. Crockett Christian Academy School currently instructs 30 students from the second grade through the twelth grade.



Other special facilities within the city include the Crockett ISD Day Care Center, Crockett State School, and the Adult Learning Center. The Day Care Center, formerly operated as a Lift Center, has functioned as a child care facility since 1968. Located southeast of the city center on Sycamore Street, the facility has four rooms. In 1980, 71 children, two months to five years in age, attended the center.

Crockett State School, located at the intersection of Loop 304 and Highway 2110, is a part of the Texas Youth Council System. With a 1980 population of 143 male students, the School is the Statewide Reception Center for Children in Need of Supervison, or "CHIN".[1]

TABLE 6: CLASSROOM CAPACITY AND SCHOOL ENROLLMENT

School	Grade	Enrollment	Capacity
Elementary	K	63	588*
	1	141	
	2	139	
		subtotal 343	
Intermediate	3	173	588*
	4	149	
	5	121	
		subtotal 443	
Middle	6	119	588*
	7	130	
	8	145	
		subtotal 394	
High	9	189	600
	10	149	
	11	92	
	12	125	
		subtotal 555	
		Total 1,735	

* Based on a standard of 28 students per classroom.

Source: "Attendance Reports, September 30, 1980", Crockett ISD Daily Attendance Report File, page 1.

Currently, Crockett's public schools have adequate space at all grade levels. The schools have attempted to keep the teacher to student ratio at

or below 1:25. The private schools, particularly the Carden School, offer a lower student-to-teacher ratio. Enrollment in the Crockett ISD has decreased from a total of 1,909 students in 1977, to 1,797 students as of September, 1980.[2 & 3] Table 6, on the preceding page, gives an outline of enrollment figures for all public schools in the city.

Parks, Recreation & Open Space

Davy Crockett Memorial Park is the only recreational facility in the city. This 35 acre site was established in 1937, and serves as a multiple function facility. Table 7 lists the facilities located in the Park. Situated in the southeast section of Crockett, the Park is the site of annual festivities. The larger structures such as baseball fields, swimming pool and rodeo arena are located on the periphery of the park grounds. The interior consists of a large open space and grouped playground equipment. Map 25 on the following page shows the location of the Park.

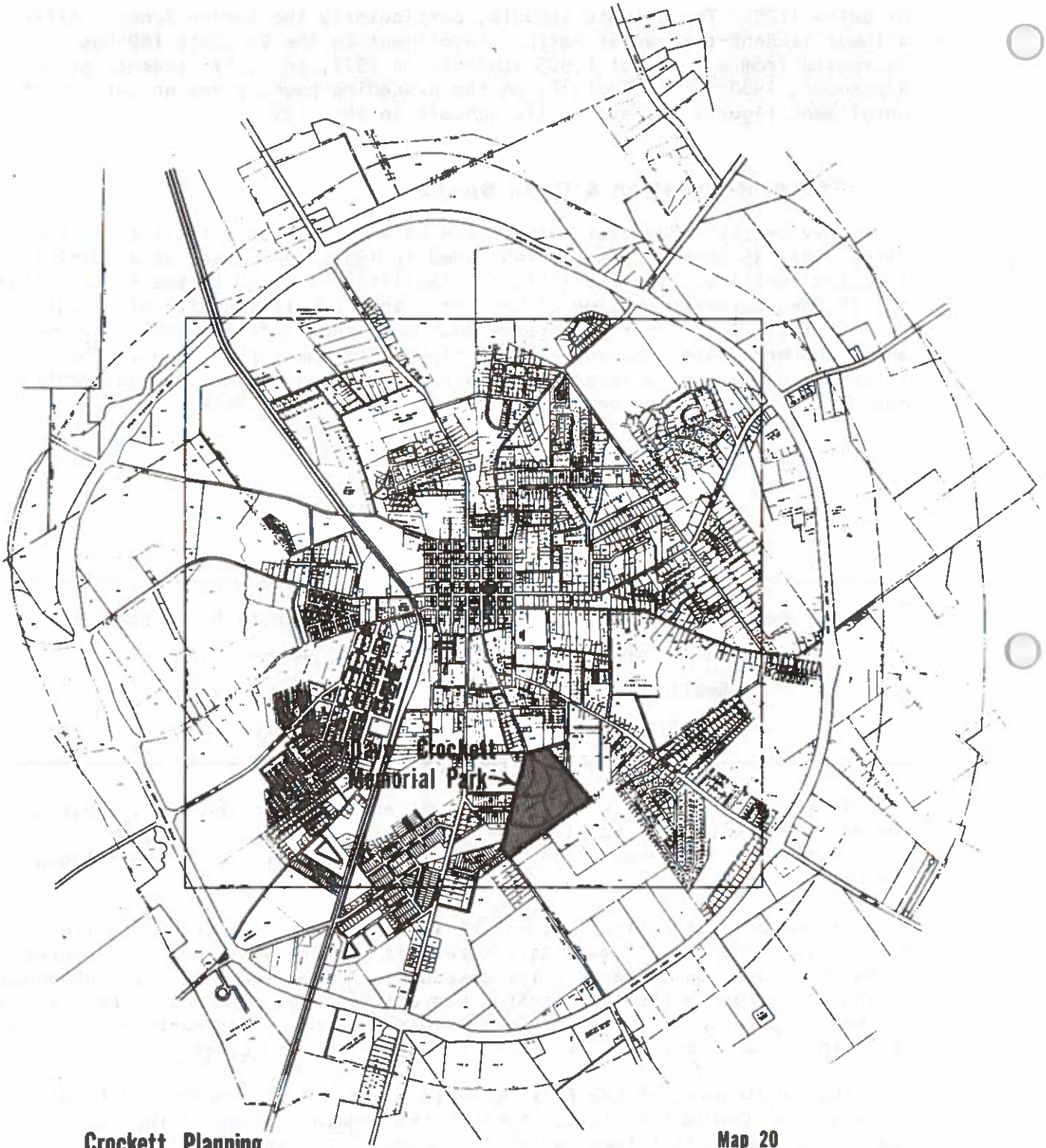
TABLE 7: PARK FACILITIES

Baseball Fields [4]	Community Building
Football Stadium	Swimming Pool
Small Zoo	Rodeo Grounds
Pavillion	Log Cabin

There is a deficiency of recreational equipment in the Park. Most of the equipment with the exception of the tennis courts is in need of substantial repair or replacement. Table 8 lists the variety of equipment found in the Park.

The major distraction in the Park is the large, blighted community house. The once stately two-story structure is rarely used and is in need of major renovation to restore its elegance. The presence of the high school football stadium in the park creates periodic parking problems. There are no designated parking areas in the Park. This type of arrangement not only congests the streets but also destroys the natural ground cover.

The landscaping of the Park reflects a natural environment with native trees as the dominant feature. Besides the regular mowing of the open spaces, no substantial landscaping is present. The grounds of the park have not been well maintained.



Crockett Planning
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Texas A&M University, College Station, Texas
1980

North

0 600 1200 2000
Scale

Map 20

Crockett Municipal Park

Public school playgrounds in Crockett are located in the southeast section of the city in the same vicinity of the Park. These playgrounds do not serve the city as neighborhood parks. The elementary school and intermediate school have an adequate supply of open space but need additional recreational equipment for the playground.

TABLE 8: RECREATION EQUIPMENT IN CROCKETT MEMORIAL MUNICIPAL PARK

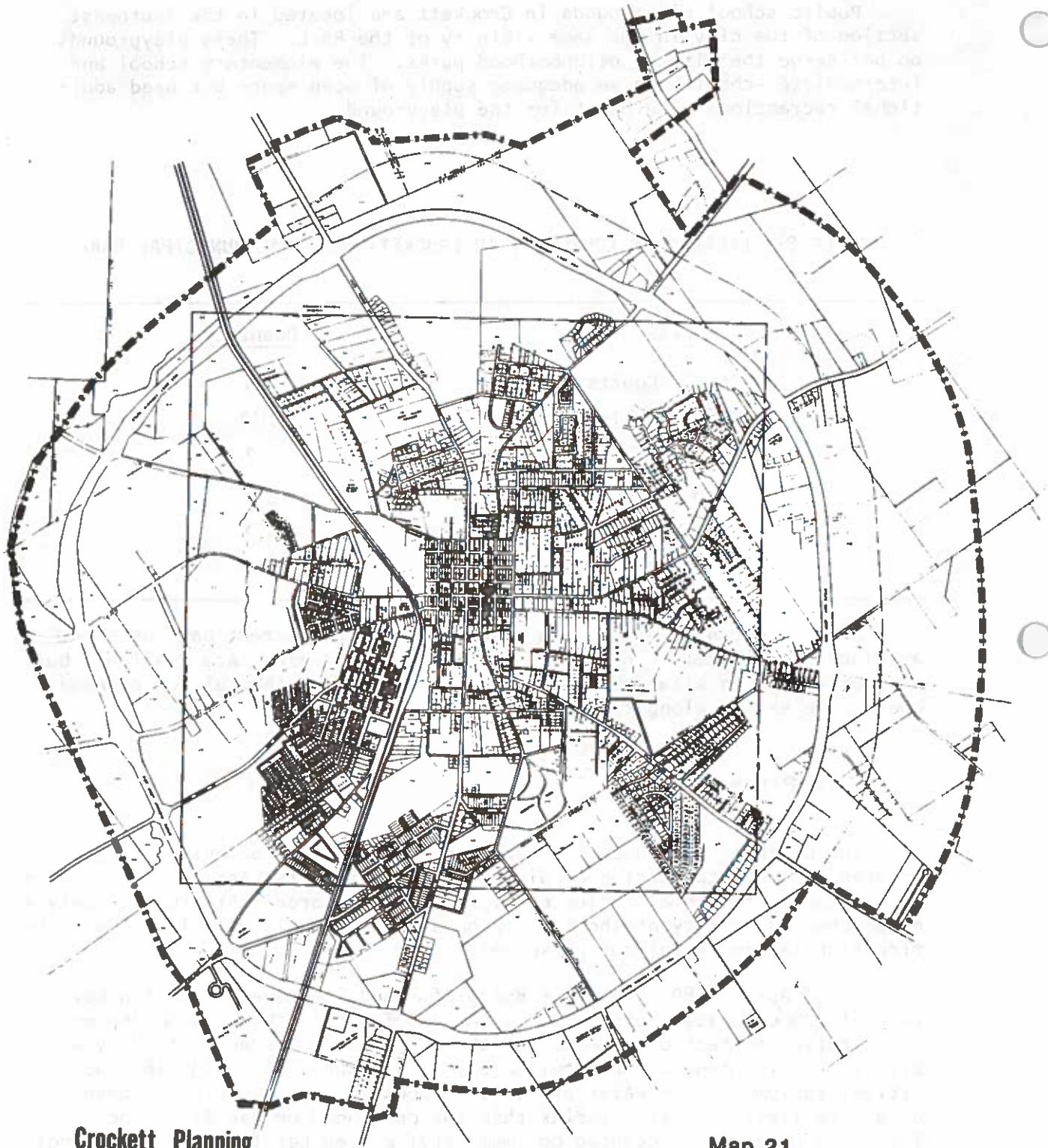
Type	Quantity
Tennis Courts	4
Picnic Tables	12
See Saw Sets	2
Merry-Go-Round	1
Swing Sets	3
Slides	3

At present, no planned open spaces related to recreational uses are available in Crockett. Throughout the city various areas are available but are restricted in size and location. The greatest potential for planned open space exists along the periphery of Crockett.

Fire Protection

The Crockett Fire Department consists of one station built in 1974. Located at the intersection of Sixth and Milam Streets, the facility houses the equipment for an all volunteer fire fighting force. At present, only a dispatcher is on duty at the station on a 24 hour basis. Table 9 lists the fire fighting equipment and personnel.

As of April 1980, the State Board of Insurance gave Crockett a key rate of .29 on a scale of .01 to 1. A low figure in this system represents better protection.[4] However, the system value is determined by a city's fire fighting capability, namely - personnel, fire fighting facilities, equipment, and water pressure. Crockett's good rating is based on a more limited service radius than the one shown on Map 21 on the following page. The accepted optimum service area per facility should not exceed two miles.[5]



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1980

North

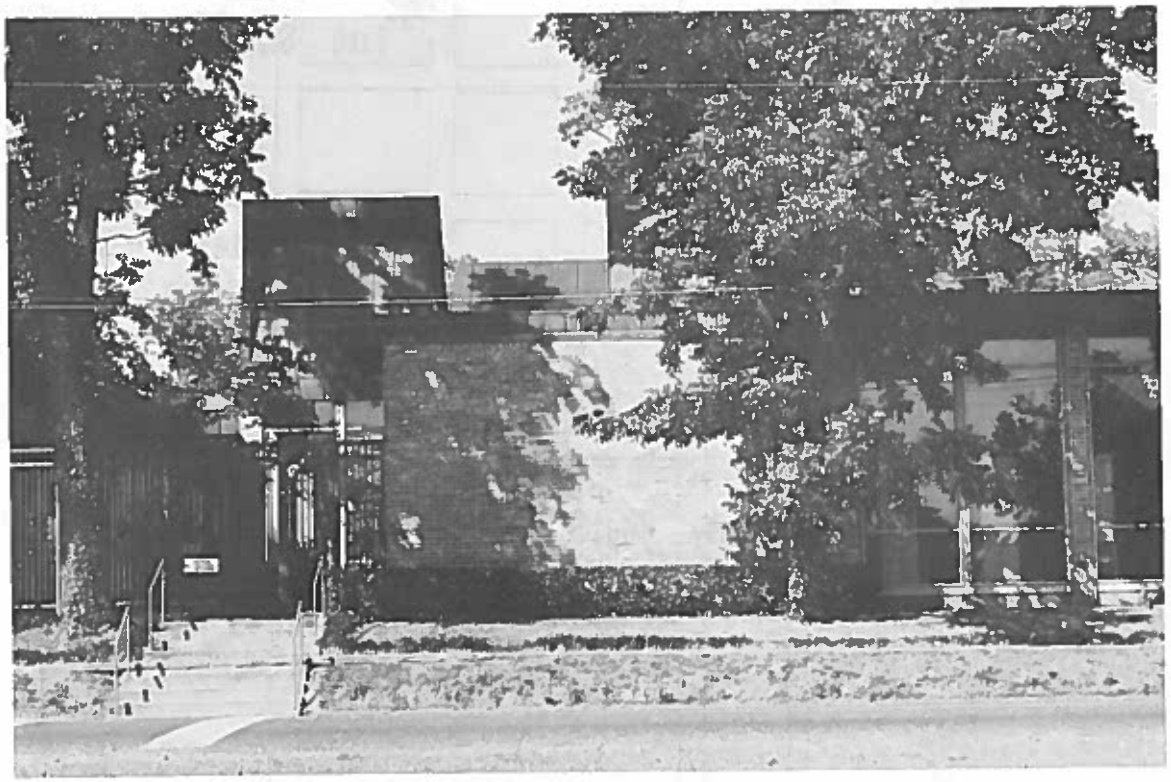
0 600 1200 2000
Scale

Map 21

Fire Fighting Service Areas

TABLE 9: FIRE FIGHTING EQUIPMENT AND PERSONNEL

Vehicle Type	Model	Personnel	Personnel Number
Pumper	1955	Volunteer	25
Pumper	1973	Fire Marshall	1
Tank Truck	1978		
Grass Fire Truck	1971		
Grass Fire Truck	1980		



Public Buildings

The major municipal buildings located in or near the downtown area are shown on Map 22 on the following page. While there has been some new construction of public buildings in recent years, most services are housed in smaller and older buildings.

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1980

North

0 600 1200 2000
Scale

Map 22

Public Buildings in the City Center

The Crockett Public Library, built in 1973, is one of the newest structures in the city. Located on Goliad Street, the facility contains over 50,000 volumes. Adequate off-street parking and well landscaped grounds are associated with the structure.

The condition of Crockett's City Hall has reached a stage where it can no longer adequately function. In addition to the standard city offices, the building houses the Police Department, the City Tax Office, the office of the Building Inspector, and the Fire Marshall's office.

The city's trucks and equipment are maintained at a garage facility located on Pease Street near the Missouri Pacific Railroad tracks. While the facility is not directly located near residences, it is within a flood prone area. Currently the maintenance yard presents no barrier to development but it could be relocated to a more suitable site.

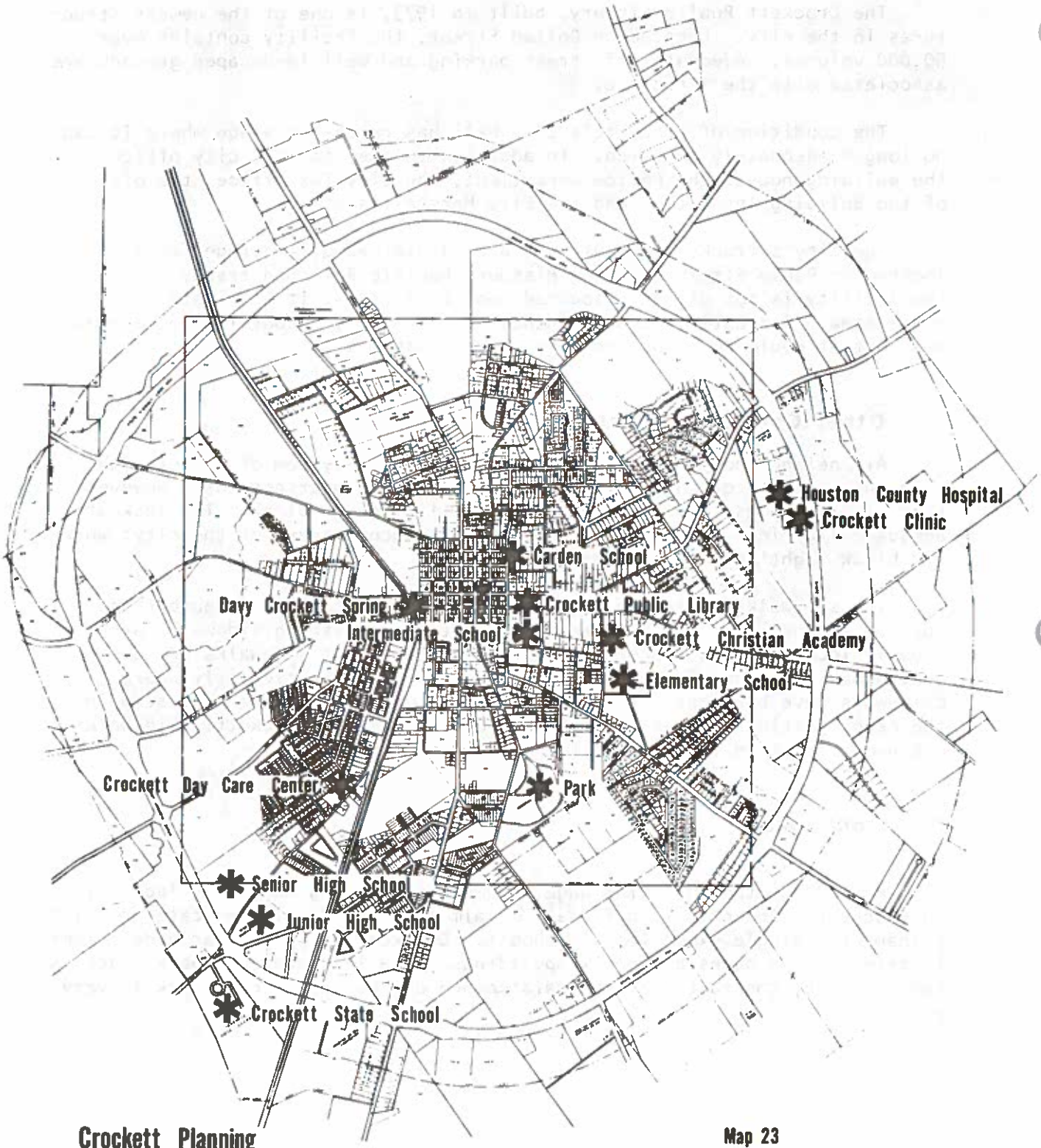
Other Community Facilities

All neighborhoods in Crockett are served by a system of street lights with the majority of them being located at street intersections. However, there is an inconsistency in the number of lights per block. The lack of adequate lighting is most evident in the low income areas of the city; where, mid-block lighting is very limited.

The sidewalks radiating from the city center decrease in number and quality as one walks farther from the downtown. Existing sidewalks are usually located on only one side of the street. Most sidewalks are discontinuous and many of them have experienced decay, particularly where driveways have been cut through them. Generally, sidewalks are located in the newer portions of the city on the eastern half of Crockett. Sidewalks are nonexistent in the southwestern sector of the city.

Conclusion

Map 23, on the following page, shows the existing community facilities in Crockett. The city is deficient in almost every facilities category with perhaps the single exception of schools. Crockett is particularly deficient in terms of its parks and public buildings. The inadequacy of park space is compounded by the fact that the maintenance on the city's only park is very poor.



Crockett Planning Information Document

prepared by the
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Texas A&M University, College Station, Texas
1980

Map 23

Existing Community Facilities

References

1. "Crockett State School History," Unpublished Article, Crockett State School, p. 1, 1980

2. "Attendance Report, September 7, 1979," Crockett ISD Attendance Report File, p. 1.

3. "Attendance Report, September 9, 1980," Crockett ISD Attendance Report File, p. 1.

4. Key Rate and Fire Record Data, State Board of Insurance Annual Report, April 1980, p. 7.

5. Community Development Standards, Dept. Urban and Regional Planning, Texas A&M University, 1978, p. 36.

The Population of Crockett

Introduction

In order to plan for a community it is necessary to have an accurate count of the people who reside there. In addition, an analysis of the characteristics of that population is essential. This information enables a community to plan for the particular needs and desires of its citizens. This section of the document examines the historic trends and the 1980 population of Crockett. The 1980 census data was unavailable at the time of this study; therefore, all current population information was derived from projections based on past census data.

Historic Trends

There was a slight increase in the population of Crockett between the years of 1950 and 1970. In 1950, Crockett's population was 5,932 persons. By 1970, this figure had grown to 6,616, an increase of 10%. The racial composition of the city has also shifted within this twenty year period. In 1950, the racial balance was 40% Negro and 59% Caucasion. By 1970, Crockett's racial composition was reversed with 55% of the population composed of Negroes and the remainder Caucasion. The male to female balance in the city remained relatively stable from 1950 to 1970, with a range of four to twelve percent more females than males.

Table 10 shows the historical population data for Crockett.

TABLE 10: RACE, SEX AND AGE: 1950 to 1970

	1950	Percent	1960	Percent	1970	Percent
Total Population	5,932	100%	5,536	100%	6,616	100%
Male	2,736	46%	2,555	48%	2,904	44%
Female	3,196	54%	2,801	52%	3,712	56%
Caucasion	3,472	58%	3,209	60%	2,984	45%
Negro	2,469	42%	2,134	40%	3,621	55%

Source: 1950 Census of Population, Characteristics of the population, p. 132, 1960 Census of Population, p. 352, 1970 Census of Population, p. 232, U.S. Commerce Department, U.S. Government Printing Office.

The population of Crockett increased by 10% from 1950 to 1970; however, during the period from 1950 to 1960, the population decreased by 9.7%. The number of males decreased during this period by 395 persons (6.6%), while the number of females decreased by 395 persons (12.4%). Discussions with several Crockett citizens indicate that this decrease may have been a result of a decline in governmental subsidies to farm related activities and a concomitant loss of employment in that sector of the economy. The male to female balance remained fairly even during the twenty-year period from 1950 to 1970 with males constituting 48% of the total population and females constituting 52%.

Figure 5 below, shows the population growth of Crockett during 1950 to 1970.

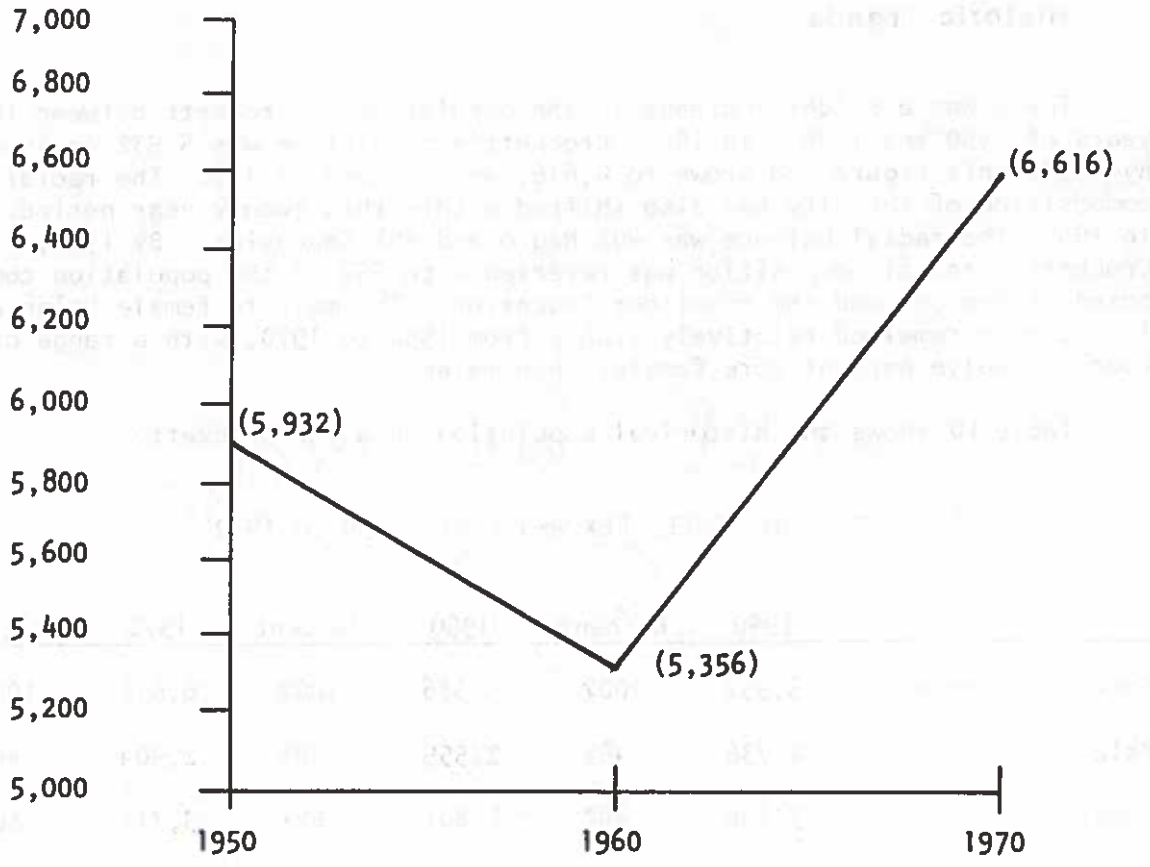


FIGURE 5: Population Growth Trends

From 1950 to 1970, the median number of school years completed by residents of Crockett was 10.2. In 1950, the figure was 10.2 years, in 1960 it

had dropped to 9.7 years, and in 1970 it had moved back to 10.7 years. This twenty year pattern is below the average for the state of Texas. In 1960, the state median was 10.4 years and in 1970 the state figure was 11.6 years.

Characteristics of the Population

Age, Sex and Race

Crockett's population cited in the preliminary report of the 1980 census was 7,104 persons. However, it is felt by the city that this figure is low and that the actual number may be closer to 8,000 persons. This higher figure was employed in the use of a cohort survival population projection method to establish age, sex and racial characteristics for the 1980 population.

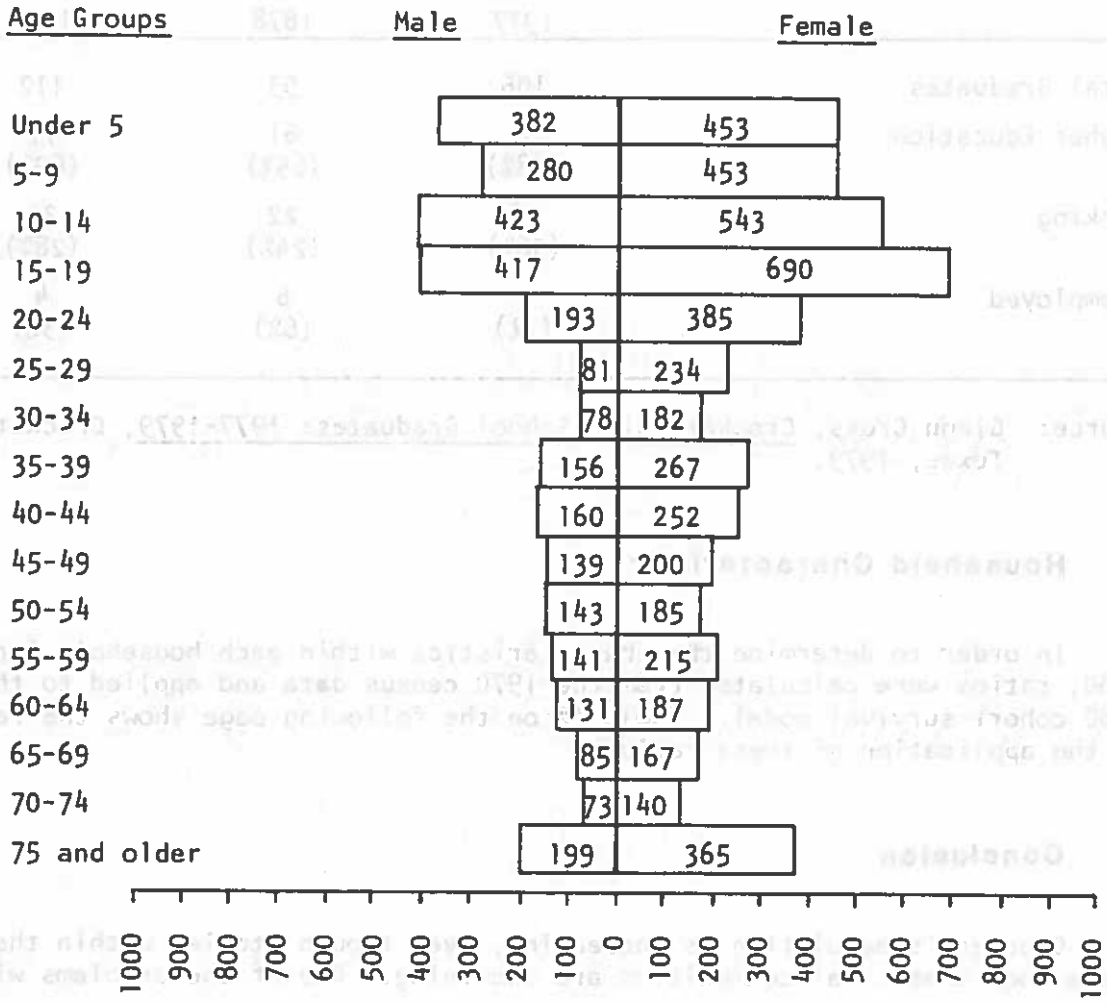


FIGURE 6: Age/Sex Categories, Crockett, Texas - 1980, based on a Cohort Survival Model

The racial balance for 1980 was computed at 4,639 Negroes (58%) and 3,359 Caucasions (42%).

Education

The number of students who are continuing their education after high school graduation has increased within the last four years. A study done by Glenn Cross, one of Crockett's high school counselors, shows an increase in the percentage of students continuing their education after high school. Table 11 below, shows that in the years 1977 to 1979, the number of students pursuing higher education increased by 10%. At the same time, the number of unemployed graduates decreased, and the number of students entering the work force decreased.

TABLE 11: EDUCATIONAL LEVELS

	1977	1878	1979
Total Graduates	106	93	112
Higher Education	61 (58%)	61 (65%)	77 (69%)
Working	38 (36%)	22 (24%)	31 (28%)
Unemployed	7 (7%)	6 (6%)	4 (3%)

Source: Glenn Cross, Crockett High School Graduates: 1977-1979, Crockett, Texas, 1979.

Household Characteristics

In order to determine the characteristics within each household for 1980, ratios were calculated from the 1970 census data and applied to the 1980 cohort survival model. Table 12 on the following page shows the result of the application of these ratios.

Conclusion

Crockett's population is increasing, even though studies within the state show that rural communities are declining. One of the problems with

TABLE 12: Household Characteristics - 1980

Relationship to Head of Household	1970	1980
All Persons	6,616	7,999
In Households	6,292	7,599
Primary Individual	493	591
Wife of Head	1,209	1,455
Other Relative of Head	2,947	3,559
Not Related to Head	54	63
Inmate of Institutions	302	391
Head	2,082	2,479
Other	22	364

Crockett's increasing population is the fact that these increases are taking place within the age groups least likely to enter the labor force. The population estimate indicates that the youthful section of the population is migrating out of the area. Persons in the older age groups are migrating into the area. A reason for this inmigration of elderly may be the relative low cost of living in Crockett with its low tax rate. Such rates make it financially attractive to persons on fixed incomes such as retirement pensions.

The outmigration of persons within the age groups most likely to enter the labor force may be the result of the increasing number of high school graduates leaving the area in pursuit of higher education. College graduates tend to move to the larger metropolitan areas where the demand for professionals is higher. The resulting population of Crockett is a large number of retirees and children.

The Economy

Historical Context

Crockett's economic base has historically been centered around its role as the county seat of Houston County. It has served as both a governmental and trading center for the region since the earliest days of the county. Many of the historical components of Crockett's and Houston County's economic base continue today.

Since its founding in 1837, the economic structure of Houston County has been primarily agriculturally based. Through the latter half of the 19th Century cotton was the mainstay of the local economy. The strain that cotton places on the soil and the textile innovations of this century have, however, forced agricultural diversification.

By 1900, timbering had become a major component of the local economic base. At the turn of the century, the 4C Company had contracted for the rights to cut over 120,000 acres of pine in the region. The economic benefits of this initial cutting were, however, shortlived. By 1920 the saw mill was forced to shut down due to a lack of available timber. The 4C Company had cut without replanting. It was not until the Great Depression and the activities of the Civilian Conservation Corps that the land was reforested.

Reacting largely to the loss of the labor supply caused by World War II, and the development of synthetic fibers, the agriculture of the region began to shift from cotton to more diversified crops such as peanuts, corn, sorghum, beans, peas and tomatoes. Cattle production also became important. However, cotton continues to be an important crop for the region.

In 1900, lignite mining operations began in the county. These operations continued until the mid 1930's when lignite was replaced largely by oil and gas from the East Texas fields. Oil development began in Houston County during the Depression. Expansion was so fast during the initial phase of the oil boom that an annex to the county courthouse was authorized within two days of the Boone Brother's No. 1 strike. The temporary annex for the County Clerk's office was completed within 48 hours of its authorization.

The following sections explore the regional, county and local economic structure. Important indicators of economic health such as income, employment and labor are analyzed. The final portion of this economic analysis investigates the economic base industries of Houston County and evaluates changes in those industries between 1970 and 1977.

The Present Economy

Household Income

The median effective buying income (EBI) of Houston County is $5,636 per year or 48% of the median household EBI for the State of Texas.

TABLE 13: HOUSEHOLD INCOME (EBI), 1976

	Texas	Houston County
Median Household EBI	$13,117	$6,521
Households with $8 to $9,999 EBI	7.7%	8.7%
Households with $10 to $14,999 EBI	20%	14%
Households with $15 to $24,999 EBT	22%	14%
Households with $25,000 EBI or more	15%	4.5%

Source: "Survey of Buying Income", Sales Marketing and Management, July 25, 1977, p. 202.

The per capita income level in Houston County during 1978 was 5,933 or approximately $1,700 below the Texas and United States levels. The lower average income can be linked to several factors in the Houston County and Crockett economy.

First, the nature of the industries in Houston County reflects the predominance of blue collar works in the area. Emphsis is placed on unskilled or semi-skilled labor with professional positions being in the minority. The major job sources are in the forestry, minerals, agri-business and clothing manufacturing fields. These employment sources usually pay low wages and there is a high turnover rate among employees.

Second, many of the workers lack basic educational and job skills. The lack of education is a primary barrier to better paying jobs. The 1970 Census indicated that among persons twenty-five years of age and over in the East Texas region, 66.5% had less than a high school education. Of those people obtaining a high school education, many move out of the region to seek further education or higher paying jobs in major cities.

The majority of Crockett's recent high school graduates leave and do not return to the city, enter the military or find employment outside of Crockett. At least 69% of the 1979 high school graduates later attend

universities or colleges. At least 8% sought employment outside of Crockett and only 23% remained locally. The pursuit of higher education may actually be an impediment to Crockett's overall economic development because there are few professional opportunities available in the local economy to recapture and retain this well educated and valuable segment of the labor force.

The Labor Force

Based on the cohort survival population projection model used in this document, Crockett's 1980 labor force consists of approximately 1,639 males and 2,797 females. This includes all persons between the ages of 15 and 65. The total labor force is reduced to a total of 4,037 people after the city's 9% unemployment figure is deducted from the labor force. This rate is approximately 3% higher than the Texas and Houston County rates. The moderately high unemployment rate in Crockett may possibly be attributed to local economic instability and a low availability of rewarding job opportunities. Labor force statistics for the city, county and state are shown in Table 14 on the following page.

TABLE 14: LABOR FORCE CHARACTERISTICS

	Potential Labor Force	Unemployment Rate	Actual Labor Force
Texas[1]	6,429,400	6%	6,043,900
Houston County[1]	7,546	6%	7,092
Crockett[2]	4,436	9%	4,037

Source: 1. "Final Report", Texas Employment Commission, June, 1980.
2. Projection made by the Department of Urban & Regional Planning, TAMU, November, 1980.

Employment Levels

Houston County has shown fluctuations in employment levels throughout the 1970's. The employment levels in all categories shrank drastically from 1970 to 1975 and then slowly increased from 1975 to 1977. Employment decreased in all categories and only manufacturing and public utilities approximated the 1970 employment levels.

TABLE 15: HOUSTON COUNTY EMPLOYMENT LEVELS

	1970	1975	1977
Agriculture	*	*	*
Mining	134	49	*
Construction	696	162	195
Manufacturing	1,372	845	1,124
Public Utility	106	123	187
Wholesale Trade	401	178	182
Retail Trade	870	682	697
Finance, Insurance, Etc.	220	149	149
Service	1,371	568	606
Unclassified	*	*	*

Source: County Business Patterns, U.S. Census, Vol. 970 - 977, part 45 - 50, p. 128
* - Data not available

It seems inconsistent to find a community with a shrinking employment base and an increasing population. This seemingly paradoxical situation is explained by the fact that Crockett has a small labor force participant to dependent ratio. People older than 65 years and younger than 15 years number 3,563 while the potential labor force numbers only 4,436. This ratio of 1.25 labor force to dependents is abnormally small. As noted previously, there is an out migration of people in the 20 to 34 year old age groups. This pattern results in a reduction of available labor force. The reduction of Crockett's labor force and the simultaneous increase in non-working dependents is perhaps one of the city's most critical problems.

Crockett's Economic Base

The following economic base analysis is designed to approximate the economic strengths and weaknesses of Houston County between 1970 and 1977. The primary economic area of interest is Crockett, however, the larger, Houston County area was chosen as the economic unit for analysis due to the difficulty in obtaining adequate employment data at the local level. Since Crockett contains approximately 40% of the Houston County population, it was assumed, for purposes of this study, that the city's economy would follow county trends.

Two methods were used to estimate economic base. The first was a shift share analysis which includes a national growth share, industry mix and a regional share analysis. The second method employed was a location quotient analysis. In the following sections, the purpose and results of each type of analysis are examined. The limitations and weaknesses of each system is also explored.

A Shift Share Model

Shift share analysis can be administered for a number of economic variables but the segment chosen for use in this study was employment. Shifts in employment over time are indicative of changes in economic health and the consequent shifts in the import and export of goods.

Shift share analysis, in general terms, describes a region by relating it to qualitative national norms. These employment elements in the metropolitan area identify and describe key economic relationships and aid in depicting which segments of the economy are growing or declining.

The first factor, the national growth share (NGS), measure the needed employment changes in an industry group in relation to national employment growth. The second factor, the industry mix (IM), represents what would have happened to the employment structure of an industry if it were to gravitate toward the overall national pattern of industrial mix. If the

NGS is larger than the IM, the particular metropolitan area component is a growth component. Conversely, when it is smaller, the component is a slow growth component and has a negative effect on the employment of the area. The third factor, the regional share (RS), measures the competitive position of a component to the rest of the nation. A positive difference signifies a shift in the particular component in the area, while a negative difference indicates a shift out of the area.

The following table shows the results of comparisons in employment shifts for the United States and Houston County between the years of 1970 and 1977.

TABLE 16: A SHIFT SHARE MODEL

	NGS	IM	NGS - IM	RS
Agriculture	*	*	*	*
Mining	18	33	-15	-125
Construction	94	-12	106	-582
Manufacturing	185	-193	378	-240
Public Utilities	14	-9	23	76
Wholesale Trade	54	-2	56	-271
Retail Trade	117	65	52	-355
Finance, Insurance, Etc.	30	24	6	-125
Services	185	287	-102	-1,237
Unclassified	*	*	*	*

* Data not available

Differences between national growth share and industrial mix indicate that manufacturing and construction are fast growth components of Houston County. All other industries seem to exhibit marginal growth with mining and service components exhibiting slow growth. When compared with actual employment changes from 1970 to 1977 (Table 15), it is evident that all segments of Houston County have shown substantial losses in employment between 1975 and 1977, however, 1970 employment levels were not attained except in the case of public utilities.

A survey of the regional share results indicate that only one component, public utilities, maintained a positive competitive position in comparison to the nation. Most segments of the Houston County economy showed moderate to severely negative results on the regional share analysis. This

is indicative of an employment shift out of the area as a result of a loss in comparative competitive advantage.

The results of the shift share analysis should give a general estimate of economic changes but one should be aware of the limitations of such an analysis. First, comparative isolation of Houston County and Crockett could have an effect on any comparisons to national patterns. This isolation could make the economic segments of Crockett less likely to conform with United State's norms. Second, the accuracy of the shift share analysis is diminished as the geographic area of the economic unit is reduced. The shift share method is best suited for multi-county, or larger planning regions. Third, shifts in employment may also be affected by changes in worker productivity, technological changes or other factors not directly considered in the analysis. In general, comparisons between the shift share results and the actual employment changes between 1970 and 1977 indicate shrinkage in employment levels in most industries and businesses. It should be noted, however, that most industries have increased in employment from 1975 to 1977, and this may be indicative of some type of slow economic rebound for the low of 1975.

A Location Quotient Model

The location quotient is designed to determine which segment or segments of the economy under analysis are of greater or lesser importance locally. A basic industry is an industry which produces in excess of local need and must export to a market outside of the economic unit under study. In some cases, the very nature of the goods or services produced may exclude a high local demand. Consequently, a basic industry will bring new money into an area which in turn will provide increased revenue and jobs for the area. A non-basic industry produces goods and services at a level that either equals or falls below local need. A non-basic status would indicate that local dollars are moving out of the economic unit. A location quotient value greater than one (1), indicates a basic industry while a value less than one (1), is indicative of a non-basic activity. Table 17 on the next page shows the results of a location quotient analysis for Houston County for 1977.

The results of the location quotient study indicate that mining and manufacturing are the strongest basic activities in Houston County. These two segments of the economy are probably basic because the nature of the products exclude total consumption at the local level. The lignite, oil and gas minerals presently being extracted in the County are removed for processing and distribution outside of the region.

Contract construction, public utilities and retail trade produce goods and services that meet but do not exceed the county demand. Wholesale trade, financial and services are examples of non-basic activities and probably do not completely meet the Houston County demand for such services.

TABLE 17: A LOCATION QUOTIENT MODEL FOR HOUSTON COUNTY

	Location Quotient
Agriculture	*
Mining	2.00
Construction	1.00
Manufacturing	1.16
Public Utilities	1.00
Wholesale Trade	.85
Retail Trade	1.04
Finance, Insurance, Etc.	.57
Services	.86
Unclassified	*

* Data not available

Caution must be exercised when interpreting these location quotients because values only slightly in a category may actually be a borderline basic industry or be slightly in the other category. Those values that are substantially above or below the value one (1), such as mining or finance, could be considered to be strongly basic or non-basic.

Conclusion

In conclusion, Crockett and Houston County have lower than average personal and household income levels. This problem is a reflection on the nature of the industries present. The employment levels and available labor force have generally been on the decline through the mid-1970's with a slight rebound in the late 1970's. There is an out-migration of people in the 20 to 34 year cohorts which probably indicates an outward movement to secure higher paying jobs and higher education. Unfortunately for Crockett and Houston County, a high percentage of this valuable segment of the labor force does not return to seek local employment. This problem reflects the general low level of wages and the lack of professional positions available in Houston County. The results of the economic base analysis indicate that construction and manufacturing are the two fast growth segments of the county's economy. All other industries showed moderate to slow growth when compared to national patterns. The competitive position of all industries except public utilities, showed a shift out of the area in the 1970's.

The location quotient analysis shows that the strongest basic industries in Houston County are mining and manufacturing. All other industries were marginally basic with wholesale, trade, finances and service industries showing non-basic tendencies.

Utilities

Water

Ground and Surface Water Resources

Houston County lies within Zone 2, of the Lower Trinity River Basin. Zone 2, is defined by Anderson, Freestone, Leon, Houston, Madison, Grimes and Walker Counties. The following material concerns ground and surface water resources within this seven county zone.

The primary sources of ground water within Zone 2, are the Carrizo-Wilcox, Queen City and Sparta Aquifers. The total estimated average annual ground water availability, or safe annual withdrawal rate, for these three aquifers is 133,000 acre-feet per year as of 1980. Reservoirs and locally owned and operated municipal lakes provide the majority of surface water within this zone. Map 24 on the following page shows the two major reservoirs that supply Crockett. These are Houston County Reservoir which is owned by Houston County Water Control and Improvement District Number 1 (WCID - 1), and Lake Fairfield. Houston County Reservoir supplies the cities of Crockett, Lovelady and Grapeland. Lake Fairfield supplies water primarily for industrial users located in Freestone County.

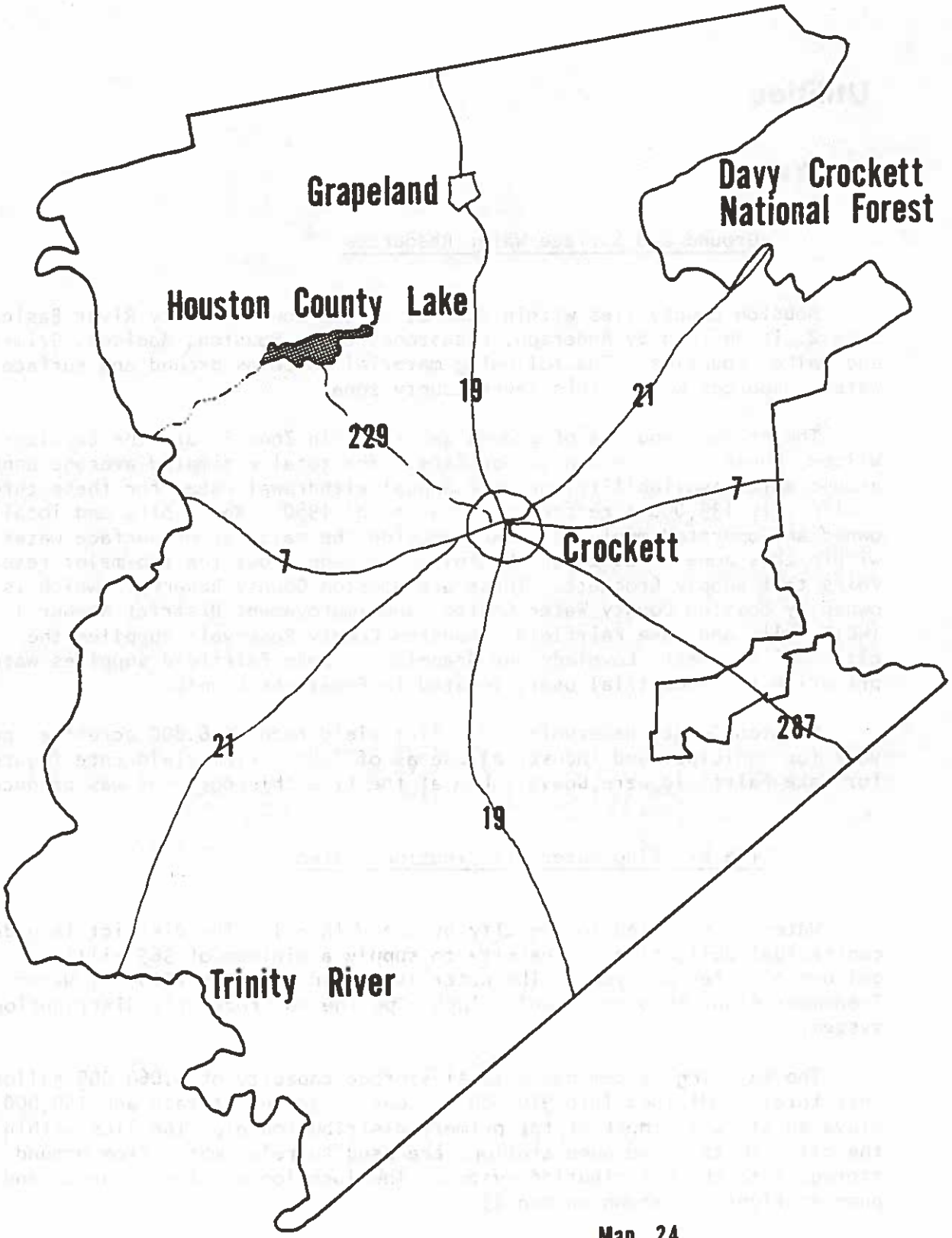
Houston County Reservoir had a firm yield rate of 6,800 acre-feet per year for municipal and industrial use as of 1980. Firm yield rate figures for Lake Fairfield were unavailable at the time this document was produced.

The Existing Water Distribution System

Water is supplied to the city by the WCID - 1. The District is under contractual obligation to the city to supply a minimum of 365 million gallons of water per year. The water is pumped from the WCID - 1 Water Treatment Plant through a twelve-inch pipeline to Crockett's distribution system.

The existing system has a total storage capacity of 1,060,000 gallons. This total is divided into 910,000 gallons of ground storage and 150,000 of elevated storage. Most of the primary distribution pipeline lies within the city limits. Two pump stations are used to relay water from ground storage into the distribution system. The location of storage areas and pump stations are shown on Map 25.

Existing water demand for Crockett may be broken into gallons per capita per day (GPCD), average daily demand, maximum to average demand ratio and maximum daily demand. All of these indicators are shown on Table 18.



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North

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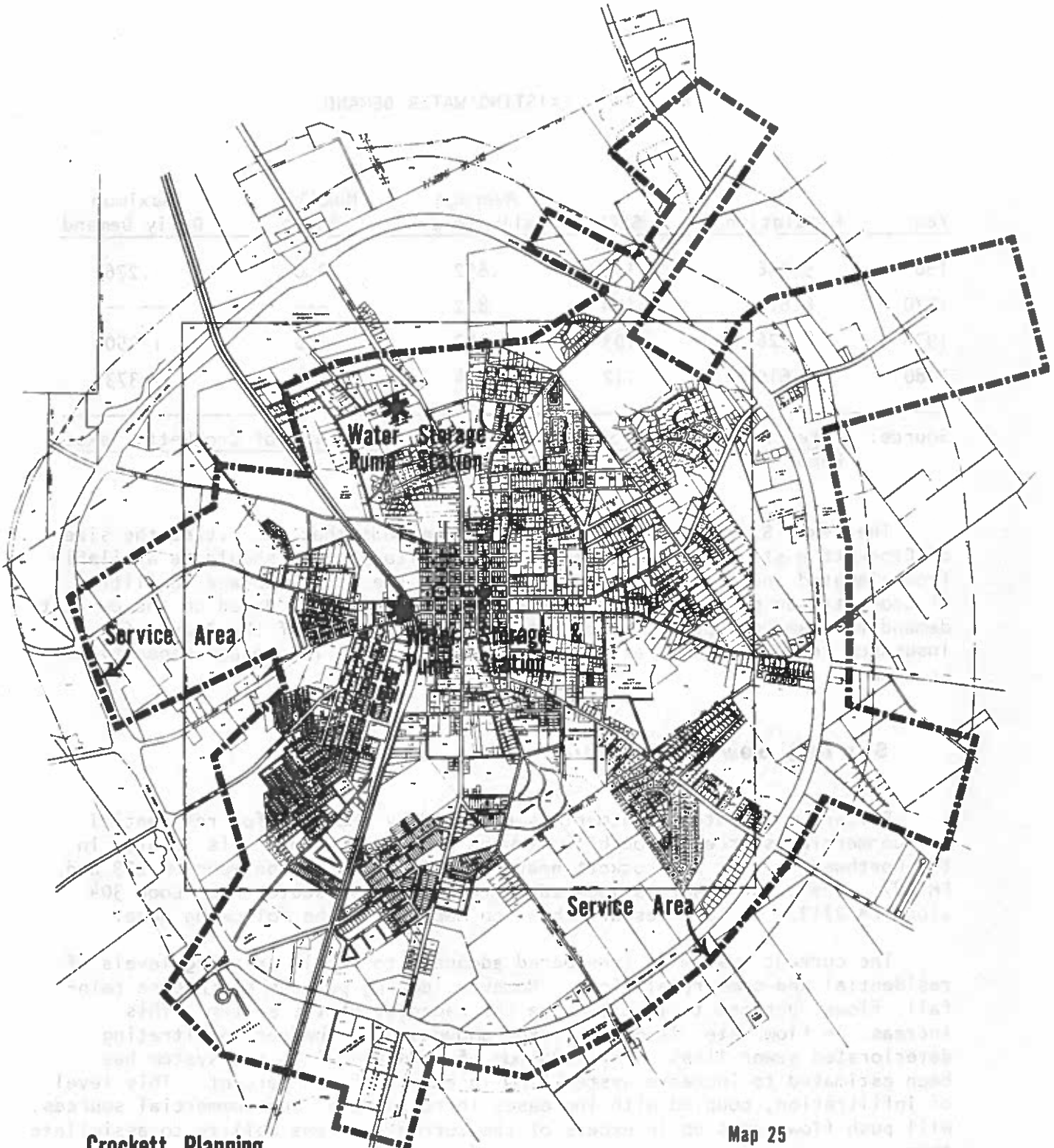
Map 24

Ground and Surface Water Resources



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Map 25

Water Distribution System

TABLE 18: EXISTING WATER DEMAND

Year	Population	GPCD	Average Daily Demand	Max/Avg. Ratio	Maximum Daily Demand
1960	5,536	122	.652	2.0	1.276
1970	6,616	124	.822	---	-----
1975	8,226	103	.849	1.6	1.350
1980	8,610	112	.964	1.4	1.373

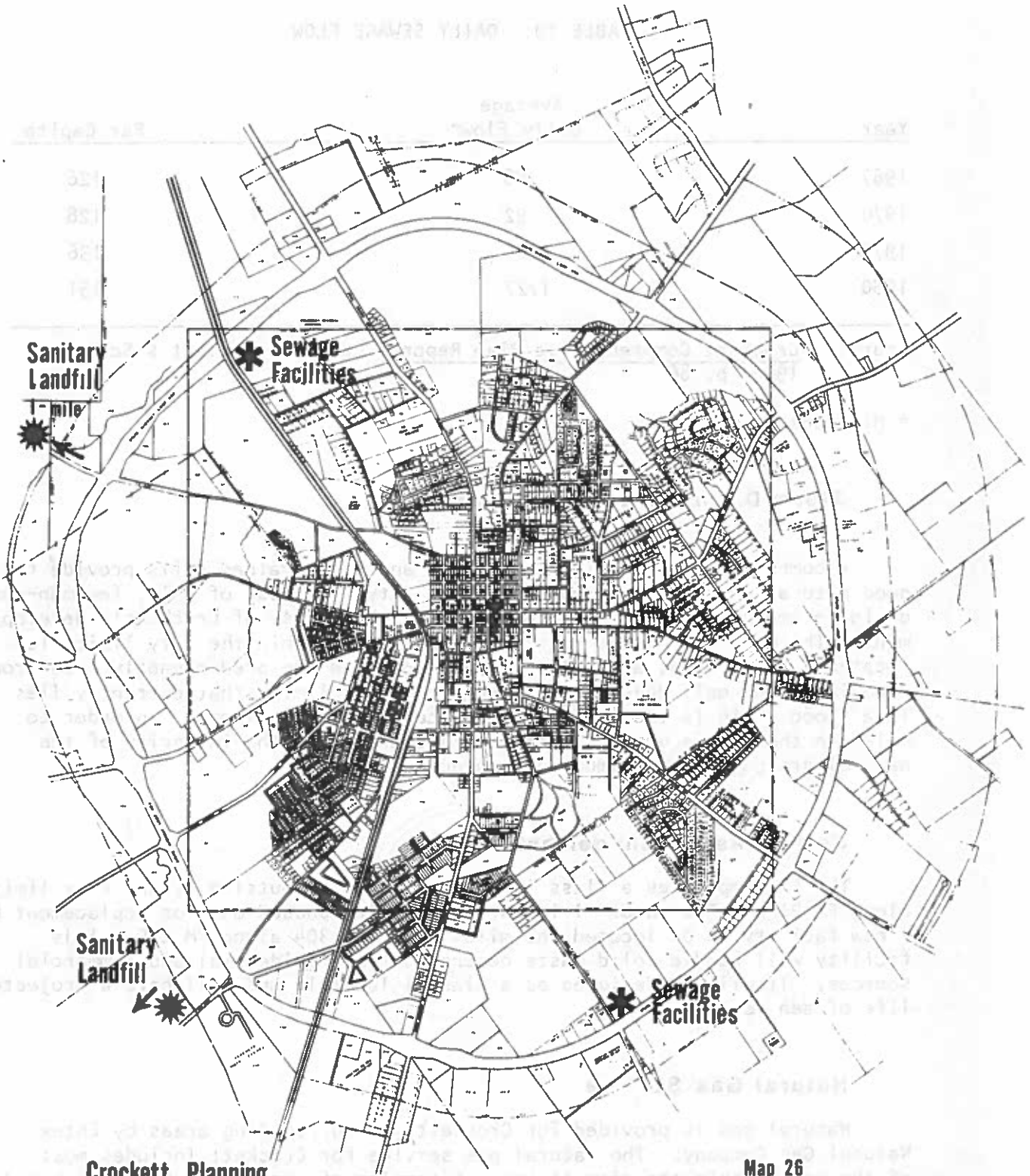
Source: Water Distribution System Analysis for the City of Crockett, Texas. Report CT-001. p. III-3, 1980.

The Texas State Board of Insurance recommends that for cities the size of Crockett a standard of 130 gallons per capita per day should be available from elevated and ground storage. Presently, the water storage facilities of Crockett can provide 123 gallons per capita per day. Based on the current demand this amount appears to be sufficient. However, if the Board of Insurance recommendations are to be met, an increase in storage capacity will be needed.

Sanitary Sewage Facilities

Primary wastewater treatment is provided by the city for residential and commercial sources through two sewage plants. One plant is located in the northwest sector of Crockett near the railroad track between FM 229 and FM 287. The other plant is located in the southeast sector near Loop 304 along FM 2712. These sites are shown on Map 26, on the following page.

The current system is considered adequate to handle existing levels of residential and commercial flows. However, during periods of intense rainfall, flows increase to levels above the capacity of the system. This increase in flow rates is due to large amounts of rainwater infiltrating deteriorated sewer lines. Infiltration of rainwater into the system has been estimated to increase system flow in excess of ten percent. This level of infiltration, coupled with increases in residential and commercial sources, will push flow rates up in excess of the current systems ability to assimilate them.



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Map 26

Sanitary Sewage and Solid Waste Facilities

TABLE 19: DAILY SEWAGE FLOW

Year	Average Daily Flow*	Per Capita
1967	.88	126
1970	.92	128
1975	1.06	136
1980	1.27	151

Source: Crockett Comprehensive Plan Report, Caudill, Rowlett & Scott, 1968, p. 86.

* Millions of gallons

Storm Drainage & Flood Control

A combination of rolling topography and well drained soils provide for good natural surface drainage within the City. Because of this, few man-made drainage improvments have been made during the course of Crockett's development. The majority of the existing development within the city limits is located in areas that are well drained and which are predominantly free from flooding. The only development within the city limits that currently lies in a flood plain is the land strip adjacent to the railroad. In order to maintain the city's good, natural surface drainage, the integrity of the natural drainage pattern must be protected.

Solid Waste Management

The City operates a Class 1 sanitary landfill outside of the city limits along FM 2110. The landfill is currently being phased out for replacement by a new facility to be located one mile from Loop 304 along FM 229. This facility will handle solid waste generated from residential and commercial sources. It will be designed as a Class 1 landfill and will have a projected life of ten years.

Natural Gas Service

Natural gas is provided for Crockett and surrounding areas by Entex Natural Gas Company. The natural gas service for Crockett includes most of the area within the city limits. Extension of service by Entex is based on demand. By franchise agreement with Crockett, Entex will provide the first 100 feet of 2-inch pipe free to each customer.

Electrical Service

Texas Power and Light Company supplies electrical power within the city limits of Crockett. Extension of electrical service is based on a particular area's need. Rural areas adjacent to Crockett are provided electrical service by the Houston County Electric Co-op.

References:
1. Draft Planning Document, Texas Water Development Board, Austin, Texas, Volume 2, May, 1977.
2. Water Distribution System Analysis for the City of Crockett, Texas, Report CT-001, 1980.
3. Crockett Comprehensive Plan Report, Caudill, Rowlett & Scott, 1968.

INTRODUCTION

Introduction

Crockett and the Future, constitutes Part 2 of the Crockett Planning Information Document. It is as its title implies, an evaluation of the city and its projected growth, development, and problems through the next twenty years. In Part 1 of the Document, The Existing City, a team of graduate students from the Department of Urban and Regional Planning at Texas A&M University focused on key elements within the community and presented a compilation of the existing conditions within the city. Part 2, addresses the same areas and issues, and assesses the impacts of continued growth in Crockett, specifically its consequences on the local economy, community facilities, public utilities, land use, and the transportation system.

The specific topics covered in Part 2 are: Goals and Objectives, Regional Resources and the Economy, Future Population of Crockett, Future Land Use, Transportation, the City Center, Community Facilities, Public Utilities, Historic Preservation, and the Visual Image of Crockett. The individual sections and the projections contained in those sections are predicated on the quantitative ground work layed in Part 1.

Crockett and the Future, is the final step in the analytical proces which will lead to the development of the 1980 Crockett Comprehensive City Plan. The alternatives outlined in this document provide the necessary information to complete the current revision of the 1969 Crockett Comprehensive Plan, and will lead to a greater awareness of Crockett's problems and potential in the years to come.

COMMUNITY GOALS and OBJECTIVES

Introduction

The following goals and objectives were prepared by the graduate students of the Department of Urban and Regional Planning at Texas A&M University for review and consideration by the citizens of Crockett. The material contained in this section of the Document has been published in the Houston County Courier Newspaper. The Crockett Planning and Zoning Commission will work with the citizens of Crockett in modifying and formalizing goals and objectives for adoption by the city and for use in the production of the Crockett Comprehensive City Plan.

The Environment

Goal 1: To preserve undeveloped open space and natural areas.

- Objective 1: To ensure that land around major water sources remains undeveloped to reduce the contamination risk to water quality.
- Objective 2: A linear park system can be utilized and should be designed to follow the pathways of creeks, thus maximizing the use of undevelopable land areas.

Goal 2: To maintain creek environments and floodplains in their natural condition.

- Objective 1: To make sure that no development occurs in the floodplain.
- Objective 2: To encourage the dedication of floodplain land to the city.

Goal 3: To improve the quality of development through specific controls.

- Objective 1: To develop a watershed management system in which the runoff coefficients are the same before and after development.
- Objective 2: To design standards for on-site containment of storm-water.

Goal 4: To control water pollution of major water sources.

- Objective 1: To develop effective administrative controls over land use.
- Objective 2: To control the density of development.
- Objective 3: To develop watershed management practices.
- Objective 4: To develop an effective solid waste management system.
- Objective 5: To comply with EPA drinking water and solid waste standards.

Goal 5: To control air pollution.

Objective 1: To control the density of development.
Objective 2: To develop effective administrative controls over land use.
Objective 3: To comply with EPA air pollution standards.

Goal 6: To control noise pollution.

Objective 1: To control the density of industrial and commercial development.
Objective 2: To develop effective administrative controls over industrial and commercial land use.
Objective 3: To comply with EPA noise pollution standards.

Goal 7: To economize on the natural resource potential of the land within the city limits and extraterritorial jurisdiction.

Objective 1: To re-emphasize agriculture in the community and to encourage small farms.
Objective 2: To optimize the industrial potential of timber-related manufacturing, lignite-related manufacturing, and sand or gravel mining.

The Economy

Goal 1: To increase employment and earnings commensurate with Texas norms.

Goal 2: To increase the strength and diversity of the economy.

Goal 3: To develop city growth plans that encourage an orderly economic situation.

Goal 4: Encourage a sound and non-fluctuating economy based on regional resources and the available labor force.

Objective 1: Acquire the necessary financial capital to assist small business starts and expansions.
Objective 2: Provide vocational training and retraining to increase resident skill and vocational diversity.
Objective 3: Remove unnecessary governmental intervention into local business and industry.
Objective 4: Encourage the development of service and tourist industries.
Objective 5: Diversify the present agriculturally based economy by supporting marketing, shipping and service activities.

Objective 6: Develop non-agricultural industries based on area resource availability. (i.e., oil, gas and lignite)

Objective 7: Encourage new industries whose work forces are not subject to seasonal lay-offs.

Objective 8: Upgrade services within the present city limits before annexing additional territory.

Objective 9: Develop a series of new industrial locations and develop long range plans to serve them with utilities.

Objective 10: Promote city growth and transportation patterns that are energy efficient and that facilitate business interaction.

Objective 11: Appraise and control the present and future subdivision development activity.

Objective 12: Work with the Deep East Texas Council of Governments to encourage planned economic development on a regional basis.

Land Use

Goal 1: Provide for safe, orderly and environmentally sound development in previously undeveloped areas and promote redevelopment activities in the central community on an equal basis with the development of the new areas.

Long Term Objectives

1: Develop and adopt a land use plan which will assure the provision of adequate industrial and commercial areas.
2: Set aside exclusive residential neighborhood units where investment in new homes and the maintenance of existing dwellings will be protected and encouraged.
3. Create a compact, orderly and economic urban pattern related to the physical features of the site.
4. Requests for commercial and industrial zoning should be explicitly tied to the future land use plan and activity centers.
5. Erosion controls should be enforced on land being developed to prevent adverse impact on surrounding property as well as to reduce air pollution.
6. Develop an industrial park area that will permit more efficient and economical extension of municipal services through the concentration of industries.

Short Term Objectives

1. Illegal, non-conforming land uses should be discontinued and encouraged to relocate to appropriately zoned areas.
2. Areas with flooding problems should only be developed with proper flood control measures.

3. Ensure that proposed development is compatible with surrounding land use.
4. Update the land use survey program every two to three years.
5. Develop residential density standards in accordance with the family's ability to afford housing and other energy and efficiency considerations.
6. Ensure the development along major thoroughfares is orderly and appealing in visual appearance, with increased building setbacks, landscaping and screening as a part of an overall improvement effort.

Transportation

Goal 1: To develop a system of streets which are capable of safely and efficiently transporting all modes of transportation through, to and from the city.

Goal 2: To ensure the coordination of all modes of transportation in the Crockett region.

Objective 1: Adopt a major street plan which sets forth standards for major, secondary and residential street design, construction and maintenance.

Objective 2: Initiate and organize a comprehensive street improvement program to pave each street in the city to conform with recommended standards set forth in the major street plan.

Objective 3: Construct curbs and gutters in the city streets to maintain proper drainage.

Objective 4: Implement changes in the system of highways so that they do not disrupt the use and enjoyment of property.

Objective 5: Adopt a policy to require the developer of new subdivisions to provide transportation facilities that conform with stated goals.

Objective 6: Provide the needed funds to continue the systematic program of continual maintenance for streets and sidewalks.

Objective 7: Implement a system of traffic circulation that contains a minimum of conflicts and which encourages traffic flow in the area surrounding the courthouse.

Objective 8: Eliminate, where possible, automobile and rail conflicts.

Housing*

Goal 1: A decent, safe and sanitary home for every family.

Long Term Objectives

1. It is the objective of the City to develop a wide range of housing that will meet the projected population growth of the City and which will likewise meet the preferences expressed by citizens.
2. It is the City's objective to encourage policies designed to preserve and enhance the character and integrity of existing residential neighborhoods.
3. The City hereby states its firm policy against discrimination in housing based on race, color, religion, sex or national origin, and its commitment to measures and policies which will eliminate all such discrimination.
4. It is the objective of the City of Crockett to develop and implement sound land use planning policies geared to the accomodation of a varied group of activities with the highest level of efficiency possible.
5. The City will actively participate in the housing programs of the Deep East Texas Council of Governments.

Short Term Objectives

1. Develop an Annual Housing Program.
2. Develop a coordinated system for the mutual advancement of housing and capital investment. The City will establish minimal community facilities criteria for each and every neighborhood in Crockett and will develop the policies, procedures and mechanisms necessary to ensure their effectuation.
3. Develop and implement legal tools and encourage and support private and public efforts to preserve Crockett's historically significant structures, particularly in reference to the existing housing stock. The City will attune its municipal code program and will examine its tax system to ensure that every possible measure is taken to protect and preserve historically significant homes and structures.
4. Utilize a major portion of the City's annual Community Development Block Grant funds in the revitalization and development of neighborhoods in Crockett.
5. Develop additional multiple-family housing.
6. Develop additional public and private housing for low income families.
7. Encourage and support the planning and development of well-designed and well-constructed mobile home neighborhoods within the City.

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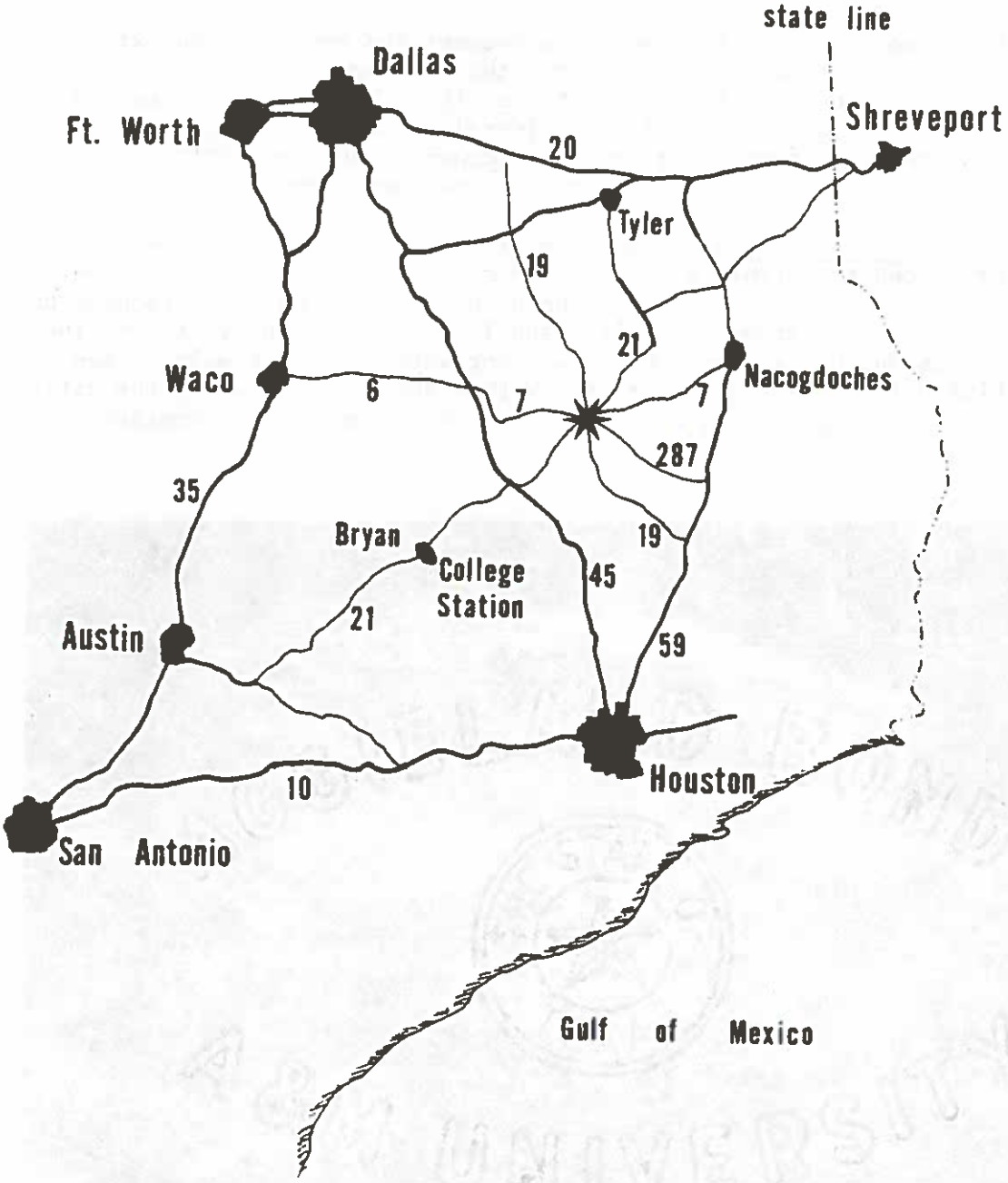
* The goals and objectives relating to housing were not done as a part of the other topics. Instead, these goals and objectives were drawn from the "Crockett Housing Element", prepared for the City in 1980.

REGIONAL RESOURCES and the ECONOMY

Introduction

The purpose of this section is to present the regional context in which Crockett interacts, and to assess the problems and potential of the present and future economic status of the city. The topics covered in this section include: water, timber, mineral resources, highways, railways, airports, the labor force, the regional economy, and Crockett's future economic development as it relates to each of these topics.

Map 1, The Regional Setting, shows the east Texas region and its major urban centers within a two-hundred mile radius of Crockett. The region is predominantly wooded with both softwood and hardwood forest, has numerous lakes and large reservoirs, and is characterized by its rolling hills. Houston, Dallas-Fort Worth, and Shreveport are the major urban centers which define the region's edge. Within the region proper, the cities of Huntsville, Longview, Lufkin and Nacogdoches comprise the dominant urban complexes.



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prepared by the
Department of Urban and Regional Planning
Texas A&M University, College Station, Texas
1980

North

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Map 1

Regional Setting

Water

Houston County lies within Zone 2 of the Lower Trinity River Basin. By definition this zone includes Anderson, Freestone, Leon, Houston, Madison and Walker Counties. Regional sources of water within this zone extend from both ground and surface water development.

Regional ground water is supplied from one major and two minor aquifers. They are the Carrizo-Wilcox, the Queen City and the Sparta, respectively. Water produced from these sources ranges in quality from "quite good" to moderately usable. The quality of the water is generally considered "quite good", with some deterioration with downdip.

Regional yields from large capacity wells are from 250 gallons per minute (GPM), to approximately 1200 GPM, with a mean recovery rate of 503 GPM.[1] Average annual ground water availability for the region is estimated at 133 thousand acre-feet. Of this approximately 12.4 thousand acre-feet are considered to consitute firm supply volume.[2] Current projections indicate that this figure will remain constant through the year 2020.

Available ground water supplies will continue to provide a portion of municipal and manufacturing needs within the region. However, a substantial increase in the use of surface water will be necessary to adequately meet future needs.

Most of the smaller public water systems and a significant portion of the manufacturing water demands within the region are supplied by surface water. There are two major reservoirs within the region, Houston County Lake and Lake Fairfield. Houston County Lake, owned by Houston County Water Control and Improvement District No. 1, supplies the cities of Crockett, Lovelady, and Grapeland. Lake Fairfield, owned by Texas Utilities, Inc., supplies water for cooling purposes at their Big Brown steam-electric power plant in central Freestone County.

Major water quality problems are restricted to the main stem of the Trinity River, as well as portions of the West Fork and the East Fork. Pretreatment of reservoir water eliminates the majority of these water quality problems.

Municipal and manufacturing water demands within the region are projected to exceed 23.6 thousand acre-feet annually by the year 2000.[3] However, extensive near- surface and deep basin lignite reserves within the region could result in accelerated manufacturing growth; thus, economic growth and associated water demands could significantly exceed projected use figures.

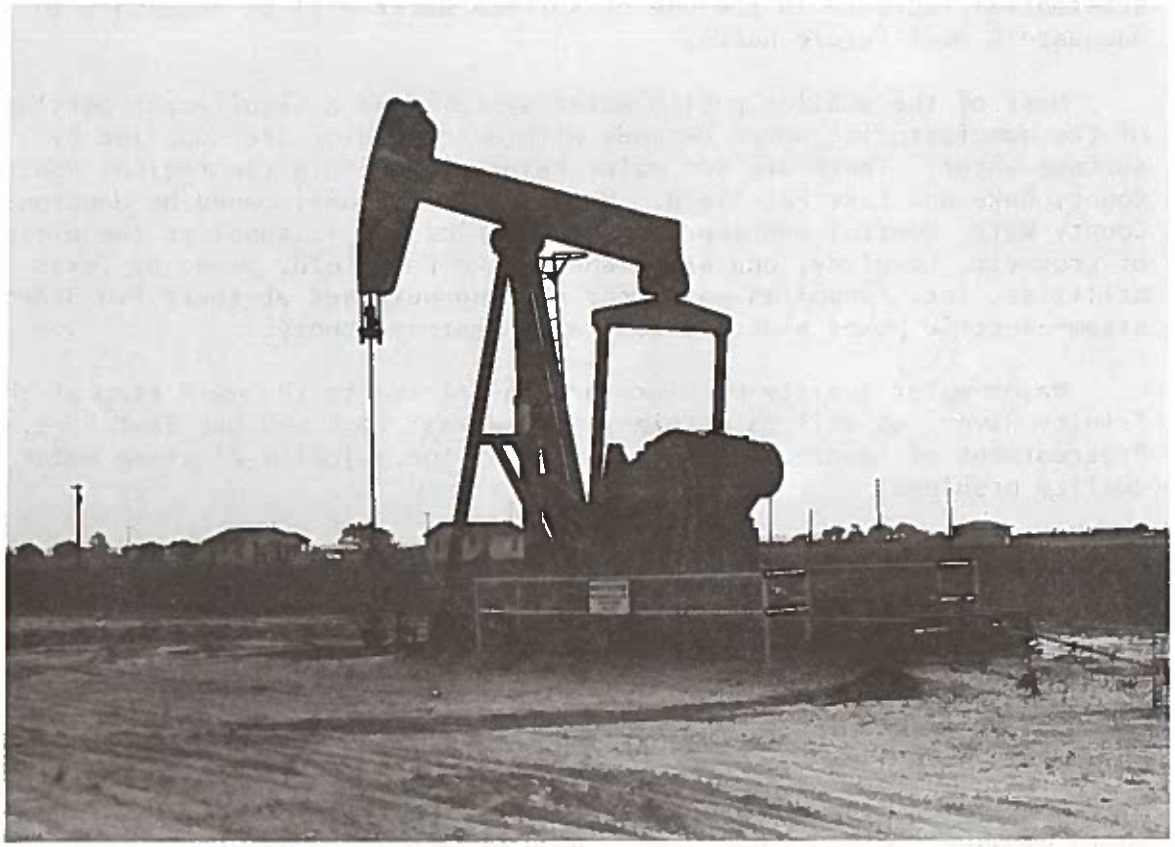
Firm supply volume for both ground and surface water within the region is projected to be 64 thousand acre-feet for the year 2000. Total in-basin demands including municipal, manufacturing, steam-electric, irrigation, mining, and livestock needs are also projected to be 64

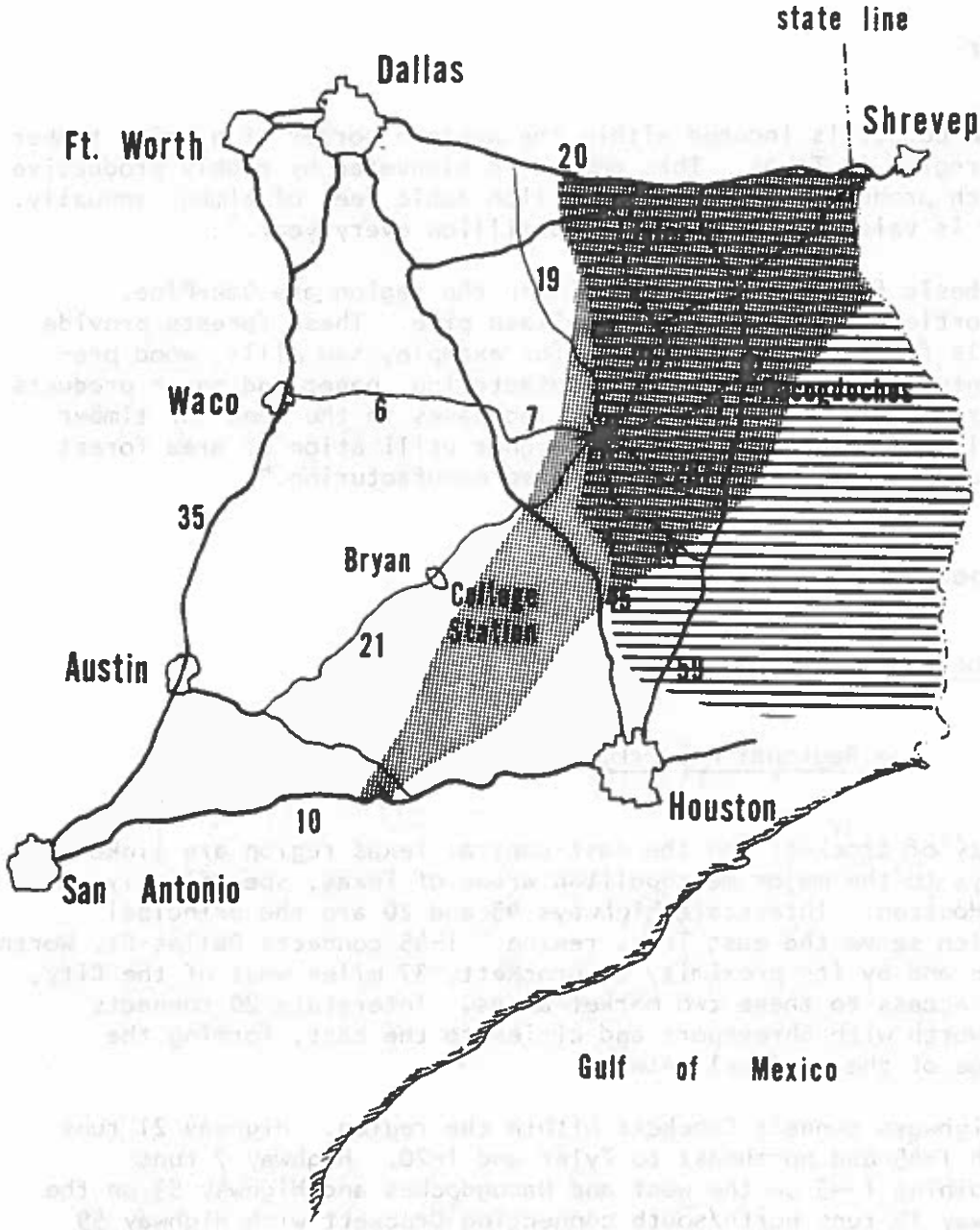
thousand acre-feet for the year 2000.[4] This indicates that much of additional surface water needs within the region, up to the year 2000, can be met from existing major projects, small local systems, return flows, and from the Trinity River Authority's share of the yield from Lake Livingston. After the year 2000 additional sources of firm supply surface water must be considered to adequately meet future demands.

Mineral Resources

Houston County is underlaid by extensive seams of fair to excellent quality lignite. These deposits are separated into two stratigraphic layers, near-surface and deep-basin. Current mining technology can retrieve up to 85 percent of the lignite within these deposits. Increases in the price of imported fuels combined with the surge of interest in alternative fuel sources may provide an impetus for large scale lignite extraction within the region.

Other mineral resources within the region include oil, gas, gravel and sand. Oil and gas production within the region exceeds six million





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North

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Map 2

Mineral & Timber Resources

Lignite

Timber

dollars annually. Gravel and sand extracted from geologic outcroppings within the region are used for foundations, fill materials and base constituents for cement production.

Timber

Houston County is located within the western border of a major timber production region in Texas. This region is blanketed by highly productive forests which produce more than 300 million cubic feet of timber annually. This timber is valued in excess of $130 million every year.[5]

Three basic forest types found within the region are Oak-Pine, Loblolly-Shortleaf pine, and Longleaf-Slash pine. These forests provide raw materials for several industries, for example, saw mills, wood preserving plants, pulpmills, plywood manufacturing, paper and paper products and furniture manufacturing. Expected increases in the need for timber products will mean an opportunity for higher utilization of area forest land and the development of timber related manufacturing.[6]

Transportation Facilities

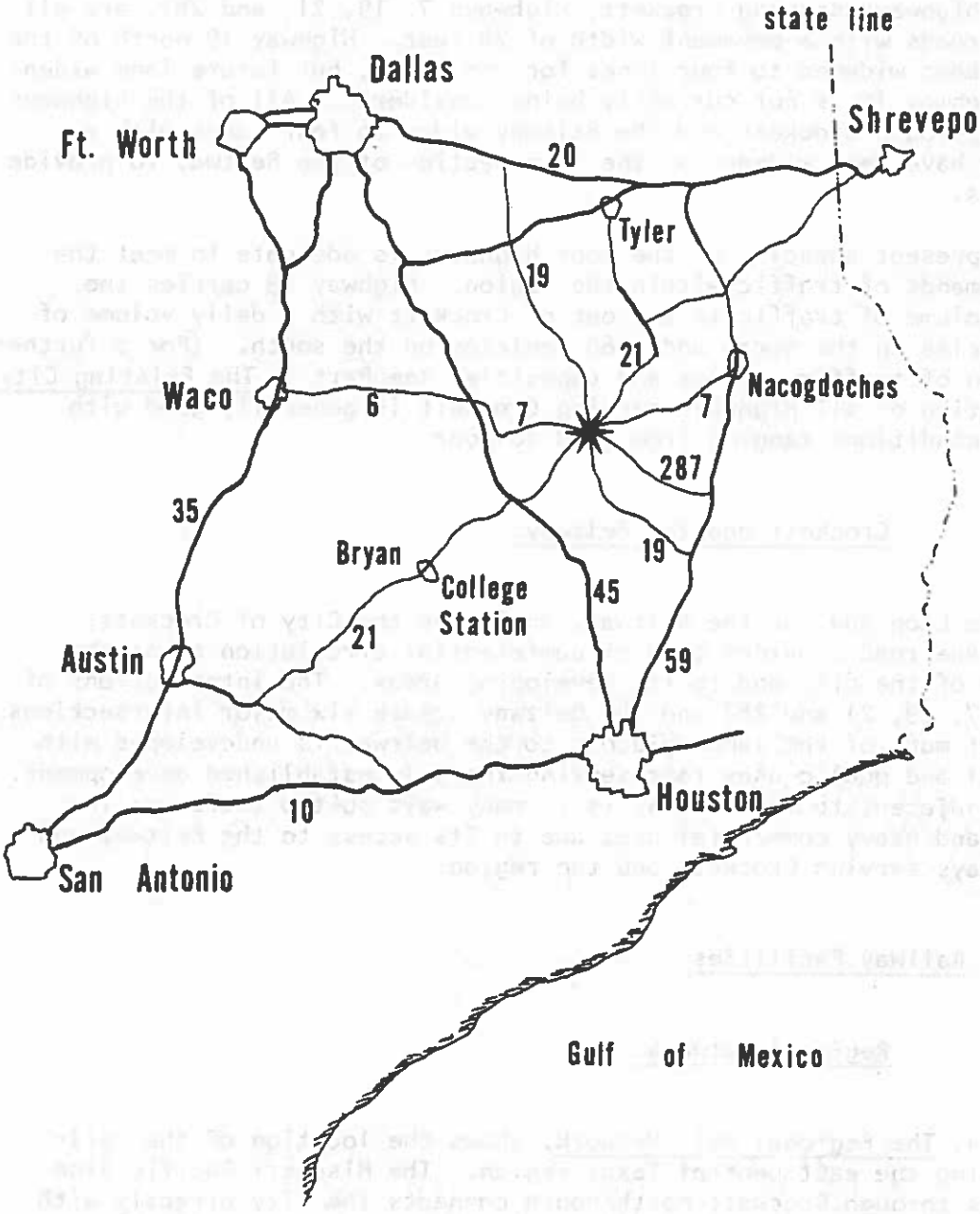
Roads and Highways:

The Regional Network:

The City of Crockett and the east-central Texas region are linked by four highways to the major metropolitan areas of Texas, specifically, Dallas and Houston. Interstate highways 45 and 20 are the principal carriers which serve the east Texas region. I-45 connects Dallas-Ft. Worth with Houston and by its proximity to Crockett, 37 miles west of the City, it provides access to these two market areas. Interstate 20 connects Dallas-Ft. Worth with Shreveport and cities to the east, forming the northern edge of the regional network.

Four highways connect Crockett within the region. Highway 21 runs southwest to I-45 and northeast to Tyler and I-20. Highway 7 runs east/west joining I-45 on the west and Nacogdoches and Highway 59 on the east. Highway 19 runs north/south connecting Crockett with Highway 59 on the south and eventually terminates at I-20. Highway 287 runs southeast/northwest from Crockett and terminates at Highway 59. Map 3, The Regional Highway System, shows the existing highway network and Crockett's relationship to the major urban areas within a 200+ mile radius.

The present highway network and Crockett's proximity to Houston and Dallas-Ft. Worth allow goods to travel to and from Crockett to these major markets in approximately three hours.



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Map 3

Regional Highway System

Capacity and Condition:

The highways serving Crockett, Highways 7, 19, 21, and 287, are all two lane roads with a pavement width of 24 feet. Highway 19 north of the City has been widened to four lanes for ten miles, but future lane widening on Highway 19 is not currently being considered. All of the highways as they approach Crockett and the Beltway widen to four lanes with a median or have been widened at the intersection of the Beltway to provide turn lanes.

The present capacity of the four highways is adequate to meet the future demands of traffic within the region. Highway 19 carries the highest volume of traffic in and out of Crockett with a daily volume of 4420 vehicles on the north and 3560 vehicles on the south. (For a further discussion of traffic volumes and capacities see Part 1, The Existing City. The condition of all Highways serving Crockett is generally good with shoulder conditions ranging from good to poor.

Crockett and the Beltway:

State Loop 304, or the Beltway, encircles the City of Crockett. The two lane road provides good circumferential circulation along the periphary of the City and to its developing areas. The intersections of Highways 7, 19, 21 and 287 and the Beltway create six major intersections. At present much of the land adjacent to the beltway is undeveloped with industrial and public uses representing the only established development. The area adjacent to the Beltway is in many ways suited to future industrial and heavy commercial uses due to its access to the Beltway and the highways serving Crockett and the region.

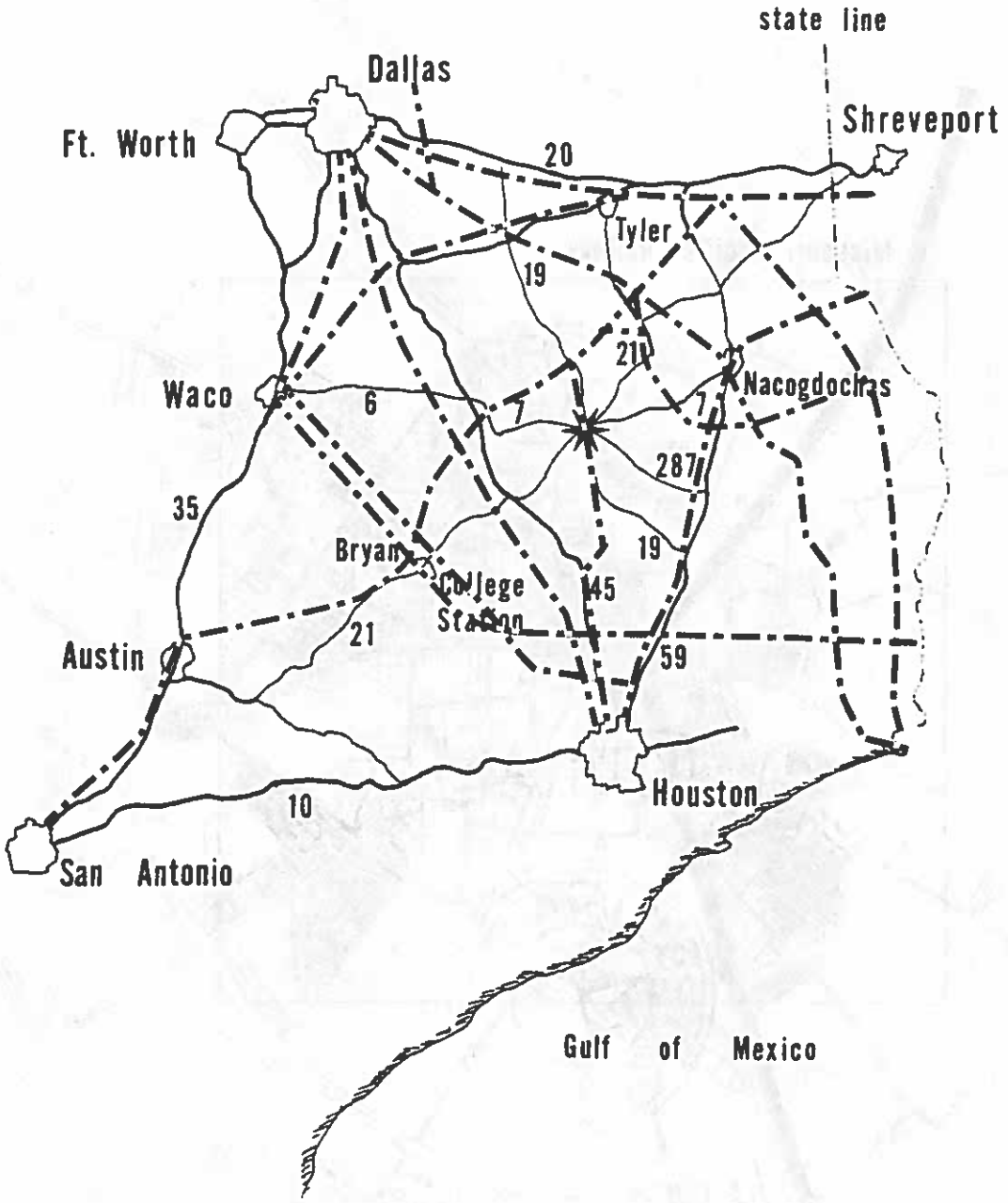
Railway Facilities

Regional Network:

Map 4, The Regional Rail Network, shows the location of the railways serving the east-central Texas region. The Missouri Pacific line which runs through Crockett north/south connects the City directly with Houston and its switching facilities. On the north, the Mo-Pac line runs into a major line serving Austin and Shreveport.

Crockett's Rail Facilities:

Crockett is served by a line of the Missouri Pacific railroad. The line runs from the north to south bypassing the downtown area on the



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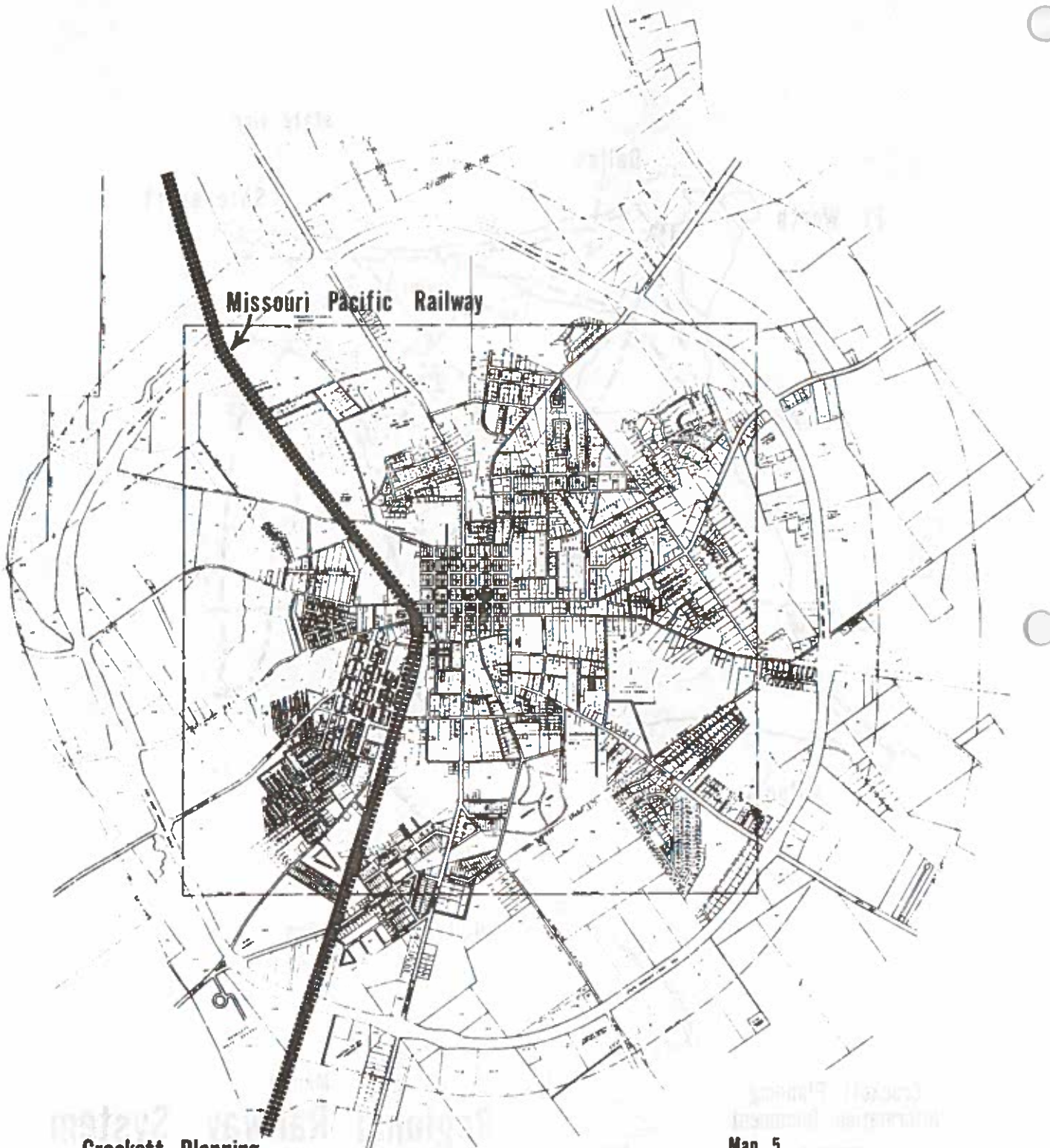
Map 4

Regional Railway System

Railways



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1980

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Map 5

Railway Network

west by two city blocks. Map 5, Crockett's Rail Facilities, shows the path of the railway throughout the City. The daily rail traffic averages 12-13 trains with one making a stop in Crockett alternating north/south on a daily basis. Rail service in Crockett is limited to freight and terminal which are available within the City. Private commercial spurs are in use, serving customers and industry located adjacent to the Mo-Pac line, although no numbers are available.

Air Transportation

The Regional Network:

The east-central Texas region is served by airports in several communities; Nacogdoches, Huntsville, Tyler, and Palestine have airports for private aviation with all but Palestine having limited commercial service for passengers and freight. Houston's Intercontinental and the Dallas-Ft. Worth International Airports are within a 3 hour drive or 35 minute flight and provide national and international flights.

Crockett's Airport Facilities:

Crockett is served by the Houston County Airport which is located nine miles east of the City. The Houston County Airport has a 4,000 foot asphalt runway which is topped and lighted. At present, no commercial flights are available and all air traffic is private.

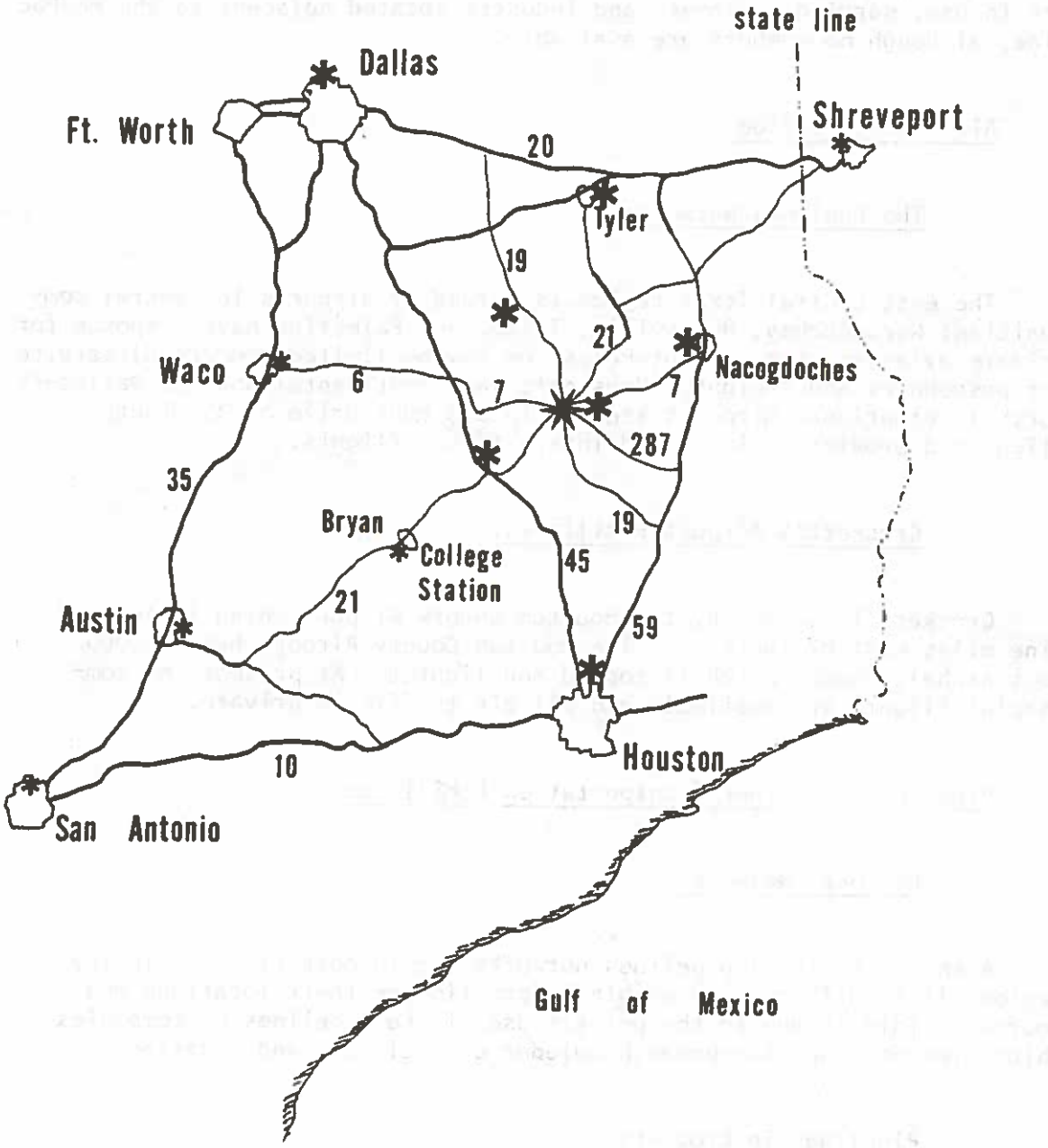
Pipelines and Other Transportation Facilities

Regional Network:

Although regional pipelines networks are in operation within the region, it is difficult to obtain information on their locations and sources. This is due to the private use of the pipelines by companies which prevents the widespread knowledge of their use and location.

Pipelines in Crockett:

The only pipeline directly serving the Crockett area is a natural gas pipeline owned and operated by Entex.



Crockett Planning Information Document

prepared by the Department of Urban and Regional Planning Texas A&M University, College Station, Texas 1980

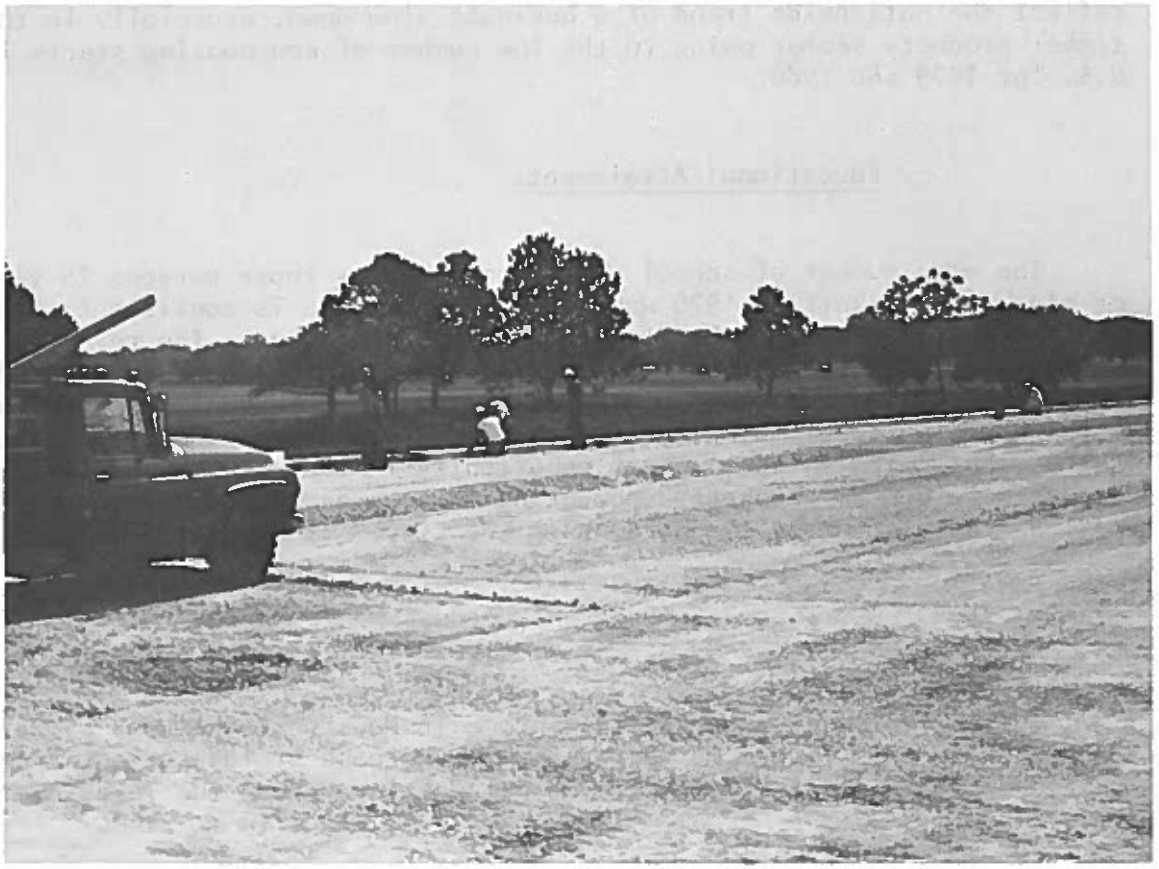
North

0 600 1200 2000 Scale

Map 6

Airports in the Region

* Airports



The Labor Force

Labor Force Characteristics:

An Age/Sex Profile of the Labor Force:

An analysis of the Crockett labor force indicates that approximately 4037 individuals between the ages of 15 and 65 are available and participate in the labor force. In 1980 females in the work force constituted 69.2 percent of the work force with males accounting for the remaining 30.8 percent.

Unemployment:

The rate of unemployment in Crockett currently is 9 percent. This figure is 50 percent higher than the current Houston County employment

rate of 6 percent and is high relative to the Texas average. The current employment figures may indicate a shift in the economy of Crockett and reflect the nationwide trend of a business slow down, especially in the timber products sector owing to the low number of new housing starts in the U.S. for 1979 and 1980.

Educational Attainment:

The mean number of school years completed by those persons 25 years or older in Crockett in 1970 was 10.7. This figure is consistant with other communities of Crockett's size within the region. The relative scarcity of employment requiring specialized training or advanced study beyond high school is responsible for the present figure for educational attainment. A great majority of high school graduates pursue a college degree, but owing to the lack of opportunity in their chosen field, few elect to return to Crockett, accounting for the depressed level of educational attainment by the persons in the City.

Per Capita Income:

The estimated 1978 per capita income in Houston County was $5,933. In comparing this figure it represents an increase of 106 percent from the 1975 figure of $2,877, and is 25 percent lower than the Texas Average of $7,746.[7]

Existing Employment Profile:

Table 1, Crockett's Employment Profile, shows the 1977 breakdown of employment within the City, contrasted with the figures for 1970.

The three sectors which employ the greatest number in Crockett are Manufacturing, retail trade, and service industries. As Table 1 indicates all sectors lost employment from 1970 with the exception of the public utilities sector. Losses were greatest in the Construction, service, and wholesale trade sectors.

TABLE 1: CROCKETT'S EMPLOYMENT PROFILE 1977

	Percent of Total Employment			
	1970	1977	% Change	Change in No. of Persons
Agriculture	*	*	*	
Mining	2.6	*	*	*
Construction	13.5	6.2	-7.3	-501
Manufacturing	26.5	35.8	+9.3	-248
Public Utilities	2.0	5.9	+3.9	+81
Wholesale Trade	7.7	5.8	-1.9	-219
Retail Trade	16.8	22.2	+5.4	-173
Financial, Insurance	4.2		+0.5	-71
Service	26.5	19.3	-7.2	-765
Unclassified	*	*	*	

*Data not available

Source: County Business Patterns, U.S. Census, vol. 970, 975, 977.

Conclusion

The labor force of Crockett is heavily represented by those individuals with modest work skills and education. This is due in part to the types of employment opportunities available within the City of Crockett, especially in the manufacturing sector where job skills are more in demand than is education. The composition of the work force is predominately female, some 70 percent which may indicate a high percentage of two income households, or a substantial number of women are the sole income earners within a household.

The 1980 unemployment figure is approximately 9 percent due in part to a slowdown in the construction industry in Texas and in the U.S.

Alternatives and Implications

For the citizens of Crockett to realize their full employment potential the City should make efforts to promote industrial location within the City. A diversity of industries should be encouraged to minimize the impact of a temporary recession within a sector and the ensuing unemployment. Vocational education in the public schools is an option which would supply industry with trained personnel and have many positive spinoffs for the total population of Crockett.

Regional Economic Growth

An Analysis of Historic Economic Development:

The City of Crockett's economic development has centered on its function as a seat of county government and as a commercial center for the agricultural communities in Houston County. The production of cotton and in the early 20th century, timber, have been and continue to be important elements of the local economy. During the post WW II period the agricultural base was diversified to include grain crops, cattle, and peanuts, with some commercial vegetable production.

The exploitation of mineral resources in Houston began in 1900 with the mining of lignite coal. Coal mining was halted as the oil and gas deposits in east Texas and Houston County were developed in the 1930's.

A Comparison of Regional, State, and National Economic Growth

The economic growth in Crockett has been related to growth within the east-central Texas region. The region is rich in mineral and timber resources, specifically lignite coal, oil, gas, and softwood lumber. Manufacturing has become an important element in the regional economy having experienced substantial increases over the last twenty years, with some fluctuations. Crockett's economy and that of the region are more dependent upon the available natural resources than the nation as a whole. Figure 3, An Economic Comparison of Region, State and Nation, indicates the relative differences between the regional economy and that of the nation and Texas.

Economic Growth in Crockett

A Comparison of Economic Growth in Crockett, the Region and the State

The City of Crockett follows the regional pattern of economic growth. That growth being based on the exploitation of agricultural and mineral resources, which in turn, provide raw materials for manufacturing of finished products.

Crockett follows the Texas pattern of growth in that there is a general national shift of labor and capital to the sunbelt. Although this trend is not strongly evidenced in Crockett, it can only have positive impacts if this national trend continues.

Conclusion

It is expected that any future economic growth within Crockett will continue along the historic pattern based on the proximity and availability of natural resources. The largest area of potential growth is within the manufacturing sector, primarily those firms which process raw materials extracted from the surrounding environment. Some smaller manufacturing firms may take advantage of moderate land costs, availability of labor force, the proximity to Houston, Dallas and other major regional markets, and the excellent transportation system, including the beltway, railway, and the four major highways which serve Crockett and the region.

Alternatives and Implications

An inhibiting factor on any future economic growth within Crockett, primarily in the manufacturing sector, is the current lack of industrial wastewater treatment capability by the city, and the lack of infrastructure to adequately provide raw water for industrial uses.

To fully capitalize on Crockett's industrial potential it is essential for the city to develop a policy to encourage industry. This may be accomplished through the development of an industrial park, with separate treatment of wastewater, and a line to supply raw water for industrial uses. The advantage of adopting an industrial park strategy for stimulating industrial development is in its lower costs to the city through centralization of services, and ultimately, lower costs to industry in the provision of these required services.

A survey taken in the report, Attracting New Industry,[8] indicates that the prime considerations in plant location are adequate drainage,

aesthetic environment, acceptable geographic and topographic locations, exposure to the public eye, availability and cost of utilities, adequate transportation system, police and fire protection, reasonable taxes and insurance, and compatable zoning. For Crockett to fully realize its economic potential these considerations must be discussed and decisions made.

References:

1. Continuing Water Resources Planning and Development for Texas, Phase I, Volume 2 of 2, Texas Water Development Board, Austin, Texas, May, 1977.

2. Ibid.

3. Ibid.

4. Ibid.

5. Economic Development Strategies, 1979, Update Report, Deep East Texas Council of Governments.

6. Crockett Comprehensive Plan Report, Caudill, Rowlett, and Scott, 1968.

7. U.S. Department of Commerce.

8. Attracting New Industry, Community Economic Opportunities Series Texas Industrial Commission, Mo. 2-76.

THE FUTURE POPULATION of CROCKETT

Estimating The Future Population of Crockett

Introduction

Planning for the future needs of a community requires that the city decision makers have a reasonable projection of future population. In most cases, various projection methods are applied and a best or most rational calculation or range of calculations are chosen for planning purposes.

Three different models were applied in this study. Two gave a cumulative total for Crockett's population and one breaks the population into age and sex components. Cumulative projections are useful in estimating total land use and facility needs for the future. The two non-component methods that were applied were the trend line analysis and the step-down ratio analysis. Component methods are necessary for many types of economic or facilities planning analysis. The productivity, taxing status and demand for various housing types are a reflection of the age and sex distribution of a community. For these reasons, it is desirable to apply a component method of population projection when one is attempting to meet specific future needs. The cohort survival method was applied in this study and gives a sex and age by 5 year cohort breakdown.

The purpose of the following analysis is not to indicate a certain number that should be rigidly applied but rather to give the Crockett decision makers a range of figures for analysis. For the purpose of the land use analysis, a "best estimate" or an estimate deemed reasonable was calculated from a compilation of the projections.

A Cohort Survival Analysis

The cohort survival component method is based on the fact that population change involves three separate components; birth, deaths and migration. Component models require comprehensive data sets that are generally not available at the local level. For this reason, birth and death rates were calculated from United States vital statistics. Migration rates were calculated by projecting Crockett's population, as enumerated by the 1960 census, to 1970 by applying just birth and death rates. The difference between the 1970 census and the 1970 estimate without migration, was assumed to represent the ingress or egress of migrants.

Determination of migration rates represents the most serious difficulty in the application of the cohort model. In this analysis, the migration rates were adjusted in 1980 by comparing male and female

TABLE 2: COHORT MODEL POPULATION PROJECTIONS FOR 1980, 1990, and 2000

	1980		1990		2000		2000*	
	M	F	M	F	M	F	M	F
0 - 4	382	453	616	647	844	893	641	679
5 - 9	280	453	808	880	806	816	612	621
10 - 14	423	543	357	603	783	863	595	656
15 - 19	417	690	480	876	936	1418	712	1078
20 - 24	193	385	303	709	258	619	196	471
25 - 29	81	234	99	273	252	599	192	455
30 - 34	78	182	57	234	217	709	165	539
35 - 39	156	267	82	238	101	356	77	271
40 - 44	160	252	171	304	52	285	41	217
45 - 49	139	200	165	258	83	244	63	186
50 - 54	143	185	139	203	170	309	129	235
55 - 59	141	215	120	198	139	277	106	210
60 - 64	131	187	107	201	106	191	81	145
65 - 69	85	167	84	146	76	145	58	110
70 - 74	73	140	39	124	79	149	60	113
75 +	199	365	92	277	75	301	57	229
Total:	3081	4918	3719	6171	4977	8174	3785	6215

*Based on "Best estimate"

school enrollment in the 10 to 19 year cohorts to the 1980 population estimates. The adjusted migration rates were then applied through the year 2000.

The results of the cohort survival analysis are shown in Table 2. The overall population is projected to grow from 7,999 to 13,151 between the years of 1980 and 2000. When this growth rate is broken into decades, and compared to the results of other projection methods, it is clear that this technique gave the highest results. For this reason, the cohort survival was not chosen as the best estimate. Historic trends, as presented in the following trend line analysis, do not justify such a high growth rate. For this reason, a best estimate for the year 2000 was calculated from an average of the trend line results and proportionally fitted to the cohort survival model for 2000. This modification gives a reasonable cumulative population estimate and an age-sex breakdown.

A review of Table 2 indicates several shifts in cohort sizes between the years 1980 and 2000. One can expect that Crockett's female population will remain higher than the male population. However, both sexes showed increased growth in the 0 to 19 year cohorts. Between the ages of 20 to 75, the male cohort sizes diminish due to out migration in the younger cohorts and lower survival rates in the older cohorts. The female population diminishes slightly after the age of 20 but increases at the age of 75. The increase in the 75 + range for both sexes can be attributed to an ingress of retired people into the community.

In general, the younger cohorts for both sexes showed the greatest increases. The male 35-39 cohorts showed a decline but the same female cohorts exhibited a slight increase. Both sexes increased at the 75+ age brackets due to high immigration rates.

Trend Line Analysis

Figure 1 gives a graphic example of Crockett's historic growth patterns. To provide a range of values, high, medium and low growth trends are projected. The best estimate for the year 2000 is based on an average of the results of this trend line analysis.

Projection A is an extension of the growth rate exhibited by the cohort model from 1970 to 1980. As previously noted, this model gave slightly higher results than the other methods and was thus chosen to represent the high growth alternative. Projection B is an extension of the 1960 to 1970 growth rate. This rate is approximately 19 percent per decade. Projection C is a computer trend line analysis based on historic data from 1940 to 1970. This alternative is the lowest because the decrease in population between 1950 and 1960 reduces the projected 1980 to 2000 growth rate. The best estimate trend line lies slightly below projection B and indicates an 11 percent to 12 percent growth rate per decade.

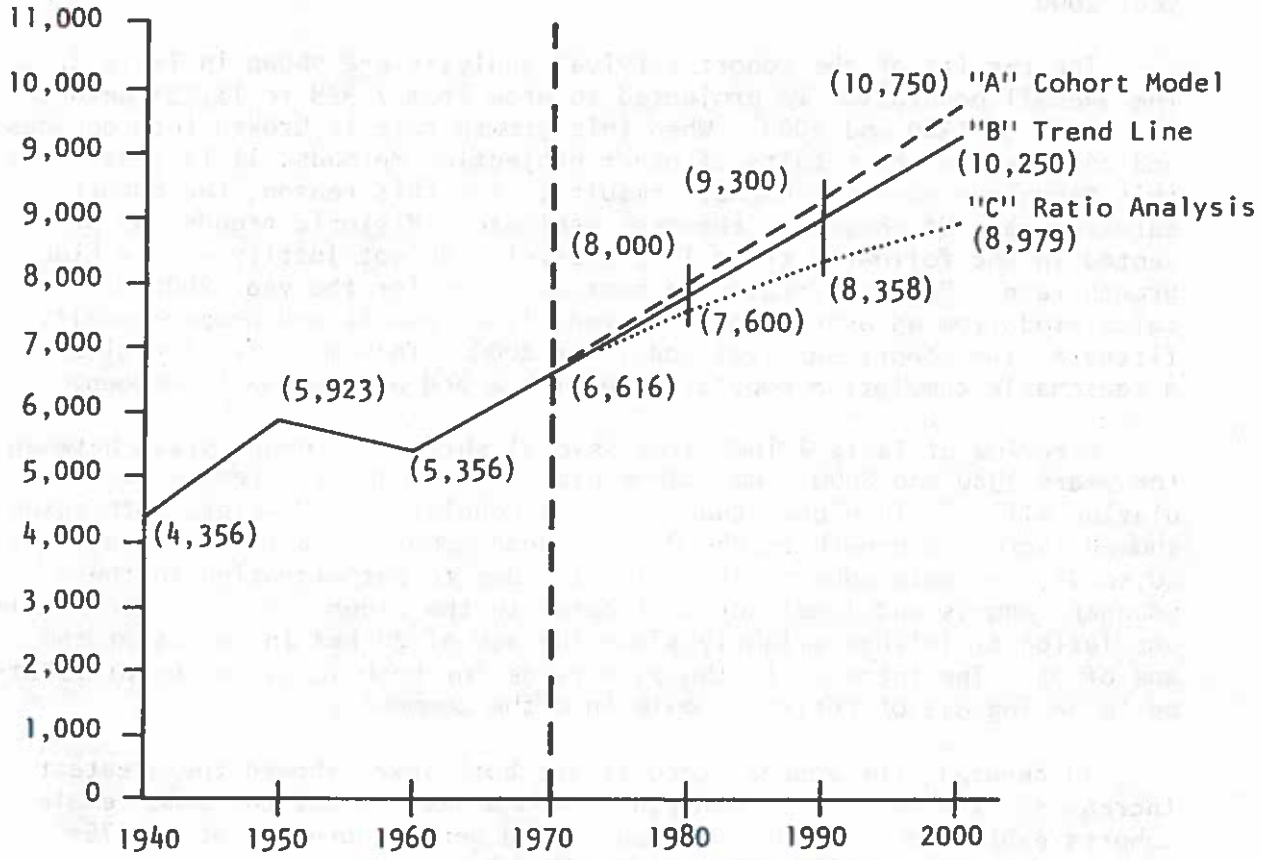


FIGURE 1: Three Population Growth Projection Alternatives

A Ratio Analysis

The ratio model projects Crockett's population as a step-down from the projected United States population. The country is broken down into increasingly smaller geographical regions and the population of each division is represented as a proportion of the next larger division. Historic ratios were calculated from 1940 to 1970 and these ratios were projected for 1980, 1990 and 2000 (Tables 4 and 5). After these ratios were projected and the United States projections were extracted from the Statistical Abstract of the United States, Crockett's population was calculated by a simple step-down procedure (Table 6).

The results of this procedure gave the lowest projections of all models applied. The projected population is approximately 7,600 from the year 2000. These results do not correlate well with reality because preliminary census counts indicate a comparable figure for 1980. Consequently, the results of this method were not considered in the

calculation of a best estimate or in the calculation of future land use and facilities requirements.

TABLE 3: POPULATION OF REGIONS (x 1000)

Region	1940	1950	1960	1970
United States	131,669	151,326	179,323	203,127
South	41,670	47,399	54,973	62,798
W. South Central	13,063	14,538	16,951	19,322
Texas	6,415	7,711	9,580	11,197
East-Central Texas	439	376	358	393
Houston County	31	22	19	18
Crockett	4.5	5.9	5.3	6.6

TABLE 4: PROPORTION OF POPULATION IN REGIONS 1940 - 1970

Regions	1940	1950	1960	1970
United States	1.0000	1.0000	1.0000	1.0000
South/U.S.	.3165	.3132	.3060	.3090
W.S.C./South	.3135	.3067	.3084	.3077
Tx./W.S.C.	.4911	.5304	.5652	.5795
E. Cent. Tx/Tx.	.0684	.0488	.0373	.0350
Houston Co./E.C.T.	.0709	.0606	.0541	.0454
Crockett/Houston Co.	.1457	.2594	.2764	.3705

TABLE 5: PROJECTED RATIOS FOR REGIONS 1980 - 2000

Region	1980	1990	2000
United States	1.0000	1.0000	1.0000
South/U.S.	.3101	.3130	.3150
W.S.C./South	.3019	.3139	.3054
Tx./W.S.C.	.5940	.6089	.6208
E. Cent. Tx./Tx.	.0281	.0255	.0235
Houston Co./E.C.T.	.0430	.0351	.0325
Crockett/Houston Co.	.4503	.5445	.6455

TABLE 6: CALCULATION OF CROCKETT'S POPULATION 1980 - 2000 (x1000)

Region and Share	1980	1990	2000
Projected U.S. Pop.*	221,651	243,004	260,000
South/U.S.	.3101	.3130	.3150
Projected South Pop.	66,003	76,060	81,900
West S. Central/South	.3019	.3139	.3054
Projected W.S.C. Pop.	19,926	23,114	25,012
Texas/West S. Central	.5940	.6089	.6208
Projected Texas Pop.	11,836	14,074	15,527
East Texas/Texas	.0281	.0255	.0235
Projected E.C. Tx. Pop.	332	359	364
Houston Co./E.C. Tx.	.0430	.0351	.0325
Projected Houston Co. Pop.	14	13	12
Crockett/Houston Co.	.4503	.5445	.6455
Projected Crockett Pop.	6.4	6.8	7.6

*Source: Statistical Abstract of The United States, U.S. Census, 1978, p. 7.

Comparison of Results and Conclusion

In conclusion, population projections for the year 2000 ranged from 7,655 to 13,151 depending on the method applied. The most reasonable values were indicated by the trend line method which gave projections ranging from 8,979 to 10,750. In order to derive a reasonable component breakdown, the cohort survival model was proportionally adjusted to fit the best estimate calculations. The results of all projections are provided for comparison in Table 7.

TABLE 7: A COMPARISON OF POPULATION PROJECTIONS

Model	1980	1990	2000
Cohort Survival	7,999	11,269	13,151
Trend Line			
High	8,000	9,300	10,750
Med.	7,800	9,000	10,250
Low	7,600	8,358	8,979
Ratio	6,439	6,839	7,655
Best Estimate*	-	-	10,000

* - Estimate chosen for land use projections

The accuracy of most projection techniques diminish as the time frame is extended. For this reason, this analysis should be revised if the future economic or demographic conditions change drastically or when new census information becomes available.

FUTURE LAND USE

Introduction

With over 938 acres of undeveloped land located within the city limits of Crockett, the city has ample land resources available for future expansion. With an additional 2,000 people residing in the city by the year 2000, additional acreage will be required for expansion of residential, commercial, industrial and public uses to meet the needs of the city's expanding population. In the Future Land Use section of this document alternative development scenarios are based on the required acreage for each land use category and the availability of land suitable for development. Since each land use category has its own set of criteria affecting the location suitability, each land use is dealt with independently in this section.

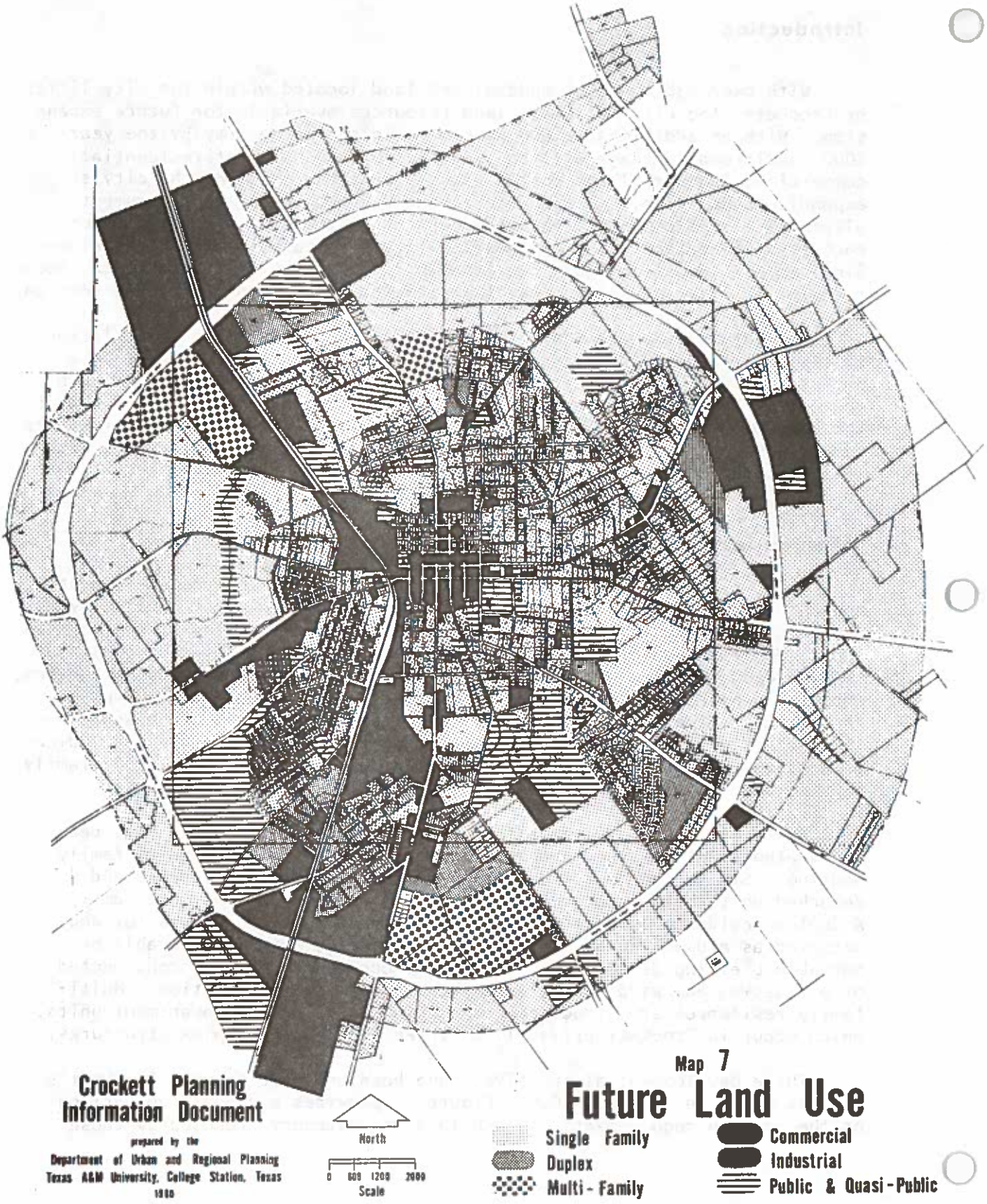
The Future Land Use Plan, illustrated by Map 7, is the accumulation of the best development proposals of each land use category, based on a professional analysis of the factors affecting future development within the city. The Future Land Use Plan is not a "crystal ball" vision of what the city must look like in the year 2000, but is rather a set of guidelines and proposals to aid in planning for the development of an attractive and well designed community in the future.

Residential Alternatives

The citizens of Crockett should be provided with an adequate amount of housing of good quality and design, a diversity of choice of housing types, and of sufficient size to produce a healthful and satisfying living environment. Housing should be located in safe and attractive neighborhoods that provide each dwelling with safe and convenient access to employment centers, shopping centers, and community recreational, educational, and cultural facilities. Alternative residential development proposals are based on the projected population characteristics of the city, which give an indication of the need for single-family, duplex, mobile home, or multiple-family housing by the year 2000.

Residential uses in the alternative development proposals have been designated as either single-family, duplex, mobile home, or multi-family housing. Single-family residential development includes attached and detached units having accomodations for and occupied by only one family. A duplex residence is a structure having seperate accomodations for and occupied as a dwelling by two families. A mobile home is a movable or portable dwelling designed for year-round occupancy which is constructed or a chassis, and used primarily without a permanent foundation. Multi-family residences are structures containing three or more apartment units, which occur in Crockett primarily as three-plex and four-plex structures.

Three development alternatives have been proposed to meet Crockett's housing needs in the year 2000. Figure 7, provides a graphic comparison of the acreage requirements of each land use category proposed by these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Department of Urban and Regional Planning
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Map 7
Future Land Use
Single Family
Duplex
Multi - Family
Commercial
Industrial
Public & Quasi - Public

development scenarios. Crockett's projected population growth, changing household characteristics, and the replacement of dwelling units which become obsolete through age or deterioration are the most significant factors influencing the future demand for housing. As the city responds to these and other changing conditions in the future, changes in the pattern of residential development will occur. These changes must recognize the need for dwelling units for households in all income levels and all ethnic groups.

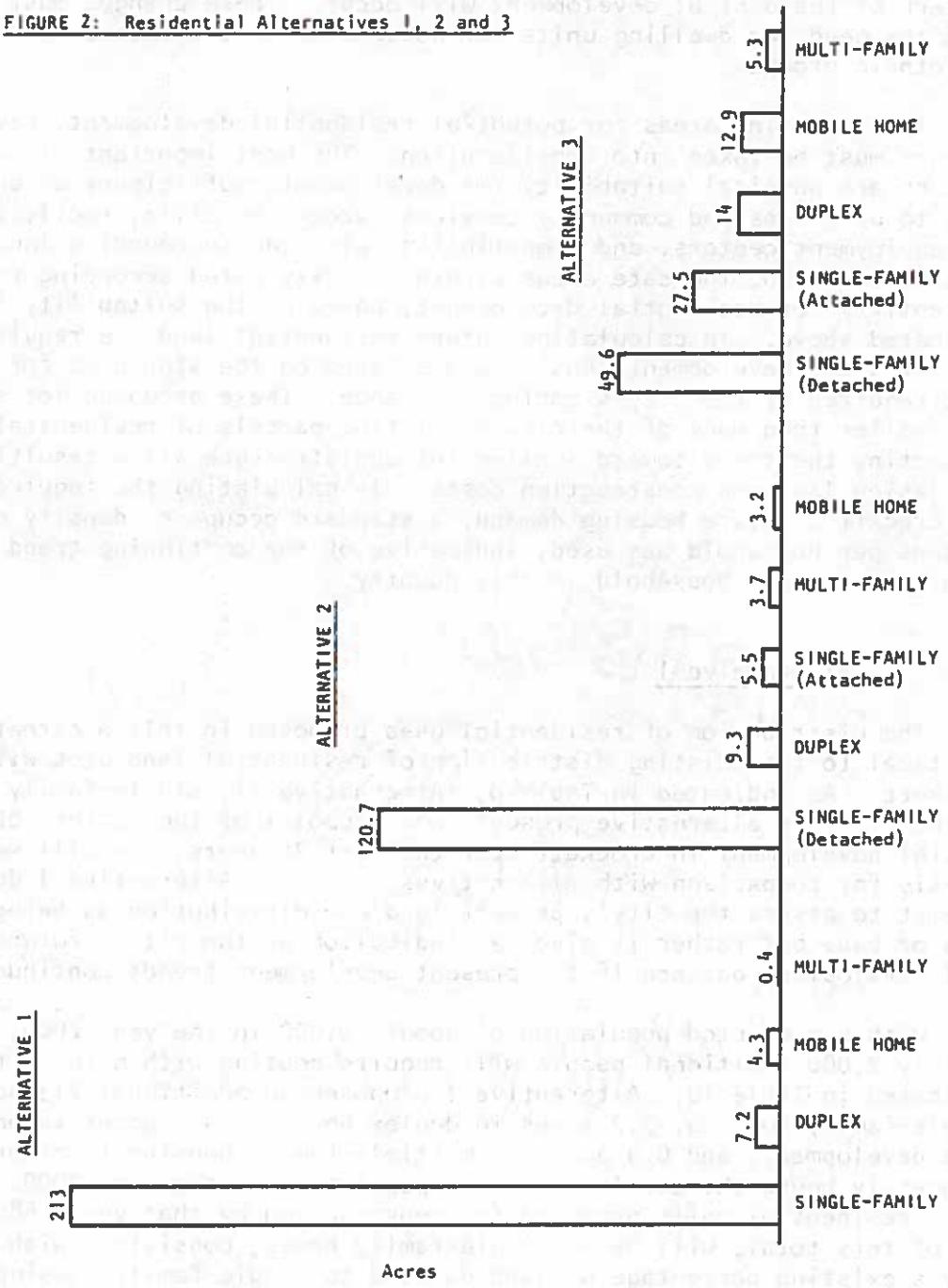
In evaluating areas for potential residential development, several factors must be taken into consideration. The most important of these factors are physical suitability for development, sufficiency of and proximity to utilities and community services, access to civic, socil, commercial, and enployment centers, and compatibility with the surrounding land uses. Maps 8, 9 and 10, indicate areas within the city rated according to their suitability for residential development, based on the suitability factors indicated above. In calculating future residential land use requirements, lot sizes and development densities are based on the standards for development required by the city's zoning ordinance. These proposed lot sizes are smaller than many of the city's existing parcels of residential land, reflecting the trend toward smaller lot and structure sizes resulting from increasing land and construction costs. In calculating the required acreage for Crockett's future housing demand, a standard occupancy density of 2.5 persons per household was used, indicative of the continuing trend toward fewer persons per household in this country.

Alternative 1

The distribution of residential uses proposed in this alternative is identical to the existing distribution of residential land uses within Crockett. As indicated in Table 8, (Alternative 1), single-family units dominate. This alternative presents one proposal of the pattern of residential development in Crockett over the next 20 years, and will serve as a basis for comparison with Alternatives 2 and 3. Alternative 1 does not attempt to assess the city's present land use distribution as being either good or bad, but rather it gives an indication of the city's future residential development pattern if the present development trends continue.

With a projected population of about 10,000 in the year 2000, approximately 2,000 additional people will require housing within the city. As indicated in Table 10, Alterantive 1 proposes an additional 213 acres in single-family housing, 7.2 acres in duplex housing, 4.3 acres in mobile home development, and 0.4 acres in multiple-family housing in order to adequately house the city's projected population in the year 2000. Of the 801 residential units proposed for construction by that year, 680 units, 85% of this total, will be in single-family homes, consistent with the city's existing percentage of land devoted to single-family housing.

FIGURE 2: Residential Alternatives 1, 2 and 3



Development densities proposed by this alternative for duplex, mobile home, and multi-family development are identical to the maximum residential densities allowed by the city's zoning ordinance. All three residential development scenarios utilize these ordinance density standards in order to aid in comparing the development proposals of each scenario. However, in Alternative 1, a standard lot size of 10,000 square feet was utilized in calculating required future acreage for the development of single-family detached housing, reflecting the larger lot sizes of recent single-family homes built in Crockett. Similarly, Alternatives 2 and 3 propose smaller lots for single-family detached units in response to an anticipated trend towards smaller lots and houses in the future.

Alternative 2

Residential Alternative 2 presents a development scenario based on the anticipated market demand for the different housing types. This market demand model is based on the professional judgement of local financial officers and the authors of this document. Whereas the residential development proposals for Alternative 1 are based solely on the continuation of the city's current development trends, the proposals of Alternative 2 are based on a projected shift in housing demand to smaller and less expensive units than presently exist in the city.

Even with the anticipated shift to smaller and less expensive housing units, single-family development is still the dominant residential use in Alternative 2. As a result of the projected demand for smaller and less expensive housing, this scenario proposes the expansion of multi-family, mobile home, and duplex housing, and the introduction of single-family attached units. the most common form of single-family attached housing is the townhouse. Townhouses are dwellings having a common wall with one or more adjoining dwelling units. With a minimum lot size of 6,000 square feet, based on the city's zoning ordinance, single-family attached development lends itself to a much higher population density than conventional single-family detached housing. For the developer, townhouses offer a means of reducing unit costs. For residents, townhouses provide maximum privacy with minimum maintenance and lower initial purchase prices.

Reflecting the anticipated demand for smaller and less expensive housing, this scenario proposes a minimum lot size of 9,000 square feet for single-family detached housing. This proposal would result in higher population densities, cheaper land costs per unit, and the construction of smaller single-family units. Although multi-family housing is almost nonexistent in Crockett's existing land use pattern, Alternative 2 proposes 3.7 additional acres of land for use in this category. The expansion of multiple-family housing will most likely occur in the form of four-plex apartment structures rather than the sprawling complexes common in larger metropolitan areas. As in Alternative 1, duplexes and mobile homes are projected to be important sources of housing by the year 2000, as indicated by the 12.5 additional acres in duplex and mobile home development proposed

TABLE 8: Residential Alternatives 1, 2 and 3

Alternative 1

Housing Type	Percent of Development 1980 - 2000	Number of Units	Units Per Acre	Acreage Required	Percent of Total by Year 2000
SINGLE-FAMILY	85%	680	3.2	213	85%
DUPLEX	7.7%	62	8.6	7.2	7.7%
MOBILE HOME	6.6%	53	12.44	4.3	6.6%
MULTIPLE-FAMILY	0.7%	6	15	0.4	0.7%

Alternative 2

Housing Type	Percent of Development 1980 - 2000	Number of Units	Units Per Acre	Acreage Required	Percent of Total by Year 2000
SINGLE-FAMILY					
Detached	73%	584	4.84	120.7	82%
Attached	5%	40	7.26	5.5	1.3%
DUPLEX	10%	80	8.6	9.3	8.3%
MOBILE HOME	5%	40	12.44	3.2	6.2
MULTIPLE-FAMILY	7%	56	15	3.7	2.2

Alternative 3

Housing Type	Percent of Development 1980 - 2000	Number of Units	Units Per Acre	Acreage Required	Percent of Total by Year 2000
SINGLE-FAMILY					
Detached	30%	240	4.84	49.6	71%
Attached	25%	200	7.26	27.5	6.4%
DUPLEX	15%	120	8.6	14	9.6%
MOBILE HOME	20%	160	12.44	12.9	10%
MUTLIPLE-FAMILY	10%	80	15	5.3	3%

over the next 20 years. Development densities for duplex, mobile home, and multi-family housing remain consistent with the city's zoning ordinances, as is also the case in residential Alternative 1.

Alternative 3

Whereas residential alternatives 1 and 2 are based on existing or anticipated development trends, Alternative 3 presents proposals for an "optimal" distribution of residential land use by the year 2000. This approach is based primarily on putting less emphasis on the development of conventional single-family homes. As indicated by Table 8, single-family detached housing accounts for only 30% of the total housing inventory in Alternative 3. Although townhouses, duplexes, mobile homes, and apartments provide less living space for residents, they tend to be considerably less expensive than conventional single-family dwellings, and can provide a pleasant and attractive living environment if placed in a properly designed arrangement.

One design concept considered in this scenario is the Planned Unit Development (PUD). A PUD may include a variety of housing types, including townhouses, duplexes, and apartments, along with open space and common areas which often include recreational facilities, a community center, or a variety of other accessory uses. A planned unit development can have as few as five or six units, and can range in size from five to a thousand or more acres. The main objective of a PUD is to achieve design flexibility and to provide a more desirable living environment than would be possible through the strict application of the zoning ordinance requirements. The PUD approach encourages a more creative residential form, a more efficient and desirable use of open land, and provides variety in the physical development pattern of the city.

Another design concept associated with Alternative 3 is the use of duplex and mobile home subdivisions, a concept more commonly associated with single-family detached housing. Mobile homes and duplexes account for 35% of the housing stock in Alternative 3, and they provide a good example of the less expensive alternatives to conventional housing. While providing residents with less expensive housing, mobile home and duplex subdivisions offer the same advantages as conventional single-family subdivisions. Residents of such subdivisions would be protected by the city's subdivision ordinance, which provides for adequate light, air, privacy, amenities and protecting the general interests of the residents. In return, the city is provided with a method of controlling the pattern of streets, lots and other facilities.

Densities in these subdivisions will be considerably higher than in a single-family detached development. In keeping with the city's zoning ordinance, parcels in mobile home subdivisions should have a minimum of 3,500 square feet, a development density of 12.44 mobile home units per acre, while duplex subdivisions should have a minimum lot size of 10,000 square

feet, and 8.6 dwelling units per acre. By comparison, a subdivision of conventional single-family lots of 9,000 square feet has a development density of 4.84 units per acre. The higher densities of the duplex and mobile home subdivisions means that land can be used more effeciently for development, requiring less land and less urban infrastructure such as streets and utilities.

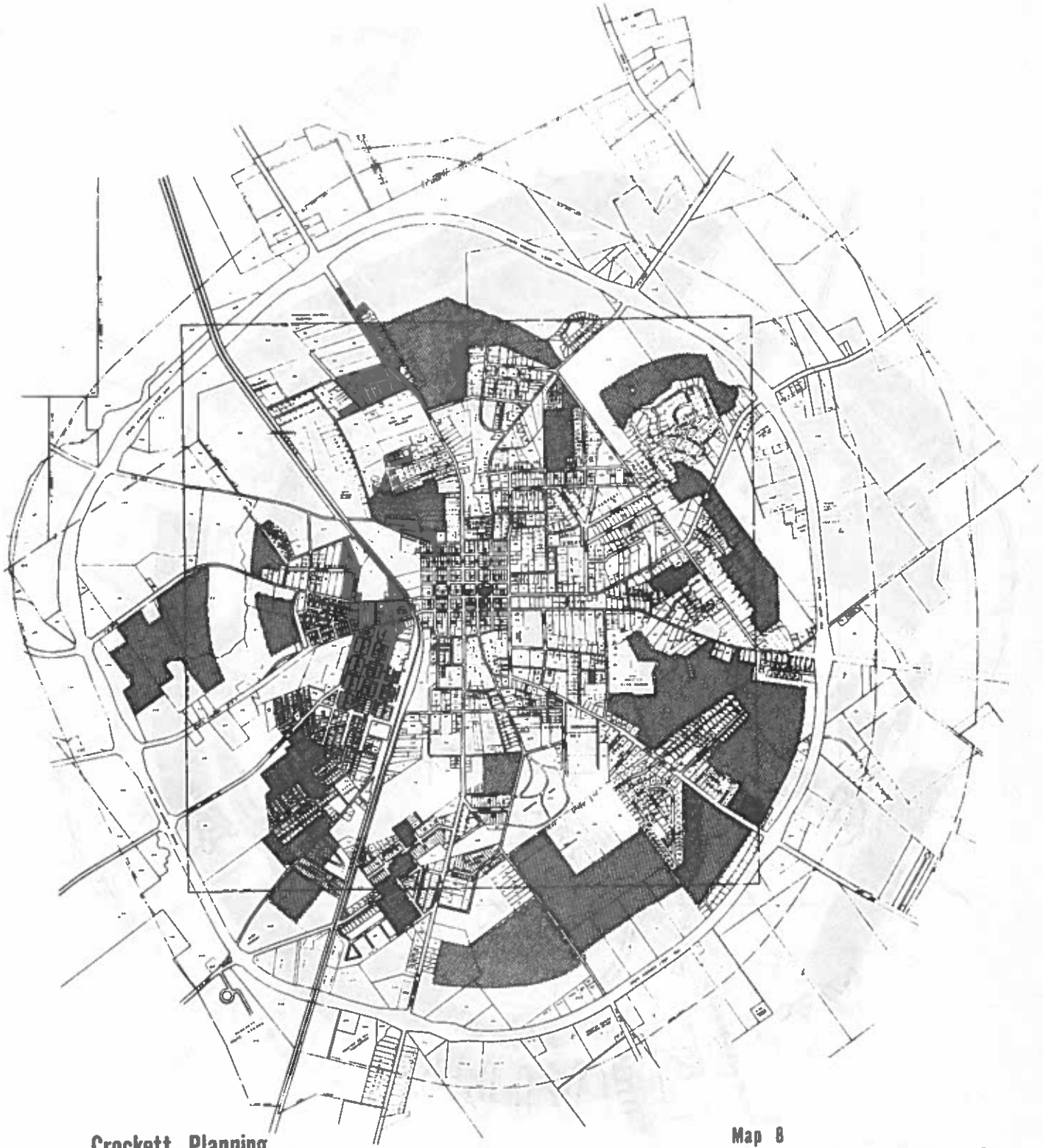
Location Suitability

In determining areas within Crockett which are suitable for future residential development several factors must be taken into consideration. These determining factors include environmental constraints, surrounding land uses, proximity to existing utilities and transportation arterials, the policy of infilling vacant areas within the city limits, linkages between the home and workplace - shops and community facilities, and the possibilities of economic redevelopment and revitalization for blighted areas.

Map 8 indicates those areas considered to be the most suitable for future residential development. These areas are considered most suitable because of the minimal amount of topographic constraints to development and the compatibility of the surrounding land uses, such as the absence of the railroad and other non-residential activities. These areas are also in proximity to existing utilities and transportation arterials, meaning they are more economically feasible to develop as compared to areas requiring lengthy utility and transportation extensions. The areas shown on Map 8 are convenient to commercial centers, employment centers and community facilities. This convenience translates into less travel time to and from these facilities, thereby reducing congestion on Crockett's streets.

Vacant areas within existing residential neighborhoods are also prime locations for development. Many of these areas have been previously platted for residential use. Although such platting may have been based solely upon speculation, most of these areas are still considered prime locations for residential growth. Another important consideration in the use of these areas is their high degree of compatibility with surrounding land uses, which are predominantly residential. Most of these unused areas are also near existing utility lines and streets.

Map 9 shows areas which are less suitable for residential development than those areas indicated above. Although these areas are not ideal locations, they still may be suitable for development. Most of the areas have more environmental constraints to development than the locations presented on Map 8, and do not have optimal surrounding land uses. Some of them adjoin commercial establishments rather than residential neighborhoods. In addition to environmental and incompatibility factors, these areas may be farther from existing utilities and major arterials.



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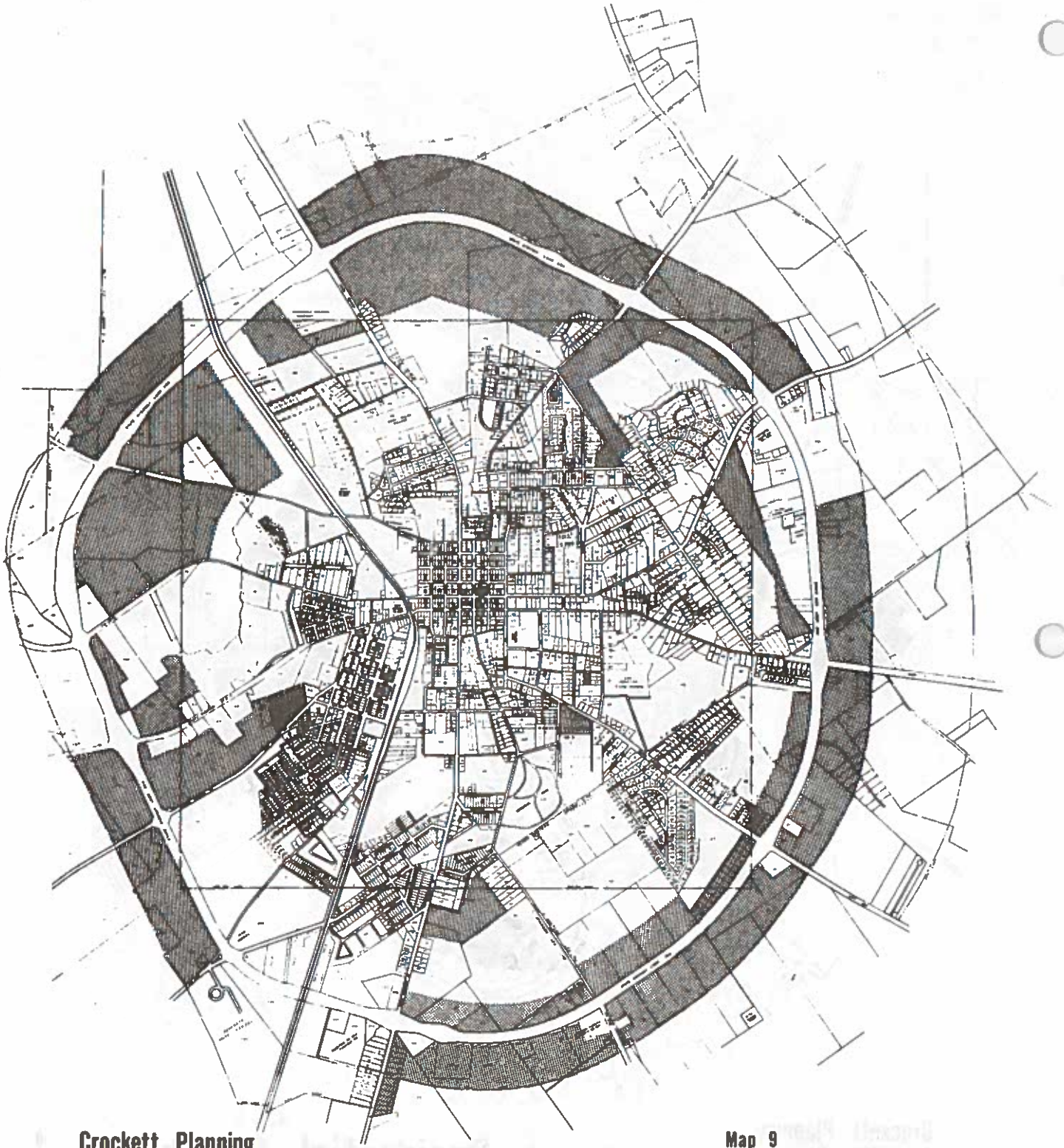
Map 8

Residential Suitability 1



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Map 9

Residential Suitability 2

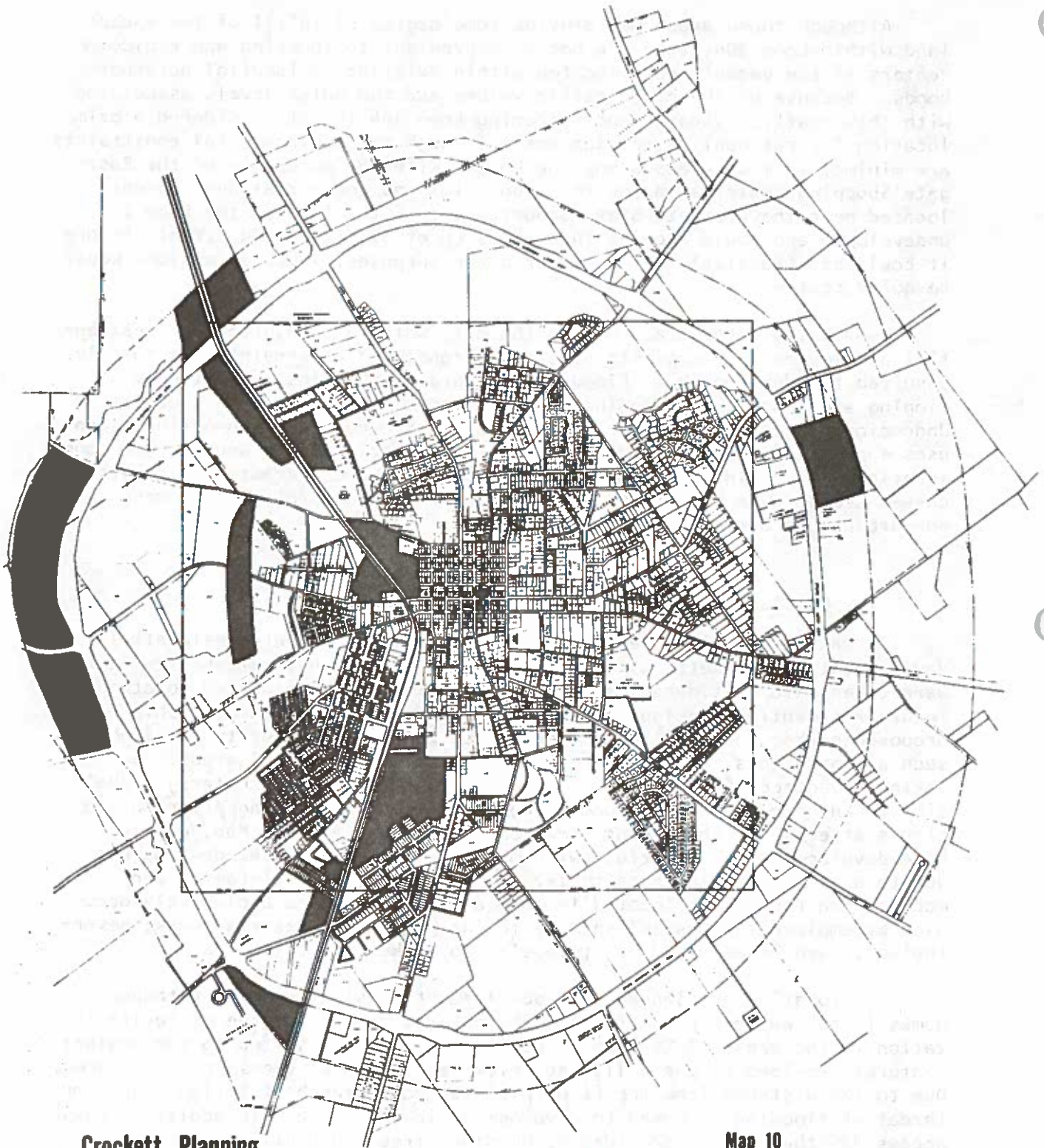
Although these areas may provide some degree of infill of the vacant land within Loop 304, they are not as convenient to shopping and employment centers as the vacant areas located within existing residential neighborhoods. Because of the high traffic volume and the noise levels associated with this traffic, vacant land bordering Loop 304 is not considered a prime location for residential development, although the environmental constraints are minimal in most areas along the Loop. With the exception of the Eastgate Shopping Center area and the industrial and commercial development located near the Crockett State School, most of the land on the Loop is undeveloped and would require the extension of utilities and streets before it could be effectively utilized for urban purposes. Such extensions would be quite costly.

Map 10 indicates areas within the city which are unsuited for residential development. Areas with severe environmental constraints are totally unsuited for development. Flood plains, drainage basins, and steeply sloping areas are the predominant environmental constraints in Crockett. Undeveloped areas next to the railroad are surrounded by incompatible land uses such as heavy commercial or industrial establishments and are not good locations for residential dwellings. Areas with the characteristics discussed above would be more suited to industrial, commercial or in many cases, non-urban land use.

Conclusion

In making the final determinations for locating future residential development in Crockett, all of the previously mentioned suitability factors were taken into consideration. Map 13 illustrates the proposed locations of future residential development within the city and their relationship to proposed parks, industry and commercial centers. High density development such as apartments, is located near the proposed industrial areas. By taking advantage of the proximity to potential employment centers, travel time to and from work is reduced, thus lowering traffic congestion on the city's streets. Although not shown on the Future Land Use Map, mobile home development is compatible with multi-family residential development, due to a similarly high density level. Although the multi-family and mobile home residences located in this area would not be exclusively occupied by employees of establishments in the proposed industrial park, nevertheless, such homes would be attractive to workers in this area.

The location of planned unit development or single-family attached homes in the western part of Crockett can provide some degree of revitalization to the area. This type of development is well suited to the aesthetic features provided by the hills and thick vegetation of the surrounding area. Due to the distance from the flood plain of Town Branch of Spring Creek, no threat of flooding is posed to development in this area. In addition, easy access to the city is provided by Houston Street, and utilities can be extended from the existing residential development to the east. Development in this area would also facilitate the residential infilling process.



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Map 10

Residential Suitability 3

Commercial Land Use

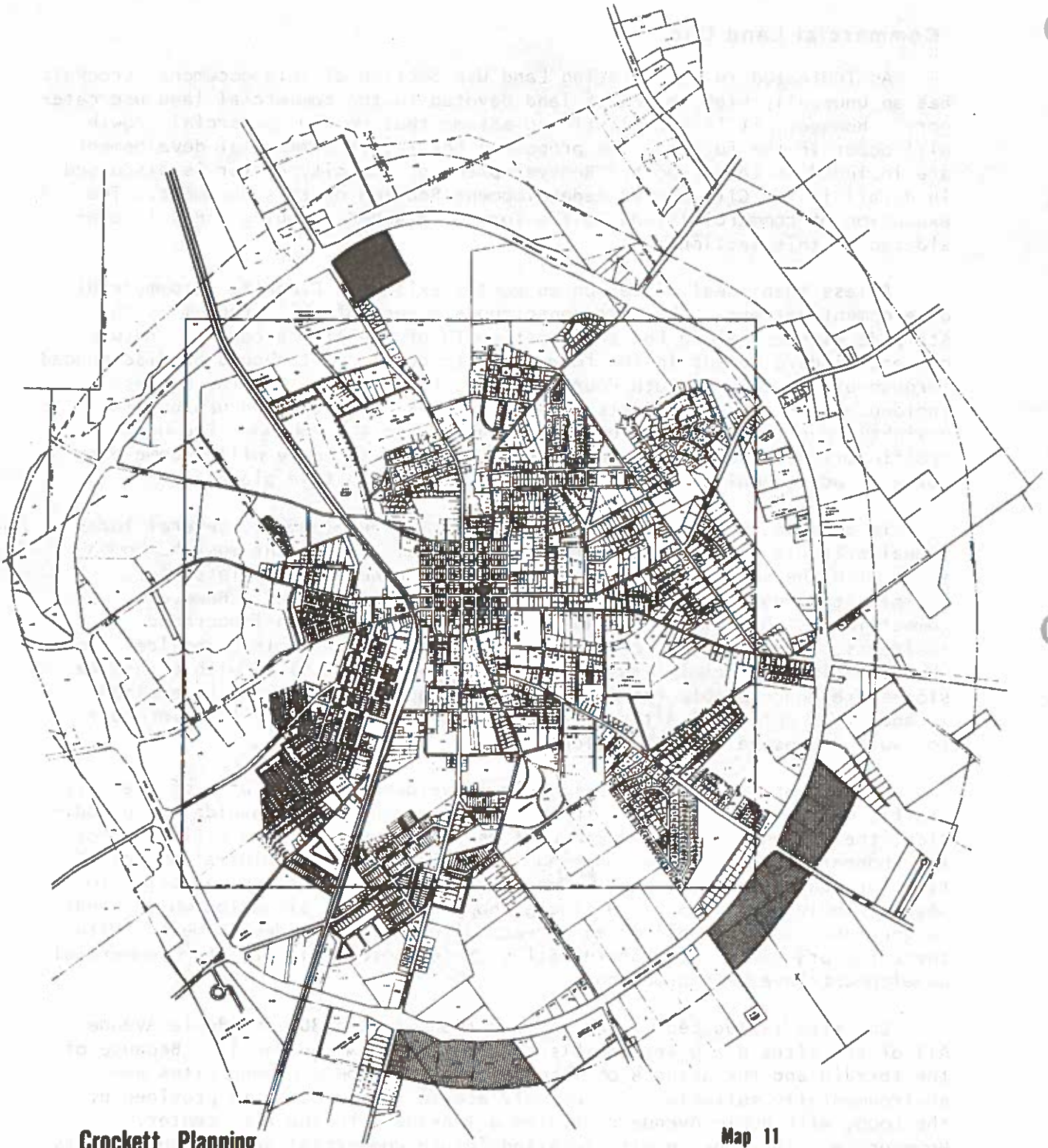
As indicated in the Existing Land Use Section of this document, Crockett has an unusually high amount of land devoted to the commercial land use category. However, it is unrealistic to assume that no new commercial growth will occur in the future. Two proposals for future commercial development are included in this report. Redevelopment of the city center is discussed in detail in the City Center Redevelopment Section of this document. The expansion of commercial land in the form of planned shopping areas is considered in this section.

A less than ideal situation currently exists in Crockett's commercial development pattern. The most conspicuous aspect of this problem is the strip development along Fourth Street south of the city's center. Future commercial development in the form of strip development should be discouraged throughout the city. South Fourth Street, for example, has the highest incidence of traffic accidents of any street in Crockett and has become unsightly due to the number of abandoned and burnt buildings. The high traffic situation on Fourth and other streets in the city will become even worse if additional strip development is allowed to take place.

In locating potential sites for commercial development, several locational criteria must be considered. Commercial development must be compatible with the surrounding land uses. It would be inappropriate, for example, to create commercial inroads in residential areas. However, commercial establishments should still be accessible to neighborhood residents. Environmental constraints must also be taken into consideration when locating potential sites. Flood plain areas and sites with excessive slopes are unacceptable for commercial development and should be avoided. In addition, potential sites must be close to existing utilities in order to avoid expensive line extensions.

By concentrating future commercial development in one area of the city, traffic problems associated with strip development can be avoided. In addition, the concentration of commercial establishments is more efficient for the shopper. Concentrated shopping facilities require a minimal amount of time for travel between shops. Concentration eliminates the necessity for several individual stops in a single shopping trip, a situation which tends to increase traffic problems on streets with commercial development. With these factors taken into consideration, three potential sites for commercial development have been proposed.

One site is located at the intersection of Loop 304 and Bowie Avenue. All of the sites discussed in this section are shown on Map 11. Because of the terrain and the absence of flood plains, the Bowie Avenue sites are environmentally suitable. The primary access to this area is provided by the Loop, with Bowie Avenue providing a linkage with the city center. However, a major concern with locating future commercial development in this area is the effect development would have on Bowie Avenue. Bowie is a residential street and generally serves residential neighborhoods by providing



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Map 11

Commercial Site Suitability

(Note: See text for description)

Best Alternative

Suitable Alternatives

access between the city center and Loop 304. With Bowie Avenue serving as the major access route to the proposed commercial development at the intersection of Loop 304, the increased traffic volumes associated with the proposed commercial center might have a disruptive effect on the Avenue's traffic flow and it might also have a negative impact on adjoining residential neighborhoods. Additionally, this area lacks sufficient utilities to support extensive commercial expansion. Lengthy and expensive improvements on this area's existing utilities would be required. With intensive commercial activity in the Eastgate Shopping Center area, commercial development at the intesection of Bowie Avenue and the Loop might encourage the expansion of similar growth resulting in strip commercial development. Strip commercial development on any part of the Loop would be extremely harmful to Crockett.

A second potential site for commercial development is located at the intersection of the Loop and south Fourth Street. This area poses no environmental constraints to development and access to the city center is provided by Fourth Street and the Loop. Commercial development would be compatible with the industrial and commercial activity west of this site, which also provides nearby utility lines suitable for commercial use. However, an undesirable traffic situation already exists at Fourth Street. This situation may be aggravated by the increased traffic volumes that would be associated with expansion of commercial activities at the Loop 304 intersection. Rather than benefiting the community, locating future commercial development in this area might add to an already unfavorable situation.

The third potential site for commercial development is at the intersection of Loop 304 and north Fourth Street. Similar to the sites discussed above, this area has no environmental restrictions to development, is compatible with the surrounding land uses, and would not require a lengthy extension of utilities. The most attractive aspect of this site is the transportation access provided by Fourth Street. With only a minimal amount of commercial land use activity located on Fourth Street north of the city center, this major thoroughfare can adequately handle increased traffic volumes. In effect, this means that even with commercial activity located at the Loop 304 intersection and the resultant increase in traffic, shoppers would still have adequate access to the city center. This positive factor is not associated with the two sites previously discussed. Since this section of Fourth Street is already a major thoroughfare of Crockett, commercial development at this site would not present the same problems to the nearby residential neighborhoods as those posed by the Bowie Avenue location.

Neighborhood Commercial

Although not indicated on any map, many sites throughout the city are suitable for neighborhood commercial establishments. As defined by the city's zoning ordinance, neighborhood commercial activities are trade and

personal services that meet the basic needs of the families residing in areas adjacent to these neighborhood commercial establishments. Retail trade and services located within a neighborhood shopping center are intended to become an integral part of the neighborhood and must operate in harmony with other residential, educational, religious, and recreational land use activities. A neighborhood shopping center might include a beauty shop, barber shop, convenience grocery store, or a dry cleaning and laundry establishment. It must be emphasized, however, that neighborhood commercial development must not be a cornerstone to expansion of commercial land use activities in a residential community. The failure of a city to regulate the expansion of general commercial activities from neighborhood commercial development may result in a continuance of the blighted and undesirable situation that currently exists in some of Crockett's commercial areas.

Industrial Land Use Alternatives

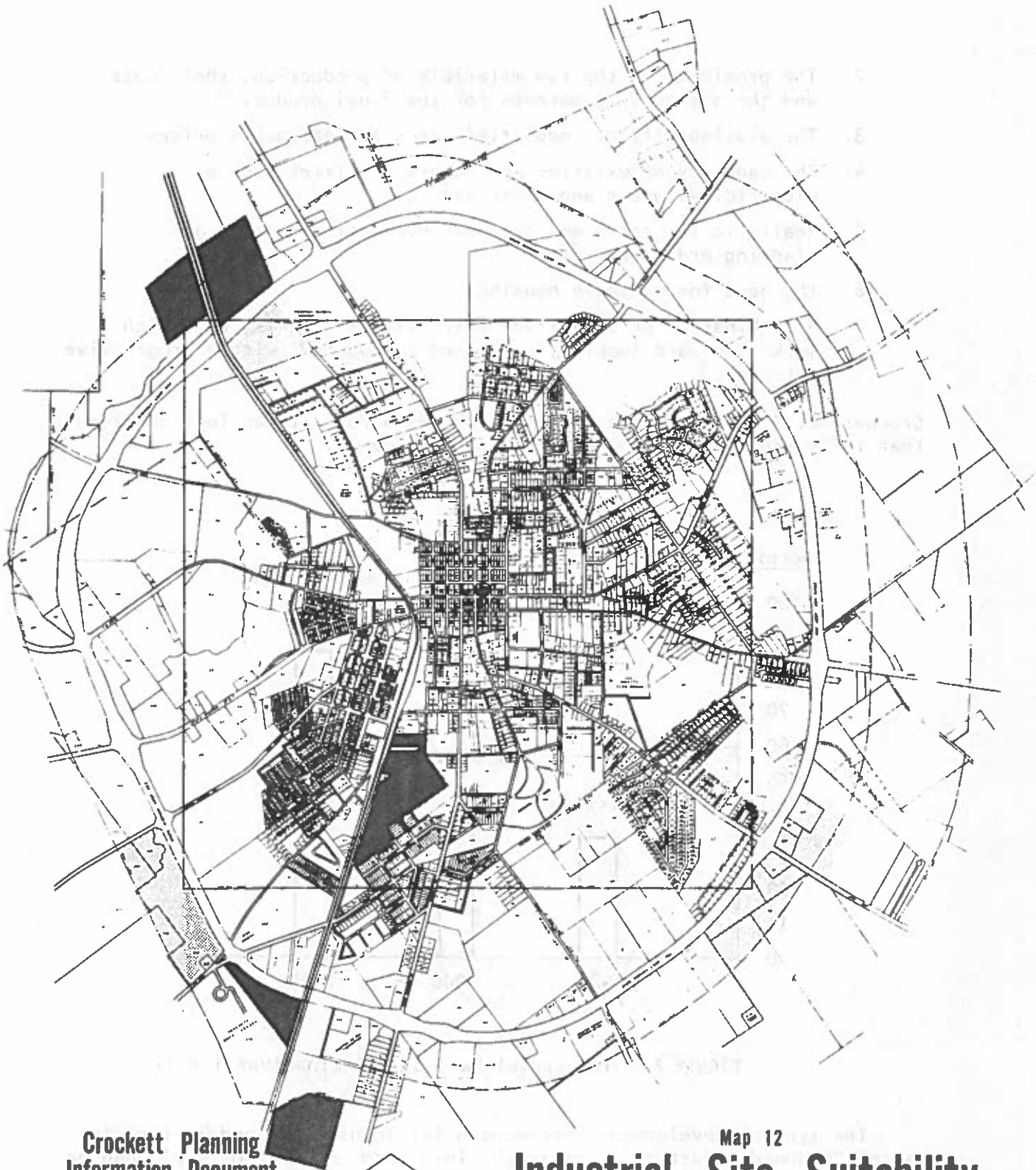
Crockett has 34 acres of land devoted to industrial land uses. This 34 acres represents 5.1 percent of the city's total developed land area. Crockett is deficient in terms of land devoted to industrial land use in comparison to other cities of a similar size. Most cities of Crockett's size usually have 11 percent of their total developed land area devoted to industrial land uses.

This document presents two alternative industrial scenarios for the future of the city. The first alternative is a continuance of the existing industrial growth rate. This alternative would require only an additional 6 acres of land by the year 2000. (A total of 40 acres) A second alternative is predicated on an accelerated development pace and is intended to bring Crockett in line with other cities of a similar size. This second alternative would require an additional 52 acres of land by the year 2000. (A total of 86 acres) Figure 3 on page 54, shows a comparison of the acreage requirements for both Alternative I and II.

The acreage figures shown in Figure 3 are based on future labor force estimates and on the type of industry that is needed in Crockett. The city needs industries that are labor intensive. This type of industry would help to reduce Crockett's unemployment problem. Additionally, the city needs industries that would emphasize professional and technical skills so that Crockett could retain the 18 to 30 year old age group that is presently migrating to other cities and regions.

In order to successfully optimize its industrial future, the city needs to consider the factors that help a community recruit new plants. A few of these are as follows:

1. The availability of workers in sufficient numbers to man the the operations envisioned and enough potential for future expansion.[1]



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Map 12

Industrial Site Suitability

First Suitability

Second Suitability

2. The proximity of the raw materials of production, their cost, and the distance to markets for the final product.[2]
3. The availability of industrial sites at reasonable prices.
4. The capacity of existing and future utilities such as electricity, water and sewer service.
5. Realistic tax rates and property evaluation, zoning and planning ordinances.[3]
6. The need for suitable housing.[4]
7. A combination of social and cultural characteristics "which mark a forward-looking, concerned community", with a progressive attitude.[5]

Crockett will have to solve several problems before it can feel confident that it is meeting the requirements listed above.

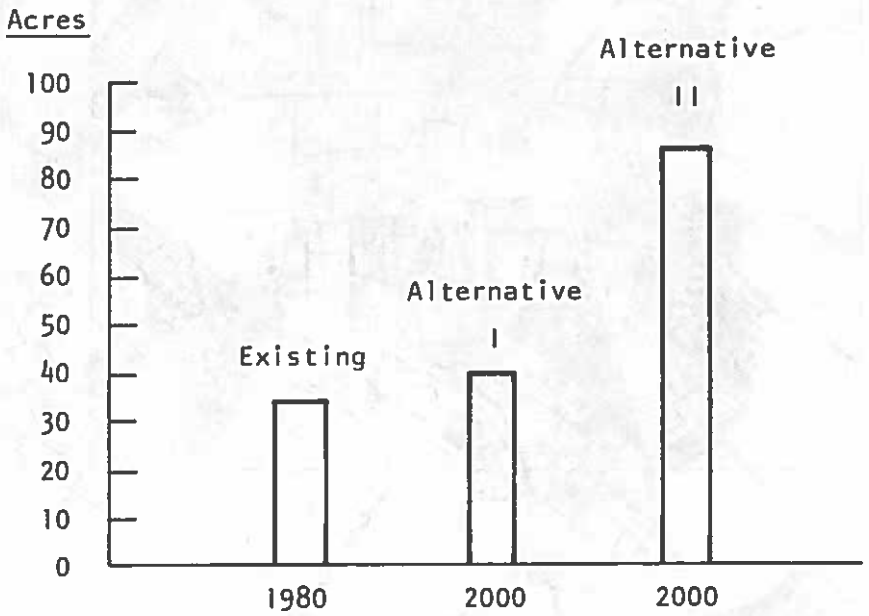


FIGURE 3: Industrial Land Use Alternatives I & II

The type of development recommended for industrial land in the city is the "Planned Industrial District." This term refers to "a planned or organized industrial subdivision, with immediate availability and basic utilities, operating under a specified set of controls for the mutual benefit of the community and the industries located within the park."[6] The benefits of the planned industrial district are threefold: 1. The entire city benefits from the industry that is drawn to such an area.

Secondly, "traffic generated by the district tenants may be handled more efficiently than in piece meal, unplanned industrial areas where most of the traffic must be accomodated on arterials and city streets."[7] Finally, the city can control harmful industrial pollutants and nuisances and insure that industry and surrounding land use activities are compatible.

Two types of industrial districts can be utilized in Crockett: The single industry, and the multiple tenant. A single industry district can be used in relation to the city's natural resources. A multiple tenant industrial district can be used in combination with offices, commercial and light industry. Crockett already has two industrial districts. One of these is located near the railroad tracks and the Loop south of town. The second district is located near Eastgate Shopping Center.

Standards for Industrial Lands

Before World War II, industrial sites were not deemed the highest and best use of land. Thus, sites were not always located near transportation or environmentally compatible. After the War, the acceleration in technology caused the United States to rapidly expand its industrial base. As a result, it became necessary to reserve industrial sites for future use. This type of planning increased efficiency and reduced the total cost for most industries. Factors considered in industrial siting are as follows:

1. Environmental compatibility
2. Compatibility with adjoining land uses
3. Proximity to rail and highway transportation systems
4. Proximity to existing and future utilities

The industrial locations shown on Map 12 utilized the criteria listed above. Land situated out of the floodplain and with a slope of 7 percent or less were prime considerations in determining environmental compatibility. The best sites for industrial development are shown on Map 12 as sites of "First Suitability". Sites shown as "Second Suitability" were judged by the same criteria, however, the sites were determined to be slightly less appropriate for industrial use. The Second Suitability sites are felt to be quite adequate for light manufacturing and operations that do not require immediate rail access.

Conclusion

In conclusion, Crockett has the potential for increasing the quantity of land used for industrial purposes. However, certain problems relative to housing and utilities must be resolved. In solving these problems it is felt that the use of the Planned Industrial District would serve the best long range interests of the city. The best locations for these districts are shown on Map 12.

References:

1. Community Development Standards: A Municipal Planning Guide for Land Use and Community Facilities, Association of Student Planners, Department of Urban & Regional Planning, Texas A&M University, 1978 page 10.

2. Ibid page 10

3. Ibid page 11

4. Ibid page 11

5. Ibid page 11

6. "Industrial Park Development for the Small Town", James A. Graaskamp and Alexander T. Anagnost, Real Estate Report No. 16, Center for Real Estate and Urban Economic Studies,School of Business Administration, University of Connecticut, October 1974, page 4.

7. "Industrial Districts Restudied: An Analysis of Characteristics", Robert E. Boley, Technical Bulletin No. 41, The Urban Land Institute, April 1961, page 28.

TRANSPORTATION

Introduction

An efficient transportation system is vital to Crockett's future development. As the city grows, greater demands will be made upon its transportation system. These demands will include the safe and efficient movement of people and goods, along with the provision of adequate access to major traffic generators. For the most part these demands are

being met. The exceptions to this are the Courthouse Square, which will be discussed in a later section of this report, and the southern section of Fourth Street which is plagued by circulation problems that are the result of strip development. Major circulation problems may occur in the future along Loop 304 if strip development is allowed to take place. In order to prevent this and other difficulties from occurring it is necessary to develop strong principles and standards on which to govern current

and future development.

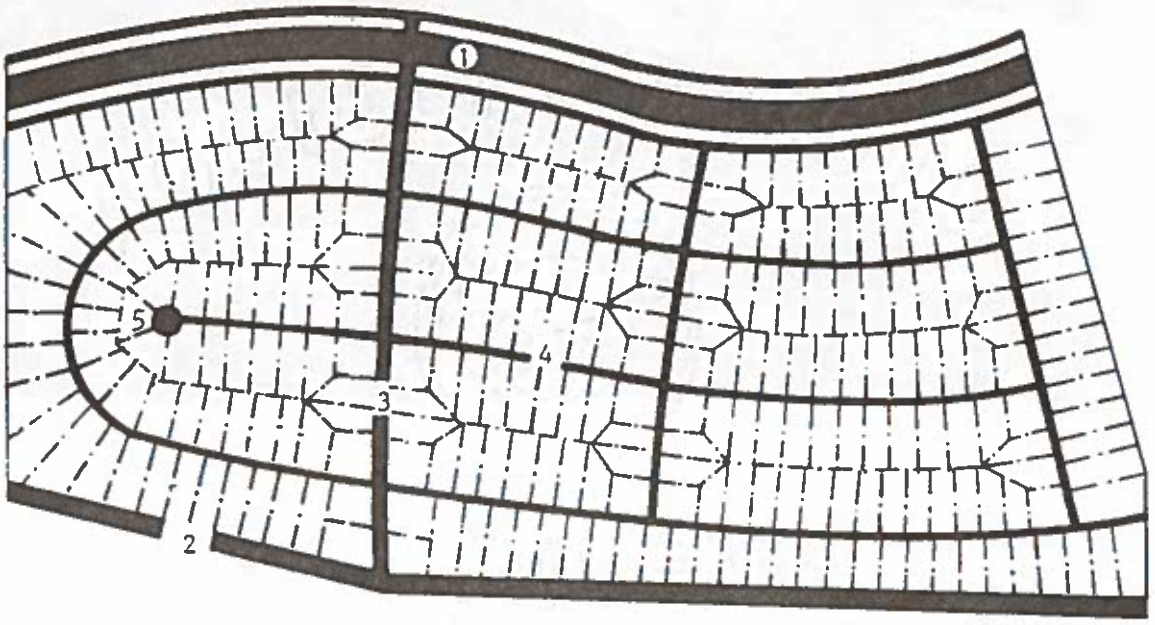
Principles and Standards

In order to maintain an efficient transportation system certain basic principles and standards should be followed. The functional street classification system is the foundation upon which these principles and standards have been developed. Figure 4 shows the Functional Street Classification System. Streets are commonly classified under this system as follows:

Arterial - Designed to provide for the rapid and convenient movement of traffic. Should surround neighborhoods and be continuous.

Collectors - Carries traffic from local streets and channels it onto arterial streets. The collector street is used primarily for locally generated traffic. They have only limited continuity.

Local - Provide direct access to abutting land uses. Should be designed to discourage through movement. This is done through the use of cul-de-sacs, loop streets, and discontinuous streets.



1. Primary Arterial
2. Secondary Arterial
3. Collector Street
4. Local Street
5. Cul-de-Sac

Figure 4: The Functional Street Classification System

Using this system of classification, it is possible to prescribe standard street widths that should be employed. Arterials should be a minimum of forty-eight (48) feet in width and should consist of four traffic lanes. The right-of-way associated with an arterial should be at least one-hundred (100) feet in width. The standard width for collector streets is thirty-six (36) feet. However, collectors in industrial and some commercial areas may require greater pavement widths. Collectors should have a right-of-way of at least eighty (80) feet. Local streets should not be less than twenty-one (21) feet in width and thirty (30) feet is preferable.

The design of the city's street system should be governed by the following principles:

1. On street parking should be limited in use along major arterials.

2. All streets should intersect at right angles.

3. Through traffic should be concentrated on a few major streets.

4. Arterials should be designed to carry traffic freely and rapidly.

5. Local streets should be discontinuous and curvilinear to discourage through traffic.

6. Intersections should be spaced at intervals for traffic flow and control purposes.

7. Major streets should border but should not intersect neighborhoods.

8. Streets should be designed to provide efficient accesss for both intracity and intercity travel.

9. Major arterials and collectors should be designed to facilitate anticipated capacities.

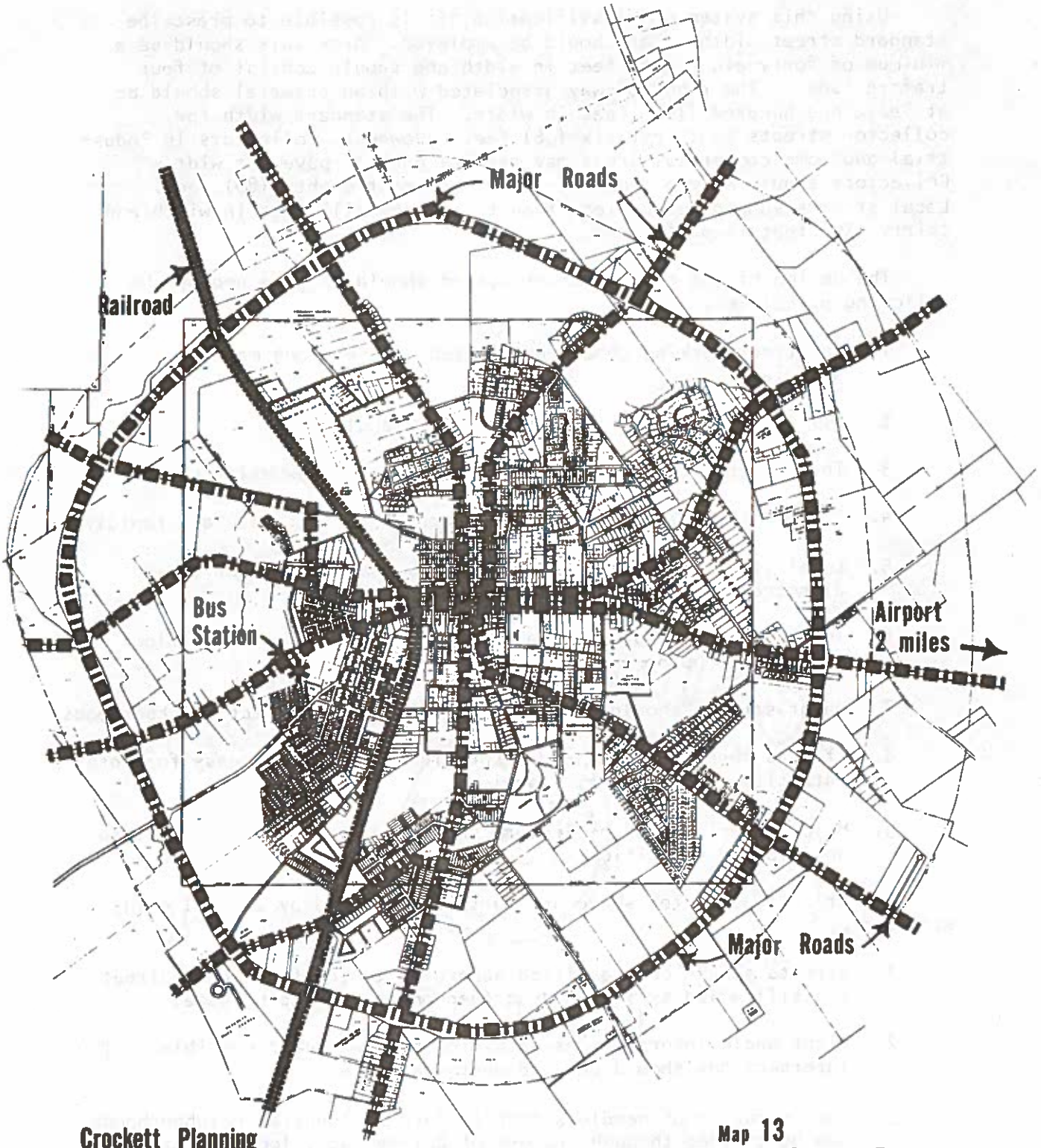
The principles listed above are further supported by the following standards:

1. Streets should be classified according to the functional street classification system as described on the preceding page.

2. Right angle intersections should be used whenever possible. "T" intersections should be used where feasible.

3. The intrusion of needless traffic into residential neighborhoods can be avoided through the use of cul-de-sacs, loop streets, curvilinear street design and the proper use of traffic signals.

4. Adequate right-of-way should be provided on every street to allow for any future widening requirements.



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Map 13

The Transportation System

5. Intersections should be spaced at appropriate intervals to insure the efficient movement of traffic at speeds for which the thoroughfare was designed.

6. Major thoroughfares should act as boundaries for neighborhoods.

7. Sharp turns and "needle" intersections should be avoided.

8. Access to and from neighborhoods should be provided by collector streets.

9. Signalization should be provided only where warranted by the Manual for Uniform Traffic Control Devices.

Transportation Alternatives

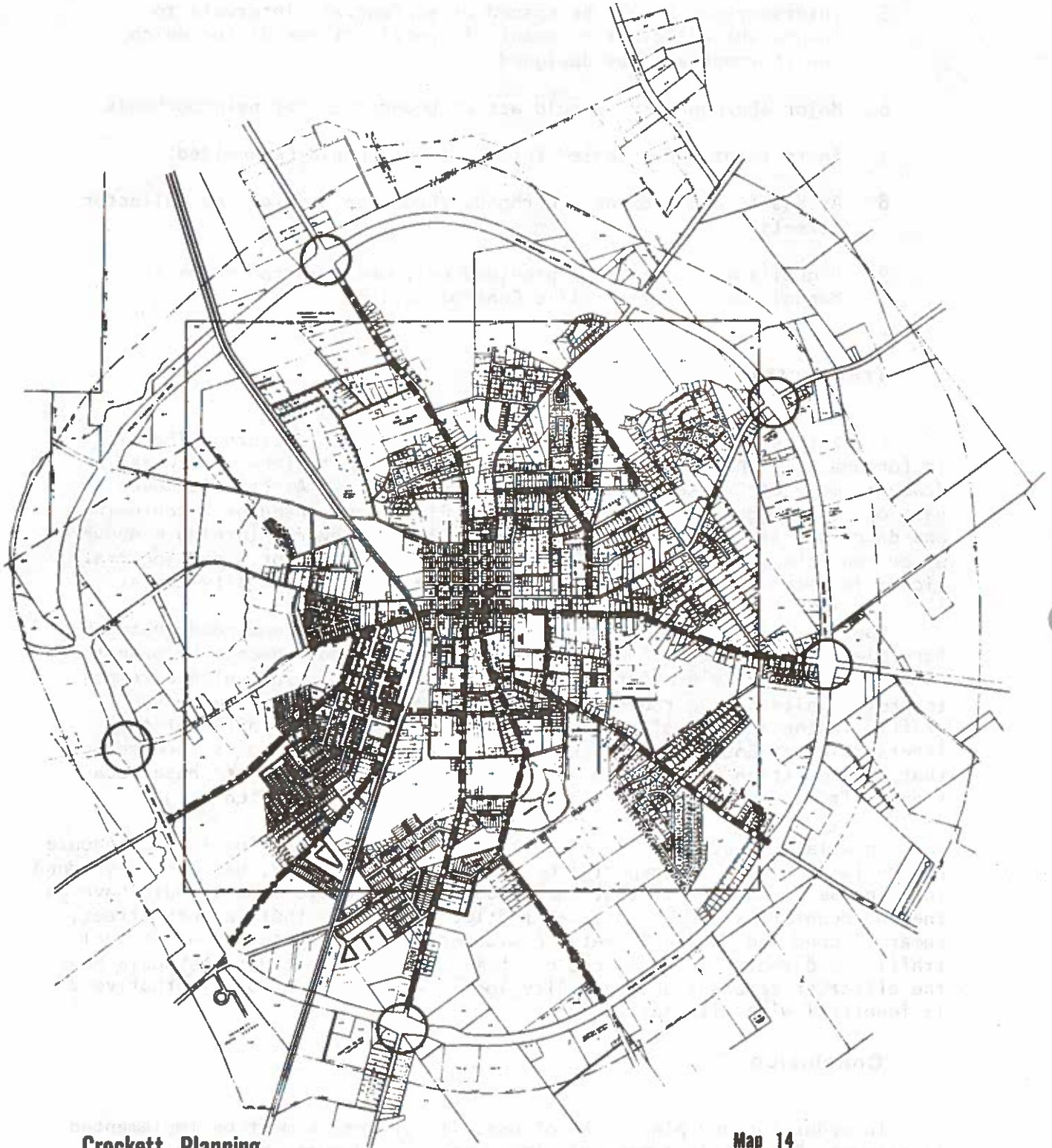
Crockett's street system resembles a radial loop pattern. The city is fortunate in that the system contains an excellent highway network. However, many of Crockett's streets lack continuity. As traffic moves east on State Highway to the city center, it is confronted by a confusing and dangerous street pattern. A driver must make several turning maneuvers at or near the courthouse square. The use of Loop 304 for bypassing traffic would materially reduce the level of street use in the city center.

Map 14, Transportation Alternative 1, shows the recommended thoroughfare plan for Crockett. The plan recommends that improvements be made to several of the city's major and minor thoroughfares. This plan attempts to provide alternative routes that would eliminate some of the heavy traffic in the central city. Due to the high volume of traffic at the intersection of Loop 304 and each of the state highways, it is recommended that consideration be given to providing grade separations at these locations. It is also recommended that Grace Street be completed.

In a later section of this report a circulation plan for the courthouse square is proposed. Transportation Alternative 2, Map 15, has been developed in response to the impact that courthouse square redevelopment would have on the thoroughfare system. This alternative recommends that Seventh Street, Lamar, Second and Fannin Streets be widened to accommodate the additional traffic load that will be placed on them. These recommendations would have the effect of creating an inner city loop. The remainder of Alternative 2 is identical with Alternative 1.

Conclusion

In order for any plan to be of use, its proposals must be implemented. At present, Crockett's transportation system is adequate but with future growth it will face an increasing number of problems. The following recommendations should help in maintaining an efficient transportation system for the city:



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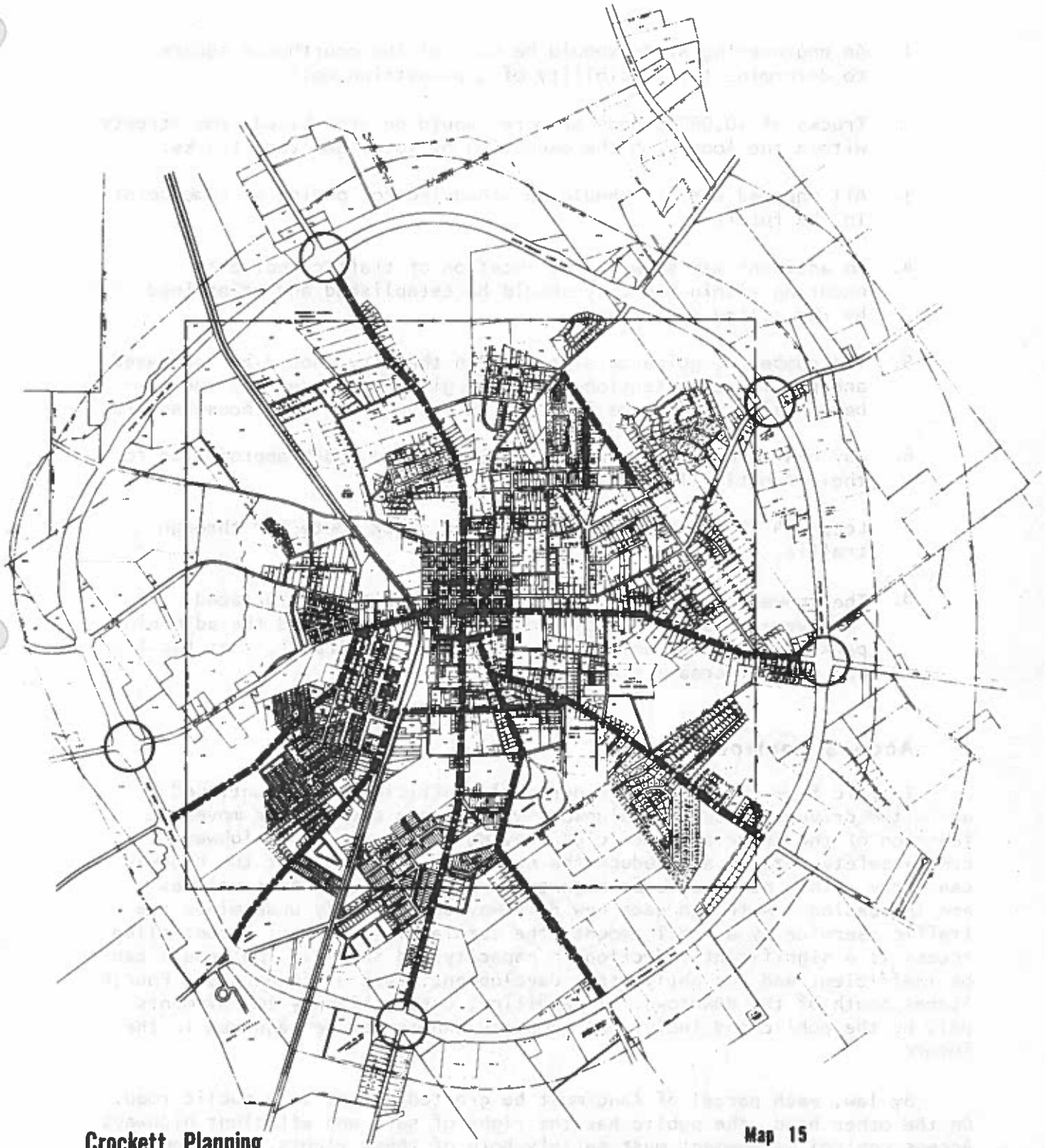
Map 14

Transportation Alternative 1

Grade Separation

Improved Streets



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Map 15

Transportation Alternative 2

Grade Separation

Improved Streets

1. An engineering study should be made of the courthouse square to determine the feasibility of a pedestrian mall.

2. Trucks of 10,000 pounds or more should be prohibited from streets within the loop with the exception of local delivery trucks.

3. All unpaved streets should be scheduled for paving at some point in the future.

4. An accident map showing the location of traffic accidents occuring within the city should be established and maintained by the police department.

5. The number of guidance signs within the city should be increased and particular attention should be given to increasing the number of signs along the loop and in or near the courthouse square.

6. Any new streets constructed should be of a width appropriate for their functional classification.

7. Loop 304 should be designated as the truck route for through traffic.

8. The runway at Houston County Airport should be resurfaced. Improvements should also be made to the hanger and the adjoining parking lot. If fuel were supplied at the airport, that facility's use could increase significantly.

Access Control

Traffic flow on Loop 304 is currently sufficient, but continued unlimited driveway access to highways will likely destroy the movement function of the arterial. Vehicles leaving or entering the highway create safety hazards and reduce the number of vehicles that the highway can carry. This means a lower highway capacity while traffic volumes are increasing. Although each new driveway opening only undermines the traffic service by a small amount, the cumulative effect of uncontrolled access is a significant reduction in capacity and safety. The result can be inefficient and unsightly strip development, such as found along Fourth Street south of the downtown. In addition, costly highway improvements paid by the public and individual property owners may be required in the future.

By law, each parcel of land must be granted access to a public road. On the other hand, the public has the right of safe and efficient highways. Access control management must satisfy both of these rights. Government has the authority and obligation to meet both of these end goals. In order to implement an effective access control policy the city and state officials must cooperate to provide the coordinated management of access. The State Highway Department will play a major role in this process due

to the fact that most of the arterials in Crockett are state highways. City government has the authority and ability to manage access through the use of the city's comprehensive plan, stated goals and objectives, and the use of various regulatory ordinances. These can all be used to establish standards for the type of land use activities permitted along aterials, and the number, location and design of access points permitted.

In order to manage access, certain policies need to be established. These should be developed independently, but should be designed to work as a unit. The following policy recommendations should be considered as a basis for access management:

1. Direct access to arterials should be discouraged.

2. Driveways should be spaced at a minimum of 300 feet apart for commercial and industrial sites. Where this standard cannot be met, the use of joint access should be required.

3. The corners of intersections and driveways should be clear of any objects that would impede visibility of traffic.

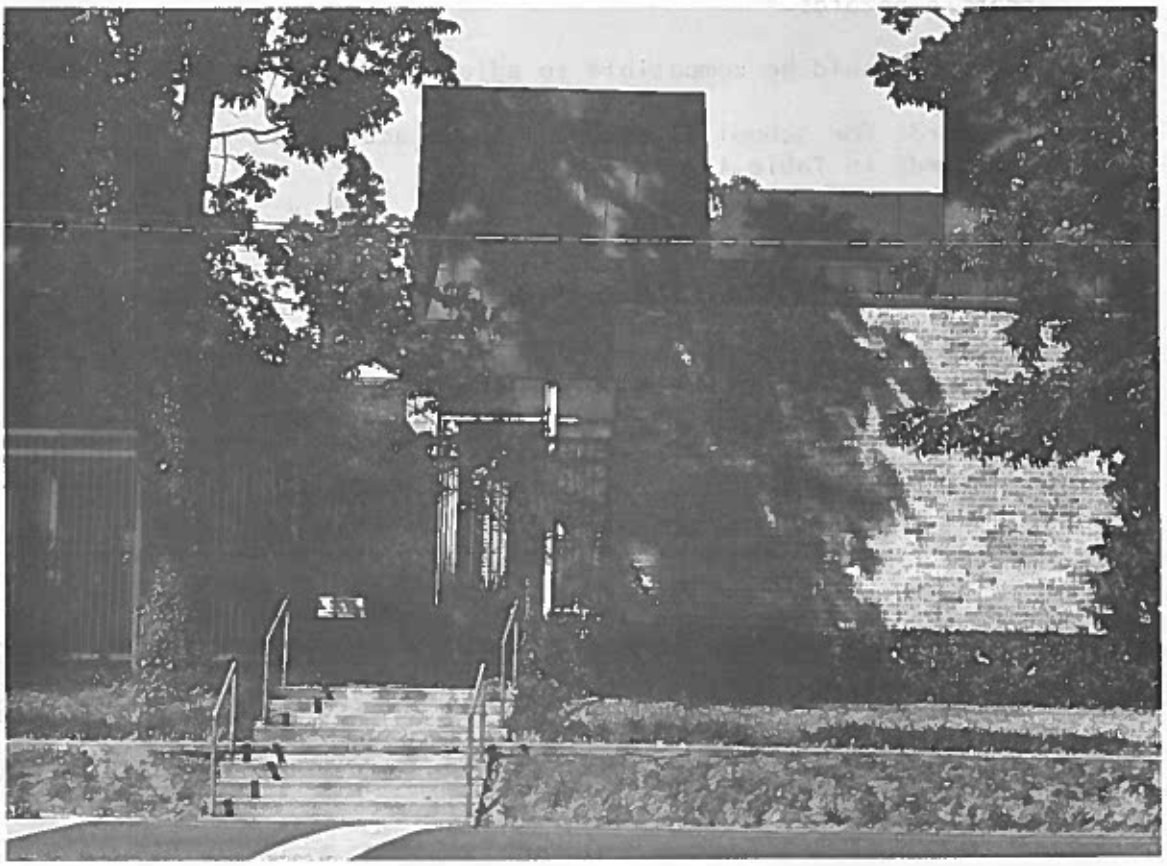
4. Driveway access for commercial and industrial development should be coupled with appropriate setback requirements to insure a smooth and safe flow of traffic into and out of sites.

These recommendations indicate only a few of the possible policies that that could be used to help insure the maximum efficiency of traffic flow on aterials. The city is encouraged to expand this list and to establish regulatory systems to implement municipal policy.

COMMUNITY FACILITIES

Introduction

The purpose of this section is to provide recommendations for the future development of Crockett's community facilities, i.e. schools, recreation and parks, public buildings and space, and police and fire protection. All recommendations are based on the requirements for the projected population of 10,000 inhabitants. Two scenerios will be presented for each category, a centralized and a decentralized version. All locations are intended to be generalized and not site specific.



Schools

Planning Principles and Standards

The following criteria should be used to determine the future needs and location for Crockett's educational facilities:

*Present and future school age population should determine the type and size of school facilities.[1]

*Schools and recreational facilities should be coordinated to minimize duplication.[2]

*Schools should be convenient to students and protected from traffic hazards.[3]

*Schools should be compatible to adjacent land uses.[4]

*Standards for school sites shall be in accordance with the standards in Table 12.

Enrollment Trends

Table 11 is a translation of Crockett's population projection for the year 2000 into expected school enrollment.

TABLE 11: SCHOOL ENROLLMENT TRENDS

Year	Total Population	Total Enrollment	Elem-tary	Inter-mediate	Middle	High
1980	7999	1735	343	443	394	555
2000	10,000	2169	428	554	492	694

Alternatives

The present elementary, intermediate, and middle schools have adequate space to support the projected increase in enrollment. The projected high school enrollment will exceed its capacity by approximately one hundred students.

TABLE 12: SCHOOL STANDARDS

	Nursery School	Elementary School	Junior High	Senior High
Population Served	1,000-3,000	2,000-7,000	10,000-20,000	10,000-35,000
Students Served	70-90	700-900	800-1,000	900-2,500
Age Groups Served	2-5 years old	6-11 years old	12-14 years old	15-18 years old
No. of Students per classroom	20	30	30	30
Optimal Square Footage per Student	40	70	90	110
Number of Classrooms	4	27	40	57
Building Size in Square feet	3,200	56,700	108,000	187,000
Building Site in Gross Acres	1-3	7-14	14-30	18-40
Offstreet Parking	1 space per 2 classrooms	1 space per classroom plus 3 add'l	1 space per class-room plus 6 add'l	1 space per teacher plus staff & students
Service Radius	1/4 miles	1/2 mile	1 mile	2 miles

Source: Community Development Standards, Dept. of Urban & Regional Planning, Texas A&M University, 1977, p. 23

Scenerio one deals with a centralization of the various schools throughout the city. This may be done by either locating all schools at one location, or centralizing the location of the elementary school and the intermediate school. The benefit to one central location for all the schools is the close proximity of the students and their records. Additional space will be required at the high school in order for it to support the increase in enrollment.

Some of the negative factors in centralized school sites are: 1) It is impractical due to the geographical size of the city, 2) It results in extreme distances for students to travel, 3) Service area exceeds maximum standards, and 4) Most students must cross major thoroughfares to attend school.

Scenerio two deals with a decentralized system. It is not economically feasible to maintain the neighborhood unit concept in Crockett, due to the fact that the city is divided by major thoroughfares. To be compatible with the neighborhood unit concept, approximately five elementary schools would have to be placed within the various residential areas. It is recommended that a second elementary school be placed in the northern sector of town. This should be in the area East of South Grace and North of Terrill Avenue. An intermediate school should be located on the same site or near it. This particular site would enable most students to travel to school with out crossing as many major thoroughfares. The new site would also reduce the service area for both elementary schools.

An elementary and intermediate school site should be acquired in the area west of the railroad tracks. The elementary and intermediate school should be combined due to the smaller size of the neighborhood. This would enable students living in this area to attend school without having to travel to the east side of Crockett. Two possible sites are: 1) The area north of San Antonio Road and west of Cedar Street, 2) The area east of North Dogwood and north of Houston Avenue. Site one is preferable to site two because it is more centrally located, and is further from the railroad. This site would reduce the amount of time and distance for students to travel to school.

A second middle school should be located in the northern sector of town. It is recommended that the school be located in the area near the intersection of Fourth Street and the Loop. This should be to the southeast of this intersection. The site should be large enough to contain both the middle school and the high school, this would reduce the service area for both schools to slightly higher than the maximum distance. The current high school will exceed its capacity in the year 2000. It will be necessary to build an addition to the present structure, or an additional high school. The present site is located in an area accessible from most parts of town; therefore, it is recommended that the present structure be maintained and plans for future enlargement be implemented.

Conclusion

In Crockett, it is not feasible to locate all schools in one location. The city needs elementary schools situated in the various residential areas to reinforce the neighborhood unit concept and to minimize the danger to students from traffic hazards. It is recommended that two additional elementary and intermediate schools be designed for in the future. One additional middle school should be incorporated into the school system, and the high school should be enlarged to support the increase in enrollment.

Recreation and Parks

Planning Principles and Standards

The following criteria were used to determine the future needs and locations for Crockett's parks and recreation:

*Function and size should be determined by the population served.[5]

*Function should be compatible with adjacent land uses.[6]

*Should not be located adjacent to man-made or natural barriers which limit accessibility.[7]

*Recreation should provide for all age groups.[8]

*Should provide active and passive recreation.[9]

*Natural areas should be utilized.[10]

*Neighborhood unit concept should be used to determine the location of neighborhood parks.[11]

*Linear parks should be developed along flood plains of creeks and drainage areas to aide in flood protection for the community and take advantage of natural features.

*Standards for parks should be in accordance with the standards in Table 13.

*Designed in conjuction with schools to minimize duplication.

TABLE 13: RECREATION AND PARK STANDARDS

Classification	ac/1000	Size	Population Served	Service Area
Playlots	N/A	2500 sq. ft.	500-2500	Sub-neighborhood
Vest Pocket Parks (mini parks)	N/A	2500 sq. ft.	500-2500	Sub-neighborhood
Neighborhood Parks	2.5	5 - 20 ac.	2,000-10,000	1/4-1/2 mile
District Parks (community)	2.5	20 - 100 ac.	10,000-50,000	1/2-3 miles

Source: Community Development Standards, Dept. of Urban and Regional Planning, Texas A&M University, 1977, p. 27.

The Davy Crockett Memorial Park is adequate in size to serve as a community park in the year 2000. The park currently contains many facilities and equipment in a state of disrepair. It is recommended that

increased maintenance of the grounds and equipment be implemented immediately and continued throughout the planning period. Increased maintenance will make the park more attractive and encourage further utilization of the facilities. Restoration of the Community Building will serve several functions. In addition to making the park more attractive, restoration and additional space would convert the structure into a multifunctional civic building. This structure will be able to serve as a public meeting place while at the same time preserving a portion of the community's heritage.

Crockett currently operates its park system as a centralized system, with all recreation located on one central site. The addition of three neighborhood parks located at the same sites of the proposed elementary and middle schools are recommended to decentralize the park system. These parks would serve as a focal point of the neighborhood and as a place of relaxation and social intercourse for its residents. The ground of the current elementary school would serve as a fourth neighborhood park.

A series of mini parks should be installed within each neighborhood. It is recommended that each neighborhood have a minimum of one per neighborhood, preferably two. Below are eight suggested locations for mini parks:

1) West of Hooks St. and east of Forhand.

2) South of Patterson and North of Wood Avenue.

3) North of Grace King Drive.

4) South of W. Austin and west of Lovers Lane.

5) South of Gary and north of Douglas.

6) North of Arledge and west of N. Dogwood.

7) West of Ninth, east of eighth, and south of Pease.

8) West of Grace and south of Houston.

Each of these locations are situated at least two blocks from each neighborhood park within the service area. These parks will serve to subdivide each neighborhood into sub units. These parks serve the same function of a neighborhood park, but on a smaller scale. Included in these parks may be play areas, game and sports areas, rest and landscaped areas.[12] Each park should contain the facilities most appropriate for the neighborhood.

A thirty-three acre linear park is recommended on the west side of town. The area located south of Navaro, north of Goliad, and west of Duprett is within a flood plain and contains steep slopes. The development of this area into residential or commercial property would be expensive and prone to flooding. The area is best suited for a hike and

bike trail. This type of park is low maintenance and takes advantage of natural features.

Conclusion

It is recommended that the City of Crockett encourage utilization of the Davy Crockett Memorial Park through increased maintenance of the groups and facilities. The neighborhood unit concept should be reinforced through the placement of neighborhood parks within residential areas at proposed school sites. This concept should be further reinforced through the placement of a series of mini parks. The area in the western section of town could best be utilized as a linear park featuring a hike and bike trail. The implementation of these various parks will provide the community with a variety of recreational facilities and places for relaxation and social interaction.

Public Buildings and Space

Municipal Buildings and Space

Introduction

Municipal buildings serve a practical purpose within the Community, but they can also serve as a reflection of the image of a community. This section will deal with the site location and size of the library, fire station, police station, and city hall.

Principles and Standards

The following criteria were used to determine the future needs and locations of Crockett's municipal buildings.

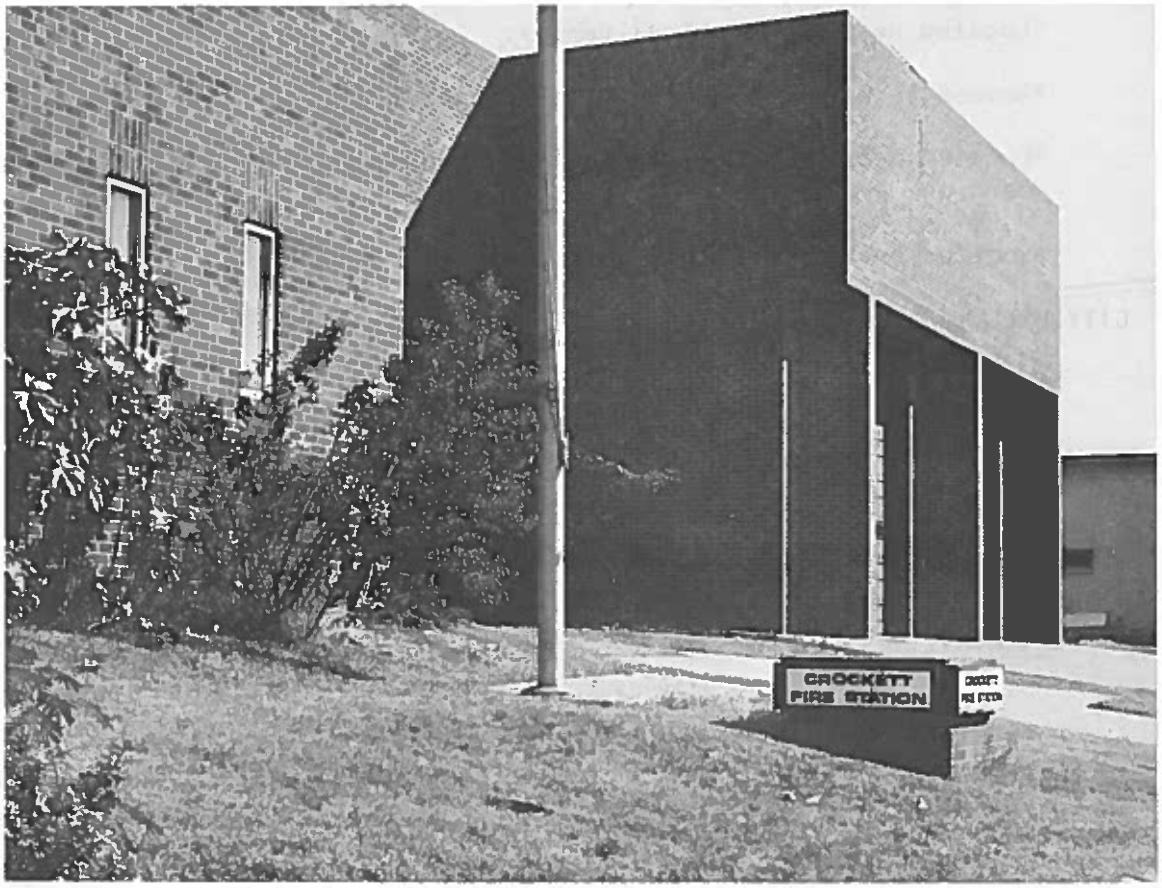
LIBRARY

*Centrally located, near places of employment.

*Park or residential areas of development should be avoided when locating libraries.

*Should be accessible to all parts of the community.

*Safe access for small children.[13]



FIRE STATION

*Located near, but not at intersection of two major thoroughfares.

*Located near, but not within a high value district.

*Located in or near non-residential uses.

*Located near areas of relative high densities.

*Located on streets which allow two way traffic.

*Population of 10,000, should have two pumper companies.[14]

POLICE STATION

*Located near geographical center.

*Access to at least one major thoroughfare.

*Located near concentrations of commercial and industrial development.

*Located near area with highest rate of arrest.[15]

CITY HALL

*Located near the central business district.

*Located near the County Court House.

*Site should be large enough to provide off-street parking and future expansion of building.

Alternatives

Library - The location and size of the library are currently adequate, however, as the population of Crockett increases, so should the number of volumes within the library. Corckett's library should increase its number of volumes by 10,000 by the year 2000. A city with a population of 10,000, should have approximately 25,000 volumes. The size of the library should include a total floor space of 7,000 square feet.[16]

Fire Station - The current fire station of Crockett meets every standard discussed previously. In the year 2000, it will be necessary to add a pumper station, located near the growth areas. This will be discussed in a later section.

Police Station - The present police station of Crockett is located in accordance with the previously discussed criteria. The station is located within the city hall and is overcrowded. A new location for the police station will be discussed in a later section.

City Hall - The location of the present city hall is optimum for its many functions; however, it has tremendous space deficiencies. One alternative for the City is to decentralize some of its offices. This could be done easily by removing the police department from city hall and relocating it near the sheriff's department, where both departments share the jail facilities. The Fire Marshall's office could be relocated to the fire station. This would allow for five offices within city hall to be vacated. Renovation of the present city hall would allow for more spacious working conditions for those offices remaining.

Another alternative would be to relocate city hall to a new site. It is recommended that city hall be located on a site that is north of Lamar, west of Sixth, east of Fifth, and south of Milam. This site is close to the central business district, two blocks north of the county courthouse, and across the street from the fire station. This new site would allow for a larger structure, off street parking, and possible future expansion. The new site would allow for many of the city offices to remain within the same structure, making interdepartment communications simple.

Conclusion

It is recommended that the city of Crockett relocate its city hall to the proposed site. This would enable the structure to meet the previously stated standards for location and space. The new structure will be able to support the current staff of city offices and additional future employees.

Police Protection

Crockett's police department currently operates with a force of fifteen employees: one chief, three sergeants, five patrolmen, and four civilians. This is an average of 1.125 sworn police officers per 1000 population. The department occupies four rooms of the city hall: the chief's office, dispatcher's office, and two additional rooms. The police share the county jail with the sheriff's department for the incarceration of offenders. For the past twenty years, the national ratio of police to population for communities of less than 10,000 has been 1.5 officers to 1000 population. This means that Crockett's police department will need to increase its manpower to fifteen officers in order to meet current standards. The police department will need additional space to support the future increase in employees. It is recommended that the police department be relocated in a separate facility from the city hall. A suitable site for the new station is the property adjacent to the sheriff's department. Because of the similarity of jobs and the shared jail between the two departments, adjacent offices would be appropriate and allow for efficient transfer of prisoners.

Fire Protection

The criteria shown in Table 14 were used to determine the future needs for the Crockett Fire Department. The previously discussed principles were used to determine the location of the fire station.

According to these standards, by the year 2000, Crockett needs to employ

at least 10 paid firemen, and add two trucks to its equipment. An additional pumper station should be added to meet the standard of two pumper stations for a community of 10,000.

Due to the different types of land uses located throughout Crockett, the maximum service area was determined to be 2 miles, this was the minimum for residential, and the maximum for multi-family districts. Map 23 shows the existing fire protection area serviceable by the current location. It is recommended that a second pumper station be located in the south section of the city, on the loop. The purpose in this new location is to protect any development in the southeast and southwest which may occur in the future.

TABLE 14: FIRE SERVICE STANDARDS

Population	No. paid Firemen	No. of Volunteers	No. of Trucks	Aerial Ladder	Auto Hose	Booster Tank
10,000	10	20	2	1	2	1
25,000	25	75	4	1	4	3
50,000	50	150	6	2	6	5
100,000	100	300	11	3	11	10
1,000,000	1000	3000	101	29	101	100

Source: Community Development Standards, Dept. of Urban and Regional Plan, Texas A&M University, 1977, p. 36.

Conclusions

In order for the fire department to protect the present and future development of Crockett, it is necessary for it to convert from an all volunteer fire department to at least a partially employed department. Additional equipment and a pumper station will be necessary for the community to be adequately protected in case of fire.

Other Community Facilities

Street lighting - It is recommended that future development within the city should be designed with a sufficient amount of street lights to illuminate particularly dark and dense areas, and commercial and industrial development. Residential areas should be illuminated at most street intersections and where it is deemed necessary for safety.

Sidewalks - It is recommended that all future residential development be designed with sidewalks on at least one side of the street. It is also recommended that where it is physically and economically feasible, that sidewalks be added to existing development, particularly in areas located near schools.

Summary

Community Facilities Alternative 1

Alternative 1 shows the expansion of Crockett's present community facilities to support the future needs. It is a centralized system of facilities, each category being located in one central area. The schools would remain the same, except for the relocation of the intermediate school to a site adjacent to the elementary school. All city offices would remain together and relocated to a new site. Map 18 shows the location of the various facilities.

Community Facilities Alternative 2

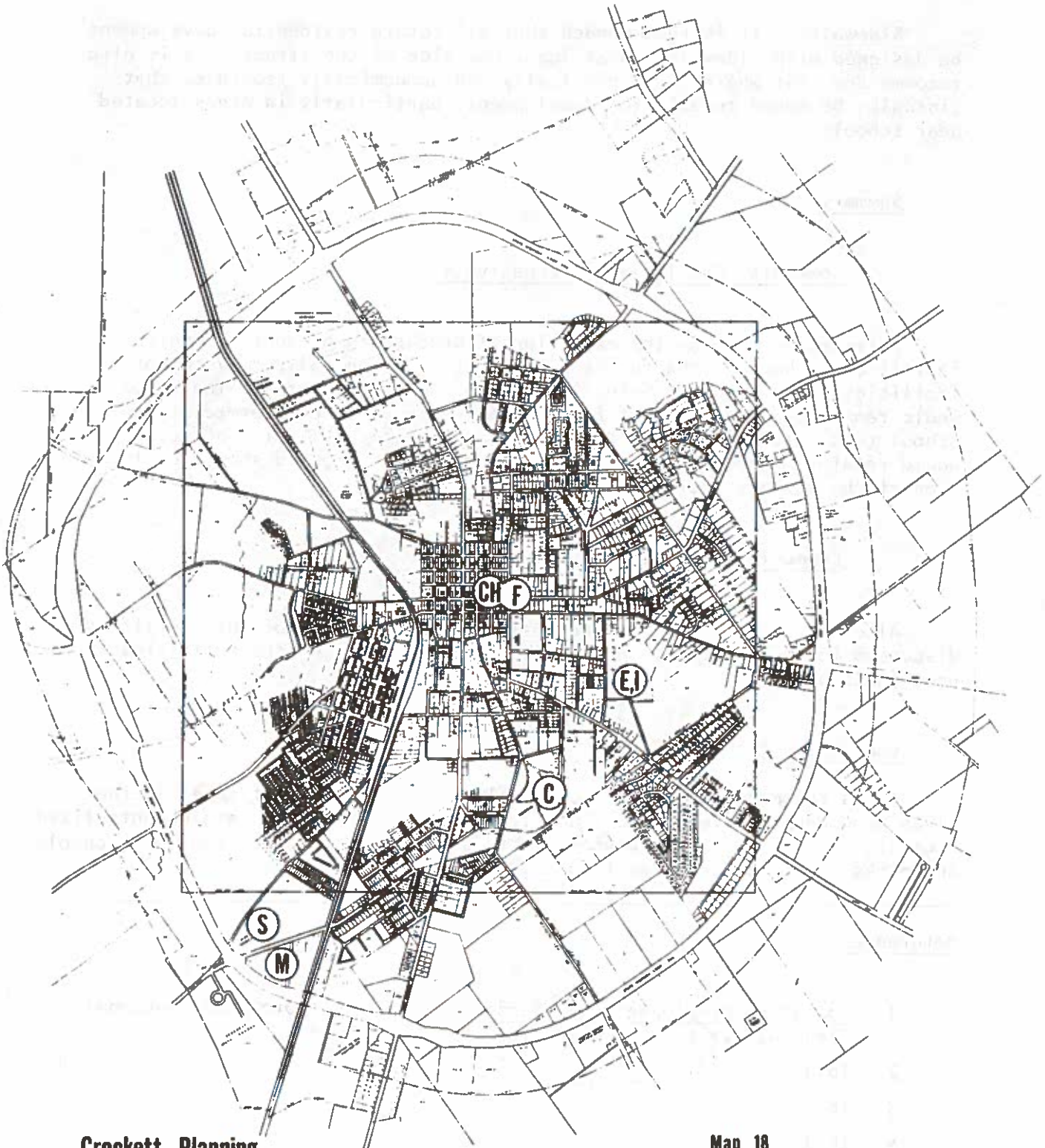
Alternative two is a decentralized proposal for all of the facilities discussed in this section. Map 19 shows the location of the facilities under this proposal.

Conclusion

It is recommended that the city select a combination of site alternatives provided by Alternative 1 and 2. City offices should remain centralized. However, the police and fire departments should be separately housed. Schools and parks should be decentralized as shown on Map 19.

References

1. Community Development Standards, Department of Urban and Regional Planning, Texas A&M University, 1977, p. 20-21.
2. Ibid.
3. Ibid.
4. Ibid.
5. Community Development Standards, Department of Urban and Regional Planning, Texas A&M University, 1977, p. 27-29.
6. Ibid.



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1980

North

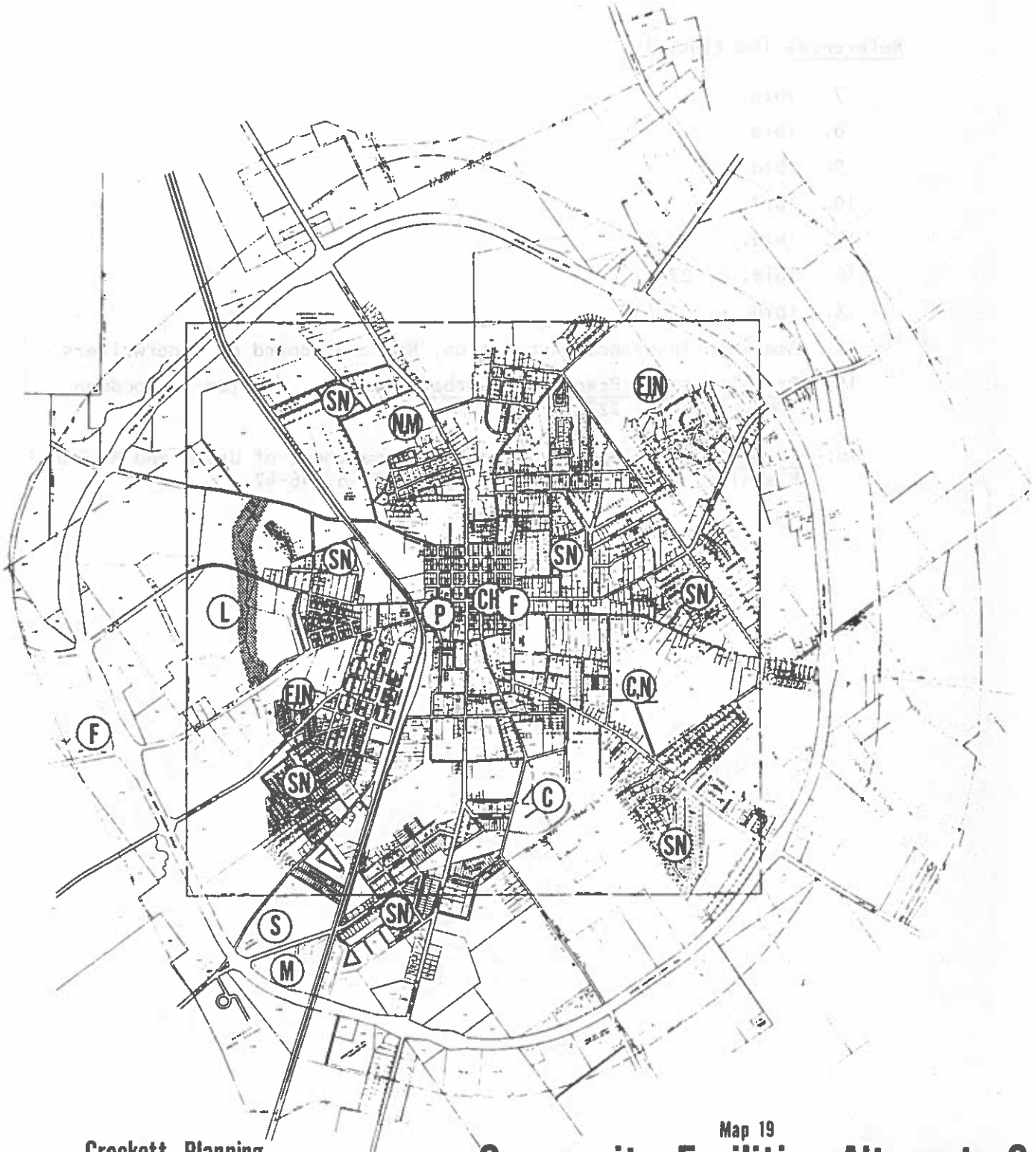
0 600 1200 2000
Scale

Map 18

Community Facilities Alternate 1

SCHOOLS: Elementary - E, Intermediate - I, Middle - M, Senior - S.

Community - C, Fire - F, City Hall - CH



Map 19

Community Facilities Alternate 2

PARKS: Linear - L, Community - C, Neighborhood - N, Mini-Park - SN.
SCHOOLS: Elementary - E, Intermediate - I, Middle - M, Senior - S.
Police - P, Fire - F, City Hall - CH

North

0 600 1200 2000
Scale

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1980

References (Continued)

7. Ibid.
8. Ibid.
9. Ibid.
10. Ibid.
11. Ibid.
12. Ibid. p. 27
13. Ibid. p. 42-43.
14. American Insurance Association, National Board of Underwriters.
15. Principles and Practice of Urban Planning, William I. Goodman, ICMA, 1968, p. 227
16. Community Development Standards, Department of Urban and Regional Planning, Texas A&M University, 1977, p. 46-47.

PUBLIC UTILITIES

Water Supply

The City of Crockett draws its water supply from the Houston County Reservoir which is owned and maintained by the Houston County Water Control and Improvement District No. 1, (WCID No. 1). In 1980 the reservoir had an annual yield of 6800 acre feet[1] or 3.36×10^8 million gallons for both municipal and industrial usage. Crockett's water supply is contracted from the WCID No. 1 which supplies the City a minimum of 365 million gallons of water per year[2]. Water from the reservoir is pumped to the WCID No. 1 water treatment facility and then into the City's distribution system after treatment. Crockett has a present water storage capacity of 1,060,000 gallons, of which 150,000 gallons is in elevated storage with the greatest percentage in ground storage.[3] Water from ground storage is relayed into the existing distribution system through the use of pumps.

The existing storage capacity is adequate to meet the present demand but additional storage facilities will be required by the year 2000. To meet the projected demand for 2000 an additional 500,000 gallons of elevated storage and 500,000+ gallons of ground storage will be required to comply with the Texas Department of Health and the Texas State Board of Insurance standards for community water supplies.

Estimated Future Water Demand

The estimated future demand for water in the year 2000 is based upon the population projections presented in the Future Population of Crockett, Section. Using the projected 2000 population of 10,250, the total demand is estimated to be 1,653.5 acre feet annually, or 1,476,000 million gallons daily. Figure 5, Projected Water Demand, shows the five year increases in the demand for water.

The increased demand will not only require the installation of additional storage facilities, but the extension of the water distribution system into areas delineated in the Future Land Use Section as future growth areas. The demand for water by industrial users is not figured into the estimates presented in Figure 5, as it is assumed that will not require large volumes of treated water, but will require raw water for cooling or as part of their manufacturing process.

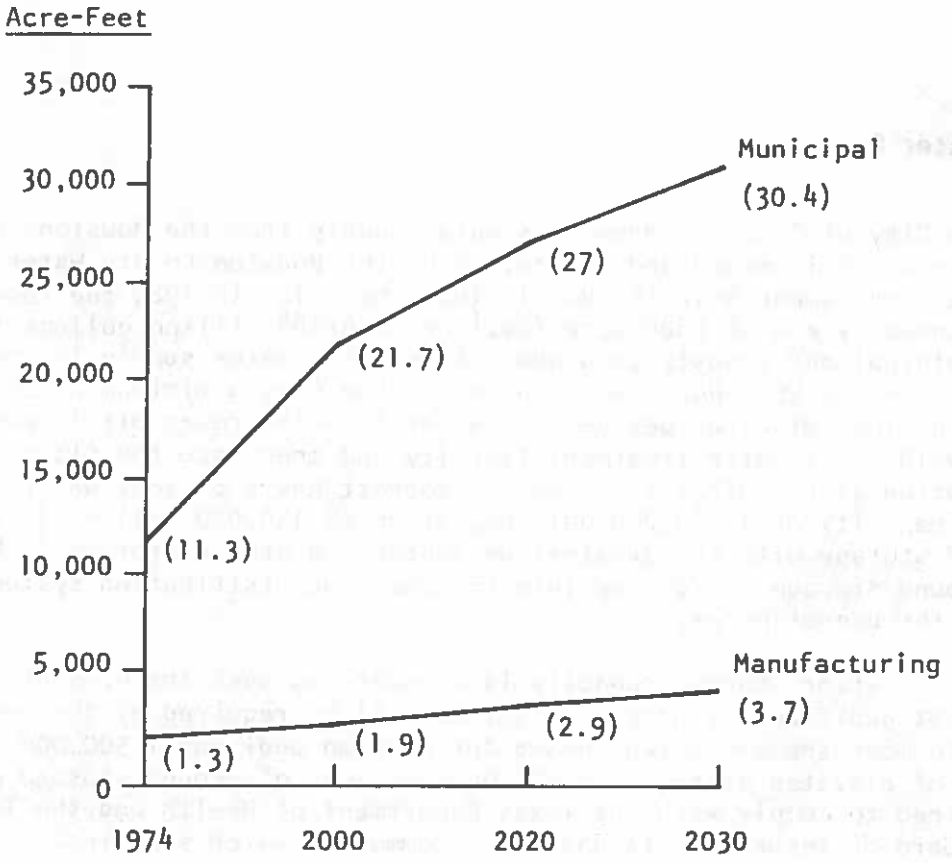


FIGURE 5. Projected Water Demand

Source: Continuing Water Resources Planning and Development for Texas, Phase 1, Vol. 2 of 2, Texas Water Development Board, Austin, Texas, May, 1977.

Alternatives

For the City of Crockett to adequately provide a safe and secure supply of drinking water several approaches should be considered. The Water Distribution System Analysis Report for the City of Crockett examines many of the problems discussed in this section. The plan provides for a five year reanalysis of the water distribution system and suggests a systematic approach to the provision of those services.

The provision of additional infrastructure may be solved in two ways; 1) Provide new main lines to developing areas, or 2) encourage development that may be served by lateral lines. An issue that may be of importance for stimulating industrial development is the provision of raw water for industry.

Conclusion

As the City of Crockett continues to grow, so the demand for water will increase. To insure the citizens of Crockett in the year 2000 will have an adequate water supply the City must plan to expand the present distribution system and seriously confront the future inadequacies of the existing storage facilities, especially elevated water storage. It is our conclusion that the City adopt the Water Distribution System Analysis Report performed in 1980 by the firm of Kindle, Stone & Associates, Inc.

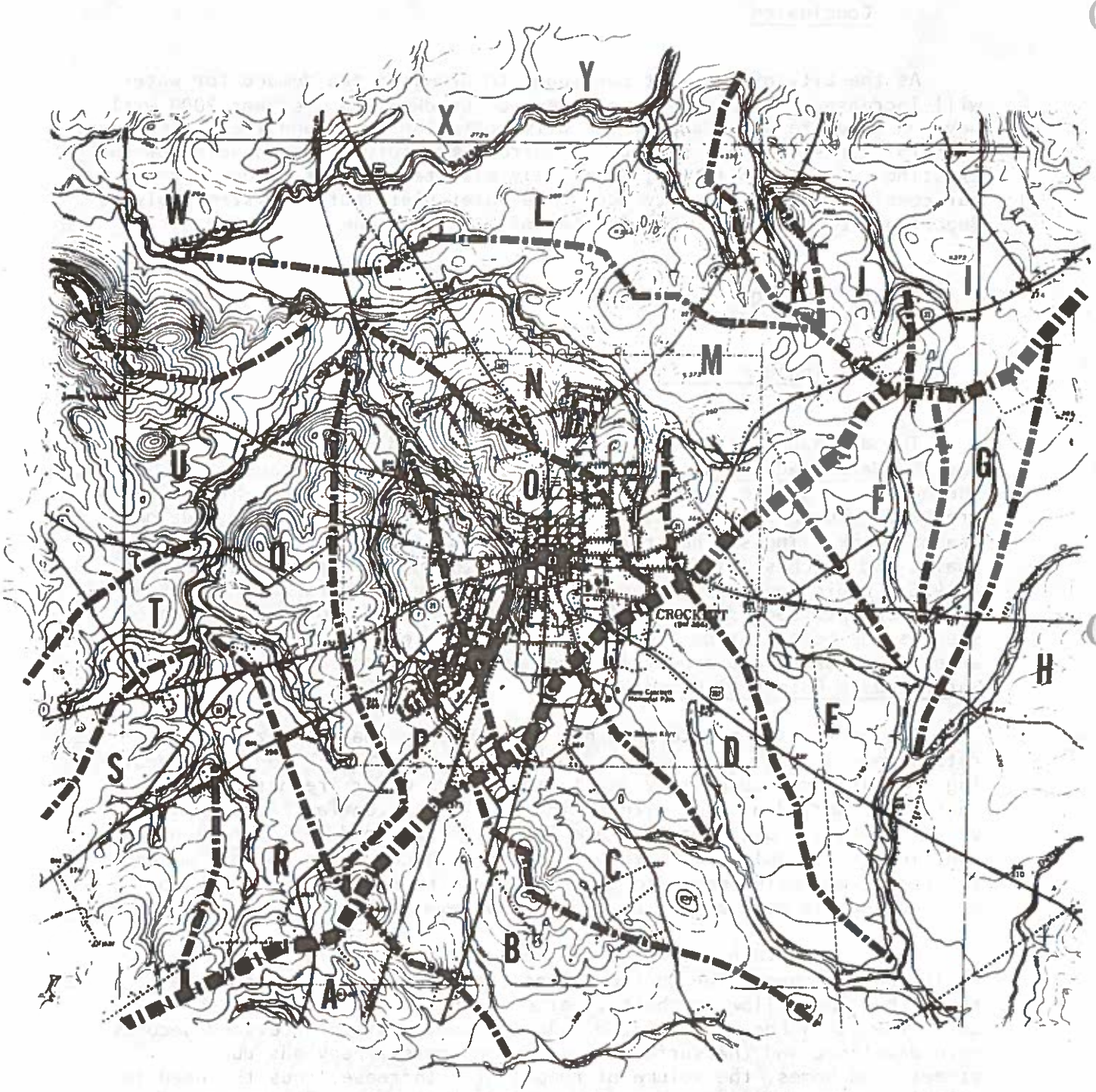
Storm Drainage

Drainage Analysis

The drainage pattern in Crockett is oriented into two watersheds. Map 20, Watersheds & Potential Flooding, indicates the direction to be to the northwest and to the southeast away from the ridge line which bisects Crockett. The northwest watershed is drained by Spring Creek, and Town Branch Creek. The southeast is drained by a series of less well defined swales and ditches. The total runoff for the northwestern watershed is 10,425.2 cubic feet per second, and for the southeastern watershed 4,464.7 cubic feet per second for a 100 year rainstorm. The northwestern watershed is the most critical to the drainage of the presently developed areas of Crockett and especially the minor watersheds noted on Map No. 20 Watersheds & Potential Flooding.

The northwestern watershed has a topography characterized by moderate slopes and has well drained soils. At present the two creeks draining this area can adequately handle most storm water, removing it in a reasonable period of time with a minimum flood potential. The culvert system presently used for drainage in the established residential areas functions reasonably well with only minor problems. Due to poor maintenance of culverts, mosquitoes breeding in the standing water in some drainage swales pose potential health problems.

The southeastern watershed is gently sloping and is drained by swales and ditches. The gentle slopes slow the speed of storm water runoff but does allow for better percolation of water into the soils until the soils become saturated. As the southeastern watershed becomes more developed and the surface area becomes more impervious due to streets and homes, the volume of runoff will increase, thus the need to quickly remove this water from the residential areas will become increasingly important.



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epartment of Urban and Regional Planning
tas A&M University, College Station, Texas
1980

North

0 1200 2400 3600
Scale

Map 20

Watersheds & Potential Flooding

Floodplain (100 year)

Major ridge line

Minor ridge line

Crockett's Storm Sewer Requirements

At present Crockett has few drainage improvements, partially due to the topography and low intensity of development. The physical size of Crockett and the lack of ordinances requiring storm drainage have also been responsible. As the City continues its growth the present system of reliance on natural drainage may prove to be inadequate. Table 15, Crockett's Storm Sewer Requirements, indicates the projected drainage needs for the year 2000.

TABLE 15: CROCKETT'S STORM SEWER REQUIREMENTS

Watershed	Year	Needed Improvements
Southeast	1990	Require storm sewers in new development
	2000	Install Main storm sewer collectors
Northwest	1990	Improve culverts and creek beds
	2000	Install collectors

Sources: Crockett 1980, Crockett Planning Information Document, Part I, Dept. of Urban & Regional Planning, Texas A&M University, 1980 Author.

Alternatives

The new development in the northwest watershed if it continues following the present trend may overburden the natural drainage system's ability to quickly drain those areas. To prevent the situation from becoming untenable, those swales feeding into the two creeks may need to be improved by the installation of concrete storm sewer which would swiftly move the storm water away from the development and on the creeks. The creeks, should they become overtaxed may require straightening and paving which would greatly improve their capability to remove substantial volumes of storm water at a rapid rate.

The southeastern watershed will require the installation of storm drainage pipes owing to its gentle slopes and corresponding slower run-off speeds. A system of main collectors may provide the swale and culvert system with improved drainage capability although new residential development should be required to provide adequate storm drainage.

Conclusion

The projected storm sewer requirements are dependent on the amount and intensity of the future development within the two primary watersheds. The present system of natural surface drainage may continue to be adequate but as the City develops the need for drainage improvements will become increasingly necessary. The retrofitting of areas with storm sewer is costly and may prove prohibitive, so a policy of requiring storm sewers in future development is advisable. In the developed areas of Crockett, improving the major drainage ways to speed the removal of storm water to the creeks and tributaries may be an alternative to retrofitting these older areas of town.

Waste Water

The Existing Sewage Treatment System

The existing sewage treatment facilities for the City of Crockett provide primary treatment of waste water from residential and commercial sources. The present treatment system is operating at near capacity. The collection system is adequate to meet the demands of the developed areas of Crockett, but there are areas within the City limits which are not served by the system. Infiltration of storm water into the system due to the deteriorating condition and age of some of the sewer lines adds up to 10 percent of the present rate of flow after a hard rain.

The treatment facilities are designed to accomodate a population of 8,000 persons at a daily per capita rate of flow of 126 gallons.[4] The 1980 population of 8,000 coupled with the daily per capita flow of 144 gallons indicate the critical state of the systems capacity.[5]

Future Treatment Requirements

To adequately provide sewage treatment in the year 2000, the present treatment facilities must be expanded or replaced. Table 16, Crockett's Waste Water Treatment Requirements, illustrates the critical nature of the present situation.

These figures do not account for industrial waste water treatment which is currently not provided.

TABLE 16: CROCKETT'S WASTE WATER TREATMENT REQUIREMENTS

Year	Daily Average Flow (Millions of Gal.)	Per Capita Daily
1980	1.21	144
1985	1.28	151.2[1]
1990	1.36	151.2
1995	1.45	151.2
2000	1.55	151.2

Sources: Crockett Comprehensive Plan Report, Caudill, Rowlett and Scott, 1968, p. 86; Crockett Study Team

Alternatives

The City of Crockett must begin the planning of a new treatment facility. As Table 16 indicates, the present system is overburdened. Careful consideration should be given in siting a new facility, within an area which will not be encroached upon by development during the lifetime of the plant.

Conclusion

The construction of a new waste water treatment plant is imperative. An additional 542,000 of treatment capacity will be needed by 2000. As the current facilities are overloaded the problems of environmental hazard are increased as is the nuisance factor of odor which accompanies an incomplete treatment of the waste material. The deteriorated sewer lines must be replaced and a long term plan developed to accomplish the capital intensive project. Consideration should be given on the treatment of industrial waste as an inducement for future industrial development.

References

1. Water Distribution System Analysis for the City of Crockett, Tx., Report CT-001, Kindle, Stone and Associates, Inc. 1980

2. Ibid

3. Ibid

4. Crockett, Texas Comprehensive Plan, Caudill, Rowlett, and Scott, 1968, p. 86.

5. Discussion with Crockett City Engineer, October, 1980.

HISTORIC PRESERVATION

Historically Significant Structures

Within the municipal boundaries of Crockett there are numerous historical structures. Because Crockett has served as the county seat for Houston County since its formation in 1837 many of the most prominant structures of the region are located there. Currently, four homes and one commercial building have been recognized as historical and have been awarded Texas Historical Medallions. A brief description of the significance of each house is as follows.

DOWNES - ALDRICH HOUSE 206 North Seventh Street

This house is listed by both the National Register of Historic Places and by the Texas Historical Medallions programs. The inscription on the medallion of the Downes - Aldrich House reads as follows: "An outstanding example of East Lake Victorian Architecture, started about 1891, completed in 1893, by J.E. Downes, prominant local businessman.

Much of the material in the structure was imported from other States. Downes lived in the house until 1910, and sold it the next year to Armistead Albert Aldrich (1858-1945), distinguished civic leader and historian, who resided here until his death. The Aldrich Family still occupies the house. Record Texas Historical Landmark 1972." Today the house is in the process of being restored and is used as the Historical and Creative Arts Center for Crockett.

GOSSETT - TAYLOR HOUSE 1.5 miles east of Crockett on State Highway 21

Although not within the municipal boundaries of Crockett, its close proximity to the city makes this house an important feature of the city's historical heritage. The Gossett - Taylor House was built around 1838 and is believed to be the first weather-boarded house in Texas. The house was built in the typical dog trot style and originally had a separate kitchen building in back of the main structure. The house was built by Andrew Gossett whose father Elijah had been a neighbor of Davy Crockett before leaving Tennessee. It was near this house that Davy Crockett camped out on his way to the Alamo. The house has been restored by the Rush Taylors.

MONROE - CROOK HOUSE 707 East Houston Street

This house is listed by both the National Register of Historic Places and by the Texas Historical Medallions programs. The inscription on the Monroe - Crook House reads as follows: "The house was built in 1854 by A.T.M. Monroe, prominent merchant and great nephew of U.S. President James Monroe. The style is Greek Revival. Bricks between the inner and outer walls provide insulation and strength. Attorney General George W. Crook bought the house in 1911. It is now owned and preserved by his daughter. Record Texas Historic Landmark 1969." Full restoration of the house was begun in 1974, and today the house is operated as a museum and is open to the public.

MONROE - WALLER HOUSE South Seventh and Clark Streets

This house is believed to have been built by Houston County's first realtor A.T.M. Monroe (who also built the Monroe - Crook House) in 1847. The house is built of lumber brought to Crockett from Shreveport, Louisiana, and is hand hewn or hand sawed. The exterior of the building is the same today as it was in 1850, but the interior has been modified for commercial purposes.

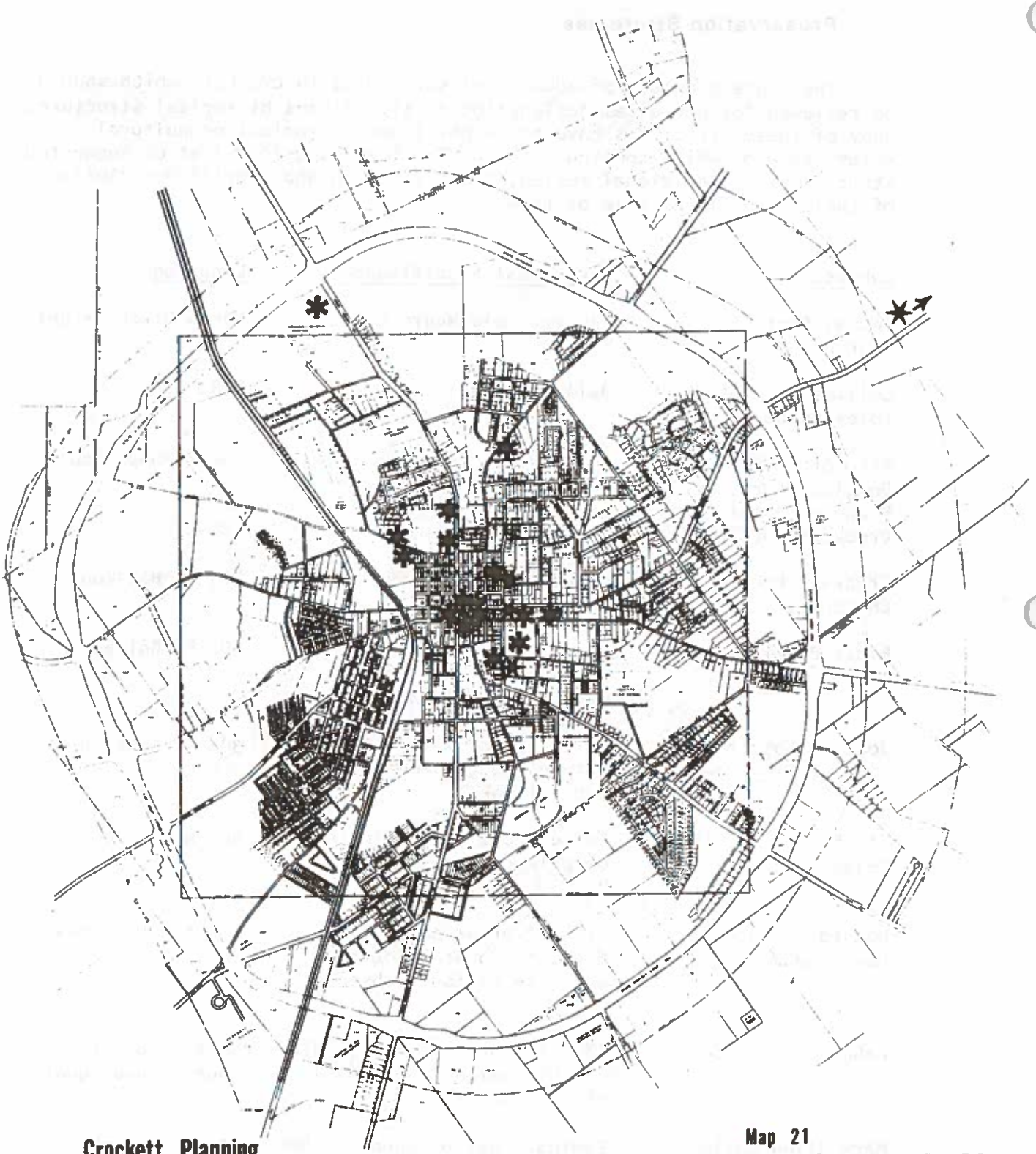
ALLIED FIRST NATIONAL BANK 415 East Goliad

This was the first bank to open in Crockett. The existing structure is not the origional building. The plaque on the building describes the history of the bank and its role in the community.

Preservation Strategies

There are a number of additional structures in Crockett which should be reviewed for potential designation as significant historical structures. Many of these structures have had significant historical or cultural roles, some of which continue today. The following is a list of suggested structures for additional review, their location and a brief description of their significant role or roles.

Subject	Historical Significance	Location
Bethel Baptist Church	110 year old Negro Church	North Sixth Street
Collins-Douglas-Foley House	Built 1856	F.R. 229
Site of Collins-Douglas Store, Pickwick Hotel, Crockett Hotel	First store on Court House Square	Court House Square
Crockett Prestyberian Church	Established in 1854	713 E. Houston
First Baptist Church	Crockett's first Church, Established 1853 (Not in origional building)	801 E. Goliad
John R. Foster House	Built approximately 1900, site of buggy shop and cabinet maker	303 N. Seventh St.
St. Francis of the Tejas	Cornerstone refers to the establishment of the Mission in 1690	609 N. Fourth St.
Houston County Court House	Site of origional Court House of Houston County, and site of four subsequent court houses	Court House Square
LeGory Saloon site	1870 Saloon, six people died in this saloon over the years of its operation	South Side of Court House Square
Mary Allen College	Seminary established in 1886 for Negro girls, origional administration building still standing	913 N. Fourth St.



Crockett Planning Information Document

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1980

North

0 600 1200 2000
Scale

Map 21

Potential Historic & Cultural Sites

★ Currently Designated Significant Sites

✱ Potential Significant Designation Sites

Mayes Building	Saddle shop established 1866, also served as law office	North Corner of Court House Square
McConnel Store	Built about 1880, old fisade still maintained	West Side Court House Square
Miles Chapel CEM Church	Negro church organized 1892, played leading role in the community	189 Fannin
Monroe Enterprises	Historical homes, real estate development circa 1850-1860 and grave marker A.E. Monroe	Intersection of N. Seventh and E. Clark Sts.
StrodePritchett Log Cabin	Restored cabin circa 1860 on new site	David Crockett Park

In addition to the significant and structures potentially designated as significant in Crockett, consideration is due for the preservation of a number of other sites which have served some significant historical of cultural function. This classification should include such sites as cemeteries, roads and parks within the Crockett city limits. The Houston County Historical Society has compiled a list of six such sites within the city limits of Crockett which are identified by the Texas Historical Markers Program. They are as follows;

Subject	Historical Significance	Location
Glenwood Cemetery South Sec.	Opened about 1837, oldest cemetery in Crockett	East Pease Ave.
Glenwood Cemetery South Sec.	Opened about 1870	East Pease Ave.
Thomas Collins Grave	One of Early Crockett settlers, believed to operate first business on square	Glenwood Cemetery
A. LeGory Grave	Brought Pecans to Crockett	Glenwood Cemetery
A.T.M. Monroe Grave	Crockett's first realtor, great nephew of President Monroe	Glenwood Cemetery
Vicory Tunstall Grave	Founder of World's Champion Fiddler's Festival and first winner of same	N. US 287 and Loop 304 Intersection
J.C. Wooters Grave	Mayor, bank developer	Glenwood Cemetery

Judge Elijah Grave	Soldier Texas Army 1836, Chief Justice Houston Co. 1844	Glenwood Cemetery
LeGory Pecan Orchard	Crop introduced around 1880, major economic crop, 1930 Crockett known as town of 5,000 people and 10,000 pecan trees	intersection of Pecan and N. 4th Streets
Camino Real	Origional Spanish Road between East Texas and San Antonio	SH 21, markers located at five mile intervals
David Crockett Memorial Park	Park created to mark the Centennial of Crockett	Memorial Drive

Methods of Strategy Implementation

There are a number of steps which Crockett should consider taking in order to better preserve its historic and cultural heritage. These steps can be accomplished incrementally, but should be undertaken in a comprehensively organized fashion to insure that the work conducted will lead to the accomplishment of the historical and cultural preservation objectives of the community. Much of the work can be done simultaneously. The following are our recommendations of the order for subsequent work, and its ordering, which should be done to accomplish the goal of preserving Crockett's cultural and historical heritage and increasing the community's awareness of the city's heritage.

First, a comprehensive plan for historical preservation in Crockett should be conducted. This document should inventory the historical and cultural resources in the community which are currently identified as significant and sites which have strong potential for future designation. Secondly, it should outline the procedures required to receive designation of significance for sites not currently recognized by such programs. Most importantly, this document should then outline a program for the implementation of a unified historic and cultural resources management plan for the city of Crockett.

Potential components of a historical and cultural resource management program include:

1) Producing a brochure describing the historic and cultural development of Crockett. This brochure should describe the formation of Houston County and the City of Crockett and its early history, the settlement of the city and county, the major historical events to have occured in Crockett, and a description of the significant sites in Crockett today.

2) Develop a historical/cultural tour of Crockett for citizens or visitors who are interested in seeing first hand components of Crockett's historical and cultural heritage.

3) A fiscal program for aiding the preservation and utilization of the historic and cultural resources of Crockett. Such a program potentially could include improvements to municipal owned resources, and tax incentives to encourage the restoration and maintenance of significant sites.

4) Formal programs for public and private cooperation in the management of historic and cultural resources.

5) Restore the facades of buildings facing the courthouse square to their origional condition. Many of the buildings facing the Courthouse Square have had more modern facades applied on top of the building's origional fronts which possibly could be removed. A program to integrate the restoration of Court House Square facades should be investigated and its potential impact on the civic design of the city.

6) Crockett has many attractive older buildings, which although not significant in historical or architectural value have the potential to add to the charm and character of the city. Programs should be investigated which would lead to better utilization of these facilities and potentially to their restoration and or rehabilitation.

In addition to work done in the Historical Preservation Plan, the city should encourage other activity which will contribute to the historical and cultural preservation and development of Crockett. One of the key mechanisms for achieving this goal is for the city to cooperate to the fullest extent possible with civic groups within the city. The city of Crockett already has many cultural and historic features and activities which are much better than many cities of similar or even larger size. This is largely due to the efforts of private groups and individuals. The city should recognize the contributions these parties have made to improving the amenities of the city and make every effort to encourage the further assistance and activities of these groups and individuals.

THE VISUAL IMAGE OF CROCKETT

Introduction

"And yet...if at the end of it all the city appears dull, uninteresting and souless, then it is not fulfilling itself. It has failed. The fire has been laid but nobody has put a match to it!"[1]

Gorden Cullen

What is city image? Harry Garnham refers to it as: "genius, loci, the prevailing spirit of a place." He goes on to define it as a planning concept "...based on the art of visual relationships, the conscious art of developing the character of a given place rather than imposing a foreign character upon it."[2]

Kevin Lynch focuses on the issue of 'legibility' of the townscape. The visual quality of the town is held within the mental image of that town by its citizens. That is, the clarity of "...city parts can be recognized and can be organized into a coherent pattern."[3]

Each person can be sure, that all five senses are involved in our perceptions of our cities images. The sounds of traffic on the roads, the aroma from the nearby restaurant, the flavor of local water and the feel of the cold stone courthouse wall all aid in our image of the city. Yet, the apparent common tie of the two definitions is visual perception. Gordon Cullen is most direct about the importance of visual perception when he wrote, "We turn to the faculty of sight, for it is almost entirely through vision that the environment is apprehended."[4] City image is by nature a visual relationship.

The Components of City Image

City image is normally talked about in terms of elements, elements that make up the city image when combined together. In general, all the various elements within the environment of the city, comprise this list of 'city image elements.' It can quickly be determined that this list is very long and complex. As Gordon Cullen wrote, "...we often get more than we bargained for. Glance at the clock to see the time and you see the wallpaper, the clocks' carved mahogany frame, the fly crawling over the glass and the delicate rapier-like pointers. Cezanne might have made a painting of it."[5] The volume of information in the environment is staggering and therefore, selection of important types of information is necessary.

Gordon Cullen suggests three major types of information to be studied and used. Optics or serial vision is the visual perception of views and scenery as one moves throughout the city. Place is the perception,

normally visual, of where you are, in the square, on fourth street, or at the shopping center. Content is the fabric of the town: color, texture, scale, style, character, personality and uniqueness. Within the form of these elements city image can be identified and therefore, manipulated.[6]

Kevin Lynch solved this same problem with his own categories of elements. A set of elements in a form easier to use, Lynch created the typical basic categories used within the planning and design professions to deal with the city image. The elements Lynch defined as important are paths, edges, districts, nodes, landmarks, element interrelations, the shifting image and image quality.[7]

Alternatives

As with all other studies, a process, such as the scientific process, enhances the quality of results, as well as, the ease of handling the subject matter. Harry Garnham presented a planning process which contains five major parts for dealing with city image. He titled them: Initial Activity, Research/Inventory, Inventory/Analysis, Creative Synthesis and Implementation.[8] With this process a citizen organization or committee will be able to successfully identify alternatives to enhance the city image.

Initial Activity is the creation of the citizens organizations or committees. The setting of goals and objectives through lectures, workshops and professional assistance. This is the first step in undertaking the task of dealing with the city image.

Research/Inventory, the next stage, can be grouped into five parts. These parts are visual setting, entrance points, basic structure and organization, central areas and details. With these parts collected, Mr. Garnham states that, "...a general articulation of townscape character or spirits becomes possible."

Stage three Inventory/Analysis is to do a detailed investigation into Natural, Cultural and Visual systems as they relate to and affect townscape character. The final aspect is an assessment of major appearance components. This produces the set of basic element components as defined by Kevin Lynch earlier in this section.

Creative Synthesis, stage four, is the actual development of alternatives. Harry Garnham proposed a General Townscape Uniqueness Plan (GTU). This plan or plans is a creative synthesis based upon "...congruence of the towns uniqueness and ingredients discovered in the analysis of Natural, Cultural, and Visual systems, as well as, the values held by the town's citizens."

The last stage, Implementation, is the creation of guidelines, policies, and methods of control. The GTU can be used as a basis for

evaluating the successful completion of public and private goals as they relate to the city image. Gorden Cullen stated it this way, "As will be seen, the aim is not to dictate the shape of the town or environment but is a modest one; simply to manipulate within the tolerances."[9]

Conclusion

The undertaking of an actual city image planning process will produce the set of alternatives to be addressed. In Crockett, the redevelopment of the city center, definition of the city's entrances, preservation of existing historical and cultural assets, and the clarification of the main paths, major roads, will most certainly be near the top of the alternatives to be addressed. The entire study of Crocketts' city image is not within the scale of this document. This section introduced a few components of the city image and a methodology to identify some alternatives. With these tools as a starting point, a citizens group or a town committee with some professional guidance can actively seek out and enhance the city image of Crockett.

References

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2. Garnham, Harry. Maintaining the Spirit of Place. College Station, Texas: Texas A&M University, 1976, p. 12.
3. Lynch, Kevin. The Image of the City. Cambridge, Massachusetts: The Massachusetts Institute of Technology, 1975, p. 2-3.
4. Ibid. p. 10
5. Ibid. p. 10-11
6. Ibid. p. 11-15
7. Chapter III.
8. Chapter II.
9. p. 10