

CITY OF

stillwater C³ Plan

Comprehensive Plan 2030



COMPREHENSIVE CONTINUOUS COOPERATIVE

C³ Plan

*City of Stillwater
Comprehensive Plan*

Adopted April 1, 2013

Prepared by
City of Stillwater
Development Services Division

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Chapter 1

INTRODUCTION

Oklahoma Statutes
Title 11.
Chapter 1
Article Article XLIII
Section 43-103

Municipal regulations as to buildings, structures and land 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 the general welfare, including the peace and quality of life of the district;
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; or
8. To facilitate the adequate provision of transportation, water, sewerage, schools, parks and other public requirements.

The regulations shall 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 governing body shall provide the manner in which regulations, restrictions and district boundaries shall be determined, established and enforced, and amended, supplemented or changed

Oklahoma Statutes gives the Planning Commission authority “to prepare from time to time plans for the betterment of the municipality as a place of residence or for business”. The Stillwater 2030 C³ Comprehensive Plan is the document that sets the context for future growth and development in Stillwater. The Comprehensive Plan consists of a series of interrelated chapters, or elements, analyzing the community's future land use, transportation, parks and recreation, and other infrastructure and environmental issues, needs, challenges, and opportunities.

The Comprehensive Plan is important because it sets the overall policy context for future growth and development for or throughout Stillwater. The Comprehensive Plan will address growth pressures in the city, future public facilities and service needs, preservation of community character and natural resources, urban design and architectural standards, the fiscal impacts and responsibilities of new development, and other important issues affecting the quality of life and character of the city. Specifically, the Comprehensive Plan will include goals, guiding principles, and policies to:

- Guide future growth and development within the city and immediate adjacent areas (such as general location and allowable densities and intensities of land uses)
- Discourage the proliferation of urban sprawl
- Protect vital natural resources, such as environmentally sensitive lands and aquifer recharge areas
- Enhance community character through architectural and design standards
- Identify needed public services and revenues based on projected population and employment growth
- Meet community expectations regarding other important issues, such as sidewalks, streetlights and housing types.

The Comprehensive Plan is a C³ Plan statement about the future of the City. The 2030 Plan is a positive plan that supports Stillwater's continued growth and development but is tempered by the people's demand that Stillwater keep its small town feel and high quality of living and natural environment.

The Plan is intended to be a dynamic document that will change with the needs of the City. It is expected that this plan will be reviewed in three to five years.

The City Council appointed 14 people from the community to serve on a committee to guide the content of the Plan. This committee worked for approximately two years attending committee and community meetings to complete the Stillwater's C³ Plan. The committee members are:

Marla Ruark, Stillwater Public Schools
David O. Thomas, Business Owner
Kay Heath, Vice President BancFirst
Doug Emde, Owner ERA Emde & Associates
Kent Sampson, Director of Campus Life and Associate
Director of the Student Union, OSU
Rusty Kraybill, Builder/Developer
Nigel R. Jones, University Architect, OSU
Tom Williams, OSU Bus Transit Driver/Former City
Councilman
Jerry W. Rackley, Executive-in-Residence, Spears Business
School Marketing Department, OSU
Ron Beer, Citizen, Vice President for Student Services
Emeritus, OSU
Behfar Jahanshahi, CEO/President of Interworks,
Inc
Jim Shideler
Greg L. Fox
Josh Pulver

Chapter 2

GOALS AND GUIDING PRINCIPLES

The goals and guiding principles provide guidance for the policies and related implementation guidelines of this Plan. The goals identify the general intent and parameters of the collective aspirations in creating a more desirable community and special place. The objectives identify specific action associated with the accomplishment of each goal.

1. Promote an urban development pattern that represents the sustainable use of land, energy and other resources by encouraging orderly, contiguous growth and minimizing single-use or low-density, dispersed development.

Goals

A goal is a desired result a city envisions, plans and commits to achieve the desired endpoint of development.

a. Identify land use and development practices that consider current and future economic, social, and environmental impacts, ensuring the ability of future generations to meet their own needs.

b. Establish a balance between contiguous outward growth and inward redevelopment, rehabilitation, and reuse.

c. Promote preservation of existing foliage during development process.

d. Provide opportunities for businesses, landowners, and the public sector to rehabilitate, redevelop, and revitalize the downtown.

e. Strengthen and promote downtown Stillwater as the City's primary business, office, governmental, and cultural center.

f. Recognize other retail centers that exist and coordinate development of new centers.

2. Minimize negative fiscal impacts of scattered urban development.

a. Identify areas for future expansion of the City that can be serviced and are compatible with the City and its systems.

b. Direct urban development into designated areas where basic services such as sanitary sewer, water facilities, and police/fire protection can be efficiently and economically provided.

c. Incorporate into the City, areas which are physically, socially, and economically a part of the City.

3. Promote a development pattern that provides for long-term development needs, while achieving a cost-effective and efficient provision of infrastructure and public facilities.

a. Equitably distribute the cost for urban services over the areas that enjoy the benefit of such services and among those entities responsible for extending such services.

b. Limit infrastructure where it does not meet current needs or demands.

c. Develop relationships with other utility providers.

4. Ensure that new development patterns facilitate safety, connectivity, and mobility for all modes of transportation in established and developing areas of the community.

a. Plan for a balanced, multi-modal transportation system of streets, sidewalks, bikeways and future public transit.

b. Promote street patterns that provide maximum safety and mobility for all modes of transportation, while preserving neighborhood integrity.

c. Promote greater connectivity between different neighborhoods and commercial areas by providing appropriate access for automobiles, bicycles and pedestrians.

d. Promote urban patterns and densities that will support transit.

e. Provide improved access to the downtown area for all modes of transportation, including the provision of additional public parking.

5. The City and County should foster coordination and cooperation between themselves and other state or local agencies

a. Facilitate coordinated efforts to manage rural development located outside the corporate city limits, so that it does not impede future urban growth.

Goals

Success is the progressive realization of predetermined, worthwhile goals.

Goals

It is a paradoxical but profoundly true and important principle of life that the most likely way to reach a goal is to be aiming not at that goal itself but at some more ambitious goal beyond it.

Arnold Toynbee

b. Coordinate the land use goals, objectives, and policies of the City of Stillwater and other governmental agencies.

c. Coordinate with other agencies to create early youth activities.

6. Maintain the established character of existing neighborhoods throughout the community and promote new neighborhoods that contain a variety of housing types and densities, with amenities, services and retail to ensure opportunities for a variety of household income levels.

a. Identify measures to foster the stabilization of established neighborhoods.

b. Ensure that new housing represents a variety of housing types and costs appropriate to the neighborhood.

c. Guide the development of new housing and neighborhoods to ensure connectivity, sustainability and quality of life.

d. Provide opportunities for a greater mix of housing types, which are appropriately located, scaled and designed in relation to surrounding neighborhoods.

e. Provide housing opportunities for all income levels.

f. Promote neighborhood design that allows for multi-modal connectivity between adjacent neighborhoods, commercial areas, and parks and open space.

g. Promote energy efficiency in building construction and site design.

h. Provide appropriate park space and recreation areas as a focal point in all neighborhoods.

i. Ensure continued value of properties through adoption of ordinances and/or property maintenance codes.

7. Seek greater diversity in employment opportunities for area residents to include a variety of jobs, cultural amenities, and services that make a positive contribution to the community.

a. Maintain and promote Stillwater's role as a regional center for economic, educational, health care, recreational, social, and cultural activities.

b. Guide new technological, industrial, and commercial development to appropriate areas of the community.

c. Provide opportunities for larger scale commercial developments along major corridors that are designed and scaled to be consistent with the character of the surrounding neighborhoods.

d. Encourage the development of existing and new technological/industrial sites to provide growth opportunities for current and future employers in the community.

e. Promote a strong, diversified economy that provides a wide range of employment and career opportunities for current citizens and future generations.

f. Promote home-based, information technology based, entrepreneurial, and other non-traditional business models to help establish a diversified economic base.

g. Foster public/private partnerships to help cultivate new opportunities for current and future employers in the community.

h. Retain local companies and recruit well-established new companies to the community.

8. Enhance the desirability of Stillwater as a place to live, work, play and visit.

a. Promote a high standard of design.

Guiding Principles

Chapter 1 Guiding

Principles are not fate; they are direction. They are not commands; they are commitments. They do not determine the future; they are means to mobilize the resources and energies of the community for the making of the future.

b. Guide the appearance, scale, and location of urban development to enhance community character and protect the scenic natural landscape.

c. Guide the quality of development with building and site design guidelines as appropriate.

d. Promote pedestrian friendly, human scale design within residential neighborhoods and commercial/office districts.

e. Encourage design within the gateway corridors of the community that creates an attractive, welcoming entrance.

f. Provide for adequate open space and recreational area in all future development through the preservation of the natural landscape.

g. Balance the community's desire for quality, compatible design, with private property rights and individual creative expression.

h. Identify areas within the community where building and site design guidelines would be appropriate.

i. Encourage creative, attractive commercial and multi-family design, compatible in scale and character with surrounding neighborhoods.

j. Encourage infill redevelopment that is compatible with and enhances the surrounding neighborhood character.

9. Preserve and promote local heritage that has an important part of the area's history and contributes to the overall character of the community.

a. Encourage community education efforts to facilitate a deeper understanding and appreciation for local history.

b. Identify and encourage designation of historically significant elements of the built environment.

c. Encourage the renovation and adaptive reuse of historic structures.

Reference Copy

Chapter 3

COMMUNITY PROFILE

HISTORY

David Lewis Payne and William L. Couch camped on what later became Stillwater Creek.



Source: Photographer: C. P. Wickmiller.
Robert E. Cunningham Oklahoma History
Collection

9th & Main Street, Stillwater, Oklahoma Territory, ca. 1900s



Source: Robert E. Cunningham Oklahoma
History Collection 2000.005.9.1713

Williams Hall was completed in 1901. The library was housed in a room on the first floor. Williams Hall was one of the first buildings on campus to have electricity.



Source: library.okstate.edu/about/history.htm

In 1884 Captain William L. Couch with his group called the Oklahoma Colony attempted to establish a settlement along the banks of a stream they named the Still Water just inside the future Oklahoma Territory. Couch and his companions were escorted out of the area by the military, but not before naming the settlement "The Town of Stillwater". The name stuck when the land was opened on April 22, 1889. Thousands of homesteaders rushed the land as Oklahoma Territory was officially opened and the foundation for the city of Stillwater was laid. These historic events were the basis of the City's motto "Where Oklahoma Began".

Three landowners donated the acreage needed to establish the settlement and the population quickly grew to over 600 residents. Stillwater Creek was unable to supply enough water for the growing population. Water wells were dug for drinking water and cisterns for fire protection. In 1892 a dam was constructed across Boomer Creek and the first city water system was established.

Three sawmills produced wood for construction and by August 1889 eighty buildings were completed on Main Street. Amon Swope's two-story building at Ninth and Main streets was the center of community life. A bank and grocery store were on the first floor while Sunday schools, church services, and town meetings were held upstairs.

A city government was established on June 11, 1889. In 1890 Stillwater became the county seat. Stillwater leaders named the county Payne for David L. Payne, the Boomer leader. In December 1890, the territorial legislature approved Stillwater as the land-grant college site for Oklahoma A&M, later known as Oklahoma State University.

The Eastern Oklahoma Railway brought the first train to Stillwater on March 25, 1900. Soon two cotton gins were operating near the track while nearby the town's first electric power plant was established by William Abercrombie. The power plant was run by a steam engine that could light up Main Street only for a short time. The city established its own power plant in 1905.

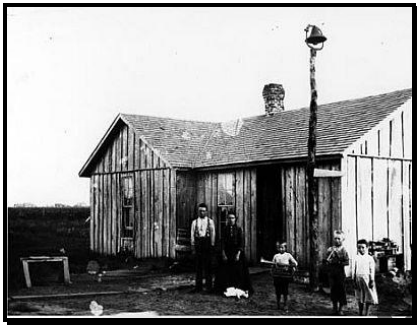
Stillwater lost some residents to the 1893 opening of the Cherokee Outlet. The community remained a quiet agricultural

Steam engine #68, first engine to arrive in Stillwater, Oklahoma Territory

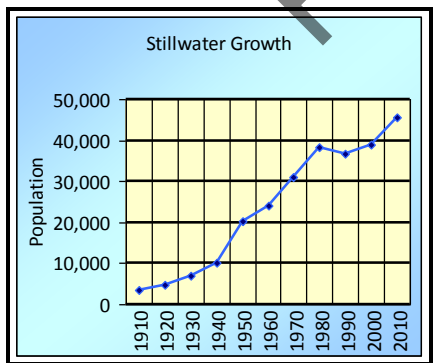


Source: Robert E. Cunningham Oklahoma History Collection 2000.005.9.0198

Charles Donart Homestead in Couch Park



Graph 1. Stillwater Growth



community for many years with Oklahoma A&M College as the principle economic base. That was a time when the Main Street businesses were home owned, doctors' and lawyers' offices were upstairs in downtown buildings, and children walked to Jefferson and Lincoln schools or to South High.

To expand the city's economic base community leaders formed the Industrial Foundation in 1951. This changed Stillwater profoundly. By 1995 thirteen manufacturing plants were providing over 5,000 jobs to the area. The plants were located on or near Perkins Road. This brought extensive retail business development and in the 1990's Perkins Road became the city's dominant business street. In 2000 Oklahoma State University, the City of Stillwater and Meridian Technology joined to create a seventy-acre Oklahoma Technology and Research Park that played a part in the commercial development west of the city.

What began as a town of 600 has grown to over 45,000 and the land-grant college, now Oklahoma State University, has an annual enrollment exceeding 23,000 students.

GROWTH OF STILLWATER

Stillwater remained small during its early years due in part to Oklahoma City. The state capitol, located 60 miles to the south, became the regional trade and services center. Stillwater's designation as a state land grant university provided other growth opportunities. Founded in December 1890 as Oklahoma Agricultural and Mechanical College, the origin of what is now Oklahoma State University established Stillwater as an important center for agricultural education and research.

Between 1960 and the mid-80's, university enrollment accounted for approximately 60 percent of Stillwater's population increase. During this same period, the economy began to diversify as several major manufacturers located in Stillwater. By 1990, another major transition was evident in the community. Associated with a statewide economic surge, population and employment experienced a significant increase locally. Since OSU enrollment remained relatively stable in recent years, the continuing population and employment increase represented further diversification of Stillwater's economy.

From 2000-2007, Stillwater topped the state in metropolitan and micropolitan statistical areas change with a 17 percent growth rate, according to U.S. Census Bureau estimates. The recession that began in 2008 slowed the growth rate to an estimate of less than one percent.

SCHOOLS OF STILLWATER

Stillwater High School



Stillwater Junior High School



Stillwater Middle School



OSU Student Union



Public School District

The Stillwater School District encompasses approximately 124 square miles and extends as much as six miles outside the city limits in some areas. The Stillwater Public School system includes six elementary schools, a middle school serving grades 6th and 7th, a junior high for the 8th and 9th grades, a high school for grades 10th through 12th, and Lincoln Alternative Academy.

In October 2007, the citizens of Stillwater voted to approve a \$31 million bond issue, the largest in the district's history. As of October 2009, \$27 million has been invested in new and improved infrastructure. Construction of Pioneer Stadium was the largest project. One of the finest stadium complexes in the state, it is home to Pioneer football, boys and girls soccer, boys and girls track and field, and band, and it will support many academic activities. Other projects included security vestibules at all schools, district-wide technology upgrades, new band and orchestra instruments, and improvements to the district's agricultural education facility. The remaining \$4 million in bonds will finance a new locker facility at the junior high, as well as additional technology, security, maintenance, and furnishings.

Private Schools

Stillwater has two private schools. Sunnybrook Christian School, Pre-K through 8th Grade, located in the northeastern portion of the city and Covenant Community School in the western portion of the city serves grades Pre-K through 12th.

Meridian Technology Center

Meridian Technology Center encompasses more than 200,000 square feet on 70 acres on the west side of Stillwater. The school offers more than 70 Career Training Majors. The school employs over 100 full-time staff members; additionally, approximately 150 instructors are employed on a short-term basis. The total enrollment, which includes short-term adult courses, business and industry training, daytime instruction, full-time adult programs and customized training, averages over 11,000 students per year.

Oklahoma State University

The Oklahoma State University System is composed of five

Junior Master Gardeners at The Botanical Garden



NOC Stillwater Campus



campuses. The Stillwater campus is the flagship institution with the outlying branches including OSU-Institute of Technology in Okmulgee, OSU-Oklahoma City, OSU-Tulsa and the Center for Health Sciences also in Tulsa.

The university offers 201 undergraduate and 162 graduate degrees as well as offering 10 certificate programs, degrees in doctor of veterinary medicine and doctor of osteopathy and one graduate certificate.

A community asset that attracts 15,000 visitors a year, The Botanical Garden (TBG) is situated on the west gateway to the city. TBG is owned and operated by Oklahoma State University.

Northern Oklahoma College

Northern Oklahoma College (NOC) is a two year community college located in Tonkawa, Oklahoma with a satellite campus in Stillwater. The NOC Stillwater campus was established in 2003 primarily as a Gateway Program. The campus offers students an alternative higher education source for two year degrees. The campus also offers general education courses that transfer to other comprehensive colleges and universities. The NOC Stillwater campus serves approximately 1,700 students with 300 new students admitted each fall and spring semester.

Chapter 4 **DEMOGRAPHICS**

POPULATION

Table 1. Stillwater's Population Growth

Census Year	Population	Percent
2010	45,688	14.5%
2000	39,065	6.1%
1990	36,676	-4.3%
1980	38,268	18.7%
1970	31,126	29.9%
1960	23,965	18.4%
1950	20,238	100.4%
1940	10,097	43.9%
1930	7,016	49.2%
1920	4,701	36.5%
1910	3,444	41.7%

Due to the somewhat rural location of Stillwater, the community acts as a central hub for the county and the surrounding region in the areas of economics, educational opportunities and services. OSU enrollment has increased for the 2010 fall semester and due to the physical growth of the campus, enrollment may continue to climb. Other factors including but not limited to regional transportation improvements, employment training program expansion, medical center expansion, university expansion, private capital investment may further promote growth in the area.

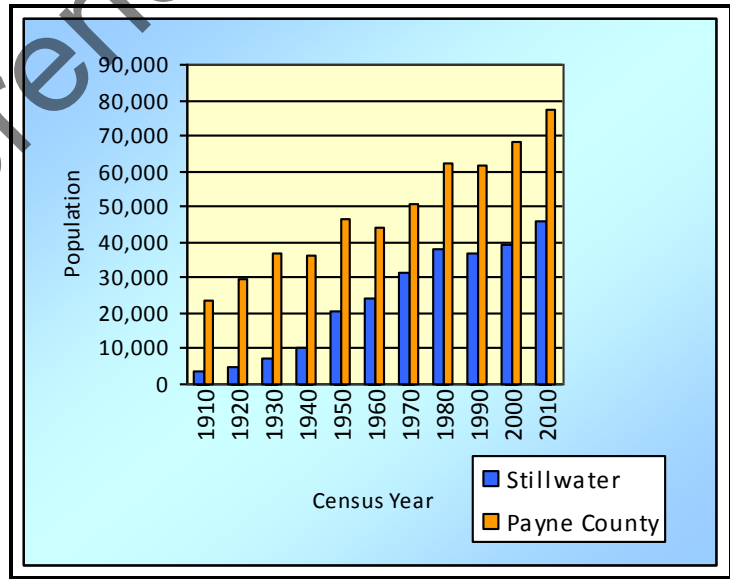
Historical Population Trends

During the last 100 years, there have been population fluctuations at the city and county levels. Stillwater's population has grown steadily from 3,444 in 1910 until a slight setback in the 1990's. The county had two decreases in population, one during the 1950's and again in the 1980's.

Table 2. Payne County's Population Growth

Census Year	Population	Percent
2010	77,350	11.84%
2000	68,190	9.80%
1990	61,507	-1.49%
1980	62,435	18.87%
1970	50,654	12.68%
1960	44,231	-4.74%
1950	46,430	22.34%
1940	36,057	2.30%
1930	36,905	19.85%
1920	29,580	1.98%
1910	23,735	11.91%

Graph 2. Population Growth for Stillwater and Payne County



Source: U.S. Census Bureau, 2010 Census

Census Bureau Population Estimates

The Census Bureau's (CB) Population Estimates Program publishes total resident population estimates and demographic components of change (births, deaths, and migration) each year. Estimates for demographic

characteristics (age, sex, race, and Hispanic origin) are published for the nation, states, and counties. The annual reference date for estimates is July 1.

These estimates are used in federal funding allocations, as denominators for vital rates and for calculating the value of a product per capita in a time series, as survey controls, and in monitoring recent demographic changes. With each new issue of July 1 estimates, the estimates are revised for the years back to the last census. Previously published estimates are superseded and archived. The 2010 Decennial Census starts a new base number for the estimates for the next ten years.

Table 3. Population Estimates

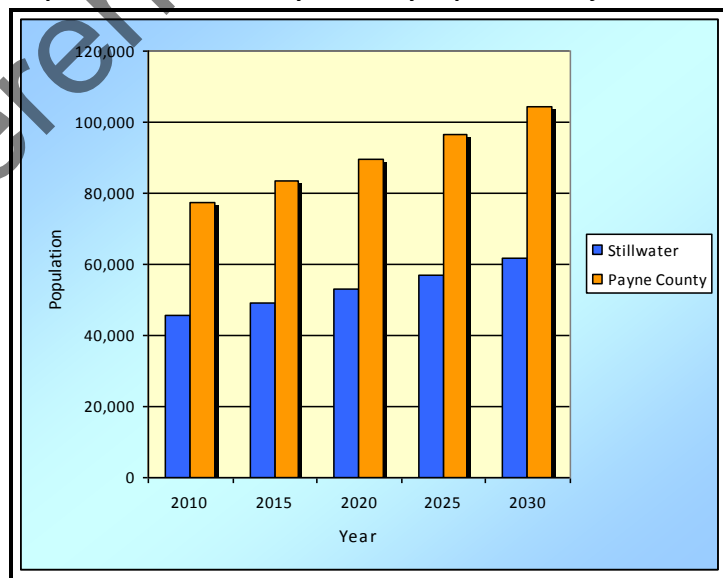
Estimate Year	Population	Annual Percentage Change
Base 2000 Census	39,059	
July 1, 2000	39,259	0.40%
July 1, 2001	41,418	5.21%
July 1, 2002	42,453	2.44%
July 1, 2003	43,572	2.57%
July 1, 2004	44,018	1.01%
July 1, 2005	45,674	3.63%
July 1, 2006	46,383	1.53%
July 1, 2007	44,990	-3.10%
July 1, 2008	45,584	1.30%
July 1, 2009	46,156	1.24%
April 1, 2010 (Decennial Census)	45,688	-1.02%
July 1, 2011	46,048	0.78%

Source: U.S. Census Bureau

Population Projections

Between the years 2004 and 2008, population projections were calculated by three independent master plan consultants and staff. The projection rate ranged between 1.5 and 2.0 percent per year. For the purposes of the C³ Comprehensive Plan, the lower percentage of 1.5 and the population of the 2010 Census of 45,688 as the base number for Stillwater and 77,350 as the base number for Payne County is used to project the population growth. The projected 2030 population for Stillwater is 61,525 and Payne County 104,168.

Graph 3. Stillwater and Payne County Population Projections



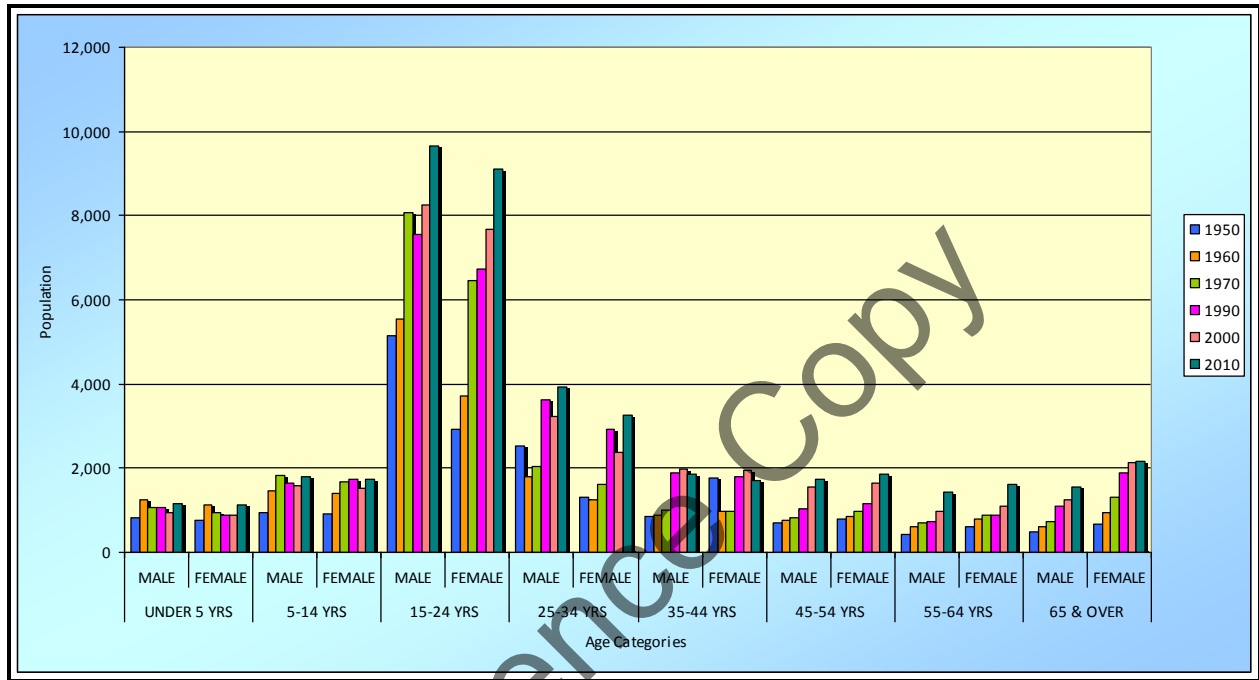
Source: City of Stillwater and U.S. Census Bureau

Historical Age Distribution

Due to the location of Oklahoma State University in Stillwater, the City and Payne County consistently have a high population count for the 20 to 24 year age group as

shown in Graph 4. Omitting this age group from the general analysis shows that trends in age distribution for the City of Stillwater reflected a shift toward an older population between 1970 and 2000. The age groups 35 years of age and under declined from 1990 to 2000 while the trend for the age groups of 35 years of age and

Graph 4. Stillwater Population by Age and Gender



Source: U.S. Census Bureau

older showed an increase during that period as well as well as the previous two decades.

Age Distribution Trends

All age groups categories, or cohorts, are set by the Census Bureau and are used for a number of statistical inferences. Significant cohorts for Stillwater are the college age groups, the senior groups and those younger than college age.

The number of persons under 20 years of age fluctuated moderately between 1970 and 2000. The total of this age group decreased by 1,695 or 14.87 percent. The largest fluctuation occurred in the 18 to 19 year age group which decreased by 1,164 or 23.63 percent.

The number of persons between 20-24 years of age fluctuated extensively between 1970 and 2000. This total increased by 2,402 or 21.55 percent with the 22 to 24 age group having the largest growth at 1,989 or 36.75 percent.

2012-2013 Stillwater

Public School Enrollment

Elementary Schools

<i>Highland Park</i>	<i>506</i>
<i>Richmond</i>	<i>568</i>
<i>Sangre Ridge</i>	<i>533</i>
<i>Skyline</i>	<i>573</i>
<i>Westwood</i>	<i>600</i>
<i>Will Rogers</i>	<i>523</i>

Secondary Schools

<i>Middle School</i>	<i>822</i>
<i>Junior High School</i>	<i>757</i>
<i>High School</i>	<i>1,090</i>
<i>Lincoln Academy</i>	<i>92</i>

The number of persons between 25-34 years of age rose extensively from 1970 to 1990 and then decreased moderately between 1990 and 2000. After increasing by 2,767 or 43.11% between 1970 and 1990, the total decreased by 812 or 12.65% between 1990 and 2000.

The number of persons between 35-44 years of age rose extensively between 1970 and 2000. After increasing by 1,656 or 45.66 percent between 1970 and 1990, the total increased by another 293 or 7.47 percent between 1990 and 2000.

The number of persons between 45-64 years of age rose moderately between 1970 and 1990. After increasing by 418 or 10.9 percent between 1970 and 1990, the total increased by another 1,467 or 27.68 percent between 1990 and 2000.

The number of persons 65 years and over rose moderately between 1970 and 1990. After increasing by 959 or 31.93 percent between 1970 and 1990, the total increased by another 384 or 11.34 percent between 1990 and 2000.

**Rendering of new Will Rogers
Elementary School**



**Rendering of new Highland Park
Elementary School**



EDUCATION

Stillwater is home to the Stillwater public school system, two private schools, Oklahoma State University, Northern Oklahoma College/OSU Gateway, and Meridian Technology Center.

Stillwater Public Schools

Over the past 20 years the Stillwater Public School System has grown from an enrollment of about 5,012 in 1990 to 5,303 in 2000 and grown to 6,064 in 2012. Currently, the Stillwater School District has the following number of schools and enrollment by school type: six elementary schools with 3,303 students; one middle school (grades 6 and 7) with 822 students; one junior high (grades 8 and 9) with 757 students; and one high school (grades 10 through 12) with 1,090 students. Although included with the high school enrollment number, Lincoln Academy offers an alternative to the traditional school setting for 92 students in grades 6-12.

The Stillwater Public School District encompasses 124 square miles and extends approximately 6.5 miles east, 0.5 to 2 miles north, 6 miles west, and 1.5 to 3.5 miles south of the city limits. See Map 1 for school district boundaries.

Stillwater Public School Facilities Report

Richmond Elementary



On May 12, 2009, Stillwater Public Schools Board of Education voted to enter into contract with Architectural Design Group, Inc. (ADG) to perform a facilities assessment and the planning, programming, and construction administration of all that was deemed to be required for the successful preparation and implementation of a bond financing program. Stillwater voters approved the bond issue in February 2011.

Sangre Ridge Elementary



In February 2011 Stillwater voters passed a \$61.5 million bond. The plan covered by the bond consists of a number of components ranging from transportation to textbooks to renovations to new buildings. This plan consists of the following components:

1. New elementary school to replace Will Rogers,
2. New elementary school to replace Highland Park,
3. Renovations and repairs to eight school buildings,
4. Agriculture education expansion,
5. Land acquisition
6. Non-construction expenditures (transportation, technology, textbooks, band and orchestra instruments, security, furnishings, and child nutrition).

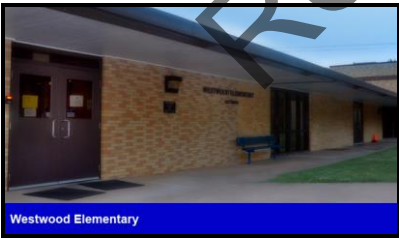
Skyline Elementary



As part of the \$61.5 million bond passed by Stillwater voters in February 2011, Stillwater Public Schools is in the process of building two new elementary schools to replace Will Rogers and Highland Park. Construction is scheduled to be completed in 2013.

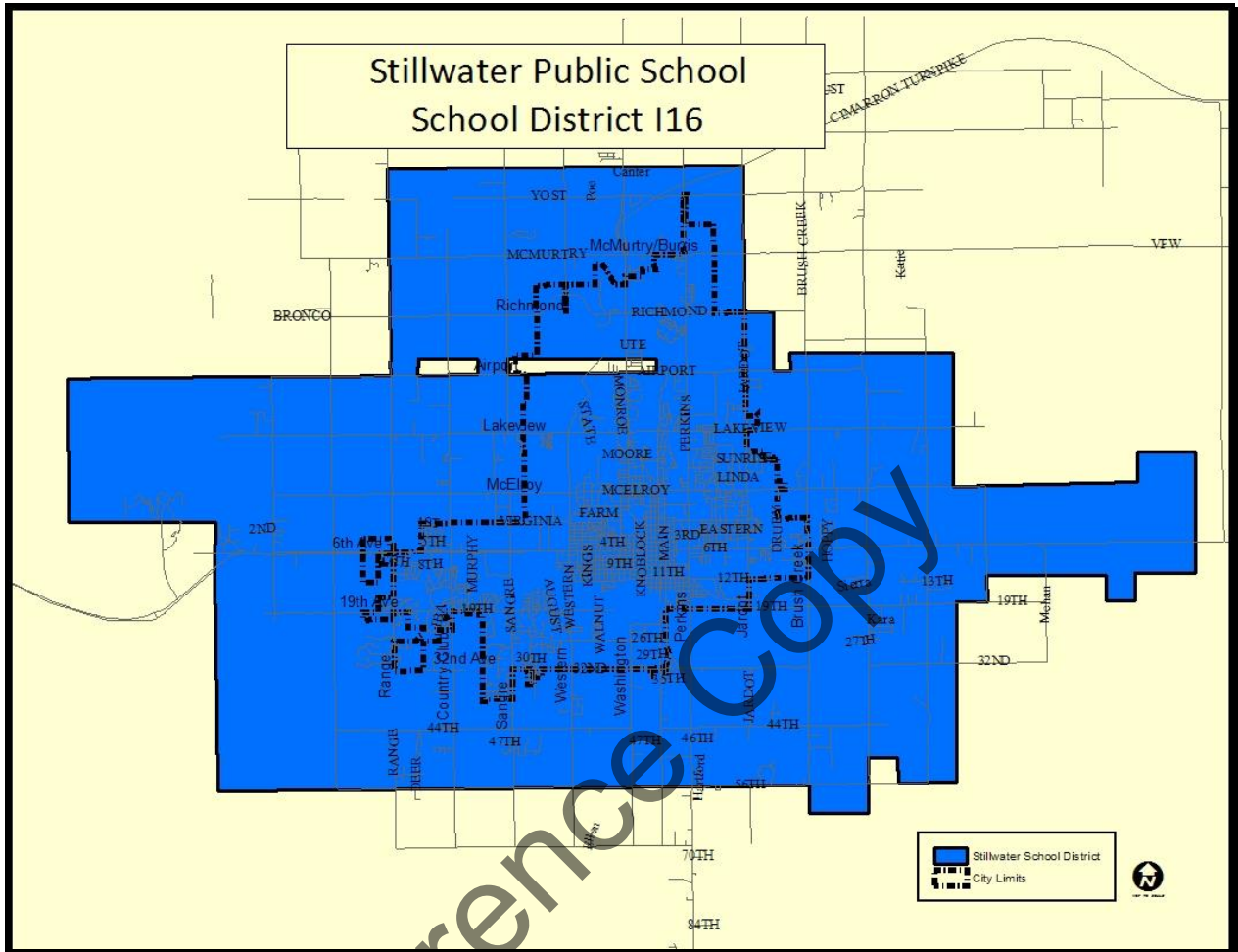
Enrollment Projections

Westwood Elementary



According to the 2010 Census, approximately 9,120 children or 19.96 percent of Stillwater's population are school age. The number of school age persons is projected to remain relatively stable with a slight increase to occur by the year 2030.

Map 1. Stillwater School District



Source: U.S. Census Bureau

Private Schools

OSU Student Union



The two private schools in Stillwater are Sunnybrook Christian School and Covenant Community School. The 2012 enrollment for Sunnybrook is 84 for students pre-kindergarten through 8th grade. Covenant's enrollment for pre-kindergarten through 12th grade is 81 students.

Oklahoma State University

Enrollment at Oklahoma State University (OSU) Stillwater campus showed an increase for the Fall 2012 semester with a headcount of 23,722. This marks the highest enrollment in more than twenty years. OSU enrolled 4,289 new freshmen, which constituted an increase of 735 over Fall 2010 and is the largest freshmen class since 1981. This number of new freshmen contributed to an overall increase in undergraduates of 1,993 which constitutes the first gain in undergraduate

enrollment since Fall 2006. The large number of returning students, new freshmen, and undergraduate transfers provide continuing growth for Oklahoma State University.

Table 4. OSU Stillwater Campus Student Enrollment Fall Semester 2012

	Undergraduates	Graduates	Total
New Freshmen	4,289	0	4,289
Concurrent Students	88	0	88
Non-Degree Seeking	114	0	114
Returning Students	12,607	3,151	15,758
Readmissions	416	1	417
Transfers	1,486	1,218	2,704
Center for Veterinary Health Sciences	0	352	352
TOTAL	19,000	4,722	23,722

Source: Oklahoma State University

*Total includes international students.

OSU Library



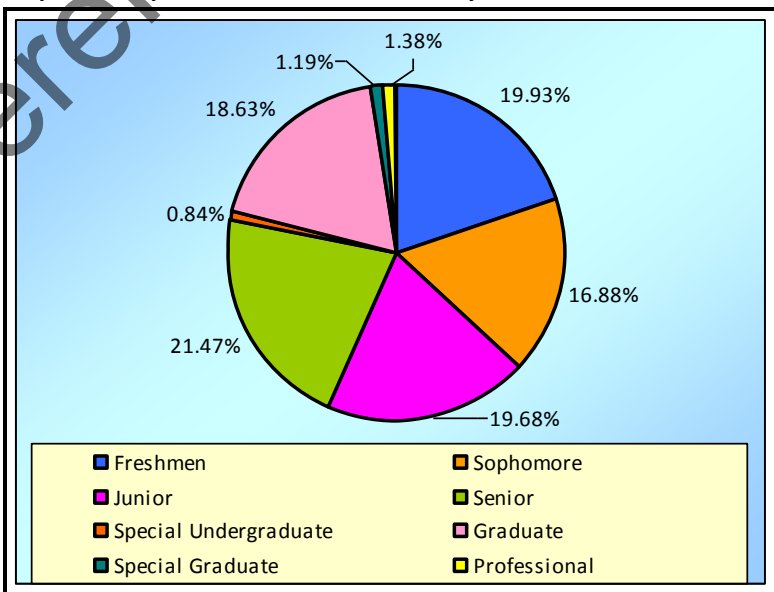
OSU Football



Composition of Student Body

There are four additional categories to the traditional classes of freshmen, sophomore, junior, and senior. The four categories are professional, special graduate, graduate, and special undergraduate. The Fall semester 2010 finds the senior class as being the largest and the sophomore class the smallest as shown in the graph below.

Graph 5. Composition of OSU Student Body



Source: Oklahoma State University

Projection of New Freshmen

According to OSU, the projections presented are mathematical models based on past trends in applications,

OSU Fans



admitted students, and subsequent enrollments, as well as retention rates and forecasts of high school graduates. Forecasts for Oklahoma high school graduates show numbers fluctuating over the next four years. Because the OSU freshman class is made up of almost 70% Oklahoma residents, these forecasts are the primary source of projection numbers for freshman enrollment.

The table below shows that the new freshmen enrollment will decline slightly in Fall 2013 before rebounding the next year. Overall, OSU is projected to have a 6.5% increase from 2011 to 2015.

OSU Freshmen Class 2012-13



Table 5. Projection of New Freshmen

Year	Resident	Nonresident US Citizen	International	Total
2013	2,686	1,637	55	4,378
2014	2,699	1,726	56	4,481
2015	2,731	1,742	57	4,530
2016	2,818	1,759	58	4,635
2017	2,858	1,777	59	4,694

Source: Oklahoma State University

Northern Oklahoma College/OSU Gateway

Northern Oklahoma College (NOC) began in 1901 when the Legislature passed an appropriation bill for the establishment of the University Preparatory School at Tonkawa. The college had 217 students and seven faculty.

NOC is a two year college to prepare students to enter a state university. The college developed a campus in Enid in 1999 and in Stillwater in 2003. The Tonkawa campus serves as the administrative center for the three campuses.

The Stillwater campus serves as primarily a Gateway Program that offers classes to students who would otherwise not be admitted to Oklahoma State University. However, the campus also offers general education courses that transfer to other colleges and universities. NOC Stillwater admits approximately 400 new students each fall and spring semester, serving some 1,700 students

Northern Oklahoma College Tonkawa Campus



Meridian Technology Center



Meridian Technology Center

Meridian was established in July 1973 and was known as Indian Meridian Area Vocational-Technical School. Classes began in August 1975 with 13 daytime programs and approximately 30 staff. The school was renamed Meridian Technology Center in 1994. Meridian served 1,635 high school students and adults in the first year through full-time Career Training Majors and short-term Professional and Personal Interest courses. The facility is located on 70

acres in the western portion of Stillwater. The school began with 92,000 square feet and now encompasses more than 200,000 square feet.

Meridian offers more than 70 career training courses each year. High school students spend a half day at their home high school and the other half at Meridian with both morning and afternoon sessions offered. The high school programs take between one and two years to complete. Adult students have a choice of attending either half or whole days. Meridian offers short term professional and personal courses. Each semester nearly 100 courses are offered. Meridian also helps organizations by customizing training for each company.

Meridian Student



The Meridian Technology Center district covers parts of Lincoln, Logan, Noble, Pawnee and Payne counties, encompassing more than 900 square miles. The district includes residents in communities served by the following school districts:

- Agra
- Glencoe
- Morrison
- Pawnee
- Perry
- Carney
- Guthrie
- Mulhall-Orlando
- Perkins-Tryon
- Stillwater.

Meridian Cosmetology Student



Composition of Student Body

A history of the last five years of the student body show that the number of full-time high school students averaged 421 per year while full-time adult students averaged 377 per year. The short-term enrollment far outnumbered full time with an average of 8,593 students per year.

Table 6. Composition of Student Body

Type of Student	# of Students
Full Time High School	421
Full Time Adults	377
Short Term Classes	8,593

Source: Meridian Technology Center

EMPLOYMENT

Employment Trends



According to the Census Bureau, of the 39,065 persons living in the City of Stillwater in 2000, 20,967 or 46.3 percent over the age of 16 were employed. The American Community Survey (ACS) for years 2009 to 2011 show that 23,801 or 52.1 percent of the 2010 population of 45,688 were employed.

In the year 2000, private wage and salary workers constituted 12,216 or 58.2 percent of the total employed. Of that number 390 were self-employed in their own incorporated business. Self-employed workers not with an incorporated business constituted 976 or 4.7 percent. The total of unpaid family workers was 99 or 0.5 percent. Government workers made up the remaining 7,676 or 36.6 percent of the total employed.

The 2009 to 2011 ACS show that out of 23,801 civilian employed workers, private wage and salary workers made up 15,663 or 65.8 percent. The number of self-employed workers not with an incorporated business constituted 864 or 3.6 percent. The number of unpaid family workers was 61 or 0.3 percent. Government workers made up the remaining at a total of 7,213 or 30.3 percent.



Employment by Industry

According to the ACS the total number of employees by industry for the 2009-2011 period was 23,801, an increase of 2,834 workers from the 2000 Census. The largest addition of employees was shown in the agriculture, forestry, fishing and hunting, and mining industry (includes elements of the oil and gas industry) with 45.6 percent increase followed by arts, entertainment, recreation, accommodation and food services with 41.8 percent. Four industries showed a decline in employees of less than ten percent while the information industry had a 50.1 percent decrease followed by the professional, scientific, management, administrative, and waste management services decrease followed by the professional, scientific, management, industry with a reduction of 12.1 percent.

Table 7. Class of Employees

Employee Class	Number of Employees (Year 2000)	Percent of Employees (Year 2000)	Number of Employees (2009-2011)	Percent of Employees (2009-2011)
Wage & salary	12,216	58.2%	15,663	65.8%
Self-employed (non-incorporated business)	976	4.7%	864	3.6%
Family workers	99	0.5%	61	0.3%
Government	7,676	36.6%	7,213	30.3%

Source: U.S. Census Bureau, 2000 Census and American Community Survey

Table 8. Employees by Industry

Industry	2000 Number of Workers	2000 Percentage of Total Workers	2009-2011 Number of Workers	2009-2011 Percentage of Total Workers	Percentage of Change
Agriculture, forestry, fishing & hunting, & mining	264	1.30%	377	1.60%	0.30%
Construction	540	2.60%	1,067	4.50%	1.90%
Manufacturing	1,634	7.80%	1,563	6.60%	-1.20%
Wholesale trade	368	1.80%	652	2.70%	0.90%
Retail trade	2,495	11.90%	3,225	13.50%	1.60%
Transportation & warehousing, and utilities	375	1.80%	503	2.10%	0.30%
Information	609	2.90%	346	1.50%	-1.40%
Finance, insurance, real estate & rental & leasing	846	4.00%	959	4.00%	0.00%
Professional, scientific, management, administrative, & waste management services	1,542	7.40%	1,376	5.80%	-1.60%
Educational, health & social services	8,413	40.10%	8,980	35.70%	-4.40%
Arts, entertainment, recreation, accommodation & food services	2,303	11.00%	2,963	12.50%	1.50%
Other services (except public administration)	834	4.00%	1,356	5.70%	1.70%
Public administration	744	3.50%	434	1.80%	-1.70%

Source: U.S. Census 2009-2011 American Community Survey

Employers

The 15 largest employers in Stillwater provided a total of 10,449 jobs in 2012. Oklahoma State University (which included full-time, part-time) totaled 5,200 followed by Stillwater Medical Center at 842, Stillwater Public Schools at 730, and the City of Stillwater at 520. The remaining employers were all classified under 500 employees.

Table 9. Stillwater's Largest Employers

Employer	Number of Employees
OSU	5,200
Stillwater Medical Center	842
Stillwater Public Schools	730
City of Stillwater	520
Walmart	402
Stillwater National Bank	300
Oklahoma Career Technology	280
Kicker	225
Armstrong Worldwide Industries	190
National Standard	185
Ocean Dental Headquarters	175
Frontier Electronics	150
Meridian Technology Center	150
Flir Technology	100

Source: Stillwater Chamber of Commerce 2010

Employment Projections

The national recession hit the Payne County area hard after a previous decade of large growth. Stillwater had some economic hardships with the closing of MerCruiser and Quad/Graphics. A significant challenge to Stillwater in the future is the trend to consolidate manufacturing production into the larger Metropolitan Areas.

The growth of total employment in Payne County was expected to increase two percent in 2012 with growth in the manufacturing employment and Education Services. Construction employment was expected to rebound slightly in 2012, then losing some of the gains in 2013. Retail Trade continues a downward trend since 2010. Employment in Financial and Insurance Services and Health and Social Assistance Services is expected to grow while losses are forecast for Business Services and Public Administration. Other Services employment is expected to remain steady. The Stillwater Economic Outlook 2012 prepared by the OSU Spears School of Business, expects the national economic recovery to help push Payne County employment to a one percent growth in 2012 and two percent growth in 2013.

Unemployment

Unemployment is a measure of the persons in the workforce who are without but are actively seeking work. To measure the prevalence of unemployment a percentage is calculated and referred to as the unemployment rate.

Nationally the unemployment rate has been a large concern during the recent recession. Unemployment reached its highest peak since the early 1980's in October 2009 at 10.0%. The rate has slowly been dropping to 7.8% reported in September 2012.

According to the Stillwater Economic Outlook 2012, the Payne County unemployment rate is forecast to follow the national trend. The Payne County rate is expected to reach the level at which it entered the recession, around 4% while the national level will remain significantly higher. See Graph 6 for national, county and city unemployment data.

Table 10. Household Income

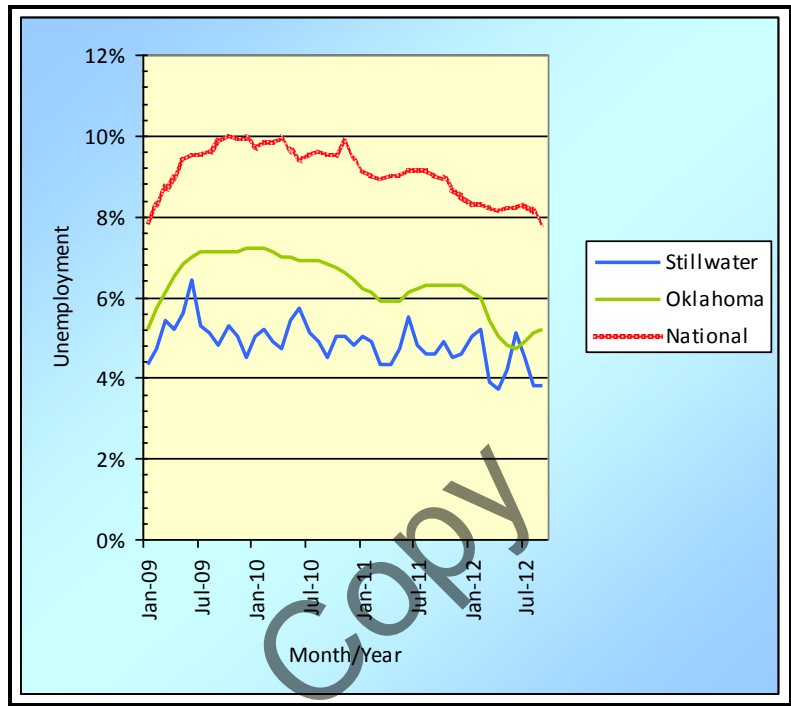
Amount	Number of Households
Total Households	18,207
Less than \$10,000	3,594
\$10,000 to \$14,999	1,743
\$15,000 to \$19,999	1,359
\$20,000 to \$24,999	1,233
\$25,000 to \$29,999	944
\$30,000 to \$34,999	967
\$35,000 to \$39,999	1,055
\$40,000 to \$44,999	873
\$45,000 to \$49,999	299
\$50,000 to \$59,999	1,369
\$60,000 to \$74,999	1,305
\$75,000 to \$99,999	1,400
\$100,000 to \$124,999	857
\$125,000 to \$149,999	499
\$150,000 to \$199,999	320
\$200,000 or more	390

Source: U.S. Census Bureau 2009-2011
American Community Survey

Table 11. Family Income

Amount	Number of Families
Total Families	8,236
Less than \$10,000	479
\$10,000 to \$14,999	400
\$15,000 to \$24,999	800
\$25,000 to \$34,999	1161
\$35,000 to \$49,999	889
\$50,000 to \$74,999	1638
\$75,000 to \$99,999	1126
\$100,000 to \$149,999	1161
\$150,000 to \$199,999	297
\$200,000 or more	285

Source: U.S. Census Bureau 2009-2011

Graph 6. National, State, and Local Unemployment

INCOME

Household Income

The Census Bureau defines a household as including all the people who occupy a housing unit as their usual place of residence. According to the Census Bureau's 2009-2011 American Community Survey (ACS), the median household income for the last twelve months was \$30,921. Out of 18,207 households, the income for 3,594 households was less than \$10,000. Additionally, 8,473 households had incomes between \$10,000 and \$49,999, and 6,140 had incomes over \$50,000. Sixteen percent or 2,969 of the households had social security income while 1,914 or 10.5% had retirement income.

Family Income

The Census Bureau definition of a family is a group of two or more people who reside together and who are related by birth, marriage, or adoption. The 2009-2011 ACS estimated that 8,236 families live in Stillwater with a median income of \$55,762. Out of that number 479 (5.8%) have an income of less than \$10,000. Families that have an income between \$10,000 and \$49,999 amount to 3,250 (39.5%), and 4,507 have an income of \$50,000 or over.

Poverty

The ACS reports that 12,521 individuals or 31.8% of the population for whom poverty status was determined, was below poverty status for the last twelve months. Of that number, 1,740 (13.9%) were children under the age 18 years. The 65 years and over age bracket had 355 (2.8%) which left 10,426 (83.3%) people aged 18 to 64 years living in poverty.

The number of males living below the poverty level in the last twelve months was 6,576 (33.1%) while the number of females was 5,945 (30.5%). The majority of individuals are white (9,046) or two or more races (921). The other races are not represented due to the number of sample cases being too small.

The number of the population living in poverty the last twelve months over the age of 25 years was 2,844. Of that number 167 had less than a high school education, 837 with at least a high school degree, 1,033 with some college or an associate's degree and 807 with a bachelor's degree or higher.

The civilian labor force 16 years and over that were under the poverty level was 6,170 people. The number of the labor force that were employed was 5,327 leaving 843 unemployed for the last year. See Table 12 for more poverty information.

Table 12. Poverty Statistics

Subject	Total	Below Poverty Level	Percent below poverty level
Population for whom poverty status is determined	39,362	12,521	31.80%
AGE			
Under 18 years	6,550	1,740	26.60%
Related children under 18 years	6,525	1,715	26.30%
18 to 64 years	29,220	10,426	35.70%
65 years and over	3,592	355	9.90%
SEX			
Male	19,894	6,576	33.10%
Female	19,468	5,945	30.50%
RACE AND HISPANIC OR LATINO ORIGIN			
One Race	N	N	N
White	31,797	9,046	28.40%
Black or African American	N	N	N
American Indian and Alaska Native	N	N	N
Asian	N	N	N
Native Hawaiian and Other Pacific Islander	N	N	N
Some other race	N	N	N
Two or more races	2,175	941	42.30%
Hispanic or Latino origin (of any race)	N	N	N
White alone, not Hispanic or Latino	30,758	8,723	28.40%
EDUCATIONAL ATTAINMENT			
Population 25 years and over	20,136	2,844	14.10%
Less than high school graduate	1,294	167	12.90%
High school graduate (includes equivalency)	3,546	837	23.60%
Some college, associate's degree	6,067	1,033	17.00%
Bachelor's degree or higher	9,229	807	8.70%
EMPLOYMENT STATUS			
Civilian labor force 16 years and over	23,452	6,170	26.30%
Employed	22,021	5,327	24.20%
Male	11,909	2,975	25.9%
Female	10,112	2,352	23.20%
Unemployed	1,431	843	58.90%
Male	1,194	696	58.30%
Female	237	147	62.00%
Population 16 years and over	33,509	10,956	32.70%
Worked full-time, year-round in the past 12 months	11,208	609	5.40%
Worked part-time or part-year in the past 12 months	14,993	7,589	50.60%
Did not work	7,308	2,758	37.70%

Source: U.S. Census Bureau 2009-2011 American Community Survey

HOUSING

Housing Units



The 2009-2011 ACS estimated the number of housing units in Stillwater at 20,025. The total housing units represented an increase of 3,220 over the 16,805 housing units in 2000, and an increase of 4,254 over the 15,771 units in 1990. Living quarters on the OSU campus are counted as group quarters; therefore, are not counted as housing units.

A total of approximately 24,425 housing units are required to meet the projected target population of Stillwater to the year 2030. The total housing demand represents an increase of 4,400 over the total of 20,025 housing units as of 2011.

Housing Type Trends

Table 13. Housing Trends

	1990	2000	2011
Total Housing Units	15,771	16,805	20,025
Single Family	8,310	9,601	10,989
Two Family	944	790	1,754
Multi-Family	3,311	5,209	6,185

Source: U.S. Census Bureau

Single family units represented the largest type at 10,989 units or 54.9% of the total. The number of single-family units increased from 1990 to 2000 by 1,291, raising its share from 52.7% to 57.1%. Despite the increase in the number of single family housing between 2000 and 2011 by 1,388, the share declined to 54.9%.

Two-family housing had a loss of 154 units between 1990 and 2000 and decreased in share from 6.0% to 4.7% before showing a gain between 2000 and 2011. The number of two-family increased during that eleven year period by 964 units and ending the period with a share of 8.8%.

Table 14. Housing Tenure

	1990	2000	2011
Occupied Housing Units	14,172	15,604	18,207
Vacant Housing Units	1,599	1,223	1,818
Owner Occupied	5,628	6,526	6,682
Renter Occupied	8,544	9,078	11,525

Source: U.S. Census Bureau

Between 1990 and 2000 the multi-family increased by 1,898 units and increasing the share from 21.0% to 31.0%. Although the multi-family housing increased from 2000 to 2011 by 976 units, the share remained the same at 31.0%. Of the total units gained during the twenty-one-year period, multi-family housing units accounted for the largest growth at 86.8% followed by two-family with 85.8% and the single family at 32.2%.

Mobile homes also gained between 1990 and 2000. The number increased by 105 during the ten-year period, increasing in share from 6.9% to 7.1%. For the period between 2000 and 2011, the number decreased by 208 while the share fell from 7.1 to 4.9%.

Housing Tenure Trends

The number of occupied housing units, owner occupied and

Table 15. Age of Housing Stock 2011

Year Structure Built	Number of Structures	Share Percentage
Total Housing Units	20,025	
2005 or later	2,108	10.5%
2000 to 2004	2,680	13.4%
1990 to 1999	2,539	12.7%
1980 to 1989	2,486	12.4%
1970 to 1979	4,718	23.6%
1960 to 1969	1,743	8.7%
1950 to 1959	1,696	8.5%
1940 to 1949	947	4.7%
1939 or earlier	1,108	5.5%

Source: U.S. Census Bureau

Table 16. Value of Owner Occupied Units 2011

Value	Number of Units	Percent
Owner Occupied Units	6,682	
Less than \$50,000	693	10.4%
\$50,000 to \$99,999	897	13.4%
\$100,000 to \$149,999	1,574	23.6%
\$150,000 to \$199,999	1,765	26.4%
\$200,000 to \$299,999	1,232	18.4%
\$300,000 to \$499,999	356	5.3%
\$500,000 to \$999,999	165	2.5%
\$1,000,000 or more	0	0.0%
Median Value	\$154,200	

Source: U.S. Census Bureau

renter occupied, in 1990 was 14,174. The number increased by 1,432 in 2000 for a total of 15,604 occupied housing units. In 2011 the number of occupied housing unit was 18,207 for an increase of 2,603.

A unique situation exists in Stillwater in that the community has a very large number of renters in proportion with home owner occupied housing units. Between 1990 and 2000 the number of renters increased by 549 for a share of 60.3% of occupied housing units. The number of renters increased between 2000 and 2011 by 2,447 for an increase of 63.3%.

The number of owner-occupied units also grew over the twenty-one year period. Between 1990 and 2000, the number increased by 898 while the share increased from 39.7% to 41.8%. The number climbed slowly by 156 between 2000 and 2011 while the share decreased to 36.7%.

The number of vacant units increased from 1990 to 2011. Vacancies were 1,599 or 10.1% in 1990, dropping to 1,223 or 7.3% in 2000 then increased to 1,818 or 9.1% in 2011. This housing stock was classified as for rent, for sale only, sold or rented but not occupied, for seasonal, recreational, or occasional use (such as migrant workers), or other vacant.

Age of Housing Stock

The majority of the housing stock was constructed between 1960 and 2000 with 11,486 structures or 57.4% share. The number of structures built prior to 1960 was 3,751 or 18.7% of the housing stock while the newest housing stock constructed since 2000 is 4,788 or 23.9%. The construction rate from 1980 to present has been consistent with an average of 2,450 housing units built per ten year period. The 1970's had the highest construction rate with 4,718 structures while the 1940's was the lowest with 947.

Value of Owner Occupied Housing Units

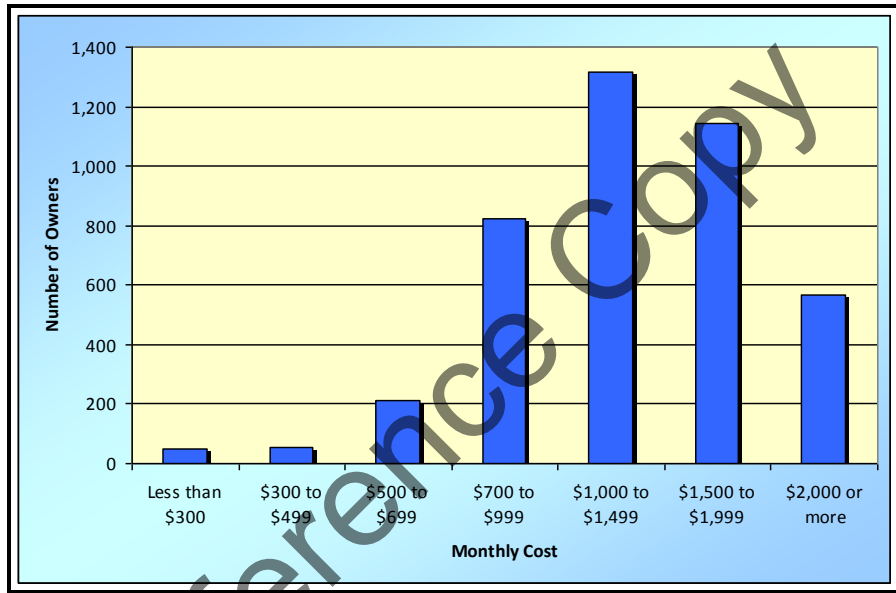
The 2009-2011 ACS estimated the median value of homes in Stillwater as \$154,200. The majority of homes are valued between \$100,000 and \$200,000 with a 50.0% share. The second largest category is homes valued under \$100,000 with 23.8% share followed closely by homes in the \$200,000 to \$299,999 category with 18.4% share. Homes valued at over \$300,000 has a 7.8% share of the owner occupied housing units.

Owner Housing Costs and Rent

The median selected monthly owner costs for housing units with a mortgage was \$1,385. The \$1,000 to \$1,499 range had the largest share at 31.6% followed closely by the \$1,500 to \$1,999 range with 27.4% share. See Graph 7.

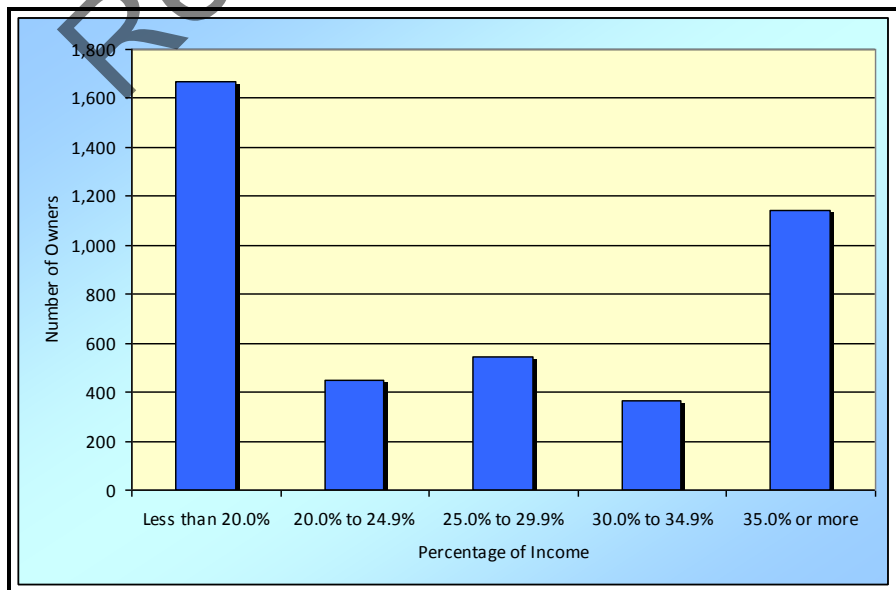
Out of the 4,164 housing units with a mortgage, 40.1% of the owners pay less than 20.0% of the household income on housing expenses. Paying 35.0% of the household income on housing expenses is 27.4% share of owners while the remainder fall somewhere in between. See Graph 8.

Graph 7. Selected Monthly Owner Costs For Housing Units with a Mortgage



Source: U.S. Census Bureau

Graph 8. Monthly Owner Costs as a Percentage of Household Income

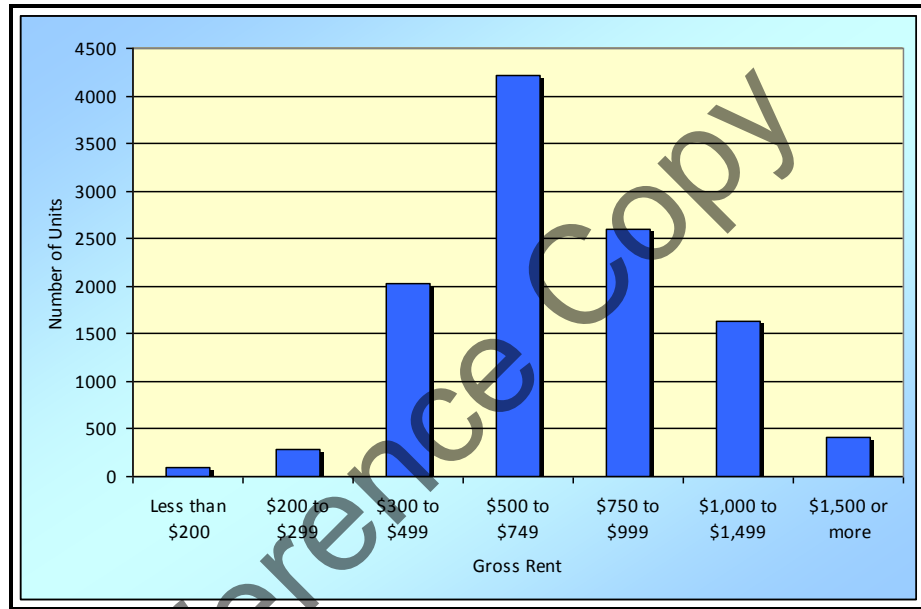


Source: U.S. Census Bureau

The 2009-2011 ACS estimated the median rent in Stillwater as \$677. The largest rent paid was \$1,500 or more with 3.6% share and the lowest rent was less than \$200 with a 2.5% share. The category that had the largest share with 37.5% was the \$500-\$749 category.

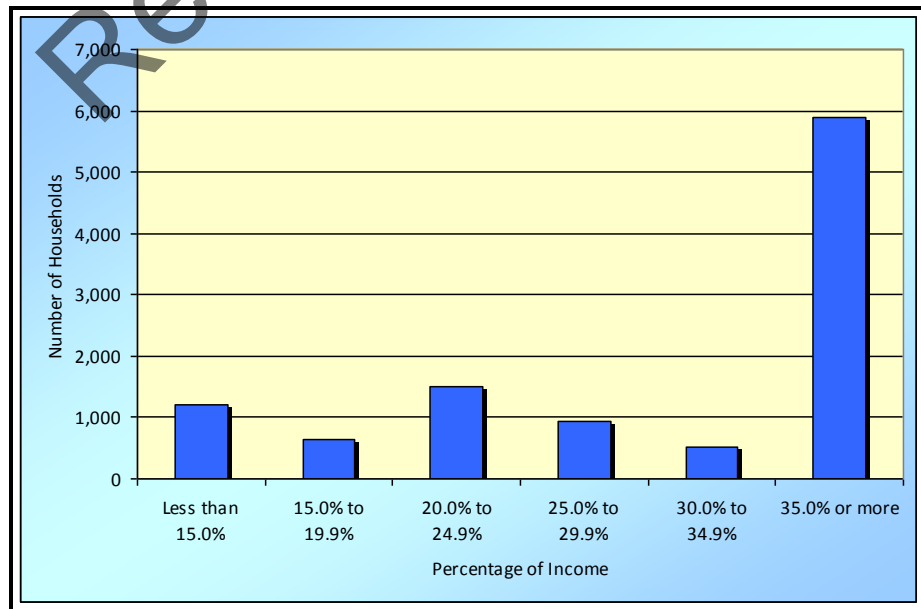
The number of occupied rental units in 2011 was 10,680. Out of that number 55.2% of renters paid 35.0% or more of the household income for rent. This is not surprising, since the majority of renters are OSU students. The category that had the lowest percentage of income paid toward rent at 4.8% was the 30.0%-34.9% range.

Graph 9. Monthly Gross Rent



Source: U.S. Census Bureau

Graph 10. Gross Rent as a Percentage of Household Income



Source: U.S. Census Bureau

PROJECTIONS AND RECOMMENDATIONS

Population

In projecting 1.5 percent population growth through the year 2030, several assumptions are made with respect to other growth factors. These assumptions include the following:

1. OSU enrollment will increase slightly over the 20-year period based on the projected number of new freshmen;
2. Stillwater's population will grow to 61,062, an increase of 15,374 or 33.6 percent from 2010.

Recommendations

1. Create a positive environment to attract commercial and industrial companies.
2. Provide incentives to attract new businesses.
3. Provide support for entrepreneurs.
4. Support existing employers.
5. Support affordable housing efforts.
6. Provide maintenance guidelines for both inside and outside of rental properties to address aesthetic and safety issues.
7. Condemn vacant, unused property if beyond rehabilitation.

Chapter 5 **INFRASTRUCTURE**

WATER SYSTEM

Water Utilities Truck



Water Operations

The raw water supply system (including pump station and pipeline), the water treatment plant and the water distribution system that serves Stillwater is owned and operated by the Stillwater Utilities Authority (City). The system serves over 110 square miles and an estimated population of 46,000 residents from the municipal system and approximately 1700 customers within Payne County from two rural systems, as well as several wholesale customers near Stillwater.

Water Storage Tower



Raw Water Supply System

The City's source of raw water is Kaw Lake located along the Oklahoma and Kansas border just east of Ponca City. A pump station conveys raw water from the lake through a 36-mile long raw water pipeline to the City's water treatment plant (WTP) located north of the city. The water pipeline is designed for a maximum flow rate of 35 million gallons per day (35 MGD). Additionally, raw water is provided from the pipeline to the Town of Morrison, and the Otoe-Missouri Tribe located near Ponca City. There are also supply points built into the pipeline for Ponca City and Perry for potential future use.

Jardot Waterline Replacement Project



The Kaw Pump Station is located one third of a mile south of Kaw Lake Dam. The maximum flow that the existing pump station can deliver is approximately 20 MGD.

The raw water pipeline from the pump station to the WTP has experienced leaks several times. A report prepared in 2002 found that numerous pinhole leaks and corrosion blisters were present throughout the interior surface of the pipe, in the relatively small area evaluated. A comprehensive evaluation of the condition of the line is in progress, as well as certain projects to extend the useful life of the pipeline.

Water Rights

The Oklahoma Water Resources Board (OWRB) is responsible for the permitting of all public stream, surface and groundwater resources for beneficial use. Water is permitted in units called "acre feet" for specific purposes such as public water supply, industrial use, or

Table 17. Daily Average Water Demand

Year	Demand (MGD)
2005	8.2
2006	8.7
2007	7.3
2008	7.0
2009	6.6
2010	6.4
2011	6.6
2012	6.9

Source: City of Stillwater Water Utilities

fish/wildlife/recreational use, etc. As issued by OWRB, the City currently maintains several long-term water right permits for public water supply purposes totaling 57,178 acre feet (approximately 51 MGD). Of the total permitted amounts 56,210 acre feet are from Kaw Lake and 968 acre feet are permitted from Lake McMurtry, located just west of Stillwater.

Oklahoma law requires the water be put to beneficial use according to a schedule of use approved by OWRB. The water rights are subject to cancellation or reduction by OWRB, if they are not being put to beneficial use, or making progress toward beneficial use. The city will continue to work with OWRB to maintain the water rights permits.

Table 18. Peak Water Demand

2005	18.0
2006	15.3
2007	13.1
2008	12.2
2009	11.9
2010	11.7
2011	12.2
2012	13.8

Source: City of Stillwater Water Utilities

The current water demand is approximately 7 MGD annual average and 13 MGD during a peak demand day. (2008-2010 approximate average).

The 2009 Water Resources Master and Infrastructure Assets Management Plan estimated the average and peak demand for the year 2060 based on forecast population growth rates and allowing for 26 percent unaccounted-for water. Based on estimates of population growth, average water demands for the year 2060 are estimated to be 23.6 MGD and the maximum day water demand is estimated to be 50.6 MGD. The City's current water rights (equivalent to 51 MGD) appear to be adequate to satisfy these projected rates.

Table 19. Water demand in the Year 2060

	Average Demand (mgd)	Max Demand (mgd)
City of Stillwater – Total	14.0	30.0
Surrounding Communities	1.2	2.6
OSU	2.1	4.5
Future Industrial Demand	1.4	3.0
Total Based on Demand	18.7	40.1
Net Production Required	23.6	50.6

Source: Water Resources Master & Infrastructure Assets Management Plan

Table 20. Water Line Sizes and Length

Pipe Size	Miles
Unknown	5.66
1 inch	0.09
1.5 inch	0.06
2 inches	4.5
2.5 inches	0.05
3 inches	0.06
4 inches	22.28
6 inches	107.29
8 inches	29.41
10 inches	20.35
12 inches	55.87
14 inches	4.63
16 inches	5.68
18 inches	2.95
20 inches	0.2
24 inches	23.56
30 inches	2.34
36 inches	12.18

Source: City of Stillwater GIS

Meter Replacement Program



Flushing the Fire Hydrant



Jardot Waterline Replacement Project



Water Treatment Plant/ Distribution System

The City's water treatment plant capacity is approximately 18 MGD. The City provides potable water to the residents inside the corporate limits and additionally, to five rural water systems, two of which are also owned and operated by the City: Payne County Rural Water District #1 (city owned), Payne County Rural Water Corporation #3 (city owned), Payne County Rural Water District #3, 51 East Water Corporation, and Noble County Rural Water District #2.

Current storage capacity of finished water at the City WTP is 5 million gallons. The distribution system includes three ground storage tanks, each with a capacity of 2 million gallons. The system also contains three elevated storage towers with capacities of 500,000 gallons, 750,000 gallons, and 1,000,000 gallons (shared with RWD #3). The total storage capacity is 12.75 million gallons, or the equivalent of 185 % of the average daily use for 2012. The City's water distribution system includes 276 miles of water line within the municipal system and an additional 175 miles of water line within the two city owned/operated rural water systems.

Secondary Water Supply

The Oklahoma State University Water Treatment Plant (WTP) reopened in 2009 using Lake Carl Blackwell as their raw water source. In case of an emergency the OSU WTP can temporary provide water for the City of Stillwater.

Automated Meter Reading (AMR)

In 2009, the City began the Automated Meter Reading project involving all water meters within the municipal distribution system and within the two city-owned/operated rural water distribution systems. This program has replaced all water meters so that they will be read remotely using radio transmission and a variety of data collection methods. The AMR system will reduce the meter reading and meter maintenance costs while improving customer service.

Maintenance

Currently the City does not have a formal evaluation program for maintenance or replacement of water and sewer lines. The maintenance is prioritized by the number and severity of leaks, age of lines, pressure issues, and repeated maintenance.

An efficient method of tracking waterline problems and maintenance is with an asset management program. The asset management program would permit more comprehensive planning and scheduling of preventive and corrective tasks.

Also, potential maintenance backlogs can be identified quickly and scheduled by priority. Maintenance work can be managed efficiently if the problem areas and the maintenance work can be displayed on maps. This can be accomplished by linking a utility's maintenance module and GIS. Maintenance and inspection histories of the water assets can be extracted from the maintenance database and transferred to the water coverage of GIS. The link can graphically track the maintenance activities and identify areas where rehabilitation or capital improvements may be necessary. Color-coded thematic maps may be generated highlighting water segments in terms of their capacity, condition, and maintainability.

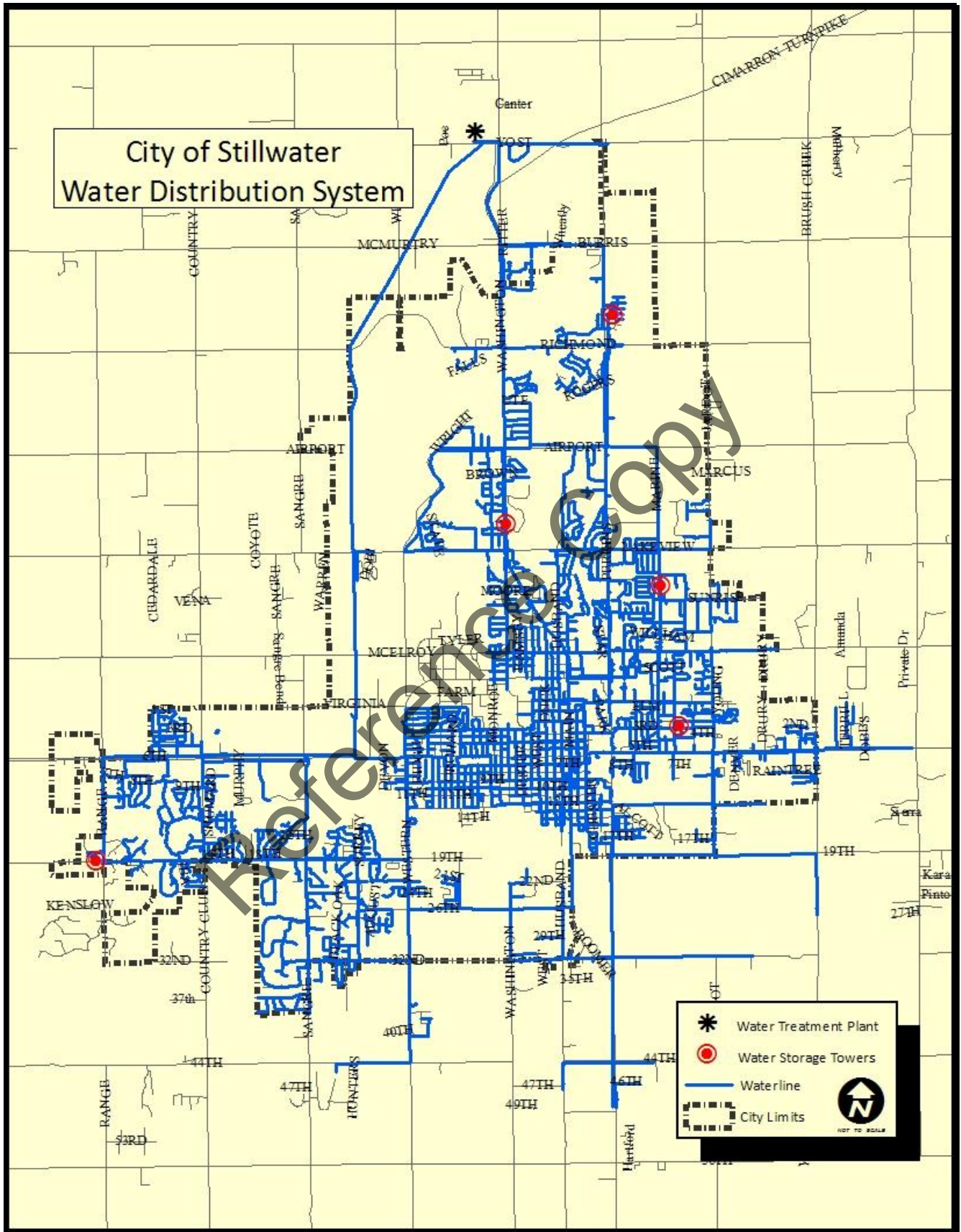
It is estimated that upwards of 50% of the 276 miles of municipal water line has been in place for 30 years or more. Due to age and condition of the infrastructure, considerable staff time is spent responding to system failures (leaks) and customer requests. Routine and preventive maintenance is performed such as flushing of dead end hydrants/water lines, a fire hydrant inspection and maintenance program which is performed cooperatively with Stillwater Fire Department, and a valve exercising/replacement program.

Due to the aging infrastructure the City has set its goal to replace 2% of the distribution system every year. The replacement of water lines is prioritized by the number and severity of leaks, age of lines, pressure issues, and repeated maintenance.

City ordinances adopted in 2009 have provided for the collection of capacity fees and user rate increase to provide revenues for the design and construction of water line replacements.

For more information on the City's water system, please refer to the 2009 Water Resources Master and Infrastructure Assets Management Plan.

Map 2. City of Stillwater Water Distribution System



WASTEWATER

Wastewater Operations

Wastewater Treatment Plant



The wastewater treatment plant and wastewater collection system that serves Stillwater is owned and operated by the Stillwater Utilities Authority (City). The system serves approximately 98 percent of the households within the Stillwater incorporated area. Other users are served by individual on-site facilities. The City's wastewater system serves a base population of approximately 46,000 residents, including the 20,000+ student population of Oklahoma State University. OSU's collection system discharges into the City's collection system in several locations.

Existing Facilities

Wastewater Treatment Plant



Wastewater Treatment Facilities: The City currently operates an "extended aeration (activated sludge)" wastewater treatment plant (WWTP) located on South Brush Creek Road in southeast Stillwater. A major upgrade to the WWTP was completed in 2003. The current capacity of the WWTP is 10 million gallons per day (MGD). The treatment facility also has a 6 million gallon (MG) lagoon for temporary storage during high flows. The WWTP receives an average flow (dry weather flow) of about 5.5 MGD.

Wastewater Collection System: The system consists of about 236 miles of sewer lines, 5,100 manholes and 15 sewer lift stations. Portions of the system have been in service for over 75 years. The wastewater collection system extends into the unincorporated area on a limited basis, primarily the eastern trunk line located approximately one-half mile outside the current eastern corporate boundary.

Wastewater Flow Trends

Wastewater treatment flow is evaluated based on average and peak flows. Based on 10 years of annual data, the average flow is 5.5 mgd with a peak flow of 11.8 mgd. Assuming an average flow of 0.0001203 and a peak flow of 0.0002582 per person, the projected average and peak flow in 2030 will be approximately 7.4 and 15.88 respectively based on population projections.

Wastewater Treatment Plant

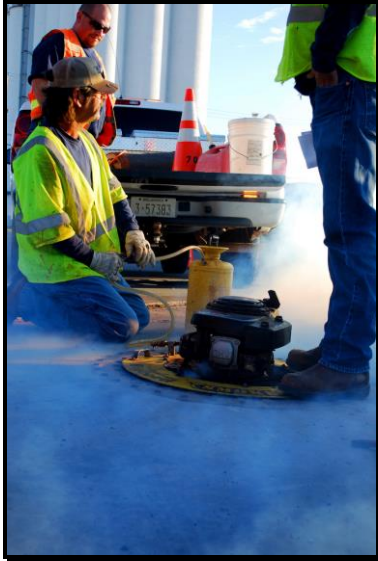


Future Projects

The capacity of the plant and changes in flow are continually monitored and studied annually for possible upgrades in the wastewater treatment plant. Water Utilities plans to replace the entire sanitary sewer

collection system in a 50 year interval. The goal is to replace 2% of the sewer collection system each year. The wastewater treatment plant will continue to operate in conformance with the Department of Environmental Quality (DEQ) permit and perform needed equipment maintenance and replacement as needed.

Sewerline Smoke Testing



Maintenance

As a preventative measure crews regularly clean out sewer lines but, as with the waterlines, there is no formal evaluation and maintenance program for wastewater lines and facilities. The computerized maintenance management program would be a plus for tracking information concerning the sewer lines.

As with most wastewater collection systems, many of the sewer lines in Stillwater have problems related to inflow and infiltration, which is commonly caused by deterioration of aging pipes and manholes.

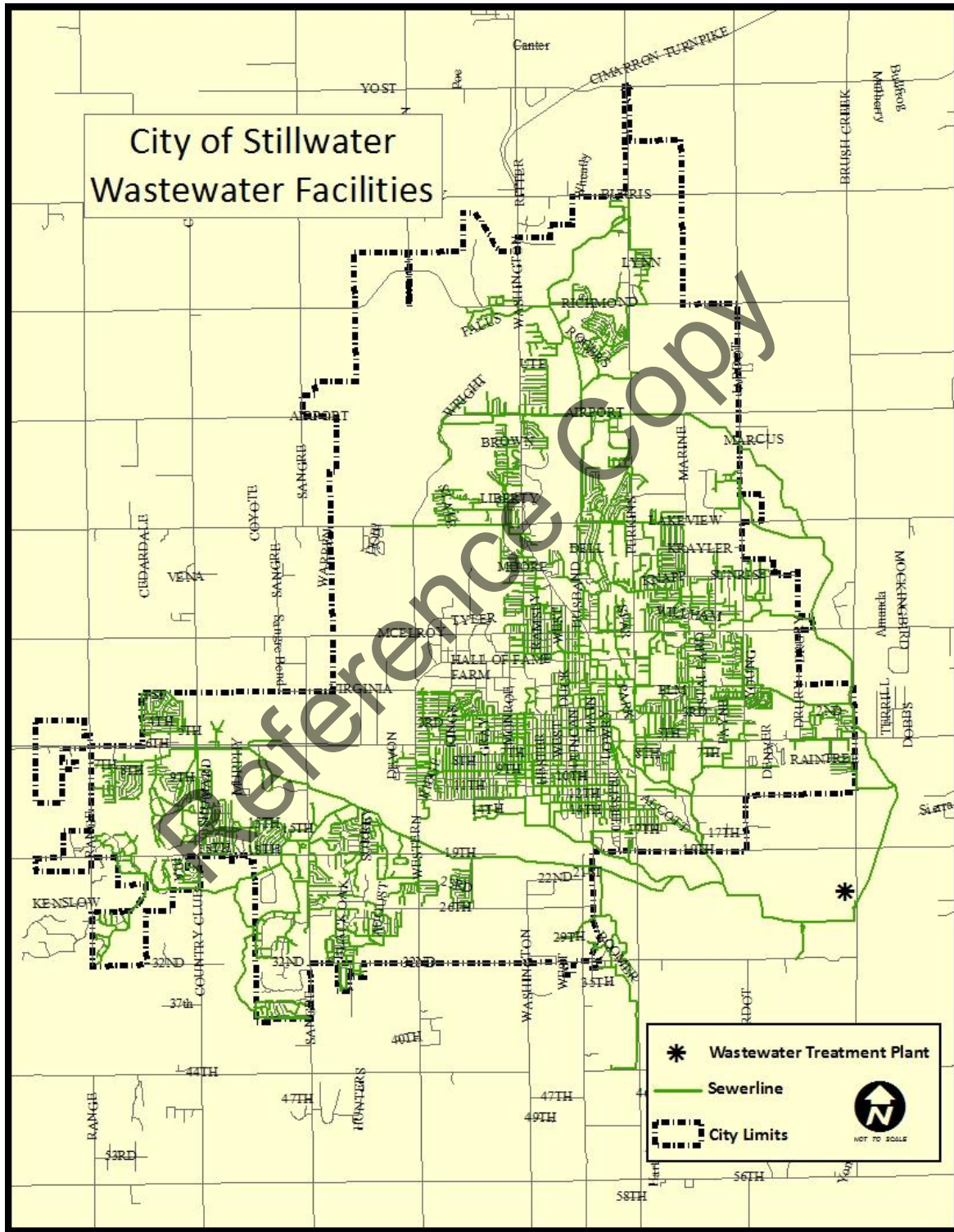
The City was issued a consent order from the Oklahoma Department of Environmental Quality (ODEQ) in 2008. The consent order was issued to resolve certain environmental compliance issues. Notably, the City had un-permitted discharges of wastewater from a large number of sewer system overflows (SSOs) due to line breaks or blockages from debris, roots, grease and power failures at various lift stations. Per the terms of the Consent Order, the City made certain system improvements, and established a Capacity, Management, Operation, and Maintenance (CMOM) program in 2009. The CMOM program details a dynamic system of management that will allow the City to evaluate and prioritize efforts to identify and correct issues within the aging collection system.

The CMOM Program documents the routine and preventive maintenance activities. These activities include root control, spot repairs, manhole inspection, flushing and cleaning of known problem areas according to weekly, biweekly, monthly, etc., schedules, systematic TV inspection, smoke testing, inspection of grease traps, routine maintenance schedules associated with 15 sewer lift stations, revision of system maps, and the maintenance of utility easements.

Aged and deteriorated sewer lines, manholes, and other infrastructure items are identified and prioritized for replacement based on the data collected during the maintenance activities. City ordinances adopted in 2009 provided for the collection of capacity fees and user rate

increases which are to provide additional revenues for the design and construction of sewer system replacements.

Map 3. City of Stillwater Wastewater System



SOLID WASTE

The Waste Management Division, owned and operated by the City, provides municipal collection of residential and commercial waste within the City of Stillwater and surrounding areas.

Residential Waste Collection

The City of Stillwater Automated Residential Waste Collection Program supplies each household with a specifically designed cart to be placed at the curbside for garbage collection. The city empties the cart once per week using collection vehicles equipped with an articulating arm. This arm grasps and quickly empties the cart and returns it to the curbside, all without the need for the operator to leave the truck cab. This method of operation is preformed quicker and safer than traditional manual collection methods.

Waste Management is working on establishing a curbside recycling program. Approximately 3,000 households were invited to partake in a pilot program called Stillwater Recycles: Curbside Single-Stream Pilot Program in the summer of 2012. Due to the success of the pilot program, on November 5, 2012 the City Council approved a plan to move forward with the program citywide. Additional carts will be delivered to the remaining areas of the city and implementation of the program will begin summer 2013. The City has contracted with Cedar Creek Farm, located in Stillwater, for receipt of recyclable materials.

Commercial Waste Collection and Rentals

The Waste Management Division offers a variety of commercial dumpsters to suit most disposal needs. Dumpster service is available six days a week with container sizes ranging from 2 to 4 cubic yard capacities.

The City also has a roll-off rental service. The service is a temporary solution for construction and demolition materials, green waste, household items including furniture and appliances, and materials such as concrete, dirt, sand, brick, etc.

Waste Collection Disposal

The only landfill located in Payne County is at 1717 Yost Road and is owned and operated by Republic Services, Inc, located in Phoenix, Arizona. The City of Stillwater is contracted with Republic Services, Inc. for disposal services. Life expectancy of the landfill is approximately 100 to 108 years. The city strives to ensure a disposal

**Waste Management
Truck with Articulating Arm**



Commercial Dumpster



stream for citizen generated solid waste by offering a collection program that are safe, efficient, and cost effective.

Boomer Lake Station



The City is currently researching the utilization of waste transfer stations. A transfer station is where solid waste is unloaded from the collection vehicles then loaded onto larger long-distance transport vehicles for shipment to landfills or other treatment or disposal facilities. The combining of several waste collection trucks into a single shipment saves money on the labor and operating costs of transporting to a distant disposal site. This can also reduce the total number of vehicular trips traveling to and from the disposal site. Waste transfer stations help reduce the impacts of trucks traveling to and from the disposal site but they can cause an increase in traffic where the transfer station is located. Due to the problems a transfer station can cause to residents in the vicinity, care is needed when siting, designing and operating the stations.

ELECTRIC

Stillwater Electric Utility (SEU) is a publicly owned utility and is governed by the Stillwater Utility Authority. The Stillwater Utilities Authority was created in 1979 for the operation and maintenance of the electric, water, and sewer facilities of the city. The current source for wholesale power is the Grand River Dam Authority (GRDA) headquartered in Vinita, OK. Electricity is delivered across GRDA's transmission system to four delivery locations in or near the city.

Electric Lines



Central Rural Electric Agreement (CREC)

The Stillwater Utilities Authority (Stillwater Power) and CREC entered into a five-year agreement on December 7, 2007 for services and service plan. This agreement was made due to the fact that the service areas of Stillwater Power and CREC overlapped in portions of Payne County that were within and outside the corporate limits of the City of Stillwater. Both entities had lines, poles and other facilities located within these areas, thus duplicating services that were costly to the customers.

The agreement stated that Stillwater Power shall confine its service to retail electric customers located in those areas within the corporate boundaries and to the current customers outside the corporate limits as it existed on the effective agreement date. CREC would confine its service to the customers outside the corporate limits and to those customers already being served within the corporate boundaries as it existed on the effective agreement date. If

CREC chooses to continue serving customers or to provide new electric service in annexed areas, it will compensate the City of Stillwater. If Stillwater Power provide service to any new retail electric customer located outside the corporate limits, it shall compensate CREC.

The original agreement expired in December 2012, but was extended at that time for another five year period beginning January 1, 2013.

Linemen at Work



Boomer Lake Station

The Boomer Lake Station is primarily used as a summer time “peaking plant” and is put on-line when power prices rise and it becomes cheaper to generate electricity rather than purchase it from an outside source. The plant also serves as a year-round standby source of power for the city in case of emergency.

Projects

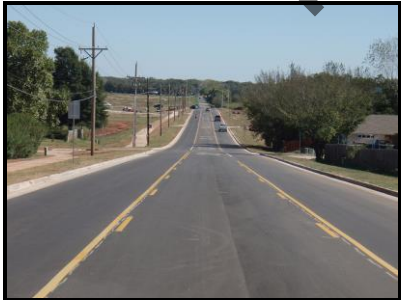
Stillwater Electric Utility completed an upgrade to the 19th Avenue substation located at 4200 W. 19th Avenue in 2009. A second substation transformer and a fourth distribution circuit was added to increase service capacity and improve electric service reliability to the southwest portion of the city.

Phase I of the Boomer Lake substation upgrade was completed in 2010. Problems were corrected that compromised the safety, reliability and operational flexibility within the city’s 69 kV system. This upgrade improved service to approximately 4,600 electric customers located in north central Stillwater.

Future Projects

SEU is currently working on a Capital Plan. In the interim, projects to upgrade the capacity to several areas of the city and upgrades to facilities are ongoing. Please refer to the SEU Department and/or the SEU Capital Plan for future projects.

19th Avenue Between Western and Sangre



TRANSPORTATION

Roadway System

The City is served by a network of roadways which includes one US highway, one state highway and an arterial grid system that serves as the basic transportation network in the City. The Oklahoma Department of Transportation (ODOT) maintains the state facilities.

Major Arterial Intersection



The road network for the City of Stillwater primarily consists of an arterial grid system. The arterial system connects residential neighborhoods within each grid to retail centers, places of employment and personal services. Stillwater's arterial roadways range from two-lane undivided paved streets to four-lane divided streets with curbs and gutters. U.S. 177 runs north-south through the City of Stillwater. U.S. 177 is a three and four lane arterial with posted speed limits between 35 to 40 mph. SH 51 runs in an east-west direction south of OSU. SH 51 is a four lane arterial that offers a direct route to I-35, approximately 15 miles west of Stillwater.

Functional Classification

The functional classification system is a hierarchical organization of streets and highways that facilitates the safe and efficient operation of vehicles along different types of facilities. Arterial facilities are at one end of the spectrum, primarily providing the function of moving vehicles. Collector and local streets are at the opposite end of the spectrum, providing access to property.

Minor Arterial



Major Arterials

Major arterials are streets and highways that provide a high degree of mobility, serve relatively high traffic volumes, have high operational speeds (45 mph or greater), and serve a significant portion of through travel.

Since traffic movement, not land access, is the primary function of major arterials, access management is essential. The number of driveways connecting directly onto a major arterial should be minimized to avoid traffic congestion and delays caused by turning movements for vehicles entering and exiting driveways. Signalized intersection spacing on major arterials should be long enough to allow a variety of signal cycle lengths and timing plans that can be adjusted to meet changes in traffic volumes and maintain traffic progression. Also, major arterials should be constructed or retrofitted with raised medians where possible to increase roadway safety and improve traffic operations.

Collector Street, University Avenue



Minor Arterials

Minor arterials are similar in function to major arterials, except that they provide a higher degree of local access. Minor arterials serve as boundaries to neighborhoods and collect traffic from collectors and local streets. Although a minor arterial typically provides more local access than a major arterial, the primary function is still traffic movement. Major and minor arterials are generally spaced

at one mile intervals in an alternating grid pattern. Any minor arterial that currently exceeds or is forecasted to reach a traffic volume of 20,000 vehicles per day should have a raised median for safety and to improve traffic operations.

Collectors

Collectors accommodate smaller traffic volumes over shorter distances compared to arterial streets. While providing service to neighborhoods and other local areas, collector streets serve as the connectors between arterials and local streets by collecting and distributing traffic to the arterial network.

Collectors may be constructed with or without center turn lanes, and may permit or restrict parking. The identification of collectors is essential in planning and managing traffic ingress/egress and movement within residential neighborhoods as well as commercial and industrial areas.

Local Streets

Local streets function to provide access to abutting property and to collect and distribute traffic between individual parcels of land and collector or arterial streets. Local streets include all other streets and roads that are not included in higher functional classes.

Through traffic and excessive speeds should be discouraged on local streets by using appropriate geometric designs, traffic control devices, curvilinear alignments, and discontinuous streets. Local streets should be designed for low speed traffic with an emphasis on providing access.

Please refer to the Stillwater Transportation Enhancement Plan (STEP) for more information on the street functional classification system.

Street Functional Classification

Functional Classification

- Collector
- Minor Arterial
- Major Arterial
- CITY LIMITS

NOT TO SCALE

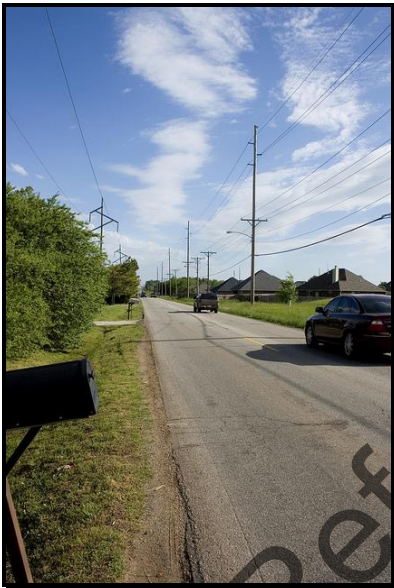
Existing Traffic Operations

Table 21. Roadway Level of Service

Grade	LOS
A	Excellent
B	Good
C	Average
D	Acceptable
E	Needs Improvement
F	Failing

Existing traffic operations are evaluated by conducting a capacity/level-of-service analysis. Roadway capacity is defined as the maximum number of vehicles that can be accommodated on a roadway facility during a particular time period under prevailing roadway, traffic, and control conditions. An important result of a capacity analysis is the determination of level-of-service. Level-of-Service (LOS) is a qualitative measure of operating conditions at a location and is directly related to the volume-to-capacity ratio along roadways. LOS is given a letter designation ranging from A to F (free flow to heavily congested), with LOS D considered in most urban areas as the limit of acceptable operation. For example, LOS can be related to the grading scale of a report card: A – Excellent, B – Good, C – Average, D – Acceptable, E – Needs improvement, and F – Failing. The level-of-service was determined for major roadways within the study area utilizing procedures identified in the 2000 Highway Capacity Manual and the available traffic data identified previously.

City Street without Curb



According to the STEP plan, the majority of roadways are operating at an LOS of A to D, meaning that traffic volumes are below capacity and the roadways are providing acceptable traffic operations. Roadways approaching or exceeding capacity with an LOS of E or F are located within the central part of the City and include portions of 6th Avenue, Perkins Road, Western, Hester, Monroe, Hall of Fame, and Virginia. See Map 5 for Level of Service.

Future Traffic Impacts

An initial step in identifying transportation improvements in the City was to determine future deficiencies by projecting 2030 traffic demands and needs along the existing roadway network. Nine scenarios were developed for the 2007 Stillwater Transportation Enhancement Plan, using varying transportation projects, to evaluate the impact on the transportation system. Based on the nine scenarios, projects were evaluated and a transportation plan was recommended.

City Intersection



The projects in the recommended plan fall into a few categories. Roadway widening projects follow a similar pattern and method. Standard practice is to remove the existing surface material and widen the roadbed and then construct the road. This method is distinguished from simply adding additional lanes to the outside of an existing roadway. Typically, intersection improvements would be incorporated into widening projects where appropriate. The widening will allow adequate room for utilities, bike lanes, and sidewalks.

Possible Future Road Project



Intersection improvements basically include the addition of turn lanes. Typically these improvements would be included with a roadway widening project; however, there are a few intersections that require additional improvement, generally where a major arterial intersects another major arterial. At the intersections of 6th Avenue and Western, 6th Avenue and Boomer, and 6th Avenue and Perkins Road accommodation and construction of double left turn lanes and a dedicated right turn lane will remove turning traffic from the through lanes and allow more traffic to move through the intersection. At the intersections of Washington and Richmond and Perkins and Richmond enough right-of-way should be required to allow these improvements if needed beyond the Year 2030 planning horizon. Signal improvements are a relatively simple way to improve traffic flow and are typically required in a community the size of Stillwater. The recommended plan includes signal improvements which specifically call for the installation of video detection systems, fiber optically interconnected, and connected to and control by a centralized control facility. See Table 23 for the Recommended Short Term Improvement Program to 2019 and Table 24 for the Recommended Long Term Improvement Program.

Road Work



Transportation Projects

The citizens of Stillwater approved a five-year, half cent sales tax for street improvements September 11, 2001. City staff used the 1988 Transportation Plan, as amended in 1996, as a basis for a list of fifteen projects. The sales tax was reauthorized by voters for an additional 10 years on April 4, 2006. Although the money generated by the tax has been expended the actual tax doesn't expire until 2016. The City will have to explore ways of obtaining money for street projects. The sales tax could be reauthorized for a list of projects or perhaps put each project to the vote of the people.

Demolition of 19th Street Bridge

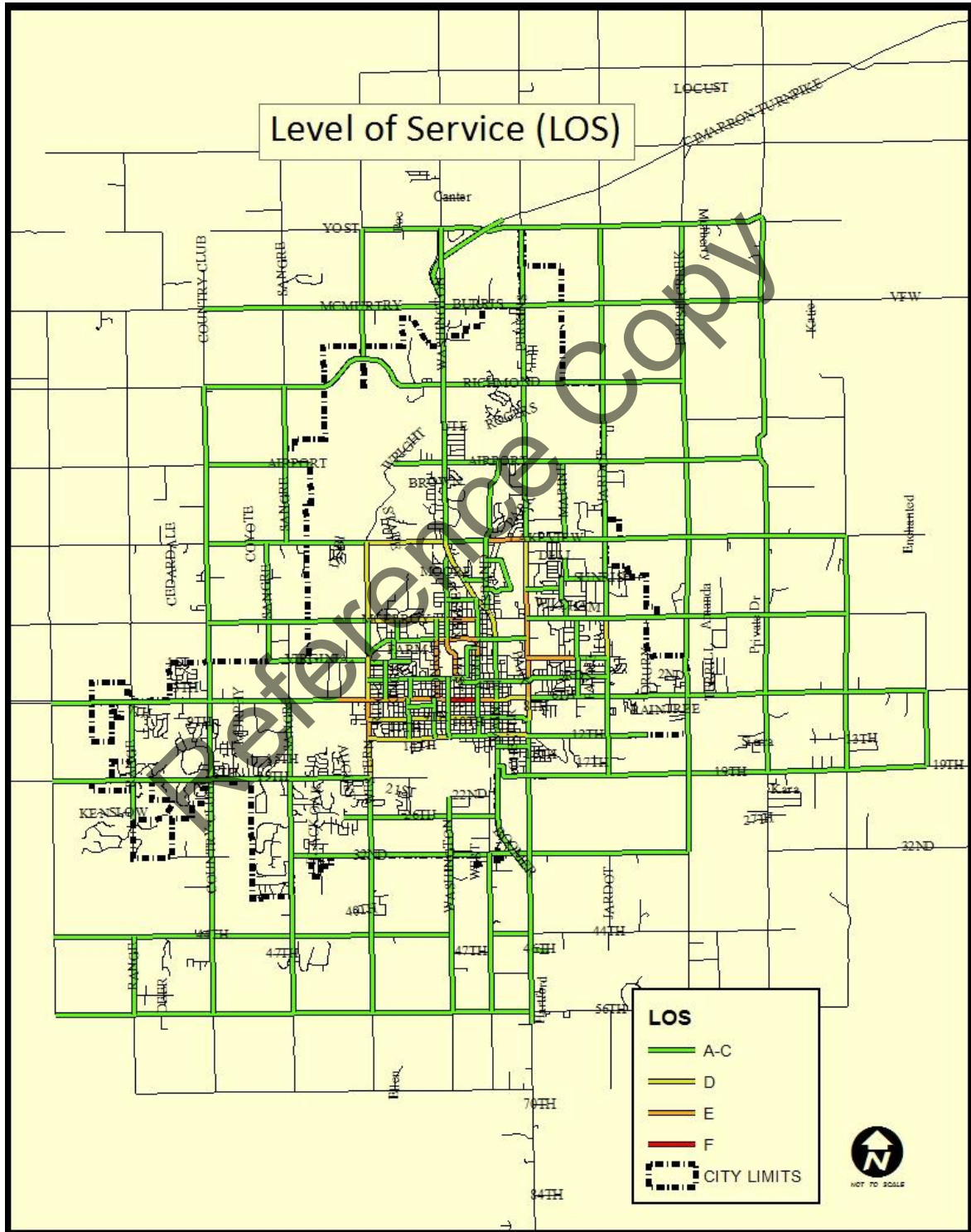


Two projects were added to the original list on January 18, 2007; the 3rd Avenue extension and wayfinding. The 19th Avenue bridge over Boomer Creek was added on March 15, 2010. On May 3, 2010 the 3rd Avenue extension and wayfinding were removed from the project list and the reconstruction of Country Club Road from 6th Avenue north to Lakeview was added. See Table 22 for a complete list of sales tax projects and their status.

Three projects have been added recently. Oklahoma Department of Transportation's (ODOT) eight year plan indicates improving the 6th Avenue/Perkins Road intersection by adding turn lanes and replacing the bridge on 6th. The projected starting date is the year 2015. Due to

development activity, improvements have become necessary for North Perkins Road from McElroy to Lakeview by adding a turn lane and/or other enhancements. This project is also on ODOT'S eight year plan with the projected start date in 2020.

Map 5. Level of Service (LOS)



Source: Stillwater Transportation Enhancement Plan (STEP)

Table 22. Sales Tax Street Improvement Projects

Project	Status
Neighborhood Streets	Ongoing
19 th Ave: Western to Sangre	Completed
Jardot 6 th to McElroy	Completed
Jardot: 12 th to 6th	In Progress
12 th Ave: Western to Duck	Completed
19 th Ave: Main to Jardot	Perkins to Jardot is Completed
Jardot: 19 th to 12 th	Completed
University: Monroe to Knoblock	Completed
Washington: Hall of Fame to Richmond	Completed
Lakeview and Husband Intersection	Completed
3 rd Ave: Washington to West	Removed from list
Way-finding Signs	Removed from list
Western and Hall of Fame Intersection	Not Started
Country Club: 6 th Ave to Lakeview	Planning

Table 23. Recommended Short Term Improvement Program to 2019

Roadway	Limits	Improvement	Order-of-Magnitude Construction Cost	Responsible Agency
Jardot	McElroy to 6 th +	Widen 2 to 4 lanes	\$5.7M	City
12 th Avenue	Western to Duck *	Widen 2 to 4 lanes	\$6.4M	City
6 th Avenue	Sangre to Jardot	Signal timing optimization improvements	\$310,000	City
Perkins	6 th Avenue to McElroy	Signal timing optimization improvements	\$195,000	City
N/A		Centralized Signalization Control	\$300,000	City
12 th Avenue	Main to Perkins	Widen 2 to 4 lanes	\$1.64M	City
Jardot	Lakeview to McElroy	Widen 2 to 4 lanes	\$3.65M	City
6 th Avenue	Western to Jardot	Widen 4 to 5 lanes	\$9.0M	City, ODOT
Perkins	Lakeview to McElroy	Widen 4 to 5 lanes	\$2.75M	City, ODOT
McElroy	Western to Boomer	Widen from 2 to 4 lanes	\$2.9M	City
Lakeview	Husband to Jardot	Widen 2 to 4 lanes	\$5.5M	City
Western	Lakeview to Hall of Fame	Widen 2 to 4 lanes	\$6.5M	City
Western	Hall of Fame to 6 th Avenue	Widen 4 to 6 lanes	\$4.3M	City, ODOT
Virginia	Perkins to Jardot	Widen from 2 to 4 lanes	\$4.2M	City
Transit Service Improvements	Current transit service area	Encourage ridership with transit service technology; Restrict on-campus parking	\$500,000	City, OSU, grants may be available
Bicycle/Pedestrian Improvements	Master Bicycle and Pedestrian Plan	Implement Recommended Projects from the Plan		City, OSU, grants may be available

Source: Stillwater Transportation Enhancement Plan (STEP)

Table 24. Recommended Long Term Improvement Program (2020 to 2030)

Roadway	Limits	Improvement	Order-of-Magnitude Construction Cost*	Responsible Agency
32 nd Street	Western to Perkins	Widen from 2 to 4 lanes	\$7.4M	City
Lakeview	Country Club to Western	Widen from 2 to 4 lanes	\$7.4M	City
McElroy	Country Club to Western	Widen from 2 to 4 lanes	\$7.5M	City
Perkins Road	½ mile north of Airport to Lakeview	Widen from 4 to 5 lanes	\$3.0M	City, ODOT
Perkins Road	Richmond to ½ mile north of Airport	Widen from 3 to 4 lanes	\$1.5M	City, ODOT
Perkins Road	Yost to Richmond	Widen from 2 to 4 lanes	\$7.6M	City
Richmond	Washington to Perkins	Widen from 2 to 4 lanes	\$3.6M	City, ODOT
Western	19 th to 32 nd	Widen from 2 to 4 lanes	\$3.6M	City
19 th Avenue	Range to Western	Widen from 2 to 4 lanes	\$11.1M	City
Country Club	Lakeview to 44 th	Widen from 2 to 4 lanes	\$17.8M	City
Sangre	6 th to 32 nd	Widen from 2 to 4 lanes	\$7.1M	City
Boomer	15 th to Perkins	Widen from 2 to 4 lanes	\$6.8M	City
Transit Service Improvements	City of Stillwater and beyond	Continue to implement transit friendly services		City, OSU, grants may be available
Bicycle/Pedestrian Improvements	Master Bicycle and Pedestrian Plan	Implement Recommended Projects from the Plan		City, OSU, grants may be available

Source: Stillwater Transportation Enhancement Plan (STEP)

*Includes estimate of right-of-way requirements

Train Track Switch



Existing Railroad Facilities

The City of Stillwater has one railroad track that begins in the southeast part of the town, heading north parallel to Perkins Road then heading in a northeasterly direction at Airport Road. The Stillwater Central Railroad provides rail service to Stillwater via a 20 mile spur connecting with the Burlington Northern Santa Fe Railroad just north of Stillwater to Pawnee.

Transit Service

The City of Stillwater receives urban transit service from the OSU Stillwater Community Transit, also known as

OSU Transit Offices



Big Orange Bus (BOB)



Reasons for Transit

1. *Reduces air pollution*
2. *Promotes energy independence*
3. *Safe mode of transportation*
4. *Promotes good health*
5. *Reduces household expenses*



“The Bus”. The OSU Stillwater Community Transit service began operating The Bus in August 2003 providing 13 routes. The Bus currently provides service to more than 600,000 riders per year throughout the Stillwater area. The OSU Tulsa/Stillwater shuttle also provides transit services to Tulsa, OK, linking the OSU campuses in Stillwater and Tulsa. This shuttle served over 53,000 passengers in 2009-2010.

The Bus provides nine routes that operate daily from Monday through Friday (no Saturday or Sunday service provided) within the City of Stillwater. The Bus offers five community routes that operate from 6:20 am until 7:00 pm and one community route that offers night service from 7:00 pm until 10:30 pm. The community routes provide access to and from the OSU campus to the airport, many residential areas, retail/activity centers, medical centers and hospitals, and park systems. In addition, there are three campus routes, two of which offer service from 6:20 am until 7:00 pm and one nightly service from 6:45 pm until 10:30 pm. The campus routes provide access around the OSU campus including parking areas, on-campus housing, main educational buildings, and the student union. The bus charges a regular fare of 50 cents per person for the general public, 25 cents for children under 18 years of age, the elderly, and disabled persons, and is free for OSU students and staff if they provide a valid ID. The Bus also provides paratransit services. The ridership for the year 2009-2010 was over 8,000 passengers.

An improvement recommended in the STEP, which would provide a significant decrease in both vehicle miles of travel and vehicle hours of travel was an increase in transit service usage. Increased usage of the transit service by OSU students and faculty would have a significant impact on the overall congestion levels throughout the City of Stillwater over the next 20 years.

The STEP recommended that OSU and the City of Stillwater provide for improved transit service to the university area to encourage higher levels of student ridership. In addition, the STEP recommended the City and OSU consider new parking policies (such as higher parking rates or reducing the number of available parking spaces on campus) to encourage higher transit ridership.

Intercity Bus Service

Jefferson Lines Bus services the Stillwater area. The bus stops at 1006 W. Hall of Fame at the Multi-Modal Transfer Terminal. The terminal is open Monday through Friday, 7:00 a.m. to 5:00 p.m. Tickets may be purchased at the terminal or online.

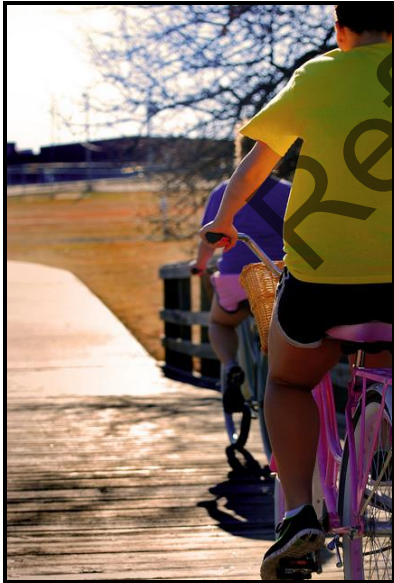
Share the Road



Share the Road Sign



Multi-Use Trail



Bicycle and Pedestrian Facilities

Bicycle and pedestrian facilities are important components of the City's transportation system. They serve as alternative modes of travel and provide for recreational opportunities for local residents. Bicycle and pedestrian planning should be highly coordinated with thoroughfare planning to ensure bicycle and pedestrian routes are safe and efficient and serve the varying needs of the community. The City should utilize opportunities to improve bicycle facilities in areas that are developing or redeveloping, or where roadway improvements are occurring. Future opportunities for bicycle and pedestrian improvements should therefore be planned for in conjunction with thoroughfare improvements.

Bike Routes

Because of its small geographical area and relatively flat terrain, Stillwater lends itself to easy bicycle commuting and recreational activities. Many Stillwater residents, particularly university students and local school children, can commute by bicycle virtually year-round. On-street bicycle routes are designated by "Bike Route" and "Share the Road" signage, directional arrows, and "Share the Road" thermoplast decals in the road bed. The routes have continuous north-south and east-west corridors, meet AASHTO guidelines, and are destination oriented.

The Stillwater Multi-Use Trail and On-Street Bicycle Master Plan was approved by the City Council on February 16, 2009. The Plan made five recommendations to improve the on-street bicycle routes.

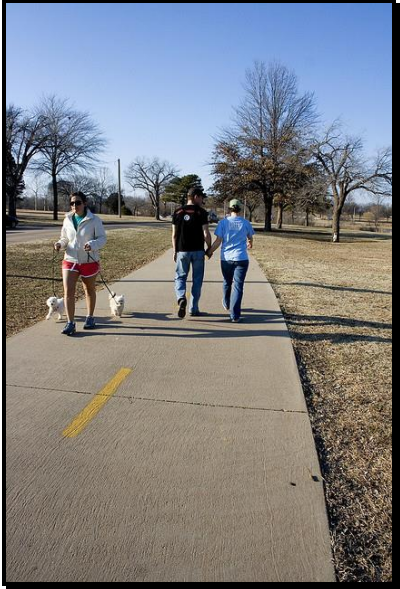
1. Eliminate references to bicycle *lane* and replace with bicycle *route*.
2. Provide adequate signage for bicyclist and motorists to delineate shared-use bicycle routes.
3. In future construction and/or reconstruction, the City of Stillwater should follow AASHTO guidelines for bicycle facilities.
4. Insure that the traffic detectors at all intersections will sense bicycles.
5. Change the existing bicycle routes to provide safe and continuous corridors.

Multi-use Trails

Trail development in Stillwater began in the 1980s with a

half mile walking loop at Couch Park. The City has funds for trail development. To date, the City has more than 7.5 miles of developed trails, 3.0 miles of nature/undeveloped trails and 27 miles of mountain bike trails. In addition to the City's trails, there are two miles of privately owned pedestrian trails open for public use. The current trails include:

Boomer Lake Trail



Why build trails?

1. Recreation
2. Alternative transportation
3. Positive economic & community development
4. Encourage physical activity
5. Protects the environment

1. Kameoka Trail Corridor

- a. Boomer Lake – a three-mile, concrete multi-use trail that circles Boomer Lake
- b. Stillwater High School Spur – a one-mile section, concrete multi-use trail that connects to Boomer Lake
- c. Hall of Fame to McElroy – a one-half mile, concrete multi-use trail along the Kameoka Trail Corridor that is a non-continuous section
- d. Hoyt Grove Park – a one-half mile section, mixed surface (concrete & gravel screenings) from 9th Avenue through Hoyt Grove Park to 12th Avenue
- e. Parkview Estates Connection – a 0.33 mile section, concrete multi-use trail from Parkview Estates through North Boomer Park that is a non-continuous segment. A grant has been obtained for this section and may be going out for bid in 2011.

2. Couch Park Walking Loop – a 0.5 mile, asphalt pedestrian walking loop

3. Sanborn Lake Nature Trail – 1.0 mile, mixed surface (gravel screenings and dirt) pedestrian trail

4. Lake McMurtry Trail – 27 miles of mountain bike trail and 2 miles of pedestrian trails, all dirt surface

5. Teal Ridge Nature Trail – a private one mile mixed surface (gravel screenings and boardwalk) pedestrian trail that is open to the public

6. Tech Park Trail - a 1.0 mile gravel screenings pedestrian walking loop

The Stillwater Multi-Use Trail and On-Street Bicycle Master Plan provides a vision for how trails should connect destinations in the community and provides a guide for the development of a comprehensive system of trails for Stillwater and the surrounding area.

Sidewalk Crew



Safe Routes to School
*Connecting the trip to
school with safety,
health, community
and choice.*

The recommendations made by the Stillwater Multi-Use Trail and On-Street Bicycle Master Plan do not indicate exact locations of each trail; rather they indicate approximate routes that connect the destinations. The location of the trails will depend on several factors including land acquisition and acceptable accommodations within the existing infrastructure for on-street bicycle routes. The Master Plan states that in the citing of specific trails, publicly-owned land should be looked at as a first option. The seven recommendations are:

1. Complete Kameoka Trail Corridor – Couch Park to Boomer Park, Parkview Estates and the Links
2. Create a Trail to Connect Tech Park to Babcock Park
3. Build a Trail to Connect Sanborn Park to OSU and Tech Park
4. Construct a Trail to Connect Babcock Park to Couch Park
5. Build the Southwest Connection Loop Trail – From Tech Park Trail
6. connecting to Babcock Park to Couch Park
7. Create the Outer Loop Trail – From Babcock Park to Couch Park to Sanborn Park
8. Construct the Stillwater Creek Corridor Trail – From Tech-Park Trail to Lake Carl Blackwell and Lake McMurtry

Sidewalks

Stillwater has an extensive sidewalk system that is generally oriented toward connecting urban core neighborhoods with the community's major activity centers and public facilities. While the layout of the system marginally accomplished this orientation, the facilities often were discontinuous and did not provide connectivity where it is needed.

The City undertook an aggressive program to improve pedestrian accessibility throughout the community in 2003. The sidewalk improvements were contracted for the next five years. In 2007 a cost analysis indicated that approximately \$160,700 would be saved per year by performing the sidewalk construction "in-house". In the first ten months of existence, the sidewalk crew saved the City over \$230,000 and exceeded their goal of installing 4,696 linear feet of 6 foot sidewalk by 232 linear feet.

Safe Routes to School (SRTS)

The Federal-aid SRTS program was created by Section 1404 of the Safe, Accountable, Flexible, and Efficient Transportation Equity Act: A Legacy for Users Acts (SAFETEA-LU), signed into Public Law on August 10, 2005. The program is to address the decline in walking and bicycling to school and the adverse effect these actions have had on traffic congestion and air quality around schools. SRTS also addresses pedestrian and bicycle safety as well as the health problems that may come about by sedentary lifestyles.

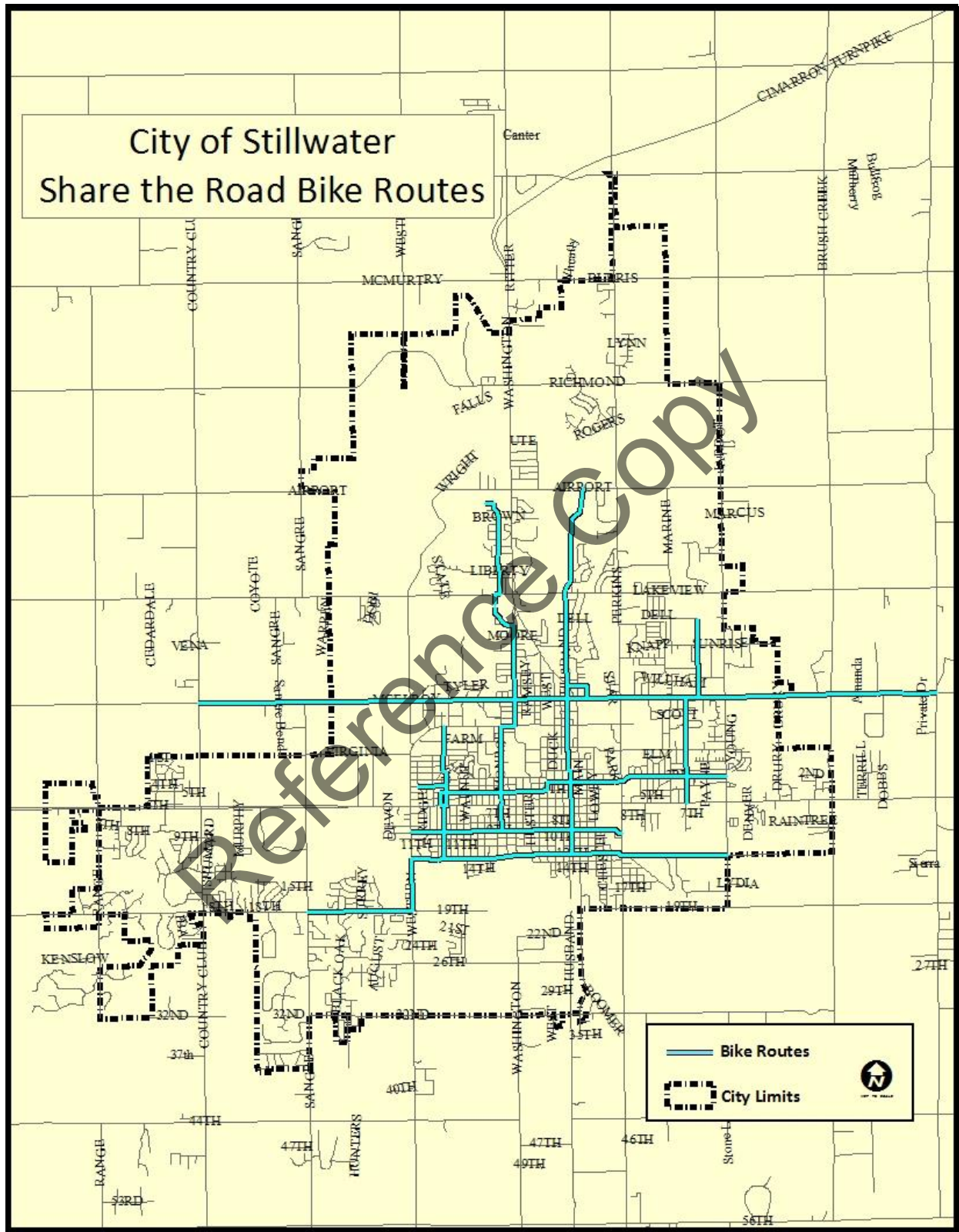
The purposes of the program are:

1. to enable and encourage children, including those with disabilities, to walk and bicycle to school
2. to make bicycling and walking to school a safer and more appealing transportation alternative, thereby encouraging a healthy and active lifestyle from an early age; and
3. to facilitate the planning, development, and implementation of projects and activities that will improve safety and reduce traffic, fuel consumption, and air pollution in the vicinity (approximately 2 miles) of primary and middle schools (Grades K-8)

In 2010 Highland Park Elementary received a grant in the amount of \$220,000 for sidewalks, signs, pavement markings, speed radar device, crosswalk improvements and educational materials. The City sidewalk crew installed the sidewalks. Although this school has been approved by a vote of the people to be moved to a new location, the sidewalks will be a valuable asset to the sidewalk network and the people of the neighborhood.

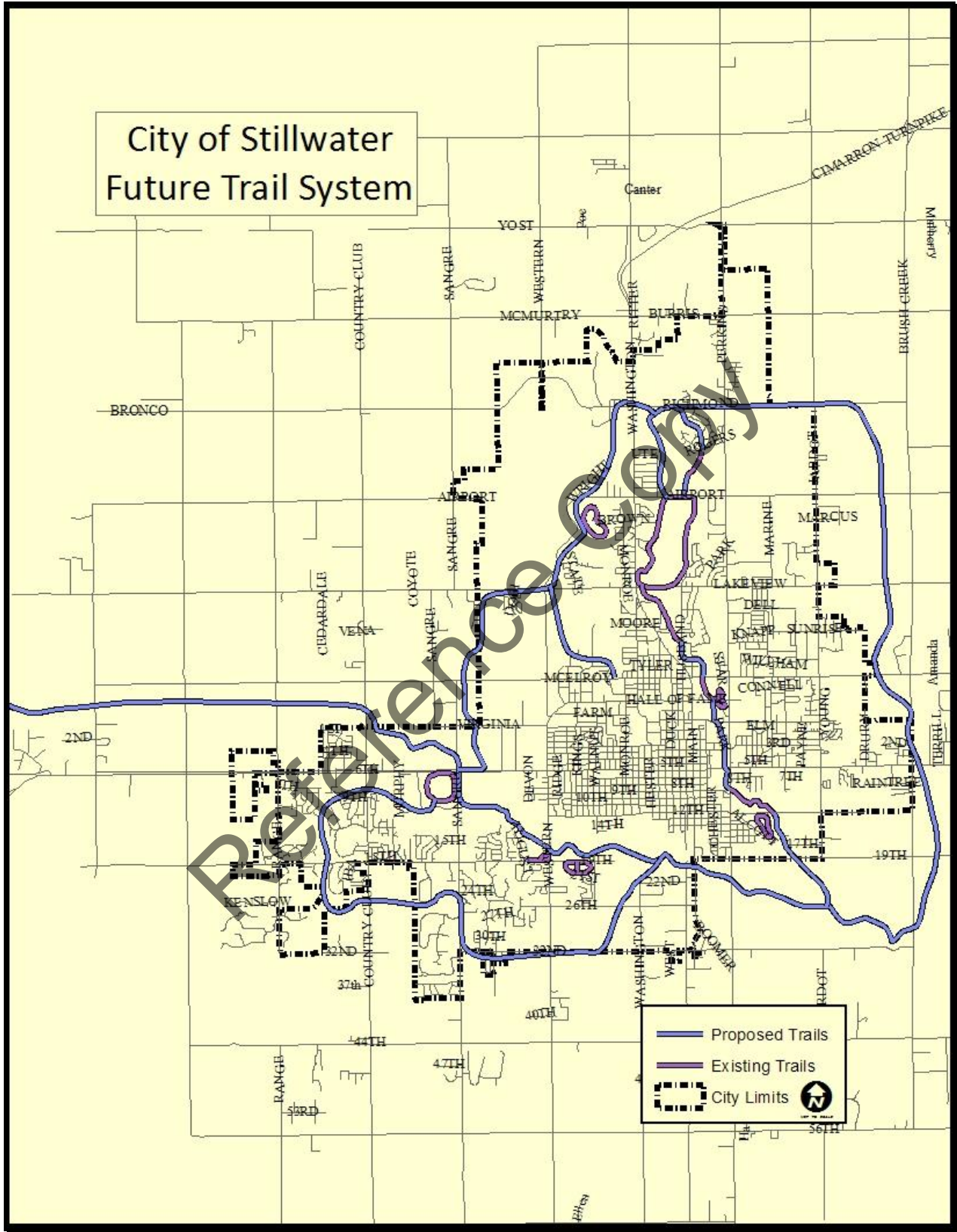
At this time no other school has applied for funds from the SRTS program.

Map 6. Share the Road Bike Routes



Source: City of Stillwater GIS

Map 7. Proposed Trail System



Source: Stillwater Multi-Use Trail and On-Street Bicycle Master Plan

Airport Terminal



Planes at Stillwater Regional Airport



Airport

The Stillwater Regional Airport is an important element of the National airport system and an integral component of the transportation infrastructure. The airport is a busy and unique facility in that it supports a wide range of aircraft, ranging from single engine training aircraft, experimental aircraft and war birds, to larger business and corporate turbo-prop and jet powered aircraft and commercial passenger charter flights.

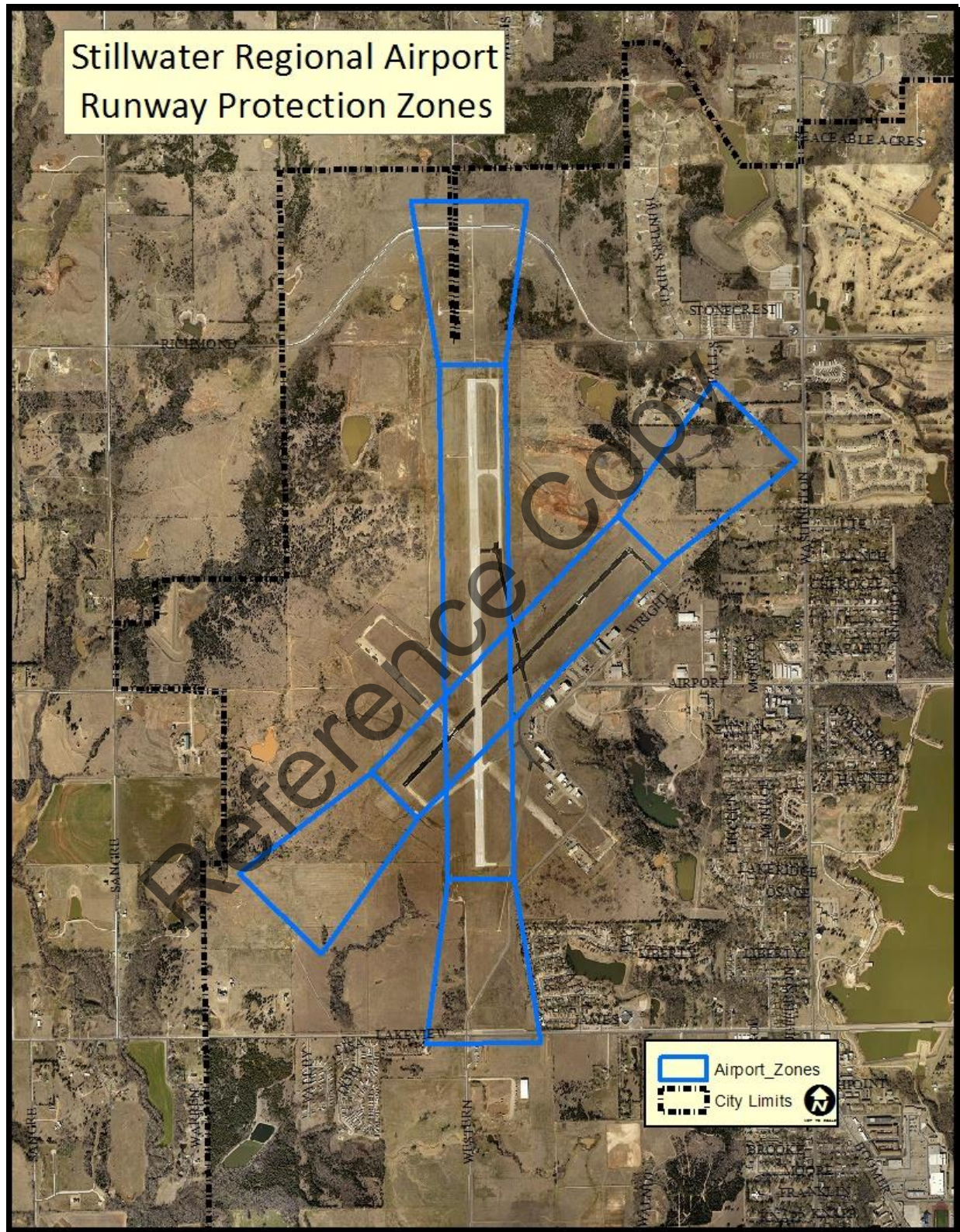
The airport is owned by the City of Stillwater, and operated by the Stillwater Regional Airport Authority, which has overall responsibility for the operation of the Airport on a daily basis. The Airport is classified as a general aviation airport by the FAA's National Plan of Integrated Airport Systems (NPIAS) and is a Federal Aviation Regulation (FAR) Part 139 certificated airport. FAR Part 139 airports are certificated to allow air carrier operations and Stillwater Regional Airport is one of only four airports in Oklahoma with this certification.

The aircraft types projected to be used at Stillwater Regional airport, during the next 20 years, are the same types that presently use the airport. The number of annual aircraft operations (landings and takeoffs) at the airport is forecast to increase modestly during the next 20 years. The total number of aircraft operations is forecast to increase from 78,415 currently, to approximately 122,191 at the end of the 20-year planning period. The current number of approximately 77 based aircraft at the airport is expected to increase to 102 in 20 years. (2008 Stillwater Regional Airport Master Plan)

Runway Protection Zones (RPZ'S)

The function of the RPZ is to enhance the protection of people and property on the ground beyond the runway ends. This is achieved through airport control of the RPZ areas, which, in turn, allows the airport to specify land use within the area and to control the height of objects. The RPZ is trapezoidal in shape and centered about the extended runway centerline. It begins 200 feet beyond the end of the area usable for takeoff or landing. The Airport Master Plan suggest the RPZ's be enlarged due to improvements to the airport. See Map 8 for the proposed runway protection zones.

Map 8. Stillwater Regional Airport Runway Protection Zones



Source: Stillwater Regional Airport Master Plan

Height Hazard Zoning

An airport Hazard Regulations ordinance has been adopted by the City of Stillwater. This ordinance is based on Federal Aviation regulation Part 77, Objects Affecting Navigable Airspace. The Airport Hazard Regulations ordinance is intended to limit the height of objects within the defined areas to protect for the safe operation of aircraft.

Height Limitations:

Except as otherwise provided in this chapter, no structures shall be erected, altered, or maintained, and no trees shall be allowed to grow in any zone created by this article to a height in excess of the applicable height herein established for such zone. Such applicable height limitations are hereby established for each of the zones in question as follows:

- (1)*Precision instrument runway approach zone.*
- (2)*Runway larger than utility with a visibility minimum as low as three-quarter-mile non-precision instrument approach zone.*
- (3)*Utility runway visual approach zone.*
- (4)*Transition zone.*
- (5)*Horizontal zone.*
- (6)*Conical zone.*
- (7)*Excepted height limitation.*

For more information on Height Limitations please refer to the Land Development Code Section 23.401(E).

Conceptual Airport Development Plan

A Conceptual Development Plan for layout of future airport facilities was prepared for the Stillwater Regional Airport Master Plan. The following is a list of critical improvement recommendations for the Airport:

1. Construct a full-length parallel taxiway (Taxiway "D") 400 feet east of the Runway 17/35 centerline.
2. Enlarge exit taxiway radii to Airport Design Group (ADG) IV to Taxiways "D" (at Runway 17 end), "D1", "D2", and "A" (at Runway 35 end).
3. Construct a diagonal high-speed exit taxiway on Taxiway "D".
4. Implement air traffic control radar system improvements.
5. Acquire land or easements for future Runway Protection Zones (RPZs).
6. Install a Medium Intensity Approach Lighting System with Runway Alignment Indicator Lights (MALSR) to Runway 35.
7. Implement an LPV precision instrument approach with lower-than ½-mile visibility minimums to Runway 35.
8. Install a Medium Intensity Approach Lighting System (MALSR) to both ends of Runway 4/22.
9. Implement a non-precision instrument approach with not-lower-than ¾-mile visibility minimums to both ends of Runway 4/22.
10. Construct an interior partial parallel taxiway 240 feet east of the Runway 4/22 centerline, from the Runway 22 threshold terminating at the terminal apron.
11. Develop an appropriate taxiway/taxilane/aircraft parking apron layout for the east side of the Airport (along Southeast Taxilane).
12. Expand the terminal aircraft parking apron area.
13. Reserve room for the development of the Oklahoma State University Aerospace Research and Education Center.
14. Install wildlife/security fencing.
15. Expand the terminal building.

16. Construct an industrial access roadway on the west side of the Airport.
17. Construct an access roadway on the northeast side of the Airport.

PROJECTIONS AND RECOMMENDATIONS

The projections and recommendations listed below will provide the City the means to serve the citizens with an efficient and cost effective infrastructure and public facilities. They will also ensure the safety, connectivity, and mobility for all modes of transportation for the established and new neighborhoods of the community.

1. Explore possibilities of an integrated management system with GIS capabilities for water utilities and transportation.
2. Conduct a Sidewalk Plan/Walkability Study for the city.
3. Expand pedestrian network that would promote greater connectivity between residential areas, major activity centers and recreation facilities.
4. Expand intra-neighborhood pedestrian routes.
5. Establish a University to downtown pedestrian connection.
6. Extend the pedestrian system into areas of emerging development.
7. Connect pedestrian facilities to the existing and proposed trail system.
8. Continue to install sidewalks during roadway upgrade or new construction.
9. Fund the recommendations in the Airport Master Plan.
10. Fund the recommendations in the Trails and Bike Route Master Plan.
11. To promote development, provide more infrastructure pro-active projects rather than reactive.
12. Continue to provide economical utilities while extending or improving the existing systems.

Chapter 6

PARKS AND RECREATION

Park and Open Space Benefits

Individual Benefits

- *Enriches quality of life
- *Provides areas for physical activity/exercise
- *Improves physical and psychological health
- *Provides social connections and interactions for seniors

Community Benefits

- *Contributes to aesthetic and physical quality of neighborhoods.
- *Provides recreational and visual assets.
- *Contributes to community policy objectives.
- *Public health Youth development
- *Job opportunities
- *Social and cultural exchange

Economy Benefits

- *Reduces energy use
- *Reduces stormwater runoff
- *Increases neighboring property
- *Improves teen academic performance
- *Lowers crime
- *Provides a quality of life factor for relocating businesses
- *Provides a quality of life factor for relocating individuals and families

Environmental Benefits

- *Purifies water
- *Absorbs carbon dioxide
- *Releases oxygen
- *Provides wildlife habitat
- *Provides biodiversity habitat
- *Provides ecological integrity

Importance of Parks and Recreation

Parks improve a person's physical and psychological health, strengthen the community and make the city a more attractive place to live and work. The benefits of parks are endless to individuals, the community, the economy and the environment. Parks provide a diverse and quantifiable range of benefits that improve the city's quality of life.

Operations

The City of Stillwater's Parks and Recreation Department owns and/or operates approximately 30 facilities for the public provision of parks, recreation and open space. Both active and passive opportunities are provided. Oklahoma State University provides extensive recreational facilities and programs for its students, faculty and staff. Facilities are available to the general public on a limited basis, with students having priority. Public use typically involves specific times and availability. In addition to publicly owned and operated facilities, Stillwater has additional private facilities with recreational provisions. Private facilities are generally operated on a membership and/or fee basis. Existing facilities and their provisions are summarized in Table 25 and 26

Table 25. OSU Recreational Facilities

Type	Number
NCAA Facilities	
Baseball Field	1
Basketball Court	1
Softball Field	1
Football Field	1
Outdoor Track	1
Cross Country Running Facility	1
Tennis Courts	8
Colvin Center	
Basketball/Volleyball Courts	6
Indoor Pool	1
Outdoor Pool	1
Multi-Purpose Fields	8
Racquetball/Handball Courts	11
Multi-Purpose Rec. Center	1
Colvin Center Annex	
Basketball/Volleyball Courts	4

Source: Oklahoma State University 2012

Table 26. City of Stillwater Parks and Rec Facilities

Parks	Shelter	Covered Picnic Table	Uncovered Picnic Tables	Benches	Water & Electric	Grills	Wheelchair Accessible	Drinking Fountains	Public Restroom	Playground	Horseshoe Pit	Walking/Hiking Trail	Baseball/Softball Field	Tennis Court	Basketball Court	Soccer Field	Swimming Pool	Disc Golf	Other Facilities
Arrington Park		X	X				X			X					X				
Arrowhead Park				X	X			X	X	X									
Babcock Park	1	X		X		X	X	X	X	X		X	3			X			
Berry Park		X								X									
Boomer Park	4	X	X	X	X	X	X	X	X	X		X						X	
Centennial Plaza								X											
Chris Salmon Plaza			X				X	X											
Couch Park	2	X		X	X	X	X	X	X	X	X	X	3	4			X		football field
Hoyt Grove (North Couch)					X							X	X					X	
Ingham Park				X			X	X		X									
Myers Park			X			X	X	X		X									
Sanborn Park & Lake								X	X			X	5						Fishing
Southern Woods Park	2	X	2	X	X	X	X		X	X			3		X				
Strickland Park	1	4		X		X	X	X	X	X			4						Skate park
Sunset Park		X						X											
Tower Park			X																
West Park		X					X	X		X	X								Walking loop
Whittenberg Park & Lake							X	X	X				3						Fishing
Lakes																			
Boomer Lake East	2	X	X	X		X	X	X	X			X							Gazebo, fishing
Boomer Lake West	4	X	X	X	X	X	X	X	X	X		X						X	Deck, boat ramp, fishing
Lake McMurtry East	1		X	X	X	X			X			X							Boat ramp, bait shop, fishing, duck blinds
Lake McMurtry West	1		X	X	X	X			X			X							Dock, boat ramp, bait shop duck blinds
Facilities																			
Armory/Annex															X				Conference room, volleyball
Community Center																			16 meeting rooms, 710-seat theatre
Municipal Pool																			
Lakeside Golf Course																			18 hole
Multi Arts Center																			Gift gallery, various art instruction
Senior Center																			34 miles of trails
Stillwater 500 (Motocross)																			
StillWaggin' Dog Park																			

Source: Stillwater Parks and Recreation Department

Park and Recreation Facility Guidelines

The National Recreation and Park Association (NRPA) guidelines have been the most recognized guide to minimum recreation facility needs within a community. NRPA has changed the standard guidelines to more of a comparison of communities within a region. In order to take advantage of this type of comparison, a survey of current conditions must be entered into the NRPA website. Since the city has not completed this step the only alternative at this time is to use the standard NRPA guidelines. It is recommended that the City adhere to the guidelines and criteria as a guide to meeting minimum facility needs with flexibility to local demands and specific conditions.

Table 27. Size of Parks/Open Space

Classification	Acres
Regional	
Boomer	296.0
Lake Carl Blackwell	9,000.0*
Lake McMurtry	2,306.0
Total	11,602.0
Large Urban	
Sanborn	100.5
Total	100.5
Community	
Babcock	68.6
Couch	69.8
Hoyt Grove	60.0
Whittenburg	70.2
Total	268.6
Neighborhood	
Southern Woods	13.3
Strickland	17.8
Total	31.1
Mini-Parks	
Arrington	3.8
Arrowhead	1.0
Berry	4.1
Centennial	1.5
Ingham	1.6
Myers	4.6
Salmon Plaza	0.2
Sunset	1.3
Tower	0.9
Westpark	0.5
Total	19.5
TOTAL PARKS	12,021.7
Open Space	
Fire Station	13.3
Hinrichs	28.4
Little Boomer	0.7
Stormwater Detention Areas	28.29
Traffic Islands	4.17
Total	74.86

* Approximate

As an alternative to the NRPA guideline, the City could also draft their own guidelines by preparing a Parks, Recreation, and Open Space Master Plan.

Land Area/Population

The standards for land area involving parks, recreation and open space are calculated according to a community's population. The standards recommendations are:

- Developed land = 5 acres per 1,000 population;
and
- Open space = 5 acres per 1,000 population.

A developed park is designed for either passive or active usage with amenities incorporated at the site. Open space is land set aside to be left in a natural state. These areas are suited for recreational pursuits that have a low impact although trails can be developed.

Developed Parks

Stillwater currently has available approximately 12,021.7 acres of developed parkland, including approximately 4,872.1 acres of water surface. Based on a standard of 228 acres for developed parkland for Stillwater's 2010 population of 45,688, there is a current surplus of over 12,089.7 acres. For the 2030 projected population of 61,062, there is an excess of 12,012.39 acres over the required 305.31.

The majority of Stillwater's parkland is comprised of the three regional parks, Boomer Lake, Lake McMurtry and Lake Carl Blackwell, which collectively provide 11,602 acres. Approximately 9,000 of these acres are associated with Lake Carl Blackwell, which is owned by OSU.

Open Space

Stillwater currently provides approximately 74.86 acres of open space throughout the city. Based on a standard of 228 acres for open space, there is currently a deficit of 153.14 acres. The deficit increases to 230.14 acres based on a standard of 305 open space, there is currently a deficit of 153.14 acres. The deficit acres for a projected population of 61,062.

Although statistics show that Stillwater has an abundance of developed parkland, the distribution or level of service which is discussed later, may not be adequate to best meet the citizens needs. The shortage of open space may be remedied by acquiring land through various means of

Chris Salmon Plaza



**Veteran's Memorial
Boomer Lake**



Southern Woods Park



public acquisition such as non-profit conservancy protection and private easements. Some portions of land associated with Boomer Lake, Lake Carl Blackwell, Lake McMurtry, and the Motorcycle Park may also be classified as open space. The open space along the drainage ways and creeks that run through Stillwater is not considered in the open space calculations. If the floodway was obtainable to the public, the approximate acreage added to the open space would be 1,882 acres.

Parks/Open Space Classification

Parks/open space are classified into groups based on type of provisions, size and service area. The seven types of parks and open spaces that are provided in Stillwater include the following:

- Regional: service area is within one hour driving time, size is 250 or more acres;
- Large Urban – service area is up to 20 miles, size is 100 or more acres;
- Community – service area is $\frac{1}{2}$ to 3 miles, size is 20 or more acres;
- Neighborhood – service area is $\frac{1}{4}$ to $\frac{1}{2}$ miles, size is 5 or more acres;
- Mini-Parks – service area is up to $\frac{1}{2}$ miles, size is $\frac{1}{2}$ acre to 5 acres;
- Special Use – multi-purpose facilities, golf courses, outdoor theaters, swimming pools, historical and cultural sites, etc.;
- Open Space and Woodlands – land set aside for Conservation or passive use.

Level of Service

Standards for Level of Service (LOS) involving parks, recreation and open space vary with the socio-economic, physiological and alternative provider characteristics of a community. LOS standards for parks, recreation and open space are based on three conditions:

- Type, number and appropriateness of facilities;
- Amount of land dedicated for active and passive recreation; and,
- Accessibility of facilities.

LOS standards for the type, number, and appropriateness of Stillwater's public facilities are established in Table 28. The standards are those recommended by the National Recreation and Park Association. Based on these standards there are deficits in all facilities currently, with the exception of baseball fields, softball fields, golf courses and a community center. The most significant deficits occur

Lake McMurtry



in the number of basketball courts, volleyball courts and tennis courts. When the standards are applied to projected populations, marginal deficits become more significant. All facilities except golf courses reach deficit status when population is projected to 61,062.

A source of meeting these deficits can be found at the previous Stillwater Public School football field located in Couch Park. Recently the City of Stillwater and Stillwater Public Schools completed a land swap in which the City of Stillwater obtained the football field. The stadium seating is considered unsafe and must be demolished. This will result in more area for sports facilities

Table 28: Standards and Needs for Public Recreation Facilities

Facility	Standard per Pop.	Existing Facilities	Rqmt. per current Pop.*	Rqmt. per 54,000 Pop.	Rqmt. per 61,062 Pop.
Playground	1/5,000	11	10	11	12
Baseball	1/5,000	9	10	11	12
Softball	1/5,000	10	10	11	12
Basketball Courts	1/5,000	3	10	11	12
Soccer	1/10,000	2	5	5	6
Volleyball	1/5,000	0	10	11	12
Tennis	1/2,000	8	23	27	30
Golf, 18-hole	1/50,000	4	1	2	2
Pool	1/20,000	1	2	2	3
Community Center	1/25,000	1	1	2	2
Outdoor Theater	1/35,000	0	1	1	1

*Based on 2010 Census population of 45,688

Accessibility

LOS standards for accessibility are based on the type of park (i.e. large urban, community, neighborhood, etc.). Recommended standards, in terms of distance between users and facilities are summarized in Table 29.

Babcock Park Sign



Based on these accessibility standards, the City's current park provisions are evaluated in the following.

- Regional. The City operates two parks that may be classified as regional parks. Boomer Lake's 296 acres and Lake McMurtry's 2,306 acres both meet the criteria for size and their provisions are accessible to the region. Lake Carl Blackwell, owned by OSU, also meets the regional criteria.
- Large Urban Parks. Stillwater operates one park that may be classified as a large urban park. Sanborn Park comprises 100.5 acres and serves the northern half of the city. The size of the existing large urban park

is adequate to meet the current population of Stillwater, however; is not adequate to meet the 2030 projected population of 61,062.

Boomer Lake



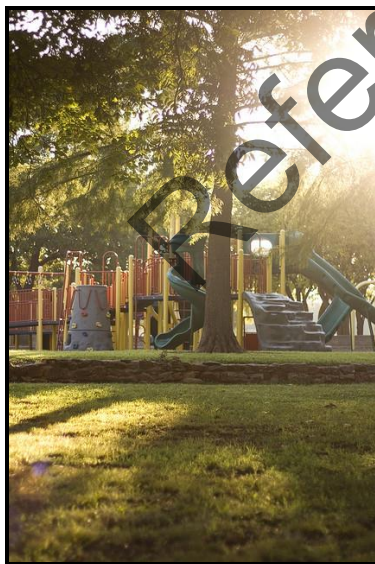
- **Community Parks.** Stillwater's four community parks collectively comprise 268.6 acres. Babcock Park, consisting of 68.6 acres, is located in the southwestern portion of the city, Couch Park with 69.8 acres and Hoyt Grove consisting of 60.0 acres are located in the southeast portion of the city, while Whittenburg Park, consisting of 70.2 acres, is located in the northern part of the city. The number and size of the existing community parks is adequate to meet the current population of Stillwater but may not meet the projected 2030 growth. See Map 9 for the service area.

Southern Woods Park



- **Neighborhood Parks.** The City currently operates two parks that may be classified as neighborhood parks. They collectively comprise 31.1 acres. Southern Woods Park is comprised of 13.3 acres and is located in the southwest portion of the city while Strickland Park consisting of 17.8 acres is located in the northeast portion of the city. Both are all generally located near Stillwater's urban core. The current number of neighborhood parks is not adequate to meet Stillwater's current and projected population. See Map 10 for the Service areas.

Strickland Park



- **Mini-Parks.** Stillwater is served by ten mini-parks comprising 19.5 acres. All but one are located generally within the urban core. Arrington, Berry, and Centennial Parks as well as the Chris Salmon Plaza are located in the eastern portion of the urban area, and Arrowhead, Ingham, Sunset, Myers, and Tower are located in the western portion. West Park is situated far west of the urban area. Based on a minimum standard of 23 mini-parks to serve the current population, 13 additional mini-parks are needed. For a projected population of 61,062, a minimum of 31 mini-parks would be required. See Map 11 for service areas.

- **Open Space.** The City owns several properties that may be classified as open space. They collectively comprise 594.92 acres. Fire Station Park is comprised of the land adjoining the Stillwater Fire Station in the southern portion of

Lakeside Golf Course



the City. It consists of 13.3 acres of generally undeveloped land. It is currently used as a training area for firefighters. Hinrichs Nature Area is comprised of 28.4 acres of undeveloped land. It is located along Stillwater Creek in the southwestern portion of the city. Little Boomer Park consists of 0.7 acres of undeveloped land along Boomer Creek. It is centrally located within the city. The City currently owns three areas totaling 28.29 acres that have been set aside for stormwater detention. Two detention areas are located in residential areas in the eastern sector of the city; the Manning detention area is comprised of 17.42 acres and the Grandview detention area at one acre. The 9.87 acre Sangre detention area, also in a residential area, is located in the southwestern sector of the city. All three areas are vacant except for a stormwater detention structure. See Map 12 for the locations of the detention open space areas. The City owns and maintains an additional 4.17 acres of open space consisting of traffic islands. Five traffic islands ranging in size from 0.03 acre to 1.38 acres are distributed throughout the city. These generally consist of lawn areas with landscaping. The City currently maintains traffic islands in the following locations:

Stillwater Motorcycle Park



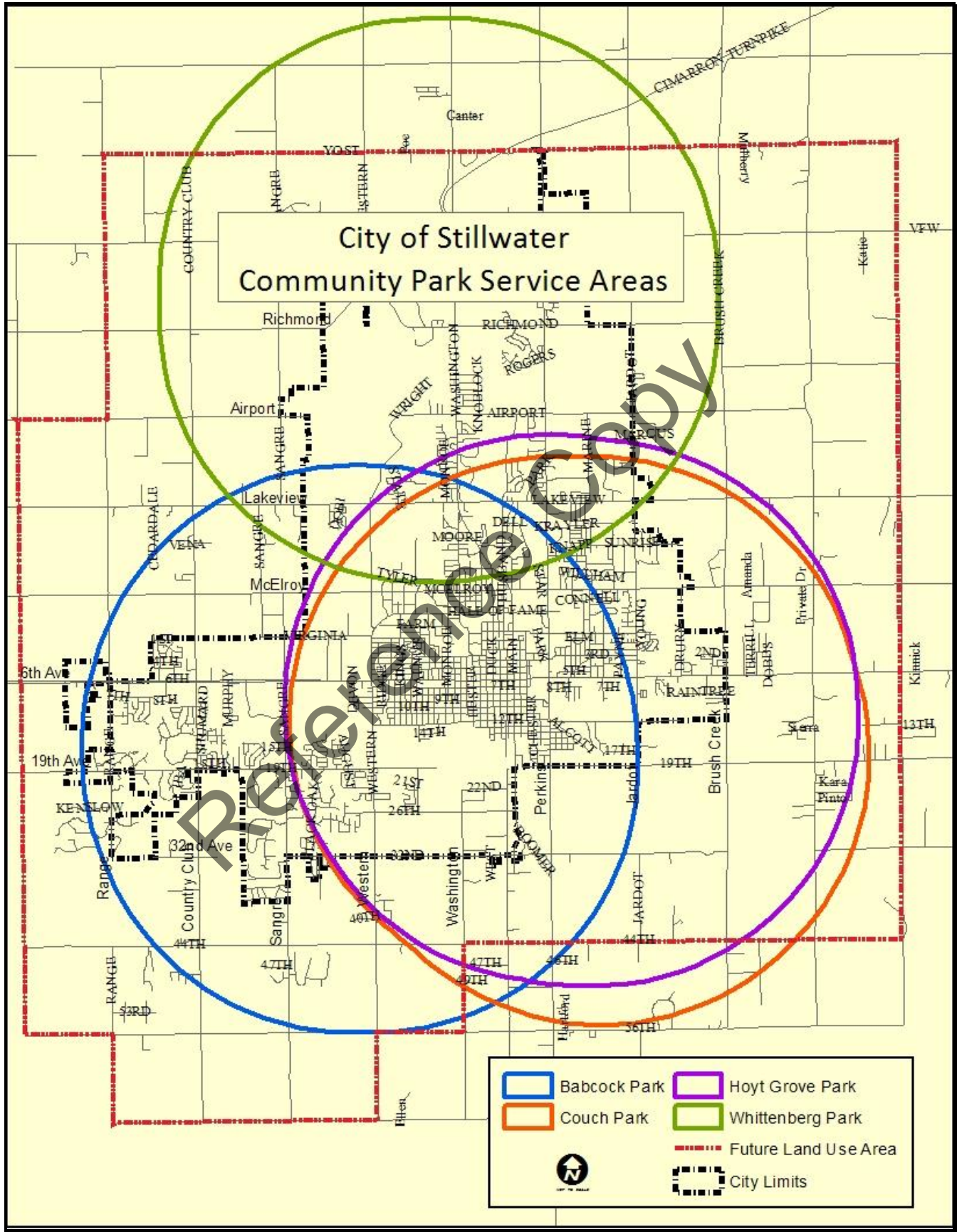
- 6th and Lowry;
- 6th and Washington;
- Washington and Hwy. 177;
- Monticello Drive area; and,
- 12th and Duck.

• Special Use Facilities. The City owns or operates five facilities with specialized uses currently. No standards are applicable for specialized facilities. Existing Special Use Facilities include the Lakeside Memorial Golf Course, Stillwater Motorcycle Park, Multi-Arts Center, Senior Citizen Center and the Kameoka Trail. Lakeside Memorial Golf Course is an 18-hole course located on 153.81 acres in the

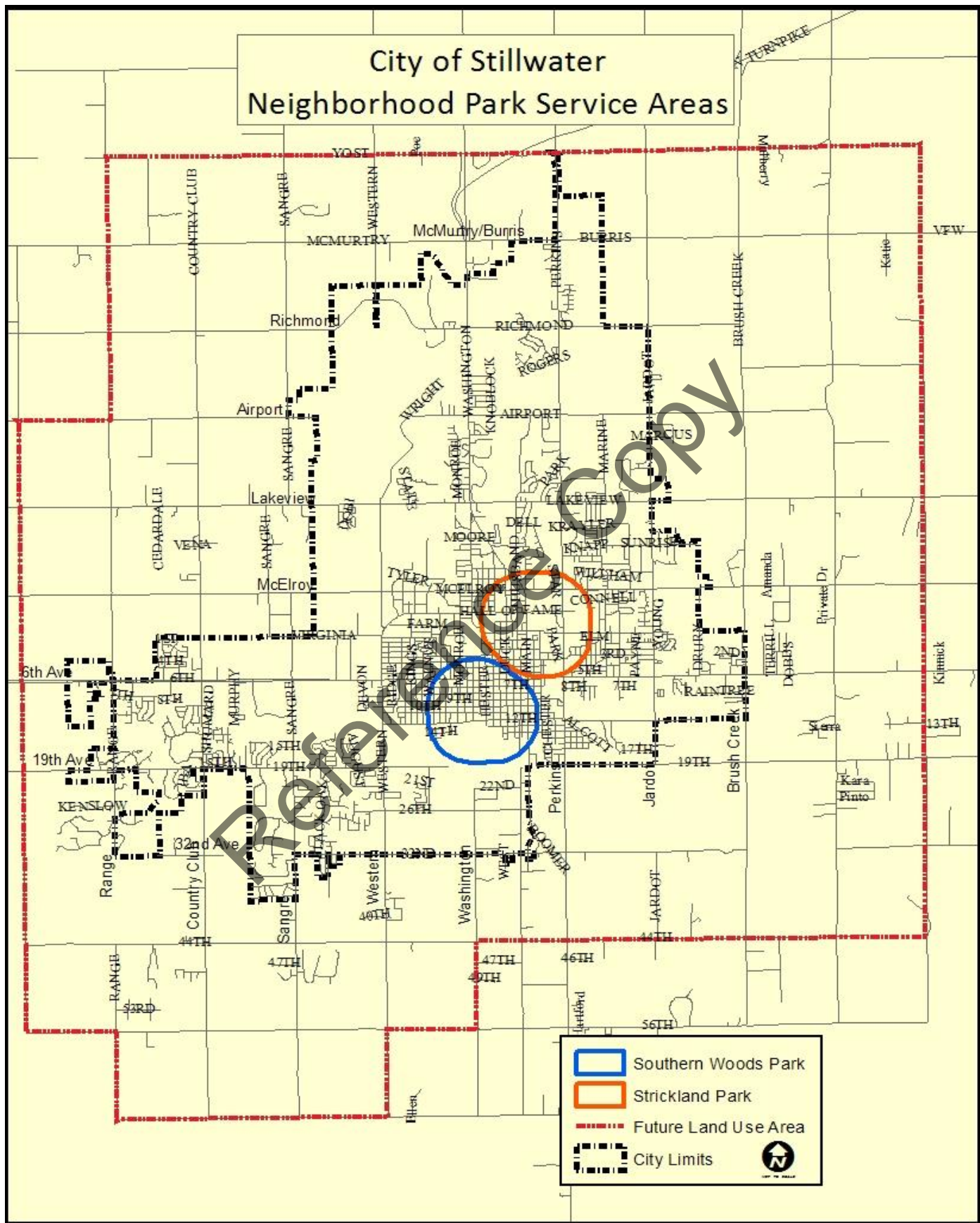
Table 29. Park Lands by Classification and Population Ratio

Type	Size Range	Population	Service Area
Regional	250+ ac.	Community	w/in 1 hr. drive
Large Urban	100+ ac.	50,000	up to 20 miles
Community	20+ ac.	10,000 - 50,000	1/2 - 3 miles
Neighborhood	5+ ac.	2,000 - 10,000	1/4 - 1/2 mile
Mini-Park	0.5 - 5 ac.	500 - 2,000	up to 1/2 mile
Special	No standards are applicable		

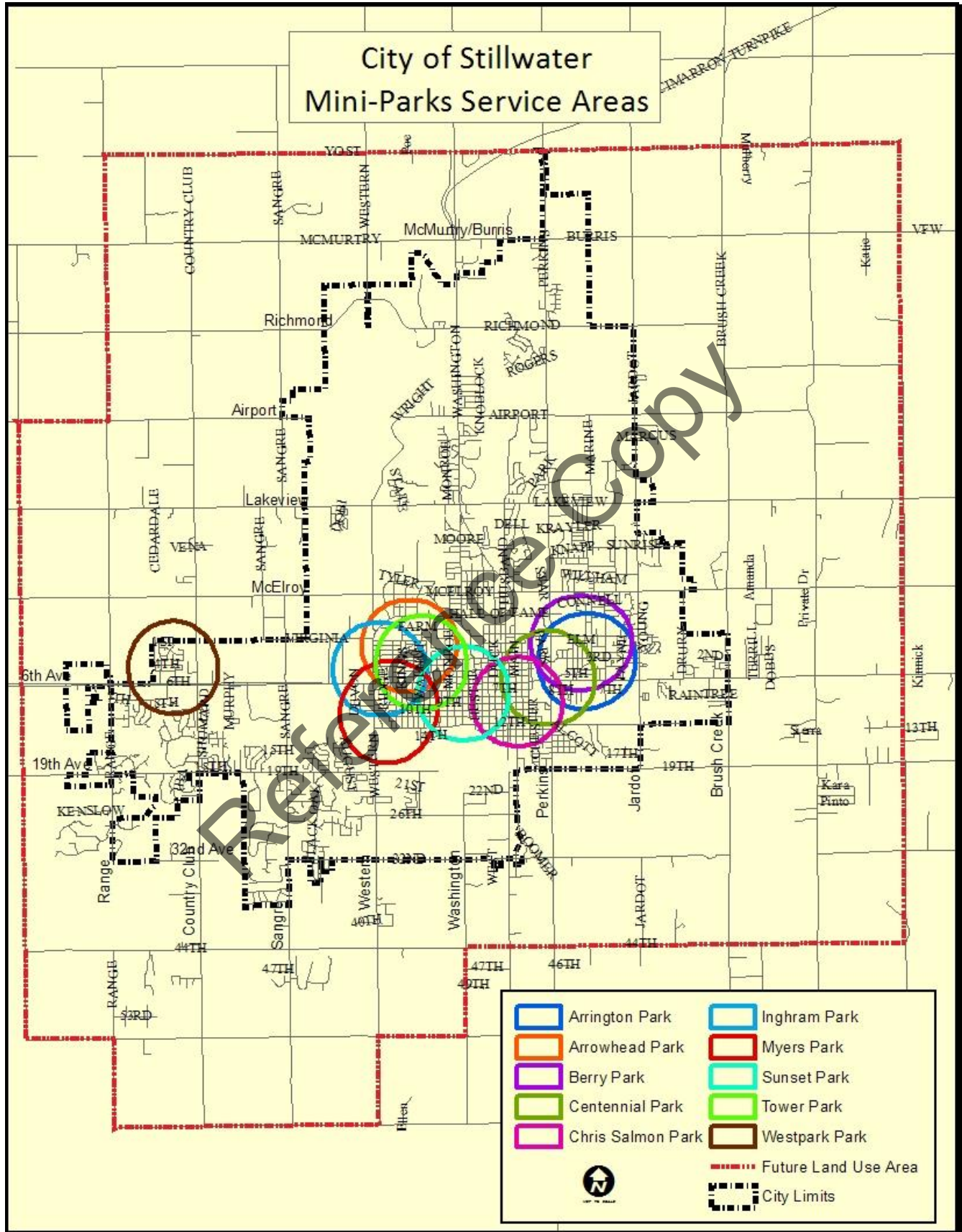
Map 9. Community Parks Service Area



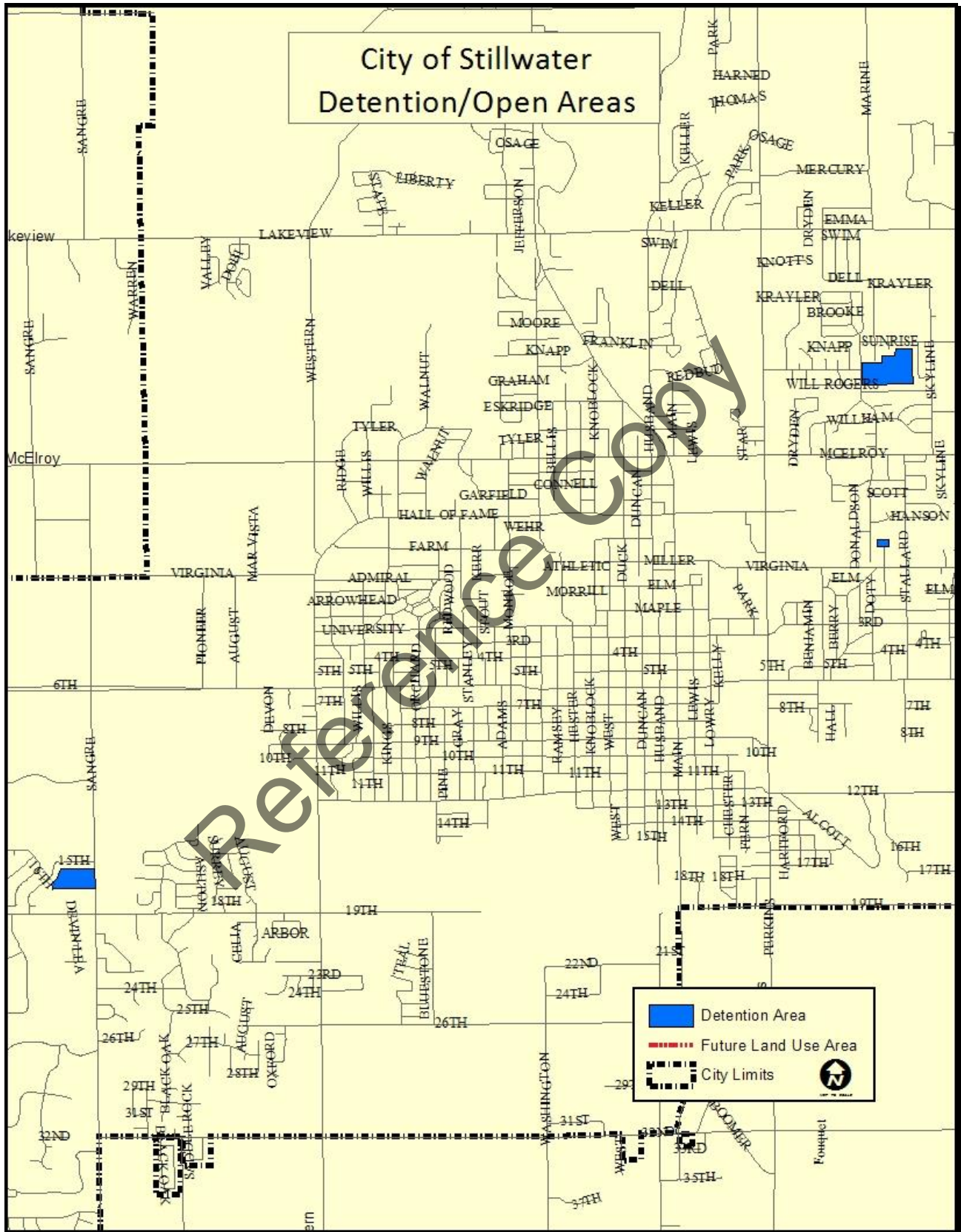
Map 10. Neighborhood Parks Service Area



Map 11. Mini-Parks Service Area



Map 12. Detention Areas



PROJECTIONS AND RECOMMENDATIONS

1. Convert percentage of parkland to natural vegetation to reduce maintenance.
2. Provide a document noting the location, accessibility, and level of service for parks and open space for evaluation and planning purposes.
3. Provide more neighborhood and mini-parks with equable distribution throughout the city.
4. Provide information to the NRPA website so the city can take advantage of the more current comparison of LOS and accessibility standards.
5. Provide a Parks, Recreation, and Open Space Master Plan.

Reference Copy

Chapter 7

Environmental Planning and Conservation

Natural and Environmental Features

Stillwater must strive to work with the natural environment to meet the needs of today without compromising the needs of future generations. The natural environment provides us with the food, water, air, materials, space, means of an economy, and makes Stillwater a unique place. Without proper stewardship and understanding, our way of life may not be sustainable. The natural environment may present constraints or resources that impact growth. The natural resources must not be exploited, but rather they should be conserved or preserved to prevent a loss that cannot be replaced.

Figure xxx. Environmental Cycle



Inventory and analysis of natural resources, attributes, and constraints that are related to the natural environment help with understanding and incorporating the natural environmental conditions with regards to planning that is necessary for successful growth. In the Stillwater 2030 Comprehensive Plan, the environmental conditions will be important for development concerning the Stillwater, Boomer, Cow, and Brush Creeks, associated floodplains, ephemeral habitats, soil conditions, natural resources, and climatic patterns that occur in or around Stillwater. With greater understanding of these conditions, future planning can use the natural conditions more as attributes rather than creating unneeded constraints.

Topography/slopes

Stillwater is located in the rolling to flat landscape of the Cross Timbers Transition ecoregion of the Central Plains in central Oklahoma. The Cross Timbers Transition consists of rough plains that are covered by prairie grasses and various trees. Terrain and vegetation are transitional between the less rugged, grass-covered ecoregions to the west and the hilly, lightly forested grassland of ecoregions to the east.

The rolling topography generally does not significantly impact development. The ability to serve developments with sewer and water services is sometimes impacted due to the slope or ridge lines such as areas in the southwest portion of the city. See Map 13 for topography and slope in and around Stillwater.

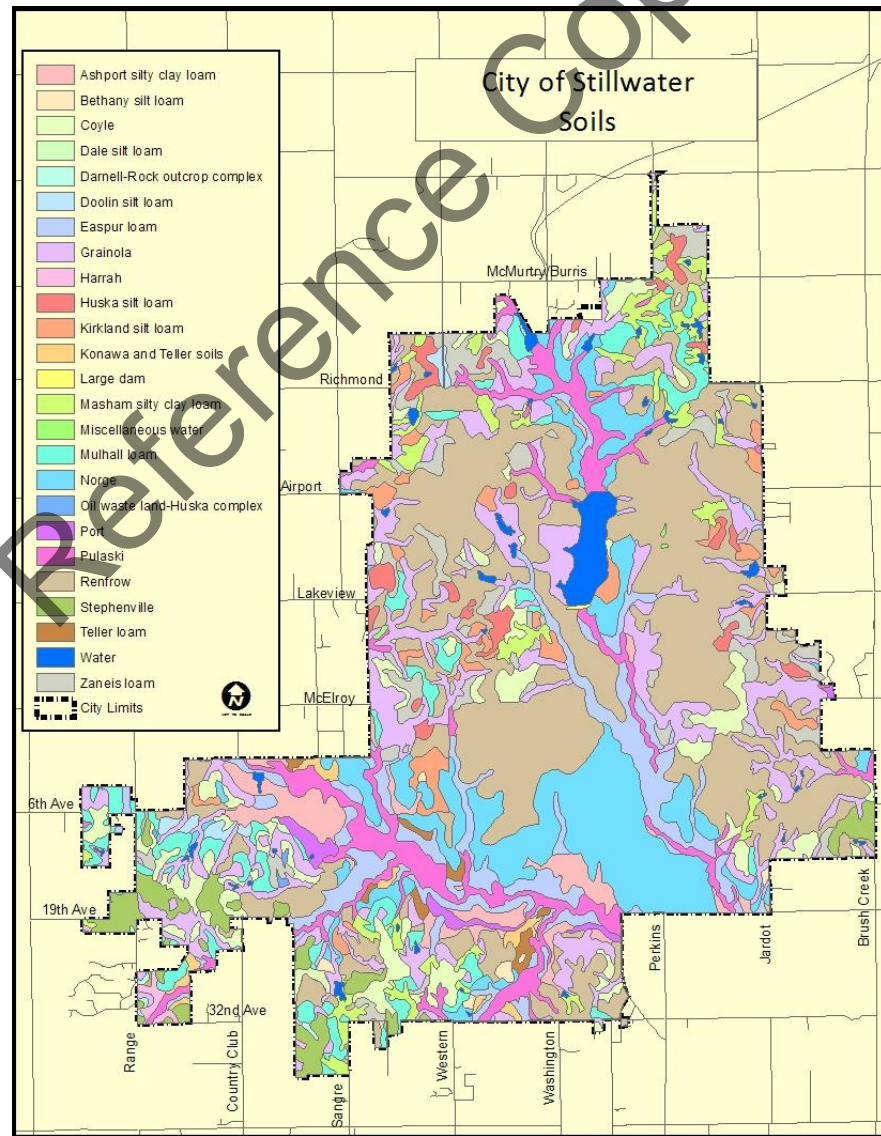
Map 13. City of Stillwater Topography and Slope



Soils

Much of the soil in Stillwater is known as Renfrow-Coyle-Grainola soils. These soils are formed in material weathered from red clay shale and sandstone under prairie vegetation. An elevated clay content in these particular soils accounts for the familiar red dirt. These high clay soils have a limited fertility, accounting for pasturing being the primary agricultural use. The silt and sand in the soils are easily eroded, while the clay is not, leading to erosion issues in streams as deep channels and steep banks are formed. The high clay content of the soil causes slow permeability of stormwater; therefore, causing more surface runoff. The slow permeability adds to issues such as flooding and a high water table. The soils are also prone to shrinking and swelling as the moisture levels in the soil change. Building foundations must be specially designed to withstand the shrinking and swelling to avoid damages.

Map 14. Soils of Stillwater

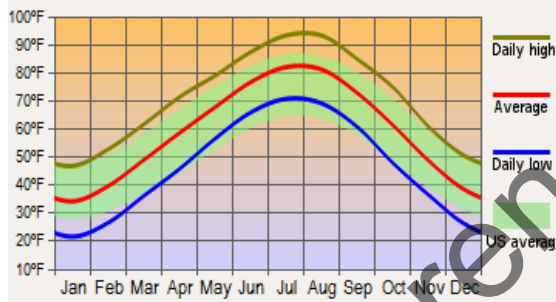


Climate

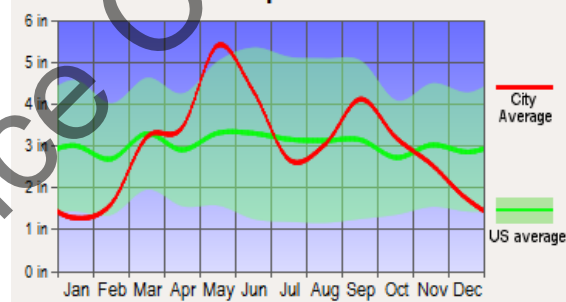
Stillwater is located in the Humid Sub-Tropical climate zone, characterized by hot, humid summers, and mild to cool winters. Stillwater, however, is near the transition area between the Hot Summer Continental climate and the Dry, Semi-Arid Steppe climate zones. Stillwater tends to be drier and milder than other portions of the Humid Sub-Tropical climate in the United States.

July and August are the warmest months, with an average high temperature of 93 degrees while January is the coldest month, with an average low temperature of 23 degrees. The average high temperature in Stillwater in July and August are higher than the US average, while the average low is below the US average. May is the wettest month, with an average precipitation of 5.06 inches. The dominant winds in the Stillwater area are from the south to southeast averaging just over seven miles-per-hour.

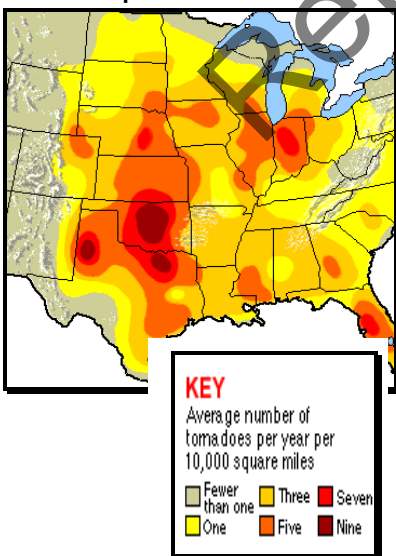
Graph 11. Average Annual Temperatures
Average Temperatures



Graph 12. Annual Precipitation
Precipitation



Map 15. Average Number of Tornadoes per Year



NATURAL DISASTERS

A hazard is defined as an event or physical condition that has the potential to cause fatalities, injuries, property damage, infrastructure damage, or agricultural loss, among other types of loss or harm. The Multi-Jurisdictional Multi-Hazard Mitigation Plan (Stillwater's Hazard Mitigation Plan), contains a risk identification and assessment for 15 hazards. For more information on natural and man-made hazards that are not covered below, please consult the Hazard Mitigation Plan.

Tornadoes

Oklahoma is located in an area of the country known as "Tornado Alley", which stretches from Texas to South Dakota where nearly 25% of all damaging tornadoes in the country occur. This region has so many tornadoes due to cold, dry air from Canada and the Rocky Mountains tend to meet the warm, moist air from the Gulf of Mexico, resulting in violent storms which may produce tornadoes.

A typical tornado path is reported to be approximately 600 feet in width, and 2.5 miles in length. The typical path in Oklahoma runs generally from southwest to northeast with the area of destruction being about 181 acres per event.

Path of May 3, 1999 F5 Tornado



Source: Oklahoma Department of Civil Emergency Management

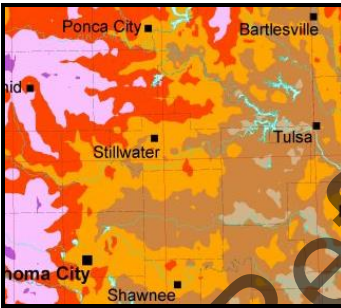
The Hazard Mitigation Plan reports a tornado scenario for Stillwater. Using a F5 tornado touching down southwest of Stillwater at about 32nd and Range Road and continues in a northeasterly path across the center of the city and passes out of Stillwater at Jardot and Lakeview. Damages in this path totaled \$800,326,154 million.

High Winds

Winds are always part of severe storms, such as hurricanes, tornadoes, and blizzards, but do not have to accompany a storm to be dangerous. Down-slope windstorms, straight-line winds, and microburst can all cause death, injury, and property and crop damage.

The factors that contribute most to wind-related deaths, injuries, and property damage is the structure type, quality of construction, and the state of deterioration of the buildings, where people reside. Mobile homes, older homes, and poorly designed and constructed buildings are the most vulnerable.

Annual Average Wind Speed



Source: AWS Truepower

Wildfires

The rural and urban/wildland interface areas of the City are at moderate to high risk to wildfires, and at severe risk during times of high wind and drought.

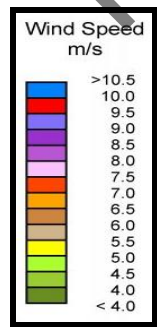
Other Disasters

The risk due to other disasters is generally very limited; therefore, unlikely to cause wide-spread damage. Only one earthquake has been reported in the Stillwater area between 1980 and 2004---a 1.9 magnitude event southwest of the city. The risk of damage in Stillwater from earthquakes is extremely limited.

The Hazard Mitigation Plan details the risks and ways to mitigate the hazards most likely to impact Stillwater.

Flood Hazard Areas

In most instances, the term 'floodplain' is used to casually refer to the regulated flood hazard area as determined by the U.S. Department of Homeland Security's Federal Emergency Management Agency (FEMA). The FEMA regulatory floodplain is developed through the processing of scientific data with flood modeling software.



Stillwater Creek Floodplain



Stillwater Creek Floodplain



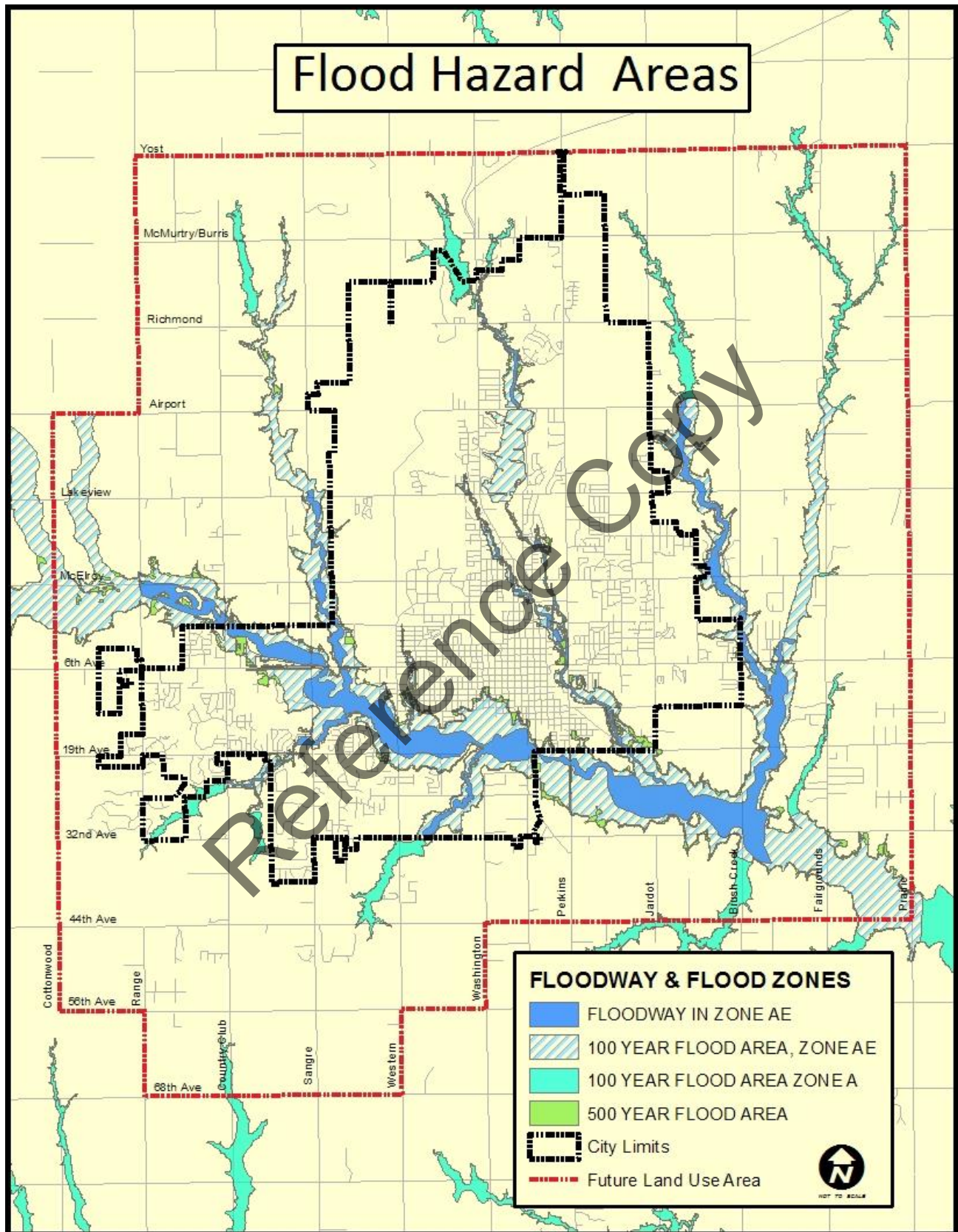
The floodway is the actual creek channel or a channel for flood waters. The designated “ae” area on a floodplain map means that area is prone to flooding or presents a 1% annual chance of flooding. This is commonly referred to as the base flood area or the 100-year floodplain. Flood zone “a” also has a 1% annual chance of flooding but has no associated base flood elevations. The area designated as the 500-year floodplain has a 0.2% or greater annual chance of flooding.

Riparian areas and large-scale floodplains—when allowed to remain in natural, open conditions—offer a wide range of benefits to people and the environment. They provide flood storage and conveyance, reduce flood velocities, and decrease flood peaks. Water quality is also improved through the riparian areas which act as natural buffer zones that can filter and process excessive nutrients and pollutants from runoff. Localized wetlands provide breeding and feeding grounds for fish and wildlife, create and enhance habitat, and protect the integrity of ecosystems. The floodplains are an important asset; they provide open space, aesthetic pleasure, and areas for recreation, too.

Floodplain management is required by federal and State of Oklahoma laws and primarily supports risk reduction associated with the hazards of flooding. The City of Stillwater has municipal code which regulates development within the floodplain to ensure it is completed in such a manner that will not create adverse impacts for the current property owners and for those on neighboring properties.

Stillwater’s main waterway is Stillwater Creek, which flows into the Cimarron River and from there on to the Arkansas River, the Mississippi River, and then into the Gulf of Mexico. Stillwater Creek and its tributaries—Cow Creek, Duck Creek, East Boomer Creek and West Boomer Creek—are prone to flooding when Stillwater receives large amounts of precipitation or runoff. Typically, runoff produced by rainstorms causes most of the flooding in Stillwater.

Map 16. City of Stillwater Flood Hazard Areas



Source: City of Stillwater GIS Division, FEMA

STORMWATER MANAGEMENT

Construction of Rain Garden



Completed Rain Garden



Babcock Basin Stormwater Control Project



Stormwater is water that originates from precipitation events. The precipitation that is not allowed to filter into the ground because of impervious surfaces such as streets, roofs, and parking lots and the ability of the soil to absorb the water becomes stormwater runoff. The stormwater runoff eventually flows to streams and rivers. Stormwater Management is closely related to flooding issues, erosion control, water quality, as well as the process of storing and conveying stormwater. The management of the stormwater is a challenge in Stillwater, as in other localities. The density of the built-up areas does not allow for the installation of large scale stormwater infrastructure such as regional detention basins. Many residential properties do not address their runoff, causing localized flooding problems with many precipitation events.

The older portions of the city do experience localized flooding issues during routine storm events. Improvements should be made whenever possible. The national Research Council reports that 42% of all urban lands in the United States will be redeveloped by the year 2030. This means that existing stormwater management issues can be addressed in the future. A comprehensive stormwater management plan may be necessary to coordinate individual projects.

The City of Stillwater operates a comprehensive stormwater pollution reduction program and is authorized under the Oklahoma Department of Environmental Quality's (ODEQ) general MS4 Permit (Small Municipal Separate Storm Sewer System). The MS4 Permit outlines how stormwater will be managed through the minimum control measures: 1. Public education and outreach; 2. Public participation and involvement; 3. Illicit discharge detection and elimination; 4. Construction site runoff control; 5. Post-construction runoff control; and 6. Pollution prevention. Various activities, known as Best Management Practices help to meet the standards required by the MS4 Permit.

Stormwater can also be managed by reducing runoff. Increased impervious surface areas such as rooftops, streets, and parking lots contribute to excess stormwater. Projects can also incorporate low-impact development (LID) designs to improve water quality and drainage conditions. Stormwater can also be utilized as a resource when saved for uses such as irrigation, recreation, and water supply by creating systems of cisterns or impoundments.

Stormwater can create problems with water quality.

Stormwater runoff collects the oil, grease, chemicals, and sediments and deposits them in the streams. Reduction of these pollutants and stormwater treatment can support the quality of the water in streams.

Green Infrastructure/Low Impact Development (LID)

Low Impact Roadside Design



Green infrastructure and Low Impact Development (LID) is an approach that Stillwater can use to maintain healthy waters, provide multiple environmental benefits and support sustainable communities. Unlike single purpose gray stormwater infrastructure, which uses pipes to dispose of rainwater, green infrastructure uses vegetation and soil to manage rainwater where it falls. By weaving natural processes into the built environment, green infrastructure provides not only stormwater management, but also flood mitigation, air quality management, and much more.

Low Impact Development



Stormwater runoff is a major cause of water pollution in urban areas. When rain falls in undeveloped areas, the water is absorbed and filtered by soil and plants. When rain falls on our roofs, streets, and parking lots, however, the water cannot soak into the ground. In most urban areas, stormwater is drained through engineered collection systems and discharged into nearby waterbodies. The stormwater carries trash, bacteria, heavy metals, and other pollutants from the urban landscape, degrading the quality of the receiving waters. Higher flows can also cause erosion and flooding in urban streams, damaging habitat, property, and infrastructure.

Low Impact Parking Lot Design



Green infrastructure uses vegetation, soils, and natural processes to manage water and create healthier urban environments. At the scale of a city or county, green infrastructure refers to the patchwork of natural areas that provides habitat, flood protection, cleaner air, and cleaner water. At the scale of a neighborhood or site green infrastructure refers to stormwater management systems that mimic nature by soaking up and storing water.

LID is an approach to land development (or re-development) that works with nature to manage stormwater as close to its source as possible. LID employs principles such as preserving and recreating natural landscape features, minimizing effective imperviousness to create functional and appealing site drainage that treat stormwater as a resource rather than a waste product. There are many practices that have been used to adhere to these principles such as bioretention facilities, rain gardens, vegetated rooftops, rain barrels, and permeable pavements. By implementing LID principles and practices, water can be managed in a way that reduces the impact of

Benefits of Trees

Reduces heating/cooling costs by 8-12%.

Improves air quality by absorbing hundreds of pounds of air pollutants.

Improve water quality and reduce flooding by absorbing and intercepting rainfall in their canopies, thus reducing stormwater.

Stimulate retail and commercial business districts by attracting shoppers.

Increase property values by 10-15%.

Reduce stress, fatigue, and aggression in humans.

Reduce a hospital patient's recovery time when there are views of trees and greenery.

Improve the concentration of children with Attention Deficit Hyperactivity Disorder (ADHD).

Calm and slow down traffic along streets.

Reduce crime and increase social ties.

Reduce exposure to harmful UV rays that are causing increases in skin cancer and cataracts.

Source: www.treevitalize.net

built areas and promotes the natural movement of water within an ecosystem or watershed. Applied on a broad scale, LID can maintain or restore a watershed's hydrologic and ecological functions. LID can be applied to new development, redevelopment, or as retrofits to existing development. LID has been adapted to a range of land uses from high density ultra-urban settings to low density development.

TREES AND NATIVE LANDSCAPING

Landscaping

The existing trees in Stillwater are an important resource that should be preserved. Trees naturally take many years to grow, and in the drier, warmer climate of Stillwater, the trees are more vulnerable to drought and disease and many varieties grow more slowly. Trees provide needed windbreak and provide erosion control which helps to make Stillwater a more hospitable place for residents. Trees also provide shade relief from the hot summers, help insulate buildings from wind in the cold winters, provide habitat to birds and other animals, clean the air, and aesthetically improve the built environment. Trees often serve several architectural and engineering functions. They provide privacy, emphasize views, or screen out objectionable views. City trees also reduce glare and reflection.

Native Landscaping

Native plants are those that have evolved and adapted to the geography, hydrology, and climate of the region. Plants native to a specific region tend to be more robust because they have adapted to the local soil, conditions, and weather patterns. Native plants have long roots which retain stormwater, reducing runoff.

Xeriscaping

Xeriscape is a term that applies to landscapes that are low-maintenance and sustainable over a long term. Often it is misunderstood to mean "zero" or no landscape. Xeriscape does not mean a sparse, desert-like setting. Actually, a xeriscape can appear to be a traditional landscape, but will save time, money and water.

Plants are selected for a xeriscape based on their ability to grow and thrive with minimal watering and maintenance. Normal levels of watering during the first year establishment period are required since new plantings don't have a sufficiently developed root systems to survive without supplemental watering.

Native plants, which are certainly worthy of consideration, are not essential for a landscape to be a xeriscape. Introduced plants that thrive under the local conditions can be a part of the plant palette.

AIR QUALITY

The quality of air we breathe is defined by the amount of pollution in the air from all sources – natural and human. Air pollution is not confined to Oklahoma’s large cities; it can blow into any part of Oklahoma from neighboring states.

Bad air quality can affect everybody’s health. It can have direct effects on the lungs, and it can worsen an existing condition, such as asthma. Young children and older adults are more sensitive to air pollution than others. The concern from air pollution to the public health incurs an economic cost to society from increased healthcare costs and loss of working days.

Industrial pollution is heavily monitored; therefore, most air pollution can be attributed to “non-point” sources such as the use of automobiles for transportation. Reduction in the use of the automobile would have the most significant impact on air quality. Increase in the use of alternative fuels would also help reduce air pollution.

Graph 13. Air Quality Index (AQI)

Air Quality Index (AQI) Values	Levels of Health Concern	Colors
<i>When the AQI is in this range:</i>	<i>..air quality conditions are:</i>	<i>...as symbolized by this color:</i>
0-50	Good	Green
51-100	Moderate	Yellow
101-150	Unhealthy for Sensitive Groups	Orange
151 to 200	Unhealthy	Red
201 to 300	Very Unhealthy	Purple
301 to 500	Hazardous	Maroon

Source: www.airnow.gov, Environmental Protection Agency

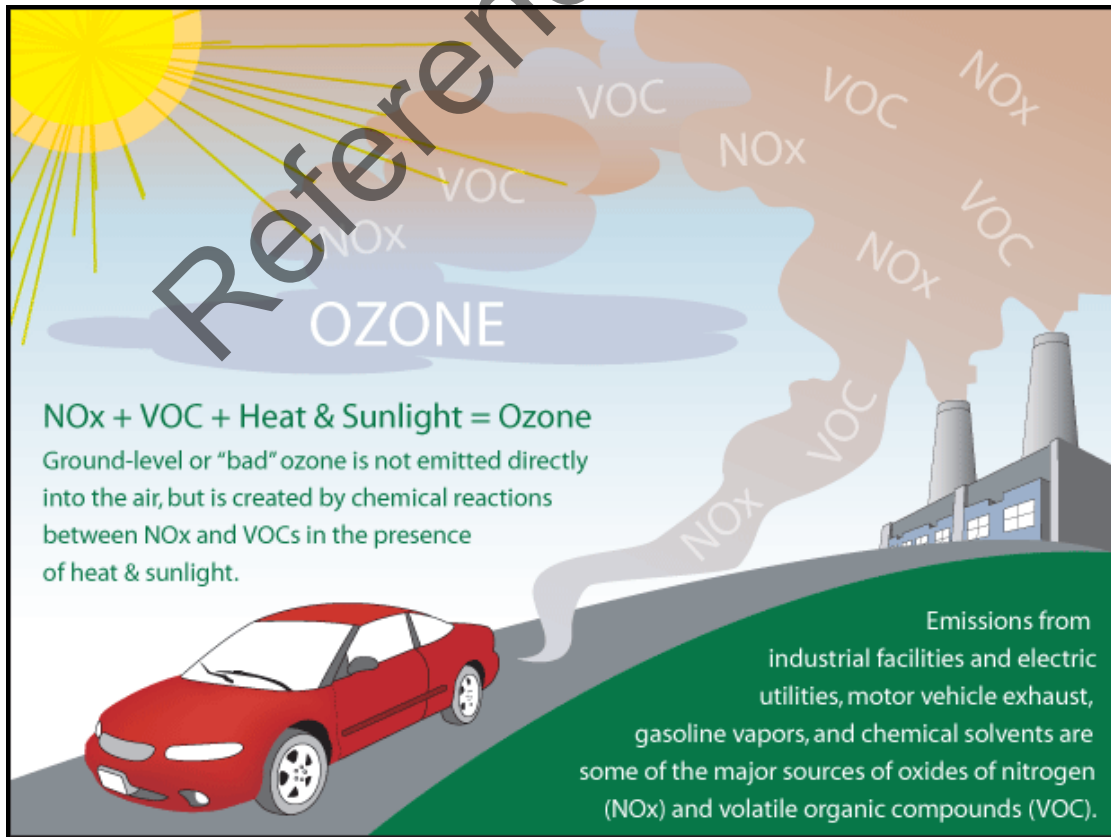
Oklahoma Department of Environmental Quality, Air Quality Division (ADQ)

ADQ works to protect the public health of Oklahoma citizens by monitoring the air quality in the state and warn and advise the public when conditions could be hazardous to their health. ADQ is the regulatory body that implements the state and federal Clean Air Acts to reduce emissions and improve air quality in the state.

Attainment

When the air quality in a state does not meet (attain) National Ambient Air Quality Standards (NAAQS), important federal funding to the state can be lost. The Oklahoma City area, Tulsa area, and Lawton are the three Metropolitan Planning Organizations (MPO) in Oklahoma that currently receive federal funding for transportation and other projects. A community becomes an MPO when the population is over 50,000 and the federal government designates the community as such. Stillwater is expected to grow over 50,000 by 2020; therefore, it is likely the City will be eligible for federal transportation funds. Although, Stillwater and Payne County currently meets the EPA requirements, air quality will have to be locally monitored if or when the City is designated an MPO.

Graph 14. Ozone Formation



Source: www.airnow.gov, Environmental Protection Agency

NOISE POLLUTION

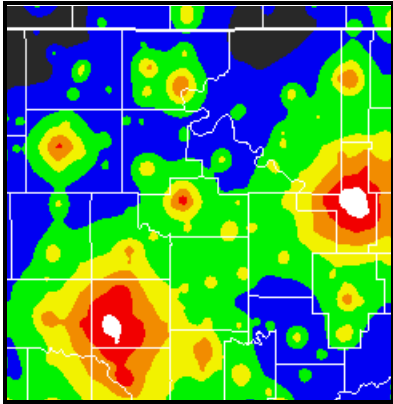
Noise Pollution is any excessive, displeasing environmental or animal noise that disrupts human or animal life. Noise pollution is linked to several psychological and physiological illnesses. Noise pollution is commonly created by construction work, transportation systems, and large scale industrial uses.

Reaction to Noise Pollution



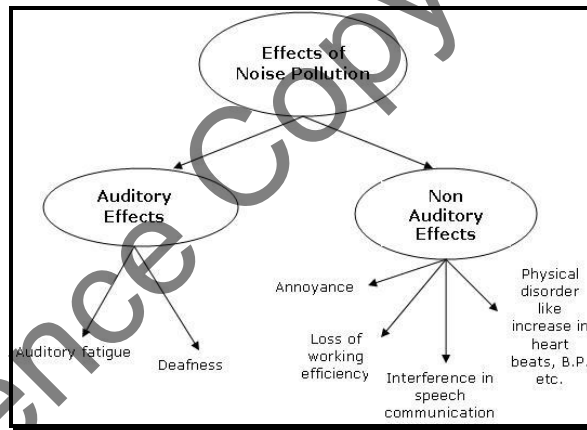
Noise compatible land use planning is a community planning method that helps reduce or eliminate noise pollution. Compatible land use planning considers the type of developments that may reside together to reduce the noise for residential areas. Noise producers may be industrial uses, highways, and airports.

Map 17. Tulsa and Oklahoma City contribute to the light pollution in Stillwater



Source: The World Atlas of the Artificial Night Sky Brightness

Effects of Noise Pollution



LIGHT POLLUTION

Many communities have chosen to limit light pollution. Light pollution is an increasing problem threatening astronomical facilities, ecologically sensitive habitats, all wildlife, our energy use as well as our human heritage. Light pollution can be described in four types.

Benefits of Reduction of Light Pollution

1. Saves money.
2. Reduces energy use.
3. Shrinks carbon footprint.
4. Better health.
5. Protects wildlife and their habitats.
6. Improved nighttime visibility.

1. Urban sky glow: The brightening of the night sky over inhabited areas.
2. Light trespass: Light falling where it is not intended, wanted, or needed.
3. Glare: Excessive brightness which causes visual discomfort. High levels of glare can decrease visibility.
4. Clutter: Bright, confusing, and excessive groupings of light sources, commonly found in over-lit urban areas. The proliferation of clutter contributes to urban sky glow, trespass, and glare.

Although Stillwater is considered a small city, the

Household Hazardous Waste Collection



community does produce urban sky glow that affects the ability of the Oklahoma State University observatory located west of the city to examine the nighttime sky.

Reduction of light pollution has many benefits, such as decreased energy use and the ability to see the night sky.

ENVIRONMENTAL PROGRAMS

The Environmental Programs Division manages compliance with local, state, and federal environmental regulations. The division is responsible for several environmental programs that help alleviate environmental concerns, prevent pollution, and educate the public. The division assists Stillwater Power and the Stillwater Water Utility with the Oklahoma Pollutant Discharge Elimination System (OPDES) permit and Air Quality issues. The division conducts the City of Stillwater's Household Hazardous Waste Collection and Trash-Off Events.

Recycling

Recycling is one of the most effective ways to reduce the amount of waste going to the landfills. Several businesses and organizations throughout town have developed their own recycling policies. Due to the number of people living in apartment buildings, one of the areas of greatest impacts would be establishing a recycling program for apartment complexes.

While the City of Stillwater does operate a number of programs to properly dispose and recycle wastes, the programs may be expanded to include additional services. The recycling program does not currently accept several forms of materials. In order for these materials to be collected, new vendors must be sought to purchase the recyclables from the City. A location for the processing of yard waste could be established to recycle trees and leaves into mulch or other useful materials.

As demonstrated in the past, disposing of yard waste that is generated by storms or general maintenance is difficult in the community. Many communities prohibit yard waste from going into the landfill. These communities will collect the yard waste and generate mulch and/or compost for the public to purchase.

Recycling Centers and Curbside Recycling

The City operates a Convenience Collection Center located at 807 S Perkins Rd. The center is a convenient professionally staffed, drive-thru service for disposing of non-hazardous recyclable goods, household waste, and green waste.

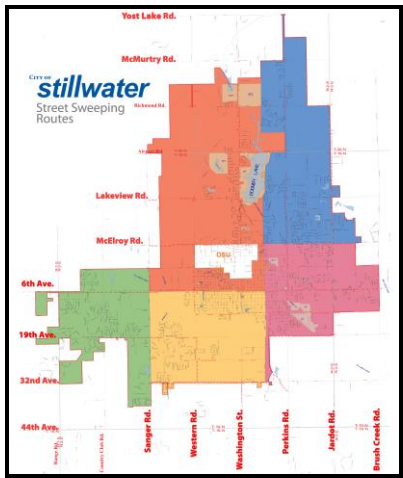
Hazardous Waste



Single Stream Recycling



Street Sweeping Routes



The City of Stillwater also offers citizens the opportunity to recycle at two unmanned sites located on Airport Road, one block west of Husband Street and at 1402 E. Sunrise Avenue. The unmanned sites have guidelines for plastics, cardboard, paper, glass, tin cans, and aluminum. Please refer to the City of Stillwater's website at Stillwater.org for the guidelines.

In March 2012, the City approved a pilot program called Stillwater Recycles: Curbside Single-Stream Pilot Program for curbside recycling. Single-stream recycling means the participants do not have to sort the items. The Wednesday trash collection day was chosen for the program due to the mixture of small and larger homes. Data was collected during the pilot program that will be used when curbside recycling goes citywide.

Due to the success of the pilot program, the City decided in November 2012 to extend the service citywide. An informational flyer will be mailed to each household in March 2013. The household will sign up for the program by selecting a cart size. Carts will be distributed summer 2013.

Wind Power



Street Sweeping Program

The City's Street Sweeping program cleans city streets to provide safe conditions for the entire community. The program not only keeps city streets cleaner and safer, but it also reduces health hazards related to dust and insures trash in the streets does not become a refuge for insects and rodents. Regular sweeping also improves the stormwater quality by helping to prevent the accumulation of debris and reducing the amount of sedimentation discharged to streams, lakes, ponds, and other waterways.

RENEWABLE ENERGY

Although most electricity used by Stillwater is generated elsewhere, the environmental impacts should still be a concern. Some of the most effective ways to reduce the environmental impacts is to increase energy efficiency and utilize renewable energies whenever possible.

Solar Panels



Renewable energy sources are energy sources that are continually replenished. These include energy from water, wind, the sun, geothermal sources, and biomass sources such as energy crops. Energy crops are woody or herbaceous plants such as willow, poplar, and many types of grasses. Renewable energy resources offer clean alternatives to fossil fuels. They produce little or no

Advantages of natural gas

1. Nearly 87% of U.S. natural gas used is domestically produced
2. 60–90% less smog-producing pollutants
3. 30–40% less greenhouse gas emissions
4. Less expensive than gasoline

Source:
<http://www.fueleconomy.gov/feg/bifueltech.shtml>

Disadvantages of Natural Gas

1. Limited vehicle availability
2. Less readily available than gasoline and diesel
3. Fewer miles on a tank of fuel

Source: <http://www.fueleconomy.gov/feg/bifueltech.shtml>

OSU's CNG Station Dedication Ceremony



pollution or greenhouse gases, and they will never run out. Development of renewable energy sources is important due to the following reasons:

1. Renewable energy sources do not release carbon dioxide (CO₂) into the atmosphere.
2. Renewable energy sources enhance energetic viability of the energy system and enhance security by decreasing dependency on importing raw materials and electrical energy.

Renewable energy sources are expected to become economically competitive to conventional energy sources. In the past, renewable energy has generally been more expensive to produce and use than fossil fuels. Renewable resources are often located in remote areas, and it is expensive to build power lines to the cities where the electricity they produce is needed. The use of renewable sources is also limited by the fact that they are not always available — cloudy days reduce solar power; calm days reduce wind power; and droughts reduce the water available for hydropower.

The production and use of renewable fuels has grown more quickly in recent years as a result of higher prices for oil and natural gas, and a number of State and Federal Government incentives, including the Energy Policy Acts of 2002 and 2005. The use of renewable fuels is expected to continue to grow over the next 30 years.

Compressed Natural Gas (CNG)

CNG is an alternative vehicle fuel to gasoline that is made by compressing natural gas to less than 1% of its volume at standard atmospheric pressure. Consisting mostly of methane, CNG is odorless, colorless and tasteless. It is drawn from natural gas wells or from crude oil production. CNG is clean and affordable. It costs about 50% less than gasoline or diesel and emits up to 90% fewer emissions than gasoline.

Although only 250,000 of the 12 million CNG powered vehicles are located in the U.S., there is growing interest in purchasing CNG fleet and private vehicles. Expanding the numbers of CNG fueling stations would allow the increase of these vehicles.

Stillwater currently has three CNG fueling stations. Oklahoma State University initiated the movement by constructing a station on the corner of Western and Lakeview and converting their buses and fleet to CNG. Stillwater Public Schools is in the negotiations and

planning stage to also convert their buses and fleet to CNG. The two other fueling stations are at Oklahoma Natural Gas, 3424 N. Perkins Road and at the OnCue store located at 1402 S. Perkins Road. All three stations are open to the public.

PROJECTIONS AND RECOMMENDATIONS

1. Update and endorse the Hazard Mitigation Plan to ensure the readiness of the community in the face of a natural disaster.
2. Expand the use of alternative fuels such as Compressed Natural Gas (CNG).
3. Consider converting fleet to CNG and partnership with university for fueling station.
4. To improve air quality, continue to develop alternative modes of transportation such as bicycle routes, bus services, and carpool incentives.
5. Continue educating the public about ways to reduce, reuse, and recycle various materials.
6. Continue to host the Household Hazardous Waste Drop-off program.
7. Control noise pollution through compatible land use.
8. Prepare regulations to control all types of light pollution.
9. Establish a Debris Management program to ensure that all debris from street seeping, storms, etc. is managed in a consistent and environmentally friendly manner.
10. Develop requirements that existing trees larger than a certain caliper must remain, unless replaced, during the construction of projects.
11. Conduct a city-wide inventory of large and heritage trees which may require additional protections.
12. Evaluate and update the landscape codes.
13. Encourage xeriscape landscaping and native trees and plants to ensure their survival and to minimize the need for irrigation.

14. Develop a guidebook to assist in selecting the best tree for specific applications to be used both for public and private applications.
15. Evaluate the potential for using Green Infrastructure and Low Impact Development design in all areas of development.
16. Consider revising the regulations to allow for the reduction of impervious areas such as:
 - i. Encouraging development density while preserving open space
 - ii. Encouraging the use of Low Impact Development (LID) solutions
 - iii. Allowing for narrower streets where appropriate
 - iv. Allowing for reduced parking requirements where appropriate
 - v. Evaluate Green Roof technology and implement when feasible
17. Encourage artificial wetlands for groundwater recharge
18. Develop sustainable funding sources for stormwater and water quality infrastructure and management.
19. Protect existing riparian corridors with buffer areas along lakes and streams from being destroyed through development incentives and obtaining easements.
20. Continue to observe and educate the public about the Best Management Practices (BMP's) to reduce pollution.
21. Encourage energy efficiency in all residences, apartment complexes, businesses, and city buildings.
22. Consider forming a program to conduct energy audits.
23. Encourage the use of renewable energy sources.

Chapter 8

REHABILITATION AND REDEVELOPMENT

HISTORIC PRESERVATION

Old Central

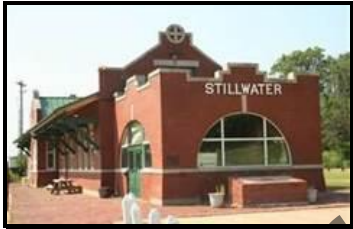


Historic preservation is the practice of protecting and preserving sites, structures or districts which reflect elements of local or national cultural, social, economic, political, archaeological or architectural history. Preservation has many diverse purposes and rewards, including the strengthening of local economies, stabilization of property values, the fostering of civic beauty and community pride, and the appreciation of local and national history.

Benefits of Historic Preservation

The benefits of historic preservation come in many public and private forms. Historic preservation safeguards a community's heritage, making it available to future generations for civic enjoyment and educational activities. Preservation makes use of historic buildings, infrastructure and investments. Historic buildings often lay vacant, are adaptable and built to last, making them great incubators for small businesses. Compared to the rents of new buildings, which are subject to new construction and materials costs, older buildings frequently maintain affordable rents. Preservation stabilizes property values and strengthens local economies. In addition, the conservation and maintenance of historic resources and scenic areas fosters civic beauty and bolsters community pride. Finally, historic preservation has been successfully employed to improve business opportunities.

Santa Fe Depot



Pleasant Valley School



An active commitment and interest by local residents and governments occupying historic buildings spurs additional investment and interest. One project may incite other rehabilitation projects, creating a domino effect. Historic preservation attaches people to the community, provides a sense of place, and encourages public participation through the preservation and demonstration of pride in the historic built environment.

In addition to public benefits, there are also advantages that accrue to individual property owners when historic resources are preserved. In addition to stabilizing property values, historic designation offers financial incentives to owners who rehabilitate their historic property. Oklahoma

*National Register of
Historical Places in Stillwater*

James E. Berry House
502 S. Duck

Campus Fire Station
600 W. University Avenue

Citizens Bank Building
107 E. 9th

William Frick House
1016 S. West Street

Hoke Building
121 W. 7th Avenue

Magruder Plots
Oklahoma State University

Murphy House
419 S. Monroe

Oklahoma A&M College
Agronomy Barn and Seed
House
2902 W. 6th Avenue

Old Central
Oklahoma State University

Pleasant Valley School
1901 S. Sangre Road

Josephine Reifsnyder Lustron
House
2119 Sherwood

Selph Building
119 W. 7th Avenue

Santa Fe Deport
400 E. 10th Avenue

Walker Building
117 W. 7th Avenue

and the Federal government offer tax incentives for rehabilitation of historical structures. Public and private grant and loan funds targeted to designated historic properties for their stabilization and restoration may also be available.

Sustainability: New vs Rehabilitation

Sustainability is defined as meeting the needs of the present without compromising the ability of future generations to meet their needs. Historic preservation is about sustainable development through the reuse of quality, durable resources that are also historically valuable. A tremendous strain is put on scarce resources when a historic building is razed. Thousands of dollars are thrown away from the expenditure of energy, both manual and mechanical, involved in the creation of a new structure and its building materials.

State Historic Preservation Office (SHPO)

SHPO is a division of the Oklahoma Historical Society, a state agency, and is responsible for carrying out the National Register Programs in Oklahoma. These programs were established under the National Historic Preservation Act and are conducted in partnership with the U.S. Department of the Interior, National Park Service. SHPO works with federal agencies, state agencies, local governments, tribal governments, nonprofit organizations, and concerned citizens to ensure that Oklahoma's significant archeological and historic resources are protected.

Oklahoma Landmarks Inventory

The Oklahoma Landmarks Inventory is the collection of information the SHPO has compiled on thousands of individual properties throughout the state. Data is collected through various sources, including the SHPO's comprehensive survey program, through the federal Section 106 review process, or through information submitted by individuals. A list of landmarks comprised of 240 properties, districts, and/or structures for Stillwater was created in 1998. At that time fourteen (14) of the properties were listed on the National Register of Historic Places, ten (10) properties were eligible for the National Register, and fourteen (14) structures were located in the College Gardens area. It is possible that several of the properties have been razed or altered drastically so as not to be eligible for the Register or even the landmark list.

Although the federal and state governments have programs that can designate and protect historical properties, the

Negative Impacts of Abandoned Buildings and Blight

Wastes resources and causes lost tax revenues.

Promotes declining property values.

Contributes to the decline of the community and neighborhood aesthetics.

Concerns to public health and welfare due to garbage accumulation and rodent infestation.

Promotes illegal activity.

Encourages further abandonment and blight.

[Mark Setterfield](#), Associate Professor of Economics, Trinity College Hartford, CT

Benefits to Redevelopment

1. Elimination of blight.
2. Creation of new sources of tax revenue.
3. Creation of jobs.
4. Creation of housing.
5. Improved quality of life.
6. Prevention of urban sprawl.
7. Provision of retail in underserved areas.
8. Historic preservation.

initiative needs to start at the local level. Many communities have ordinances in place to protect historic districts, individual buildings and archaeological sites from destruction or insensitive remodeling. This provides a legal means by which local communities can identify, evaluate and protect historic properties. Under the Certified Local Governments (CLG) program, local governments that enforce appropriate historic preservation zoning ordinances are delegated certain SHPO responsibilities, receive federal matching funds for the development of their local preservation program and participate in the National Register of Historic Places nomination process.

National Register of Historic Places

The National Register is a catalogue of the buildings, sites, structures, districts, and objects significant in our past, and the register is the foundation for all of the SHPO's programs. Listing in the National Register provides recognition, limited protection, and, in some cases, financial incentives for these important properties. The SHPO identifies, evaluates, and nominates properties for this special designation. Stillwater currently has fifteen (15) properties and structures listed on the National Register of Historic Places.

REDEVELOPMENT

Urban blight refers to the deterioration and decay of buildings and older areas of cities, due to neglect, crime, or lack of economic support. As a city gets older, some buildings or properties are not maintained and become run-down, abandoned or condemned. People who cannot afford to live elsewhere must sometimes live in properties that are without appropriate maintenance. The look and condition of these properties, as well as their use can be said to be urban blight.

The adverse impacts of distressed areas tend to be contagious. Even though a city may be prosperous, deteriorated areas in the overall community can still physically and financially have an impact.

Redevelopment Benefits

Redevelopment brings a variety of benefits to the public and especially to the neighborhoods in which a project is undertaken. As a project area is revitalized, it begins to generate enough revenue to pay its own way and contribute to other areas of the community. When a redevelopment project ends, the property taxes from the increase in

property values flow to all other local taxing agencies. Increased sales tax revenues also enable local governments to provide greater public safety and services to all citizens while stopping the spread of deterioration and blight.

Corridor Redevelopment Plan

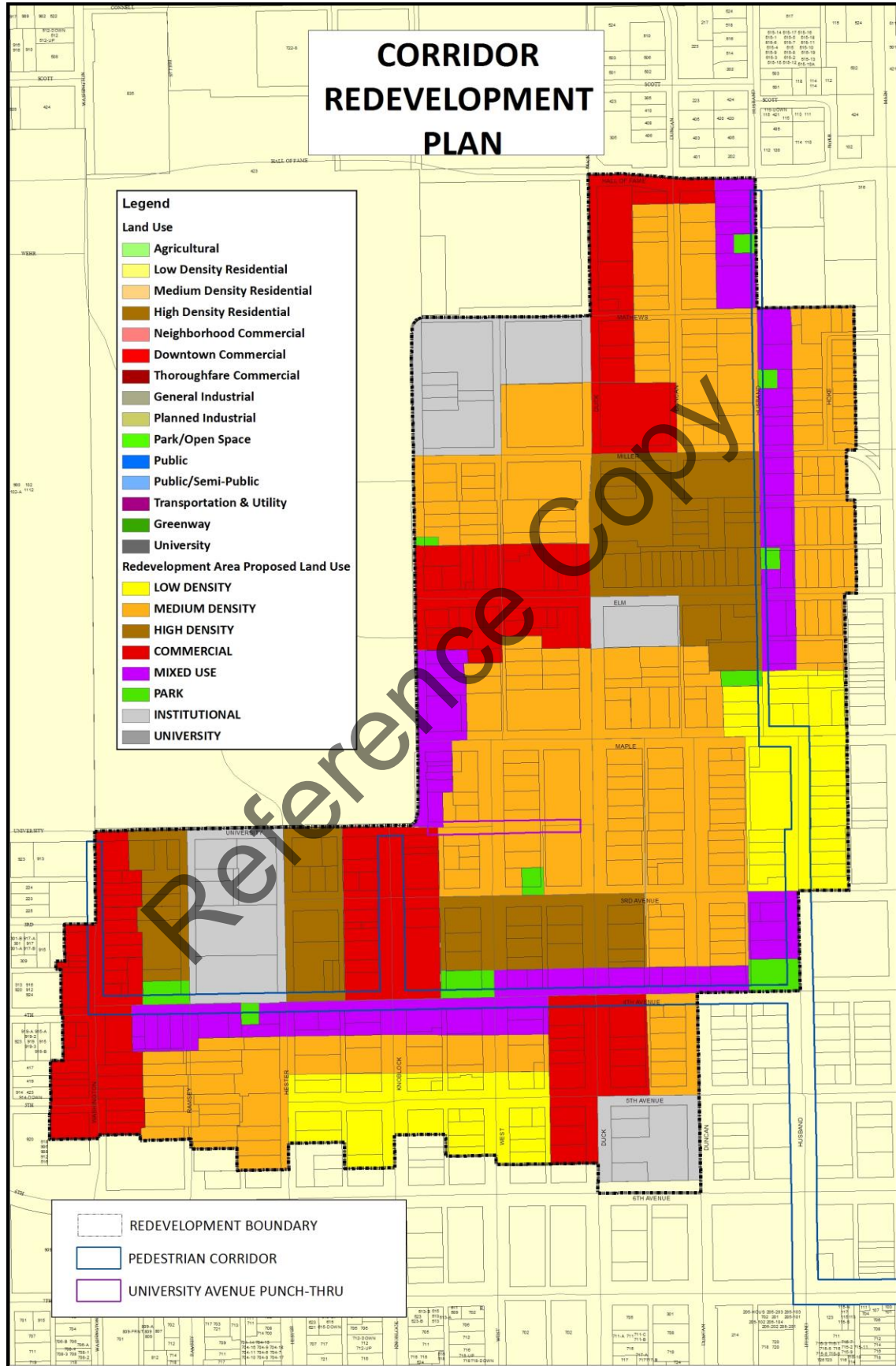
The Corridor Redevelopment Plan for the City of Stillwater is developed to identify and encourage outside-of-the-box thinking when evaluating development proposals and/or opportunities in the area immediately south and east of the Oklahoma State University campus. The Corridor Redevelopment Plan recommends higher mixed uses, pedestrian access, public spaces and public art, and a pedestrian connection from the University to Downtown Stillwater. This plan encourages redevelopment efforts, new investment, improved infrastructure, highest and best density redevelopment, commercial and residential utilization of properties, public spaces for the enjoyment of all, and economic strength and vitality for the surrounding area of the community.

Many principles in the Corridor Redevelopment Plan may also be incorporated in other areas of the community not only for redevelopment of an area but as objectives for the whole city. See Map 18 for the Corridor Redevelopment Area and land use. For more information please refer to the Corridor Redevelopment Plan.

PROJECTIONS AND RECOMMENDATIONS

1. Update the SHPO's landmark inventory list.
2. Create and enact a historical preservation ordinance.
3. Identify areas of the city that are affected by blighted conditions.
4. Identify and enact incentives for redevelopment.

Map 18. Corridor Redevelopment Area



Chapter 9

AREAS OF SPECIAL INTEREST

Downtown Stillwater Pole Sign



Downtown Stillwater

The heart of every community in America, whether intended or not, is the original business district, also fondly referred to as “Downtown”. When visitors come to town, they seek out the Downtown area, because it defines the community and offers a reflection of their history and their future.

To improve and increase the level of business activities within the downtown area, the City Council adopted a resolution on August 20, 2007 creating the Business Improvement District (BID) #1. The area extends from 4th Avenue to 15th Avenue and roughly from Duncan to Lowry. Other than commercial, the uses in the BID District include residential and local, county, and federal government facilities.

An improvement district is a special district created to make improvements, typically to infrastructure, in a given area. It is also called a self-taxing district, because the property owners agree among themselves to pay into the district, in return for services which they also agree on.

Bench in Downtown Stillwater



The goals of the Downtown BID is to 1) increase business activity within the district, which would result in economic growth for the area, 2) become a destination place for Stillwater residents and visitors, and 3) establish Downtown Stillwater as the premier business, cultural and entertainment destination in Oklahoma. The BID district has attracted many new businesses and visitors by installing unique features, beautifying the downtown area, providing funding for upgrades to the existing structures, enhancing community activities and creating innovative tourism events. The continuing growth in the Downtown BID district will be a vital part of Stillwater.

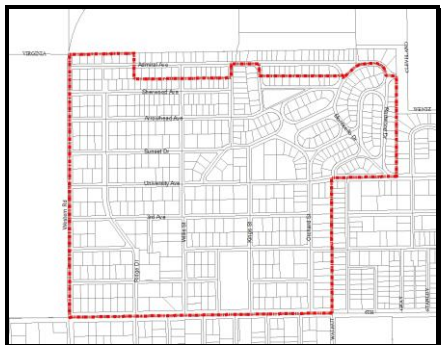
Westwood Neighborhood Street



Westwood Neighborhood

The Westwood Neighborhood is located southwest of the OSU main campus between 6th Avenue and the campus and Western and Walnut Street. It contains ten subdivisions, a portion of a subdivision, and four miscellaneous tracts. The subdivisions were platted between 1925 and 1950.

Westwood Neighborhood Conservation Overlay District



College Gardens Characteristics

Integrity of location (the place where the Garden City Movement was manifested and the only place where avant-garde architecture was constructed in Stillwater).

Design (Garden City Movement inspired street design, landscape architecture, and style of domestic architecture).

Setting (adjacent to the OAMC campus).

Workmanship (sophisticated configuration: placement of houses, trees, and green space to create views and an organic sense of community, ornamental detailing; tile street names in curbs, innovative period techniques; curvilinear street designs and use of topography to break linearity).

Feeling (of a progressive, sophisticated academic community in the 1930's and 1940's).

Association (presence of 1920's period and Modern Movement house styles, WPA sidewalks).

Westwood Neighborhood Conservation Overlay District

In January 2010, the Westwood Neighborhood Association approached the City Council to create an ordinance to preserve the historic residential character of the neighborhood. Two ordinances were created and approved by the City Council to control the increased density of people and the parking issues in the neighborhood.

Ordinance 3142 created the Westwood Neighborhood Conservation Overlay District. The overlay district extends north from 6th Avenue to the university minus a portion of properties on the north side of Admiral Avenue and east from Western Road to the university and the half block between Walnut and Orchard. The ordinance restricts the number of unrelated people that can occupy a dwelling unit to three (3).

To facilitate the overcrowding parking situation, on street parking is restricted to one side of the road and ordinance number 3148 was approved. The ordinance sets some restrictions on off-street parking in the overlay district. The ordinance states that every property must provide no less than two paved off-street parking spaces and that only a percentage of the required front yard can be paved based on the width of the lot.

College Gardens

An intensive-level survey of the College Gardens area was conducted during the 2002-03 fiscal year under contract from the Oklahoma State Historic Preservation Office (SHPO). The following information is from the report that was submitted to SHPO.

Perhaps the most unique subdivision in the Westwood Neighborhood as well as in Stillwater, is College Gardens. This subdivision is adjacent to the campus and was platted in 1927 with a replat in the 1930's creating College Gardens, First Section and College Gardens, Second Section. The design of College Gardens was influenced by the City Beautiful Movement, an outgrowth of the designs of Frederick Law Olmstead, Jr. and John Charles Olmstead, which began in the 1890's and persisted into the late 1920's. The original plan of College Gardens was especially representative of the tendency to incorporate boulevards and residential parks into the subdivision. The district reflects the last years of the City Beautiful Movement and is the only such design in Stillwater. College Gardens also represents historical themes

associated with the role of Oklahoma A&M College (OAMC, now Oklahoma State University) to the state during the Great Depression and the Second World War.

OSU Library



At the time of the survey fourteen (14) properties in College Gardens warranted further study and seventy-six (76) properties were contributing resources to the historical nature of the area. Although the survey found that the College Gardens Historic District does not retain enough architectural integrity to warrant a nomination as a district to the National Register of Historic Places, some type of local preservation should be researched and possibly enacted.

The 2010 Census revealed that the College Gardens area has approximately 456 dwelling units with seventy-seven percent (77%) being rental units. With the proximity of the university, the tenants are almost always university students. The increased density does not fit with the historic character of the neighborhood and has created visual blight. Usually each student will have at least one vehicle which overwhelms available parking spaces. The resulting shortage of parking spaces has prompted many renters to habitually utilize residential lawns for parking. Some property owners have even paved front lawns to increase the parking spaces available.

OSU Student Union



Oklahoma State University

The Oklahoma Territorial Legislature gained approval on December 25, 1890 for the Oklahoma Territorial Agricultural and Mechanical (A&M) College. The land-grant university was specified to be in Payne County which created rivalry between the towns within the county. Stillwater ultimately won out.

Theta Pond



On December 14, 1891, the first student started their classes. The classes were held in local churches for two and one-half years while the first academic building was being constructed. The first commencement exercises held in 1896 consisted of six male graduates.

The first building, Old Central, was located on the southeast corner of the campus and was dedicated on June 15, 1894. The campus grew to have seven (7) buildings by 1919.

The Georgian architecture and growth of Oklahoma State University can be contributed to Henry G. Bennett, who served as the school's president from 1928 to 1950. Dr. Bennett developed a strategic plan for the physical expansion of the campus. The plan was adopted in 1937

and was followed for more than fifty (50) years. Two of Dr. Bennett's major additions to the campus was the Edmon Low Library, opened in 1953, and the Student Union, opened in 1950.

Oklahoma State University has undergone several name changes. Upon statehood in 1907, "Territorial" was dropped from its title of Oklahoma Territorial Agricultural and Mechanical (A&M) College. In 1957 Oklahoma A&M became Oklahoma State University of Agricultural and Applied Sciences. The latter portion of the name was dropped in 1980.

OSU Campus 2006



OSU announced its "Campus Master Plan" in 2005 as a campaign to enhance academic, athletic, and administrative facilities. Over \$800 million is earmarked for campus construction and renovation over twenty years. The Plan calls for an "athletic village" where most of the university's athletic facilities will be located on the main campus. To accomplish this goal, the athletic department bought all (or nearly all) the property north of Boone Pickens Stadium up to McElroy between Knoblock and Washington streets. The project includes the construction of an indoor practice facility for most sports, a soccer stadium/outdoor track, a tennis complex, and a baseball stadium. See Map 19 for the OSU Master Plan.

OSU adopted an updated Campus Landscape Master Plan in 2011. The firm of Alaback Design Associates was selected to produce the plan. The firm assembled a team from multiple disciplines and departments to devise a plan for new development, to promote consistency in campus building efforts, and to provide a standard for hardscape and softscape when repairs or replacement must occur. Campus beautification, building, construction, and landscaping projects may be directed and guided by the Master Plan.

The Strip



The Strip and Campus Corner

The portion of Washington Street between 6th Avenue and University Avenue is known as the Strip. The area features small shops, restaurants, bars, and live music. It is adjacent to Oklahoma State University and close to greek housing; therefore, it is a big part of Oklahoma State University's night life.

The Strip is the western boundary of the Corridor Redevelopment Plan. North of 4th Avenue is designated in the redevelopment plan as a pedestrian corridor. The street has a sixty (60) foot right-of-way which is standard for a street classified as local, but as a street that will have

vehicle traffic and high levels of pedestrians, the street should be widened. Upgrades to the street, sidewalk, buildings, and parking will greatly enhance the street as a pedestrian area.

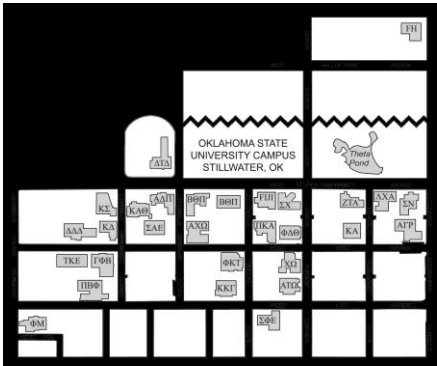
Campus Corner



Campus Corner is located three blocks east of the Strip on Knoblock between University Avenue and 3rd Avenue. The one block area features unique shops and restaurants, including the original home to Hideaway Pizza.

Campus Corner is also located in the Corridor Redevelopment Plan and is designated as a pedestrian corridor. Knoblock is different from Washington Street as it has an adequate width for a pedestrian corridor with a one hundred (100) foot right-of-way. Upgrades may still be made in the way of paving, pedestrian amenities, and landscaping. For more information on upgrades and development please refer to the Corridor Redevelopment Plan.

Map 20. Greek Neighborhood

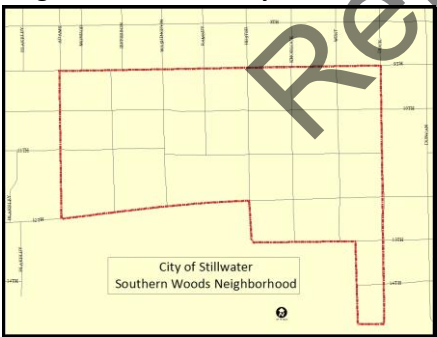


Greek Neighborhood

The Greek neighborhood consists of 28 men's and women's fraternities and sororities with approximately 3,000 members. The neighborhood is located south of the campus between South Walnut and South Washington Streets and West 4th and West University Avenues.

The Greek neighborhood is densely populated with the Greek houses, single family houses, and apartments. This presents a problem with expanding the houses and providing adequate parking for the growing number of members.

Map 21. Southern Woods Neighborhood Boundary

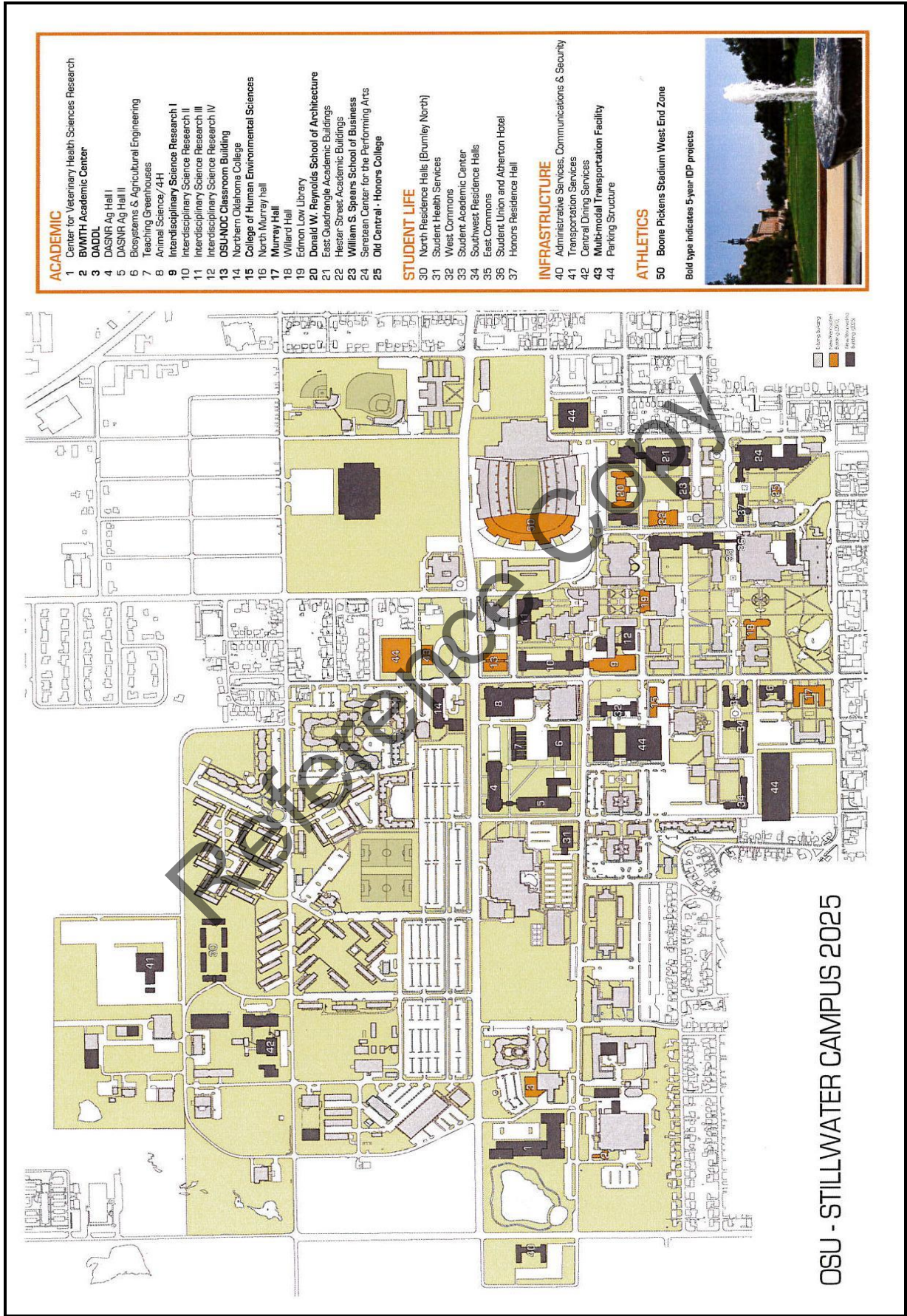


Southern Woods Neighborhood

Portions of seven subdivisions are located in the Southern Woods Neighborhood. The subdivisions are among the oldest in the city with the Original Town Stillwater platted in 1890 up to the Duncan Subdivision platted in 1953.

The Southern Woods community is the location for a number of celebrations, Juneteenth being the most recognized. Juneteenth is the observation of June 19th as the African-American Emancipation Day. The history of African-Americans in Stillwater is rooted in the Southern Woods Neighborhood.

Map 19. OSU 2025 Master Plan



PROJECTIONS AND RECOMMENDATIONS

1. Continue to support BID #1.
2. Support the Westwood Neighborhood Association's initiative to conserve the historical residential character of the neighborhood.
3. Support the Corridor Redevelopment Plan.
4. Research possibility of initiating people density and parking regulations in other single family residential areas of the community.
5. Continue working with Oklahoma State University in implementing their Campus Master Plan.
6. Consider improvement such as wide sidewalks, landscaping, seating, and additional parking to enhance the Strip.
7. Encourage the improvements to Campus Corner as part of the pedestrian corridor in the Corridor Redevelopment Plan.

Chapter 10 **LAND USE**

Purpose

This chapter establishes the policy guidance that enables the City to plan effectively for its future growth and development. Sound planning is essential to prepare for anticipated infrastructure needs and establishing and preserving the community's character. High quality development is of equal importance to the requisite streets and infrastructure. The other components of the Comprehensive Plan are integral parts in establishing the future land use map. For example, access to the land is provided by the transportation network which in turn influences the type and density of development. The amount, location, and timing of development are influenced by the proximity or lack of utilities. The perceptions by area residents and companies considering investing in the community are impacted by the community aesthetics that are a direct result of design and development.

Table 30. Existing Land Use within City Limits

Land Use	Acres	Percentage
Agriculture	60.31	0.32%
Low Density Residential	1787.55	9.51%
Medium Density Residential	6876.23	36.56%
High Density Residential	826.32	4.40%
Neighborhood Commercial	258.98	1.37%
Thoroughfare Commercial	796.8	4.24%
Downtown Commercial	186.47	1.00%
Community Commercial Node	22.39	0.12%
Public	42.75	0.23%
Public/Semi-Public	145.92	0.78%
General Industrial	513.17	2.73%
Planned Industrial	897.1	4.77%
Park/Open Space	1115.56	5.93%
Greenway	1881.29	10.01%
Transportation/Utility	1301.18	6.92%
University	2087.91	11.11%
TOTAL	18799.93	100.00%

EXISTING LAND USE

Study Area

The existing land use study area included the City Limit boundary in 2001 plus the surrounding area from Yost Road to 44th Avenue and Prairie Road to the half mile line west of Range Road.

Existing Land Use Inventory

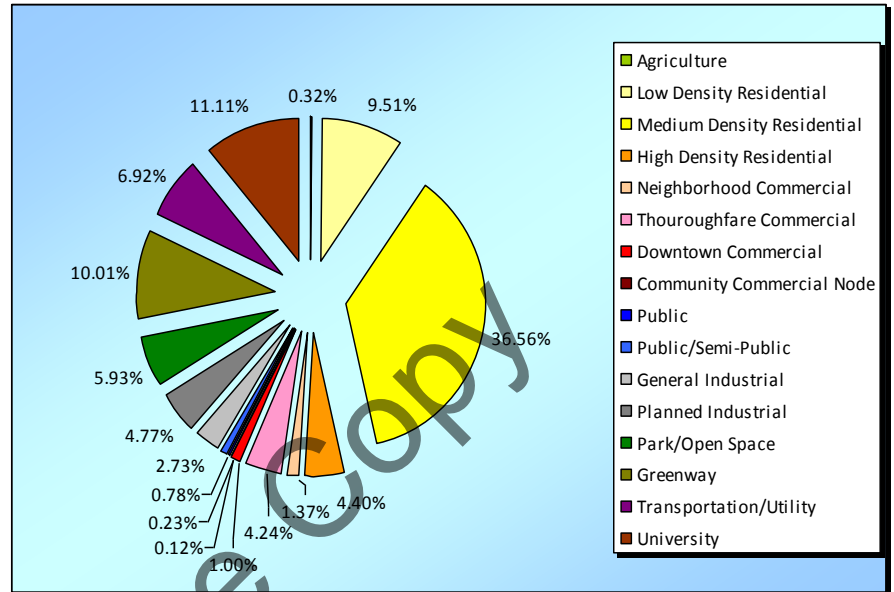
The land use within the Stillwater City Limits is comprised of approximately 18,799.93 acres (30 square miles). The Medium Density Residential category has the highest acreage with 6,876.23 acres followed by University at 2,087.91 acres and Greenway with 1,881.29 acres. Table 30 and Graph 15 indicates the acreage and percentage of the total land use within the city boundary.

The acreage for the complete study area totals 54,116.86 acres. The land use categories that have the largest acreages for the total study area are Agriculture with 16,634.85 acres, Low Density Residential with 12,632.48 acres and Medium Density Residential with 10,677.49 acres. Table 31 indicates the approximate acreage per land use and Graph 16 shows the percentage of the total acreage within the current study area.

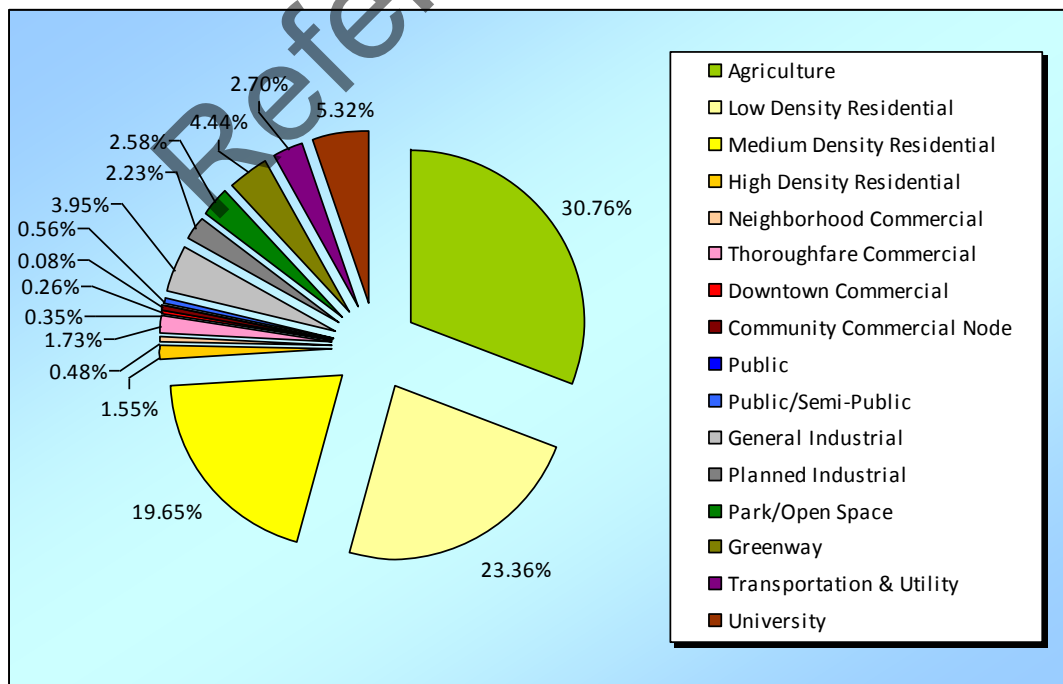
Table 31: Existing Land Use Acreage for Study Area

Land Use	Acres	Percentage
Agriculture	16,634.85	30.75%
Low Density Residential	12,632.48	23.34%
Medium Density Residential	10,677.49	19.73%
High Density Residential	837.51	1.55%
Neighborhood Commercial	207.68	0.38%
Thoroughfare Commercial	946.40	1.75%
Downtown Commercial	186.47	0.34%
Community Commercial Node	142.05	0.26%
Public	42.75	0.08%
Public/Semi-Public	304.58	0.56%
General Industrial	2353.65	4.35%
Planned Industrial	1,226.74	2.27%
Park/Open Space	1,396.13	2.58%
Greenway	2,186.54	4.04%
Transportation & Utility	1,461.69	2.70%
University	2,879.85	5.32%
TOTAL	54,116.86	100.00%

Figure 15. Existing Land Use Percentages within City Limits



Graph 16: Existing Land Use Percentages for Study Area



FUTURE LAND USE

Stillwater does not have to wait and react to growth and development; rather, the City can determine where growth will occur and what character the new development will reflect. This Plan will ensure that development meets certain standards and, thus, contributes to achieving the desired pattern of development and community character.

Agriculture



Study Area

The municipal city limits extends roughly from Yost Road on the north to ½ mile south of 32nd Avenue and from ½ mile west of Range Road to Brush Creek Road on the east. With a future goal of squaring off the city limit boundary the City of Stillwater Annexation Plan was adopted September 22, 2008.

In order to address future annexations, land use designations will be assigned to not only within the city limits but all the area in the Annexation Plan. In addition, the area southwest of the city included in the Southwest Water Plan that is outside the Annexation Plan limits will also be included in the future land use map.

Future Land Use Categories

Agriculture

The agriculture land use contains establishments that are primarily engaged in growing crops, raising animals, harvesting timber, and harvesting fish and other animals from a farm, ranch, or their natural habitats. These establishments are often described as farms, ranches, dairies, greenhouses, nurseries, orchards, or hatcheries.

Low Density Residential

Within the Low Density Residential category, conventional single-family detached dwellings, two-family units, and low density multi-family are found with single-family representing the primary use. The gross density is up to twenty (20) dwelling units per acre. Public uses such as places of worship, schools, parks, and other neighborhood-oriented public facilities are acceptable throughout the area, assuming that they are designed to respect and enhance the character of the community. Neighborhood scale commercial may be located in this area on a limited basis.

High Density Residential

High Density Residential contains the multi-family uses with gross densities between twelve (12) and one hundred

Low Density Residential



Source: places.designobserver.com

High Density Residential

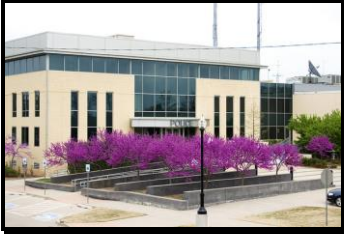


Source: places.designobserver.com

Commercial



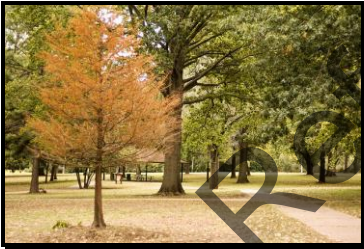
Public



Industrial



Parks and Open Space



University



fifty (150) dwelling units per acre. The High Density Residential land use may act as a transition between Low Density Residential and Commercial and Industrial areas. Convenience and neighborhood scale commercial may be located in this area.

Commercial

Commercial areas are designed to specifically promote commercial retail and service activities, although they may also include office uses. Common uses in the commercial area will include shopping and service facilities for the sale of goods and services, including small shops and larger retail stores and centers, restaurants, hotels and motels, service stations, and various other customer-oriented establishments.

Public

Uses compatible with the Public land use category include government facilities, educational institutions, medical facilities, library, and fire stations. The Public facilities may be found mixed appropriately within residential developments.

Industrial

Uses associated with industrial activity include manufacturing, assembly, warehousing, distribution, or maintenance of products. Heavy industrial activity is often also accompanied by outdoor activity areas or storage.

Parks/Open Space

The Park and Open Space designation involves public-controlled areas for recreation. Park usually refers to developed sites involving facilities and/or structured programs. Open Space refers to mostly natural sites that are used for passive recreation purposes.

University

University uses include facilities associated with the Oklahoma State University campus and affiliated properties.

Land Use Patterns

Land use patterns are the placement of various types of land use in relation to each other. These land use types usually include residential, commercial, institutional, recreational, and industrial. Travel patterns and type of travel are created by the patterns of placement which in turn play a large part in the physical activity patterns of a

community. Using land use patterns that promote walking or bicycling has beneficial effects on health. Climate change and environmental exposure to pollutants and/or disease agents may also be affected by land use patterns. For example, residential neighborhoods in close proximity to industrial areas are more likely to be exposed to industrial contaminants. Some land uses may promote a land use pattern. A new commercial area or a school, primarily an elementary school, will likely cause more residential growth in the vicinity. The benefits of compatible land uses include:

1. Investments are protected from the adverse impacts of incompatible uses,
2. Negative impacts to adjacent land uses is reduced or eliminated,
3. Similar land uses will not have a negative impact on existing or new utilities,
4. Negative impacts to public facilities (road system, sidewalks, bike paths, parkland, etc.) is reduced or eliminated.

Land Use Buffer Zones

The assignment of land uses to adjacent land should be compatible, related, mutually supportive, and similar in the amount of generated traffic and needed transportation facilities. A land use can be used as a buffer between more incompatible uses. The usual hierarchy of land uses is as follows:

1. Industrial uses near commercial rather than residential
2. High density residential and office between commercial and single family residential
3. Low density single family residential between multi-family and agriculture.

PROJECTIONS AND RECOMMENDATIONS

1. Provide a plan that has a desirable pattern of development.
2. Provide a plan that considers the current location and type of infrastructure and what is needed for development.
3. Provide a land use plan with compatible land uses.

4. Provide a land use pattern for walkable neighborhoods.
5. Provide a plan that protects the public from adverse impacts of incompatible uses.
6. Provide a plan that considers land use buffer zones.
7. Provide a land use pattern that will reduce the negative impacts to public facilities.
8. Provide a plan that has sufficient area for each land use.

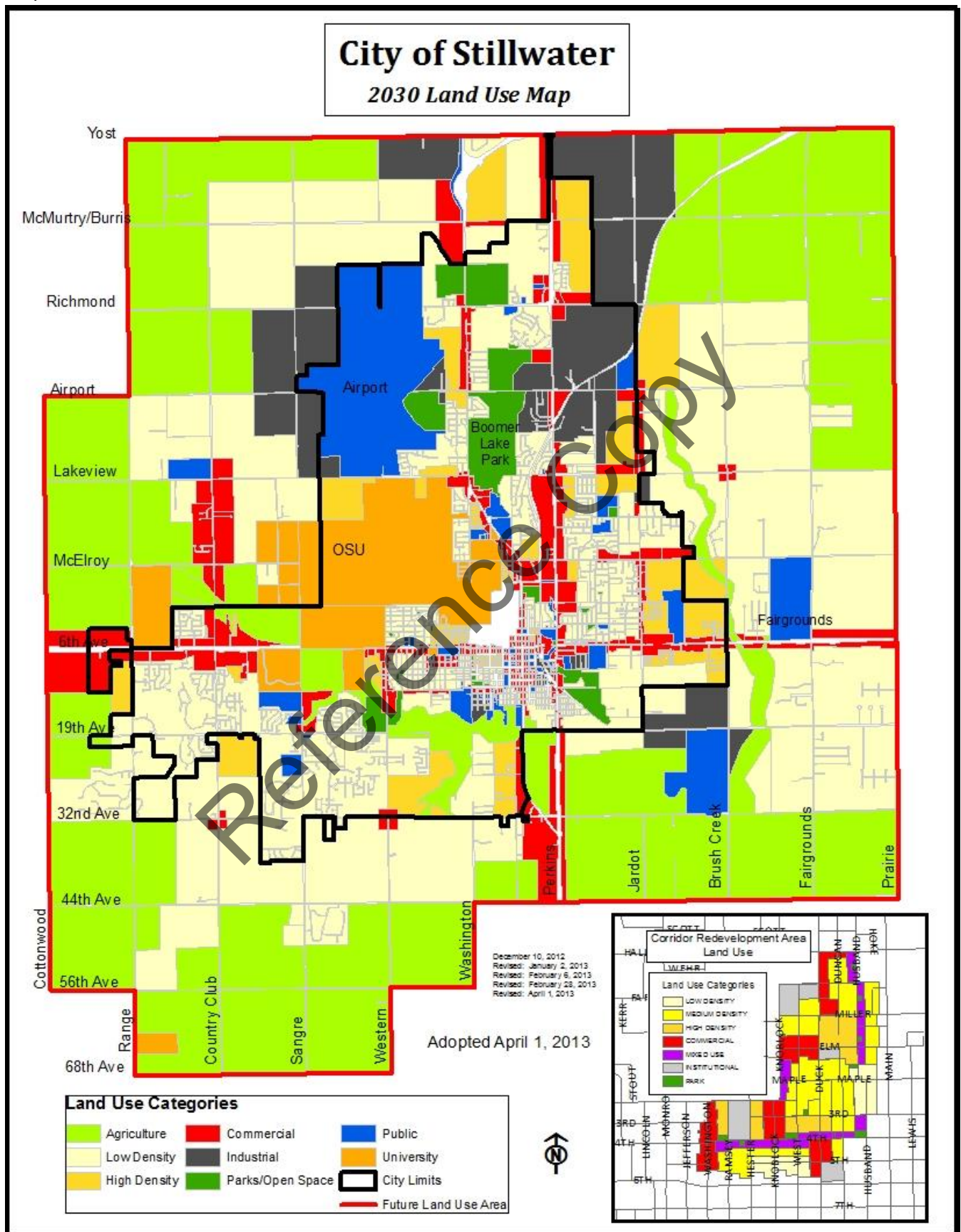
Conclusion

The City of Stillwater's C³ Plan is a generalized Land Use map & policy statement that links all man-made & natural systems and activities relating to the use of land. The Plan provides direction and goals for the present and future well-being of the community. The Plan is general, not overly specific, but acts as a guideline for the development of Stillwater.

The Plan sets the stage to the year 2030. Due to fast-paced change, new technology, and the rapid growth or decline of the community the Plan will be reviewed and updated every 5 years.

Map 22. Existing Land Use

Map 23. Future Land Use



Appendix

Please consult the following plans for more information on the specific subject.

Corridor Redevelopment Plan

Stillwater Multi-Use Trail and On-Street Bicycle Master Plan

Stillwater Regional Airport Master Plan Update 2008

Stillwater Transportation Enhancement Plan (STEP)

Water Resources Master & Infrastructure Assets Management Plan

Reference Copy