

2030 Land Use Plan

Prepared by:
City of Lawton Planning Division
103 SW 4th Street
Lawton, Oklahoma 73501

Approved by the City Planning Commission- June 26, 2008
Approved by City Council- July 22, 2008

This plan is the product of a project financed in part by the Federal Highway Administration and the Federal Transit Administration of the U.S. Department of Transportation.

The contents of this plan reflect the views of the City Planning Commission, and Lawton City Council. The Planning Division is responsible for the facts and accuracy of the data presented herein. The contents do not necessarily reflect official views or policies of any governmental agency. This plan does not constitute a standard, specification or regulation.

"Lawton, the epicenter of civilization in Southwest Oklahoma"

RESOLUTION NO. 08-01

A RESOLUTION ADOPTING THE 2030 LAND USE PLAN FOR THE CITY OF LAWTON, OKLAHOMA, AS THE BASIC POLICY DOCUMENT IN CONSIDERATION OF MATTERS AFFECTING THE FUTURE GROWTH OF THE CITY OF LAWTON.

WHEREAS, Section C-1-3 of the Lawton City Charter calls for the preparation of a comprehensive plan every five years; and

WHEREAS, the present Land Use Plan was prepared and adopted in 2001; and

WHEREAS, a steering committee with members from the City Planning Commission, City Council, Chamber of Commerce, Fort Sill, Lawton Public Schools, Cameron University, and a local developer assisted in the review and development of the 2030 Land Use Plan; and

WHEREAS, the 2030 Land Use Plan has been prepared by the Planning Division as a guide to sound economic and social development in Lawton; and

WHEREAS, the City Planning Commission held a public hearing on the 2030 Land Use Plan;

NOW, THEREFORE, BE IT RESOLVED by the Lawton City Planning Commission that the 2030 Land Use Plan for the City of Lawton shall be the guiding document for the development of land.

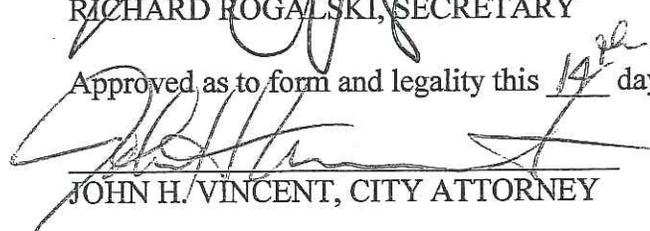
ADOPTED this 26th day of June, 2008.


PAT HENRY, CHAIRMAN

ATTEST:


RICHARD ROGALSKI, SECRETARY

Approved as to form and legality this 17th day of July, 2008.


JOHN H. VINCENT, CITY ATTORNEY

RESOLUTION NO. 08-100

A RESOLUTION ADOPTING THE 2030 LAND USE PLAN FOR THE CITY OF LAWTON, OKLAHOMA, AS THE BASIC POLICY DOCUMENT IN CONSIDERATION OF MATTERS AFFECTING THE FUTURE GROWTH OF THE CITY OF LAWTON.

WHEREAS, Section C-1-3 of the Lawton City Charter calls for the preparation of a comprehensive plan every five years; and

WHEREAS, the present Land Use Plan was prepared and adopted in 2001; and

WHEREAS, a steering committee with members from the City Planning Commission, City Council, Chamber of Commerce, Fort Sill, Lawton Public Schools, Cameron University, and a local developer assisted in the review and development of the 2030 Land Use Plan; and

WHEREAS, the 2030 Land Use Plan has been prepared by the Planning Division as a guide to sound economic and social development in Lawton; and

WHEREAS, the City Planning Commission held a public hearing on the 2030 Land Use Plan and adopted the 2030 Land Use Plan for the City of Lawton as the guiding document for the development of land;

NOW, THEREFORE, BE IT RESOLVED by the Mayor and Council of the City of Lawton that the 2030 Land Use Plan for the City of Lawton is hereby adopted and shall be the guiding document for the development of land.

ADOPTED this 22nd day of July, 2008.



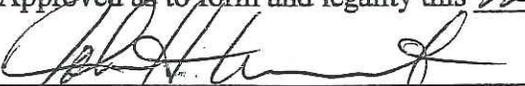
JOHN P. PURCELL, JR., MAYOR

ATTEST:



TRACI HUSHBECK, CITY CLERK

Approved as to form and legality this 22nd day of July, 2008.



JOHN H. VINCENT, CITY ATTORNEY

Table of Content

Chapter 1 - Introduction	Ch. 1 Pg. 1
Purpose and Authority	Ch. 1 Pg. 1
Plan Development	Ch. 1 Pg. 2
Table 1: Land Use Steering Committee Members	Ch. 1 Pg. 2
Implementation	Ch. 1 Pg. 2
Table 2: Land Use Plan and Zoning Ordinance Comparison	Ch. 1 Pg. 3
Planning Period	Ch. 1 Pg. 3
Amendment Procedure	Ch. 1 Pg. 3
Appendix A summarizes the Land Use Plan	
Amendment procedure.	Ch. 1 Pg. 4
Land Use Map (Appendix B)	Ch. 1 Pg. 4
Chapter 2 - Community Profile	Ch. 2 - Page 5
Community Characteristics	Ch. 2 - Page 6
SIZE	Ch. 2 - Page 6
Table 3: Population and Growth Summary	Ch. 2 - Page 6
Map 1: City Limits and Planning Area	Ch. 2 - Page 7
COMPOSITION	Ch. 2 - Page 7
Age	Ch. 2 - Page 7
Table 4: Lawton 2000 Population by Age	Ch. 2 - Page 8
Gender	Ch. 2 - Page 8
Figure 1: Lawton 2000 Population Distribution	
between Males and Females	Ch. 2 - Page 9
Race	Ch. 2 - Page 9
Table 5: Population by Race 1990, 2000	Ch. 2 - Page 10
Education	Ch. 2 - Page 10
Housing	Ch. 2 - Page 10
Labor Force	Ch. 2 - Page 10
Table 6: Leading Employers	Ch. 2 - Page 11
Income	Ch. 2 - Page 11
PROJECTED POPULATION	Ch. 2 - Page 11
Table 7: 2030 Population Projections	Ch. 2 - Page 12
Housing	Ch. 2 - Page 12
Employment	Ch. 2 - Page 12
ADDITIONAL PLANNING ELEMENTS	Ch. 2 - Page 12
Lawton Public Schools	Ch. 2 - Page 12
Appendix C	Ch. 2 - Page 12
Map 2: Location of Residential Development	
Pending Approval	Ch. 2 - Page 13
Map 3: Developable Land	Ch. 2 - Page 13
Higher Education	Ch. 2 - Page 14
Great Plains Technology Center	Ch. 2 - Page 14
Cameron University	Ch. 2 - Page 14
Ridge Line and Drainage Basin	Ch. 2 - Page 14
Map 4: Drainage and Ridge Line	Ch. 2 - Page 15

Federal Lands	Ch. 2 - Page 15
Fort Sill Military Installation	Ch. 2 - Page 15
Appendix D is the map of the Fort Sill Buffer Zone	Ch. 2 - Page 15
Tribal Lands	Ch. 2 - Page 15
Chapter 3 - Housing Availability, Afford ability, and Quality	Ch. 3 - Page 16
Housing Availability	Ch. 3 - Page 16
Table 8: Lawton Type and Number of Housing Units 1990 and 2000 Census	Ch. 3 - Page 16
Building Permits	Ch. 3 - Page 16
Appendix E contains a table showing the subdivisions with the number of lots and acreage	Ch. 3 - Page 17
Apartments	Ch. 3 - Page 17
Appendix F shows the apartment complexes And the number of units.	Ch. 3 - Page 17
Fort Sill Housing	Ch. 3 - Page 17
Home Ownership	Ch. 3 - Page 17
Homeowner Median Price Trends	Ch. 3 - Page 17
Table 9: Comparison of Median Value of Homes in Oklahoma	Ch. 3 - Page 18
Housing Affordability	Ch. 3 - Page 18
Appendix G, Affordable Housing Tables	Ch. 3 - Page 18
Appendix H Military Allowances and Rent Ranges	Ch. 3 - Page 18
Quality of Housing	Ch. 3 - Page 18
Appendix I for a breakdown of the number of structures built during a specific time frame.	Ch. 3 - Page 19
Table 10: Occupants Per Room	Ch. 3 - Page 20
Chapter 4 - Infrastructure	Ch. 4 - Page 21
Water Supply and Water Rights	Ch. 4 - Page 21
Table 11: Water Rights and Dependable Yield for Water Sources	Ch. 4 - Page 21
Table 12: Historical/Projected Demand of Water	Ch. 4 - Page 21
Watershed Pollution	Ch. 4 - Page 21
Map 5: Lakes Lawtonka, Ellsworth and Waurika Watersheds	Ch. 4 - Page 22
Treating the Water Supply	Ch. 4 - Page 22
Distribution of Water	Ch. 4 - Page 23
Figure 2: Zones of Service	Ch. 4 - Page 24
Condition of the Distribution System	Ch. 4 - Page 25
Sanitary Sewerage System	Ch. 4 - Page 25
Sanitary Sewer Collection	Ch. 4 - Page 26
Table 13: Sewer Main Inventory	Ch. 4 - Page 26
Wastewater Treatment Process	Ch. 4 - Page 26
Sanitary Sewer Discharge	Ch. 4 - Page 27
Compliance with the Administrative Order	Ch. 4 - Page 27
Reclamation and Reuse	Ch. 4 - Page 28

Solid Waste Collection and Disposal System	Ch. 4 - Page 28
Solid Waste Collection System	Ch. 4 - Page 28
Solid Waste Disposal System	Ch. 4 - Page 29
Alternate Disposal Method	Ch. 4 - Page 30
Composting	Ch. 4 - Page 30
Recycling	Ch. 4 - Page 31
Transportation	Ch. 4 - Page 31
Transportation Planning	Ch. 4 - Page 31
Map 6: LMPO Boundary	Ch. 4 - Page 31
Transportation Network	Ch. 4 - Page 32
Roadway System	Ch. 4 - Page 32
classification system illustrated in Appendix J.	Ch. 4 - Page 32
Table 14: Miles of Classified Roadway - 2002	Ch. 4 - Page 32
Lawton Area Transit System	Ch. 4 - Page 32
Appendix K, Route Map	Ch. 4 - Page 33
Bicycle and Pedestrian Facilities	Ch. 4 - Page 33
Lawton-Fort Sill Regional Airport	Ch. 4 - Page 33
Noise and Clear Zones	Ch. 4 - Page 33
Freight and Freight Facilities	Ch. 4 - Page 34
Railroad	Ch. 4 - Page 34
Open Space and Recreation	Ch. 4 - Page 34
Passive Recreation	Ch. 4 - Page 34
Active Recreation	Ch. 4 - Page 35
Park Standards	Ch. 4 - Page 35
Table 15: Park Categories	Ch. 4 - Page 36
Park Inventory	Ch. 4 - Page 37
Parkland Selection	Ch. 4 - Page 37
Areas of Concern for Parks	Ch. 4 - Page 37
Pedestrian/Bikeway Trails and Greenways	Ch. 4 - Page 38
Figure 3: Influence of the Built Environment on Travel/Activity Patterns and Attendant Human and Environmental Impacts	Ch. 4 - Page 38
Recommended Guidelines	Ch. 4 - Page 38
Figure 4: Trails and Green ways promote Walking	Ch. 4 - Page 39
Chapter 5 - Environmental Planning and Conservation	Ch. 5 - Page 40
Physical Resources, Opportunities and Constraints	Ch. 5 - Page 40
Slope	Ch. 5 - Page 40
Appendix L illustrates the topography at ten foot intervals	Ch. 5 - Page 40
Ridge Line and Drainage Basin	Ch. 5 - Page 40
Soils	Ch. 5 - Page 40
Appendix M illustrates the soils	Ch. 5 - Page 40
Floodplain	Ch. 5 - Page 40
Appendix N illustrates the general locations of floodplain	Ch. 5 - Page 40
Urban Stormwater Pollution	Ch. 5 - Page 41
Water Conservation	Ch. 5 - Page 42

2030 Land Use Plan

Vegetation and The Urban Environment	Ch. 5 - Page 43
Wildlife	Ch. 5 - Page 43
Air Quality	Ch. 5 - Page 43
Table 16: 8 Hour Highest Average	Ch. 5 - Page 44
Chapter 6 - Areas of Special Treatment	Ch. 6 - Page 45
sub plan (Appendix O)	Ch. 6 - Page 45
without sub plans are listed separately (Appendix P).	Ch. 6 - Page 45
With Sub Plans	Ch. 6 - Page 45
Brockland Addition	Ch. 6 - Page 45
North Addition	Ch. 6 - Page 45
Central Business District	Ch. 6 - Page 45
TIF District Appendix Q.	Ch. 6 - Page 45
Urban Renewal Plans	Ch. 6 - Page 45
Appendices R, S, and T for the three land use plans.	Ch. 6 - Page 46
Cameron University	Ch. 6 - Page 46
Appendix U demonstrates the constraints on growth and the zoning surrounding CU	Ch. 6 - Page 46
Appendix U is the Cameron University Master Plan map.	Ch. 6 - Page 46
Appendix V also illustrates the location of the new facility	Ch. 6 - Page 46
Appendix V shows that CCMH is surrounded on three sides by single family residential.	Ch. 6 - Page 46
Appendix W for the street realignment location.	Ch. 6 - Page 46
Appendix X shows the distribution of LPS's elementary, junior high and high schools	Ch. 6 - Page 47
Without Sub Plans	Ch. 6 - Page 48
Capital Hill and Manning Subdivisions (Map 7, Area xxxx)	Ch. 6 - Page 48
North of the Airport (Map 7, Area xxxx)	Ch. 6 - Page 48
Koehler Addition, Blocks 1 and 2 (Map 7, Area xxxx)	Ch. 6 - Page 48
White Acres, Block 1 (Lots 19-21), Block 2 (Lots 27-32), and Block 4 (Lots 1-9) (Map 7, Area xxx)	Ch. 6 - Page 49
Tropes Five Acre Blocks and Tropes Second Subdivision Block 1 and 2 (Map 7, Area xxx)	Ch. 6 - Page 49
Southeast 36th Street and Lee Boulevard (northeast corner) (Map 7, Area xxxx)	Ch. 6 - Page 49
Vernon-Legion Subdivisions - This area is located north of Gore Boulevard between railroads to the east and west and I-44 to the north (Map 7, Area xxx).	Ch. 6 - Page 49
Tribal Land (Appendix Y)	Ch. 6 - Page 49
Chapter 7 - Land Use Supply and Demand	Ch. 6 - Page 50
Municipal City Limits	Ch. 6 - Page 50
Lawton's municipal limits are illustrated in Appendix Z.	Ch. 6 - Page 50
Comanche County Rural Water Districts is illustrated in Appendix AA.	Ch. 6 - Page 50
Table 16: 2000 - 2005 Land Use Inventory	Ch. 6 - Page 51
Planning Concepts	Ch. 6 - Page 53

2030 Land Use Plan

DISTRIBUTION	Ch. 6 - Page 53
INTENSITY	Ch. 6 - Page 53
TIMING	Ch. 6 - Page 53
Patterns for Compatible Land Uses	Ch. 6 - Page 53
NEIGHBORHOOD UNIT CONCEPT	Ch. 6 - Page 53
one-mile square concept as shown in Appendix BB ...	Ch. 6 - Page 54
Planned Unit Development	Ch. 6 - Page 54
Smart Growth	Ch. 6 - Page 55



CHAPTER 1 - INTRODUCTION

Early in our development, mankind ceased his nomadic wanderings and established permanent settlements. Even in these primitive settlements care was given to the spatial design by the site selection and the arrangement of the structures to reduce the dangers from fire and outside attackers and to provide the essentials for human life such as water and food supplies. As these settlements became cities with populations, new factors that influenced the physical layout began to emerge such as health and sanitation of the locations of manufacturing activities.

Land use controls in the United States can be traced to the original thirteen colonies. In the early 1900's, zoning became the tool to establish land uses or activities permitted on parcels of land. The zones or districts identify specific activities permitted in broad use categories of agriculture, residential, commercial and industrial. In the last thirty years almost every town or city in the United States has been actively pursuing urban design principles to improve the social, economic, recreational, and cultural environments of the communities.

As cities grow in size, the demands for more governmental support are also growing. Cities are currently providing a myriad of services such as transportation, meals for the elderly, sports programs for youth, in addition to the traditional services of fire and police protection and providing safe drinking water. Therefore, the preparation of the comprehensive plan for urban development has taken on a broader scope. The comprehensive plan is now the guide for communities to divide their resources to support the increasing service demands. This document was designed to be that guide.

PURPOSE AND AUTHORITY

Title 11, Oklahoma Statutes, Section 45-101 et. Seq., allow cities to form a "Municipal Planning Commission" "to prepare from time to time plans for the betterment of the municipality as a place of residence or for business." This Plan should identify the policy recommendations for the physical development of the area including the most desirable land use patterns within the city. Such recommendations should be based upon examination of environmental factors such as topography, soil conditions, water and wastewater impacts, transportation patterns and socioeconomic factors such as existing and projected population and employment trends.

Section C-1-3b of the Charter of the City of Lawton states that the planning function shall include "the development and administration of a comprehensive land use plan which will provide for the careful and thoughtful integration of residential, commercial, industrial, public and other elements to achieve and preserve social purposes, economic values, and aesthetic quality of the neighborhoods and of other areas that composes the city." The review of this plan shall be at five-year intervals. In the development of the plan the "city will seek a combination of densities and varieties of uses which will be directed to objectives of both stability and innovation."

These two authorities define both the purpose and scope of the comprehensive plan and firmly establish that the plan should be specific to the City of Lawton. Although the Lawton Municipal territorial limits include parts of the Fort Sill Military Installation, the U.S. Army sets out the land use policies and regulations applicable to the installation.

Therefore, this document will not establish any land use recommendations for Fort Sill. Additionally, other lands under the jurisdiction of the Federal government are not included in the plan such as Native American Tribal lands.

PLAN DEVELOPMENT

This plan was developed over a thirteen-month period with the assistance of a Land Use Steering Committee composed of members of the City Planning Commission and City Council along with representatives from Lawton Chamber of Commerce and Industry, Fort Sill, Cameron University, and Lawton Public Schools.

A Community Visioning Meeting was held October 18, 2005 for input from many of the community’s organizations and committees as well as the general public. The Land Use Plan should be based upon input from other community partners who play major roles in our growth. On July 12, 2005 Planning Division staff met with the Mayor and CPC Chair where a recommendation was made to establish a Land Use Steering Committee (LUSC) with the following members:

Table 1: Land Use Steering Committee Members

ORGANIZATION	COMMITTEE MEMBER
City Planning Commission, Chair	Pat Henry
Lawton Chamber of Commerce	Dana Davis (or Designated Representative)
Fort Sill	Major General David P. Valcourt (or Designated Representative)
Cameron University, President	Dr. Cindy Ross (or Designated Representative)
Lawton Public Schools, Superintendent	Barry Beauchamp (or Designated Representative)
Developer/ City Planning Commission	John Jones
Council/Strategic Planning Task Force	Janice Drewry
City Planning Commission	John Pereira

Source: Planning Division

Over the next xxx months each mile section map was reviewed by the Land Use Steering Committee in public meetings. The second Community Meeting was held xxxxxxxxxxxx, 2006. The CPC held a public hearing on _____, 2006 (describe action) and the City Council held a public hearing on _____, 2006.

IMPLEMENTATION

This Plan will be implemented by utilizing a variety of tools such as zoning district regulations, building and health codes, land subdivision regulations, growth policies, and even the provision and extension of infrastructure to support activities in undeveloped areas. This Plan will recommend some of these tools be used in the community to ensure the most economic physical development for the future growth.

The Land Use Plan should not be confused with the City’s Zoning Ordinance. As its title indicates, a Land Use Plan is a *plan*—a *guide* to public and private investment in land use and infrastructure. In contrast, a *zoning ordinance* is just that—a regulatory tool used by the City to influence and direct development of the community in ways that reflect the direction and desired form called for in the Land Use Plan. The City’s zoning ordinance is one tool among several used to implement the vision, goals, policies and recommendations of the plan.

The following table highlights the differences.

Table 2: Land Use Plan and Zoning Ordinance Comparison

LAND USE PLAN	ZONING ORDINANCE
Provides general policies—a guide.	Provides specific regulations- the law.
Describes what should happen in the long-term – not necessarily the use(s) recommended or existing use today.	Describes what is and what is not allowed today, based on existing conditions.
Includes recommendations that involve other agencies and groups	Deals only with development related issues under City control
Flexible to respond to changing conditions	Predictable, fairly rigid, requires formal amendment to be approved by City Council
General Land Use Categories (residential)	Zoning Districts (e.g., SF1, R4, C4, etc)
General land use locations	Parcel-specific zoning designations
Policy document	Implementation of goals/policies/plans

PLANNING PERIOD

This Plan has been developed in accordance with Section C-1-3 of the Charter of the City of Lawton, which requires that a comprehensive land use plan be adopted every five years. This Plan is intended as a policy guide for land development matters for the planning period of 2005 to 2030 and supersedes the 2025 Land Use Plan, which was adopted in 2001.

AMENDMENT PROCEDURE

The 2030 Land Use Plan has a direct relationship to establishing and changing of zoning districts which are specifically delineated areas in a municipality within which uniform regulations and requirements govern the use, placement, spacing and size of land and buildings. Zoning districts are established or modified by the passage of an ordinance by the governing body. The boundaries of zoning districts are displayed graphically on the official zoning maps located in the Planning Division.

Sections 43-102 and 43-103, Title 11, Oklahoma Statutes, grant municipalities the power to establish or amend zoning districts. Such regulations shall be made in accordance with a “comprehensive plan” and be designed to accomplish any of the following objectives:

1. To lessen congestion in the streets
2. To secure safety from fire, panic and other dangers
3. To promote health and general welfare
4. To provide adequate light and air
5. To prevent the overcrowding of land
6. To promote historical preservation
7. To avoid undue concentration of population
8. To facilitate the adequate provision of transportation, water, sewerage, schools,

parks and other public requirements.

The regulations shall also be made with reasonable consideration, among other things, as to the character of the district and its peculiar suitability for particular uses and with a view to conserving the value of buildings and encouraging the most appropriate use of land throughout the municipality.

The state law also sets out notice requirements for the changing of zoning districts or district boundaries to include written notice to all property owners within a 300-foot radius of the exterior boundary of the tract to be changed and notice to the general public by newspaper publication that public hearings will be held before the enactment of any changes.

Thus, based upon the above described law, the establishing or changing of zoning district boundaries or regulations shall be in accordance with a comprehensive plan and the objectives listed above.

The 2030 Land Use Plan is the comprehensive plan of Lawton and serves as the guide for zoning which implements land use policy. However, the land use needs of a community are dynamic and the Charter only requires review of the plan at periods of not more than five years because community wide conditions do not change at a rapid rate. Therefore, the 2030 Plan contains an amendment procedure to evaluate zoning requests that are not in accordance with the adopted plan. Appendix A summarizes the Land Use Plan Amendment procedure.

The Land Use Plan includes a Land Use Map (Appendix B) which depicts the various Land Use designations detailed in the Land Use Plan. These designations are determined by the City as appropriate for future development based on Community needs and the stated Goals and Objectives. Development or redevelopment of property must be compatible with the Land Use designation for the property which is indicated on the map.

CHAPTER 2 - COMMUNITY PROFILE

This land use plan offers an opportunity for the community to remember its past, but, more importantly, to envision its future. The success of the community to achieve its goals will largely depend on its collective history and on recognizing the qualities that make this community “home”. Sustaining and growing the economy, creating more employment, creating opportunities for the youth, preserving and enhancing the community character, and balancing the demands placed on the fiscal resources to maintain and expand the infrastructure system are a few of the many challenges facing the City of Lawton. It is important to get a sense of where the City is right now by considering its history and current conditions before tackling the future challenges.

This community profile offers an in-depth introduction to the City. The profile will document socioeconomic conditions and demographic characteristics of the community pertaining to its historical and current population, the age, gender, and educational attainment of its people. The purpose of this chapter is to examine how the community has grown since its settlement. This chapter will identify its current characteristics and resources that will contribute to the envisioned future, and to analyze where the community appears to be headed in the future.

The Lawton-Fort Sill community is rich in history of its past. Fort Sill was founded in 1869 to control the Southern Plains Indians which consisted of the Comanche, Kiowa, Apache, Southern Cheyenne and Arapaho tribes or tribal branches. The United States Government had determined that the nomadic hunters were to become farmers and live on reservations. Fort Sill played an enormous part in subduing the Indians in the years that followed. The Red River Campaign of 1875 ended the sporadic Indian uprisings. In 1902, the role of Fort Sill changed dramatically when the first battery of field artillery arrived. By 1911, the School of Fire for Field Artillery was established, and this mission continued to expand to the present status of the Field Artillery Center of the World.

By 1901, the Indians received individual land allotments and the reservation system ended. The surplus land was opened to homesteaders by utilizing a lottery and auction system rather than the dangerous “land-run” method. Thus, Lawton was created in a unique fashion. The City’s growth was sustained by several factors including being the county seat of government, the major retail center for surrounding farming and grazing industries, having railroad service from all directions and being near petroleum related industry. However, the most influential contribution to Lawton’s development has been Fort Sill. Between World War II and the 1950’s Lawton’s population almost doubled due to the expanded mission of Fort Sill. According to the Census Bureau the population of Lawton-Ft. Sill in 2000 was 92,757.

As the City grew the type of development evolved. During the early 1960s Lawton undertook several urban renewal projects near the Central Business District. These clearance projects demolished many historical structures. However, several historical sites and buildings do remain in or around the City including the Comanche Reformed (Dutch) Church, Fort Sill Indian School, Central Junior High School, Lawton Carnegie Library and Mattie Beal Home. Private organizations as well as governmental entities maintain these historic sites.

Lawton’s municipal limits are illustrated in Map 1. The City currently contains 57.53 square miles excluding Fort Sill. Because Lawton has been extremely generous in its potable water

sales to areas beyond its jurisdiction, a substantial amount of growth is continuing to occur adjacent to the City boundaries. Comanche County does not exercise zoning controls or subdivision regulations. These subdivisions in the County do not meet the City's regulations, and the potential of annexing is also a concern. It is simply unfair to ask the residents of the City to pay for the improvements to the infrastructure that would be required in case of annexation. Since the County has chosen to leave these satellite areas unregulated, the City requires that new developments requesting city water to meet City Code.

The challenge to land use planning is to achieve the appropriate mix of land uses so the community continues to grow at a normal rate. Consider the dilemma of the city that encounters rapid economic growth. The city may have an insufficient number of schools to support the new population growth or their transportation network may not have the capacity to carry the increased traffic volumes. All communities need growth but the key to healthy growth is the timing and location. The current socioeconomic growth patterns of the community are expected to change during the next 20 years. Historically the growth has taken place outside of the downtown area, along the periphery of the city limits. With the recent efforts of the Lawton Urban Renewal Authority (LURA) to foster redevelopment in the downtown the growth will be focused on the downtown.

COMMUNITY CHARACTERISTICS

An assessment of the existing demographics and socioeconomic characteristics of the population is essential to the planning effort as well as considering other factors such as schools, federal land, soils, etc. Three aspects of the population and a category of additional planning factors are studied and all are equally important in the planning process.

1. Size - the aggregate number of people in the City;
2. Composition - the character and identity of the population; and
3. Distribution - the arrangement, settlement, and/or placement of the population.
4. Additional Planning Factors - elements that affect growth

SIZE

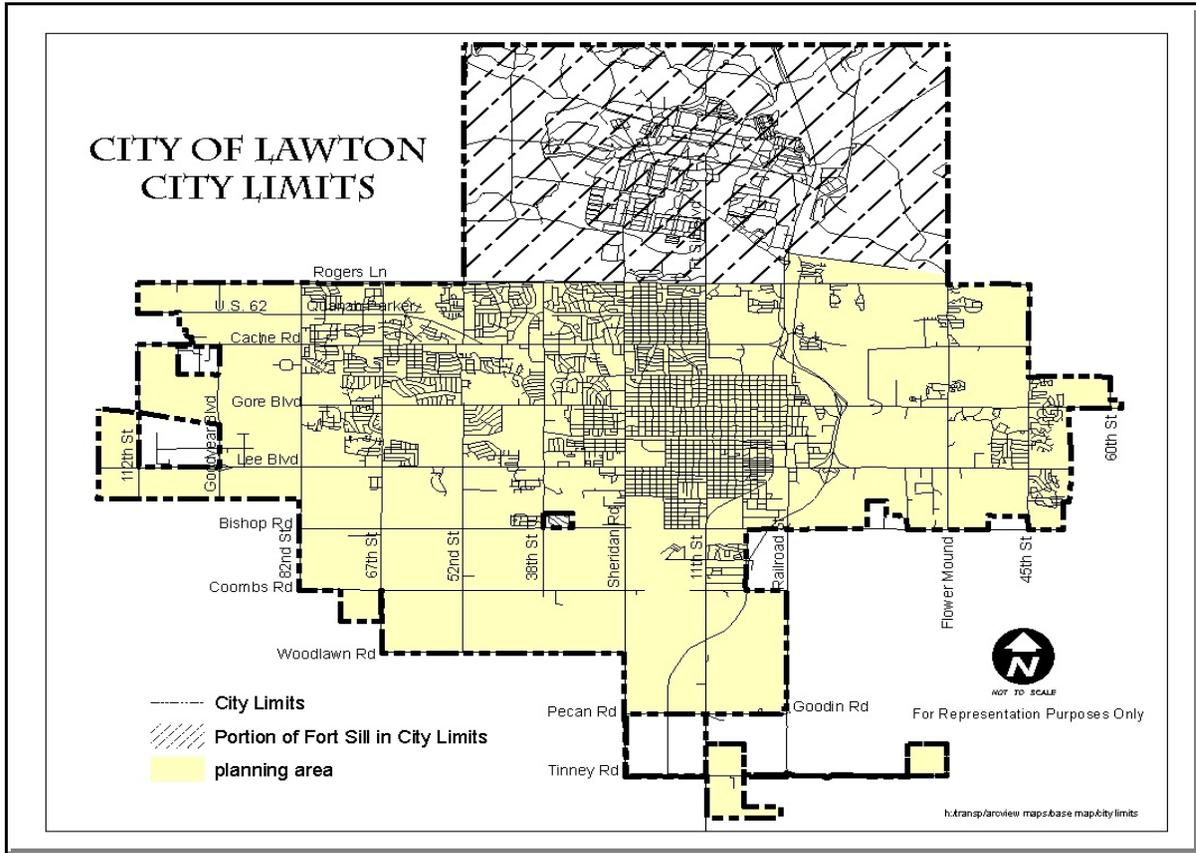
Past growth trends provide guidance in planning for the future. The form and pace of growth illustrate the development forces at work in the City. Planning considers how these trends may extend into the future. After two decades of little population change, Lawton's population grew significantly in the 1990's due to the annexation of a portion of Fort Sill Military Installation. Table 3 provides population and growth data from 1980 through 2000 and shows there was a population increase in the City of 12,196. By way of comparison, based on 2000 Census data eighty percent of the population in Comanche County resides within the City of Lawton.

Table 3: Population and Growth Summary

LOCATION	1980	1990	2000	1980 - 2000 DIFFERENCE
City of Lawton	80,054	80,561	92,757	12,196
Fort Sill	15,924	12,107	11,357	-4,567
Comanche County	112,456	111,486	114,996	2,540

Source: US Census Bureau

Map 1: City Limits and Planning Area



Source: Planning Division, City of Lawton

COMPOSITION

Age

The community has a relatively stable working population between the ages of 18-59 of 43,750. The older age groups of 45-64 and +64 are the most expansive of the population. Retiring military personnel find this community attractive due to the services offered at Fort Sill and the large medical centers. The City's population is comprised of slightly more males (52.1 percent) than females (47.9 percent). These trends are expected to continue and may lead to increased home ownership and the need for alternative housing types, such as patio homes, townhouses and apartments. The other large cohort, the 20-24 age group, often has difficulty finding quality housing units at affordable rents rates. Table 4 illustrates the population by age groups according to the U.S. Census.

Table 4: Lawton 2000 Population by Age

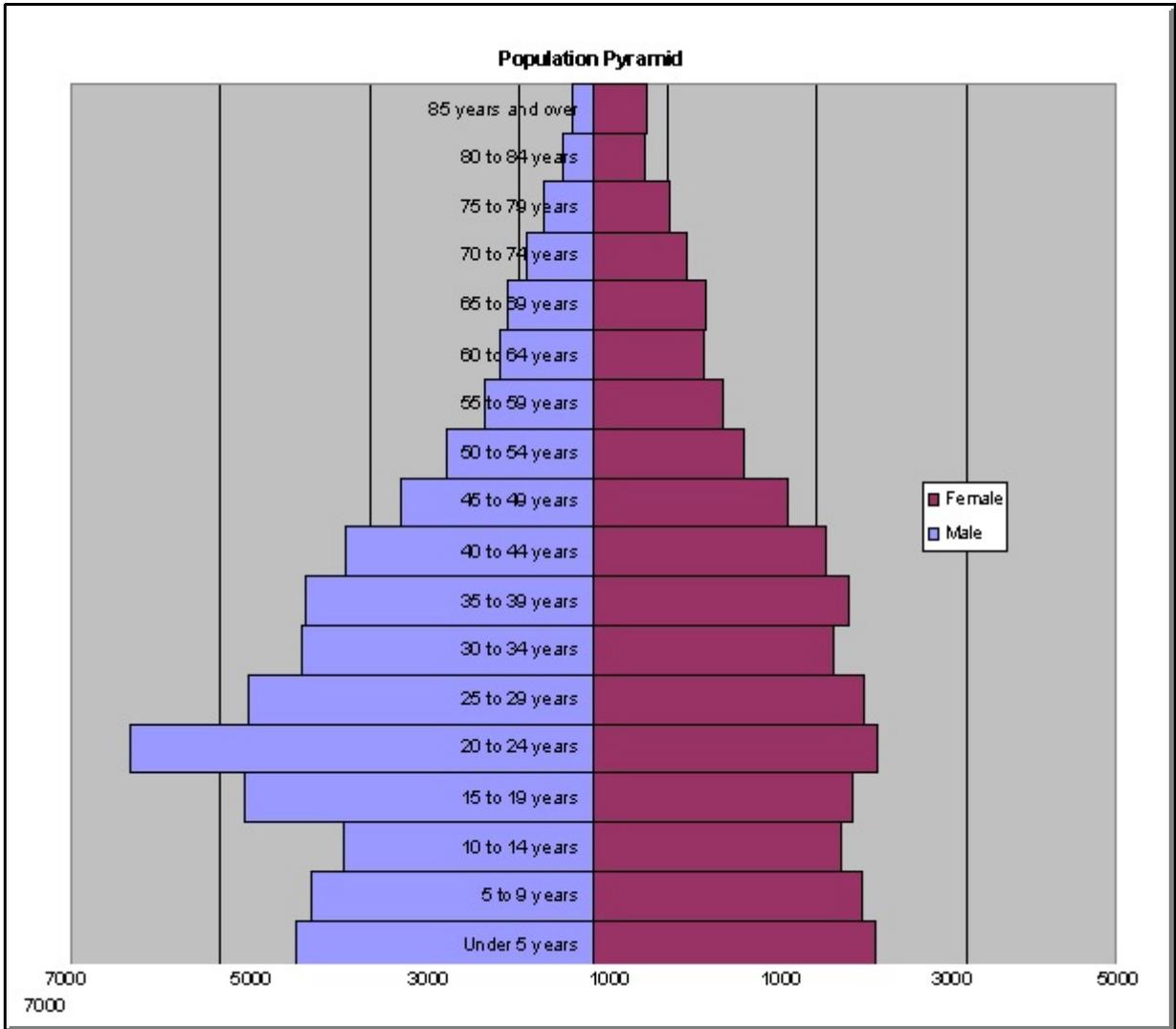
AGE CATEGORY	MALE	FEMALE
Under 5 years	3,976	3,775
5 to 9 years	3,784	3,598
10 to 14 years	3,344	3,338
15 to 19 years	4,685	3,461
20 to 24 years	6,206	3,798
25 to 29 years	4,612	3,621
30 to 34 years	3,910	3,225
35 to 39 years	3,847	3,415
40 to 44 years	3,334	3,119
45 to 49 years	2,558	2,604
50 to 54 years	1,966	2,032
55 to 59 years	1,459	1,732
60 to 64 years	1,269	1,480
65 to 69 years	1,155	1,505
70 to 74 years	905	1,269
75 to 79 years	652	1,039
80 to 84 years	411	687
85 years and over	262	724
TOTAL	48,335	44,422

Source: U. S. Census 2000

Gender

The age cohorts under the age of 15 are equally distributed between male and female. However, the age cohorts between 15-29 are predominantly male. This age cohorts include young military soldiers. Figure 1 also indicates that the population distribution between males and females begins to change with age 65, where the female population is larger. This is a national trend with females outliving males.

Figure 1: Lawton 2000 Population Distribution between Males and Females



Source: U.S. Census 2000

Race

Lawton is a culturally diversified community. This can be attributed to the presence of the Fort Sill Military Installation and Native American Tribes. Table 5 provides information on race from the 1990 and 2000 Census.

Table 5: Population by Race 1990, 2000

	1990	PERCENT OF POPULATION	2000	PERCENT OF POPULATION
White	57,019	70.78%	56,897	61.3%
Black	15,575	19.3%	21,388	23.1%
American Indian & Alaskan	2,684	3.3%	3,534	3.8%
Asian	2,621	3.3%	2,285	2.5%
Pacific Islander	n/a	n/a	407	.4%
Other	2,662	3.3%	8,246	8.9%
TOTAL	80,561	100%	92,757	100%

Source: US Census

Education

The 2000 Census indicates that approximately eighty-five percent of the twenty-five years and older population have completed high school or higher. In addition, nineteen percent has a bachelor's degree or higher. According to the 1990 Census, of the population over age twenty-five, 81% completed high school or higher. The 2000 figures for Oklahoma reflect a lower (80.6%) percent of the population completing high school or higher.

Housing

The 2000 Census documented that the City had 36,433 housing units, with 31,778 occupied. The occupancy rate for 2000 was 87%, 3% higher than 1990. The average household size of an owner occupied housing is 2.58 and average household size of a renter occupied is 2.65. Median number of persons per dwelling unit was calculated by adding the renter and owner-occupied averages and dividing by two, resulting in 2.61 persons per dwelling. The assumption for the development of this plan is that the persons per dwelling unit ratio for the year 2030 will remain the same as the year 2000 (2.61 persons per dwelling unit).

The predominant housing type is the single family-detached unit, accounting for 71% of all housing units. The second most common housing type is single family attached, providing 5.2% of all housing units. Mobile homes also represent 3% of the housing units.

Labor Force

The labor force includes the employed and unemployed Lawton residents who are 16 years old and older. Those who are not working or seeking work are not included in the labor force. According to the 2000 Census, 45,807 individuals are in the labor force, representing 65% of residents 16 and older. The number of employed residents was 30,818, while unemployment accounted for 2,599 (3.7%) of the total population.

Lawton's labor force is concentrated most heavily in the following sectors: management, professional and related occupations (28.6%), sales and office occupations (26.5), service occupations (21.3%), production, transportation, and material moving occupations (13.6%).

Construction, extraction, and maintenance (9.5%) and farming, fishing and forestry (.4%) are the remaining occupations of the labor force.

Former military personnel along with Cameron University and Great Plains Technology Center graduates offer companies quality personnel. In a collaborative effort Cameron University, the City of Lawton and the Lawton Chamber of Commerce & Industry (LCCI) completed a Strategic Plan aimed at attracting additional higher-paying jobs to the Lawton area.

Cameron University's Center for Emerging Technology and Entrepreneurial Studies (CETES) is able to connect the expertise of Cameron University with local, regional, and state initiatives. Cameron students can pursue an M.S. in Entrepreneurial Studies or a certificate in Entrepreneurship at the graduate level. These studies will help prepare students to begin their own ventures.

Table 6 lists the largest employers in the City. According to the BRAC study by Tchrizon, Fort Sill is the largest employer in southwest Oklahoma and is the fourth largest employer in the state with 20,808 employees as of 2003. Fort Sill's total expenditures represented an infusion of 1.19 billion dollars into the local economy (Source: Tchrizon BRAC study).

Table 6: Leading Employers

EMPLOYER	NUMBER OF EMPLOYEES
Fort Sill	5,983
Goodyear Ind.	2,481
Lawton Public Schools	2,400
Comanche County Memorial Hospital	1,237
Walmart/Sams Wholesale	580
Cameron University	550
Columbia/Southwestern Medical	505
Lawton Correctional Center	425

Source: Oklahoma Department of Commerce

Income

According to the Oklahoma Department of Commerce, Comanche County ranked seventh in the state for the average wage per job in 2003 with a figure of \$30,033. Comanche County ranked eleventh in per capita personal income for the same year (2003) at \$25,545 up from \$21,397 in 2000. Although the rankings indicate Comanche County is in a good position economically, the County still has 17,295 (16.6%) persons living below the poverty level.

PROJECTED POPULATION

Historically with the update of the plan staff relies on the Oklahoma Department of Commerce (ODOC) to provide population forecast. However, due to the changing population figures (30%

population increase) provided by the Department of Defense with the Base Realignment and Closure (BRAC) the ODOC numbers were not used. The 2030 population projection was based upon the 2030 Comanche County population projection prepared by the Lawton Chamber of Commerce & Industry (LCCI) and Great Plains Technology Center Economic Development Center using the REMI model.

The Transportation Modeling consultant retained by the Lawton Metropolitan Planning Organization (LMPO) interpolated the projection prepared by the LCCI and projected the 2030 population for the City of Lawton, Comanche County and the Lawton Metropolitan Transportation Study area. Table 7 provides the projected population. Additional data on 2030 projected housing and employment will be available in the 2030 Transportation Plan.

Table 7: 2030 Population Projections

	2000 CENSUS	2030 FORECAST	FORECAST CHANGE	FORECAST PERCENT CHANGE
Fort Sill Population	11,357			
Lawton City Population	92,757			

Source: Art Pendergraft, Transportation Modeling Consultant

Housing

The assumption is made that the person per dwelling unit will remain 2.61 for the year 2030. There are **xxx** single family lots in the development stage and plats for these lots have not been approved. Map **xxx** illustrates the location of these lots, while Map **xxx** illustrates the location of developable land. As shown by these maps residential development is occurring and projected to occur in the west, southwest and east portions of the City.

Employment

The 2000 Employment was developed from data obtained from the Oklahoma Employment Security Commission (OESC) . The 2000 total employment for Lawton was 34,848 of which 7,681 (22%) were retail employees and 27,167 (78%) were non-retail employees. Of the retail employees 653 (9%) worked within the CBD area and 2,146 (28%) worked in shopping centers.

ADDITIONAL PLANNING ELEMENTS

Lawton Public Schools

The Lawton Public Schools (LPS) (also known as Independent School District Number 8 (I-8)) provides education to the majority of students of the Lawton community. The I-8 district covers 225 square miles, with 79.3 students per square mile. Appendix C illustrates the geographic limits of the I-8 District. The I-8 District operates 27 elementary schools which historically have been centrally located in neighborhoods. This location factor conforms to the recommended Neighborhood Unit concept discussed in Chapter 9. LPS is transitioning from the junior high concept (grades 7,8 & 9) to the middle school concept (grades 6, 7, & 8).



Map 2: Location of Residential Development Pending Approval

Map 3: Developable Land

The city has historically supported growth and development within the boundaries of the I-8 District to ensure that the real property taxes are available to support a quality education system for the children of the community. Additional information on LPS is located in Chapter 6.

Higher Education

Lawton is also home to the Great Plains Technology Center (GPTC) and Cameron University. GPTC offers vocational training and instructional facilities for companies throughout Southwestern Oklahoma. In addition, Cameron University is state accredited and offers Associate, Bachelor and Master's degrees on its campus. Additional information on GPTC and Cameron University is located in Chapter 6.

Great Plains Technology Center

The GPTC was founded in 1970 and provides not only vocational training but also an Economic Development Center which assists in customized training and research programs for business and industry. The curriculum includes 30 programs of technical skills and trades. The strong presence of vocational training has been a vital component to industrial development and job diversification in the Lawton area. The Center also provides support and assistance to existing businesses through its Economic Development Center.

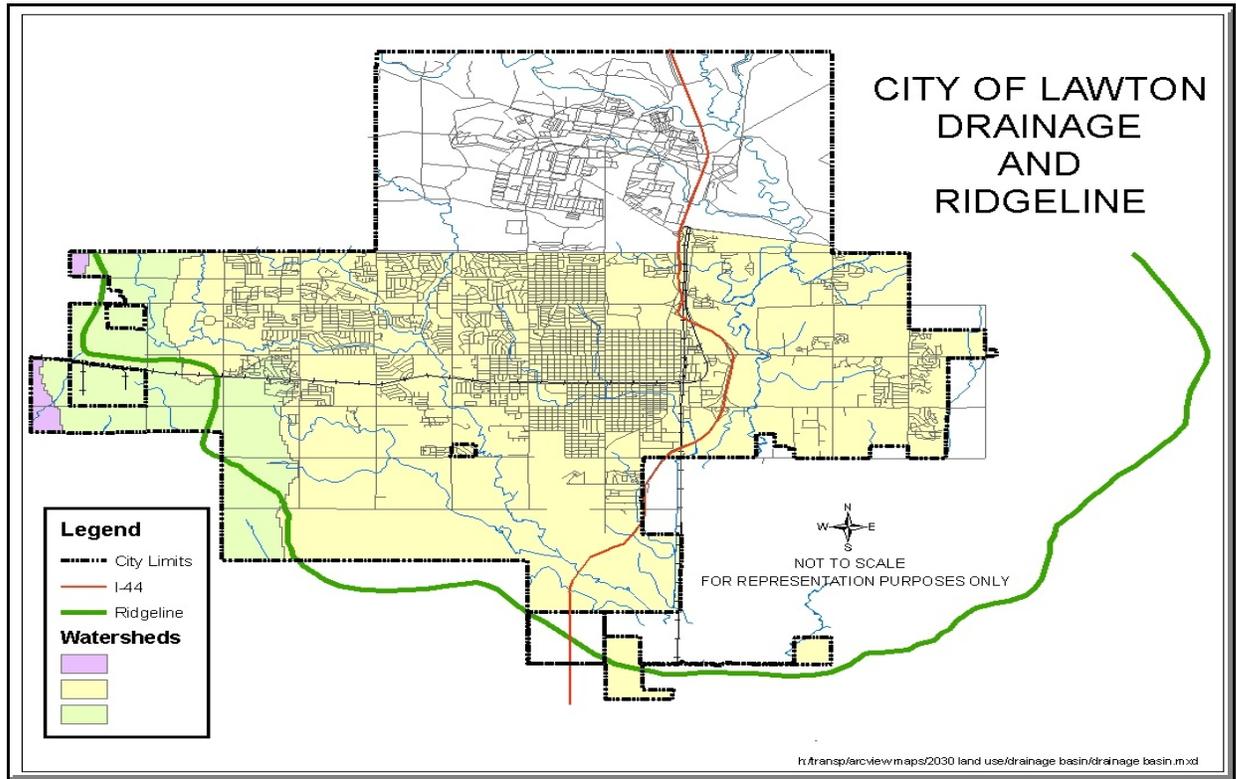
Cameron University

In 1909, the Cameron State School of Agriculture was founded upon 80 acres located west of the original townsite. In 1986, the Oklahoma State Regents for Higher Education changed the function of Cameron to include an expanded number of baccalaureate degrees and also master degrees, which lead to its recognition as a university. The University employs 550 persons and is considered a strong economic factor in the future growth of Southwest Oklahoma. It is developing strong technology support to enhance the City's economic growth potential.

Ridge Line and Drainage Basin

Map 4 illustrates Lawton's drainage basin consisting of 56,580 acres. For more on physical constraints of development see Chapter 5.

Map 4: Drainage and Ridge Line



Source: Planning Division, City of Lawton

Federal Lands

Fort Sill Military Installation

Although the City of Lawton and Fort Sill mutually consented to the populated portion of the installation being annexed in 1998, the City does not have any jurisdiction over this Federal land.

Resolution 05-170 was adopted on October 25, 2005 to prevent or lessen encroachments on the perimeter of Fort Sill. The buffer zone is a no or limited development area within and without the city limits. Appendix D is the map of the Fort Sill Buffer Zone. For more information on Fort Sill see Chapter 6, Areas of Special Treatment.

Tribal Lands

Tribal lands are protected by the sovereign nation policy. Consequently, the City of Lawton does not exercise any jurisdiction over development of these lands. For more information on Tribal Lands see Chapter 6, Areas of Special Treatment.

CHAPTER 3 - HOUSING AVAILABILITY, AFFORD ABILITY, AND QUALITY
HOUSING AVAILABILITY

According to the 2000 Census the City of Lawton had 36,433 housing units with 17,397 (47.8%) owner occupied, 14,381 (39.5%) renter occupied and 4,665 vacant housing units. Between 1990 and 2000 there was an increase of 1,811 housing units. This increase may be attributed to annexation and new construction. The vacancy status declined from 5,056 units in 1990 to 4,655 units in 2000. Although both owner occupied and renter occupied units have increased in the ten year period from 1990 to 2000, the increase in the renter occupied units is nearly seven times greater than the owner occupied units. The housing occupancy rate increased approximately 7 percent between 1990 and 2000. Table 8 provides additional information on housing unit data from the 1990 and 2000 census.

Table 8: Lawton Type and Number of Housing Units 1990 and 2000 Census

TYPE OF UNIT	NUMBER OF UNITS 1990	PERCENT	NUMBER OF UNITS 2000	PERCENT
Owner Occupied	17,114	49.4%	17,397	47.8%
Renter Occupied	12,452	36.0%	14,381	39.5%
Vacant	5,056	14.6%	4,655	12.7%
TOTAL UNITS	34,622	100.0%	36,433	100%
Vacant for Rent	2,844	56.25%	2,238	48.08%
Vacant for Sale Only	791	15.65%	897	19.27%
Rented or Sold, Not Occupied	263	5.20%	345	7.41%
Seasonal, Recreational, or Occasional Use	89	1.76%	76	1.63%
For Migrant Workers	1	0.02%	1	0.02%
Other Vacant	1,068	21.12%	1,098	23.59%
TOTAL VACANT UNITS	5,056	100%	4,655	100%

Source: U.S. Census Bureau

Building Permits

From January 1, 2000 to December 31, 2004, 538 residential building permits were issued by the City of Lawton License and Permits Division. From this number, 530 are for single family homes, 6 for duplexes and 2 are for multi-family units. (Source: City of Lawton License and

Permits Division).

Between 2000 and 2005 eighteen single family subdivisions were platted. These subdivisions created 494 lots for single family development. The area of the City with the largest growth in the number of lots platted is east of I-44 and the second largest growth area is west of 52nd. Appendix E contains a table showing the subdivisions with the number of lots and acreage in each and a map illustrating the distribution of subdivisions platted between 2000 and 2005.

- ✓ The area east of I-44 represents 44.5% of the lots platted.
- ✓ The area west of 52nd represents 43.7% of the lots platted.
- ✓ The area between I-44 and 52nd represents 11.7% of the lots platted.

Apartments

A survey conducted by the Planning Division in 10/2005 shows Lawton has approximately 4,968 total apartment units. Out of this number of units there are 2,096 efficiency and one bedroom apartment units, 1,899 two-bedroom units, 366 three-bedroom units and 23 four-bedroom. Appendix F shows the apartment complexes and the number of units.

However in 2005 significant new construction of multifamily units were completed or under construction. With the completion of the units under construction 1,000 new units will be added to the inventory.

Fort Sill Housing

A study prepared by Tchrizon in February 2004 shows that Fort Sill had 1,415 family quarters and 3,100 single soldier units. Due to the shortage of family quarters on base approximately two thirds of the married soldiers live in housing off base.

Home Ownership

The Department of Housing and Urban Development's (HUD) goal is a 70 percent home ownership rate in a community. While 70 percent home ownership is a worthy goal, a more realistic goal for Lawton is a 60 percent home ownership rate due to the presence of the military population in Lawton, the majority of which are renters. According to the 2000 Census 54.7% of Lawton's households own their own homes.

Homeowner Median Price Trends

The 2000 Census found that the median value for all owner-occupied housing units in Lawton was \$69,700. However, the median value of a home in Lawton is above the median value of \$67,700 in Oklahoma (Source: U.S. Census Bureau, Census 2000). Based on data obtained by the City of Lawton Housing and Community Development Division from the Comanche County Tax Assessor's office, the median home sales price for a 3-bedroom, 2-bath home in Lawton has risen to \$78,200 in 2003. The monthly mortgage payment for a \$78,200 loan (assuming no down payment) at 6.5 percent interest for a 30-year term would be \$494.00 (exclusive of insurances and property taxes). Insurance and property taxes would add approximately \$150 more per month. Lawton still remains one of the more affordable communities compared to cities of the same size or larger in Oklahoma for home buyers. Table 9 shows a comparison of median home values in several communities in Oklahoma.

Table 9: Comparison of Median Value of Homes in Oklahoma

	BROKEN ARROW	NORMAN	LAWTON	MUSKOGEE
Median Value	\$98,500	\$93,700	\$69,700	\$54,300

Source: U.S. Census Bureau, Census 2000

HOUSING AFFORDABILITY

According to HUD, in the year 2000 approximately 5,199 renter households (32.9 percent of all renter households) in the City were cost burdened. Lawton has 2,544 renter households that are severely cost burdened.

Cost burdened is defined as a household spending more than 30 percent of their gross annual income for housing.

Severely cost burdened is a household that spends more than 50 percent of their gross annual income for housing.

In 2005, the Fair Market Rent (FMR) for a two-bedroom apartment in Lawton was \$496 (*Source: National Low Income Housing Coalition*). In order for a household to afford the 2005 FMR rent, without paying more than 30% of income on housing, a household must earn \$1,653 monthly or \$19,840 annually. Assuming a 40-hour work week, 52 weeks per year, this income level translates into an hourly wage of \$9.54 for a household to be able to afford a two-bedroom apartment in Lawton. For more information see Appendix G, Affordable Housing Tables.

According to a study of military housing needs prepared by Cameron University School of Business, published January 2005, affordability is also a problem for military personnel. The primary determinant of affordability for rental houses for military households is the Basic Allowance for Housing (BAH). To determine affordability of housing, different rent ranges are aligned against BAH for different pay scales, for military families with dependents and without dependents. For more information see Appendix H Military Allowances and Rent Ranges. The [assumption](#) may be made that the demand for convenient, affordable housing is not being met in the Lawton community and must be addressed in the future.

QUALITY OF HOUSING

Second in importance only to availability and affordability, quality of houses is an important dimension of the housing market. Housing quality varies substantially depending on neighborhood conditions, age of the house, proximity to schools and parks, and the area crime rate.

Substandard housing conditions for the City of Lawton based by the rules established by HUD includes any housing unit with five or more nonlife-threatening code violations or with any one of the following:

1. The physical condition or use of the dwelling constitutes a public nuisance.

2. Any dwelling designated unsafe for human habitation or use.
3. Any dwelling noticeably capable of being considered a fire hazard or noticeably unsafe or unsecured so as to endanger life, limb or property.
4. Any dwelling from which the plumbing, heating or other facilities required by law have been removed, or from which utilities have been disconnected, destroyed, removed, or rendered ineffective, or the required precautions against trespassers have not been provided.
5. Any dwelling that is in a state of dilapidation, deterioration or decay; faulty construction; overcrowded; open, vacant or abandoned; damaged by fire to the extent of not providing shelter; in danger of collapse or failure and dangerous to anyone on or near the dwelling.

The housing stock in Lawton is aging. The median year a structure (housing unit) was built in Lawton is 1969 with the greatest number of houses being constructed between 1960-1979. See Appendix I for a breakdown of the number of structures built during a specific time frame.

The 2000 Census states that 2.6 percent of the owner occupied housing units and 13.2 percent of the renter occupied have three rooms or less while the median number of rooms per occupied housing unit is 5.2. Table 10 demonstrates the occupants by room by tenure. Thus the assumption of overcrowding in rental units may be correct and may be attributed to households with lower incomes lacking the resources to obtain housing to meet their needs or lacking the resources for home ownership.

- | |
|--|
| <ul style="list-style-type: none">✓ 21% of owner occupied housing units had 2 or more occupants per room✓ 54% of renter occupied housing units with 2 or more occupants per room is more than two and a half times greater. |
|--|

Table 10: Occupants Per Room

	LAWTON
Total	31,771
Owner Occupied	17,387
0.50 or less occupants per room	12,041
0.51 to 1.00 occupants per room	4,943
1.01 to 1.50 occupants per room	309
1.51 to 2.00 occupants per room	57
2.01 or more occupants per room	37
Renter Occupied	14,384
0.50 or less occupants per room	7,055
0.51 to 1.00 occupants per room	6,285
1.01 to 1.50 occupants per room	664
1.51 to 2.00 occupants per room	302
2.01 or more occupants per room	78

Source: U.S. Census Bureau, Census 2000

According to the 2000 Census the number of housing units lacking complete plumbing facilities was 323 (0.9 percent) and the number of units lacking complete kitchen facilities was 529 (1.5 percent). Although the percentage of housing units lacking complete kitchen and plumbing facilities seems small (less than 1 ½ percent), families should not be expected to live without certain basic requirements. These units are considered substandard and should be upgraded if economically feasible. Destroying the housing units would displace the household and possibly cause a financial hardship.

CHAPTER 4 - INFRASTRUCTURE

WATER SUPPLY AND WATER RIGHTS

The City of Lawton uses three sources of water: Lakes Lawtonka, Ellsworth and Waurika. Lakes Lawtonka and Ellsworth are owned and operated by the City, and the U.S. Corps of Engineers owns Lake Waurika.

However, when you examine the adequacy of supply you need to examine the dependable yield of the lakes rather than the permitted water rights. The dependable yield refers to the amount of water available from a water source during 50-year drought conditions. Table 11 shown below illustrates the water rights and dependable yield for each of the sources.

Table 11: Water Rights and Dependable Yield for Water Sources

	WATER RIGHTS	DEPENDABLE YIELD
Lake Law tonka	23,500 ac ft/yr	10,530 ac ft/yr
Lake Ellsworth	23,500 ac ft/yr	14,560 ac ft/yr
Lake Waurika	23,750 ac ft/yr	23,750 ac ft/yr
TOTAL	70,747 ac ft/yr	

Source: Public Works/Engineering Department, City of Lawton, 2005

The amount of water consumed by the citizens, industry and businesses of the City for average flows and maximum day demands is shown in Table 12. Based upon these estimations the dependable yield of 48,840 ac ft/yr (43.6 million gallons per day [mgd]) will be enough water supply for the City’s needs through the year 2030.

Table 12: Historical/Projected Demand of Water

YEAR	AVERAGE DAILY MGD	MAXIMUM DAILY MGD		YEAR	AVERAGE DAILY MGD	MAXIMUM DAILY MGD
1975	16.7	30.1		2005	23.3	41.9
1980	17.7	31.9		2010	24.8	44.6
1985	18.6	33.5		2015	27.0	48.6
1990	19.6	35.3		2020	29.2	52.6
1995	20.7	37.3		2025	31.4	56.5
2000	21.8	39.2		2030	33.6	60.5

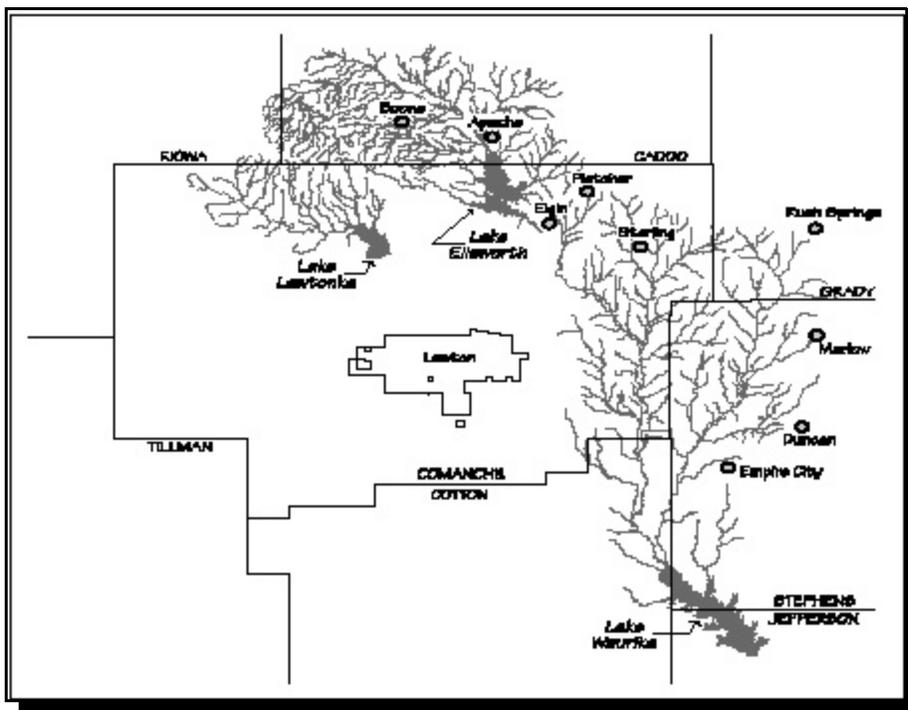
Source: City of Lawton Public Works, Engineering Division 2004 Study

Watershed Pollution

Having an adequate supply of raw water will be of little difference if the sources are so polluted that they cannot be treated for domestic uses. Lakes Lawtonka and Ellsworth are under the

direct management of the City. The watersheds can be polluted by numerous sources such as runoff, erosion, recreational activities, municipal and industrial wastewater discharges, chemical spills, urban development and agricultural activities. The two municipal lakes have minimal regulations protecting the watersheds and surface waters. To monitor and prevent pollution of the surface waters and the watersheds, the City of Lawton should annually review its watershed management program and continue its enforcement efforts. Although the Waurika Master Conservancy District manages Lake Waurika, the City as the major financial partner of the Conservancy District can certainly play an aggressive role in monitoring pollution prevention. The quality of the water must be protected. Map 5 demonstrates the coverage of the watersheds that supply Lakes Lawtonka, Ellsworth and Waurika.

Map 5: Lakes Lawtonka, Ellsworth and Waurika Watersheds



Source: City of Lawton Fresh Water Plan, 1996

Treating the Water Supply

As illustrated above the City has three water sources. These are connected by a series of pipelines and pumps which move the water from one lake to another until it reaches its final destination of the treatment facility on the south side of Lake Lawtonka at Medicine Park. At this location the City operates a water treatment plant which was recently renovated and expanded in 2004 to a 40 mgd facility. The purpose of the renovation was to demolish the oldest and obsolete 10 mgd South Plant constructed in 1932 and to expand the old North Plant constructed in 1967 from 25 mgd to 40 mgd to meet future demands. In addition to expanding the older North Plant to 40 mgd, it was necessary to update the technology and processes to meet the current and future Safe Drinking Water Standards. Once the water enters the plants from Lake Lawtonka it goes through a series of processes to treat the water for domestic usage.

The Environmental Protection Agency's (EPA) Safe Drinking Water Act and the regulations of the Oklahoma Department of Environmental Quality (ODEQ) establish the standards for water quality. As these standards are revised for more stringent higher quality the City's plant must be modified to meet these new standards over time.

Although the Medicine Park North Plant was renovated and is in good condition. The current 2005 maximum day projected demand approaches the 40 mgd capacity of the Medicine Park Water Treatment Plant Facility. Therefore, the City is in the process of designing a new Southeast Water Treatment Plant to be located in the southeast corner of Southeast Coombs Road and S.E. 15th Street. The location of the new plant provides a secondary source of water to be fed by gravity flow from Lake Ellsworth and by pumping from Lake Waurika. Both raw water sources will come from Lake Ellsworth and Lake Waurika through the existing 42-inch Waurika pipeline.

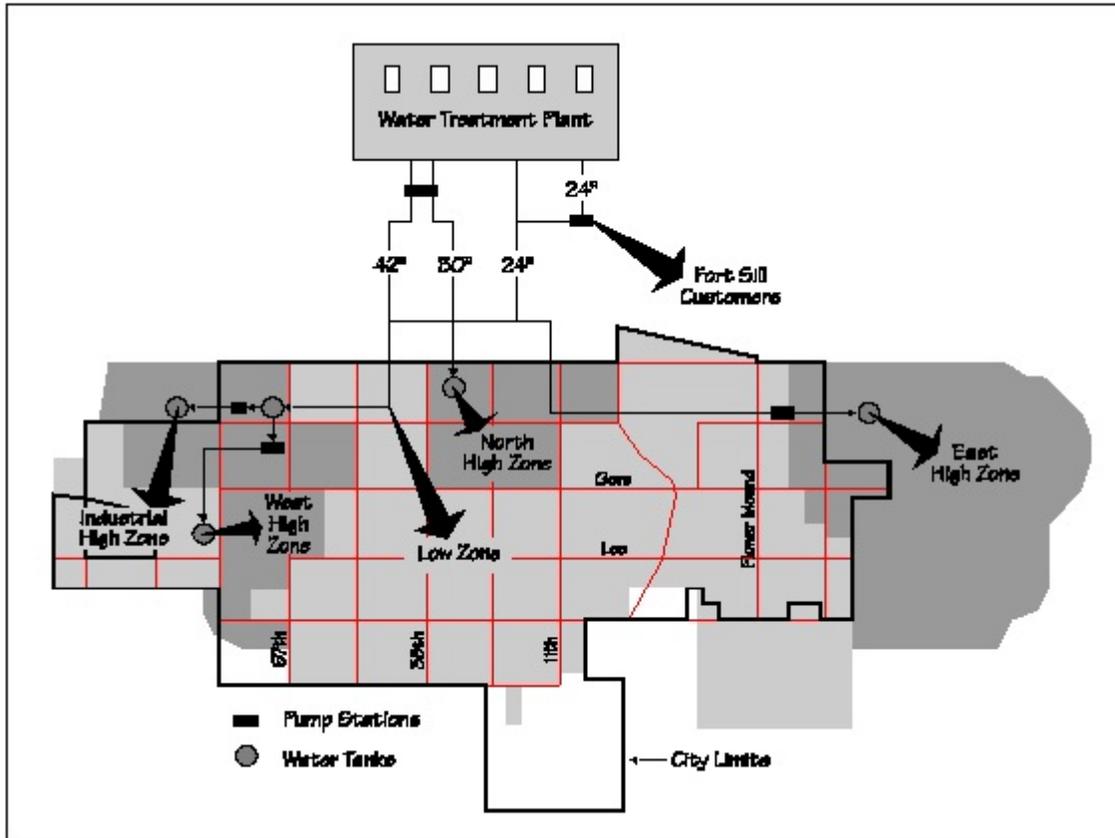
Since the raw water sources are not located in close proximity to each other, one of the key considerations for locating the new Southeast Water Treatment Plant was the transportation costs of pumping the raw water from the lakes to the Medicine Park Plant and the new Southeast Plant for treatment and transportation to the distribution system. It should be noted that the Southeast Water Treatment Plant will be designed and constructed in phases based on the population and economic growth of the community. Phase 1 of the Southeast Plant will be design and constructed with an initial capacity of 10 mgd. The piping and hydraulics for the plant will be constructed for the ultimate capacity of 40 to 45 mgd. It is anticipated that the phase 1 construction project will be advertised and bid in the spring of 2006 with completion of construction and start-up for the new plant occurring in the summer of 2008.

Distribution of Water

Once the water has been treated for consumption, distribution of the water is made through a series of interconnecting pipes, water pumps and towers. The larger pipes, known as *transmission lines*, connect to the treatment plant and transfer the water to smaller pipes, called *mains*. The mains are generally laid in a grid pattern along section line roads and are 10" to 16" in size. The mains connect to smaller pipes, usually 12" to 30" in size, which are located within the sections. These are the lines that will feed individual customer service lines.

In Lawton, customers are divided into zones of service, which are defined according to their elevation in relationship to the treatment plant. Low zones are far enough below the plant in elevation that gravity is all that is needed to supply the water from the plant to the customer. High zones are not far enough below the plant and have to have the assistance from pumps and elevated storage tanks to create the pressure to deliver the water to the customers and provide adequate fire flows. The topography of Lawton delineates five zones. Figure 2 shows the zones of service, the four transmission lines that carry water from the Plant to Fort Sill and the City, along with pump and tank locations.

Figure 2: Zones of Service



Source: 2025 Land Use Plan

During low flow times, the treated water will flow by gravity from the clear well storage at the plant to the customers served by the low zone. When peak flow demands occur, the system becomes a pump pressure system. The amount of water pressure at the customer's end depends upon their elevation in relation to the clear well's elevation, the height of the water in the clear well, friction in the pipes, and the demand at the receiving points during the demand times. A series of pumps and elevated water tanks have been placed in key locations along the distribution system to insure the adequacy of pressure and volume of water being delivered. Currently, the pumping system capacity is 50 mgd with one pump out of service in each zone and combining the low zone and the high zone. However, the transmission line system has a capacity of only 45 mgd. Projected maximum day demand in 2030 is estimated to be approximately 60 mgd. Meeting the maximum day and peak hour demand is essential to the growth of the community.

These calculations should include the amounts of treated water sold to Fort Sill, rural water districts and other buyers. Projected maximum day demand in 2030 is estimated to be 60 mgd. Therefore, the construction of additional treatment and transmission capacity is necessary to support current customers located outside the municipal limits. Additionally, to support increased industrial development in the western part of the community improvements to Pump Station Number 1 will be required.

Condition of the Distribution System

The design life of the distribution system is 50 years but the actual life for any segment is determined by maintenance and soil conditions. Maintenance and replacement of deteriorated lines should occur on a regular basis. "Looping" the system should also be pursued in older neighborhoods. Looping ensures that no main lines are dead-ends but are interconnected to provide uniform pressure and water quality at all times. According to the Water Distribution Division, there are approximately 125 miles (25%) of pipe that are in poor condition and in need of replacement. Another 25% of the pipes are in fair condition and will need to be replaced in the near future. Thus, only 50% of the mains are in good condition and do not need to be replaced. An investment of \$ 5 million in 2000 Capital Improvement Program funding was appropriated to improve high maintenance lines and fire flow areas.

All of the pumps and tanks are in good condition. Like the mains, the tanks are designed to last 50 years. The oldest tank is 38 years old but is in fair condition, and with continued maintenance could remain in service for an indefinite period of time. This same thing could be said for all of the City's water storage tanks. The 7 million gallon ground storage tank is scheduled for rehabilitation in 2006 from funds through the 2005 CIP. Pumps, however, have average life expectancy of around 20 years. Some of the pumps have reached this age and may need to be replaced soon. Pump Station Number 1 had three new pumps installed in 2003 as part of the 2000 CIP. City staff has begun replacing aging fire hydrants that were manufactured between 1906 and 1946 through the Water Distribution Division's budget. Approximately 15% of the aging fire hydrants have been replaced to date.

The cost of replacing approximately 125 miles of mains will be tens of millions of dollars. The City desperately needs to be more consistent in annually replacing segments of the system. To upgrade the system the City should adopt a framework for guiding the future expansion of the distribution system and a financing program to replace deteriorated pipes. It should be noted that the City Council has incorporated the use of impact fees for future development and growth, however, these funds are not to be used for replacement of existing mains in need of maintenance.

Therefore, the construction of additional treatment and transmission capacity is necessary to support future demand. Additionally, to support increased industrial development in the western part of the community further improvements to Pump Station Number 1 will be required.

SANITARY SEWERAGE SYSTEM

Sanitary sewers collect wastes from individual residential, commercial and industrial users by a series of pipes, including the building sewer (called the service line), laterals or street sewers, branch or trunk lines, and finally mains or interceptors. The size of these pipes is dependent upon the loads they carry. The force of gravity, in contrast to pressurized water distribution systems, collects the sewage. Sewers must be laid out to flow continually downhill so that the lines will quickly concentrate the flows in the valleys of the drainage basins and follow those paths to the end of the system. In some cases the two functions of collecting storm water and sewage is combined as a result of seepage, known as infiltration, and the storm water is also treated prior to discharge. Therefore, cities attempt to control development within drainage basins to prevent the expense of pumping the sewage over the crests of the drainage basins. Lawton is surrounded by such basins with ridge lines, which are described in Chapter 2 of this document.

Sanitary Sewer Collection

The sanitary sewer collection system is divided into three drainage basins: Wolf Creek, Numu Creek and Cache Creek. The sewerage consists of approximately 400 miles of sanitary sewer mains ranging in size from 6 inches to 60 inches, 5 lift stations, and approximately 6,100 manholes (Source: Sanitary Sewer Evaluation Survey). Lawton’s collection system is composed of various mains of different sizes and capacities. Table 13 illustrates the inventory of mains.

Table 13: Sewer Main Inventory

LINE SIZE	PERCENT OF TOTAL SYSTEM
60 inch	0.38%
54 inch	1.02%
36 inch	3.20%
30 inch	1.05%
27 inch	0.99%
24 inch	2.04%
21 inch	0.63%
18 inch	3.06%
15 inch	2.99%
12 inch	2.82%
10 inch	10.35%
8 inch	56.77%
6 inch	14.71%

Source: 1996 Fresh Water Plan

Wastewater Treatment Process

The current wastewater treatment plant (WWTP) was originally built in the early 1970's. Since that time numerous expansions and renovations have been completed. In the late 1990's the WWTP was expanded to treat 18 mgd. This capacity should allow for substantial population increases and industrial growth and be sufficient in size until the year 2030. However, as a rule when a WWTP reaches 75% of the designed capacity, the community should be developing plans in accordance with the latest technology and securing the finances to expand its capacity. By the time the WWTP reaches 90% of its capacity, construction of the expansion should be under way. The WWTP average daily flow is currently operating at 65% of the designed capacity. The WWTP includes tertiary treatment capabilities. The WWTP is in full compliance with its National Pollutant Discharge Elimination System (NPDES) Permit and is inspected and approved by ODEQ.

Sanitary Sewer Discharge

Sanitary sewers must ultimately discharge the wastes into a wastewater treatment plant, whose purpose is to disinfect the effluent prior to discharging wastewater into streams or rivers. Because the sewage of a community is complex in its composition and contains more than organic matter, treatment processes are constantly being more strictly regulated by the Federal and State governments to insure the wastewater purity prior to discharge. Lawton does not collect nor treat any wastewater from customers beyond the corporate limits.

Compliance with the Administrative Order

The existing system is currently under a Consent Order (CO) by the ODEQ to eliminate sanitary sewer overflows (SSOs) caused by a combination of insufficient line capacity and deterioration of existing lines. The collection system is insufficient due to an excessive amount of extraneous inflow and infiltration of storm water runoff. Seventy-one percent (71%) of the City's collection system consists of lines that are 8 inches or less in diameter. Additionally, the majority of sanitary sewer pipe is made from concrete and has begun to display significant deterioration. The guide to repairing and replacing the deteriorated sanitary sewer system is a Sanitary Sewer Evaluation Survey (SSES) which has been reviewed and accepted by the ODEQ.

In 1997, as a result of the Administrative Order (AO) issued by the EPA, the City of Lawton entered into a Consent Order with ODEQ on behalf of EPA. The CO outlines the actions to be completed by the City to eliminate SSO's by increasing the capacities of the Wastewater Treatment Plant (WWTP) and collection system and replacing miles of deteriorated mains. This massive rehabilitation program has been estimated to cost in excess of \$60,000,000 excluding any debt service. Due to the size of the rehabilitation program the work was divided into the appropriate drainage basins.

Phase I included expansion of the Wastewater Treatment Plant to the 18 mgd capacity and the construction of designated interceptors and rehabilitation of mains located in the Numu Creek basin. Phase I construction was completed in 2005, and the flow monitoring assessment was completed by 2005. The submission of the proposed schedule for the construction of Phase II, located in the Wolf Creek basin, was submitted to ODEQ in 2003 and approved. Start-up Phase II of the program began in July 2005 with a scheduled completion by July 2012. Phase III is rehabilitation work to be completed in the East Cache Creek basin as well as other identified areas. Again its completion time frame is to be determined after the completion of Phase II. The schedule for completion of this large rehabilitation program will take 21 years to complete.

Phase II and Phase III projects in the Wolf Creek Basin to upgrade major outfall lines that have already or will in the near future, reach their design capacities. Also, there is a major outfall line, 9-Mile Creek that is scheduled for construction in the Cache Creek Basin and continuing east.

Since these projects will take several years to finance, design and construct, the existing outfall lines are fast reaching their capacities so future development will be allowed to connect to them only when the existing dry weather flow capacity is not exceeded based on the proposed development's peak flows. Where existing dry weather flow allows additional development, it will be approved for connection to the system on a first come/first serve bases until full capacities are reached. Size of line will be based on the City of Lawton's Master Sewer Plan

that is designed and modeled using InfoWorks Hydraulic Model. There is a requirement to extend the trunk main to the edge of development to meet the master plan sizing and sub-basin out flows.

Reclamation and Reuse

Future water shortages and cost considerations could generate increased pressure to reclaim and recycle wastewater. Wastewater reclamation—the reuse of highly treated effluent—can become an important source of water for landscape and agricultural irrigation, aquifer recharge, industrial cooling, power generation, paper production and food processing. Major reuse application types are urban, industrial, agricultural, environmental and recreational, groundwater recharge and augmentation of potable supplies. Quantity and quality requirements differ for each reuse application.

According to the U.S. Environmental Protection Agency (EPA) urban reuse include the following:

- Irrigation of public parks and recreation centers, athletic fields, school yards and playing fields, highway medians and shoulders, and landscaped areas surrounding public buildings and facilities.
- Irrigation of landscaped areas surrounding single-family and multi-family residences, general wash down, and other maintenance activities.
- Irrigation of landscaped areas surrounding commercial, office, and industrial developments.
- Irrigation of golf courses.
- Commercial uses such as vehicle washing facilities, laundry facilities, window washing, and mixing water for pesticides, herbicides and liquid fertilizers.
- Ornamental landscape uses and decorative water features, such as fountains, reflecting pools, and waterfalls.
- Dust control and concrete production for construction projects.
- Fire protection through reclaimed water fire hydrants.
- Toilet and urinal flushing in commercial and industrial buildings.

SOLID WASTE COLLECTION AND DISPOSAL SYSTEM

Solid Waste Collection System

Residential refuse collection is accomplished by the customers placing both home and yard wastes in containers in the alley or curbside for bi-weekly pickup by sanitation crews. Lawton collects on 26 residential routes. The City also provides a variety of commercial and industrial collection services, using containers of different sizes based upon the customers' refuse volume. The number of commercial pick-ups is also determined by the customers' needs; for example, hospitals or medical facilities may need more frequent pick-ups for their waste products.

The City does not provide solid waste collection services beyond its municipal limits except to large industries. Low population densities and sprawling urban development creates increasing distances for the sanitation crews to travel during collection. Lawton does not use transfer stations, so the sanitation crews fill the compactor trucks to capacity and then travel to the landfill for disposal. During the summer months the waste volume increases



dramatically due to yard waste. The crew size during the growing months is increased from 2 to 3 persons to complete the routes. This yard waste stream accounts for approximately 15% of the total volume deposited in the landfill. The City's forces and private haulers annually collect approximately 120,000 to 180,000 tons. The City has examined once a week pick-up on several occasions as a measure to reduce annual operating costs. However, the City has chosen to continue the twice a week pick-up for aesthetic reasons.

As the operating costs for collection continues to increase annually the City has decided to examine the potential for a fully automated collection system beginning in February 2006. This system uses special containers picked up by an automated arm on the vehicle and has the potential to save \$2 million over the next 10 years. These types of systems have proven cost effective in many cities because they can be operated by one operator per vehicle and decrease workman's compensation claims by reducing injuries to the work force. Additional trucks will be required, as growth in the community will occur during the 10 year transition period.

Solid Waste Disposal System

Landfills are refined open dumping of refuse which is covered by various methods to minimize the blowing and scattering of the refuse, the production of odor and the access by animals. Extreme care must be taken in this method to prevent contamination of surface and ground-water. Generally, an area is excavated to an approved depth, clay is compacted in the area, an impervious cover is placed on the clay, a leachate collection system is installed and a protective cover is placed. The refuse is compacted into the cavities, known as cells and then the refuse is covered daily with a layer of earth taken from either the trench or slope. As the refuse fills the cell the slope of the mound may not exceed 4:1. After the cell is filled, the cell is capped with an impervious layer, topsoil is added and the area is planted to stop erosion. Although the landfill is the most economical method for refuse disposal, the amount of land for dumping and soil for cover material is equal to the volume of the waste stream. Thus, communities must pay careful attention to the life cycle of the landfill and continuously monitor the remaining space for refuse. The selection of new landfill site is based upon many factors such as subsoil composition; topography, groundwater sources and surrounding land uses.

In 1971, the City acquired a tract of 140 acres located in Section 30, T1N, R11W, Comanche County, OK. The site is situated about 4 miles south of the urbanized area. Of the original site only 67 acres is currently permitted for landfill use. The active portion of the landfill including the SE area and cell consists of 42 acres. Cell 1 contains 9 acres and was constructed in 1995. In 2000, the City received authority for a 50 feet vertical expansion. This increased the active life of the landfill by 3 years. The construction of Cells 2 and 3, which contain a total of 18 acres, was completed in 2001. The annual tonnage estimated to be deposited in the landfill is 180,000 tons. Therefore, the remaining life expectancy of the permitted landfill is six years or until about 2012.

The City of Lawton has approximately six years of remaining life with its current permit. The City is in the process of obtaining a permit from the ODEQ to expand the current landfill to the south of the existing site. Land was purchased to provide approximately 70 years of landfill airspace. The first phase of the landfill expansion will permit an area large enough to address placing refuse for the next 30 years for the citizens of Lawton. The 2005 CIP provides funds to construct the Subtitle "D" approved cells to carry the City through the next 10 years beyond the existing six years of landfill space. Design plans are currently under review for approval by the

ODEQ for permitting as part of the 2005 CIP.

The City has already acquired an additional 431 acres adjacent to the current landfill. This land was acquired to provide cover material and expansion space for future permitting. A master plan is being developed to guide meeting the landfill needs beyond the life of the currently permitted area.

In 1993 the Federal Government enacted the Resource Conservation and Recovery Act (RCRA) Subtitle D and the State of Oklahoma passed the Oklahoma Solid Waste Management Act, which established new regulations for the development and closure of permitted sanitary landfills. New landfills constructed after the passage of the legislation are required to provide facilities for leachate retention, storm water collection and retention, gas and groundwater monitoring wells. The thrust of the new laws is preventing the discharge of pollutants from the landfill operations from leaving the site and contaminating the air and water quality of the surrounding area. Cells 1, 2 and 3 were constructed in compliance with Subtitle D regulations.

The Subtitle D regulations also set out strict procedures for the closure of filled cells and that communities must provide financial assurance that adequate funds are available to complete the required closure in a timely manner. Closure actions include the placement of cover materials such as compacted soil, clay and the establishment of vegetation to prevent erosion of the slope. Boring of the cells will also be performed to ensure the compaction of the fill materials. Gas probes and groundwater-monitoring wells will provide samples to monitor pollutants being discharged. Sampling of any surface water being discharged will also be required. Finally, inspections will be continuously performed on the erosion control features and leachate management system. During the post closure period the City will be required to submit the test results and inspection reports to ODEQ. The amount of area currently included in our approved closure plan consists of 67 acres.

Alternate Disposal Method

The City has examined different methods of disposal such as composting. The exclusion of yard waste could extend the life of the landfill by 2 years. The City has acquired a wood hog grinder to recycle wood material that can easily be separated from the waste stream. The chipped wood is used to augment soil and enhance landscaping aesthetics. It is made available for Lawton citizens use free of charge.

In 1999 the City rejected a bid from a private firm to operate the landfill and reduce a portion of the waste stream through composting. It was estimated that the proposed change in operation would cost the City an additional \$3.4 million per year. The City also considered the use of yard waste for alternative daily cover for the active cell. However, this idea was also deferred. The concept of using an alternative daily cover rather than soil which could result in a decrease of as much as 85% of the usable space consumed by daily cover material is being explored. The City has also examined the concept of a regional landfill operation. The latest study was concluded in 1994 when the Council voted to continue municipal ownership and control. As fewer municipalities are able to construct landfills to the more stringent regulations, the question of the advisability of continued municipal ownership may certainly be raised again.

Composting

Composting is the process whereby refuse is converted into humus, an organic product that is normally used as fertilizer. Composting involves separating the biodegradable material from

metals, glass, paper and plastic products. The use of composting is becoming more attractive because it does not produce air or water pollution. Again, the initial cost of the necessary equipment for composting is very high. The market for the salvaged items remains unstable. Therefore, the economics of composting do not make it the most widely used solution. The sanitary landfill still remains the most economical method to dispose of refuse.

Recycling

Recycling can be a method of managing municipal waste. A well-run recycling program can divert a significant percentage of municipal, institutional, and business waste from disposal and can help to control waste management cost by generating revenue through the sale of recyclable materials. The program manager must give special attention to making the program economically efficient and maximizing public participation.

As stated above the current life expectancy of the current permitted landfill is six years or until about the year 2012. A permit for an additional 10 years of landfill space is under review by ODEQ. As some time in the future it may become imperative to examine the feasibility of a recycling program to reduce the amount of municipal solid waste thus extending the life expectancy of the landfill.

TRANSPORTATION

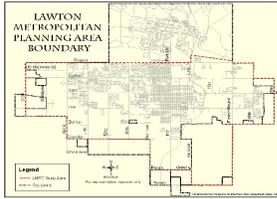
Transportation Planning

The Lawton Metropolitan Planning Organization (LMPO) is responsible for the transportation planning process for the Lawton Metropolitan Area (LMA). In 2003, the Governor redesignated the City Planning Commission (CPC) as the LMPO. Under the federal guidelines, Metropolitan Planning Organizations designated as attainment for air quality are required to update their long range transportation plan every five years.

The recently enacted highway bill - Safe, Accountable, Flexible, Efficient Transportation Equity Act – A Legacy for Users (SAFETEA-LU), re-authorizes federal surface transportation programs through 2009. To federal transportation dollars for projects the City and LMPO must complete its transportation and land use planning process according to the federal guidelines.

The Long Range Transportation Plan (LRTP) identifies construction and non-construction projects that are recommended to be implemented or constructed in the next 25 years using federal, state, and local funds. The construction projects include adding capacity while non-constructed improvements include development and implementation of a bike and pedestrian plan, sidewalk construction, actuated signals, and access management. congestion mitigation needs. For more information on funding sources see the 2030 Long Range Transportation Plan. Map 6 illustrates the LMPO boundary that was studied for the 2030 LRTP.

Map 6: LMPO Boundary



Source: Planning Division, City of Lawton

Transportation Network

The two major functions of any road system are to provide mobility and to provide access to land uses. The street system in this community has a tremendous influence on land development patterns. Historically, roads followed development rather than guiding it. When properly planned, however, a coordinated street system opens lands to the proper type of development at the proper time, protecting existing residential development and facilitating the orderly and efficient growth of the area.

Roadway System

The existing road network for the community is based on a grid system. The blocks within the system are mostly uniform and measure approximately 1,200 feet. Streets are categorized by their use and function in the overall street system. Historically, one of the most important uses of functional classification of streets has been to identify streets and roads that are eligible for federal funds. In cooperation with the Oklahoma Department of Transportation (ODOT) and the Federal Highways Administration (FHWA) the LMPO developed the current classification system illustrated in Appendix J. Table 14 demonstrates the mileage of the various classifications.

Table 14: Miles of Classified Roadway - 2002

CLASSIFICATION	MILES
Interstate	8.44
Freeway	6
Principal Arterial	41.96
Minor Arterial	42.83
Collector	26.67
Rural Collector	12.5

Source: Planning Division, City of Lawton

The City is served by several highways: Interstate 44, State Highway 7 (SH7) and US Highway 62 (US62). Interstate 44 is the major north-south transportation corridor and SH7 and US62 provides major east-west routes. The State Highway System in Oklahoma represents roads that are constructed by ODOT. These major routes provide connectivity with roads outside the metropolitan area. The secondary routes predominantly provide access to rural areas outside the metropolitan area with roads inside the area.

Road ownership is dependent on location and operational function. ODOT maintains roads designated as Interstate, US Highway or State Highway. The Comanche County Commissioners are responsible for maintaining roads in the unincorporated areas within the county. Lawton maintains publicly dedicated roads within the corporate city limits with the exception of U.S. Highways, Interstate and roads under the jurisdiction of Fort Sill.

Lawton Area Transit System

The development pattern in Lawton reflects the wide reliance on the automobile which is typical of development after World War II. Nevertheless, a coordinated public transit service, developed and implemented in conjunction with a land use plan that encourages its utilization, can offer an attractive alternative to the private automobile which can conserve energy, reduce traffic congestion and air pollution, and most importantly, offer mobility to the transportation disadvantaged segments of society -- the young, the frail elderly, the disabled, and the economically disadvantaged.

The City Transit Trust in 2002 began operating a fixed route transit system, known as the Lawton Area Transit System (LATS). This system has five routes, which are within ½ mile of 70% of the population of the Lawton-Fort Sill community. Operations are carried out twelve hours a day, six days a week. In calendar year 2005 LATS carried 496,442 passengers with an average of 915 passengers per day. LATS also provides a complementary paratransit service for those with a disability and are unable to independently use the fixed route service. See Appendix K, Route Map. For a more detailed discussion of LATS' operation please refer to the 2030 LRTP.

The augmentation of a transit system allows Lawton to implement different land use patterns that are higher in population density and more oriented toward urbanization where residents can work, shop, live and play in the same environment. Offering a different transportation mode also allows the community to plan for integration of other modes such as pedestrian walkways and bike paths to alleviate traffic congestion and improve air quality.

Bicycle and Pedestrian Facilities

An important element of SAFETEA-LU is that bicycling and walking are vital to the development of an integrated and intermodal transportation system. A more detailed discussion of the needs, requirements and benefits of pedestrian/bikeways (trails) and greenways is found in Chapter **xxx**.

Lawton-Fort Sill Regional Airport

The Lawton-Fort Sill Regional Airport is located at the southern boundary of the LMA and encompasses approximately 1.65 square miles. It is bounded by SW 11th Street/US 281B on the east, Sheridan Road on the west and SW Bishop Road to the north. There are mail and shipping services located close to 11th Street within the vicinity of the airport. According to FAA §47102(7), the airport is classified as a Commercial Airport because it exceeds two-thousand five-hundred passengers per year.

Lawton Regional Airport has one major carrier, American Airlines - American Eagle. The Airport also houses an airplane refueling depot. Lawton-Fort Sill Regional Airport has the required facilities and infrastructure for truck to plane transfers of freight or vice versa. The airport terminal building and runway have the capacity to handle most commercial aircrafts. There are four aircraft aprons, two for general aviation and two for air carriers. The facility also has a

three bay Aircraft Rescue and Fire Fighting facility and has the fuel refilling capability of any international airport.

Noise and Clear Zones

Noise can be a limiting factor in the types of land uses appropriate for a specific area. Aviation noise can affect the types of development suitable to be located near airports. Noise pollution can be defined as unwanted or offensive sounds that unreasonably intrude into our daily activities. Noise is evaluated using the day-night sound level (DNL) methodology to determine both the existing noise level and the noise level that could be expected to occur for a particular activity.

DNL levels are usually depicted as contours, which form concentric “footprints” around the noise source. Generally residential land uses are not recommended in areas where noise levels exceed 65 DNL. The Airport Authority is in the process of updating the 1996 Master Plan which will provide revised contour data based upon the Airport’s expanded service, type of jets and frequency of landings. Please consult the updated Airport Master Plan for the noise level contours. Chapter 6, Areas of Special Treatment provides a brief discussion on development north of the Airport property.

Freight and Freight Facilities

Freight is the movement of goods, services or commodities and its associated cost from one point to another. Freight planning attempts to identify these varied linkages that are responsible for getting freight from its origin to its destination and improve or replace them if they operate in an inefficient manner. A region’s vitality and businesses, jobs, and consumers all rely on a transportation system that can handle goods efficiently and safely. The movements of freight carrying vehicles also affect the amount of urban congestion and air and noise pollution.

The majority of freight facilities are located south of Lee Boulevard, on SW 97th Street and between SW 24th Place and SW 20th Street and north of Bishop Road between 11th and SW 3^d Street. The southwestern industrial section of the LMA is home to Goodyear Tire and Rubber Company, Bar-S Foods, Republic Paperboard Company and one trucking company. These industries are the primary destination of large trucks that enter the City via US Highway 62.

Railroad

Freight movement by rail in the City is primarily utilized by The Goodyear Tire and Rubber Plant and Republic Paperboard Company. This is no passenger service in Lawton. There are approximately 13.75 miles of rail. These rails once owned and operated by the Burlington Northern Railroad Company and the Union Pacific Railroad are now the responsibility of the Stillwater Central Railroad. The Stillwater Central Railroad currently owns and operates about 253 miles of tracks in Oklahoma and is categorized as a local operating rail by industry officials. There are twenty-six street railway crossings, one grade separated, ten protected by flashing signals and crossing arms and thirteen protected by warning signs. The industrial park on the west side of town, industrial zones east of the Central Business District and south of the airport should be planned for development as intermodal facilities with aggressive recruitment of industry and general economic development.

OPEN SPACE AND RECREATION

Passive Recreation

Recreation has many forms including social, educational, cultural, and physical and all of these contribute to the quality of life in the community. Joint public/private partnerships support our museums, art galleries, and performing arts such as theater, music and festivals. These activities are diverse and offered on a year-round basis with enormous popularity in the community. A strong local cultural and arts environment has an economic benefit in addition to its aesthetics. Thousands of people annually attend our “Arts for All” and “International” Festivals, which enhance the revenues of the retail sales sectors. Performing events of theater or music sponsored by the Lawton Community Theater, Lawton Philharmonic Orchestra, and Cameron University draws patrons from the Southwestern Oklahoma area. The Museum of the Great Plains is nationally recognized and proven to be a great tourism attraction. However, encouraging more participation and support by the private sector could strengthen the promotion and growth of culture and the arts.

For years the concept of a cultural center with a theater and small performance venues for Elmer Thomas Park has been discussed. During the last five years, the McMahon Foundation and city contributors have spent millions of dollars for improvements in Elmer Thomas Park. Completed renovation of the Museum of the Great Plains and the pedestrian/bikeway trail will certainly attract more and more visitors to this park. This park contains +185 acres of rolling terrain with native and planned vegetation accents and a lake feature. It is located in the central part of the community near the Central Business District. The park contains both passive and active recreational facilities and is ideal for the location of a cultural center. Joint maintenance and use of existing facilities such as parking would lower the construction costs of the cultural center.

Active Recreation

Park Standards

Generally, parks are classified based upon their service population. Table 15 contains the description, typical facilities, service area, population served, and acres required for each type of park. The Parks and Recreation Department portion of the City’s website contains more information on Lawton’s parks and recreational facilities compared to the national standards.

Table 15: Park Categories

NEIGHBORHOOD PARK	
Description	Provides recreational opportunities for all ages of the neighborhood. When possible, neighborhood parks should be separate facilities, however, they may be located adjacent to elementary schools or linear parks.
Typical Facilities	Play apparatus for all ages of children, multi-use paved surfaces, picnic areas with shelters, informal ball fields, walkways, tennis courts, restrooms and landscaping.
Service Area	1/4 to 1/2 mile radius
Populations Served	1,000 to 5,000
Acres Required	5 acres per 1,000 (5 acres minimum)
COMMUNITY PARK	
Description	Provides recreational facilities for the community to utilize. Facilities should be provided for people of all ages. Should be located on arterial streets and accessible by pedestrians and bicyclists.
Typical Facilities	Swimming pools, lighted athletic fields and tennis courts, pedestrian and exercise trails, large picnic areas with shelters, landscaped areas to buffer adjacent developments, areas of natural value and water areas.
Service Area	1/2 to 3 mile radius
Population Served	15,000 to 20,000
Acres Required	3 acres per 1,000 (20 acres minimum)
METROPOLITAN PARK	
Description	To accommodate social, cultural, educational, and physical activities of particular interest to the community.
Typical Facilities	Lighted athletic complex, large swimming pool, nature center, zoo, community center, museum, golf course, historical sites and amphitheater.
Service Area	Whole community
Population Served	Varies with usage
Acres Required	Varies
REGIONAL PARK	
Description	Provides extensive areas for passive recreation and regional recreational facilities that compliment urban resources.
Typical Facilities	Campgrounds, picnic areas, nature centers, wildlife sanctuaries and golf courses.
Service Area	Urban areas
Population Served	50,000 to 100,000
Acres Required	5 acres per 1,000 (250 acre minimum)

Source: City of Lawton Parks and Recreation Department, 2005

Park Inventory

According to the Parks & Recreation Department Strategic Plan, November 2000 there are eighty-one city parks of which seventy-three are neighborhood parks. The total acreage of the City's parks is eight hundred sixty-two. Lawton meets the standards for the recommended number of neighborhood parks and total amount of park acreage. The addition of East Side Park allowed the City to meet the minimum recommended number of community parks, although a west side community park is strongly recommended. The City is deficient in the number of soccer fields, baseball/softball fields and swimming pools. A large metropolitan park (Elmer Thomas) serves the entire community.

Parkland Selection

The purposes for having open space and parkland are to prevent overcrowding which results from unregulated residential, commercial, industrial, and institutional uses and to provide accessible and appropriate land for recreational use. The current subdivision regulations establish the criteria for the provision of parkland in newly platted areas. The developer may either dedicate land or contribute money in lieu of dedicating land. The donated money is deposited into a parkland fund to be used in the future acquisition of parkland or its development near the subdivision for which it was intended. The money cannot be used for the operation or maintenance of the park in the subdivision. However, certain criteria should be applied in site selection. The preferred standards are as follows:

1. *The size of the park should be adequate to serve the intended user population.*
2. *The site should incorporate a variety of natural features such as rolling or sloped areas, flat grassy areas, trees, or water features.*
3. *The site should eliminate all potential hazards or at least satisfactorily mitigate them.*
4. *The site should preserve natural features to the greatest extent feasible.*
5. *Neighborhood parks should be located in the center of the neighborhood. A neighborhood is generally considered to be a one square mile area.*
6. *Community parks should be located central to the approximately four square miles of population they are intended to serve.*
7. *Metropolitan parks are intended to serve different functions than other parks. They are intended to serve more population and "high culture" activities. Their sites should include areas of historical, archaeological, geological, or environmental significance and should be appropriate for recreational facilities. Variety in terrain could be beneficial.*

Areas of Concern for Parks

In addition to the deficient acreage devoted to active recreation, several other concerns are evident, such as:

1. *Inadequate funding for maintenance of the existing parks and equipment.*
2. *Parks which are of inadequate size for their service population.*
3. *Parks without access.*
4. *Undeveloped parks.*

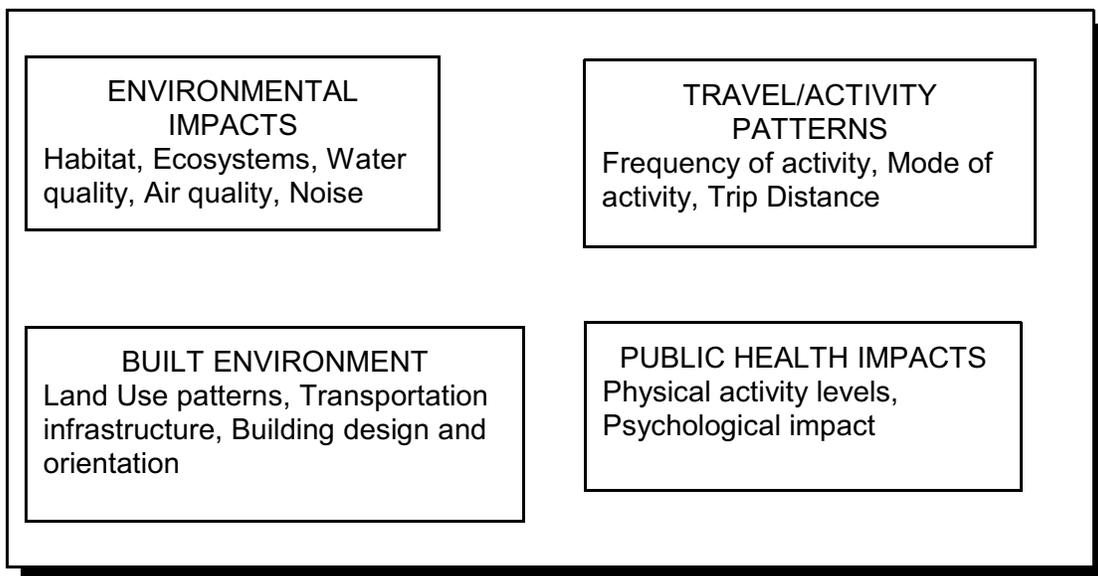
Land for recreational use is usually owned by the City, Fort Sill and Independent School District 8. All of these entities are providing recreational programs. To make a more effective recreation program for all the community's needs, all of these parties should strengthen their planning relationship. For example, when a neighborhood park is planned in conjunction with

the elementary school for a new subdivision, the taxpayers reap the benefits as well as the service population.

Pedestrian/Bikeway Trails and Greenways

In the last fifty years the relationship between the way the land is developed and the transportation system providing access to that land has promoted the dependence on the automobile. The built environment and the transportation infrastructure are self-reinforcing. The imbalance of our current built environment has led to our community being largely devoid of walking and bicycling amenities. Taking transportation planning concepts into account when designing trails can lead to increased usage rates of these facilities and thus many of the associated benefits of trails will be increased.

Figure 3: Influence of the Built Environment on Travel/Activity Patterns and Attendant Human and Environmental Impacts



Studies have shown that close proximity of a trail to a residence tends to make the property easier to sell and may have a modest positive impact on the value of the home. According to the FHWA a typical neighborhood lot sidewalk of 5 feet and two street border trees raise the cost of the undeveloped lot by 1 to 3 percent. In comparison, residential lots streets with sidewalks and trees often show an increased property value of \$3,000 to \$5,000.

Recommended Guidelines

Although the Lawton City Code requires a minimum 4 foot wide sidewalk installed on both sides of minor arterial, collector and all residential streets in newly constructed subdivisions, the adopted design standards are 4-foot wide on local streets, 5-foot on collector and 6-foot on arterials. Most guidelines require sidewalk design widths of 5-feet (60 inches) with larger design widths in areas of high pedestrian traffic. A wheelchair user requires a 60-inch x 60-inch (5'x5') space to maneuver in a circle and to allow two wheelchair users to pass one another.

If using federal funds for street reconstruction, the City must provide a sidewalk on at least one

side of the street. According to the City of Lawton Public Works Department the completed road project with sidewalks in the last five years are: NW 82nd Street project from Lee Blvd to US 62 and Flower Mound Road project from Gore Blvd. to Cache Road projects yet to be completed which will also include sidewalks are: 38th Street project from Cache Road to Rogers Lane, 38th Street from Gore Blvd. to Cache Road, SE 45th Street from Lee Blvd. to Gore Blvd., West Gore Blvd. from NW 67th Street to NW 82nd Street and NW 67th Street from Cache Road to Rogers Lane. Other sidewalks constructed include a sidewalk in McMahon Park east of the ball fields and a concrete pedestrian walk that encircles Elmer Thomas Park.

As illustrated in Figure 4 trails and greenways promote walking and biking as fundamental modes of travel from one location to another, as well as for recreation and exercise purposes but the facilities need to be available in order for these modes to be utilized. Decision makers should give priority to green infrastructure as part of their quest to make our community more livable, sustainable and healthy.

Figure 4: Trails and Green ways promote Walking

TRAIL AND GREENWAY BENEFITS	
TRANSPORTATION	Facilitates non-motorized trip making and the attendant reduction in emissions, congestion, lost time, societal costs, public costs and personal costs.
ECONOMIC	Job creation for gear and services for local residents and tourists Ind property values Retention of industry due to increased quality of life for employees
PUBLIC HEALTH	crease Increased physical activity levels Reduced auto emissions
OPEN SPACE	Maintenance of wildlife habitat Heat island mitigation provided
EDUCATION	Interpretive signs regarding wildlife and historic aspects of corridors Outdoor classrooms Students who exercise tend to get better grades in school and experience fewer behavioral patterns
SOCIAL CAPITAL	Increased interaction among community members

CHAPTER 5 - ENVIRONMENTAL PLANNING AND CONSERVATION

PHYSICAL RESOURCES, OPPORTUNITIES AND CONSTRAINTS

This chapter will examine the physical resources and the environmental factors which may affect community growth and development. These physical resources and environmental factors may enhance or limit urbanization. For example, the most economical sewerage is a system based upon gravity flow. However, Lawton is surrounded by a ridge line which acts as a physical and economic barrier to extending the sewerage beyond it unless population increases can support the development. Conserving natural resources, preserving biodiversity and maintaining a clean environment are essential factors for sustaining healthy human communities.

Slope

In Lawton, the terrain ranges from 1290 feet above mean sea level (MSL) in the northwest to 1030 feet above MSL in the southeast near the Wastewater Treatment Plant. With the exception of four subsidiary drainage basins, the topography should not cause any barriers to urbanization. Appendix L illustrates the topography at ten foot intervals. However, care should be exercised that the slope is not greatly modified because this can lead to flooding problems if the runoff rate is changed. Additionally, slope changes may also bring greater potential for erosion when vegetation such as a tree mass is removed.

Ridge Line and Drainage Basin

Map 1 on [page xxxx](#) illustrates Lawton's drainage basin consisting of 56,580 acres. Four subsidiary basins are formed along channels known as Wolf, Numu, East Cache Creek, and Meadowbrook. Sewerage is collected using a gravity flow system. Extension of the sewerage across the ridge lines would require the installation of sewer lift stations that lift the flow over the ridges. These lift stations are expensive to operate and maintain. Unless population growth demands sewerage extension beyond the ridge line, urbanization should be limited to the area within the ridge line.

Soils

The Soil Conservation Service (SCS) analyzes and classifies the soils in the community based upon their suitability for various uses. Appendix M illustrates the soils and provides a summary table of characteristics. The soils in this community tend to have a high clay content component which affects the moisture content. Soils shrink and swell dependent upon this moisture content factor, the net result may be shifting or cracking of foundations or roads and fracturing of underground infrastructure. Because of the shrink-swell action different types of foundations or stabilization of soils may be required to alleviate the poor soil condition.

Floodplain

The floodplain is a general term applied to all areas susceptible to being flooded by any source of water. Appendix N illustrates the general locations of floodplain in Lawton. The City entered the National Flood Insurance Program (NFIP) in 1978. The NFIP defines the floodplain into special flood hazard areas. These areas contain both the floodway and flood fringe and are subject to a one percent chance of flooding in any given year.

Development is strictly regulated in the special flood hazard areas to minimize the potential loss of lives and property. By participating in the NFIP all property in Lawton, located inside and

outside special flood hazard areas, is eligible to be insured for property damage that may occur during a flooding event.

Uncontrolled development in the floodplain can be very expensive to the public sector. The City of Lawton continues to expend millions of tax dollars to mitigate stormwater runoff to reduce or prevent flooding. The City should protect any flood prone areas before urbanization occurs to reduce the future public dollars required for drainage mitigation.

Tree masses are those groups of natural vegetation generally located along floodplains. Species commonly found in this area are: elm, ash, hackberry, soapberry and mesquite. These areas provide many benefits such as carbon monoxide reduction and the provision of natural wildlife habitats. Because Lawton has an arid climate these tree masses will also reduce temperature and block winds. The City needs to protect the existing tree masses in and along the floodplains.

Urban Stormwater Pollution

Rain and snowmelt move across highways, roads, parking lots and yards, sweeping a variety of contaminants into our storm drains and into our rivers and lakes. The contaminants include metals (e.g., lead, zinc, and iron), organic compounds (mainly insecticides such as diazinon and malathion), petroleum residues, nitrates, and road salt. As land in the watershed is converted to hard surfaces that are impervious to water, the area loses its ability to absorb and store rainfall. Many of those hard surfaces are roads, which collect oil, solvents and other contaminants that are then washed into streams or other bodies of water. Research suggests that when impervious surfaces cover more than 10 percent of a watershed, the water bodies they surround become degraded. Locating and quantifying impervious surfaces are critical to estimating non-point source pollution loading because of runoff, a key component for maintaining clean drinking water. Research indicates there is an imperviousness threshold beyond which no combination of best management practices can mitigate the additional pollutant load resulting from excessive development.

The three strategies to control stormwater pollution are: (1) control of pollutant production, (2) control of pollutant removal from the site, and (3) control of pollutant transfer through the delivery system. The first strategy includes the regulation of land use types, development density, lawn fertilizing, and so on. Stormwater pollution per person decreases with higher residential densities therefore; cluster development is a means of minimizing pollution loading of stormwater in residential areas.

In strategy two measures for controlling transfer of pollutants from the site are aimed at regulating the volume of runoff. The most common solution is to increase soil absorption through increasing the ratio of vegetated to impervious groundcover, using porous pavers, and diverting runoff into infiltration beds or dry wells. The final mitigation measure deals with the delivery system. Detention ponds and retention basins improve the water quality by holding the water and allowing the sediments to settle. Ordinance 05-92 sets out additional measures to control erosion and stormwater pollution from new developments. These include sedimentation basins, stilt fences and ground cover.

Water is fundamental to life. Because of this vital role, the efficient management of water resources is crucial. From the smallest communities to the world as a whole, it is becoming increasingly important to regulate land development, decrease pollution, and protect water

supplies.

Rainfall happens and with it the inevitable runoff and resulting impacts: overflowing streams - erosion - property damage - flooding. These impacts are all related to stormwater and how, once the rain hits the ground, the stormwater will interact with the environment.

A serious problem with land development is the change in the rate and amount of runoff reaching streams and rivers. Overland flow varies drastically in the urban landscape. Urbanization also changes the drainage basin by the addition of ditches and underground channels thus increasing the drainage density. Coupled with the lower infiltration rates, this leads to increased amounts of runoff and larger peak discharges into streams and rivers which in turn leads to increased flooding.

Overland flow INCREASES with slope and hard surface ground coverage such as concrete and asphalt.

Overland flow DECREASES with soil organic content and particle size and vegetative cover.

Water Conservation

Although Chapter 2 reports that the City of Lawton will have an adequate supply of water through the year 2030, episodes of water shortages and drought are inevitable in Oklahoma. Water use guidelines can often stave off critical dry periods and the hardships associated with them. Better planning, innovative water management and water conservation may be needed to maintain supplies and satisfy increasing demands. Community water conservation programs can prevent or delay the costly construction of new or upgraded water treatment plants. Water conservation can also have environmental benefits, such as a reduction in wastewater discharged into rivers and streams.

In the home, the key is starting simply, such as turning off water when it is not being used, then gradually taking more advanced steps to reduce water consumption. On a larger scale, improved landscape designs, irrigation scheduling and better methods of irrigating crops, reclamation and reuse of wastewater, water budgeting and adoption of rate controls may be required in reducing both use and demand.

Water supply management programs, such as metering, leak detection and repair efforts; pressure reduction; and watershed management along with demand management options - such as water pricing, regulation and education - can result in impressive savings of both water and money.

In the summer, lawn, shrub and garden watering typically accounts for 50 to 80% of home water use. The keys to outdoor water conservation are to eliminate over watering and reduce evapotranspiration. Landscapes are typically over watered by as much as 20 to 40%. Trickle or drip irrigation systems can use 80 to 90% less water than hose or sprinkler methods. Efficient landscaping can save between 40 and 80% of the water used in a traditional garden. Xeriscape is one of the most popular and water-efficient forms of landscaping, incorporating

intelligent and attractive landscape design utilizing native or adapted vegetation which requires less water.

The City of Lawton has adopted a temporary or periodic restriction on outside water usage in Chapter 22 of the Lawton City Code. These water restrictions on outside usage are progressive depending upon the severity and length of the drought and are enacted based upon specific lake elevations. The first stage of restriction of outside water usage is voluntary but the restriction moves to a mandatory prohibition of outside water usage if lake levels do not rise.

Vegetation and The Urban Environment

People need trees. They need to see leaves from their windows, to sit in green spaces, and to play in the shade. Trees draw people out from behind walls of brick and glass, and in coming together, neighbors forge relationships, nurture children, and build a sense of community. Research shows that physical environments can contribute to mental fatigue, and natural environments can help alleviate that fatigue.

An urban forestry program will improve the health and diversity of the community's urban forests, increase public awareness regarding the economic and environmental benefits of trees in the urban setting, and reduce heat island effects. The planting and preservation of trees and vegetation as an integral part of man-made habitat and developments of all types - offices, businesses, industries, homes, neighborhoods, communities, and transportation options should be encouraged. The City of Lawton should establish a Tree Board and hire a professional arborist or forester.

Wildlife

Rapid conversion of once-natural areas and farmland into subdivisions, shopping centers, roads and parking lots has become a leading threat to native plants and animals. As development spreads farther into wild lands - what scientists refer to as the "urban/rural interface" - wildlife habitat becomes fragmented. This fragmentation is believed to be the key indicator of species loss.

Air Quality

The Clean Air Act requires the EPA to set National Ambient Air Quality Standards (NAAQS) for the six major air pollutants considered harmful to public health and the environment. The six criteria pollutants are carbon monoxide (CO), lead (Pb), nitrogen dioxide (NO₂), ozone (O₃), sulfur dioxide (SO₂), and particulate matter (PM). There are two categories of PM, particulate matter less than 10 micrometers (PM-10) and particulate matter less than PM 2.5. Particulate is a general term used to describe tiny bits of matter floating around in the atmosphere, such as soot, fine ash, molds, pollens and dust. Particulate pollution comes from such sources as factory and utility smokestacks, vehicle exhaust, wood and diesel burning, construction activity and agriculture. Larger particles are caught by the hairs in your nose and your breathing tubes, but smaller particles (less than 2.5 thousandths of a millimeter) can get past these defenses into the respiratory system. The new particulate matter PM 2.5 sampling network began operation in the community during August 2000.

Ozone is an odorless and colorless gas formed by a chemical reaction between volatile organic compounds and sunlight. Ozone is formed when pollutants emitted by vehicles, large industry and utilities, small industry such as gasoline dispensing and dry cleaners, paints and cleaners,

and small engines react in the atmosphere. Ozone can cause short-term health effects to the respiratory system. A typical day of high ozone concentrations has light wind speeds, no cloud cover, and high temperatures. On these days the pollutants from automobiles, including carbon monoxide, are trapped by inversion near the ground. With no wind to move the ozone the concentration increases until the late evening. Peak ozone levels typically occur from May through September.

Many community air quality problems are due largely to emissions from automobiles. Projected increases in traffic are cause for concern in maintaining acceptable air quality. Unless measures are taken to balance the transportation system, there will be increased congestion, additional automobiles being used, more trips per person, and more people making trips for personal business. Continued increases will negatively impact air quality and will ultimately adversely impact the economic vitality of the community.

Communities where air pollution levels exceed the NAAQS are designated as non-attainment areas by the EPA. Non-attainment designation leads to additional federal and state regulations for the area and development of a State Implementation Plan (SIP) to reduce emissions. New regulations mean higher prices for cleaner burning fuel and tougher emission standards for vehicles and industry. Currently Comanche County is designated as an "attainment area". The Long Range Transportation Plan contains more information on air quality.

Table 16 below illustrates highest 8 hour average for the community. ODEQ has installed air quality monitoring stations which measure concentrations of the six pollutants. The station located east of I-44 (near the USPHS Hospital) measures ozone, and the second station located at the Comanche County fairgrounds measures particulate matter 10.

Table 16: 8 Hour Highest Average

MONTH	2003 8 HOUR HIGHEST AVERAGE	2004 8 HOUR HIGHEST AVERAGE	2005 8 HOUR HIGHEST AVERAGE
May	0.069	0.067	0.072
June	0.071	0.077	0.083
July	0.077	0.084	0.082
August	0.081	0.078	0.073
September	0.087	0.082	0.078
October	N/A	0.048	0.073

Source: Oklahoma Department of Environmental Quality

CHAPTER 6 - AREAS OF SPECIAL TREATMENT

Throughout the City are areas which because of development patterns, large land holds, or locational characteristics if developed haphazardly can have a large impact on the surrounding land uses. Identification of these areas will encourage planned and orderly, efficient, economical land use development.

Residential areas abutting arterials or adjacent to commercial or industrial uses have historically received pressure for conversion of use. This is largely in part to the exposure to high traffic volumes on the arterial. Typically these residential areas have common traits which often lead to a piecemeal development with multiple curb cuts. Common traits are:

- originally developed with single family dwelling units
- lots front upon heavily traveled arterial streets
- lots are of limited lot depth and frontage and are under separate ownership
- land assemblage for these lots is often difficult

Without significant development standards the conversion of these residential properties can lead to a de-stabilizing influence upon the adjacent residences. This “domino” effect can be overcome by establishing reasonable development standards that allow the owners of the conversion properties to receive reasonable return on their investment as the residential uses become less attractive while protecting the property values of the adjacent properties.

Areas of special treatment are areas where there are specific characteristics that can be identified. Such as, large tracts of land held under one ownership, historic properties/districts, flood plain, areas impacted by intrusion of industrial/commercial development, **XXXXXX**. Development of special treatment should be based upon sub-plans or mini-plans. The following are areas of special treatment which currently have a sub plan (Appendix O). Areas without sub plans are listed separately (Appendix P).

With Sub Plans

1. Brockland Addition - This residential subdivision should be developed in accordance with the policy adopted by the Lawton Metropolitan Area Planning Commission on September 12, 1984. **RECREATE MAP FOR THIS PLAN - MAP NUMBER 7.**
2. North Addition (IS THIS A PART OF THE TIF DISTRICT, OR URP) - This residential neighborhood is located north of the Central Business District and contains some historic structures. Preventing further commercial/professional office land use encroachments will protect the preservation efforts and policies adopted by the neighborhood.
3. Central Business District (THIS IS A PART OF THE TIF DISTRICT & URP) how to address. The central core should be reinforced with architectural guidelines which encourage pedestrian amenities, landscaping and integration of newer structures with older ones. The CBD should be the heart of the community’s business and governmental functions. It should also be the primary transit transfer station. A master plan for development of this area should be completed. **DOES THE CHAMBER’S PLAN QUALIFY?**
4. TIF District Appendix Q.
5. Urban Renewal Plans - The Lawton Urban Renewal Authority (LURA) has three active adopted plans. These plans encompass the downtown area, the civic center area and the

D-6 area. (Appendix R).

6. Cameron University - The land uses surrounding the University should be supportive of the technology and research development efforts related to this growing institution. Commercial encroachments into the area surrounding the University should be discouraged. CU has a limited supply of open land for future expansion. Southwest 38th Street, a major arterial, divides the campus which is a detriment for future growth. Appendix S demonstrates the constraints on growth and the zoning surrounding CU. The east and south perimeters are zoned mainly single and multi-family residential. LWPB Architects and Planners and HFSD recently completed Cameron University's Master Plan 2015. This plan addresses architectural design guidelines, landscaping and open spaces, and vehicular and pedestrian circulation. Appendix T is the Cameron University Master Plan map.

DESCRIBE THE AREA THAT SHOULD BE SUPPORTIVE OF TECHNOLOGY AND RESEARCH. THIS IS NOT A CURRENT DESIGNATION FOR LAND USE SHOULD THIS BE CHANGED TO OFFICE??

Cameron University recently completed a major addition to the campus called Cameron Village. This \$12 million project was constructed on the south end of CU's campus. Appendix V also illustrates the location of the new facility. The complex consists of six residential buildings that houses 72 apartment-style units - totaling 240 beds - and comes in two and four bedroom apartments and the McMahon Center. The 9,000 square-foot McMahon Center features a seminar room, computer lab, classroom and library.

7. Comanche County Memorial Hospital - According to the CCMH website, the facility is the largest county hospital in Oklahoma with 283 beds. Comanche County Hospital Authority (CCHA) currently occupies approximately 35 acres on Gore Boulevard. CCHA also owns properties at 38th Street and Gore Boulevard (Great Plains Medical Square), the former Garfield and Pecan Grove elementary school properties, and leased facilities in other Lawton locations.

CCMH recently completed an expansion of a parking lot and helipad on the west side of the hospital expanding to N.W. 35th Street. Construction on the Heart Center located on the northeast corner of the complex was also recently completed. To meet future growth of health care by the year 2030, CCHA expects to add a new patient tower, expanded emergency services, a new nursing home, additional medical office space, and expanded support services. Although most of the expanded facilities can occur on existing property, any additional expansion needed will most likely have to occur towards the east. The east boundary of the CCHA is N.W. 31st Street and single family homes. Appendix S shows that CCMH is surrounded on three sides by single family residential.

An existing problem that affects CCMH is the intersection of 31st Street and 27th Street along Gore Boulevard. In the draft 2030 Long Range Transportation Plan the realignment of this intersection was a project identified by the Transportation Policy Committee for safety reasons. See Appendix V for the street realignment location.

8. Fort Sill -The Fort Sill Military Installation functions as the United States Army Field Artillery Center and the home to the III Corps Artillery. The installation has 147 square miles

dedicated to artillery training and testing. Although the City of Lawton and Fort Sill mutually consented to the populated portion of the installation being annexed in 1998, the City does not have any jurisdiction over this Federal land. This installation continues to be the community's largest employer. Therefore, support of this installation's mission and personnel is vital to Lawton's future.

In Fall of 2005, the City adopted a resolution supporting a "buffer zone" to protect the installation's mission and growth. Appendix D is the map of the Fort Sill Buffer Zones.

Three areas of cooperation and coordination are paramount. **WHAT ARE THE THREE AREAS?** First, the cooperative development of a land use policy for all areas adjacent to the installation. The entire northern perimeter of Lawton abuts Fort Sill and its training grounds and firing ranges. Artillery firing and military training obviously produce impact noises, which may be incompatible with residential activities. It is not likely that the size of the firing ranges or training areas will grow in size due to the economics of land acquisition. Development of the 2030 Land Use Plan and other planning documents should be developed in concert with Fort Sill.

9. Lawton Public Schools - Currently LPS is the third largest school district in the state with 35 schools and a student census of nearly 18,000 (Source: <http://www.lawtonps.org/>). Appendix W shows the distribution of LPS's elementary, junior high and high schools. Due to the Base Closure and Realignment (BRAC) action Lawton Public Schools is looking at a large increase in the enrollment for the next five years. According to the current estimate of needs, new schools and teachers, renovations and additional support personnel are the items needed to prepare for the influx of students.
10. Historic Preservation - During the early 1960s Lawton undertook several urban renewal projects near the Central Business District. These clearance projects demolished many historical structures. However, several historical sites and buildings do remain in or around the City including the Comanche Reformed (Dutch) Church, Fort Sill Indian School, old Lawton High School, Lawton Carnegie Library and the Mattie Beal Home. Private organizations as well as governmental entities maintain these historic sites.

In 1992, the Department of History, University of Oklahoma, conducted a survey of historic structures and areas in Lawton that might be suitable for preservation. Ninety-three sites were identified for further study. Six of these structures such as the Mattie Beal Home, Central Junior High School, First Christian Church, the old Saint Andrews Episcopal Church have been accepted onto the National Register for Historic Preservation. The National Register is limited to buildings that are 50 years old or older. To date no governmental or private organization has pursued the nominations of other recommended structures in the survey.

The Lawton Historic Preservation Commission (LHPC) was created by a city ordinance in 2003. The basic purpose of the LHPC is to create appreciation of, and protection for, properties within the city which have an architectural, archaeological, cultural, or historic significance. The LHPC makes recommendations to the City Planning Commission and the City Council concerning applications for designation of property as a Historic Preservation District. The LHPC also issues Certificates of Appropriateness and Certificates of Economic Hardship, provides for surveys of potential Historic Preservation

Districts, works with other entities to facilitate the use of historic preservation as an agent of economic development, and seeks to educate the public about the benefits of historic preservation.

HISTORICAL PRESERVATION DISTRICT BENEFITS

- Safeguards the heritage of the City by preserving and regulating historic landmarks and districts which reflect elements of its cultural, social, political, and architectural history.
- Preserves and enhances the environmental quality of the neighborhoods.
- Strengthens the City's economic base by stimulation of conservation and reuse.
- Establishes and preserves property values.
- Ensures the harmonious, orderly, and efficient growth and development of the municipality.
- Promotes the use of historic landmarks and districts for the culture, prosperity, education, and welfare of the people of the community and visitors to the City.

Without Sub Plans

1. Capital Hill and Manning Subdivisions (Map 7, Area xxxx) - These two subdivisions are located south of SW Bishop Road, east of SW 11th Street, west of I-44 and north of SW Coombs Road. This area contains mixed land uses on large lots. The Lawton-Fort Sill Regional Airport is west of these subdivisions. Although the area has single family residential uses this plan recommends this area support future land uses that require access to airport shipping and interstate trucking. Conversion to industrial uses should occur on a block-by-block basis. The transition should occur from the west to the east to avoid spot zoning.
2. North of the Airport (Map 7, Area xxxx) - This area is located between SW 17th Street, Sheridan Road, Douglas Avenue and Lee Boulevard. The area lies in the north-south approach zone to the Lawton-Fort Sill Regional Airport. An updated Airport Master Plan is being developed. The information in the update will provide current noise contour information based upon current and proposed airport activities. The frequency of flights and type of jet engines could impact the noise contours as provided in the 1995 Airport Master Plan.

Future development should be in concert with the most current Airport Master Plan. However, in the long run it would be best for this area to slowly change to light industrial uses that require access to airport shipping or provide service to those type of uses. Such transition should be based upon conversions of multiple lots or blocks, which are contiguous to the existing light industrial uses closer to Sheridan Road. Industrial uses should have sufficient area for on sight loading/unloading, maneuvering and parking, buffered from residential uses by opaque screening, have limited curb cuts and limited/shielded outdoor lighting.

3. Koehler Addition, Blocks 1 and 2 (Map 7, Area xxxx) - This area consists of a small horseshoe-shaped, residential subdivision surrounded by commercial land uses. The

addition is located north of Ferris Avenue and is only accessible from Sheridan Road. The residential lots have shallow depths so redevelopment should be based upon assemblage of a large number of lots or one block at a time. The redevelopment should minimize the number of curb openings. Redevelopment should be contiguous to the existing commercial development along Sheridan Road, moving from west to east in direction. The more restrictive zoning should be applied to reduce traffic generation onto Sheridan Road.

4. White Acres, Block 1 (Lots 19-21), Block 2 (Lots 27-32), and Block 4 (Lots 1-9) (Map 7, Area xxx) - This area is located north of Lee Boulevard and west of SW 25th Place. It is characterized by small single family dwellings. The 2025 identified this area as showing substantial blight **HAS THERE BEEN CHANGES _ WHAT????**. Because of the declining condition of the structures and the accesses to a divided arterial this area would be an area for redevelopment as commercial. However, redevelopment to commercial should be based upon assimilation of multiple lots with contiguous areas. The most restrictive commercial uses should be utilized.
5. Tropes Five Acre Blocks and Tropes Second Subdivision Block 1 and 2 (Map 7, Area xxx) - Lee Boulevard, Wolf Street, Sheridan Road, and the half section line bound this area on the west. It is presently mixed zoning and land uses between residential, agricultural and industrial. During the past five years the Tropes Five Acre Blocks have continued to show expansion of commercial and industrial uses. Future development should be industrial. However, to limit piecemeal development the conversion from residential to industrial should be based upon large lot or tract redevelopment.
6. Southeast 36th Street and Lee Boulevard (northeast corner) (Map 7, Area xxxx) - This tract of land (605 feet by 635 feet) fronts upon State Highway 7. The limited access rights for this tract were acquired in connection with reconstruction of the highway. To protect public safety the number of access points onto the highway must be preserved. This tract is adjacent to an existing frontage road and any rezoning action must include a site plan, which utilizes the existing frontage road for access.
7. Vernon-Legion Subdivisions - This area is located north of Gore Boulevard between railroads to the east and west and I-44 to the north (Map 7, Area xxx). Although this area is isolated by man-made barriers the residential character of the area remains stable. The residential areas have stabilized and care should be exercised that future land use decisions promote the continued stability. Future development must be in accordance with the D-6 Urban Renewal Plan.
8. Tribal Land (Appendix Y) - Approximately 1700 acres of Native American Indian tribal lands are located within the municipal limits of Lawton. Tribal lands are protected by the sovereign nation policy. Consequently, the City of Lawton does not exercise any jurisdiction over development of these lands. The development of these lands is determined by the tribal governing bodies and the Department of Interior. However, the development of these lands has been dependent upon obtaining infrastructure support from the City. Because the development of these lands may have significant impact upon the City's infrastructure, i.e. the transportation network and surrounding properties, there has been great concern over the type and intensity of development that may be placed upon these lands. For example, if a tribal entity decides to place a large commercial development on its land, the increased traffic volume may cause congestion and have a

negative impact on the local street network.

CHAPTER 7 - LAND USE SUPPLY AND DEMAND

MUNICIPAL CITY LIMITS

Lawton's municipal limits are illustrated in Appendix Z. The City currently contains 57.5 square miles excluding the annexed portion of Fort Sill. Because Lawton has been extremely generous in its potable water sales to areas beyond its jurisdiction, a substantial amount of growth is occurring adjacent to the City boundaries. Comanche County does not exercise zoning controls and utilizes minimum land subdivision regulations. Such developments will not meet the City's regulations, and the potential of annexing is also a concern. It is simply unfair to ask the residents of the City to pay for the improvements to the infrastructure that would be required in case of annexation. Since the County has chosen to leave these satellite areas unregulated, the City will have little choice but to require certain subdivision standards for infra-structure in areas where city water is requested.

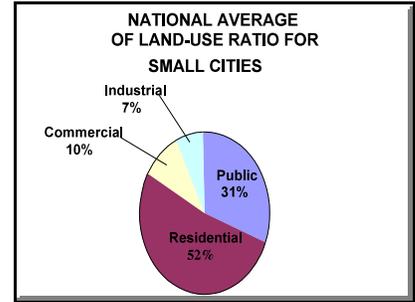
Another water issue restricting the growth of Lawton is the rural water districts surrounding the City. The City of Lawton may annex a parcel of land inside a rural water district but cannot sell water to that area. The rural water district must agree to de-annex the parcel before the City can provide water. The Comanche County Rural Water Districts is illustrated in Appendix AA.

The final way the City may control development along its boundaries is the annexation of a buffer zone. This method is very unpleasant because it is not voluntary. Additionally these buffer zones are expensive to the city because services are being extended without the adequate tax base to support the services. In order to support the population of each city enough land must be devoted to providing residential, commercial, industrial and public services and activities. The challenge to land use planning is to achieve the appropriate mix of land uses so the community continues to grow at a normal rate. Consider the dilemma of the city that encounters rapid economic growth. The city may not have enough schools to support the new population growth or their transportation network may not have enough capacity to carry the increased traffic volumes. Every city in America is paying large recruitment packages to attract new businesses and industries to their area. Having paid these packages often there is little money available to build the new schools or roads to support the additional growth. All communities need growth but the key to healthy growth is the timing and location. Public policies must seek to balance market supply-and-demand dynamics. Such balancing can occur only if government monitors land supply so that it can periodically adjust its forecasts of urban space and facility needs. Land supply monitoring can be of great assistance to local policy makers in deliberating development decisions.

Land use ratios are developed from the acreage totals into four broad categories of residential, commercial, industrial and public. Generally the ratios will not include agricultural land because preservation of agricultural land is a national goal. America continues to be the largest food producer in the world. Lands involved in active agriculture should not be urbanized unless absolutely necessary. These ratios do not represent the locations of land uses but are merely aggregates of usage. The spatial display of land uses will be illustrated on the Land Use Map.

During this five year period very little change has occurred in any of the land uses inventories. Considering the modest growth in population discussed in Chapter 2, the stability of the land use inventory is to be expected. Table 16 give further information of the gross land uses inventory by showing how much acreage in each category has been developed. However, due

to the BRAC announcement Lawton is expected to grow by **XXX** persons in the next five years. Therefore, the next land use inventory may show a large increase in Residential/Low Density and Residential/High Density along with accompanying Commercial.



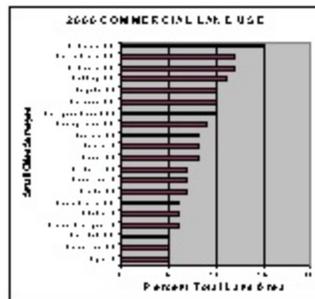
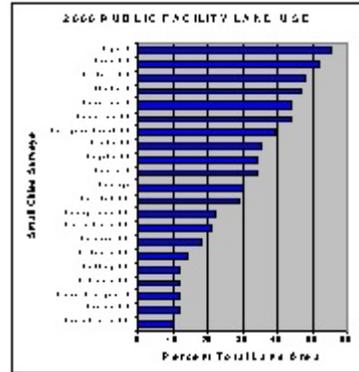
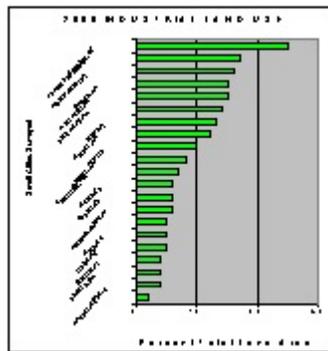
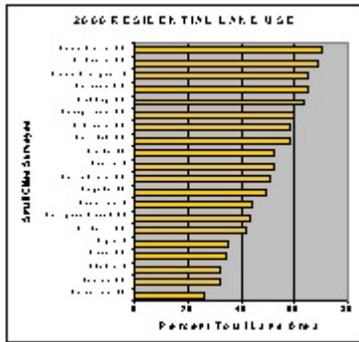
Calculations made in December 2005 indicate that approximately 19,079 acres are available for development. However, many factors such as availability of infrastructure, schools and traffic volumes affect the timing, location and pattern of development. The mere zoning of the property does not guarantee development. In fact an over abundance of zoned land for a specific use can inflate the real property values beyond the market demands. Simply put if the property is too expensive the market turns to conversion of less expensive land into the land use category it is seeking. Often this trend is demonstrated by converting single family residential lots into strip commercial along the arterial streets rather than developing the existing commercial zones at the corners of the intersections. On the other hand, planning policies should not overly restrict land development causing shortages in land available for development to support the needs of the community.

Before leaving the land supply and demand dynamic discussion it would be wise to examine how our community's land use ratios compare with national trends. Tables 17-20 illustrate Lawton's land use ratio rankings as compared to a survey of other small cities. (Source: American Planning Association PAS Memo, August 1992). The figure on the right illustrates the comparison land use ratios of these small cities by use category. Although Lawton appears to be low in its ranking, it would be unwise to base land development decisions solely on this ranking. Each community has different growth characteristics so this information should be used in conjunction with other criteria.

Table 16: 2000 - 2005 Land Use Inventory

LAND USE	ACRES (2000)	ACRES (2005)
Residential	10,747	13,700
Commercial	2,506	2,788
Office	10	143
CBD	230	230
Industrial	1,734	4,918
Public	4,022	2,945
Agriculture	11,478	8,386
Tribal	2,831	2,831
Private Open Space	128	128
TOTAL	33,686	36,069

Source: City of Lawton Planning Division



PLANNING CONCEPTS

A rapid rate of growth can result in a mixed blessing to the community; dramatic increases in the number of jobs will certainly bring enhanced prosperity but such growth also strains the City's ability to fund new infrastructure to support the growth. No growth is certainly not acceptable to any city. Thus, the planning profession has developed some general principles for balanced growth to minimize the financial burden until the tax base has expanded and can absorb the growth costs. Three concepts that are always examined are distribution, intensity and timing.

DISTRIBUTION

Distribution is defined as the "pattern or arrangement" of the various types of land uses. The pattern of growth may be concentrated which is the most economical extension of infrastructure. In contrast growth may be dispersed. This is the type of growth often described as "leapfrog" because the development leaves gaps of undeveloped, vacant land between the growth. Distribution that is dispersed is the least economical because infrastructure is prematurely extended before the population has relocated to the area.

INTENSITY

Intensity of growth is defined as the population density of development or magnitude of activities of development. Density should be examined in the Land Use Plan in order to provide adequate areas for activities and infrastructure to support the population. For example, what is a minimum land size for single family detached dwelling units as compared to apartments. Currently, the local standard is 7 units per acre in single family density and 25 units per acre in high-density residential developments.

TIMING

The timing of development should depend upon the population growth and the extension of infrastructure to support growth. There are definite economic and practical limits to urbanization. The ridge lines, which surround Lawton are illustrated on Map 4. The ridge lines define the drainage basins for the gravity sewage system. Beyond these ridge lines lift stations are required to lift sewage over the ridge lines. Such lift stations are expensive to construct and maintain. Until Lawton's population growth causes such an expensive extension of infrastructure it would not be prudent to encourage development outside these barriers. As previously discussed, there are hundreds of acres available for residential and commercial development. Lawton's real challenge is to replace infrastructure for its existing population as compared to extending infrastructure to meet population growth.

PATTERNS FOR COMPATIBLE LAND USES

Balanced growth has been defined as growth with the proper arrangement and density that is timed to the economical extension of infrastructure. But it is equally important to discuss the compatibility of lands to each other.

NEIGHBORHOOD UNIT CONCEPT

The neighborhood unit is the basic tool for planning walkable and livable communities. This concept has five basic features:

1. Identifiable center and edge
2. Limited size (commonly 5 min. walk from center to edge)
3. Mix of uses and housing types

4. Interconnected network of walkable streets and
5. Special sites for civic purposes

During the last twenty years Lawton has promoted the Neighborhood Unit Concept to encourage compatible integration of land uses and to reserve an appropriate amount of land area for all urban activities. This one-mile square concept as shown in Appendix BB places low density residential uses as the central focus of each neighborhood. Schools and parks are closely positioned within short walking distances from adjacent homes. Collector streets in the residential neighborhood are designed to “collect” traffic from the residential streets and direct the traffic to the high volume streets along the perimeters. As the neighborhood grows outward from the focal point, the residential densities also increase from single family units to townhouses, apartments, and retirement centers. These densities generate more traffic, lighting and noise and should be located along the perimeter streets known as arterials. The arterial streets, as the name suggests, are the arteries of urban traffic and are normally four-lane streets.

Just as it is prudent to develop a neighborhood from a central focal point, it is also wise to develop an entire community radiating from the center. In most American communities the center has been defined as the concentrated uses devoted to governmental, business, institutional, cultural and educational functions. This center is known as the Central Business District or CBD. The CBD is where you will find a community’s first courthouse, bank, hospital, library and high school. Generally, all these uses were located within short walking distances and were also served by the first trolley system which connected these uses to residences and factories. Often the CBD was further centered on the “Courthouse Square” which functioned as the seat of government and the depository of all official records. Residential developments radiated from the CBD while factory or industrial uses were placed along the outer boundaries of the city. As mode of transportation changed to the automobile the role of the CBD as the center of the community began to erode. Lawton fell prey to the declining CBD during the late 1960's. Shopping areas were being built in the suburban neighborhoods. New roads moved residential areas farther away from the CBD.

Commercial uses inherently provide more activities during their longer operating hours, more traffic congestion, noise, lighting and litter. The Neighborhood Unit Concept provides for commercial areas, which are the most incompatible with residential uses. Thus, the concept places commercial areas the farthest distance away from the lower density residential uses. Every community must have sufficient commercial areas to support the needs of its citizens. The key questions to communities are the location and timing of these commercial activities. However, designing and implementing a Neighborhood Unit Concept allows all of the necessary land uses to harmoniously support each other.



Planned Unit Development

Another development concept often promoted by the Planning profession is the Planned Unit Development or PUD. This type of development is a type of land regulation that promotes large scale, unified land development with a mixture land uses and dwelling types. This concept emerged during the late 1970s to encourage the mixture of densities and uses to utilize less land area and support pedestrian and transit oriented transportation. This concept is very

much like the newest trend in planning known as “smart growth”. This concept allows limited commercial areas within the traditional residential neighborhoods. Additionally, the PUD supports the mixture of higher residential uses such as townhouses, duplexes and retirement centers adjacent to single family detached dwelling units with shared recreational facilities. These planned neighborhoods are often gated for higher security and have dominant homeowners’ associations who establish rules for users and maintenance of the common, shared areas.

Lawton has a PUD ordinance to allow for these smaller, planned neighborhoods but few developers have taken advantage of this type of development until recently. The emerging trend seems to be that residential subdivisions should offer a variety of lot sizes and development alternatives. Several recent subdivision submissions have included the mixture of densities. Lawton should examine its PUD ordinance for needed revisions to accommodate this changing market. Additionally, Lawton can provide better information to the development community on the advantages of using the PUD as a development tool. The PUD is very supportive of using only the smallest portion of land urbanization. Its compact design also supports the minimum extension of infrastructure and services. The PUD’s emphasis on limited shopping or services within the neighborhood lessens the burden upon the arterial street network. In summary, the PUD is economical both to the development industry and the community and its use should be encouraged. Lawton currently has three PUD’s.

Smart Growth

Smart, efficient development decision save taxpayers money and allow governments to stretch their dollars farther, even as they make it possible for households to spend less on expenses such as transportation. And there is mounting evidence that metro areas with smart-growth attributes - healthy central cities and inner suburbs, excellent transportation networks, vibrant centers and neighborhoods - have stronger economies.

Overinvesting in new sprawl developments, under-investing in maintenance, repair and upgrading of infrastructure in existing areas is economically unsustainable in the long haul. When economic vitality departs existing areas for sprawling new locales, remaining taxpayers suffer a double whammy declining services and rising tax rates, even as residents of the receiving areas see their taxes rise to accommodate new growth.

PRINCIPLES OF SMART GROWTH

- Mix land uses.
- Take advantage of compact building design.
- Create range of housing opportunities and choices.
- Create walkable neighborhoods.
- Foster distinctive, attractive communities with a strong sense of place.
- Preserve open space, farmland, natural beauty and critical environmental areas.
- Strengthen and direct development towards existing communities.
- Provide a variety of transportation choices.
- Make development decisions predictable, fair and cost effective.

CHAPTER 8 - GOALS, POLICIES AND RECOMMENDATION

CHAPTER 9 - CONCLUSION

H:\2030 Land Use\Chapters\Chapter Composite\allchapters.wpd

September 5, 2007

APPENDIX A: EXPLANATION OF AMENDMENT TO THE 2030 LAND USE PLAN

PURPOSE

The purpose of the 2030 Land Use Plan is to provide assistance to the City Planning Commission and the City Council in making decisions which affect the metropolitan area. The City Charter provides for the development and administration of a comprehensive land use plan which will provide for the careful and thoughtful integration of residential, commercial, industrial, public, and other elements to achieve and preserve social purposes, economic values, and aesthetic quality of the neighborhoods and of other areas of the city. The 2030 Land Use Plan sets forth the policy recommendations of the City Planning Commission to bring about orderly coordinated, physical development in accordance with the present and future needs of the community. Oklahoma Statutes grant municipalities the power to establish or amend zoning districts which regulate the use, placement, spacing, and size of buildings and land. Zoning regulations are made in accordance with a comprehensive plan, and the 2030 Land Use Plan is a part of the comprehensive plan.

PROCEDURE

1. Applications for an amendment to the 2030 Land Use Plan and/or rezoning are available in the Planning Division.
2. Application shall consist of:
 - a. Completed application form(s). (All questions must be answered to process the application(s).)
 - b. Certified ownership list of property owners within 300 feet of the request.
 - c. Fee as set out in Appendix A, Schedule of Fees and Charges, Lawton City Code.
 - d. A basic site plan is required for any rezoning to a district other than A-1, I-2, RE, and R-1, and a detailed site plan is required for any rezoning for tracts less than five acres or adjacent to any existing RE or R-1 or any single-family residential use.
3. The Planning Department will prepare the location map showing the requested area and the area 300 feet around the requested area. This location map will be given to the applicant.

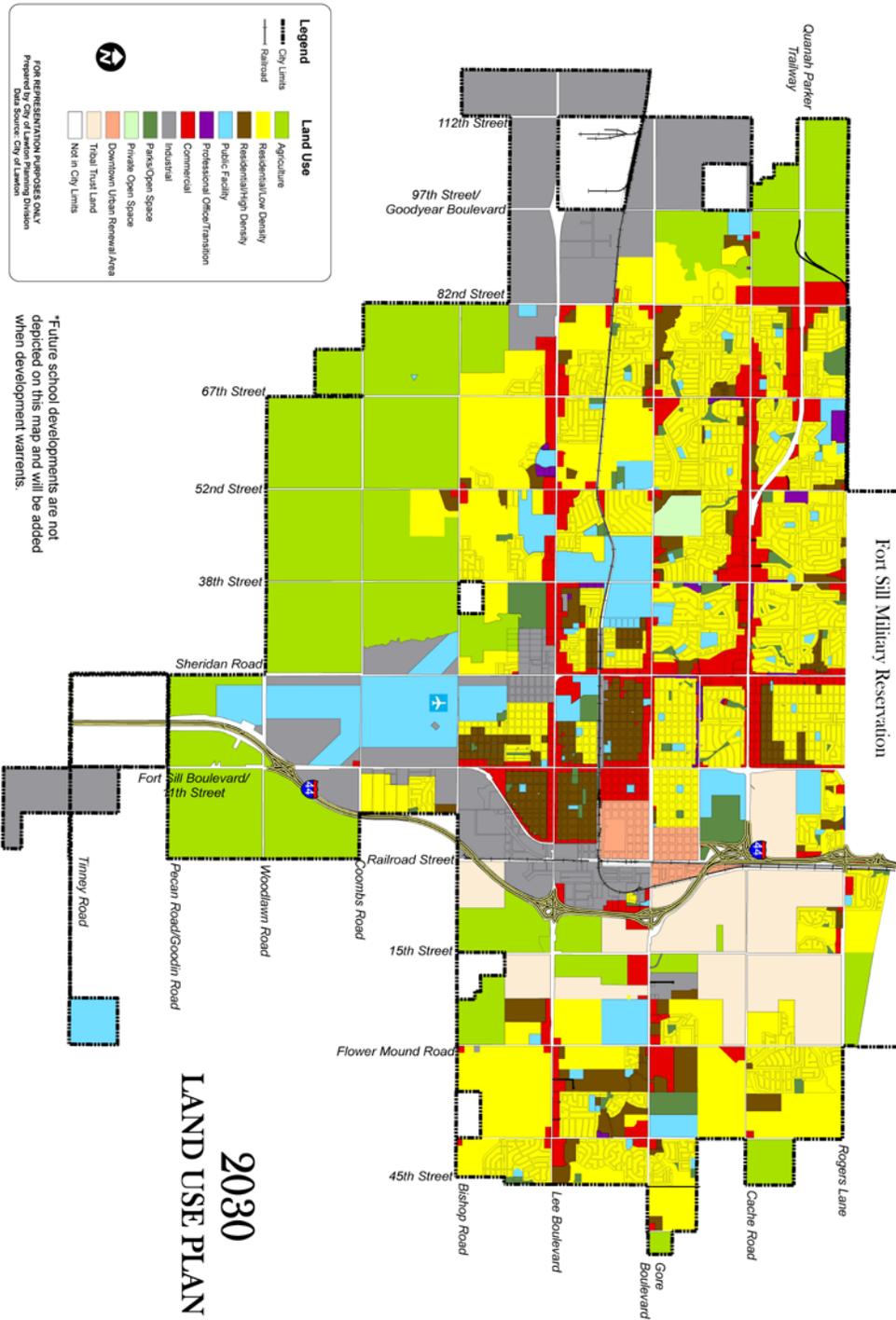
4. The applicant will take the map to a bonded abstractor, registered professional engineer, registered land surveyor, or attorney who will furnish a certified list of property owners within the notification area. The fee for the certified ownership list will be the responsibility of the applicant.
5. Applications for an amendment to the 2030 Land Use Plan and/or rezoning shall be filed with the Planning Division.
6. Once the applicant has submitted the completed application forms, certified ownership list of property owners within the notification area, site plan, and filing fee, the Planning Staff will schedule the public hearing before the Planning Commission. Oklahoma Statutes and the Lawton City Code require letters be mailed at least 20 days prior to the Planning Commission meeting date to property owners within the notification area advising them of the public hearing to consider the request and notice of public hearing be published in *The Lawton Constitution* at least 15 days prior to the Planning Commission meeting date.
7. At the Planning Commission meeting the Planning Staff will provide background information concerning the request and a recommendation for approval or disapproval. The Chairman will open the public hearing to allow anyone to speak for or against the request.

Once the public hearing is closed, the Planning Commission will make a motion to recommend approval or disapproval of the request to the Lawton City Council. A letter will be sent to the applicant stating the Planning Commission's recommendation.

8. After the Planning Commission has made its recommendation to the City Council, the Planning Staff will advertise a second public hearing before the City Council. Oklahoma Statutes and Lawton City Code require letters be mailed at least 20 days prior to the City Council meeting date to property owners within the notification area advising them of the second public hearing to consider the request and that an additional notice of public hearing be published in *The Lawton Constitution* at least 15 days prior to the City Council meeting date.

9. Any petitions for or against a request must be submitted to the City Clerk at least three days prior to the City Council meeting. If a petition against a request is submitted to the City Clerk at least three days prior to the City Council meeting signed by owners of at least 20% of the property in the requested area or by the owners of at least 50% of the property within 300 feet of the requested area, the Council must have a favorable vote of three-fourths of the members to approve the change of zoning.
10. At the City Council meeting the Planning Staff will provide background information on the request and the Planning Commission recommendation. The Mayor will open the public hearing to allow anyone to speak for or against the request. Once the public hearing is closed, the City Council will make a motion to approve or disapprove the request. A letter will be sent to the applicant stating the City Council's action.
11. If the City Council approves the request, the Official Zoning Map and/or Land Use Plan Map will be amended to reflect the new zoning and/or land use classification.
12. If the City Council denies a rezoning request or if a rezoning request is withdrawn by the applicant after the Planning Commission has held a public hearing on the request, there is a 6 month waiting period before another request can be submitted for the property. The 6 month waiting period can be waived if: 1) the requested rezoning is to a more restrictive zoning classification than originally requested; 2) the applicant submits documentation showing the public interest will be served by approval of requested change or significant changes have occurred since the prior application, i.e., the granting of a rezoning or use permitted on review of a more intensive nature for property within 300 feet of the request, a change in classification to arterial of a street abutting the property in question; or 3) the new applicant is a party at interest who demonstrates that his interest was not in any way considered in the previous application.
13. The legislative action of the City Council is final unless appealed to a court of competent jurisdiction.

APPENDIX B: LAND USE MAP

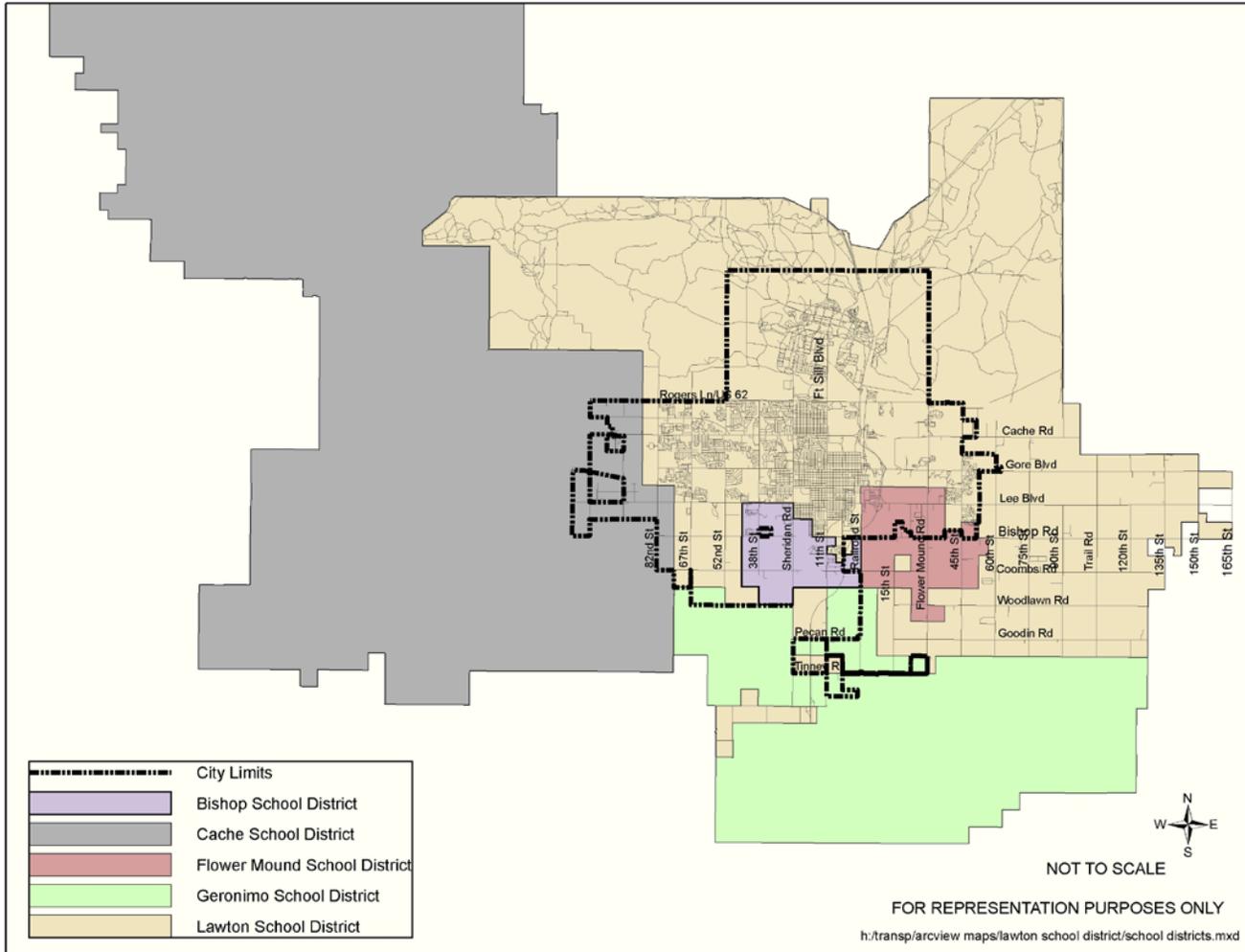


APPENDIX C: APPROVED SUBDIVISIONS BETWEEN 2000 AND 2005

SUBDIVISION NAME	LOTS	ACREAGE	LOCATION
Rolling Hills Dev. Pt. 3E	27	6.624	Between I-44 & 52nd St
Enclave Pt. 1	31	9.25	Between I-44 & 52nd St
MacArthur Park Add. Pt. 7	23	7.03	East of I-44
Pebble Creek Pt. 3	26	8.11	East of I-44
Pebble Creek Pt. 2C	19	4.98	East of I-44
Kingsbriar Pt. 4	66	17.97	East of I-44
Eastlake Pt. 1	67	17.58	East of I-44
Turtle Creek Townhouse	16	3.44	East of I-44
Yorkshire Estates	4	24.137	East of I-44
Wvatt Acres Pt. 12	59	22.84	West of 52nd St
Brentwood Pt. 2B	32	9.95	West of 52nd St
Brentwood Pt. 2C	22	5.62	West of 52nd St
Brentwood Pt. 2D	20	5.39	West of 52nd St
Brentwood Pt. 3A	25	6.67	West of 52nd St
Wvatt Acres Pt. 13	9	4.54	West of 52nd St
Wvatt Acres Pt. 14	23	8.95	West of 52nd St
Silver Creek Patio Homes	29	7.25	West of 52nd St
TOTAL LOTS	498		

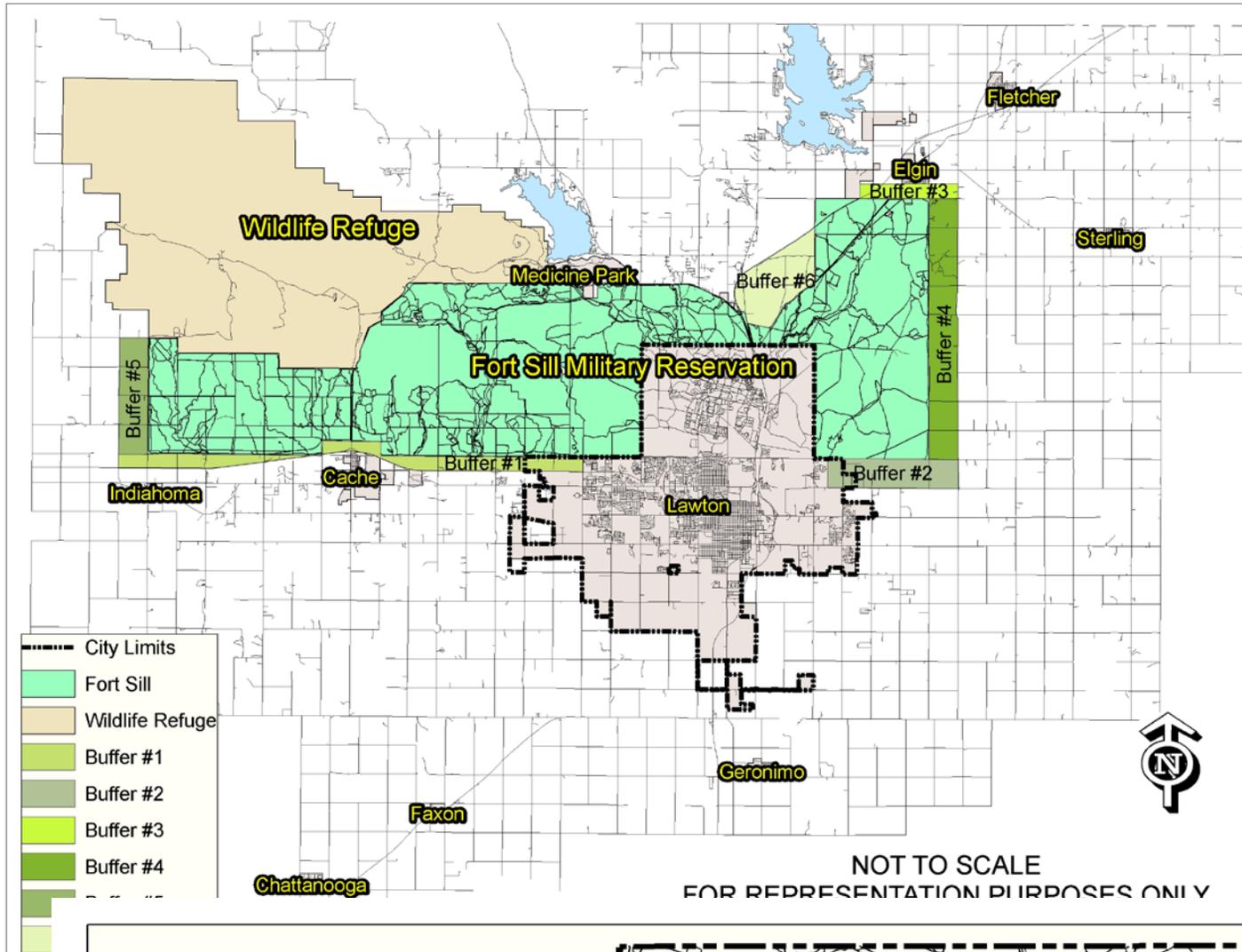
Source: City of Lawton Planning Division

APPENDIX C: APPROVED SUBDIVISIONS BETWEEN 2000 AND 2005



APPENDIX D: LAWTON PUBLIC SCHOOL DISTRICT I-8 BOUNDARY

APPENDIX E: LAWTON PUBLIC SCHOOL LOCATIONS



Lawton Public Schools



APPENDIX F: FORT SILL BUFFER ZONES

APPENDIX G: APARTMENT SURVEY

NAME	EFFICIENCY	1BED	2BED	3BED	4BED	TOTAL
Abba Courts						0
Amber						62
Apple Run			48	28		76
Arbor		8	16			24
Ashley						32
Bellaire		42	86	64	18	210
Bentley Heights		24	1			25
Brockland		22	0		0	22
Cambridge Estates		61				61
Candlewood		47	39			86
Carriage		64	78	16		158
Carsons Rentals						0
Columbia Square			14	50		64
Crosby Park		128	88			216
Crystal Point		24				24
Deer Park			76			76
Elmwood		24	1			25
Embassy						80
Falcon Ridge		24				24
Fox Valley			110	12		122
Garret's Landings		16	72	4		92
Holiday Plaza						51
Hollybrook		20				20

2030 LAND USE PLAN - APPENDICES

NAME	EFFICIENCY	1BED	2BED	3BED	4BED	TOTAL
Invitational		142	81	6		229
Irwin Courts		50	6			56
Jacklyn			40			40
La Villa						0
Landings		30	18			48
Lawton Pointe						72
Lawtonian		40				40
Lycarolan		29				29
Meadow Brook Sq. & Melrose		80	50			130
Meadow Brook Villa						73
Montego Bay	40	40	26	4		110
Oak Hill		64	40			104
Oak Park		32	176	64		272
Paragon		31	36			67
Parkview						0
Pecan Valley		50	50			100
Pepper Tree						57
Pine Terrace		24	32	4		60
Pinewood Village		70	32			102
Raintree		152	12			164
Regency Arms		96	56			152
Sanders Heights			12	28	4	44
Savannah House						92
Sheridan Square	56	80	140			276
Sher-Lin	41	16	23			80
Stratford Square			48	12		60

2030 LAND USE PLAN - APPENDICES

NAME	EFFICIENCY	1BED	2BED	3BED	4BED	TOTAL
Summit			64		1	65
Summit Ridge		56	56	56		168
The Gardens						92
Timbers	31	61	44			136
Twin Oaks East & West			36			36
Victoria Square		110	8	8		126
Warwick Place						0
Willow Park	40	80	40			160
Winchester		16	118	8		142
Woodland Arms		8	26	2		36
	208	1861	1899	366	23	4968

APPENDIX H: AFFORDABLE HOUSING TABLES

FAMILY INCOME 2005

LOCATION	AREA MEDIAN INCOME (AMI) ¹			MAXIMUM AFFORDABLE ² MONTHLY HOUSING COST BY % OF FAMILY AMI			
	ANNUAL	MONTHLY	30% of AMI ³	30%	50%	80%	100%
Oklahoma	\$48,114	\$4,009	\$14,434	\$361	\$601	\$962	\$1,203
Lawton	\$45,650	\$3,804	\$13,695	\$342	\$571	\$913	\$1,141

Source: National Low Income Housing Coalition

FAIR MARKET RENTS (FMR)⁴ BY NUMBER OF BEDROOMS

LOCATION	ZERO	ONE	TWO	THREE	FOUR
Oklahoma	\$409	\$447	\$548	\$741	\$823
Lawton	\$366	\$394	\$496	\$725	\$871

Source: National Low Income Housing Coalition

INCOME NEEDED TO AFFORD

LOCATI ON	ANNUAL INCOME				
	ZERO- BEDROO M FMR	ONE- BEDROO M FMR	TWO- BEDROO M FMR	THREE- BEDROO M FMR	FOUR- BEDROO M FMR
Oklahom a	\$16,349	\$17,869	\$21,935	\$29,654	\$32,938
Lawton	\$14,640	\$15,760	\$19,840	\$29,000	\$34,840

Source: National Low Income Housing Coalition

RENTER INCOME

LOCATION	HOUSEHOLD INCOME (2005)				RENTER WAGE (2004)	
	ESTIMATED RENTER MEDIAN HOUSEHOLD INCOME ⁵	MONTHLY RENT AFFORDABLE AT RENTER MEDIAN	INCOME NEED TO AFFORD TWO-BEDROOM FMR AS % OF RENTER MEDIAN	ESTIMATED % OF RENTERS UNABLE TO AFFORD TWO-BEDROOM FMR ⁶	ESTIMATED MEAN RENTER HOURLY WAGE ⁷	MONTHLY RENT AFFORDABLE AT MEAN RENTER WAGE
Oklahoma	\$25,623	\$641	86%	43%	\$9.48	\$493
Lawton	\$27,559	\$689	72%	36%	\$8.51	\$442

Source: National Low Income Housing Coalition

HOUSING WAGE

LOCATION	HOURLY WAGE NEEDED TO AFFORD (@ 40 hr/wk)				
	ZERO-BEDROOM FMR	ONE-BEDROOM FMR	TWO-BEDROOM FMR	THREE-BEDROOM FMR	FOUR-BEDROOM FMR
Oklahoma	\$7.86	\$8.59	\$10.55	\$14.26	\$15.84
Lawton	\$7.04	\$7.58	\$9.54	\$13.94	\$16.75

Source: National Low Income Housing Coalition

WORK HOURS PER WEEK

LOCATION	WORK HOURS/WEEK NECESSARY AT MINIMUM WAGE TO AFFORD				
	ZERO-BEDROOM	ONE-BEDROOM	TWO-BEDROOM	THREE-BEDROOM	FOUR-BEDROOM
Oklahoma	61	67	82	111	123
Lawton	55	59	74	108	130

Source: National Low Income Housing Coalition

FULL TIME JOBS NECESSARY

LOCATION	FULL-TIME JOBS NECESSARY AT MINIMUM WAGE TO AFFORD				
	ZERO-BEDROOM FMR	ONE-BEDROOM FMR	TWO-BEDROOM FMR	THREE-BEDROOM FMR	FOUR-BEDROOM FMR
Oklahoma	1.5	1.7	2.0	2.8	3.1
Lawton	1.4	1.5	1.9	2.7	3.3

Source: National Low Income Housing Coalition

CHART FOOTNOTES

2030 LAND USE PLAN - APPENDICES

1	HUD, 2005
2	“Affordable” rents represent the generally accepted standard of spending not more than 30% of income on housing costs.
3	Annual income of 30% of AMI or less is the federal standard for Extremely Low Income households. Does not include HUD-specific adjustments.
4	HUD, 2005; final as of October 1.
5	Census 2000 median renter household income, adjusted to a 2005 value using HUD’s income adjustment factor.
6	Estimated by comparing the percent of renter median household income required to afford the two-bedroom FMR to the percent distribution of renter household income as a percent of the median within the state, as measured using 2003 American Community Survey Public Use Microsample data. States are the most local level for which these data are available.
7	Estimated mean renter wage is based on BLS data and adjusted using the ratio of renter to total household income reported in Census 2000.

APPENDIX I: MILITARY ALLOWANCES AND RENT RANGES

RENT RANGES	WITHOUT DEPENDENTS	WITH DEPENDENTS	NUMBER OCCUPIED UNITS
\$450 TO \$499	E-1 to E-4		1,359
\$500 to \$549	E-5, O-1		1,304
\$550 to \$599	E-6	E-1 to E-4	930
\$600 to \$649	E-7, O-2		933
\$650 to \$699	E-8, O1E, I-2	E-5, O-1	505
\$700 to \$749	E-9, WO-3 to WO-5, O2E, O-3		540
\$750 to \$799	O-4 to O-5	E-6 to E-8, O-2, O1E to O2E	440
\$800 to \$899	O-6 to O-7	E-9, W-3 to W-5, O3E, O-3 to O-4	389

2030 LAND USE PLAN - APPENDICES

\$900 to \$999		O-5 to O-7	284
----------------	--	------------	-----

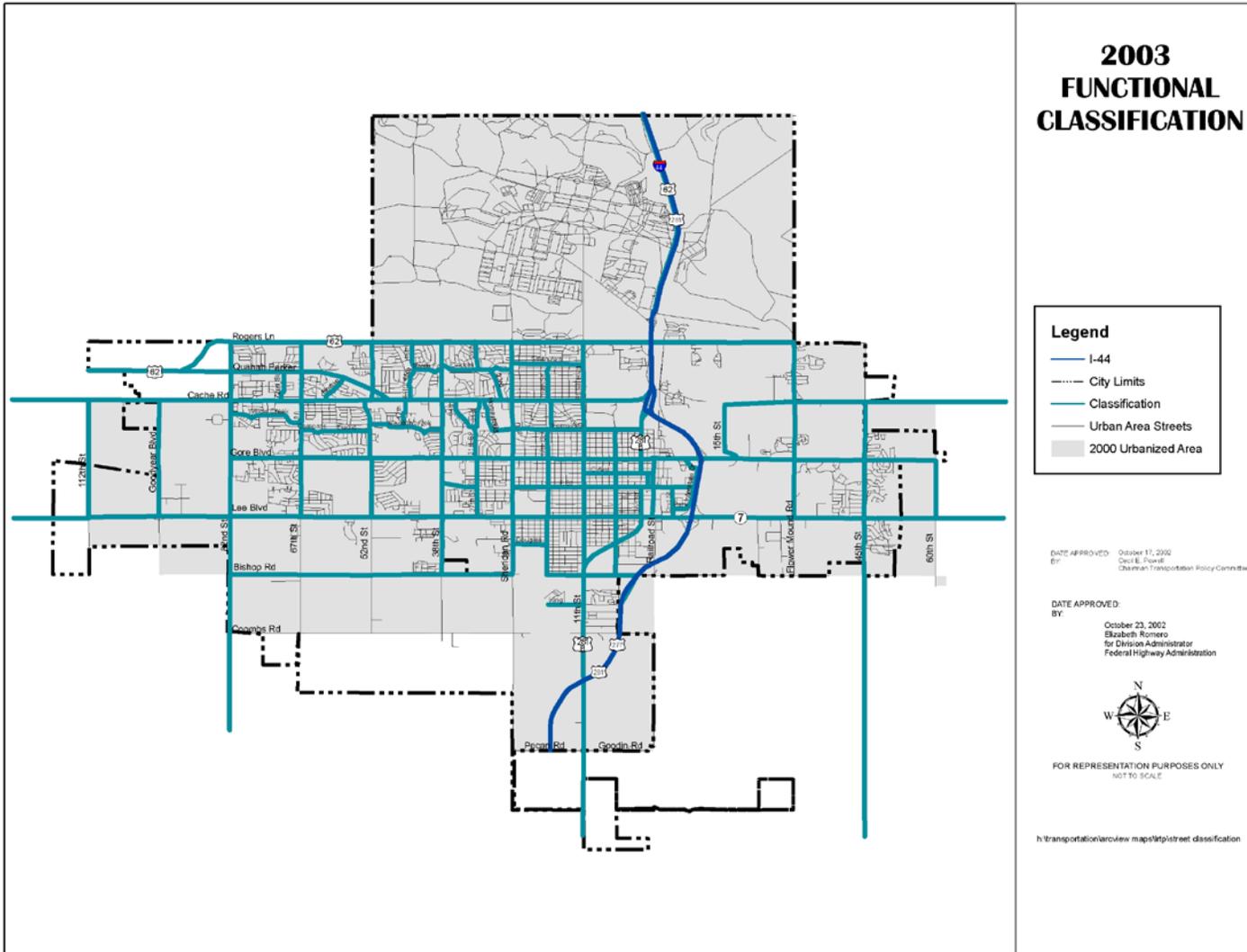
Source: U.S. Census Bureau and Housing Administration Office, Fort Sill. Defense Technical Information Center

APPENDIX J: YEAR STRUCTURE BUILT

	NUMBER OF STRUCTURES
<i>Total</i>	36,427
Built 1999 to March 2000	210
Built 1995 to 1998	1,225
Built 1990 to 1994	1,387
Built 1980 to 1989	5,196
Built 1970 to 1979	9,159
Built 1960 to 1969	8,358
Built 1950 to 1959	6,281
Built 1940 to 1949	2,432
Built 1939 or Earlier	2,179

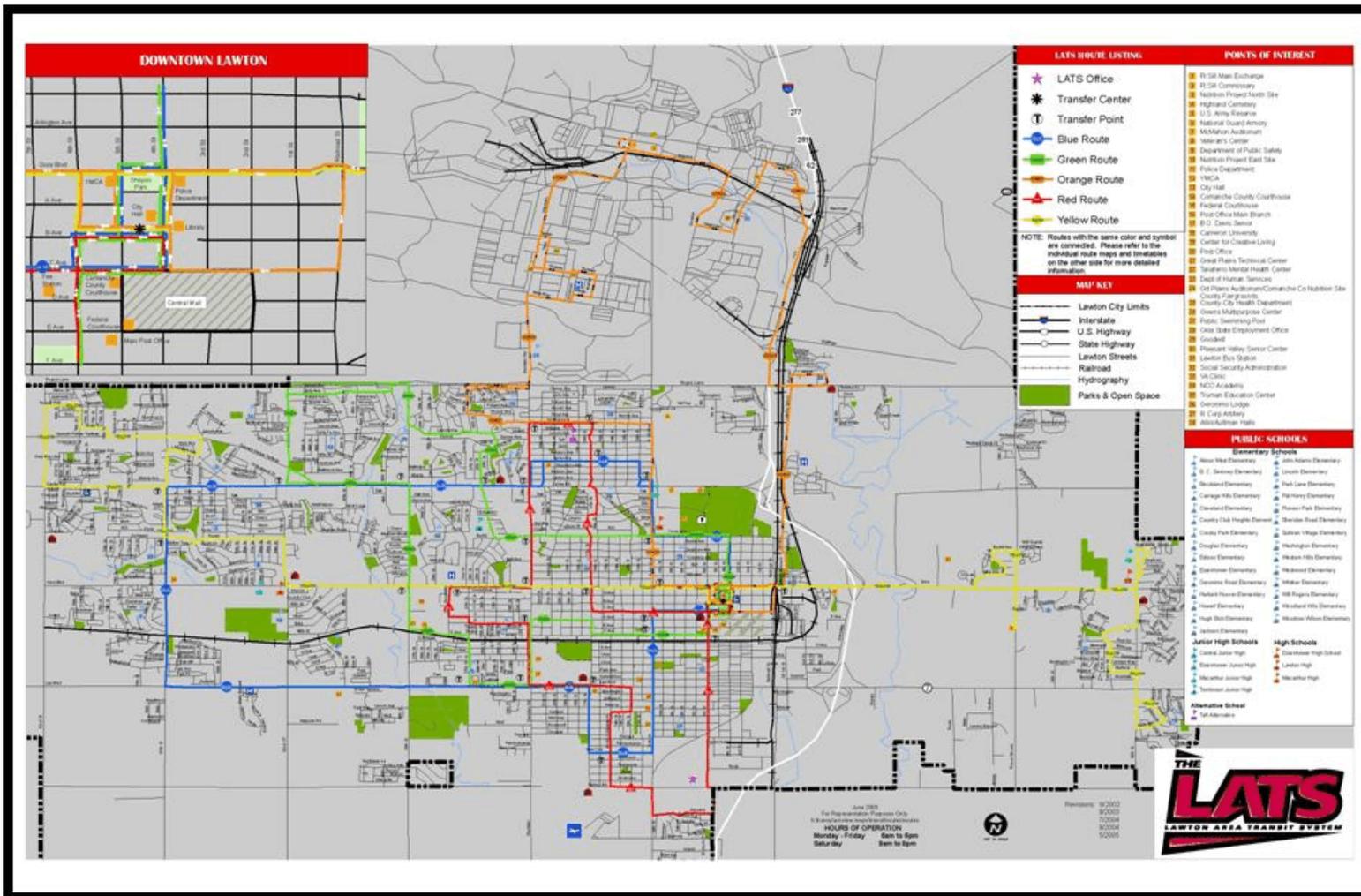
Source: U.S. Census Bureau, Census 2000

APPENDIX K: FUNCTIONAL CLASSIFICATION MAP



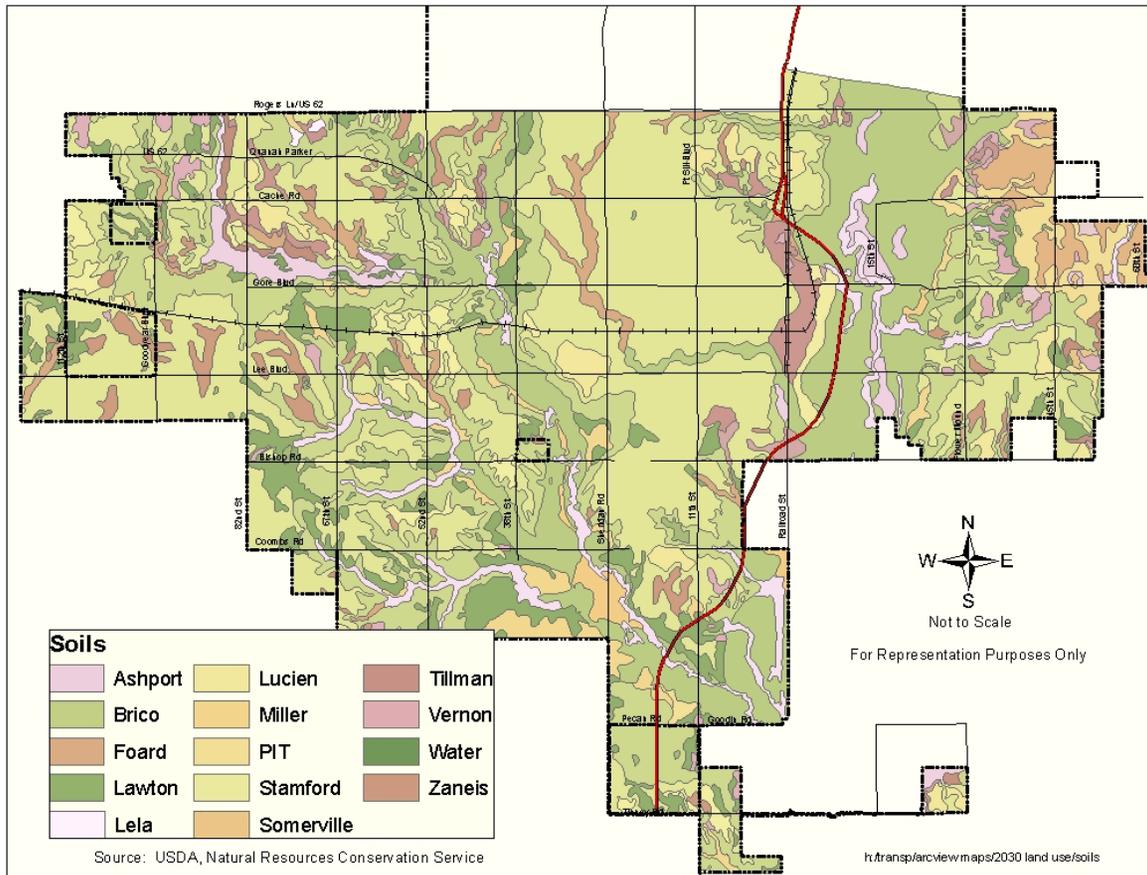
APPENDIX L: LATS ROUTE MAP

2030 LAND USE PLAN - APPENDICES



APPENDIX M: CONTOUR MAP

APPENDIX N: SOILS OF LAWTON



2030 LAND USE PLAN - APPENDICES

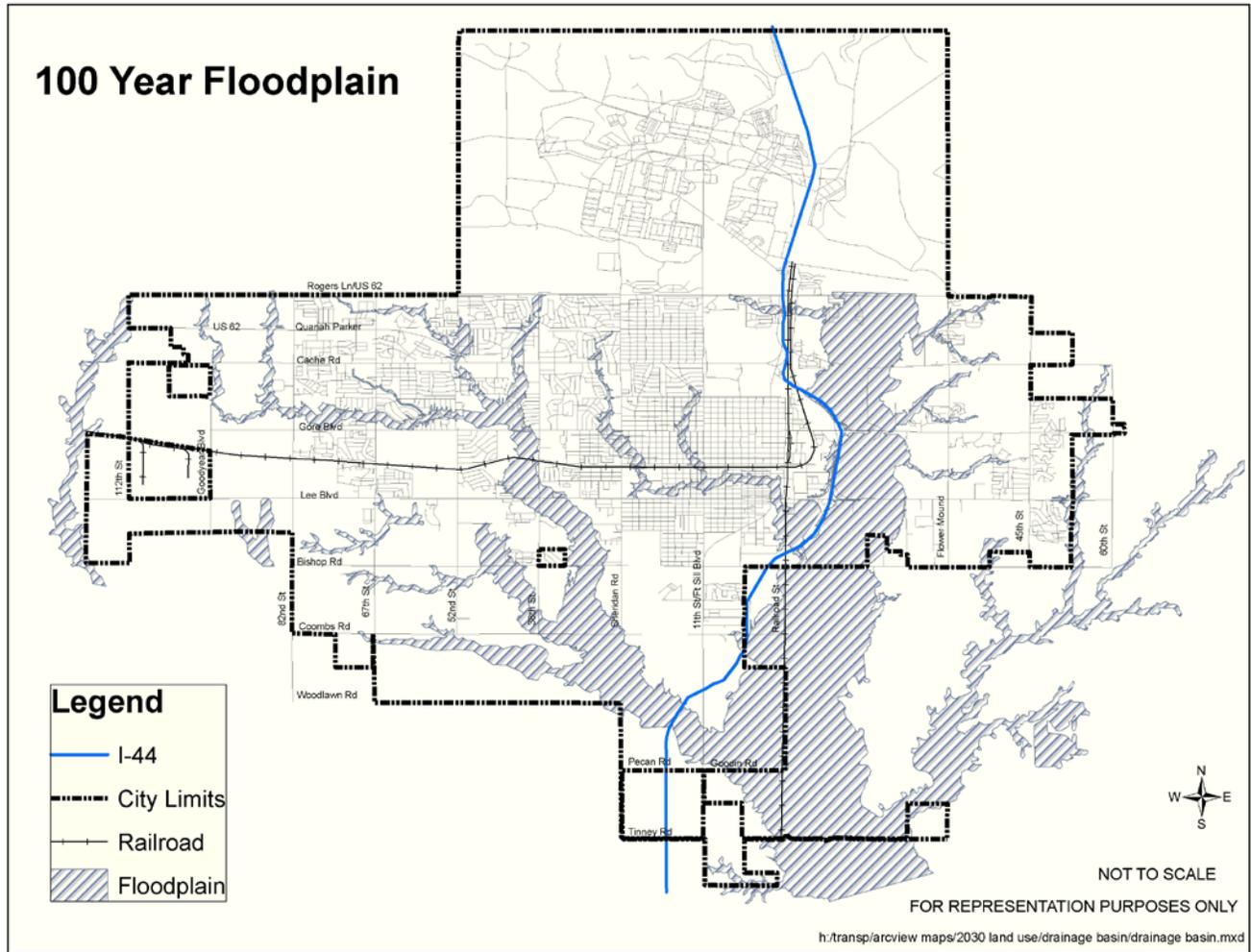
SOIL	SLOPE	LOCATION	DRAINAGE	RUNOFF	PERMEABILITY	USE & VEGETATION
Ashport	0-3%	flood plains of small streams	well drained	negligible	moderate	cultivated with alfalfa, small grains and grain sorghum
Brico	3-20%	footslopes of Wichita Mountains	well drained	medium to high	moderately slow	rangeland with mid to tall grasses
Foard	0-5%	terrace pediments & Wichita Mountains	well drained	moderate to high	very slow	small grains, cotton & native range
Lawton	0-8%	treads & risers of stream terraces that drain from Wichita Mountains	well drained	low to high	moderately slow	wheat, small grains, cotton, sorghums, alfalfa, native tall and mid grasses
Lela	0-1%	flood plain	poor	slow	very slow - rarely or occasionally flooded	cultivated with small grains, grain sorghums & alfalfa, pasture or rangeland, tall & mid grasses with hardwood trees
Lucein	1-30%	upland soils	well drained	very high	moderately rapid	rangeland, grazing, mid &

2030 LAND USE PLAN - APPENDICES

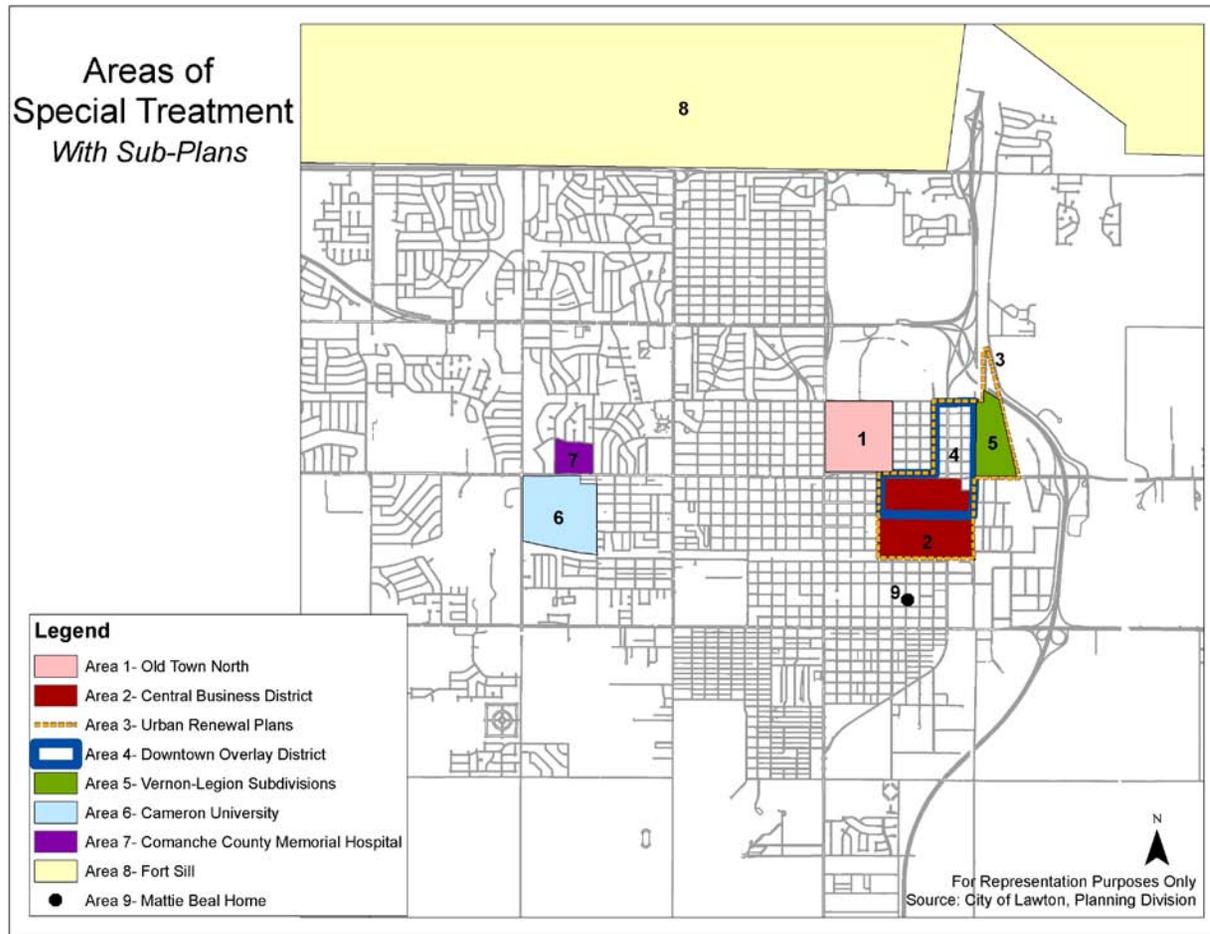
SOIL	SLOPE	LOCATION	DRAINAGE	RUNOFF	PERMEABILITY	USE & VEGETATION
						tall grasses
Miller	0-1%	nearly level flood plains	moderately well drained	high	very slow - occasionally or frequently flooded	cultivated with wheat, grain sorhum, cotton alfalfa, small percent of trees
Somerville	8-45%	N/A	N/A	N/A	N/A	N/A
Stamford	0-5%	plane, concave, convex uplands	well drained	medium	very slow	native range, small grains, short grasses
Tillman	0-5%	alluvial plains & alluvial plain remnants	well drained	medium to high	slow	cropland & native grasses
Vernon	1-45%	broad gently sloping to steep plains & escarpments	well drained	very high	very slow	rangeland
Zaneis	0-8%	nearly level to sloping convex uplands	well drained	low to high	slow	cultivated and rangeland

Source: USDA, Natural Resources Conservation Service

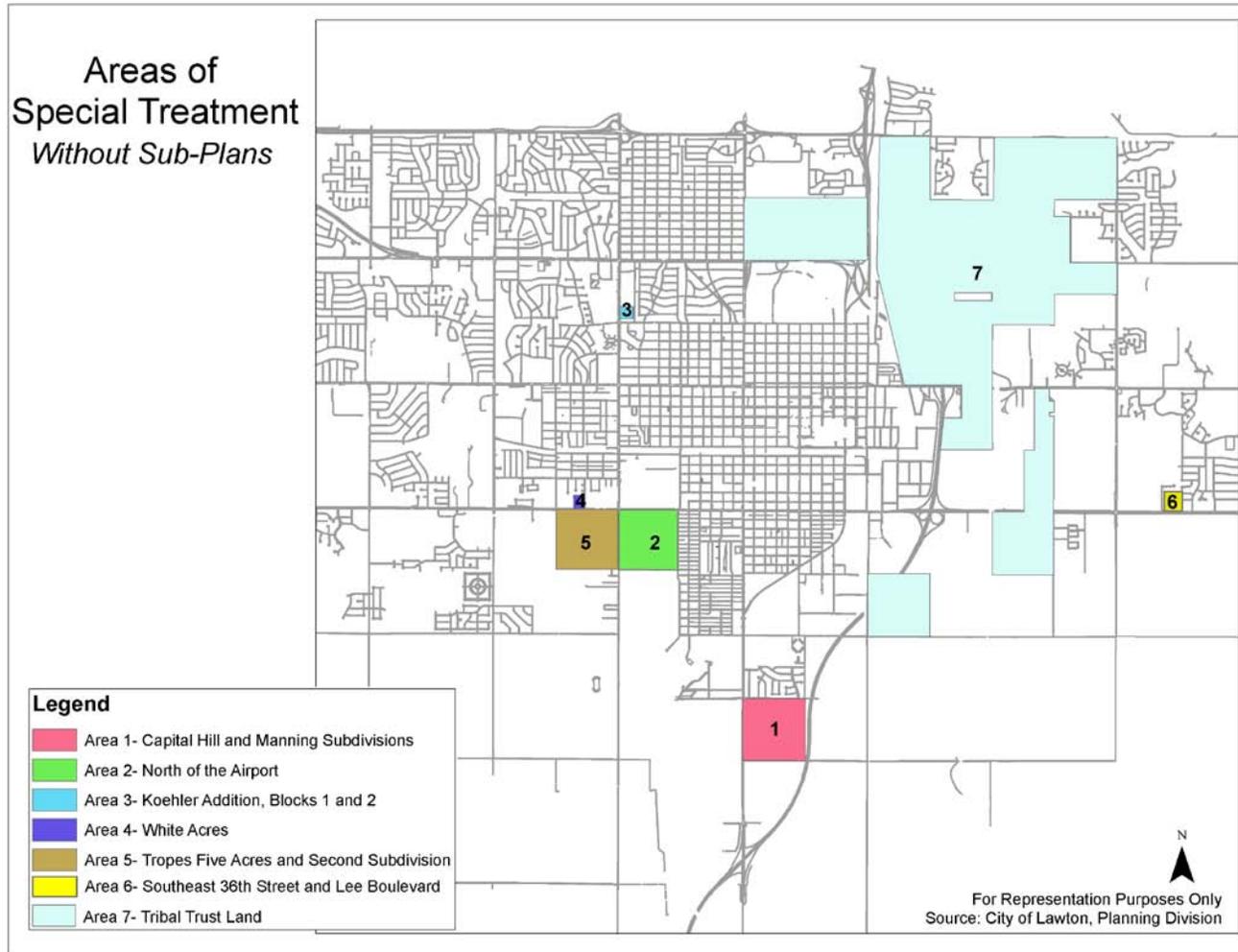
APPENDIX O: FLOODPLAIN MAP

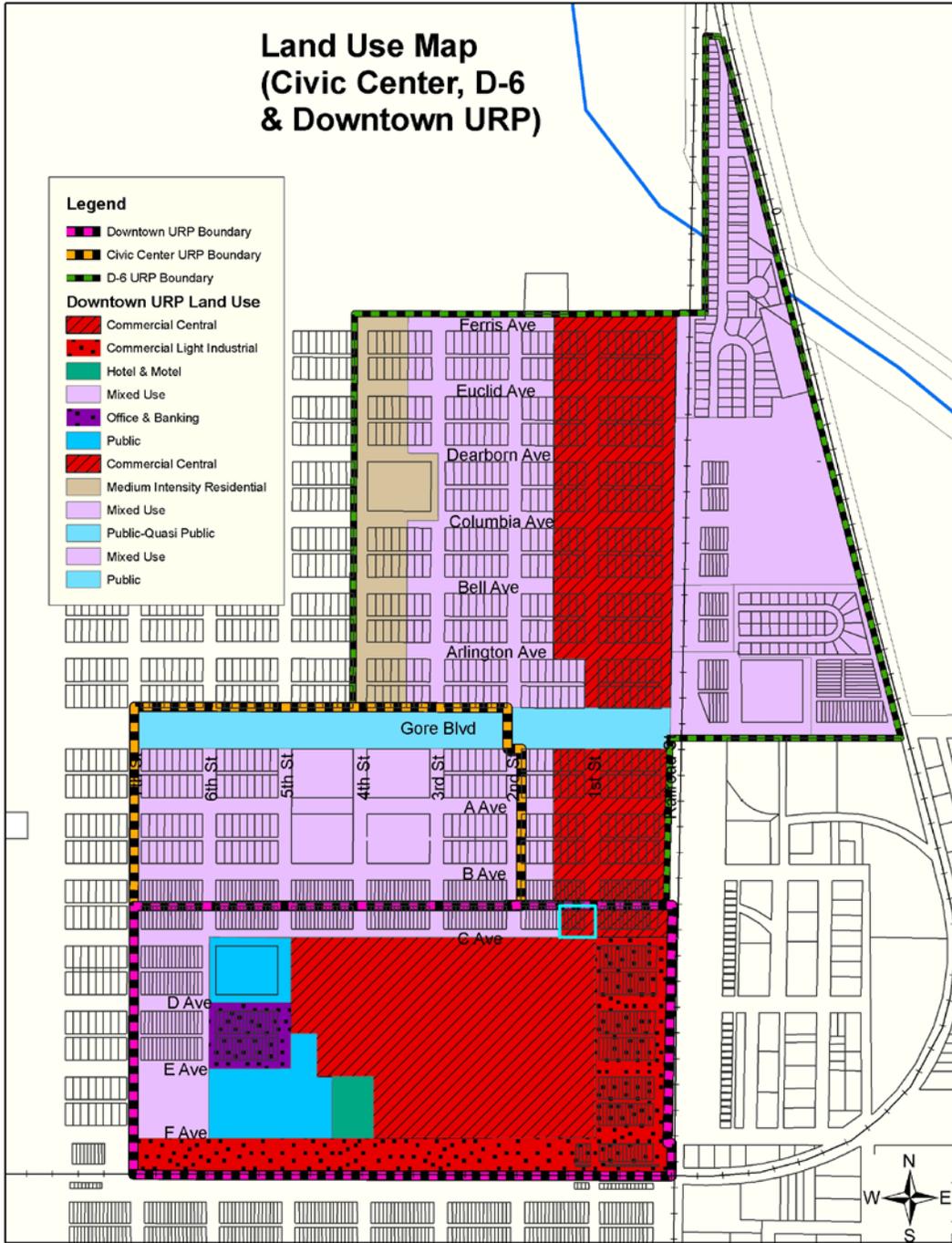


APPENDIX P: AREAS OF SPECIAL TREATMENT WITH SUB PLANS



APPENDIX Q: AREAS OF SPECIAL TREATMENT WITHOUT SUB PLANS



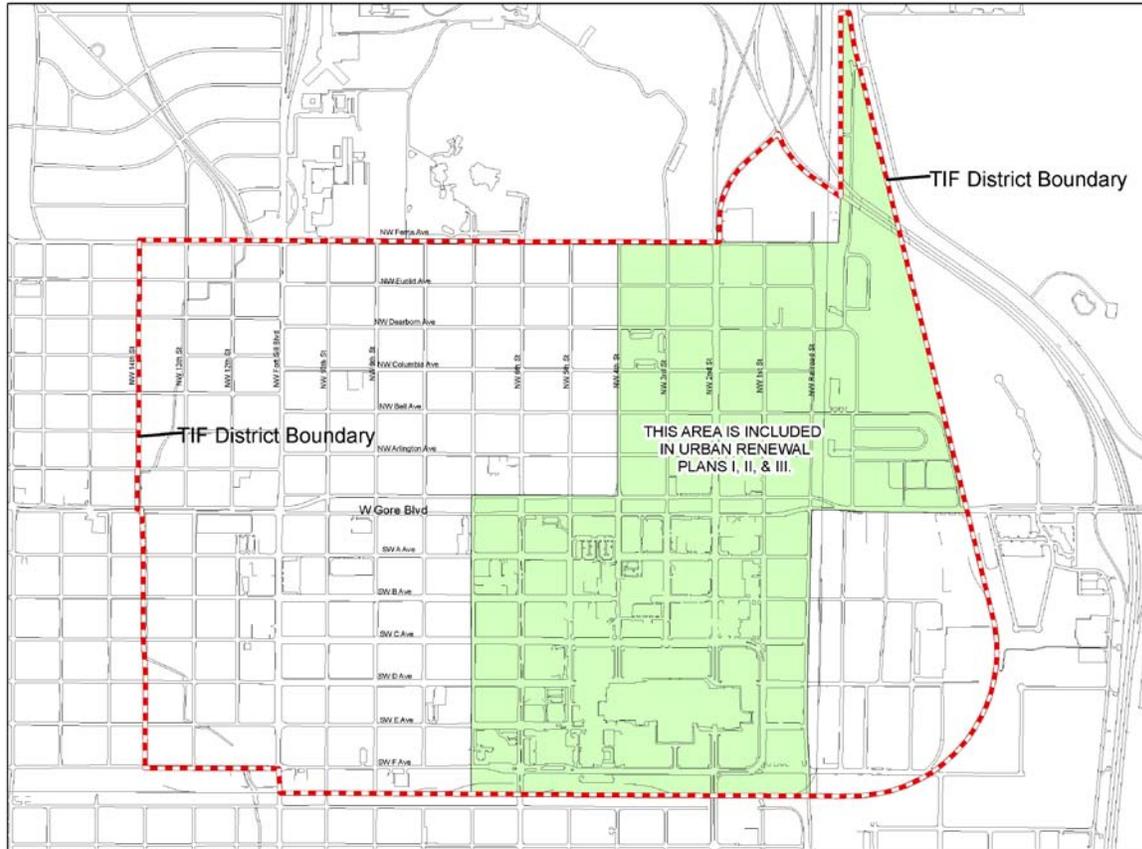


h:\transp\arcview maps\LURA\Composite\Approved Land Use.mxd

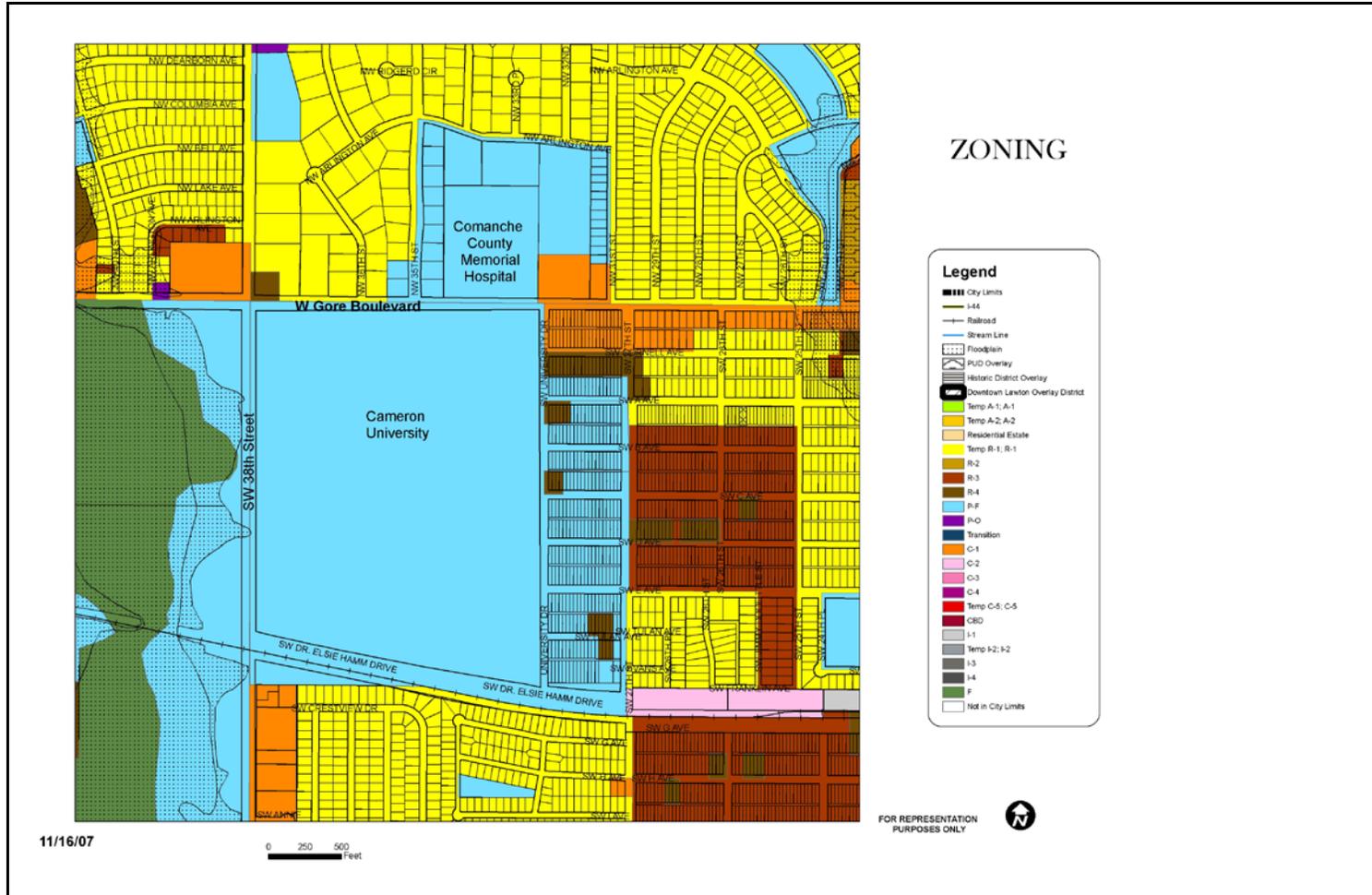
Not to Scale
For Representation Purposes Only

APPENDIX R: URP LAND USE PLAN

APPENDIX S: TIF BOUNDARY

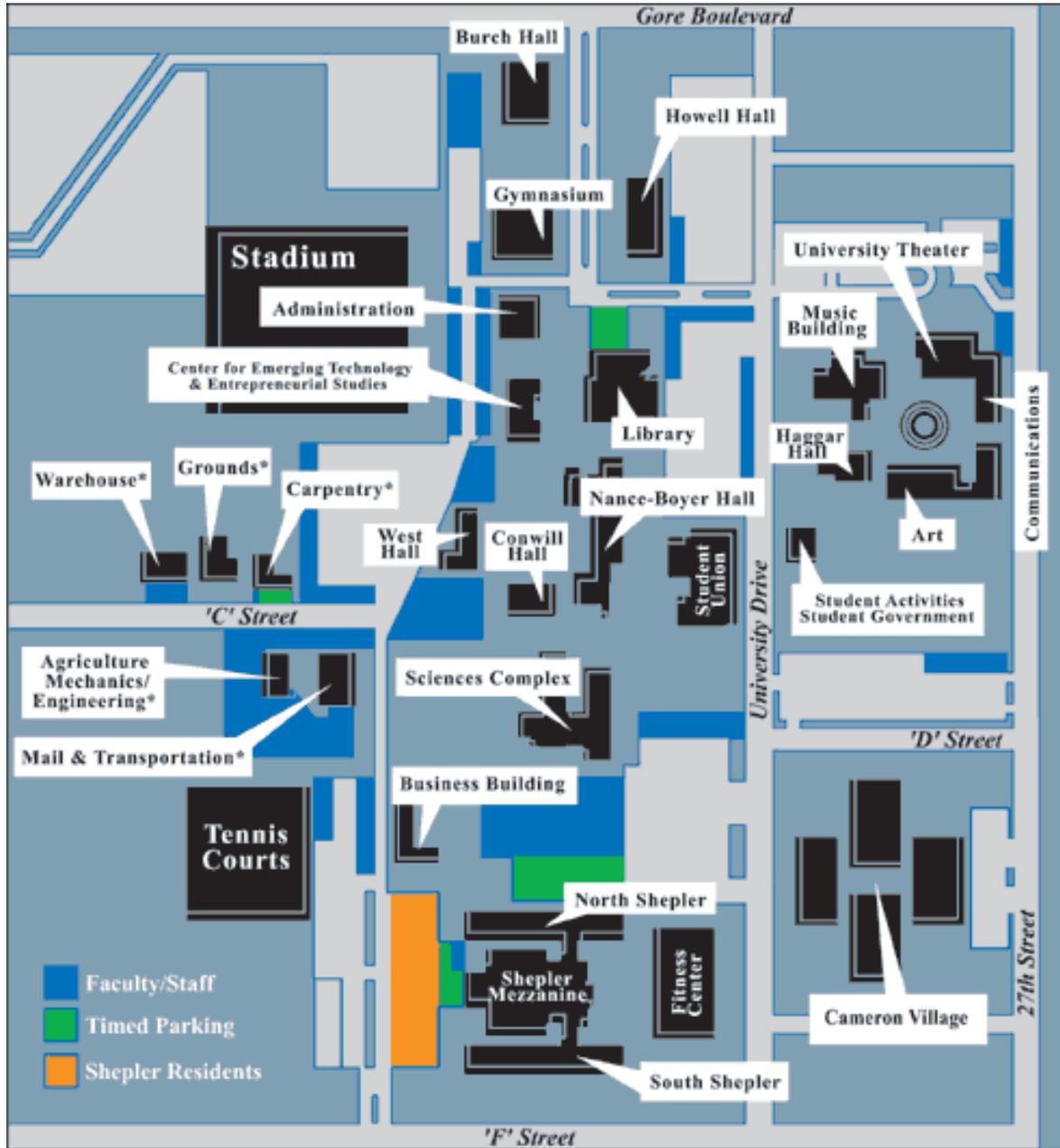


APPENDIX T: CAMERON UNIVERSITY AND COMANCHE COUNTY MEMORIAL HOSPITAL SURROUNDING ZONING DISTRICTS



APPENDICES

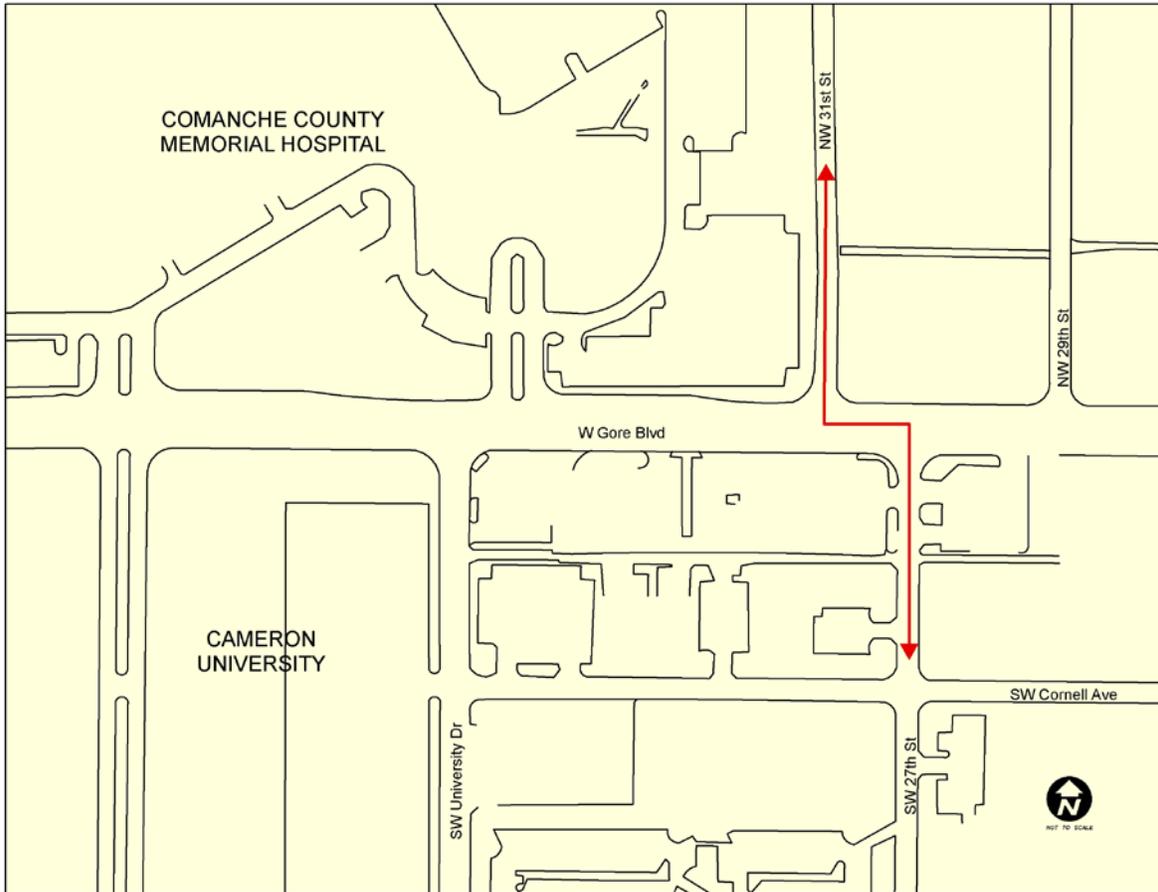
APPENDIX U: CAMERON UNIVERSITY PLAN

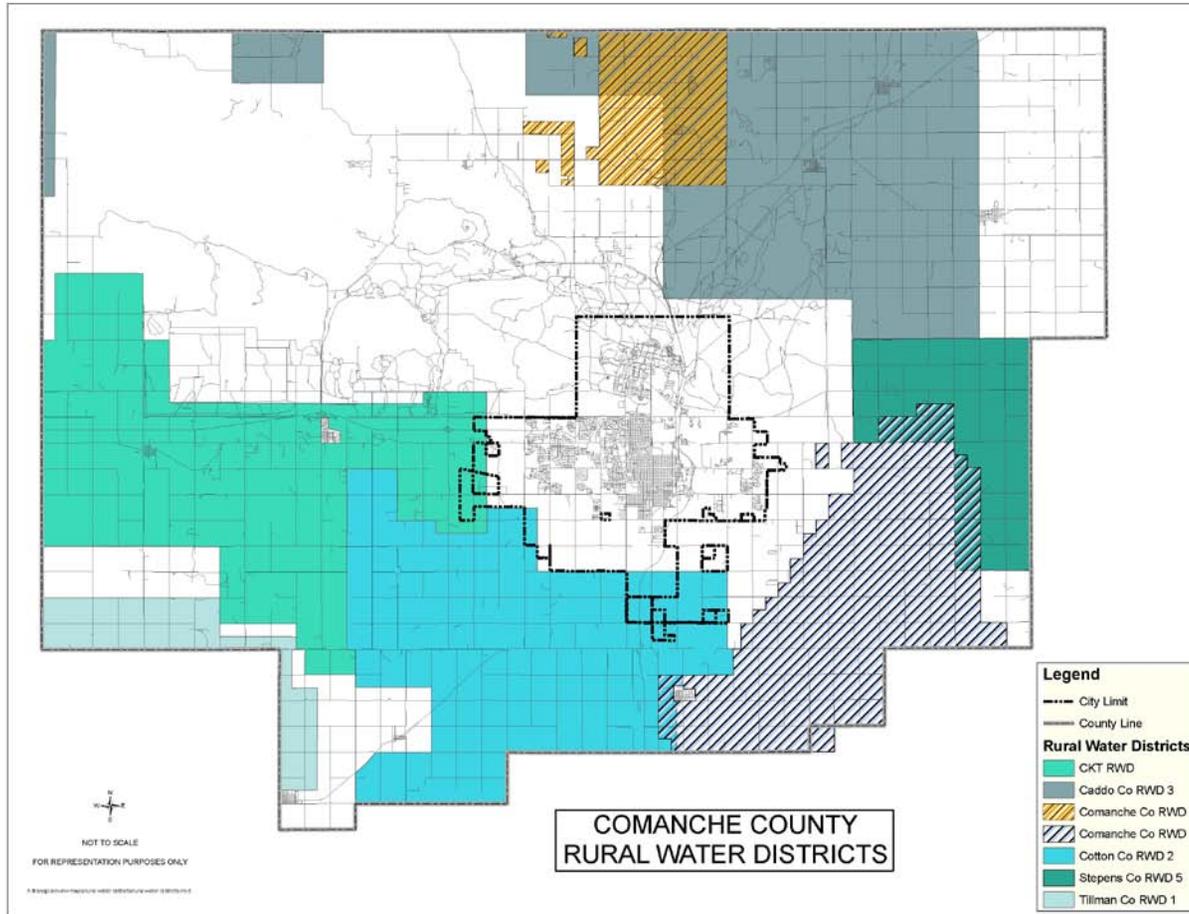


*Physical Facilities

APPENDICES

APPENDIX V: LOCATION OF STREET REALIGNMENT FOR CCMH





APPENDIX W: COMANCHE COUNTY RURAL WATER DISTRICTS

**APPENDIX X:
NEIGHBORHOOD UNIT
CONCEPT**

