SECTION 7

MASTER PLAN PRIORITIES

This section of the document provides information about the capital projects requested by City departments and the Master Plans which govern them. Projects are summarized by category at the end of each Master Plan section.

This section is for information only and is not part of the ordinances adopted by the City Council.

MASTER PLAN PRIORITIES

The City of Tulsa is proactive in reviewing its capital needs both annually and in the strategic view of long-range goals and needs as identified in the various master planning efforts undertaken both internally and with sister organizations involved in major capital programs in the region. Out of these master plans and recommendations, over 620 projects totaling just over $8.4 billion with time horizons that extend out as far as 50 years have been developed and are contained in an inventory that is reviewed and maintained by the City's Finance Department. Below is a summary of the major planning efforts and plans that govern the City's physical development and provide guidance as to the City's Capital Improvement Plan (CIP) and the individual projects funded as part of the City's capital programs. In the following pages, each of these plans is discussed in further detail with a brief explanation of the goals and priorities for the physical projects they govern.

City of Tulsa Comprehensive Plan

Undertaken in 2010, PLANiTULSA created a new vision for the City of Tulsa that reflects the needs and dreams of the citizens for the next 20-30 years. The City of Tulsa Comprehensive Plan was adopted by the Tulsa Metropolitan Area Planning Commission and approved by City Council in July 2010. It serves to guide the physical development of the city through a set of goals and policies. Tulsa's Comprehensive Plan describes the kinds of places, economy, housing and transportation choices, parks, and open spaces that the city's policies should be designed to create.

HUD Consolidated Plan 2015-2019

The Consolidated Plan serves as the framework for a community-wide dialogue to identify housing and community development priorities that align and focus funding from the US Department of Housing and Urban Development (HUD) Office of Community Planning and Development. This plan establishes the goals for the expenditure of annual allocations from HUD's formula block grant programs which include: Community Development Block Grant (CDBG) Program, HOME Investment Partnerships (HOME) Program, Emergency Solutions Grant (ESG) Program, and Housing Opportunities for Persons With AIDS (HOPWA) Program. The City of Tulsa receives just over $5.0 million in year from HUD formula grants.

Long Range Transportation Plan (LRTP) and Major Street and Highway Plan (MSHP)

The Major Street and Highway Plan (MSHP) delineates the routes and widths of street-right-of-way and the suggested number of lanes that should be constructed when arterial streets are improved. The MSHP which was updated to reflect new cross sections, as outlined in the City's updated comprehensive plan, has been in existence for over 50 years. The Long Range Transportation Plan (LRTP) serves as a guide for the investment of local, state and federal resources. The LRTP meets the requirements of federal law, authorizing the adoption of a long-range transportation plan for the metropolitan planning area. This is an important requirement for the expenditure of federal transportation resources.

Comprehensive Assessment of the Water and Wastewater Systems

In July 2011 Tulsa Metropolitan Utility Authority (TMUA) engaged a team, led by the financial firm of Infrastructure Management Group, Inc. (IMG) comprised of engineering and legal firms, to conduct a comprehensive assessment of the City's water and wastewater systems. The TMUA, like many water and wastewater utilities across the country, was facing challenges, including rising costs, aging infrastructure, increasingly stringent regulatory requirements, and a changing workforce. Rather than focusing on just financial, operational, or capital, TMUA chose to take a holistic approach considering all significant aspects of the utility systems including governance and organizational structure, management, operational performance, capital needs, financial condition, and legal and public policy issues. The study was completed in August 2012.

MASTER PLAN PRIORITIES

Tulsa has two sources of raw water: Spavinaw Creek (Spavinaw and Eucha Lakes) and the Verdigris River (Oologah Lake). Spavinaw and Eucha Lakes can provide an average annual yield of 59 million gallons per day (MGD) of untreated water under drought conditions; the City has water rights to 128 MGD from Oologah Lake. Water from the Spavinaw system is treated at the Mohawk Water Treatment Plant. The Mohawk WTP has a daily treatment capacity of 100 MGD. The A. B. Jewell plant treats water from Lake Oologah is capable of treating a maximum volume of 120 MGD. The distribution system is made up of 2,300 miles of water lines, pumps, hydrants, meters, and storage facilities. The wastewater system is made up of 1,990 miles of sanitary sewer gravity and pressure mains, 49 sanitary sewage lift stations, wet-weather flow equalization basins, and the four wastewater treatment plants (WWTPs) currently operated solely by the TMUA or in conjunction with the Regional Metropolitan Utility Authority (RMUA).

Master Drainage Plans

In the early 1980s, Tulsa had developed significant flooding issues. The federal government had declared Tulsa County a flood disaster area nine times in 15 years, more than any other community in the nation. The most devastating flood in Tulsa's history hit in the mid-night hours of Memorial Day 1984. The City responded to the shock of this killer flash flood with community-wide commitment to end recurring disasters. This commitment is reflected in a comprehensive watershed management program, dedicated funds for maintenance and operation, a prototype alert system, and continued capital improvements. The Engineering Services Department, working in conjunction with the Stormwater Drainage and Hazard Mitigation Advisory Board and numerous citizen groups, developed the "Flood and Stormwater Management Plan 1999-2014, in furtherance of this comprehensive stormwater management approach which established a phased implementation program for the projects identified in the Master Drainage Plans.

Parks Master Plan

The City of Tulsa Parks Department undertook a master planning effort in 2009 in response to aging Parks infrastructure and repeated budget cuts that had left a number of dilapidated community centers closed to the public. The City of Tulsa manages 135 parks covering roughly 6,000 acres. The plan was finalized in February of 2010 and was formally adopted as part of the City's Comprehensive Plan. The plan resulted in the following park system vision statement…*Tulsa will be known as a city that celebrates and preserves green space and beautiful environments, and enjoys outstanding recreational opportunities supporting the health and wellbeing of its citizens.*

Arkansas River Corridor Master Plan

Preceded by decades of discussion about Arkansas River improvements and potential development, citizens, City and County officials, and the U.S. Army Corps of Engineers (USACE) produced and adopted the Arkansas River Corridor Master Plan in 2005. The plan resulted in recommendations for projects and appropriately located development along the 42 miles of river in Tulsa County. A major focus was the desire to see a consistent presence of water in the river.

Zoo Master Plan

In 2010, the City of Tulsa transferred maintenance and operations to the private company Tulsa Zoo Management Incorporated (TZMI). Through a comprehensive facility evaluation completed in 2010, and the Tulsa Zoo Master Plan completed in 2012; TZMI identified $111.9 million in necessary improvements for failing exhibits and buildings.

COMPREHENSIVE PLAN, SMALL AREA PLANS AND HUD CONSOLIDATED PLAN

Master Plan Priorities

There are many factors that drive the social and physical needs of the community be they economic or demographic. The overarching goals outlined in the City's Comprehensive Plan provide the basis for all other plans whether they are infrastructure, land use, housing, recreation or economic development. Small Area Plans and the Housing and Urban Development Consolidated Plans are both tools to implement strategies outlined in the Comprehensive Plan. They are summarized below.

City Comprehensive Plan

In January of 2008, the City Tulsa Planning Department began the process of updating the City's Comprehensive Plan which had not been updated since 1978. The Comprehensive Plan provides policy guidance regarding land use, transportation, service delivery and major capital improvement projects. The City engaged over 2,500 citizens thru a number of citywide and neighborhood visioning workshops and presentations during plan development. A number of scenarios were presented to citizens with regards to the future of the City's transportation options and land use configurations. The plan was formally adopted by Tulsa Metropolitan Area Planning Commission (TMAPC) and the City Council in the summer of 2010. The highest priority projects from the PlaniTulsa process and existing small area plans have been added to the CIP Inventory.

Neighborhood Revitalization and Small Area Plans

Small Area Plans (SAP) and Sector Plans are long-range plans focused on a specific area. They typically cover the same topics as the City's comprehensive plan. The smaller scale allows stakeholders and public engagement to be the focus of the planning process. Their geographic bounds are shown on **Page 7-6.** The high priority plan projects are shown on **Page 7-7 and 7-8.**

36th Street North Small Area Plan: Effective October 16, 2013. The 36th Street North Small Area Plan was a priority in PLANiTULSA. This SAP focuses on policies to help spur development in the planning area.

Brady Arts District Small Area Plan: Effective February 2013. This plan followed PLANiTULSA's SAP guidelines in creating a vision and recommendations for the Brady Arts District. The plan's recommendations range from streetscape guidelines and place-making to marketing and sustainability.

Brookside Infill Development Design Recommendations: Effective November 2002. This plan was intended to address short-term infill issues impacting Brookside. It focuses on design policies, especially streetscape.

Charles Page Boulevard Plan: Effective November 1996 and Amended 2000. Initiated in 1991, this neighborhood plan divided the corridor into two subareas and provided policy, capital improvement, and development recommendations for both.

Crosbie Heights Small Area Plan: Effective February 2019. This plan followed PLANiTULSA's SAP guidelines in creating a vision and recommendations for the Crosbie Heights Neighborhood. Policies and recommendations range from housing options, streetscaping recommendations, and multimodal infrastructure. This plan supersedes portions of the Charles Page Boulevard Plan that are within the Crosbie Heights boundary.

Crutchfield Neighborhood Revitalization Master Plan: Effective June 2004. The Crutchfield Neighborhood Revitalization Master Plan process was driven by an active neighborhood group. The plan focuses on providing land use and infrastructure improvement guidance that will help continue the historic mix of uses found in the neighborhood.

Downtown Area Master Plan: Effective 2010. Downtown Tulsa is a critical part of the economic and social life of Tulsa. The Downtown Area Master Plan was developed along with PLANiTULSA and was the first plan adopted as a component of the Comprehensive Plan. The plan expands on previous plans and PLANiTULSA to provide guidelines to revitalize downtown.

East Tulsa Neighborhood Implementation Plan Phases I & II: Effective November 2006 and May 2007. The first of two parts, the phase I plan focuses on 5 square miles on the western edge of the total planning area with a mix of land uses. Phase II focuses on land uses along the Highway 412 corridor, including two major activity centers and conceptual redevelopment ideas for commercial development.

Eugene Field Small Area Plan: Effective June 2013. This SAP was created under the direction of consultants from McCormack Baron Salazar. The area involves a complex mix of park, industrial, and residential uses. The plan's recommendations focus on revitalizing residential areas while increasing connections to the Arkansas River and commercial corridors.

Kendall-Whittier Sector Plan: Effective October 2016. This plan was prepared by Houseal Lavigne Associates. The Kendall-Whittier Sector Plan envisions a thriving, connected community with a rich mixture of land uses, transportation options, and people.

The Pearl District – 6th Street Infill Plan: Effective January 2006 and amended April 2014. The plan takes a detailed look at the Pearl District and provides a future vision and recommendations on how the area can achieve that vision.

Riverwood Neighborhood Plan Update: Effective October 2008. This plan provides a series of connection and infrastructure improvements aimed improving public spaces and helping to revitalize commercial properties.

Sequoyah Area Neighborhood Implementation Plan: Effective May 2007. This plan provides a number of revitalization goals with policies and projects to help realize those goals. The Sequoyah Neighborhood Association, Tulsa Public Schools, and the City of Tulsa worked together to create this plan.

Southwest Tulsa Neighborhood Revitalization Plan Phase I & II: Effective May 2009 and June 2011. The phase one portion of the two phase plan is considered the detailed implementation plan. It includes projects specific to each of the identified subareas. Projects and recommendations range from site specific redevelopment to streetscaping and land use designations. Phase II focuses on the 2010 Comprehensive Plan (PLANiTULSA) impact on Southwest Tulsa and the implementation projects presented in Phase I. It provides additional project ideas and concepts based on the Comprehensive Plan.

Unity Heritage Neighborhoods Plan: Effective October 2016. This plan was prepared by Houseal Lavigne Associates. The Unity Heritage Neighborhoods Plan promotes a vision of an attractive urban lifestyles that connects residents to the area's legacy, local commercial opportunities, and regional destinations. It updates and combines several previous neighborhood Sector Plans in North Tulsa.

COMPREHENSIVE PLAN, SMALL AREA PLANS AND HUD CONSOLIDATED PLAN

Master Plan Priorities

Utica Midtown Corridor Small Area Plan: Effective January 2014. The plan seeks to preserve stable residential neighborhoods while encouraging the growth of regional job centers by encouraging best practices in contemporary urban design and planning. The planning process was divided into two portions, each headed up by separate consultants, stakeholder, and resident groups.

West Highlands/Tulsa Hills Small Area Plan: Effective April 2014. This SAP was initiated in response to development pressures in a previously agricultural area. The plan attempts to balance future development with existing aesthetics and open space while ensuring that transportation and related systems are enhanced.

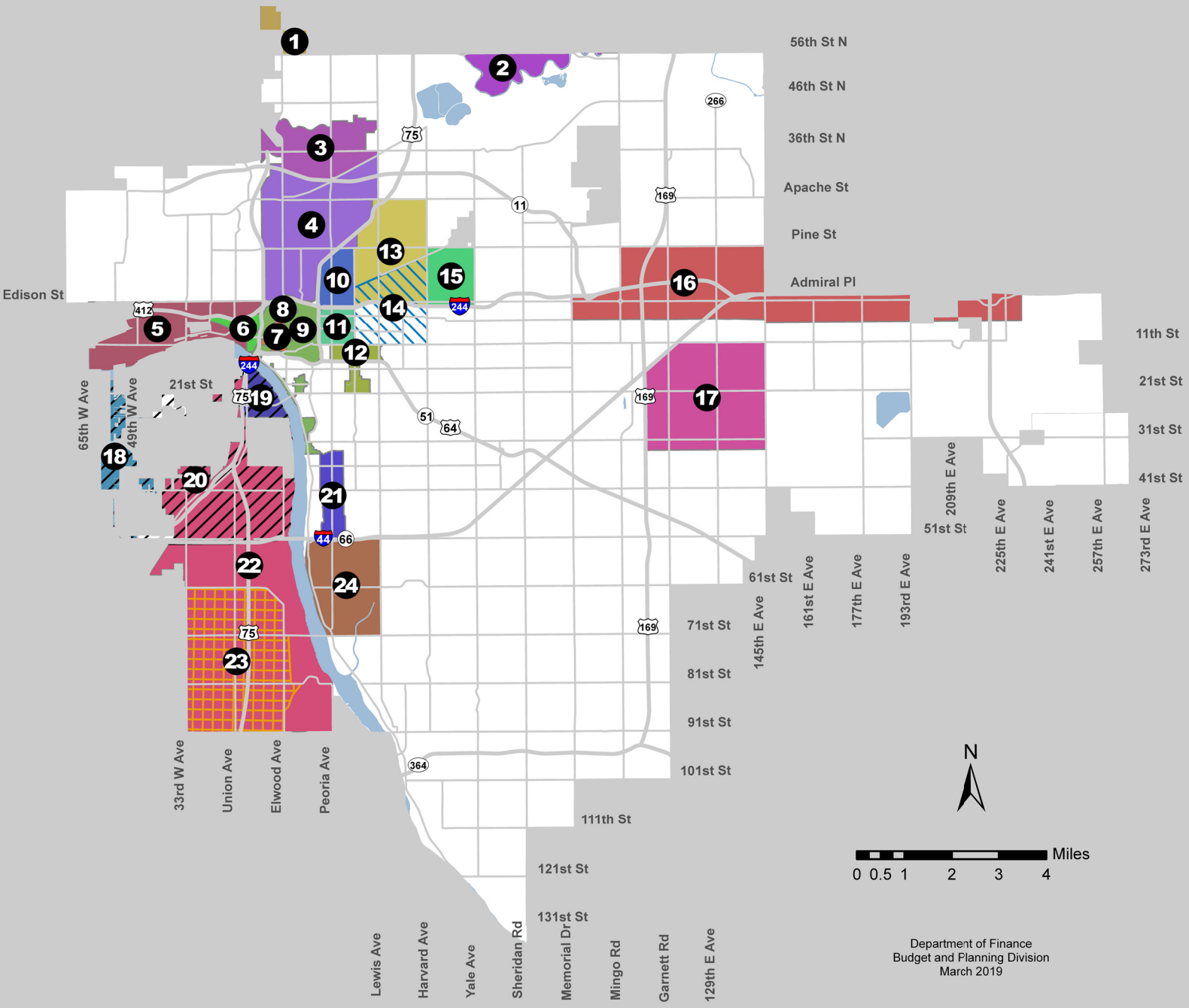
HUD Consolidated Plan 2015-2019

The Consolidated Plan serves as the framework for a community-wide dialogue to identify housing and community development priorities that align and focus funding from the US Department of Housing and Urban Development (HUD) Office of Community of Planning and Development. This plan establishes the goals for the expenditure of annual allocations from HUD's formula block grant programs which include: Community Development Block Grant (CDBG) Program, HOME Investment Partnerships (HOME)

Program, Emergency Solutions Grant (ESG) Program, and Housing Opportunities for Persons With AIDS (HOPWA) Program. The City of Tulsa receives just over $5.0 million in year from HUD formula grants. The plan outlines goals for affordable housing and physical improvements that will serve the City's low and moderate income populations shown on **Page 7-9**. Target areas where established in the plan to incentivize physical improvements that would advance both HUD goals and the City's Small Area Plan priorities. The target areas in the 2015-2019 Consolidated Plan were Riverwood, Southwest Tulsa, Crutchfield and the 36th Street North Small Area Plans. The total below, represents the sum of the total requests contained in the City's planning documents that support both plan goals and economic development.

	Project Title	Requesting Dept	Cost Estimate (in $000)	Estimated Annual Operating Impact
1	Planning, Economic Development, and Resilience	MOED	$ 900,042,067	$ 5,055,300
		TOTAL $	**$900,042,067**	**$ $5,055,300**

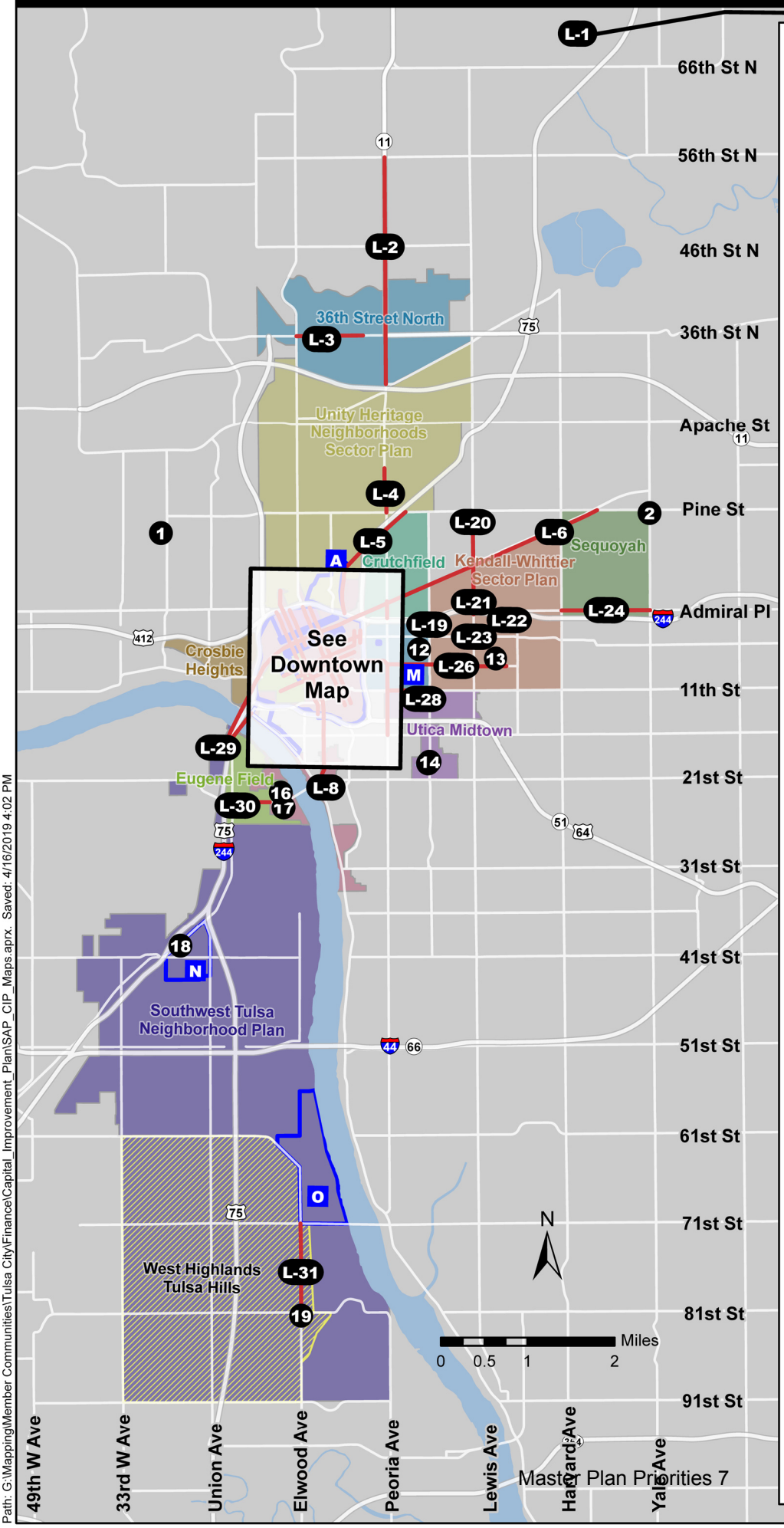
City of Tulsa
Small Area Plans



Small Area Plans

1. District 24
2. North Tulsa County Comprehensive Plan
3. 36th Street North
4. Unity Heritage Neighborhoods Sector Plan
5. Charles Page Boulevard
6. Crosbie Heights
7. Arena District Master Plan
8. Brady Village
9. Downtown Area Master Plan
10. Crutchfield
11. 6th Street Infill Plan - Pearl District
12. Utica Midtown
13. Springdale Development Area
14. Kendall-Whittier Sector Plan
15. Sequoyah
16. East Tulsa Phase 2 Planning Area
17. East Tulsa Phase 1 Planning Area
18. Berryhill Land Use Plan
19. Eugene Field
20. District 9
21. Brookside
22. Southwest Tulsa Neighborhood Plan
23. West Highlands Tulsa Hills
24. Riverwood

Small Area Plans & CIP Projects



Legend

CIP Projects - Points

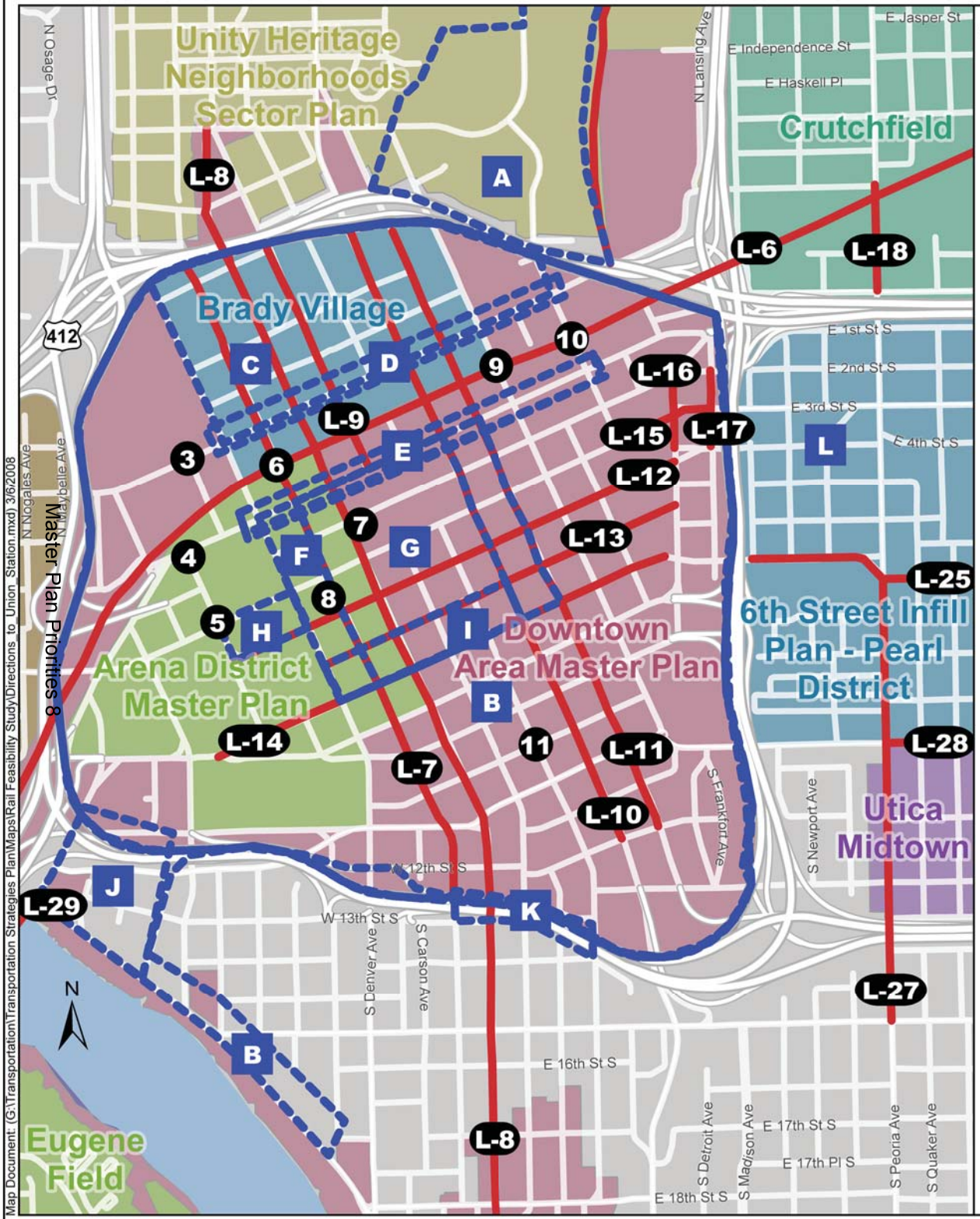
- 1 Gilcrease Bike and Trail Connector
- 2 Pine Street and Yale Avenue Intersection
- 12 11th Street BRT Completion
- 13 ENGINEERING - Kendall Whittier - Admiral Blvd - Zunis Ave to Vic
- 14 UTICA AVE PEDESTRIAN IMPROVEMENTS - Crosswalk at S Utica Ave. and E 17th Pl./Swan Lake Dr., caution signs.
- 15 General Sites - Swan Lake Fencing, fountain and Irrigation
- 16 Concrete Plant Site Acquisition
- 17 City Equipment and Materials Relocation from 23rd and Jackson
- 18 Route 66 Station (Phase II - Route 66 Historical Village)
- 19 Hager Creek Storm Sewer Relief Line

CIP Projects - Lines

- L-1 Elm Creek - Floodplain Property Acquisition
- L-2 Peoria Connection
- L-3 36th STREET NORTH CORRIDOR - Phase II
- L-4 ART - North Peoria Ave Public Sculpture Program
- L-5 DAM PLAN - Sealed Corridor Phase II
- L-6 DAM PLAN - Light Rail System
- L-8 DAM PLAN (ENGINEERING) - Two-Way Street Improvements and Enhancements to Do
  DAM PLAN - Downtown Circulation
- L-19 Kendall Whittier (ENGINEERING) - Overpass Repair - Enhance 3 ove
- L-20 Kendall Whittier (ENGINEERING) - Lewis Ave - North Admiral Blvd
- L-21 Kendall Whittier (ENGINEERING) - Overpass Repair - Enhance 3 ove
- L-22 Kendall Whittier (ENGINEERING) - Overpass Repair - Enhance 3 ove
- L-23 Kendall Whittier (ENGINEERING) - Lewis Ave - 2 St to 3rd St S
- L-24 ENGINEERING - Admiral Place Streetscaping Improvements
- L-26 KW/PEARL - Phase I - 6th St Streetscaping: West Park - Columb
  KW/PEARL - Phase II - 6th St Streetscaping (Lewis to IDL)
  PEARL - Phase III Pearl District Flood Control and Redevel
- L-28 11th STREET STREETSCAPING - Peoria Ave to Utica Ave
- L-29 Route 66 Bridge (Cyrus Avery Memorial Bridge)
- L-30 EUGENE FIELD STREETSCAPING - Streetscaping and pedestrian enhancements, W 23rd St between Jackson Ave Southwest Blvd
- L-31 Elwood Avenue - 71st Street South to 81st Street South

CIP Projects - Areas

- A EVANS/FINTUBE - Downtown Tulsa Trailhead Facility
- M Elm Creek - Pearl East Detention Pond
- N SOUTHWEST PLAN - The Redfork Campus Plan (Webster,Clinton ,Pleasan
- O Turkey Mountain Urban Wilderness Improvements



Small Area Plans & CIP Projects

CIP Projects - Points

- 3 Headquarters/ Downtown Patrol Division
- 4 DAM PLAN - Grade Separation of Streets` Crossing of BNSF Rail
- 5 ART - Public Art for the BOK Center & Convention Center
- 6 DAM PLAN - Grade Separation of Streets` Crossing of BNSF Rail
- 7 DAM PLAN (DCC) - Centennial Walk - Phase 2 and 3 Improvements
- DAM PLAN (TRAFFIC) - Downtown Traffic Signalization
- 8 Downtown Transit Center
- 9 DAM PLAN - Grade Separation of Streets` Crossing of BNSF Rail
- 10 DAM PLAN - Grade Separation of Streets` Crossing of BNSF Rail
- 11 DAM PLAN - Central Campus Green Space

CIP Projects - Lines

- L-6 DAM PLAN - Light Rail System
- L-7 DAM PLAN (ENGINEERING) - Two-Way Street Improvements and Enhancements to Do
- L-8 DAM PLAN (ENGINEERING) - Two-Way Street Improvements and Enhancements to Do
- DAM PLAN - Downtown Circulation
- L-9 DAM PLAN (ENGINEERING) - Two-Way Street Improvements and Enhancements to Do
- L-10 DAM PLAN (ENGINEERING) - Two-Way Street Improvements and Enhancements to Do
- L-11 DAM PLAN (ENGINEERING) - Two-Way Street Improvements and Enhancements to Do
- L-12 Engineering - 4th, 5th and 6th Streets Improvements and Enhancem
- L-13 Engineering - 4th, 5th and 6th Streets Improvements and Enhancem
- L-14 Engineering - 4th, 5th and 6th Streets Improvements and Enhancem
- L-15 DAM PLAN (DCC) - 3rd and Kenosha Area (East End) Streetscaping & Li
- L-16 DAM PLAN (DCC) - 3rd and Kenosha Area (East End) Streetscaping & Li
- L-17 DAM PLAN (DCC) - 3rd and Kenosha Area (East End) Streetscaping & Li
- L-18 DAM PLAN - Sealed Corridor Phase III
- L-25 Elm Creek - Pearl East Conveyance System
- L-27 PEARL - Peoria Avenue Streetscaping -- 6th Street to 15th
- L-28 11th STREET STREETSCAPING - Peoria Ave to Utica Ave
- L-29 Route 66 Bridge (Cyrus Avery Memorial Bridge)

CIP Projects - Areas

- A EVANS/FINTUBE - Downtown Tulsa Trailhead Facility
- B DAM PLAN (DCC) - Landscape/Upgrade IDL Entrances and Exits
- DAM PLAN - Arkansas River & Downtown Parking Garages and Faci
- DAM PLAN - Downtown Urban Parks - Green Space Including Land
- DAM PLAN - Phase II -Downtown Housing and Residential Develop (MOED)
- C DAM PLAN (ENGINEERING) - Downtown Streets Phase I - Brady & Greenwood Resur
- D DAM PLAN (ENGINEERING) Street Resurfacing, Improvements and Enhancements
- E DAM PLAN (DCC) - Downtown Intersection Enhancements, Streetscaping,
- ENGINEERING - Downtown Streets Phase II - Resurfacing, Improveme
- F DAM PLAN (DCC) Landscape/Upgrade IDL Entrances and Exits Phase II
- G Downtown Development and Redevelopment Fund (MOED)
- H DAM PLAN (ED) - Downtown Post Office Acquisition
- I DAM PLAN - Arkansas River - Downtown Connections - Phase II
- J DAM PLAN - Arkansas River - Downtown Connections - Phase I
- K ENGINEERING - I-144 Expressway "Deck-Overs" - Freeway Park
- L Elm Creek - Pearl West Detention Pond

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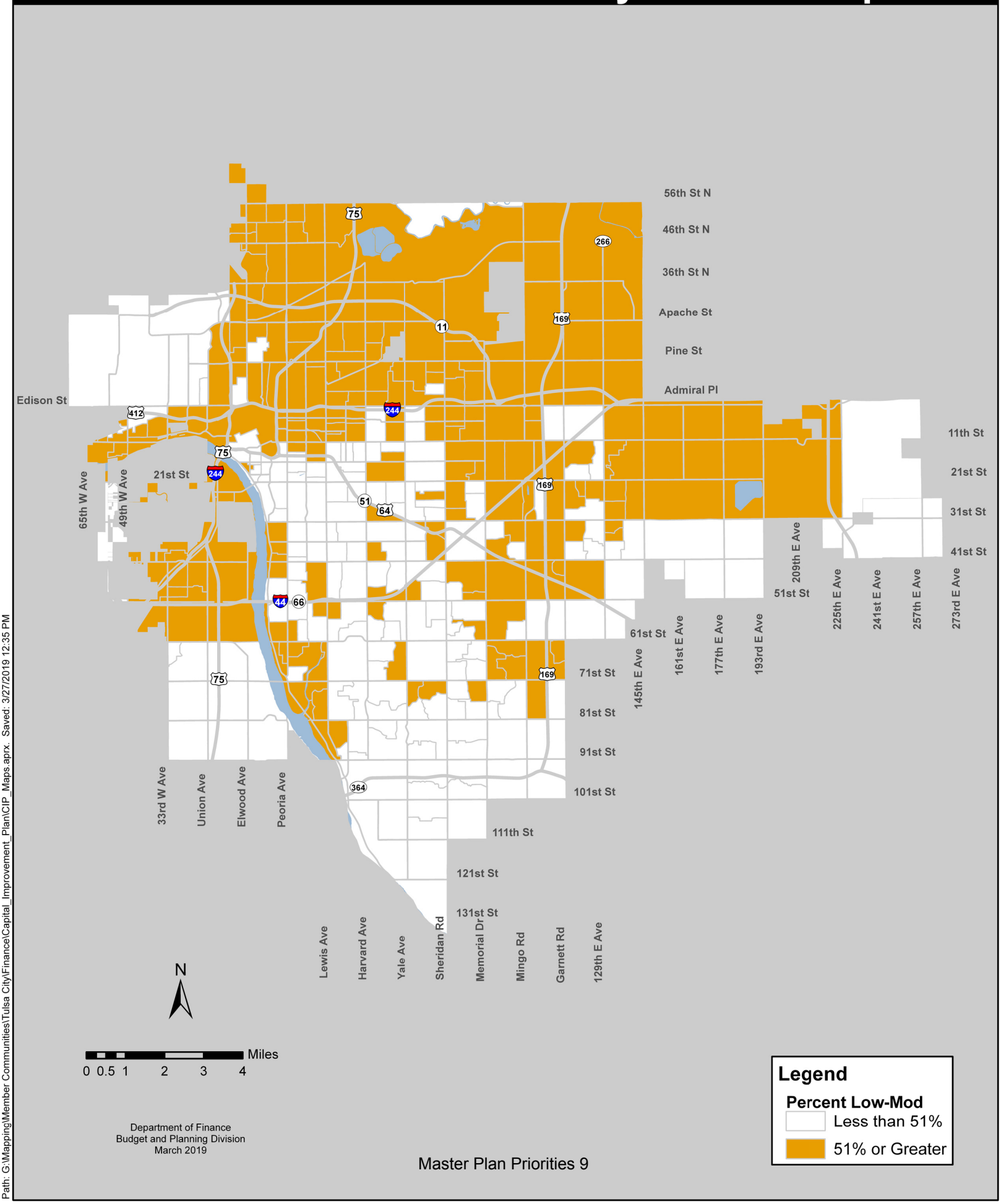
City of Tulsa
Low & Moderate Income by Block Group



Department of Finance
Budget and Planning Division
March 2019

Master Plan Priorities 9

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Tulsa is fortunate to have an abundance of parks, open space and opportunities for outdoor exploration. The Arkansas River, Turkey Mountain and the RiverParks System, Gathering Place. Tulsa Zoo and the numerous City of Tulsa parks provide the foundation for excellent outdoor recreation. The City of Tulsa Parks Master Plan, Arkansas River Corridor Master Plan and Zoo Master Plan prioritize and provide guidance on the needs of the City's recreation amenities.

Parks Department Master Plan

Tulsa Parks manages 135 parks covering roughly 8,652 acres. This includes two nature centers, six community centers, four with fitness facilities, gymnasiums and all have meeting rooms. There are 57 miles of walking trails, two skate parks, two dog parks, and five swimming pools. In addition, there are 185 sports fields, 94 playgrounds, 103 tennis courts, 8 outdoor pickleball courts, 15 water playgrounds, 17 splash pads, 69 picnic shelters, four golf courses and 8 disc golf courses. Major park facilities are shown on **Page 7-10**.

The Master Plan has integrated information from additional planning efforts for the City of Tulsa that have helped inform the planning process. These include:

- Summary of recent ten-year plan updates for Tulsa Neighborhood Implementation Plan Studies
- Downtown Tulsa Master Plan
- Brady Village Trail Plan
- Strategic Plan for the City of Tulsa Parks and Recreation Department
- Aquatics Inventory Analysis

The critical issue is the condition and configuration of the parks. Tulsa has many parks of approximately the same age that are reaching a point in their life cycle where repair and/or re-purposing is required. Strategic prioritization was needed to determine if elements should be removed, replaced, or repurposed. The final Park's Master Plan reflects this strategic view. The plan's capital improvement strategy was organized around these functional areas.

- Update parks and facilities to address changing needs and desires
  - Improve existing parks to meet community standards
  - Utilize an inventory analysis of existing pools to determine which pools are functional, which need repairs, and which should be replaced or decommissioned.
  - Improve water playgrounds.
  - Increase access to natural areas and open space
  - Create a series of destination parks throughout Tulsa
  - Achieve and maintain an appropriate level of service for all parts of Tulsa

- Maximize recreation program management
  - Enhance recreation program planning method
  - Conduct a program life cycle analysis
  - Implement new programs based on research and feedback
  - Assess services to determine the City's responsibility for provision
  - Develop procedures and policies to accurately track program participation and drop-in facility use

- Create and implement a cost recovery philosophy and policy
- Track performance measures for all park and recreation services.

The Park Board's highest priority continues to be the maintenance of the existing system. The needs range from roof repairs to air conditioning. They also include remodeling existing facilities to more closely match the needs of today's users and adding storage to protect valuable equipment. The summarized needs are included in the table below.

Zoo Master Plan

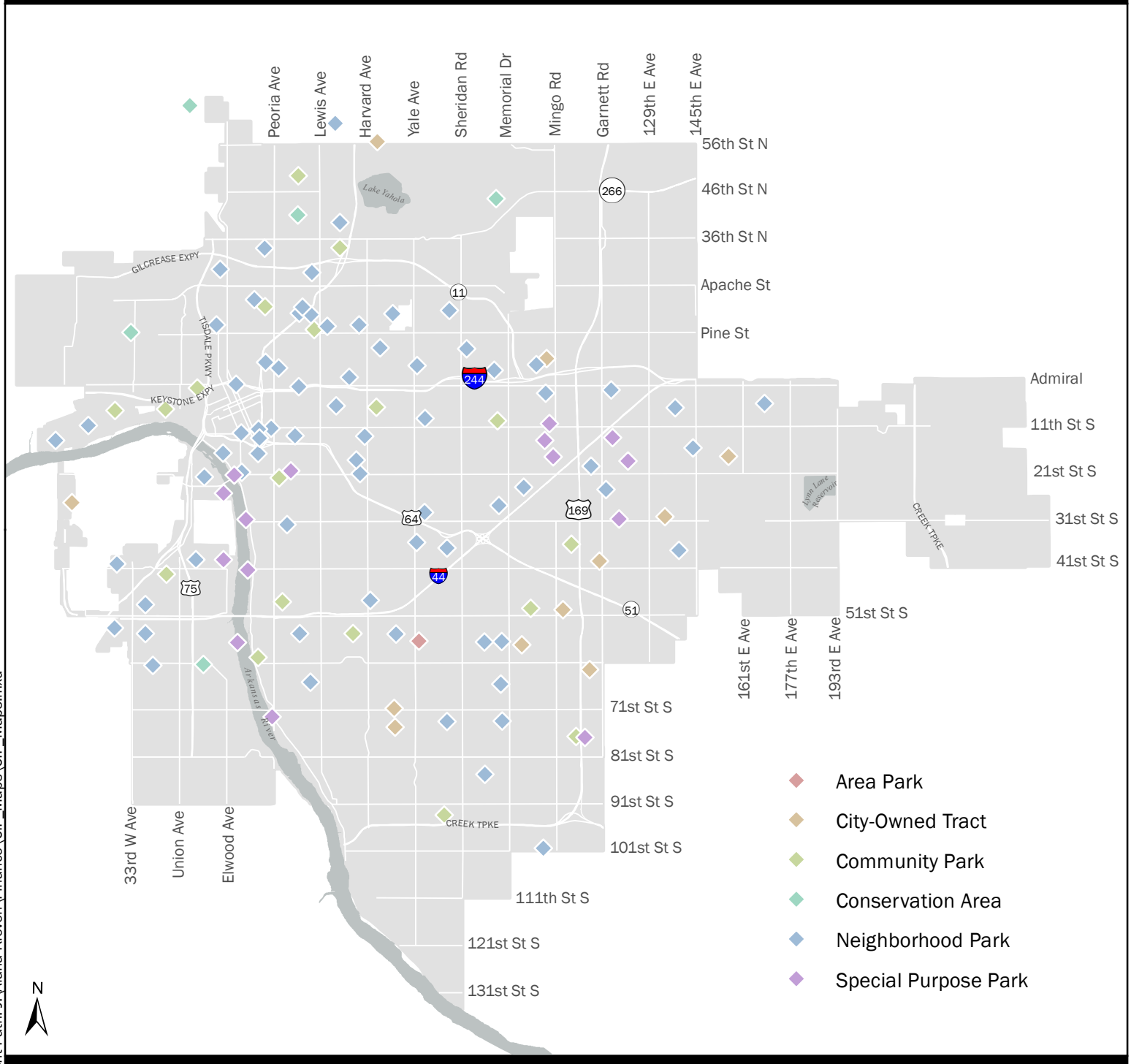
In 2010, the City of Tulsa transferred maintenance and operations to the private company Tulsa Zoo Management Incorporated (TZMI). Through a comprehensive facility evaluation completed in 2010, and the Tulsa Zoo Master Plan completed in 2012, TZMI has identified $111.9 million in necessary improvements for failing exhibits and buildings. In 2013 voters approved the Improve Our Tulsa Capital Program, of which $11.75 million would go to address the *Carnivores* and *Tiger & Snow Leopard* Exhibits. Additionally, the Zoo is scheduled to receive $25 million from the Tulsa Vision Capital Program. This funding will go towards the construction of new exhibits, as identified in the Zoo Master Plan. The remaining unfunded projects listed below were targeted because they address the general safety, health, and welfare issues of Zoo patrons, staff and animals as well as deferred maintenance. By focusing on these exhibits, the Zoo will continue to make progress on its 20-year master plan.

Arkansas River Corridor Master Plan

In 2007, the River Parks Authority, City, County and INCOG, along with the Corps of Engineers, completed a $500,000 River Corridor Development Study. The plan resulted in recommendations for projects and appropriately located development along the 42 miles of river in Tulsa County. A major focus was the desire to see a consistent presence of water in the river. It identified a number of projects throughout the River Parks system including the renovation of the River West Festival Park, improvements on the east bank between 11th and 21st streets, including a Route 66 center and commercial facilities at 19th and Riverside, and resurfacing and widening of the trails. These were the highest priorities of the Authority and proceeds from the 2006 Sales Tax Extension Program and Vision 2025 have been allocated for them. More recently, voters approved the Tulsa Vision Economic Development Capital Program which will fund the replacement of the deteriorating Zink Dam and the construction of a new low-water dam near Jenks, among other improvements along the Arkansas River.

	Project Title	Requesting Dept	Cost Estimate (in $000)	Estimated Annual Operating Impact
1	Playground and Water Playground Equipment	Parks	$ 12,695,550	$ -
2	Center Improvements	Parks	$ 4,415,000	$ -
3	Park Improvement	Parks	$ 14,611,000	$ 60,000
4	Sports Facilities	Parks	$ 16,197,000	$ -
5	Trails	Parks	$ 2,750,000	$ -
6	General Facilities	Parks	$ 24,973,025	$ 10,000
7	Golf Course and Facilities	Parks	$ 54,200,000	$ -
8	Zoo Master Plan	Parks	$ 117,380,000	$ -
9	Arkansas River Corridor Master Plan	Parks	$ 123,040,183	$ 842,500
		TOTAL	**$ 370,261,758**	**$ 912,500**

City of Tulsa
Park Facilities



Updated April 2019
City of Tulsa GIS Group

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LONG RANGE TRANSPORTATION PLAN (LRTP) AND MAJOR STREET AND HIGHWAY PLAN (MSHP)

Master Plan Priorities

The top priority for this area of the City's Capital Improvements Program continues to be arterial and residential street rehabilitation and resurfacing. Since 1996, GO Bond and Sales Tax programs have provided $661 million for street construction and rehabilitation. In 2008, voters approved a $452 million streets package to repair arterial and residential streets and bridges throughout the City of Tulsa over five years. In 2013, voters approved another $624.9 million in general obligation bonds and dedicated sales tax; to repair arterial and residential streets throughout the City. Most recently, in 2016 voters approved a permanent 0.085% tax increase to fund routine and preventative street maintenance, as well as some infrastructure and limited operational funding for the City's public transportation system.

Planning Background

Two transportation-planning instruments are used to determine street and expressway projects in the Tulsa area. The Tulsa Metropolitan Area Transportation Study (TMATS) is the State-mandated planning program used to determine regional transportation funding priorities. The other planning tool, the Major Street and Highway Plan (MSHP) which was updated recently to reflect new cross sections developed for the City's updated comprehensive plan, has been in existence for over 50 years and delineates the routes and widths of street right-of-way and the suggested number of lanes that should be constructed when arterial streets are improved. All proposed expressway and street improvements are based on these plans. For arterial streets included in the 2013 funding program, a new planning tool called a Multimodal Mobility Study has been introduced as part of the City's ongoing commitment to planning, designing and constructing Complete Streets. The Complete Streets Procedural Manual has been developed to assist staff and design consultant engineers to develop street projects that serve the needs of all users including automobile, transit, bicycle and pedestrian. This analysis is utilized to determine alternative lane configurations and roadway cross sections that are viable to serve all modes of travel as best as possible, and inform final decisions in developing project plans.

Expressways and Highways

Since World War II, the federal government has collected and distributed tax revenue for the construction of highways, expressways and, to a lesser extent, streets in urban areas. The money is generated by taxes on gasoline and disbursed back to the states and local areas under a variety of programs. With the passage of the Economic Recovery Act in 2009, additional funds were available in FY 10 to address street needs. The formula used to determine each state's annual allocation is based on population, road mileage, and physical size.

The Tulsa area's share of federal and state highway funds varies from year to year. Most funds are used for the construction of expressways and other federal and state highways that serve the area, but some of the money is also used to improve local arterial streets. From FY 82 through FY 16, over $1.9 billion was used to construct portions of Tulsa's expressway system and major streets,and make improvements to the U.S. and state highways that pass through the city. Tulsa only received $8.6 million in 2008 which was used on a number of projects throughout the city; however, it received over $95 million in 2007 and with emergency relief and stimulus funds combined received over $195 million in 2009. In 2011, construction was completed on the stimulus package rehabilitation of the Inner Dispersal Loop (IDL). In 2012, construction continued on I-44 from Yale Avenue to the Arkansas River, and the southbound span of the I-244 bridge over the Arkansas River. In 2014, ODOT completed its final and largest segment of Tulsa's portion of I-44; at the surrounding interchange of South Lewis and I-44. Currently, ODOT is working on US 75 west of Tulsa.

The local expressway system plan was originally developed in the 1950s. While it was designed as a regional network, the City later annexed most of the area it served. The plan shows 107 miles of expressways inside the city limits and/or annexation fence line. To date, 94 miles have been constructed.

LONG RANGE TRANSPORTATION PLAN (LRTP) AND MAJOR STREET AND HIGHWAY PLAN (MSHP)

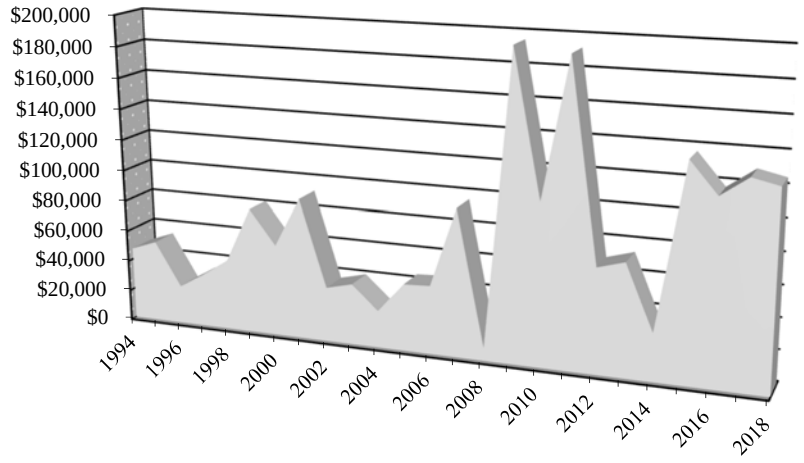
Master Plan Priorities

One segment of the expressway system remains incomplete: the Gilcrease expressway extending from the Tisdale Parkway west and south to I-44. The Gilcrease project has previously been defined in segments: Gilcrease North - U.S. 75 west to the Tisdale Parkway, Gilcrease West - Edison Street to I-44, and Gilcrease Northwest - Tisdale Parkway to Edison Street. Construction of the Gilcrease North has been completed. Gilcrease West is under design and right-of-way acquisition is ongoing. The environmental clearance has been granted for that segment extending south of Edison Street to I-44. A Finding of No Significant Impact (FONSI) was issued in October of 2005 for the Gilcrease Northwest segment. Construction was completed on the section of Gilcrease Northwest between the Tisdale Parkway and 41st West Avenue in 2013. In 2017, the City reached an agreement with the Oklahoma Turnpike Authority (OTA), where the OTA would fund all future construction of the Gilcrease in exchange for setting up tolls.

In addition to the sections proposed for new construction, several of the existing expressways are overloaded (Map 5): I-44 west of Sheridan and U.S. 169 between I-244 and I-44. The 2015 traffic counts show the portion of I-44 at Yale Avenue carries 90,000, up slightly from 80,900 vehicles per day in 2014. U.S. 169 between I-244 and I-44 carries over 108,500 vehicles per day and has been widened to 6 lanes. US-169 has also been widened to 6 lanes between I-244 and the Tulsa city limits at 56th Street North.

The Oklahoma Department of Transportation (ODOT) is addressing the congestion problem on the state highway system. It began widening I-44 from four to six lanes between I-244 and the Arkansas River in the early 1990s. The segment between I-244 and the Arkansas River has been recently completed. In FY11, $192 million of State and Federal Highway monies were awarded to Tulsa County for distribution among all entities within the County. This amount was significantly higher than the funding allocated in previous years. The spike in allocations was the result of receiving a TIGER grant award of $60 million to be used at I-244 over the Arkansas River. Tulsa County was allocated $124.7 million in 2018.

Tulsa County Allocations
State and Federal Highway Money
FY 1994 - FY 2018
(in 000s)



***Source**: Oklahoma Department of Transportation*

Local Arterials

While some federal monies are used to improve local arterial streets, most of the existing major streets were financed with local funds. There are 346 miles of designated arterial streets in the city. Seven miles are improved to six lanes; twenty miles are five lanes; 145 are four-lanes; and the remaining are two lanes.

LONG RANGE TRANSPORTATION PLAN (LRTP) AND MAJOR STREET AND HIGHWAY PLAN (MSHP)

Master Plan Priorities

TMATS uses the "Level C Service Volume" as the standard to gauge the adequacy of the street system. Generally, if a two-lane road carries over 11,900 vehicles a day or a four-lane carries more than 23,800 vehicles, it is not meeting this standard and needs to be analyzed for possible widening to four, five, or six lanes depending upon whether it is a secondary or primary arterial, or reconfiguration of the street cross section due to a multimodal analysis. As shown on **Page 7-14**, the problem areas at this time are generally located south of 21st Street between 145th East Avenue and the Arkansas River.

Because urban street projects are complex and time consuming to implement, the City historically advance funds design under one capital financing program and then finances construction from a following program. For example, the 1994 Bond Issue and 1996 Sales Tax programs financed the engineering of more than a dozen street projects. Funds for the construction of some of these projects were contained in the 2001 Sales Tax Extension and for others in the 2006 Sales Tax program. Design of fourteen street projects has been funded in the 2005 Bond Issue and the 2006 Sales Tax. Construction of these and other previously designed projects began in the Fix Our Streets sales tax program in 2008. Currently, the 2014 Improve Our Tulsa capital program will fund the construction of four widening projects; as well as two widening design projects; which will be constructed in a future capital program.

Arterial and Residential Street Maintenance and Replacement

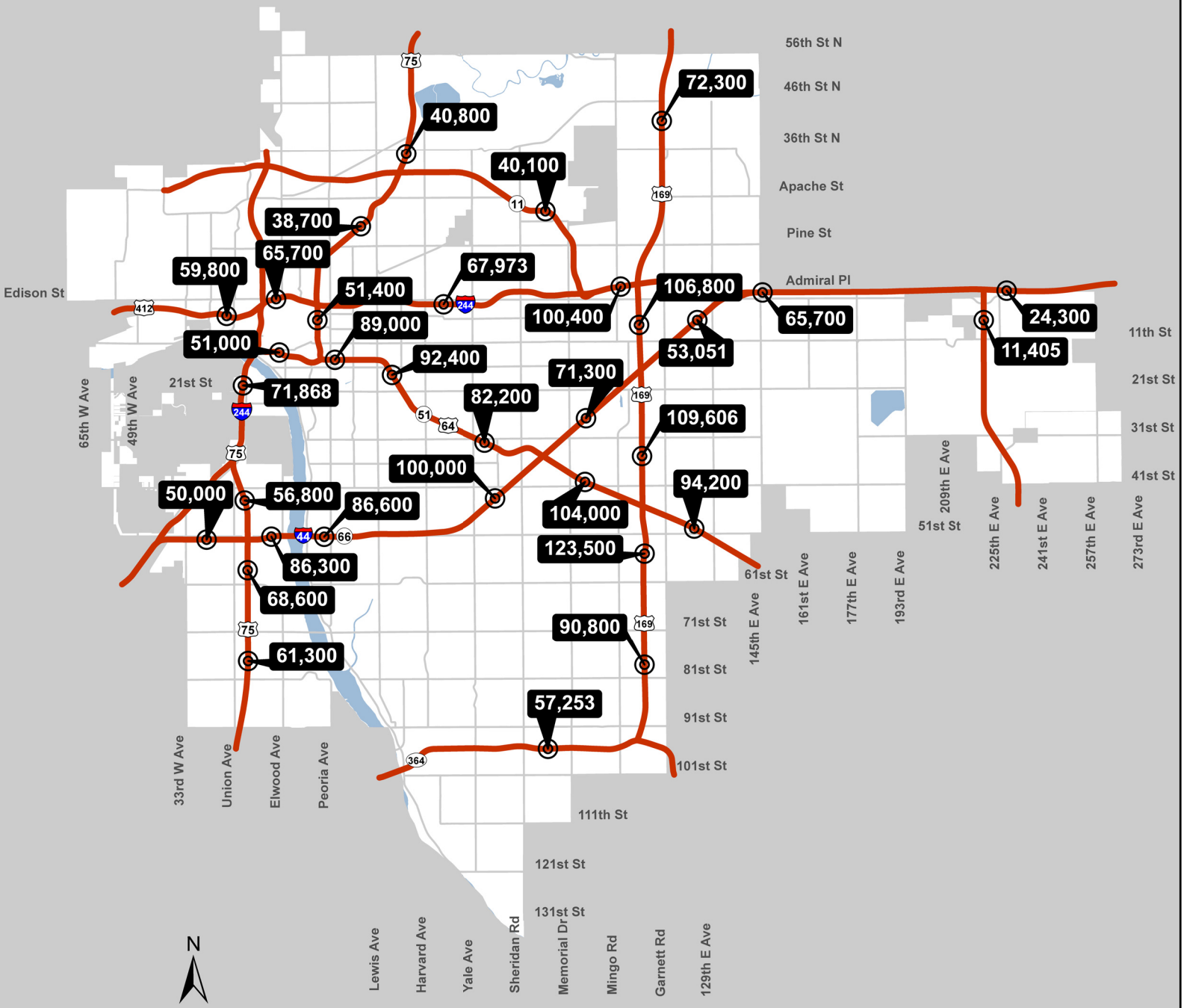
The City started using the pavement management system for management of street maintenance and replacement, in 1988. Each street in Tulsa is now examined periodically to determine its current condition and useful life, using the Pavement Management System (PMS). According to the Engineering Department's PMS calculations, the City needs to spend over $790 million on arterial and residential street rehabilitation to bring the City's average Pavement Condition Index (PCI) up to 70. The City has begun to address this issue with the passage of the 2008 Fix Our Streets Improvement Program in November 2008, which dedicated $452 million toward improving the overall residential and arterial street conditions across the City. Continuing on this progress, voters approved another capital program in November, 2013. The new program dedicates $486.9 million to Arterial and Residential repair.

Conclusion

Transportation related improvements are among the most expensive capital projects. They also require a comparatively long time to design and construct. In the following table, the total street and expressway capital improvements needs are summarized.

	Project Title	Requesting Dept	Cost Estimate (in $000)	Estimated Annual Operating Impact
1	Expressways and Parkways	Streets	$ 46,404,800	$ 114,400
2	Arterial Widening	Streets	$ 1,710,760,400	$ 10,222,000
3	Intersections	Streets	$ 143,332,800	$ 956,800
4	Traffic Engineering	Streets	$ 245,388,000	$ 769,600
5	Rehabilitation Programs	Streets	$ 1,261,644,800	$ 1,445,600
6	Bridges	Streets	$ 89,429,600	$ 83,200
7	General Projects	Streets	$ 57,011,200	$ 208,000
8	Tulsa Transit	Streets	$ 75,620,000	$ 6,000
		TOTAL	**$ 3,629,591,600**	**$ 13,805,600**

City of Tulsa
Expressways with Traffic Counts



Department of Finance
Budget and Planning Division
March 2019

Master Plan Priorities 16

* Source: Oklahoma Department of Transportation, 2017 AADT.

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COMPREHENSIVE WATER SYSTEM STUDY

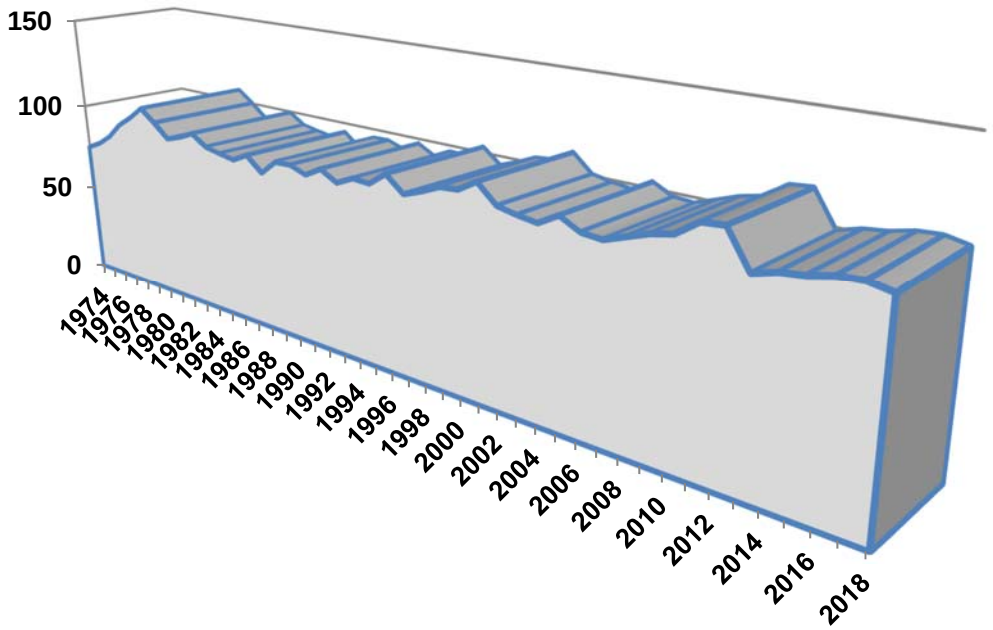
Master Plan Priorities

The goal of the water system is to provide clean water at adequate pressures for the health and safety of the citizens in accordance with all State and Federal regulations. The system has three components: (1) supply, (2) treatment, and (3) distribution. All must be capable of providing adequate amounts of water to meet customer demands. The Tulsa Metropolitan Utility Authority contracted with the Infrastructure Management Group (IMG) Team to complete a new comprehensive assessment of the City of Tulsa's water and sewer systems. The 2012 Comprehensive Water System Study (CWSS) reviews and builds on the previous comprehensives plans prepared in 2001 and updated in 2005. The study, which was completed in July 2012, reviews the current operation and capital needs of the water system and makes recommendations for future short-term and long-term capital improvements needed to meet the strategic objectives and priorities of Tulsa water system.

Historic and Projected Demand

The historic demand for water in Tulsa is documented in the following graph. Tulsa used a record volume of water during the summer of 2011. On August 1, 2011, Tulsa used 207 MGD of treated water; 94% of the City's current production capacity. As part of the new CWSS, historical population data and available growth projections were reviewed and an overall future growth rate for the Tulsa Metropolitan Statistical Area (TMSA) was selected. The data is then used to estimate future population and water demand for TMUA's service area over the next 50 years. Water demand is discussed in terms of system-wide max day projections. In addition to population, weather has a significant impact on the amount of water that is used. Hot, dry summers like the one Tulsa experienced in 2011 significantly increase the overall demand for treated water. The current maximum day demand for Tulsa without drought is 131.54 MGD. The CWSS provides a projection of the water system demand, with and without drought, through 2060. Future water demand projections will be used to determine the timing for water system improvements and future water system expansion.

City of Tulsa
Average Daily Water Demand 1974-2018
(in Millions of Gallons)



Source: *Water and Sewer Department*

2015 to 2030 Projected Water Demand
(In Millions of Gallons per Day)

Year	Average	Maximum Day	Maximum Day with Drought
2015	110	185	210
2020	115	197	224
2025	123	210	239
2030	131	223	254

Source: CWSS 2012

Maximum Day (MGD) equals 1.78 times the Average Day (MGD)
14 percent increase in Maximum Day (MGD) for drought conditions

Since 2000, the average day water demand for the City of Tulsa has ranged from 96 to 115 MGD. The ratio between the average day and the maximum day over the last ten years ranged from 1.28 to 1.60. The variations in the average day and maximum day demands are primarily dependent on summer weather conditions, which ranged from cool and wet during the summer of 2004 to hot and dry during the summers of 2011 and 2012. However, in 2013 and 2015, the temperature trended towards cool and dry.

Supply

Tulsa has two sources of raw water: Spavinaw Creek (Spavinaw and Eucha Lakes) and the Verdigris River (Oologah Lake). They are supplemented by an emergency connection to Lake Hudson. Spavinaw and Eucha Lakes can provide an average annual yield of 59 million gallons per day (MGD) of untreated water under drought conditions; the City has water rights to 128 MGD from Oologah Lake; and Lake Hudson can provide 31 MGD in emergencies. In addition, a third permanent supply source has been obtained from the Grand River Dam Authority (GRDA).

In 1986, Tulsa contracted with GRDA to obtain additional raw water from the Grand River Salina Pumped Storage Project, which is owned by the GRDA. Tulsa entered into a contract to use up to 80 MGD from this source; however, there is currently no flowline conveyance system in place to bring this water to Tulsa. The 2012 CWSS reviewed the need to develop this source of water based on water demand projections and makes recommendations regarding the need and timing for the completion of the Third Raw Water Flowline. The construction of the Third Flowline may have a significant impact on the water system capital plan. While there are no immediate threats to the rights, the construction of a portion of the pipeline would solidify the city's rights under the beneficial use provisions of pertinent case law. Currently, construction is scheduled to begin in FY31.

Over the last 10 years, there has been a steady decline in the quality of water drawn from the Spavinaw Creek watershed. Increasing levels of phosphorus have caused algae blooms in the lakes. The algae blooms have led to taste and odor problems in the water. While some tastes and odors can be removed at the plant, some remain. The sources of the phosphorus pollution are dozens of large-scale chicken farms that have been constructed in this watershed. Intensive efforts are continuing to preserve water quality in Spavinaw and Eucha Lakes; such as the Eucha-Spavinaw Water Quality Court Master project, and the Source Water Protection and Management Program.

Water System Capacities

Supply Storage Allocation in Billions of Gallons		Annual Supply Dry Weather Yield		Flowline Capacity MGD		Treatment Capacity	
Eucha	25.9	Lake Hudson	31	Spavinaw #1	38	Mohawk WTP	100
Oologah	67.3	Oologah	128	Spavinaw #2	56	AB Jewell WTP	120
Spavinaw	9.0	Spavinaw/Eucha	59	Oologah #1	40		
				Oologah #2	80		
TOTAL	102.2		218	TOTAL	214		220

Source: *Water and Sewer Department*

Treatment

Water from the Spavinaw system is treated at the Mohawk Water Treatment Plant. The Mohawk WTP was returned to full service in 1999 and has a daily treatment capacity of 100 MGD. The A. B. Jewell plant normally treats water from Lake Oologah. The original A. B. Jewell Plant was completed in 1972. It has been expanded twice and is now capable of treating a maximum volume of 120 MGD. Expansion of the water treatment plant capacity will be required to meet future growth demands. The 2012 CWSS projected maximum day water demands through 2060 with and without drought. The treatment capacity needs of the A. B. Jewell Plant were evaluated and the need and timing for system capacity expansions are addressed in the Capital Improvement Plan. Options to provide increased capacity at A.B. Jewell in the most cost effective and efficient manner will be evaluated prior to plant expansion, which is tentatively scheduled to begin within the next 5 years.

Asset Management is also a high priority for the water system. Continued maintenance and rehabilitation of existing plant infrastructure is required on an ongoing basis for both the A.B. Jewell and Mohawk WTP to replace equipment and infrastructure as it reaches the end of its service life.

Distribution

The distribution system is made up of water lines, pumps, hydrants, meters, and storage facilities. As of June 2018, there are 2,556 miles of water lines, 16,865 fire hydrants, and 144,761 service meters. The system is designed to provide water to customers in accordance with Oklahoma Department of Environmental Quality standards. Tulsa distribution system meets or exceeds performance criteria for water quality, pressure and flow.

While current pipe size and construction standards are adequate, numerous parts of the distribution system are old and/or were built in areas previously outside the city limits and do not meet today's standards. The present distribution system contains over 300 miles of waterline that is more than 70 years old, including 100 plus miles of 2-inch diameter waterline, and over 1,200 miles of water line that is more than 40 years old. Approximately half of the Tulsa water system consists of cast iron piping. Although distribution system integrity is adequate, a disproportionate number of breaks and leaks occur in the legacy 2-inch and 6-inch waterline systems.

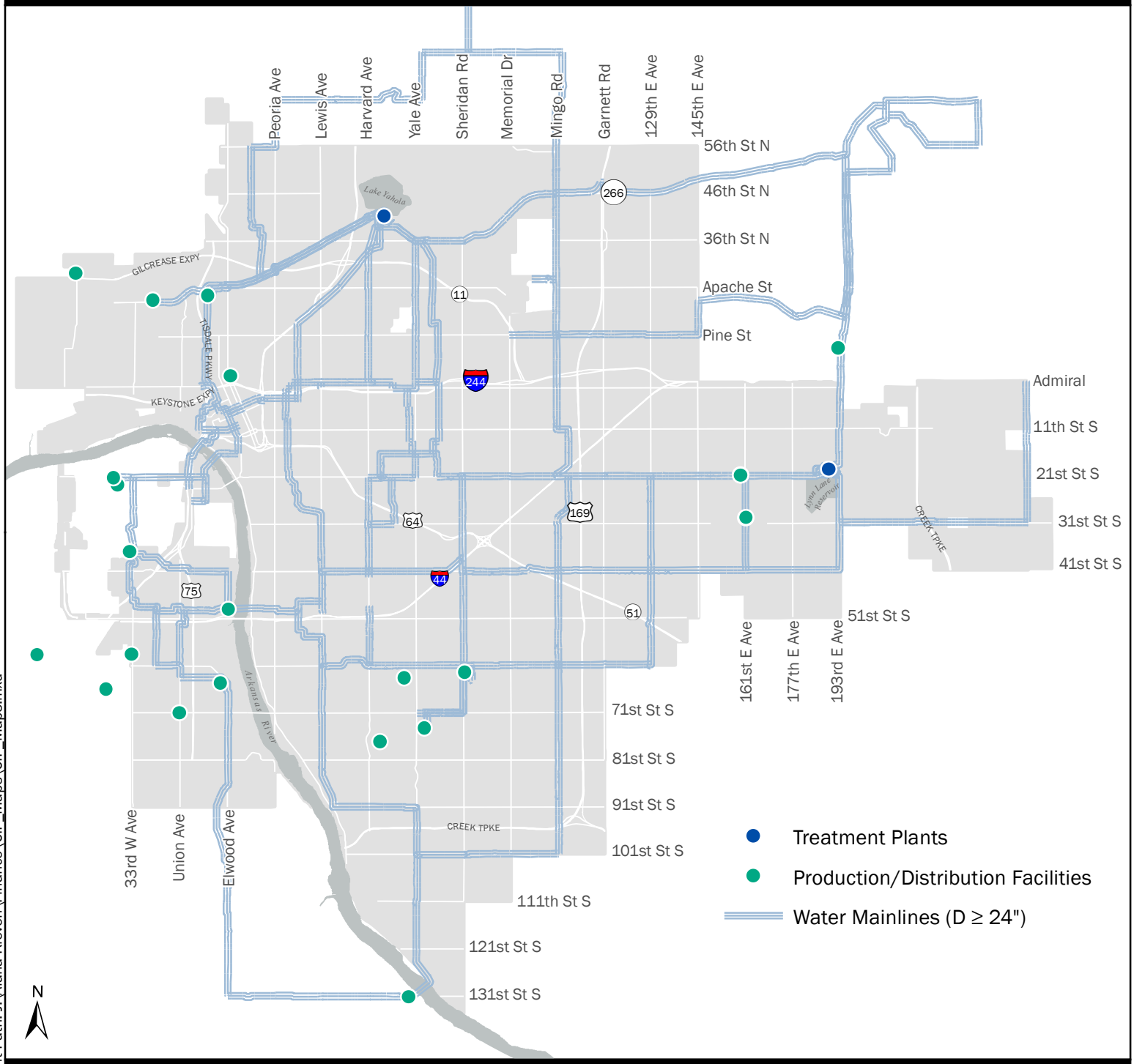
Distribution system priorities include maintenance of existing infrastructure and replacement and rehabilitation of aging waterlines. Water main replacement is coordinated with street rehabilitation projects to maximize efficiency and minimize disruption to neighborhoods and businesses. Additionally, an ongoing replacement program is underway to upgrade undersized waterlines to improve the level of service, reliability, and fire protection to areas served by legacy systems. The major lines in the distribution system and the location of plants are shown on **Page 7-19**.

Conclusion

Providing high quality water service, protecting the Spavinaw Creek watershed and the City's other raw water supplies from further pollution, replacing and rehabilitating aging infrastructure, planned system expansion to meet future growth, and security are ongoing priorities. Continued investment in infrastructure is required to insure that Tulsa's goals are met. The current water system capital project requests are listed in the following table. The following table summarizes the total inventory for all projects as submitted in the most recently adopted TMUA capital plan.

	Project Title	Requesting Dept	Cost Estimate (in $000)	Estimated Annual Operating Impact
1	AB Jewell	Water	$ 54,261,000	$ (347,956)
2	Distribution Mains	Water	$ 299,322,000	$ 3,592,081
3	Mohawk	Water	$ 6,500,000	$ 538,101
4	Pump Stations	Water	$ 4,290,000	$ -
5	Raw Water	Water	$ 951,186,000	$ 4,066
6	Transmission Mains	Water	$ 48,475,000	$ -
7	Water Services	Water	$ 8,857,000	$ (40,814)
8	Water Tanks	Water	$ 7,657,000	$ -
9	General Facilities	Water	$ 6,287,000	$ -
		TOTAL	**$ 1,386,835,000**	**$ 3,745,478**

City of Tulsa
Water System



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COMPREHENSIVE SEWER SYSTEM STUDY

Master Plan Priorities

Between 1992 and 2008, over $240.1 million in General Obligation (GO) Bond proceeds and Sales Tax funds were allocated for sewer system improvements. These programs, along with state revolving loans, provide funding for critical projects. Even with this high level of funding, the inventory of needed sanitary sewer projects still exceeds $620 million in the next five years. The Tulsa Metropolitan Utility Authority contracted with the Infrastructure Management Group (IMG) to complete a new comprehensive assessment of the City of Tulsa's water and sewer systems. The 2012 Comprehensive Sewer System Study (CSSS) reviews and builds on the previous comprehensive plan prepared in 2003. The study, which was completed in 2012, reviews the current operation and capital needs of the sewer system and will make recommendations for future short-term and long-term capital improvements needed to meet the strategic objectives and priorities of the Tulsa sewer system. The projects appearing within the inventory below are a result of the most pressing needs identified by IMG over the next 5 years.

The City's sanitary sewer system is designed to collect and treat sewage and return clean water to area streams and rivers in accordance with State and Federal standards. The sewer system can be divided into two components, the collection system and treatment plants. The collection system consists of collector sewers, larger diameter "interceptors," along with lift stations and force (pressurized) mains. Tulsa is divided into four basins each served by a treatment plant: Northside, Southside, Haikey Creek, and Lower Bird/Spunky Creek**. Page 7-23** shows the locations of the large interceptors in the collection system and the plants.

Average Daily Flows
Tulsa Sanitary Sewer Plants
FY 2008 – FY 2018
(in Thousands of Gallons)

Fiscal Year	Northside	Southside	Haikey	Lower Bird
2007/08	23,870	22,111	8,241	324
2008/09	28,500	29,300	11,000	300
2009/10	31,600	30,100	11,700	500
2010/11	23,400	24,500	10,800	500
2011/12	22,400	21,700	9,500	700
2012/13	20,700	20,900	10,400	900
2013/14	19,400	21,100	9,700	800
2014/15	30,000	30,000	11,000	1,200
2015/16	26,400	25,100	11,500	1,000
2016/17	19,000	22,000	11,200	1,000
2017/18	21,000	20,900	11,300	1,100

***Source**: Water and Sewer Department*

Because of different land uses and stream classifications in the basins, each plant must meet different treatment requirements and standards established by the Federal Clean Water Act. At this time, the City is meeting all of these standards, but continues to improve the system to meet future standards. The projects needed to meet state and federal requirements, as well as other facilities needed to improve service, are documented in various inflow and infiltration studies conducted over the last fifteen years.

Northside Service Area

The Northside Wastewater Treatment Plant is located at the confluence of Bird and Mingo Creeks. This plant can treat 42 mgd to advanced secondary treatment levels. Many of the previously identified repairs in the Northside Service Area are complete. Work continues on nitrification improvements.

Southside Service Area

The Southside Wastewater Treatment Plant, located at West 51st Street and the Arkansas River, also has a treatment capacity of 42 mgd. The plant is undergoing a $12 million improvement program to address UV Disinfection and Anaerobic Digester repairs, and is largely complete. In 2013 $4.5 million in OWRB loan funds were appropriated to address odor control improvements. Design has concluded and another $2.6 million in OWRB loan funds was appropriated in 2015 to complete improvements. Most recently, funds have been appropriated to address screening improvements to better filter particulates.

Like the Northside Basin, the City has identified and fixed numerous overflow problems in this basin.

Haikey Creek Service Area

The Haikey Creek Treatment Plant serves south Tulsa and the western portion of Broken Arrow, a high-growth area in the MSA. For this reason the plant was doubled in size and is now capable of treating 16 mgd per day. Tulsa and Broken Arrow jointly funded the plant expansion.

Spunky Creek/Port of Catoosa Service Area

Lower Bird Creek Treatment Plant and attendant pump stations were built to serve the Port of Catoosa. The construction of this plant allowed the closing of the lagoons that previously served the Port. This was particularly important to the future development of the Port, as the lagoons were at capacity and additional industrial development could not occur until this plant was in service. Additionally, the City of Catoosa was under a consent order to close and abandon their lagoons and replace them with a new treatment plant, or instead divert the flow to the Lower Bird Creek. The plant has recently completed an expansion from 2.0 mgd to 4.0 mgd which will allow future growth at the Port, the City of Catoosa, and other potential users in the area. TMUA also needed a site for a Lift Station to pump flow from the Hard Rock Casino and the Spunky Creek drainage area South of Interstate 44 / Highway 412. An agreement was made with Catoosa to build a Lift Station at Catoosa's lagoons and pump all of Catoosa's flow including the Hard Rock Casino to the Lower Bird Plant for treatment (approximately 800 mgd.). Catoosa also agreed to allow TMUA to share their main Spunky Creek Interceptor for flow coming from Rolling Hills and the rest of the Lower Bird Creek basin. Flow meters were installed to keep track of the amount of flow treated by Catoosa and TMUA. TMUA will design and build a parallel sewer along Catoosa's main interceptor to serve the remaining Spunky Creek Basin in the City of Tulsa.

Other than the Port, most of this basin is being served by septic tanks. There are two subdivisions (Rose Dew and Rolling Hills) whose sewage is pumped out of this basin and treated at the Northside Treatment Plant. Design began in 2016 for rehabilitation of the Rose Dew Lift Station. Going forward, both completed and planned improvements will allow better service to this entire basin.

Conclusion

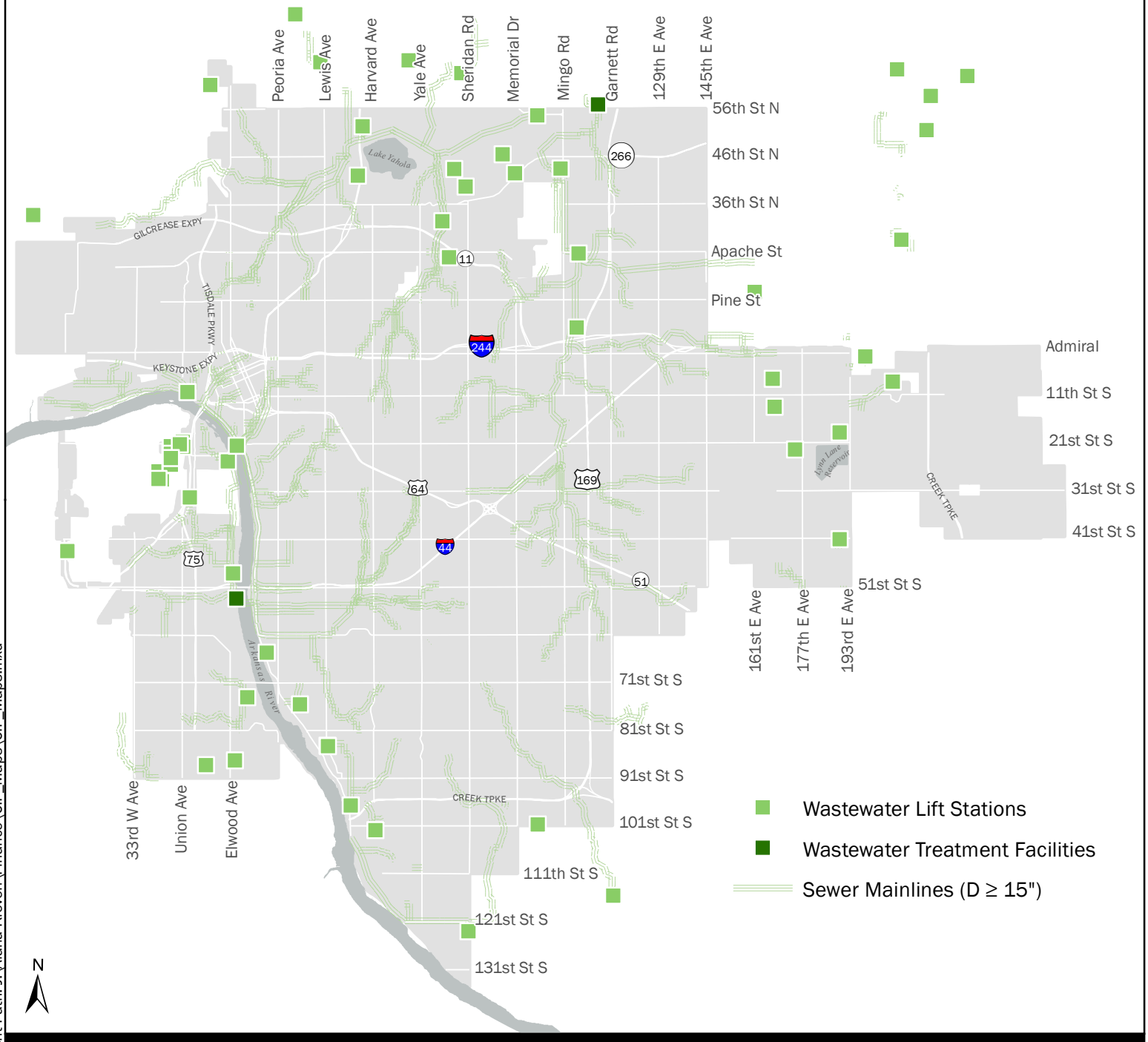
The City's sewage treatment plants now have sufficient capacity to serve the city well into the future. In previous years, stringent federal and state regulations forced the City to allocate significant resources to collection system problems. Almost $632 million of sales tax and debt have been allocated since 1990 to build projects required by administrative orders and consent decrees and to improve critical parts of the system. Although the City has completed the requirements stipulated by the administrative orders and consent decrees issued in the late 1990's, additional consent orders have been issued to eliminate recent isolated incidents of residential sewage overflows. Debt used to finance these improvements has been or will be repaid with a combination of enterprise funds and property taxes. The total Sanitary Sewer needs are listed in the table below.

COMPREHENSIVE SEWER SYSTEM STUDY

Master Plan Priorities

	Project Title	Requesting Dept	Cost Estimate (in $000)	Estimated Annual Operating Impact
1	Collection System	Sewer	$ 423,071,800	$ 560,920
2	Haikey Creek	Sewer	$ 30,627,600	$ 211,560
3	Lift Stations	Sewer	$ 24,227,200	$ 6,556
4	Lower Bird Creek	Sewer	$ 5,064,300	$ -
5	Northside	Sewer	$ 47,299,000	$ 1,428,754
6	Southside	Sewer	$ 20,062,900	$ 4,800
		TOTAL	**$ 550,352,800**	**$ 2,212,590**

City of Tulsa
Wastewater System



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MASTER DRAINAGE PLANS

Master Plan Priorities

Based on citizen and neighborhood input the top priority projects are “small drainage projects” and "channel erosion control" throughout the city. While immediate flood control priorities may change slightly from year to year, the overall direction of the program was established more than 20 years ago. Between 1970 and 1990, Tulsa County was declared a federal flood disaster area nine times. During that period, floods resulted in the loss of life and caused more than $300 million in damage to homes and businesses. As a result, elected officials passed watershed-development ordinances, established development fees dedicated to the construction of flood-control facilities, approved a monthly charge for maintenance of the drainage system, and allocated millions of capital dollars to new flood-control projects. Due to these efforts, the city has seen no major damage from flood events since 1987.

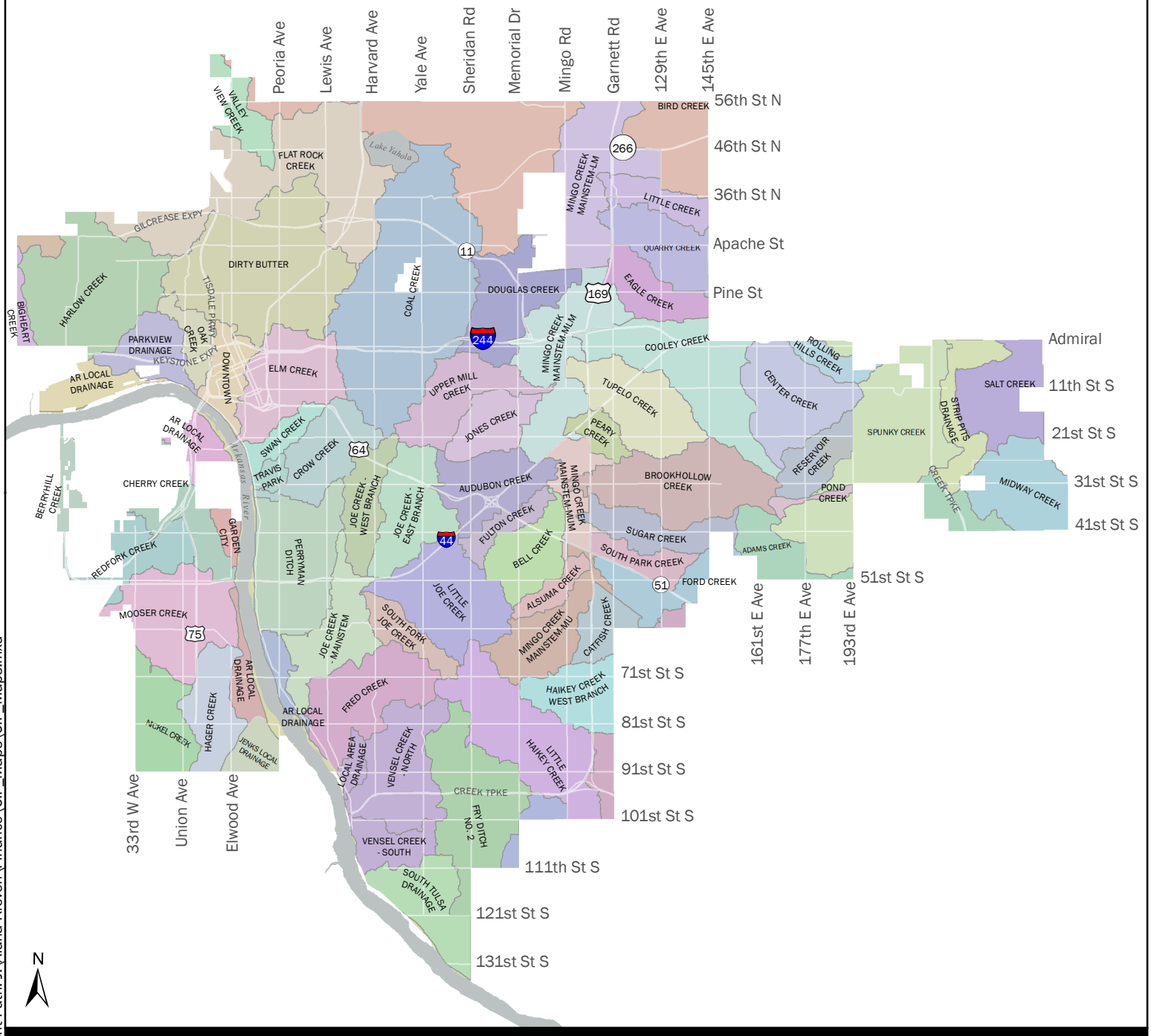
Master Drainage Plans (MDPs) were also funded for each creek basin in the city, the boundaries of which are shown on **Page 7-25**. These plans analyze the unique hydrological characteristics of each creek basin and recommend solutions to correct existing problems and prevent future trouble. Official maps found on the City website should be used to judge the status of any individual piece of property.

The Engineering Services Department, working in conjunction with the Stormwater Drainage and Hazard Mitigation Advisory Board and numerous citizen groups, developed the “Flood and Stormwater Management Plan 1999-2014,” a phased implementation program for the projects identified in the Master Drainage Plans. The plan was adopted by TMAPC and the City Council and became part of the City's official Comprehensive Plan. The plan will continually be updated as projects are added. The Plan prioritizes the projects based on selected criteria including project cost, reducing flooding of buildings, reducing economic flood damages, reducing overtopping of streets, reducing erosion and nuisance flooding, rehabilitating existing structures, and providing regional detention in-lieu of on-site detention.

Citywide small drainage projects are funded through user fees which are deposited into the Stormwater Enterprise fund. The remaining, larger projects, which have positive cost benefit ratios, will be considered for funding in future sales tax, general obligation bond, and revenue bond programs. The total needs of the stormwater management system are listed in the table below.

	Project Title	Requesting Dept	Cost Estimate (in $000)	Estimated Annual Operating Impact
1	CW - Bridge and Culvert Replacements	Flood Control	$ 10,447,500	$ 10,000
2	CW - Channel Erosion and Stabilization	Flood Control	$ 17,000,000	$ 10,000
3	CW - Comp Study of Stormsewer Collections	Flood Control	$ 3,000,000	$ -
4	CW - Concrete Channel Rehabilitation	Flood Control	$ 12,750,000	$ 10,000
5	CW - Flood Control Engineering & Inspection	Flood Control	$ 500,000	$ -
6	CW - Floodplain Acquisition	Flood Control	$ 14,000,000	$ -
7	CW - Hydrologic & Hydraulic Modeling	Flood Control	$ 6,000,000	$ -
8	CW - Master Drainage Plan	Flood Control	$ 16,000,000	$ -
9	CW - Planning Services for Hazard Mitigation	Flood Control	$ 250,000	$ -
10	CW - Urban Lake Maintenance	Flood Control	$ 2,500,000	$ 10,000
11	CW - Urgent Small Drainage Projects	Flood Control	$ 8,500,000	$ 10,000
12	CW - Stormwater Facility Repair and Construction	Flood Control	$ 8,235,000	$ -
13	CW - Flood Control	Flood Control	$ 359,859,087	$ 457,000
		TOTAL	**$ 459,041,587**	**$ 507,000**

City of Tulsa
Drainage Basins



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CITYWIDE FACILITIES MAINTENANCE AND EQUIPMENT

Master Plan Priorities

Public Facilities Maintenance's highest priority project is to address ADA compliance issues across all City facilities. The remaining priorities are to continue the maintenance program on an even and annual basis, a scheduled repair and replacement program for roofs on City buildings, and security improvements for public facilities.

Public Facilities Maintenance

The Asset Management Department is responsible for the maintenance of nearly 100 City buildings including Fire stations and Police uniform divisions, Equipment Management and public works and infrastructure facilities, the One Technology Center – which houses City Hall, and the Civic Center Complex. It maintains and updates a comprehensive list of building repairs and modifications needed over the next five years. The list includes repair or replacement of worn-out heating and cooling systems, roofs, driveways and parking lots, and upgrades to building operational systems to be more energy efficient, as well as other needed improvements. The 2006 Sales Tax provided $11 million to continue the maintenance program. The 2006 funding also provides resources for security and safety improvements and carpeting replacement throughout the system. The 2014 Improve Our Tulsa Sales Tax program provided $2.4 million to address ADA compliance.

The Engineering Services and Asset Management Departments oversee a citywide maintenance management program for roofing systems. This program entails inspections to identify deficiencies, engineering and architectural solutions to correct the problems, and repairs and/or replacement of roofs on City owned or operated facilities. It also includes an element for scheduling routine and preventive maintenance. The 2006 Sales Tax provides some funding for this program as does the 2014 Improve Our Tulsa Sales Tax Program.

The Mayor's Performance Review Team, in 2003, issued a list of recommendations that included review and inclusion of energy efficient components in the design of major renovations to existing facilities and the construction of new buildings. Other energy saving strategies can be implemented in existing building operational systems. The 2006 Sales Tax allocates $2.1 million for these improvements.

The 2005 General Obligation Bond program provided funding for over $5 million in improvements to roofs, Gilcrease Museum, the PAC, and security systems.

Major facilities needs are summarized in the table below.

	Project Title	Requesting Dept	Cost Estimate (in $000)	Estimated Annual Operating Impact
1	Police Department	Police	$ 76,873,880	$ 162,000
2	Fire Department	Fire	$ 252,817,704	$ -
3	Gilcrease Museum	Gilcrease	$ 33,113,383	$ -
4	Performing Arts Center	PAC	$ 256,420,000	$ 15,000
5	Tulsa Convention Center and BOK Center	Citywide	$ 45,586,463	$ -
6	Animal Shelter Expansion	Citywide	$ 5,750,000	$ 695,000
7	Information Technology Department	IT	$ 15,678,000	$ 1,890,000
8	Facilities	Facilities	$ 340,047,447	$ 1,115,500
9	Equipment Maintenance	AMD	$ 24,600,000	$ 2,000
10	Short Term Capital Equipment	Citywide	$ 61,750,000	$ -
		TOTAL $	**$ 1,112,636,877**	**$ 3,879,500**