
# TRANSPORTATION

## COMPREHENSIVE TRANSPORTATION PLAN UPDATE

March 6, 2025 DRAFT

AIM NORMAN
AREA & INFRASTRUCTURE MASTER PLAN

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# INTRODUCTION TO AIM NORMAN

# INTRODUCTION TO AIM NORMAN

In 2023, the City of Norman embarked on an ambitious endeavor: The Norman Area & Infrastructure Master Plan (AIM Norman). Decisions made in Norman today and in the years to come will shape city's growth, development patterns, and the community image for decades. Rapidly changing and evolving technology, extreme weather events, and the University of Oklahoma's growing national audience as a new member of the Southeastern Conference will all impact these decisions.

AIM Norman examines all elements of city development and quality of life to help shape the community's growth through 2045. Together, all seven Master Plans of AIM Norman provide a roadmap that will provide essential guidance to leaders and decision-makers, representing the City and its partners' plan for growth, change, and adaptation.

AIM Norman is:

- A combination of processes and Master Plans.
- A blueprint for a sustainable and resilient future that embraces Norman's unique character.
- A collective vision for Norman that should resonate with every community member.
- All-encompassing and inclusive, supported by every facet of the community, and align with the values and aspirations of Norman residents.

AIM Norman encompasses distinct master planning elements, with the Land Use Plan as the guide for development and land use policy to help inform all Master Plans.

## HOUSING

A safe, comfortable, and attainable home for all is critical to Norman's future success. Rising home prices contribute to housing challenges. The recognition of poverty and unhoused populations in Norman is growing, while limited student housing options strain existing neighborhoods. The increasing popularity of the Oklahoma City metro as a place to live creates more demand, coupled with long-time residents wanting to age in the community. The AIM Norman Housing Plan analyzes the housing market and outlines a strategic plan for addressing housing needs.

## STORMWATER

Major rain events impact Norman's residents and infrastructure. The City has recently shifted away from the traditional system of hard, channelized drainage paths and concentration of stormwater flows toward more sustainable stormwater policies. However, challenges remain, including flooding, erosion, and pollution of streams flowing into Lake Thunderbird. As growth and development increase impervious surface coverage, the City must accommodate stormwater effectively throughout the community. The AIM Norman 2025 Stormwater Master Plan Update outlines resilient solutions to help Norman's stormwater management systems adapt to both current and future challenges.

## TRANSPORTATION

Mobility routes create a more connected community when it feels safe, comfortable, and accessible for all users. As the Norman community grows geographically and in population, so too must the routes and options to get to places. Car-centric communities like Norman are considering a more multi-modal approach to transportation. People are looking for connected trails and safe bike routes when choosing where to live, as new personal transportation devices grant more people opportunities to leverage trails. The AIM Norman Comprehensive Transportation Plan Update identifies future mobility projects in existing and new neighborhoods for motorists and active transportation users to cast a positive vision for mobility in Norman.

## PARKS, RECREATION, AND CULTURE

Along with a comprehensive trail network, residents value cities with unique quality of life amenities — particularly parks, recreational opportunities, and special events. Norman has more parks per capita than many comparable cities. Maintaining these parks at a first-class level is a high priority that grows in difficulty as costs rise and resources decline. Residents desire a connection to nature and each other, along with vibrant cultural and community events and facilities for all ages and abilities. The AIM Norman Parks, Recreation, and Culture Master Plan aims to provide current and future residents with safe and engaging parks, recreation, events, and cultural activities to access and enjoy.

## WASTEWATER

Reliable and resilient wastewater service is vital for existing and future homes, businesses, and industries. As more users are added and the wastewater collection system is expanded, adequate treatment facilities for quantity and quality must also be in place to meet environmental standards and water quality requirements. The AIM Wastewater Master Plan analyzes wastewater capacity needs and identifies improvements to the collection and treatment of wastewater to meet current and future needs in accordance with environmental regulations while minimizing costs to ratepayers.

## WATER

Access to quality water supply is critical for existing and future homes, businesses, and industries. Currently, Norman's critical water supply comes from Lake Thunderbird, the Garber-Wellington Aquifer, and wholesale water purchases from Oklahoma City. With projected residential and commercial growth, future constraints on the water supply and infrastructure are expected and must be addressed. The AIM Norman Water Master Plan analyzes the water system's capacity and water supply needs and identifies improvements to meet existing and future demands.

## INTEGRATING THE AIM NORMAN MASTER PLANS

A thoughtful, coordinated approach ensures that all seven elements of AIM Norman work together to create a balanced, sustainable, and thriving community for current and future residents. Together, they shape how Norman looks, feels, and functions. Major decisions in one component influence the others and determine the trajectory of land use development.

## DEVELOPMENT PRINCIPLES

The AIM Norman Land Use Plan's Development Principles stem from Norman residents' input and Smart Growth for America's Principles of Smart Growth. The ten Development Principles align AIM Norman's plans and studies to guide Norman's evolution through 2045.

## AIM NORMAN DEVELOPMENT PRINCIPLES

1. Manage urban services efficiently.
2. Promote diverse housing options.
3. Promote infill development and neighborhood reinvestment.
4. Protect the environment in all decision-making.
5. Enhance distinctive neighborhoods, business districts, and natural areas with a strong sense of place.
6. Provide a multi-modal and connected transportation network.
7. Enhance public safety and minimize hazards.
8. Encourage balanced and connected neighborhoods.
9. Make development decisions predictable, fair, and cost effective.
10. Make decisions in a transparent and collaborative manner.

# PURPOSE OF THE CTP UPDATE

The updated Comprehensive Transportation Plan (CTP), named the "AIM Norman" Plan, addresses the evolving transportation needs of the community and integrates new components into the existing roadway plan since the last update in 2014. This includes enhanced provisions for comprehensive transportation alternatives such as bicycling and walking, creating a comprehensive framework that accommodates various modes of travel.

The primary purpose of updating the CTP is to create a balanced transportation system that offers diverse travel choices, supported by a realistic funding approach for improvements. The plan identifies future transportation needs, establishes goals and policies, and outlines short-term and long-term capital investments. This update consolidates previous efforts and integrates community input to reflect a unified vision for Norman's transportation future through 2045.

The five Guiding Principles established in the 2014 CTP will continue forward. These guiding principles include:

- Norman is a special place
- Mobility is important
- Maintain and improve existing infrastructure
- Promote fiscal stewardship
- Enhance economic vitality

Likewise, the Goals from the 2014 CTP will be honored and described in further detail in later chapters

This updated CTP serves as Norman's long-term vision for a comprehensive, efficient, and sustainable transportation system, ensuring The City can meet its future transportation needs while promoting community well-being and economic growth.

## GOAL #1
### PEOPLE AND PLACES FOCUS

Design a transportation system with amenities and aesthetic treatments that enhance the travel experience for all modes of transportation.

## GOAL #2
### EFFICIENT AND EFFECTIVE MOBILITY

Provide multi-modal transportation options and management to meet existing and future mobility needs.

## GOAL #3
### INFRASTRUCTURE MAINTENANCE AND SAFETY

Prioritize investments to maintain, rehabilitate, ensure safety, and reconstruct current infrastructure systems.

## GOAL #4
### MAXIMIZE RETURN ON INVESTMENT

Optimize the use of City funds and leverage additional funding to maximize public return on transportation investments.

## GOAL #5
### SUPPORT COMMUNITY VITALITY

Invest in transportation improvements that enhance the physical and economic vitality of Norman's neighborhoods, businesses, employment, and education districts.

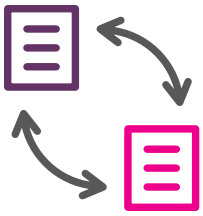
# DEFINITIONS

- **Access Management:** Techniques of transportation infrastructure management intended to reduce congestion and accident rates, lessen need for highway widening, conserve energy, and reduce pollution.
- **Association of Central Oklahoma Governments (ACOG):** ACOG is the federally designated Metropolitan Planning Organization (MPO) for the Greater Oklahoma City region. The ACOG region consists of 46 cities and 4 counties (Canadian, Cleveland, Logan and Oklahoma) in Central Oklahoma.
- **Active Transportation:** Any mode of transportation that is human powered (e.g. biking, walking, skateboarding). Active transportation network includes bike lanes, sidewalks, and multi-use lanes to help create and promote safe, convenient, efficient, and affordable ways for people to get around.
- **Alternative Modes (of Transportation):** Non-traditional modes of transportation often with an emphasis on sustainability such as biking, walking, carpooling, public transportation, or use of electric vehicles.
- **Average Daily Traffic (ADT):** The average number of vehicles passing a specified point during a 24-hour period.
- **Bus Rapid Transit (BRT):** A high-quality bus-based transit system that delivers fast, effective, and affordable service achieved by following systems that may include dedicated lanes, busways, traffic signal priority, off-board fare collection, elevated platforms, and enhanced stations.
- **Campus Area Rapid Transit (CART):** The University of Oklahoma public shuttle bus system operating in Norman. CART operates five fixed routes from Monday through Friday in and around the University of Oklahoma.
- **Carpool:** Any vehicle (usually a car) or arrangement in which two or more occupants, including the driver, share the use or cost, in traveling between fixed points on a regular basis (also referred to as ride sharing).
- **Central Business District:** Commercial and business center of a city.
- **Congestion:** A condition characterized by slower speeds, longer trip times, and increased vehicular queuing.

# DEFINITIONS
## continued

- **EMBARK:** The largest public transit agency in Central Oklahoma serving the Oklahoma City (OKC) area. The City of Norman partners with EMBARK to provide transit services in Norman.
- **Geographic Information System (GIS):** A computerized data management system that creates, manages, analyzes, and maps all types of data. GIS connects data to a map, integrating location data (where things are) with all types of descriptive information (what things are like there).
- **Intermodal Transportation:** Modes of transportation refer to the transportation techniques used such as automobiles, public transit buses, trucks, aircraft, walking, biking etc. Intermodal transportation refers to the network for transportation utilizing various combinations of transportation modes.
- **Micro Transit:** Micro transit is a small scale on-demand public transit service that can be booked and paid for through an app as per the request. It is used as a complement to fixed-route service to provide transportation in locations and times poorly served by regular transit.
- **Multi-modal Transportation System:** Transportation system that reflects consideration of more than one mode to serve transportation needs in an area.
- **Oklahoma Department of Transportation (ODOT):** ODOT is the state agency of Oklahoma responsible for planning, building, and maintaining its road networks and transit needs within the state.
- **Oklahoma Turnpike Authority (OTA):** OTA is an agency of Oklahoma that deals with issues regarding the Oklahoma turnpike system. Along with the ODOT, OTA is the primary infrastructure construction and maintenance agency of the State.
- **Paratransit:** Paratransit service complements the fixed-route transit system by providing lift-equipped van service to eligible individuals who are not functionally able to ride the fixed-route bus service due to a disabling condition.
- **Regional Transportation Authority (RTA) of Central Oklahoma:** An independent government agency made up of the member cities of Edmond, Norman, and Oklahoma City. The RTA is responsible for developing, funding, constructing, implementing, operating, and maintaining transportation projects located within the boundaries of the regional transportation district.
- **Ridership:** Number of passengers on a public transport system.
- **Sustainable Transportation System:** A system containing transportation modes that are low or zero emissions, energy efficient and affordable.
- **Functional Classification:** The classification of urban and rural roadways according to their function. Roadways at the top of the hierarchy serve intercity and other long-distance movement. Roadways lower in the hierarchy provide access to land.
  - *Expressway: A type of divided highway that is designed to carry traffic through urban areas at high speeds and longer distances with access controlled/partially controlled by ramps and/or medians.*
  - *Freeway: A divided highway, also known as access highway, with full control of access which is designed for high-speed vehicular traffic. Traffic flow on a freeway is unhindered because there are no traffic signals, intersections, or at-grade crossings with other roads, railways, or pedestrian paths.*
  - *Principal Arterials: Heavily used roads in the area, carrying around 48% of the total vehicle miles traveled in the region. Includes all "Highways" within or passing through urbanized Norman. Requires a minimum of four travel lanes with curb and gutter and a minimum of 100 feet of right-of-way.*
  - *Minor Arterials: They are intended to distribute traffic throughout The City and link major community-wide traffic generators. A Minor Arterial will typically consist of two travel lanes, with turn lanes required at intersections with all other arterials, and sometimes with Collectors.*
  - *Collectors: Allow traffic to move from the local street system to the arterial system. Collectors typically have two travel lanes, with turn lanes required at some intersections, including all arterials.*
  - *Locals: Local streets are primarily designed to provide direct access to residential properties and facilitate low-speed, local traffic within a neighborhood. Such streets typically work well for bike traffic.*

# PLAN INTEGRATION:
## Land Use Plan with the CTP



### HOW THE LAND USE PLAN INTEGRATES WITH THE CTP

All policy recommendations in the AIM Norman Comprehensive Plan apply to the CTP.

### THE CTP IS:

- A guide for development policy
- A context for making key land use and public investment decisions
- A vision for The City's future
- A tool to guide City priorities, directions, and capital improvement programming
- A strategic document adapted to Norman's specific needs and visions

### THE CTP IS NOT:

- An unchangeable, inflexible commitment to carry out specific projects
- A document that commits The City to a specific course of action
- A rigid land use plan that anticipates the specific use of every piece of property into the future
- A capital or operating budget

### TWO KEY PARTS IN THE LAND USE PLAN BEAR REPEATING:

#### DEVELOPMENT PRINCIPLES - PRINCIPLES TO SHARE NORMAN'S FUTURE THROUGH ALL MASTER PLANS

The Comprehensive Plan Development Principles stem from input from Norman residents and Smart Growth for America's principles of smart growth. Many apply to the **Comprehensive Transportation Plan** when looking to the future and how Norman will evolve through 2045, specifically those highlighted below:

1. **Manage urban services efficiently**
2. Promote diverse housing options
3. **Promote infill development and neighborhood reinvestment**
4. **Protect the environment in all decision-making**
5. **Enhance distinctive neighborhoods, business districts, and natural areas with a strong sense of place**
6. **Provide a multi-modal and connected transportation network**
7. **Enhance public safety and minimize hazards**
8. **Encourage balanced and connected neighborhoods**
9. Make development processes predictable, fair, and cost-effective
10. Make decisions in a transparent and collaborative manner

#### FUTURE LAND USE PLAN – THE POLICY MAP FOR THE VISION OF FUTURE GROWTH

The Future Land Use Plan will be crafted from population projections, economic trends, environmental analysis, and public input to shape land use directions. This comprehensive approach will ensure that the plan is responsive to current needs and future demands. The plan will significantly influence the direction of the Comprehensive Transportation Plan by:

- **Guides Locations for New Development and Infill.** The plan will identify optimal areas for new development and infill projects, ensuring efficient use of land and resources while minimizing urban sprawl.
- **Helps to Identify Necessary Transit Infrastructure.** By projecting future population and economic growth, the plan will help pinpoint where new transit infrastructure will be needed to support a growing population.
- **Indicates Areas for Active Transportation Facilities.** The plan will highlight regions where transportation priorities should focus on active transportation facilities, such as bike lanes, pedestrian paths, and greenways, promoting more mobility options.

# PLAN INTEGRATION:
## All AIM Norman Plans with the CTP

### HOW ALL AIM NORMAN PLANS INTEGRATE WITH THE CTP

All policy recommendations in the AIM Norman Comprehensive Plan apply to the CTP.

### WATER MASTER PLAN

- **Service Capacity.** Water service and capacity are key drivers in land use density, which plays a critical role in transportation needs.
- **Infrastructure Corridors.** Transportation and utility corridors can be shared for mutual improvements such as water lines, roadways, and trails.
- **Efficient Expenditures.** Coordinated planning and implementation of infrastructure can lead to reduced cost and expenditures that come from taxpayers.

### WASTEWATER MASTER PLAN

- **Service Capacity.** Wastewater service and capacity are key drivers in land use density, which plays a critical role in transportation needs.
- **Infrastructure Corridors.** Transportation and utility corridors can be shared for mutual improvements such as wastewater lines, roadways, and trails.
- **Efficient Expenditures.** Coordinated planning and implementation of infrastructure can lead to reduced cost and expenditures that come from taxpayers.

### HOUSING MASTER PLAN

- **Road Capacities.** The size, types, and capacity of new roads influence appropriate locations for different densities of housing or mixed residential uses.
- **Mobility Connections.** New connections open possibilities to direct new and infill housing development.
- **Transit and Active Transportation.** Future transit locations and bicycle and pedestrian route improvements offer better locations for households needing to be close to these services.

### STORMWATER MASTER PLAN

- **Drainage Improvement.** Effective drainage systems are crucial to transportation infrastructure as they prevent water accumulation on roads, reducing the risk of flooding and ensuring safe travel for Norman residents.
- **Greenway Corridors.** Active transportation corridors along creeks and rivers offer essential access points for drainage maintenance, ensuring the effective management of water flow and the preservation of natural waterways.
- **Reducing Environmental Impacts.** As Norman further implements Low Impact Development (LID) standards, these technologies can be incorporated into transportation design to promote enhanced water quality and environmental resilience.

### PARKS, RECREATION, AND OPEN SPACES MASTER PLAN

- **Destinations.** Parks are a key destination for bike and pedestrian users. Ensuring active transportation infrastructure connects to existing and future parks is essential.
- **Context Sensitivity.** Active transportation infrastructure in parks should enhance and relate to designed and desired uses of parks.
- **Greenway Corridors.** Greenway corridors can function as high quality linear parks that play a critical role in The City's overall parks system.


# BASIS FOR THE PLAN

# BACKGROUND INFORMATION

The 2014 CTP was developed through a multi-year process that identified transportation needs for the area, goals and policies, and short-term and long-term capital investments for improvements to existing roads, construction of new roads, bicycle, pedestrian, and transit facilities. The CTP was created to provide a framework for a balanced transportation system that offers choice in how people travel, supported by a realistic approach to fund improvements.

The updated CTP is one of many Master Plan documents that was developed through the "AIM Norman" Plan. The CTP will serve as Norman's long-term vision for a range of transportation options and accommodations including personal and commercial vehicles, bicycling, walking, and public transit services. Through the AIM Norman effort, groups were appointed to guide the development of the scope for the update of the Norman CTP. These include a Steering Committee and a Transportation Sub-Committee. The committees provided input and recommendations and helped guide the community involvement for the CTP. Further information on the formative public input and the work of these committees can be found in the Appendix B.

## AUTHORITY AND RELATIONSHIP TO REGULATIONS

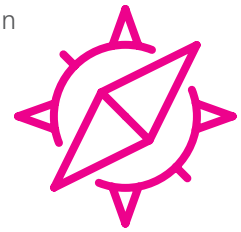
### AUTHORITY FOR THIS PLAN IS CONTAINED IN THE OKLAHOMA STATUTES § 11-43-103:

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
8. To facilitate the adequate provision of transportation, water, sewerage, schools, parks and other public requirements

These provisions, along with case law, establish a strong relationship between the plan and its supporting regulations. In simple terms, a municipality plans and then regulates. This plan establishes the City's vision, direction, and policies related to transportation. The provisions of this plan are implemented through the City's capital expenditures and laws. The City's Capital Improvements Project Plan and Budget are direct examples of capital expenditures to implement this plan. The Subdivision Regulations, as Chapter 30 of the Code of the City of Norman, are the primary regulations which implement this plan.

## GUIDING PRINCIPLES, GOALS, AND OBJECTIVES



The primary goal of developing vision and goals for the Norman CTP was to plan for a well-balanced transportation system that offers choices in how people travel and is supported by a realistic plan to fund these improvements. For the 2014 CTP, guiding principles and numerous project goals were developed and strategies put forth that were considered to generally represent the community values and aspirations determined through listening sessions, conversations, and deliberation related to transportation necessary to accommodate future growth and enhance the quality of life in Norman. To guide the development of the Norman CTP and its implementation, the compilation of five guiding principles, twenty goals and numerous draft strategies were refined into a set of five goals and associated objectives to re-state the formative work. The guiding principles, goals, and objectives from the 2014 CTP are being carried forward in this updated CTP document and are explained in greater detail in this CTP Update.

# GUIDING PRINCIPLES

## #1: A SPECIAL PLACE TO LIVE

A vibrant Norman community in 2045 will be achieved by ensuring transportation and infrastructure investments that focus on both people and places. These investments should enhance transportation choices and accessibility, and also create a unique place with lasting value that blends seamlessly with the character and vision of Norman's neighborhoods, employment centers and activity centers.

### OBJECTIVE #1

Adopt policies, ordinances and programs that promote multi-modal, context sensitive considerations and aesthetics into the planning and project funding of transportation facilities in Norman.

### OBJECTIVE #2

Institute departmental processes and procedures to ensure coordination of land use and transportation planning, while including context sensitive solutions for design and implementation of transportation corridors and facilities in Norman.

### OBJECTIVE #3

Provide transportation investments and procedures that help enhance traffic and circulation, walkability, bikeability, aesthetics and amenities of the central core of Norman including Downtown, Campus Corner, the University of Oklahoma (OU), and surrounding neighborhoods.

### GOAL #1

**Provide a transportation system planned and designed with people and places in mind, including amenities and aesthetic treatments to enhance the traveling experience for all modes of transportation.**

### OBJECTIVE #4

Enhance the aesthetics of the section line roadway corridors that lead residents and visitors to the central core and major areas of retail and development and to significant attractions in Norman such as Lake Thunderbird State Park.

### OBJECTIVE #5

Invest in improvements to minimize the impacts of railroad delay and noise through Norman.

### OBJECTIVE #6

Provide a wayfinding system of signage, markers, and other devices to inform visitors and residents of the special areas and attractions in Norman.

# GUIDING PRINCIPLES
continued

## #2: MOBILITY

The provision of transportation options and solutions within Norman will create a seamless system. This principle is illustrated in Norman CTP through efficient system management and operations, through context sensitive and complete streets designs, and with a range of accessible and convenient transportation choices. A multi-modal network will provide connections between neighborhoods and destinations throughout Norman, with good connections to the Oklahoma City region, through a system offering opportunities to drive, walk, bike and take transit.

### OBJECTIVE #1

Provide mobility for people who live, work and visit Norman - especially those who are economically, socially or physically challenged - in order to support their full participation in society and contributions to Norman's economic productivity.

### OBJECTIVE #2

Invest in timely street improvements for a network of section line roads in the area beyond the core of Norman that support the effective movement of vehicles around rather than through the central core of Norman, while accommodating active transportation users in the roadway corridor.

### OBJECTIVE #3

Invest in improvements to the arterial and collector street network, as well as parking in the core of Norman to support the balanced mobility of motorists, active transportation users, and commerce.

### GOAL #2

**Provide efficient and effective mobility to, from, and within Norman by providing multi-modal transportation options and management for existing and anticipated future needs.**

### OBJECTIVE #4

Provide a modern, corridor-focused transit network that has enhanced frequency and hours of service and efficient connectivity to current and future regional transit services with the intent to provide viable options to the personal vehicle.

### OBJECTIVE #5

Support efforts to develop a regional transit system including rail transit, and serve as leaders in regional rail transit discussions.

### OBJECTIVE #6

Provide a network of bicycle and pedestrian facilities, including sidewalks, bike routes, bike lanes and paths, that provides mobility options, regional and multi-modal connectivity and recreational opportunities for Norman residents.

## #3: MAINTAIN AND IMPROVE EXISTING INFRASTRUCTURE

Through efficient system management, Moving Forward, the 2014 CTP, places high priority upon maintenance, rehabilitation, safety and reconstruction of basic infrastructure systems. As neighborhoods in Norman mature, we will rise to the challenge of keeping them viable and strong by maintaining high quality transportation infrastructure including streets, sidewalks, and other public infrastructure facilities. Investments will provide a balance between the transportation needs of the community and the needs of the local neighborhoods.

### OBJECTIVE #1

Design, operate and manage the transportation system to maintain or improve the quality of multi-modal mobility, access and safety for those traveling in and living within Norman.

### OBJECTIVE #2

Develop and implement transportation performance measures and programs to regularly monitor, evaluate, and forecast the degree to which the transportation system investments accomplish community goals and mobility objectives.

### OBJECTIVE #3

Minimize the impacts of project implementation upon the multi-modal access to businesses and neighborhoods during construction.

### GOAL #3

**Prioritize investments to ensure the maintenance, rehabilitation, safety, and reconstruction of current infrastructure systems.**

### OBJECTIVE #4

Manage, reduce and avoid roadway congestion and increase mobility and safety for all roadway users through operational improvements, targeted capacity enhancements, and promotion of alternative means of transportation.

### OBJECTIVE #5

Develop and promote programs to incorporate public and business observations of and assistance with the conditions assessment and maintenance of the multi-modal transportation infrastructure and corridor amenities.

# GUIDING PRINCIPLES
continued

## #4: FISCAL STEWARDSHIP

The 2014 CTP strives to provide a detailed road map of actions for transportation and infrastructure investments based on an approach that maximizes the benefits for multiple user groups in a way that is both fiscally and environmentally responsible. Future investments will include input from the community at large and the priorities as identified through regular ongoing dialog with stakeholders.

### OBJECTIVE #1

Identify and pursue private, regional, state and federal revenue sources for funding multi-modal transportation improvements in Norman, and actively engage in regional efforts to identify new dedicated funding sources.

### OBJECTIVE #2

Integrate state and federal long-range transportation planning factors with local and regional transportation planning to maximize future funding opportunities for surface transportation projects in Norman.

### OBJECTIVE #3

Provide transparency and meaningful public awareness, ongoing citizen input, and participation opportunities to implement and update the Norman CTP.

### GOAL #4

**Optimize the use of City of Norman funds and leverage additional funding for transportation to maximize the Norman public return on investment in transportation infrastructure and operations.**

### OBJECTIVE #4

Plan for and preserve rights-of-way and other real property for future multi-modal transportation and supporting infrastructure investments in advance of economic development.

### OBJECTIVE #5

Develop a policy and programs for city consideration of private/public partnerships and donations to fund transportation infrastructure, amenities and aesthetics.

### OBJECTIVE #6

Create and implement tax assessments for transportation and supporting improvements associated with special initiatives, including bridge repair and rail transit.

## #5: ENHANCE ECONOMIC VITALITY

The 2014 CTP supports economic vitality that promotes economic growth while using resources in an efficient and effective manner. These fiscally sound efforts are intended to achieve a diverse, vibrant local economy with a strong tax base, thus reducing the future fiscal burden on residents to provide city services.

### OBJECTIVE #1

Initiate and promote a managed parking system(s) and/or district(s) to support and encourage increased activity and density of development within the core of Norman and specifically to address the needs of Downtown, Campus Corner and OU.

### OBJECTIVE #2

Provide for effective trucking, railroad and air freight movement to, from and through Norman, including supporting facilities and airspace, while minimizing their impact on the quality of life.

### OBJECTIVE #3

Identify and promote land development strategies and suitable locations to maximize and support multi-modal development, such as mixed-use districts and transit oriented development, which maximize the benefits of transit investments.

### GOAL #5

**Invest in transportation improvements that support the physical and economic vitality of Norman's neighborhoods, businesses, employment and education districts.**

### OBJECTIVE #4

Identify and implement policies and programs to support and incentivize development initiatives within the city by establishment of special districts for use in timely implementation of transportation improvements.

### OBJECTIVE #5

Identify and implement policies and programs to streamline the project development process and to reduce transportation improvement implementation time.

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# PUBLIC INVOLVEMENT

# COLLABORATIVE PROCESS

To provide an update to the CTP, an open and collaborative process involving citizens, multiple entities, and various interest groups was conducted over the development of the CTP.

## TRANSPORTATION SUB-COMMITTEE

An team of key stakeholders, subject matter experts, and involved residents composed the transportation sub-committee for the CTP. The sub-committee met eight times from January 2024 to March 2025 to speak into the planning process, providing crucial input and guidance for the development of the plan.

The sub-committee was comprised of:

- Jim Adair, Chair
- Trey Bates
- Hal Cantwell
- Olivia Dailey
- BJ Hawkins
- Lance Lampkin
- Chris Nanny
- Adam Ross
- Karleene Smith
- Chuck Thompson

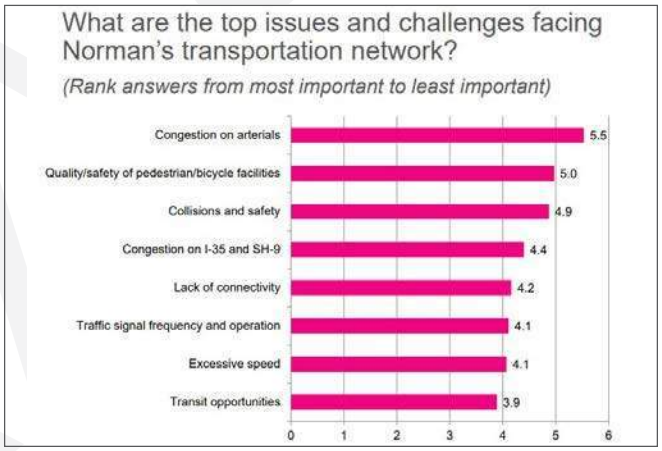
## PUBLIC MEETINGS AND PRESENTATIONS

Public meetings and several presentations were made to review and discuss the existing conditions and needs, modal plans, policies and programs, and implementation strategies for the updated CTP. These included presentations to the City Council, the AIM Norman Steering Committee, and transportation sub-committee. The materials presented at these meetings and some of the comments received are summarized in Appendix B.

## NEIGHBORHOOD WORKSHOPS AND SURVEY

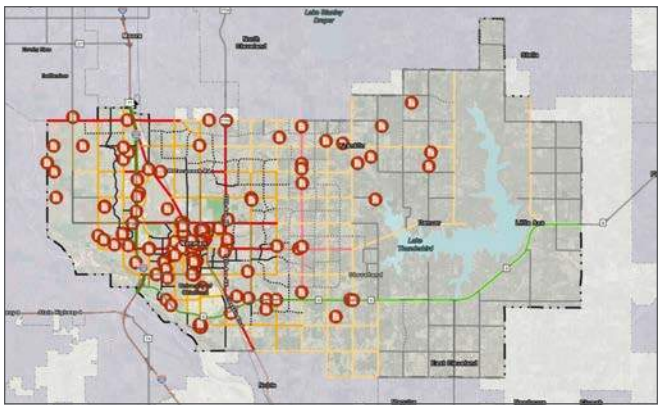
In February, March, and April 2024, a series of seven neighborhood workshops took place at elementary schools and community centers across the City of Norman. A total 103 people attended the events and 205 comments were collected.

A transportation specific survey during January 2024 collected 278 responses. The responses helped form critical input that helped guide the direction and priorities of The Plan.




## INTERACTIVE WEBMAP

The planning team developed an interactive webmap for use by the transportation sub-committee to provide location specific comments to help guide the planning team. There were 140 comments provided by sub-committee members, which helped guide the planning process throughout the project.



# COMPONENTS OF THE CTP

The CTP Update includes review of and recommendations for seven separate transportation components, including:

## TRAFFIC

This section reflects an update to traffic-related items from the 2014 CTP, including volumes, operations, and crash history. Existing and future traffic conditions across the City of Norman were analyzed to understand the conditions today and anticipate needs for the future.

## ROADWAYS

This section provides critical updates to the 2014 Norman Comprehensive Transportation Plan. Included with this section are an updated Transportation Plan Map, modifications to the street cross sections to accommodate updated best practices for active transportation, recommendations for enhanced access management, and an updated list of recommended roadway projects.

## ACTIVE TRANSPORTATION

The Active Transportation section integrates the heart of the Norman Greenways Master Plan and places a heavy emphasis on planning for bike and pedestrian routes that maximize the number of potential users by providing low stress routes. The plan indicates locations for future greenways, side paths, cycle tracks, bike lanes, and bike routes with the backbone of the system composed of greenways and side paths.

## PARKING

The Parking section incorporates the provisions of the 2018 City of Norman and Cleveland County Strategic Parking Plan. Many of the provisions of the plan have been implemented. A key recommendation of plan ties directly with the transit portion of the plan with a proposal for a parking facility to integrate with the Norman Transit Center and planned development of commuter rail with a stop downtown.

## TRANSIT

The Transit section incorporates the provisions and recommendations of the 2021 Go Norman Transit Plan. A key recommendation of the of the plan was updating and streamlining the route network for The City's transit system. A key recommendation of the of the plan was updating and streamlining the route network for The City's transit system.

## BRIDGES

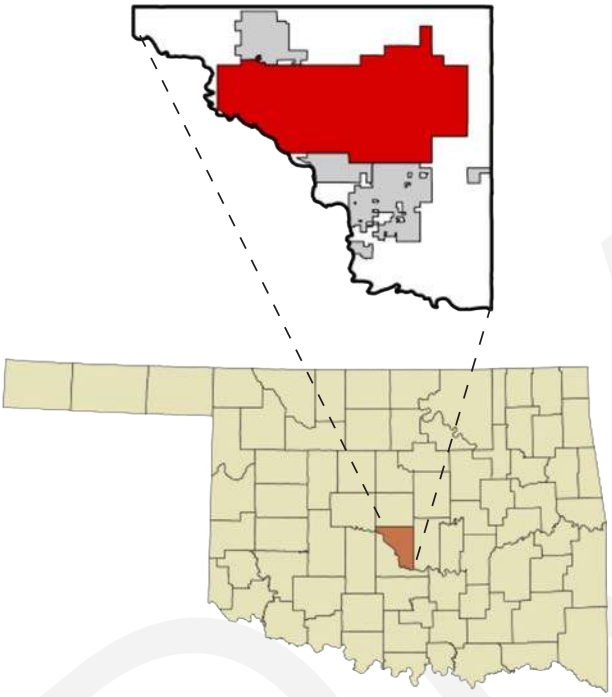
This section will highlight the need to continue the progress started with the 2023 Bridge Bond program. The semi-annual inspection of the more than 90 bridges The City is responsible for and helps sets the priority of maintenance of upgrades or replacement. This CTP update will continue to follow the established City policies with evaluations and project recommendations.

## AVIATION

The final piece to this CTP update is the Aviation component. The University of Oklahoma owns and operates Max Westheimer Airport, which is guided by the FAA approved airport master plan for related capital improvements. The City has the ability to support the airport's master plan outside of the airport property boundaries with policy recommendations and infrastructure improvements to enhance access to the airport.

# CONTEXT

Located in Cleveland County, Norman, Oklahoma, serves as both the county seat and home of the University of Oklahoma. The city is notable for housing the National Weather Center along with numerous related private sector meteorological businesses, the Oklahoma Geological Survey, Oklahoma Renewable Energy Council, SouthWest NanoTechnologies, and the United States Postal Service National Center for Employee Development.



The community features a vibrant downtown and an adjacent university entertainment district called Campus Corner, as well as the Sam Noble Museum of Natural History and Fred Jones Jr. Museum of Art. Norman stands as a key education, cultural, and business hub within the state and Oklahoma City Metro.

One of Oklahoma's fastest growing and largest cities, Norman is estimated to have a 2023 population of over 130,000 with projected growth reaching over 185,000 by 2045. It is anticipated much of this growth will be seen across the northern, eastern, and northwestern portions of The City adjacent to existing developed areas and as infill in existing neighborhoods. Although not supported by The City, the Oklahoma Turnpike Authority's $5 Billion dollar ACCES Oklahoma program has planned two new turnpikes that traverse along the north city limit line (East-West Connector) and along the western sides of Lake Thunderbird (South Extension Turnpike). *The future lying ahead for Norman residents is a bright and vibrant one.*

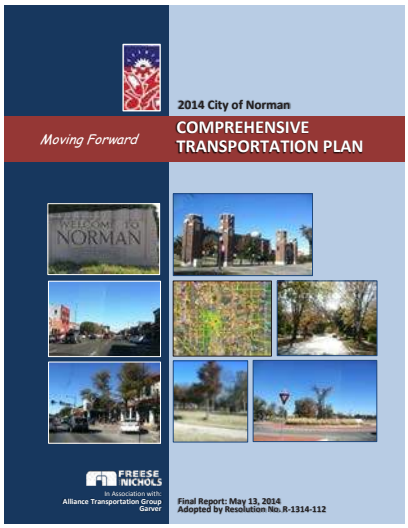
University of Oklahoma

The National Weather Service


Sam Noble Museum

# PLAN SUMMARIES

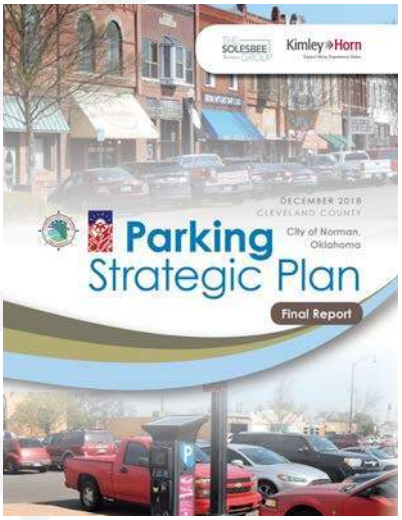
## NORMAN COMPREHENSIVE TRANSPORTATION PLAN (2014)




The Norman Comprehensive Transportation Plan (CTP) outlines several key recommendations to enhance The City's transportation infrastructure and services. One of the primary recommendations is to develop a multi-modal transportation system that includes improvements to roadways, public transit, and non-motorized transportation options such as biking and walking. This involves expanding and upgrading the existing road network, implementing Complete Streets designs that accommodate all users, and enhancing public transit services to provide more reliable and frequent service. The plan also emphasizes the importance of completing the sidewalk network and creating safe, accessible pedestrian pathways to encourage walking as a viable mode of transportation.

Another significant recommendation is the integration of intelligent transportation systems (ITS) to improve traffic management and reduce congestion. This includes the use of advanced technologies such as real-time traffic monitoring, adaptive signal control, and dynamic messaging systems to optimize traffic flow and enhance safety. The plan also highlights the need for ongoing maintenance and preservation of existing infrastructure to ensure long-term sustainability and reliability. By focusing on these areas, the Norman CTP aims to create a more efficient, connected, and sustainable transportation system that supports The City's growth and enhances the quality of life for its residents.

## CITY OF NORMAN & CLEVELAND COUNTY STRATEGIC PARKING PLAN (2018)




The City of Norman and Cleveland County Strategic Parking Plan, developed in 2018, outlines several key recommendations to improve parking management and efficiency in downtown Norman primarily through the construction of a mixed-use parking garage adjacent to the County Courthouse. One of the primary recommendations is the establishment of a dedicated parking management organization to oversee all aspects of parking operations, including enforcement, maintenance, and customer service. This organization would be responsible for implementing a comprehensive parking management system that includes modernized parking meters, improved signage, and the integration of technology to provide real-time parking availability information. Additionally, the plan suggests revising parking rates and time limits to encourage turnover and ensure that parking spaces are available for short-term visitors and customers.

Another significant recommendation is the enhancement of alternative transportation options to reduce the demand for parking. This includes expanding public transit services, promoting the use of bicycles through the installation of bike racks and lanes, and improving pedestrian infrastructure to make walking a more attractive option. The plan also emphasizes the importance of engaging with the community and stakeholders to gather feedback and ensure that the parking solutions meet the needs of residents, businesses, and visitors. By implementing these recommendations, the City of Norman and Cleveland County aim to create a more efficient, user-friendly, and sustainable parking system that supports the economic vitality of the downtown area.

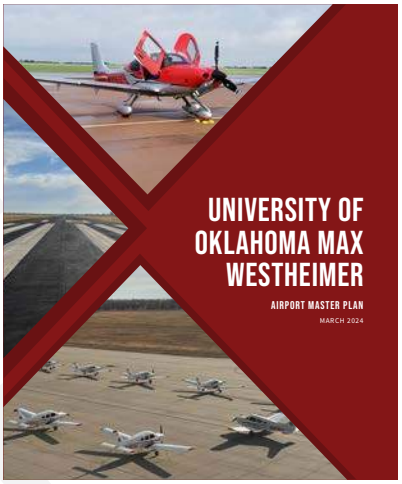
# PLAN SUMMARIES
continued

## ENCOMPASS 2045 (2021)


The Encompass 2045 plan, developed by the Association of Central Oklahoma Governments (ACOG), outlines several key recommendations for improving transportation in Norman. One of the primary recommendations is to enhance public transit services to better connect Norman with the broader Central Oklahoma region. This includes expanding bus routes, increasing the frequency of service, and improving transit facilities to make public transportation a more viable option for residents. Additionally, the plan emphasizes the need for improved bicycle and pedestrian infrastructure, such as dedicated bike lanes and safer crosswalks, to promote alternative modes of transportation and reduce reliance on personal vehicles.

Another significant recommendation is the development of intelligent transportation systems (ITS) to optimize traffic flow and reduce congestion. This involves the implementation of advanced traffic management technologies, such as real-time traffic monitoring and adaptive signal control, to enhance the efficiency of the existing road network. The plan also highlights the importance of maintaining and preserving the current transportation infrastructure through regular maintenance and upgrades to ensure long-term sustainability. By focusing on these areas, the Encompass 2045 plan aims to create a more connected, efficient, and sustainable transportation system for Norman and the surrounding region.

## WESTHEIMER AIRPORT MASTER PLAN (2024)




The 2024 Westheimer Airport Master Plan, developed for the University of Oklahoma's Max Westheimer Airport, includes several key recommendations to enhance the airport's infrastructure and services. One of the primary recommendations is to extend and strengthen the runways to accommodate larger aircraft and increase operational capacity. This also involves developing additional hangar areas to support growing aviation demand and improve the overall functionality of the airport. The plan emphasizes the importance of maintaining and upgrading existing facilities to ensure safety and efficiency, which includes modernizing the terminal and improving airfield lighting and signage.

The plan also highlights the need for environmental sustainability, recommending measures such as the use of renewable energy sources and the implementation of green building practices in future developments. By focusing on these areas, the 2024 Westheimer Airport Master Plan aims to support the airport's growth, improve operational efficiency, and ensure long-term sustainability.

## NORMAN GREENWAYS MASTER PLAN (2012)


The City of Norman Greenways Master Plan outlines several key recommendations to enhance The City's greenway network and promote connectivity. One of the primary recommendations is to create a comprehensive greenway system that links existing trails, parks, and open spaces throughout Norman. This involves identifying and prioritizing potential greenway corridors based on their suitability and connectivity potential. The plan emphasizes the importance of focusing on corridors that provide significant connectivity benefits, such as linking neighborhoods, schools, parks, and other major destinations. By doing so, The Plan aims to create a cohesive network that enhances recreational opportunities and promotes alternative transportation options.

Another significant recommendation is to preserve and enhance natural corridors, such as creek and river systems, to create continuous greenway trails. This includes conducting a thorough inventory of existing conditions and utilizing GIS data to evaluate the suitability of potential greenway segments. The Plan also highlights the need for community engagement and public input to ensure that the greenway network meets the needs and desires of residents. By implementing these recommendations, the City of Norman aims to create a more connected, accessible, and sustainable greenway system that enhances the quality of life for all residents.

## GO NORMAN TRANSIT PLAN (2021)

The Go Norman Transit Plan, is a comprehensive roadmap aimed at optimizing and expanding The City's transit services. Developed through a nearly year-long study, the plan involved a thorough review of existing transit services and extensive community engagement. This collaborative approach ensured that the plan addresses the needs and preferences of Norman's residents, making it a well-rounded and community-focused initiative.

GO NORMAN TRANSIT PLAN

**Final Report**

**June 2021**

Key recommendations of the plan include increasing the frequency of transit services, introducing Sunday service, expanding service coverage, and extending operating hours on weekdays and Saturdays. These improvements are designed to make public transportation more accessible and convenient for residents. By enhancing service frequency and coverage, the plan aims to reduce wait times and make it easier for people to rely on public transit for their daily commutes and other travel needs.

Additionally, the plan emphasizes the importance of ongoing public engagement and collaboration with stakeholders to ensure the successful implementation of these recommendations. This includes regular feedback from the community and continuous assessment of transit services to adapt to changing needs. By fostering a collaborative environment, the Go Norman Transit Plan aims to create a sustainable and efficient transit system that benefits all residents of Norman.

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# TRAFFIC

# HISTORICAL SAFETY ANALYSIS

## EXISTING CONDITIONS

As part of the effort to update the 2014 CTP, more recent traffic conditions were evaluated and analyzed. Traffic safety, volume and operational analysis, field observations, and signal inventory are included in the update. This section of the CTP highlights the updated traffic conditions to understand the growth experienced, identify safety issues within The City, and develop future projects for study and implementation to help Norman plan for the future.

Data collection included historical crash data over a ten-year period, signal and driveway inventory, and traffic volumes to determine the current number of vehicles utilizing local routes and to understand the growth experienced over the last ten years.

## HISTORICAL SAFETY ANALYSIS

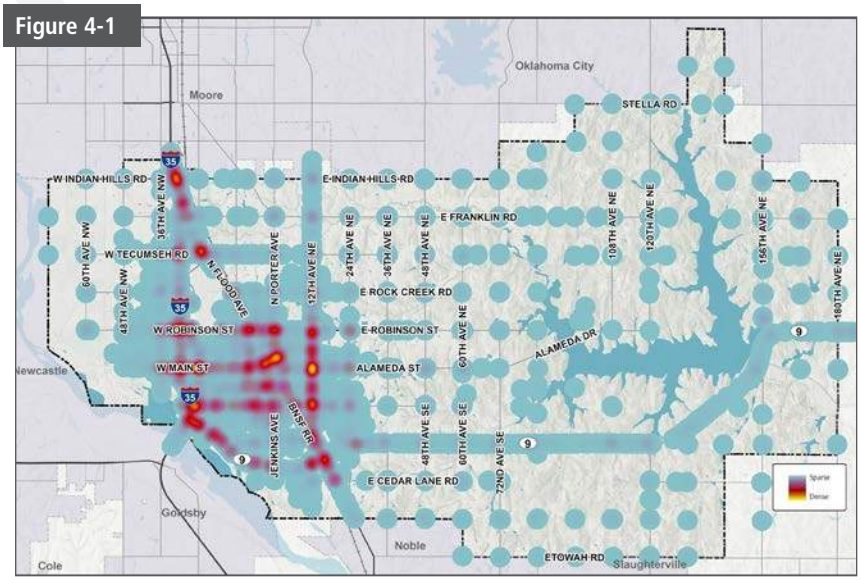
Collision data was compiled for a ten-year period, from 2012 to 2021, throughout the city limits of Norman. A safety analysis was conducted to determine street segments, intersections, and hot-spot locations throughout The City that have historically experienced a high number of crashes or a high crash rate. Throughout the crash analysis, collision trends were also investigated to further identify areas for safety improvements throughout The City.

Over the ten-year period, a total of 23,766 crashes occurred within the City of Norman. These crashes are reflected in the heat map in Figure 4-1.

### HOT SPOTS IDENTIFIED

- Flood Avenue at Tecumseh Road
- Main Street at 24th Avenue W
- Robinson Street at 24th Avenue W
- 12th Avenue E at Alameda Street
- Lindsey Street at 24th Avenue W
- Main Street at Porter Avenue

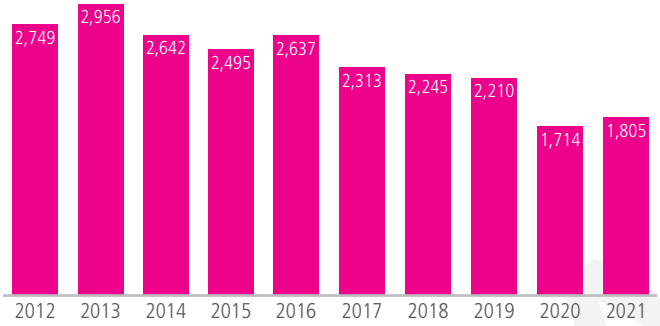
Figure 4-1



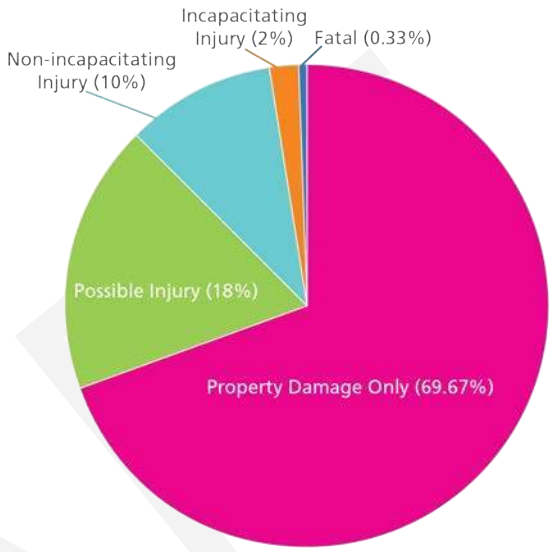

Crash Data Heatmap

Out of the 23,766 collisions that occurred, 79 resulted in a fatality and nearly 3,000 crashes involved an injury. An average of 2,376 collisions occurred per year - with 2013 experiencing the highest number of crashes (2,956) and 2020 experiencing the lowest number of crashes (1,714).

## CRASHES PER YEAR




## CRASH SEVERITY

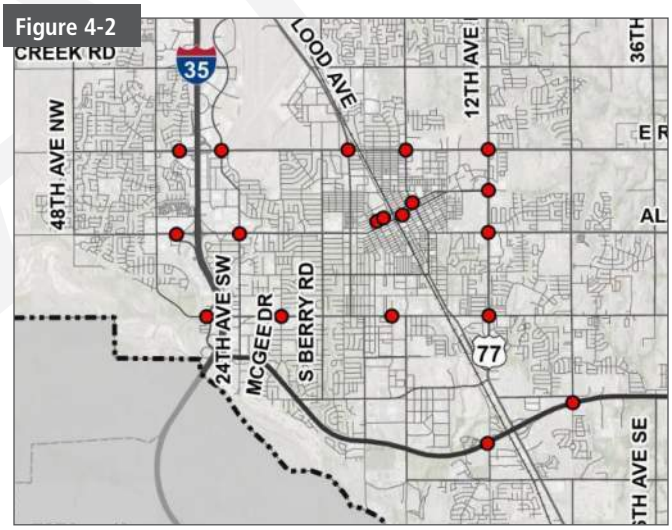



A further look at intersection-related collisions reflected that approximately 51% of crashes were intersection-related and 49% were not. Intersection crash rates, which factor in traffic volume to see how frequently crashes occurred relative to the demand, were calculated and ranked by crash occurrence. The top 20 intersections within The City with the highest crash rates are shown in Figure 4-2 and listed in Tables 4-3 and 4-4 below.

### *HOW IS AN INTERSECTION CRASH RATE CALCULATED?*

$$\text{Rate} = \frac{1{,}000{,}000 \times \#\text{ of Crashes}}{365\text{ Days} \times \#\text{ of Years} \times \text{Traffic Volume}}$$

**Figure 4-2**




Top 20 Intersections by Crash Rate

**Table 4-3**

| | Top Intersections | Crash Rate* | # of Crashes |
|---|---|---|---|
| 1. | Main St at 24th Ave W | 2.11 | 375 |
| 2. | 12th Ave E at Alameda St | 2.03 | 307 |
| 3. | Robinson St at Porter Ave | 1.77 | 207 |
| 4. | Robinson St at 12th Ave E | 1.72 | 238 |
| 5. | Gray St at Webster Ave | 1.60 | 51 |
| 6. | 12th Ave E at Main St | 1.55 | 139 |
| 7. | Robinson St at 24th Ave W | 1.53 | 244 |
| 8. | Lindsey St at I-35 | 1.52 | 123 |
| 9. | 12th Ave E at Lindsey St | 1.49 | 156 |
| 10. | Gray St at Santa Fe Ave | 1.47 | 36 |

**Table 4-4**

| | Top Intersections | Crash Rate* | # of Crashes |
|---|---|---|---|
| 11. | Lindsey St at Asp Ave | 1.42 | 98 |
| 12. | SH-9 at 24th Ave W | 1.39 | 216 |
| 13. | Lindsey St at Ed Noble Pkwy | 1.39 | 78 |
| 14. | SH-9 at 12th Ave E | 1.38 | 189 |
| 15. | Lindsey St at McGee Dr | 1.38 | 131 |
| 16. | Robinson St at Rambling Oaks Dr / Crossroads Blvd | 1.36 | 134 |
| 17. | Main St at Ed Noble Pkwy | 1.31 | 143 |
| 18. | Robinson St at Flood Ave | 1.31 | 228 |
| 19. | Main St at Peters Ave | 1.28 | 55 |
| 20. | Gray St at Porter Ave | 1.25 | 75 |

**Intersection crash rate per one million vehicle miles traveled*

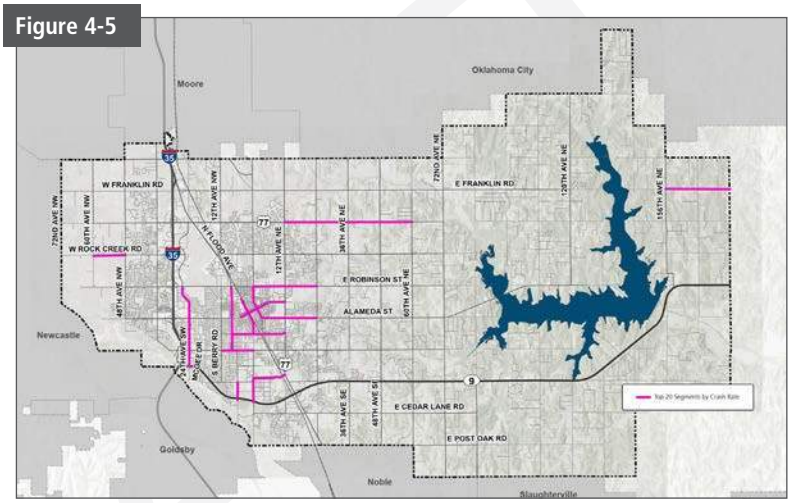
# HISTORICAL SAFETY ANALYSIS
## continued

Route segments were also analyzed and crash rates were calculated for roadway segments between signalized intersections. The top 20 segment locations within The City with the highest crash rates are shown in Table 4-6 below. Comparison to statewide crash rates typical of the facility type was also completed for the segments to understand how significant of a crash problem exists within the route limits. When assessing segment rates, both daily traffic and length of segment are taken into account. As with the intersection crash rate analysis, the segment analysis identified routes within the core of Norman, including Boyd Street, Main Street, Robinson Street, and Flood Avenue, that experienced crash rates much larger than the statewide rate for a similar facility type. A section in rural Norman to the east of Lake Thunderbird along Franklin Road reflects a high crash rate, which can be attributed to a high number of collisions relative to the low traffic volume experienced on this route.

### *HOW IS A SEGMENT CRASH RATE CALCULATED?*

$$\text{Rate} = \frac{100{,}000{,}000 \times \#\text{ of Crashes}}{365\text{ Days} \times \#\text{ of Years} \times \text{Traffic Volume} \times \text{Length of Segment}}$$

**Figure 4-5**




Top 20 Segments by Crash Rate

**Table 4-6**

| | Route: Segment Limits | Distance (Miles) | # of Crashes | AADT | Crash Rate* | Statewide Crash Rate | STW Ratio |
|---|---|---|---|---|---|---|---|
| 1. | Boyd St: Porter Ave to 12th Ave E | 0.73 | 201 | 3,575 | 2,110 | 126 | 16.73 |
| 2. | Flood Ave: Main St to Lindsey St | 1.00 | 203 | 2,814 | 1,976 | 126 | 15.67 |
| 3. | Main St: University Blvd to Porter Rd | 0.57 | 335 | 9,437 | 1,790 | 586 | 2.91 |
| 4. | Main Street: Porter Road to 12th Avenue E | 0.93 | 313 | 5,713 | 1,614 | 284 | 5.68 |
| 5. | Chautauqua Ave: Imhoff Rd to SH-9 | 0.56 | 149 | 5,631 | 1,295 | 62 | 20.97 |
| 6. | Franklin Rd: 156th Ave E to East City Limits | 2.00 | 47 | 580 | 1,110 | 75 | 14.80 |
| 7. | Flood Ave: Robinson St to Main St | 1.00 | 455 | 11,857 | 1,051 | 126 | 8.34 |
| 8. | Jenkins Ave: Constitution St to SH-9 | 0.76 | 159 | 5,669 | 1,011 | 284 | 3.56 |
| 9. | Porter Ave: Robinson St to Alameda St | 1.06 | 615 | 15,750 | 1,009 | 284 | 3.55 |
| 10. | Robinson St: Porter Ave to 12th Ave E | 1.00 | 645 | 18,886 | 936 | 284 | 3.29 |
| 11. | Jenkins Ave: Boyd St to North City Limits | 1.20 | 139 | 3,395 | 935 | 126 | 7.41 |
| 12. | Boyd St: Flood Ave to Porter Ave | 0.95 | 475 | 14,760 | 928 | 284 | 3.27 |
| 13. | Robinson St: 12th Ave E to 24th Ave W | 1.00 | 336 | 9,999 | 921 | 284 | 3.24 |
| 14. | Rock Creek Rd: 60th Ave W to 48th Ave W | 1.00 | 27 | 847 | 873 | 75 | 11.65 |
| 15. | 24th Ave W: Boyd St to SH-9 | 1.00 | 471 | 14,959 | 863 | 284 | 3.04 |
| 16. | Constitution St: Jenkins Ave W to 48th Ave E | 1.00 | 204 | 6,800 | 822 | 126 | 6.52 |
| 17. | Lindsey St: Berry Rd to Jenkins Ave | 1.00 | 560 | 19,299 | 798 | 126 | 6.33 |
| 18. | 24th Ave W: Robinson St to Boyd St | 1.55 | 805 | 18,443 | 772 | 284 | 2.72 |
| 19. | Tecumseh Rd: 12th Ave E to 60th Ave E | 4.00 | 144 | 1,300 | 759 | 75 | 10.12 |
| 20. | Alameda St: Porter Ave to 24th Ave E | 1.72 | 535 | 11,581 | 736 | 284 | 2.59 |

**Segment crash rate per 100 million vehicle miles traveled*

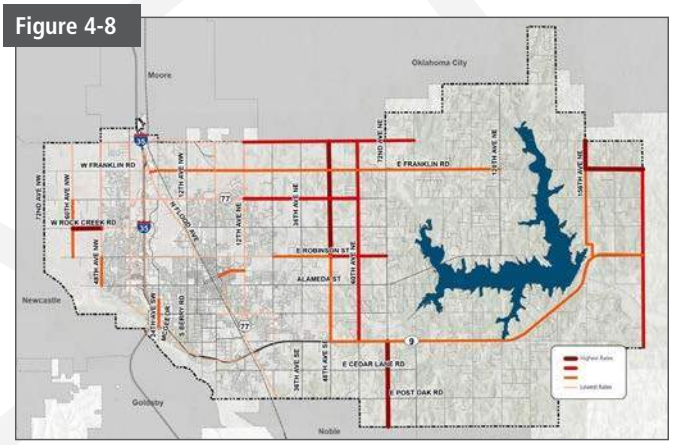
Fatal and Serious Injury collisions were assessed in additional detail to determine segments within The City that experienced a high number of these high severity collision types. Crash rates were calculated along roadway segments within The City and the following key segments were identified in the analysis. Arterials connecting rural and urban Norman produce the highest fatality rates along with those located near city limits. For a majority of the segments, daily volume remains slightly lower compared to other areas but encompasses a longer distance. These segments also typically have higher posted speeds compared to streets closer to center city. Higher vehicle speed, which increases the likelihood that a collision will result in a fatality, when combined with lower volumes can significantly influence the rate. Six of the ten segments that recorded the highest fatal crash rates in Norman also produced the highest rates for serious injury collisions.

**Table 4-7**

| | Route: Segment Limits | Fatal Crash Rate* |
|---|---|---|
| 1. | Rock Creek Rd: 60th Ave W to 48th Ave W | 32.35 |
| 2. | Franklin Rd: 156th Ave E to East City Limits | 23.62 |
| 3. | 48th Ave E: North City Limits to Robinson St | 19.03 |
| 4. | 72nd Ave E: SH-9 to South City Limits | 16.12 |
| 5. | 156th Ave E: North City Limits to Franklin Rd | 14.05 |
| 6. | Robinson St: 48th Ave E to 72nd Ave E | 11.42 |
| 7. | 60th Ave E: North City Limits to SH-9 | 10.87 |
| 8. | Tecumseh Rd: 12th Ave E to 60th Ave E | 10.54 |
| 9. | Indian Hills Rd: 12th Ave E to 84th Ave E | 7.77 |
| 10. | 180th Ave E: Franklin Rd to South City Limits | 6.31 |

**Segment crash rate per 100 million vehicle miles traveled*

**Figure 4-8**



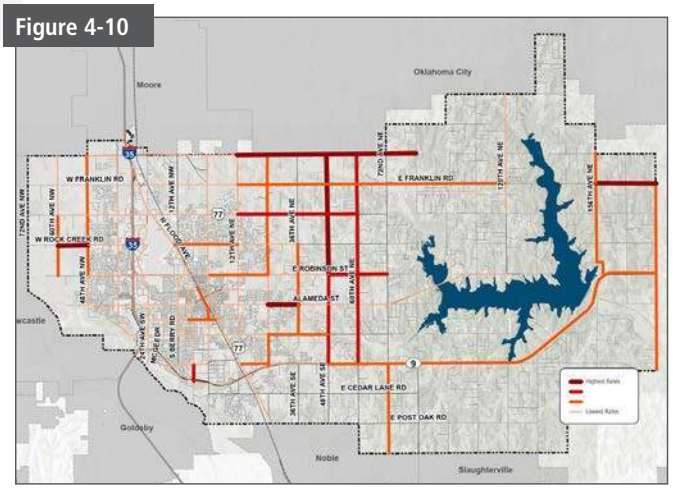

Segments by Fatal Crash Rate

**Table 4-9**

| | Route: Segment Limits | Fatal & Serious Injury Crash Rate* |
|---|---|---|
| 1. | Rock Creek Rd: 60th Ave W to 48th Ave W | 161.73 |
| 2. | Franklin Rd: 156th Ave E to East City Limits | 118.09 |
| 3. | 48th Ave E: North City Limits to Robinson St | 85.62 |
| 4. | Alameda St: 24th Ave E to 36th Ave E | 47.95 |
| 5. | Indian Hills Rd: 12th Ave E to 84th Ave E | 42.71 |
| 6. | Tecumseh Rd: 12th Avenue E to 60th Ave E | 42.15 |
| 7. | 60th Ave E: North City Limits to SH-9 | 41.31 |
| 8. | Chautauqua Ave: Imhoff Rd to SH-9 | 34.75 |
| 9. | 48th Ave E: Robinson St to SH-9 | 34.25 |
| 10. | Rock Creek Rd: Flood Ave to Porter Ave | 34.25 |

**Segment crash rate per 100 million vehicle miles traveled*

**Figure 4-10**




Segments by Fatal & Serious Injury Crash Rate

# HISTORICAL SAFETY ANALYSIS
## continued

Out of the 23,766 collisions that occurred between 2012 and 2021 in Norman, 429 involved pedestrians or bicycles and were analyzed in additional detail. As indicated by Figure 4-11 below, a heavy concentration of these crashes occurred near the core Norman area and the University of Oklahoma.

There are several collisions that occurred along segments of roadway without designated bike facilities, including 12th Avenue E from Classen Boulevard to Robinson Road, southeast of downtown, along Alameda Street from Peters Avenue to 24th Avenue E, and west of downtown near Norman High School on Main Street. Along 24th Avenue south of Alameda Street towards SH-9 also shows multiple pedestrian and bicycle related collisions. Pedestrian facilities are present along the streets listed above and major neighboring intersections are signalized with pedestrian crossings but activity was observed not utilizing the facilities as shown in the image to the right.

While bike trails and designated on-street lanes exist on adjacent segments, collisions appear to occur along gaps in the network.

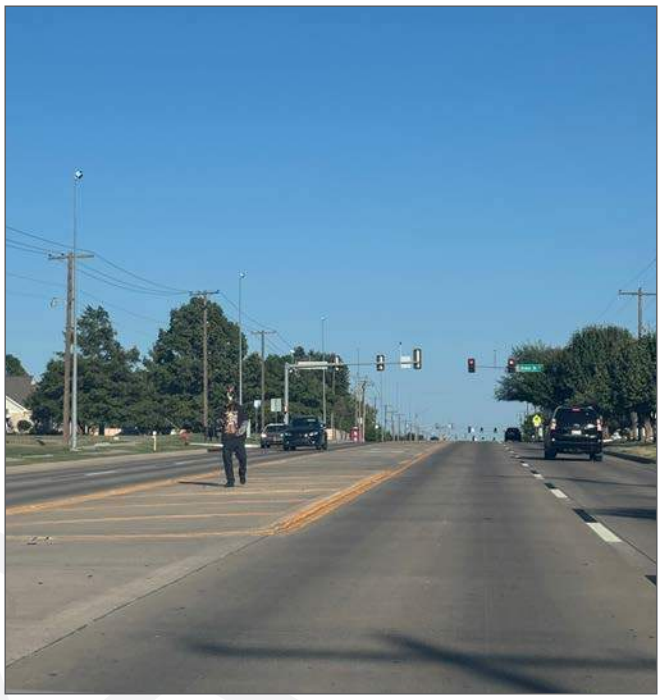
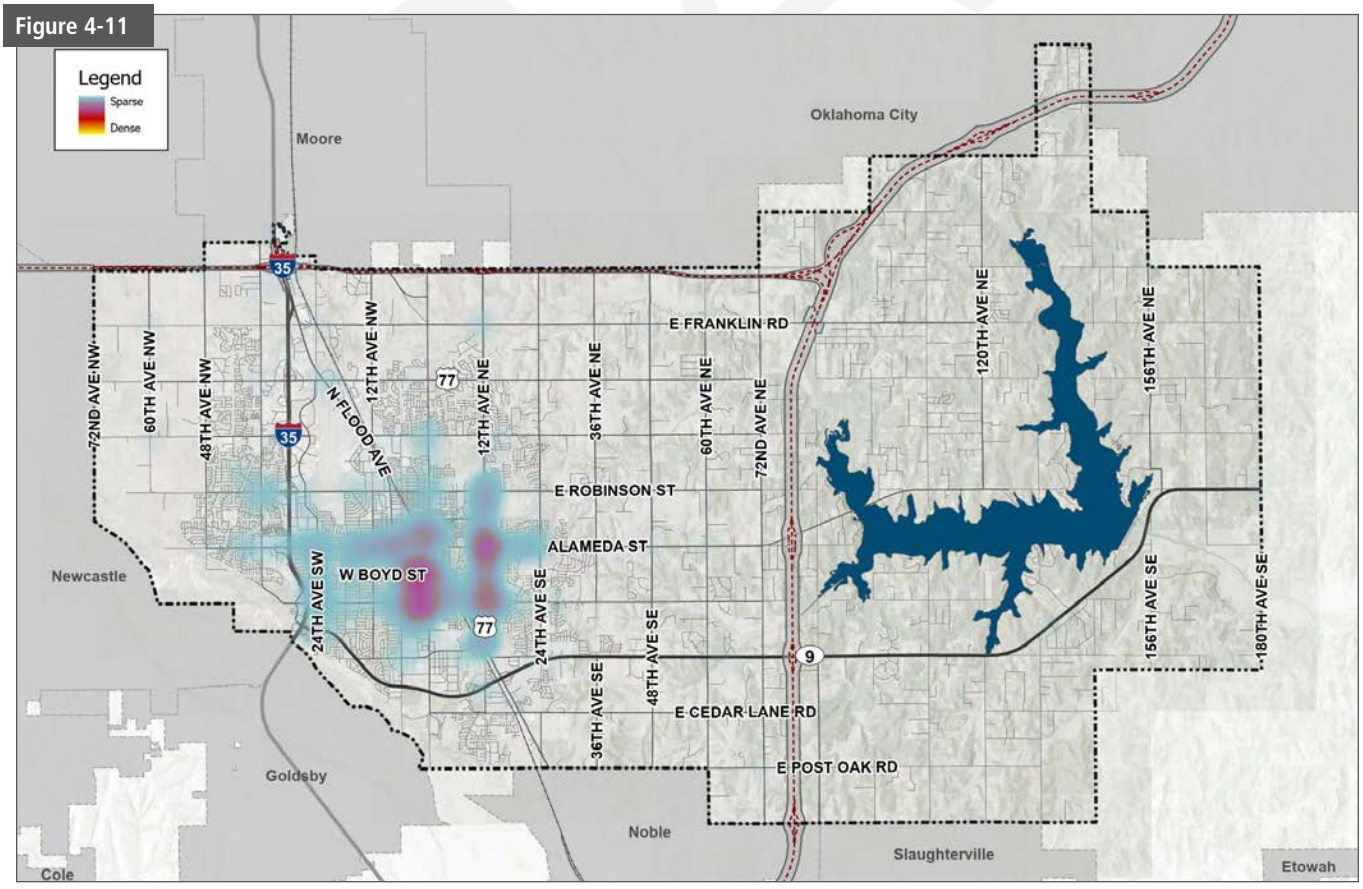


Figure 4-11




Pedestrian & Bike Crash Heatmap

# TRAFFIC VOLUMES

Traffic volumes were collected utilizing average annual daily traffic (AADT) data available through online databases provided by the Oklahoma Department of Transportation (ODOT) and the Association of Central Oklahoma Government (ACOG). Current volumes, as recent as 2023, and historical volumes from 2012 were captured throughout Norman to understand the current demand and the growth experienced since the 2014 CTP was drafted.

A growth trend was calculated for key roadway segments within The City to determine which routes have increased in demand over the last ten years. High growth segments, which have experienced more than 2% annual growth over the past ten years, and moderate growth segments that have grown between 0.5% to 2% volume on the route, are key segments to focus on for Norman investments and future projects to handle the demand increase.

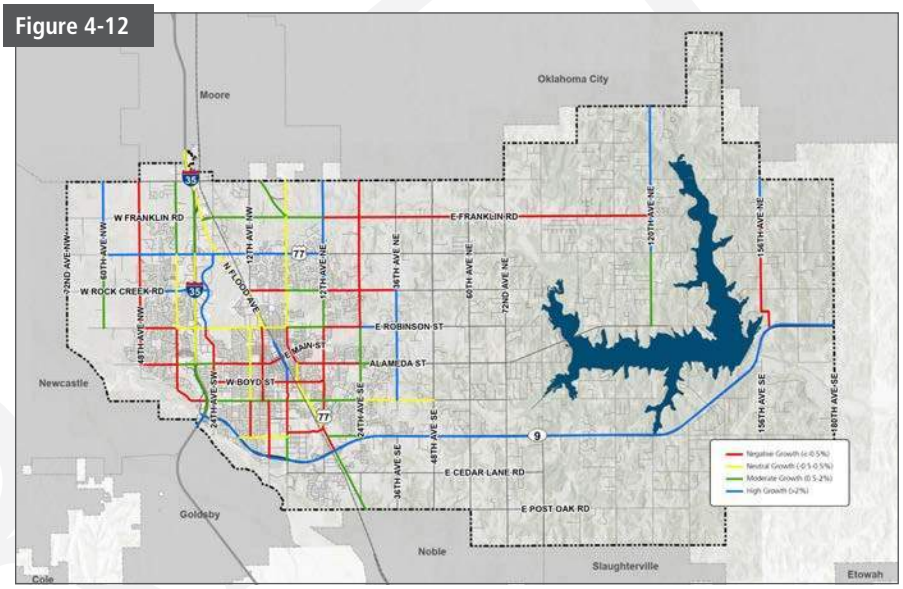
### *HIGH GROWTH ROUTES*

State Highway 9
Tecumseh Road
24th Avenue W
12th Avenue W
36th Avenue W
Rock Creek Road
120th Avenue E
156th Avenue E

### *MODERATE GROWTH ROUTES*

W. Lindsey Street
24th Avenue E
Franklin Road
120th Avenue E
156th Avenue E

Figure 4-12




Historical Growth - Latest 10 Years

Roadway capacity refers to the quantity of traffic that a facility can process before excessive delay and queuing restrict throughput and diminish operations. To simplify the process of describing the traffic congestion on a roadway, traffic engineers typically assign a letter grade corresponding to the Level of Service (LOS) to categorize the operating characteristics of a route. LOS is a concept defined by the Highway Capacity Manual (HCM) to qualitatively describe operating conditions within a traffic stream. LOS is stratified into six categories (A through F). These range from LOS A indicating the highest quality of service to LOS F representing breakdown in traffic flow (LOS D is commonly used as the minimum acceptable standard). Table 4-13 includes a brief description of each LOS grade and the corresponding planning-level volume to capacity (v/c) ratio to gauge the roadway congestion.

Table 4-13

| LOS | Interpretation | v/c Ratio Range |
|---|---|---|
| A | Free flow condition, vehicles act nearly independent to one another. Little to no delay. | 0 - 0.5 |
| B | Similar to LOS A, but drivers have slightly less freedom to maneuver. | 0.5 - 0.65 |
| C | Density becomes more noticeable. Speeds are at or near free flow speed. | 0.65 - 0.75 |
| D | Represents the lower end of stable flow. Typified by increased density and delay, with severely restricted maneuverability. | 0.75 - 0.9 |
| E | Route approaches capacity and few usable gaps exist in the traffic stream. Density increases and traffic flow is unstable. | 0.9 - 1 |
| F | Route has more demand than capacity. Flow is forced and movement within the traffic stream is stop and go. | >1 |

# TRAFFIC VOLUMES
## continued

The daily traffic volumes of the major routes in Norman were compared against LOS E capacity thresholds obtained from ACOG to identify deficiencies within the roadway network. Table 4-14 depicts the ACOG capacities by route type. The capacity thresholds are based on generalized solution sets to HCM procedures and are useful for planning purposes (though lacking parameters such as turning volumes, signal timing and phasing, and queue spillback needed for detailed operational analysis). With capacities established, v/c ratios were determined for the major routes in Norman and compared to the LOS criteria. Historical growth indicates that roadways leading into Norman have v/c ratios that reflect a LOS nearing or exceeding capacity of the facility type.

**Table 4-14**

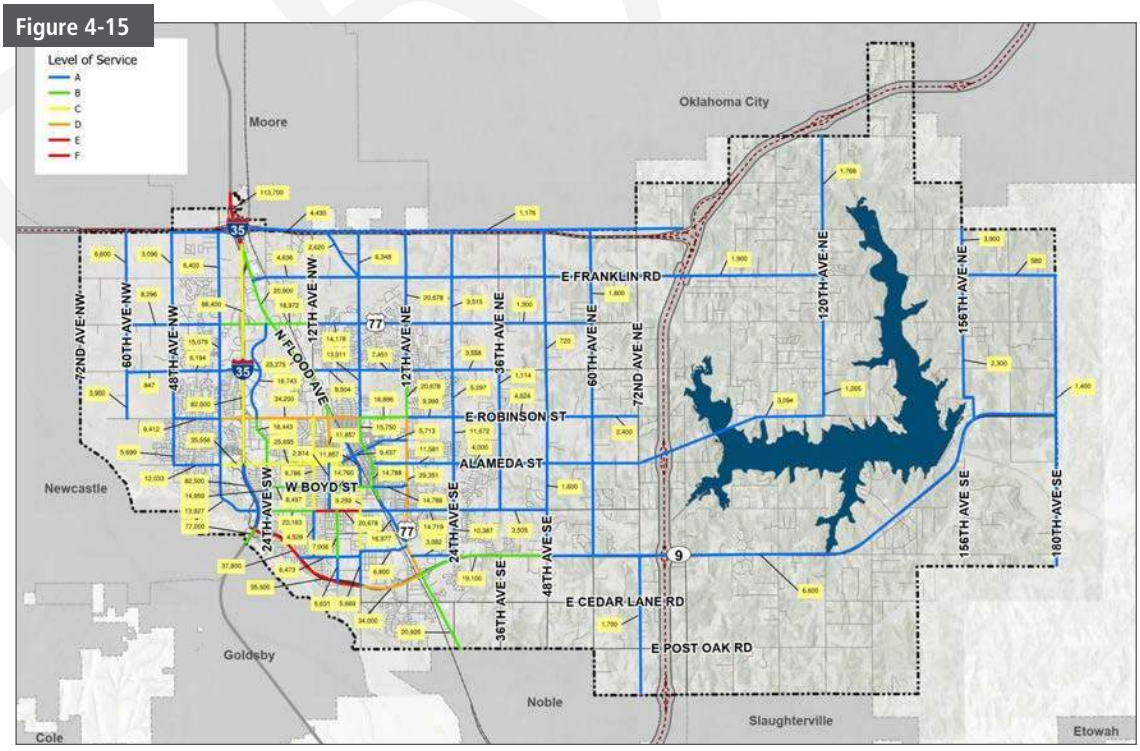
| Route Type | Lanes | | LOS E Capacity (vpd) |
|---|---|---|---|
| Freeways | 4 | - | 80,000 |
| | 6 | - | 125,000 |
| | 8 | - | 165,000 |
| City Arterials | 2 | No Turn Lane[1] | 13,680 |
| | 2 | Turn Lane | 17,100 |
| | 3 | TWLTL[2] | 17,955 |
| | 4 | Undivided | 34,200 |
| | 4 | Undivided; No Turn Lane[1] | 27,360 |
| | 4 | Divided | 38,000 |
| | 5 | TWLTL | 36,000 |
| | 6 | Undivided | 52,300 |
| | 6 | Divided | 58,000 |
| | 1 | - | 11,000 |

*[1]20% reduction applied for no left turn lanes within the corridor*

*[2]5% increase for continuous center left turn lane*

Figure 4-15 reflects the roadway segments in Norman and the associated AADT volumes as compared to the LOS criteria previously described. As shown in the figure, most segments outside of the city's core operate at LOS A when looking at volumes and capacity of the current facilities. A handful of major routes leading into The City and University campus experience LOS D or worse, indicating segments are nearing or over the capacity threshold of the route type. These include portions of SH-9, I-35, Lindsey Street, Robinson Street, and 12th Avenue NE.

**Figure 4-15**

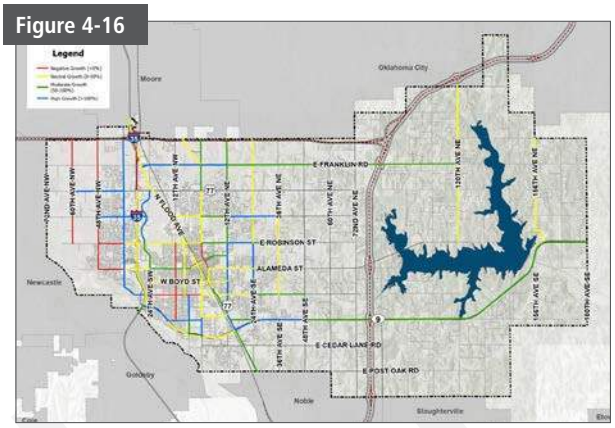



AADT and LOS Map

Future traffic volumes were analyzed to capture an understanding of the growth impact within the City in the future. Historical volumes and growth patterns from the past ten-years, as well as the ACOG Travel Demand Model (TDM), were used to project volumes to the year 2045 along City of Norman routes.

ACOG's TDM is developed to forecast 2045 volumes on Norman streets based on geographical areas, socio-economic data, and land uses with the existing transportation network. Data was evaluated by segment from the TDM, using the 2015 base year and 2045 future year, to examine areas of growth throughout Norman. Figure 4-16 depicts the level of growth the routes are anticipated to experience through the TDM. The model projects arterials connecting the core of Norman to the surrounding areas to undergo the most aggressive growth. Routes incorporated entirely within The City's center, as well as within rural Norman, are shown to grow at a more neutral level. Most notably on this list are 24th Avenue W parallel to I-35, SH-9, 24th Avenue E connecting eastern sections of Norman to the heart of The City, and portions of Franklin Road providing access to east Norman and areas north of Lake Thunderbird.

**Figure 4-16**



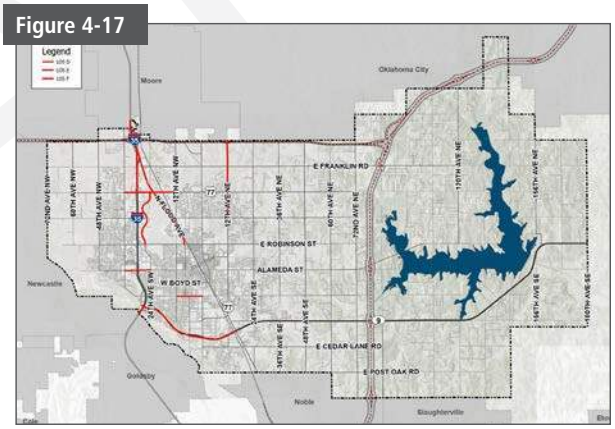

ACOG Travel Demand Model Growth

Historical growth patterns, which account for the traffic volumes collected over a ten-year period, were analyzed to determine routes within Norman that are projected to have v/c ratios that reflect a LOS nearing or exceeding capacity of the current facility type.

As shown in Figure 4-17, ten-year growth trends were analyzed to determine the roadway segments within Norman by the year 2045 that anticipate congested roadway segments, indicating LOS D or worse conditions. These routes include:

- I-35: North City Limits to Tecumseh St
- I-35: SH-9 to South City Limits
- 24th Ave W: Tecumseh St to Robinson St
- Flood Avenue: I-35 to Robinson St
- 12th Ave E: North City Limits to Rock Creek
- Tecumseh St: 36th Ave W to 12th Ave W
- Main St: 36th Ave W to 24th Ave W
- Lindsey St: Berry Rd to Jenkins Ave
- SH-9: I-35 to Classen Blvd

**Figure 4-17**

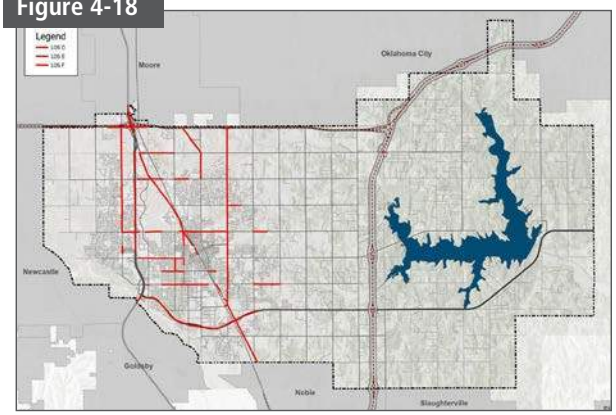



Future Segments (LOS D-F), Historical Volumes

Figure 4-18 reflects the segments within the City of Norman that are projected to experience LOS D or worse conditions based on the TDM growth projections from 2015 to 2045. As can be seen in the map, additional routes are projected to exceed v/c capacity thresholds of the current facility type by the year 2045 when analyzed by the model. These routes include:

- 12th Ave E: entirety
- 36th Ave W: Indian Hills Rd to Robinson St
- I-35: Franklin Rd to Main St
- Franklin Rd: Flood Ave to 12th Ave E
- Broadway Ave: Porter to Tecumseh St
- Robinson St: 36th Ave W to 12th Ave E
- Flood Avenue: I-35 to Acres St
- Main St: I-35 to Flood Ave
- Indian Hills Rd: west of 36th Ave W to 24th Ave W
- Boyd St: 12th Ave E to Flood
- SH-9: I-35 to east of Classen

**Figure 4-18**




Future Segments (LOS D-F), ACOG TDM

# TRAFFIC SIGNALS

Traffic signals control the flow of traffic at intersections, reduce crashes by clearly assigning right-of-way to different vehicles and pedestrians, while also improving traffic efficiency by managing the timing of different traffic streams at an intersection.

The City currently maintains approximately 150 signalized intersections, which includes updating timing elements (splits, cycle lengths, and clearance intervals), maintaining all field devices, and remaining current with necessary hardware (detection methods, communication systems, and pedestrian and vehicle signal heads). At higher levels of the functional classification system, mobility is favored over providing local access to adjacent land uses. Relatively high travel speeds are expected from arterial type routes though many impediments exist that reduce travel speed and increase the probability of stopping (and crashes). These impediments include the number and spacing of traffic signals, inefficient signal timings, a high number of access points, a lack of turn lanes or median presence, and poor geometrics. As a basic measure of functionality, the number of signalized intersections and access points on The City's most heavily traveled arterial routes were measured on a per mile basis (refer to Figure 4-21 and Table 4-22).

Though necessary to allow safe and equitable travel flow, signalized intersections limit capacity along a corridor due to the allocation of green time to competing movements and the presence of signalized intersections can cause an increase in vehicle crashes due to additional stops. Likewise, the cumulative effect of multiple unsignalized access points reduces capacity (and increases crash probability) due to the slowing of vehicles to either complete turns or allow entering vehicles to join the traffic stream. Tables 4-19 and Table 4-20 depict information on signal and access point density gathered from FHWA, the HCM, and the National Cooperative Highway Research Program (NCHRP) Report 420. As shown, as traffic signal and access point density rise on arterials, mobility deteriorates and crashes tend to increase.

Based on Tables 4-19 and Table 4-20, multiple segments appear to be influenced by signal and driveway density. Sections along Porter Avenue, Classen Boulevard, and Lindsey Street exceed 70 driveways and four signals per mile. Overall signal density on Lindsey Street of 5.2 per mile appears to be influenced by pedestrian crossing signals at the University of Oklahoma.

**Table 4-19** SIGNAL DENSITY INFLUENCE ON TRAVEL TIME AND CRASH RATE

| Signals/ Mile | Increase in Travel Time (%) | Crashes per Million Vehicle Miles Traveled |
|---|---|---|
| 2 | - | 3.53 |
| 3 | 9 | 6.89 |
| 4 | 16 | 6.89 |
| 5 | 23 | 7.49 |
| 6 | 29 | 7.49 |
| 7 | 34 | 9.11 |
| 8 | 39 | 9.11 |

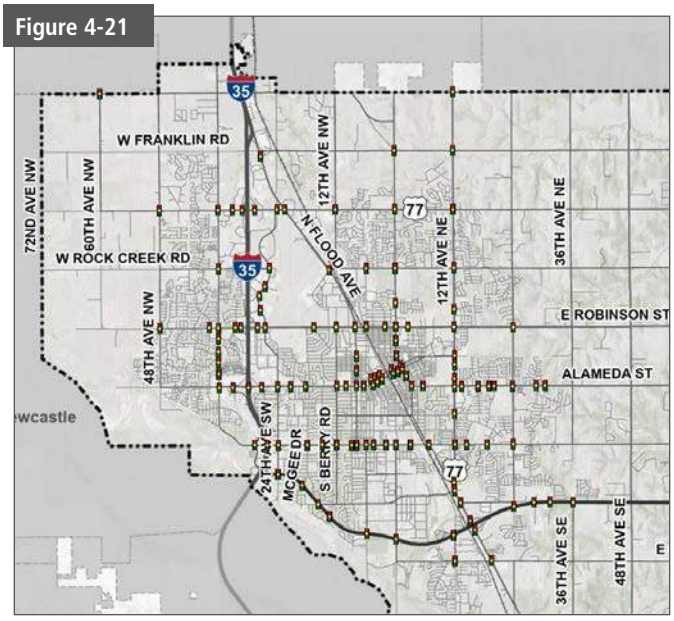
Source: FHWA Access Management Brochure and NCHRP Report 420

**Table 4-20** ACCESS POINT DENSITY INFLUENCE ON FREE FLOW SPEED AND CRASH RATE

| Access Points per Mile (Bi-Directional) | Reduction in Free-Flow Speed (mph) | Crash Rate Index |
|---|---|---|
| 0 | 0 | 1 |
| 20 | 2.5 | 1.4 |
| 40 | 5 | 2.1 |
| 60 | 7.5 | 3 |
| 80 or More | 10 | 3.5 |
| 7 | 34 | 9.11 |

Source: Highway Capacity Manual and NCHRP Report 420

**Figure 4-21**




Traffic Signal Locations

Table 4-22

## SIGNALIZED INTERSECTIONS AND ACCESS POINTS PER MILE (ARTERIAL ROUTES)

| Route | Segment | Distance | Signals | Signals/Mile | Driveways | Driveways/Mile |
|---|---|---|---|---|---|---|
| SH-9 | I-35 to S Jenkins Rd | 2.5 | 6 | 2.4 | 12 | 4.8 |
| | S Jenkins Rd to 24th Ave E | 2.2 | 3 | 1.4 | 12 | 5.5 |
| | **TOTAL** | **4.7** | **9** | **1.9** | **24** | **5.1** |
| LINDSEY ST | Ed Noble Pkwy to S Berry Rd | 1.4 | 6 | 4.3 | 100 | 71.4 |
| | S Berry Rd to Chautauqua Ave | 0.5 | 4 | 8.0 | 41 | 82.0 |
| | Chautauqua Ave to Classen Blvd | 1.1 | 9 | 8.2 | 34 | 30.9 |
| | Classen Blvd to 24th Ave E | 1.4 | 4 | 2.9 | 74 | 52.9 |
| | **TOTAL** | **4.4** | **23** | **5.2** | **249** | **56.6** |
| MAIN ST | 48th Ave W to 36th Ave W | 1 | 1 | 1.0 | 30 | 30.0 |
| | 36th Ave W to 24th Ave W | 1 | 5 | 5.0 | 33 | 33.0 |
| | 24th Ave W to University Blvd | 1.6 | 7 | 4.4 | 102 | 63.8 |
| | University Blvd to Porter Ave | 0.6 | 6 | 10.0 | 25 | 41.7 |
| | **TOTAL** | **4.2** | **19** | **4.5** | **190** | **45.2** |
| ROBINSON ST | 48th Ave W to 36th Ave W | 1 | 3 | 3.0 | 28 | 28.0 |
| | 36th Ave W to 24th Ave W | 0.8 | 5 | 6.3 | 18 | 22.5 |
| | 24th Ave W to Porter Ave | 2.2 | 6 | 2.7 | 49 | 22.3 |
| | Porter Ave to 24th Ave E | 2 | 4 | 2.0 | 64 | 32.0 |
| | **TOTAL** | **6** | **18** | **3.0** | **159** | **26.5** |
| 24TH AVE W | Tecumseh Rd to Robinson St | 2.3 | 8 | 3.5 | 38 | 16.5 |
| | Robinson St to SH-9 | 2.6 | 9 | 3.5 | 155 | 59.6 |
| | **TOTAL** | **4.9** | **17** | **3.5** | **193** | **39.4** |
| 12TH AVE E | Tecumseh Rd to Robinson St | 2 | 5 | 2.5 | 37 | 18.5 |
| | Robinson St to Alameda St | 1 | 5 | 5.0 | 32 | 32.0 |
| | Alameda St to Classen Blvd | 1.7 | 4 | 2.4 | 45 | 26.5 |
| | Classen Blvd to SH-9 | 0.9 | 4 | 4.4 | 29 | 32.2 |
| | **TOTAL** | **5.6** | **18** | **3.2** | **143** | **25.5** |
| PORTER AVE/ CLASSEN BLVD | Tecumseh Rd to Robinson St | 2 | 4 | 2.0 | 70 | 35.0 |
| | Robinson St to Alameda St | 1.1 | 7 | 6.4 | 82 | 74.5 |
| | Alameda St to Lindsey St | 1.1 | 5 | 4.5 | 92 | 83.6 |
| | Lindsey St to 12th Ave | 0.9 | 2 | 2.2 | 27 | 30.0 |
| | **TOTAL** | **5.1** | **18** | **3.5** | **271** | **53.1** |
| FLOOD AVE | I-35 to Robinson Ave | 3.6 | 4 | 1.1 | 47 | 13.1 |
| | **TOTAL** | **3.6** | **4** | **1.1** | **47** | **13.1** |
| TECUMSEH RD | 48th Ave W to 36th Ave W | 1 | 2 | 2.0 | 33 | 33.0 |
| | 36th Ave W to 12th Ave W | 2 | 7 | 3.5 | 38 | 19.0 |
| | 12th Ave W to 12th Ave E | 2 | 3 | 1.5 | 25 | 12.5 |
| | **TOTAL** | **5** | **12** | **2.4** | **96** | **19.2** |

# OPERATIONAL ANALYSIS

The quality of operations at intersections in Norman were evaluated in terms of LOS. LOS is a concept defined by the HCM to qualitatively describe operating conditions within a traffic stream. LOS is typically stratified into six categories (A through F). These range from LOS A indicating free-flow, low density, or nearly negligible delay conditions to LOS F where demand exceeds capacity and large queues are experienced.

Synchro Studio™ v12.2 software was used to determine the expected LOS using a procedure consistent with the equation-based HCM methodology. In addition,

micro-simulation was used to analyze arterial operations via SimTraffic, the companion software to Synchro, to supplement some of the shortcomings of the HCM procedure. For unsignalized and signalized intersections, the HCM uses control delay for the basis of determining LOS. Control delay at an intersection is the average stopped time per vehicle traveling through the intersection plus the slower movements caused by vehicles queuing or decelerating upstream of the approach. The LOS thresholds defined by HCM 7th Edition (page 905 for signalized intersections, pages 994 and 1085 for unsignalized intersections) are shown Table 4-23 below.

**Table 4-23**

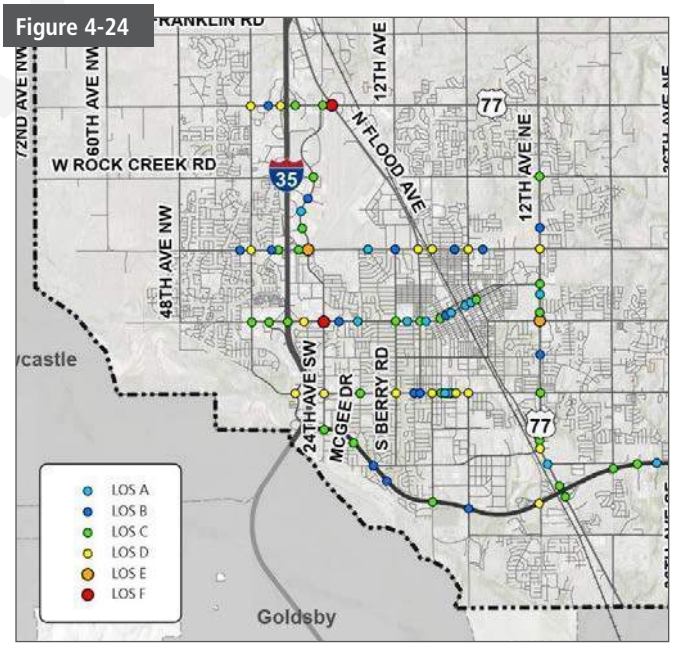
| Level of Service | Description | Control Delay Range (Sec/Veh) | |
|---|---|---|---|
| | | Unsignalized | Signalized |
| A | Most vehicles do not stop | 0 to 10 | 0 to 10 |
| B | Some vehicles stop | >10 to 15 | >10 to 20 |
| C | Significant number of stops | >15 to 25 | >20 to 35 |
| D | Many stop, individual cycle failure | >25 to 35 | >35 to 50 |
| E | Frequent individual cycle failure | >35 to 50 | >55 to 80 |
| F | Arrival exceeds capacity | >50 | >80 |

Using City signal timings and the current traffic volumes, LOS was calculated via microsimulation for multiple signalized intersections within Norman. As depicted in the map to the right, intersections with LOS E or F conditions are along 24th Avenue W and the intersection of 12th Avenue E and Alameda Street.

Traffic entering the City via I-35 from the north appears to create a pattern of delay along segments between the interstate and the heart of Norman. Intersections with high delay today include Flood Avenue at Tecumseh Road, 24th Avenue W at Main Street, 24th Avenue W at Robinson Street, and 12th Avenue E at Alameda Street.

When considering and anticipating future growth within Norman, intersections that currently experience moderate delay will worsen as volumes increase provided no adjustments are made at the intersection. Signalized intersections along Tecumseh Road, Robinson Street, and Lindsey Street currently operate with LOS D conditions, which is considered the minimum acceptable LOS threshold.

**Figure 4-24**




Intersection Level of Service (LOS)

# FUTURE RECOMMENDATIONS

Through a review of the latest traffic data available throughout the City of Norman, the following recommendations are related to traffic safety and operations. Policy recommendations and future traffic studies are provided below for consideration in Norman. The traffic studies included in Table 4-25 below were identified and prioritized based on potential future needs of The City and AIM Norman Guiding Principles.

## POLICY RECOMMENDATIONS

1. Utilize regional Safety Action Plan for safety improvements for all modes of travel
2. Develop a policy to apply for grant funding when available and applicable
3. Policy for uniform signage on bike paths
4. Develop a roundabout policy to identify best locations and ensure safe travel for all users
5. Adopt a Safe Routes to School policy

**Table 4-25**

**FUTURE STUDIES**

| Project Location | Details |
|---|---|
| Citywide | Conduct citywide safety study for pedestrian/bicycle improvements |
| Boyd St | Conduct safety study for pedestrian/bicycle improvements |
| 12th Ave E | Conduct safety study for pedestrian/bicycle improvements |
| Main St | Conduct safety study for pedestrian/bicycle improvements |
| East Norman | Conduct safety assessment for rural countermeasures |
| 36th Ave E | Multi-modal capacity analysis |
| 48th Ave E | Multi-modal capacity analysis |
| Citywide | Conduct citywide speed studies on routes adjacent to schools |
| Porter Ave @ Franklin Rd | Study potential innovative intersection configurations |
| Classen Blvd @ Constitution St | Study potential innovative intersection configurations |
| 12th Ave E | Conduct access management study |
| Cedar Lane @ 12th Ave E | Perform roundabout study |
| East Norman | Perform roundabout study at arterial intersections |
| Alameda St @ Crawford Ave/Apache St | Conduct intersection study for alignment improvements |
| SH-9 @ Berry Rd | Study a restricted crossing U-Turn (RCUT) installation |
| Alameda St | Conduct a study for lane configuration |
| Flood Ave | Perform a study for 3-lane configuration |
| 24th Ave W @ Flood Ave | Study a potential bypass for University North Park area |
| Webster Ave | Perform a study for one-way conversion |
| University Blvd | Perform a study for one-way conversion |

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# ROADWAYS

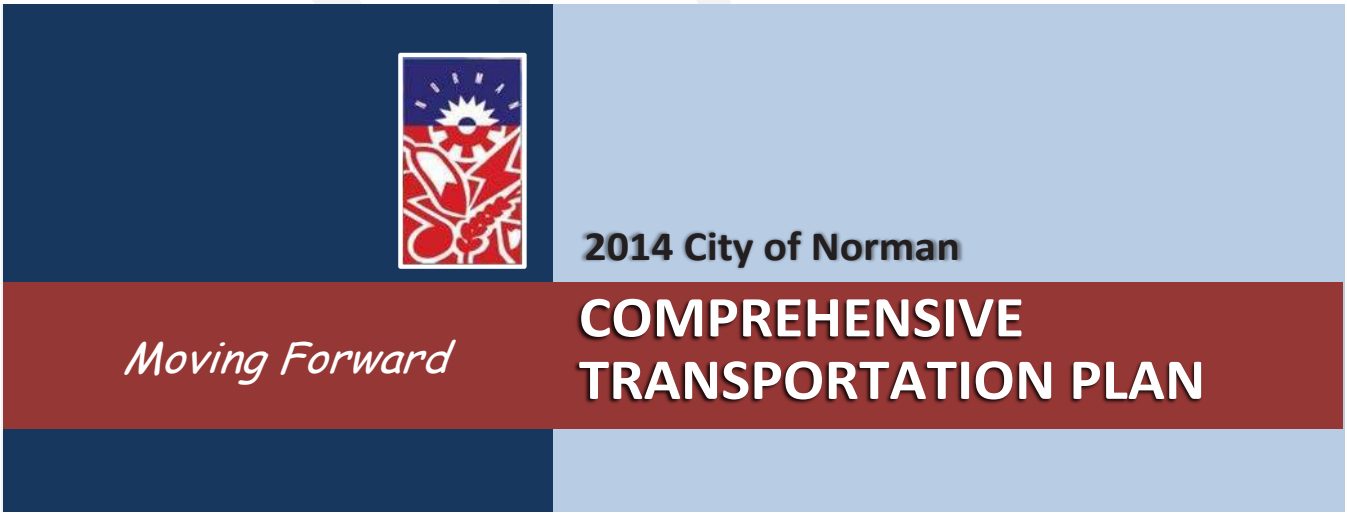
# OVERVIEW

## OVERVIEW

This plan section largely constitutes an update of the 2014 Comprehensive Transportation Plan. That plan is included as an appendix to this updated plan and may be used for reference.

### KEY UPDATES OF THE 2025 CTP INCLUDE:

- Updated and overhauled Transportation Plan Map to correspond to land use changes anticipated through the planning horizon of AIM Norman. This also includes a more robust planned collector network for the areas where new development is anticipated across the city.
- Updated street cross sections to provide additional alternatives for the incorporation of bicycle and pedestrian infrastructure based on changes in the state of practice since 2014.
- Updated referenced design guidelines based on new and updated design guidelines manuals that reflect a more context sensitive and complete streets oriented design philosophy.
- Addition of East Alameda St as a special corridor for future improvements as a new eastern gateway with multi-modal elements safely connecting downtown with one of Norman's most valued recreational asset, Lake Thunderbird
- Updated recommendations for access management including consideration of access management along the proposed collector street network and recommendations for development of Corridor Access Management Plans for several key corridors.
- Updated project recommendations for future roadway projects.
- Acknowledge the ACCESS Oklahoma planned turnpikes will have an impact on Norman's existing transportation system and planned land use development. Although this CTP Update recommends several new multi-modal transportation improvements, their desired results are not intended to support ACCESS Oklahoma's planned projects.



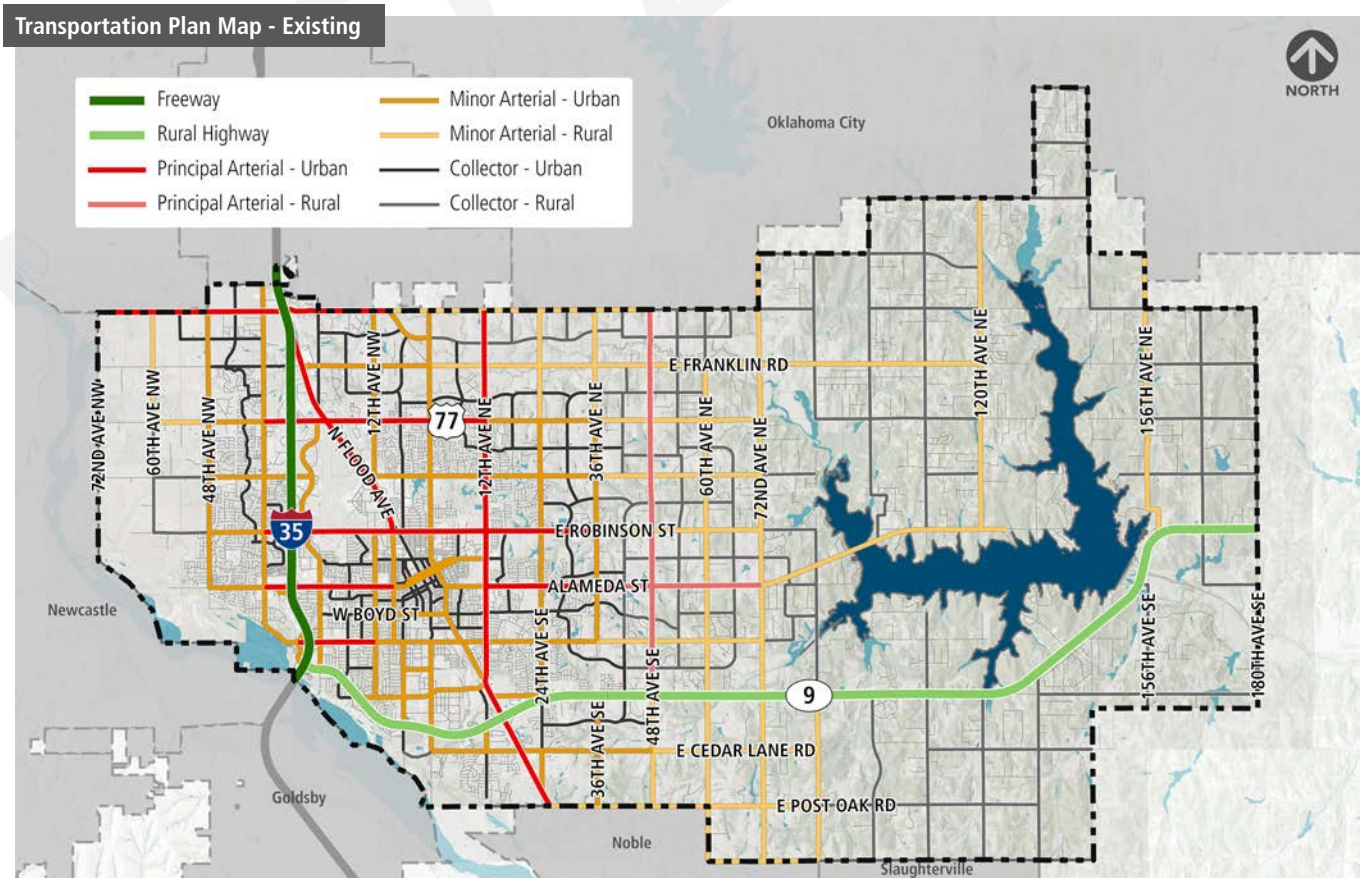
# EXISTING CONDITIONS

Since the adoption of the 2014 Comprehensive Transportation Plan (CTP), numerous changes have occurred. Between 2010 and 2020, the City of Norman population grew by 15.4% to reach 128,026 residents. By 2045, The City's population is projected to eclipse 185,000.

Numerous capital investments in The City's transportation system have been made with the passage of The City's 2019 Transportation Bonds, which will end in 2030. Example projects include James Garner Avenue Extension that provided for a direct connection from Flood Avenue north of Robinson Street to James Garner Avenue into downtown, bypassing much of the existing traffic on Flood Avenue. Another project includes the Porter Avenue streetscape improvements from Alameda Street to Robinson Street, which provided a welcomed refresh to the corridor including decorative sidewalks and lighting.

However, implementation of the CTP continues, including the Transportation Plan Map (below).

**Transportation Plan Map - Existing**



# TRANSPORTATION SYSTEM PLAN

The Transportation Plan Map establishes the locally designated classification system for existing and proposed roads and works in conjunction with the Active Transportation Plan Map, which establishes the proposed location of bicycle/pedestrian transportation elements beyond sidewalks. The classifications indicated on the Transportation Plan Map relate to the Functional Classification and Cross Sections contained in this chapter, which establish the standards for right-of-way and improvements related to each type of roadway.

A chief function of the Transportation Plan Map is its relationship to the 2025 Land Use Plan and the Norman Subdivision Regulations. Those regulations provide for the implementation of The Plan by means of private development, serving as a complement to The City's capital investments. Specifically, Section 30-410 relates design in the development process to The Plan requiring streets in new development to "*conform to all of the elements of the City's Transportation Plan*" with regard to "*arrangement, character, extent, width, grade, and location*".

This plan continues and expands upon the shift in approach to transportation planning seen in the 2014 Comprehensive Transportation Plan that placed greater emphasis on development of a meaningful collector road network. This change and a number of other significant changes are reflected on the map below.

Significant changes to The Plan are further detailed in Table 5-1 on the following page.

**Transportation Plan Map**

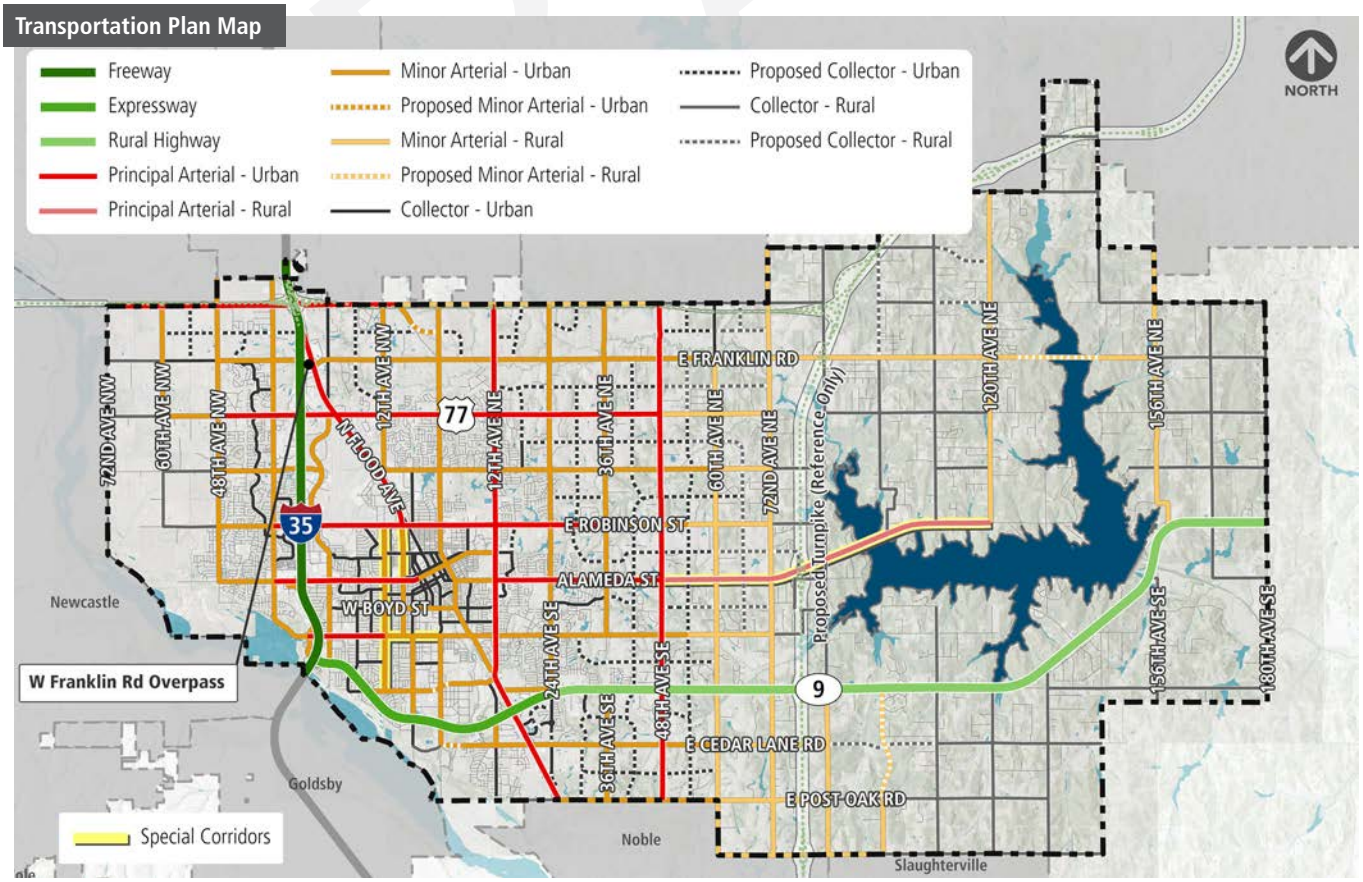
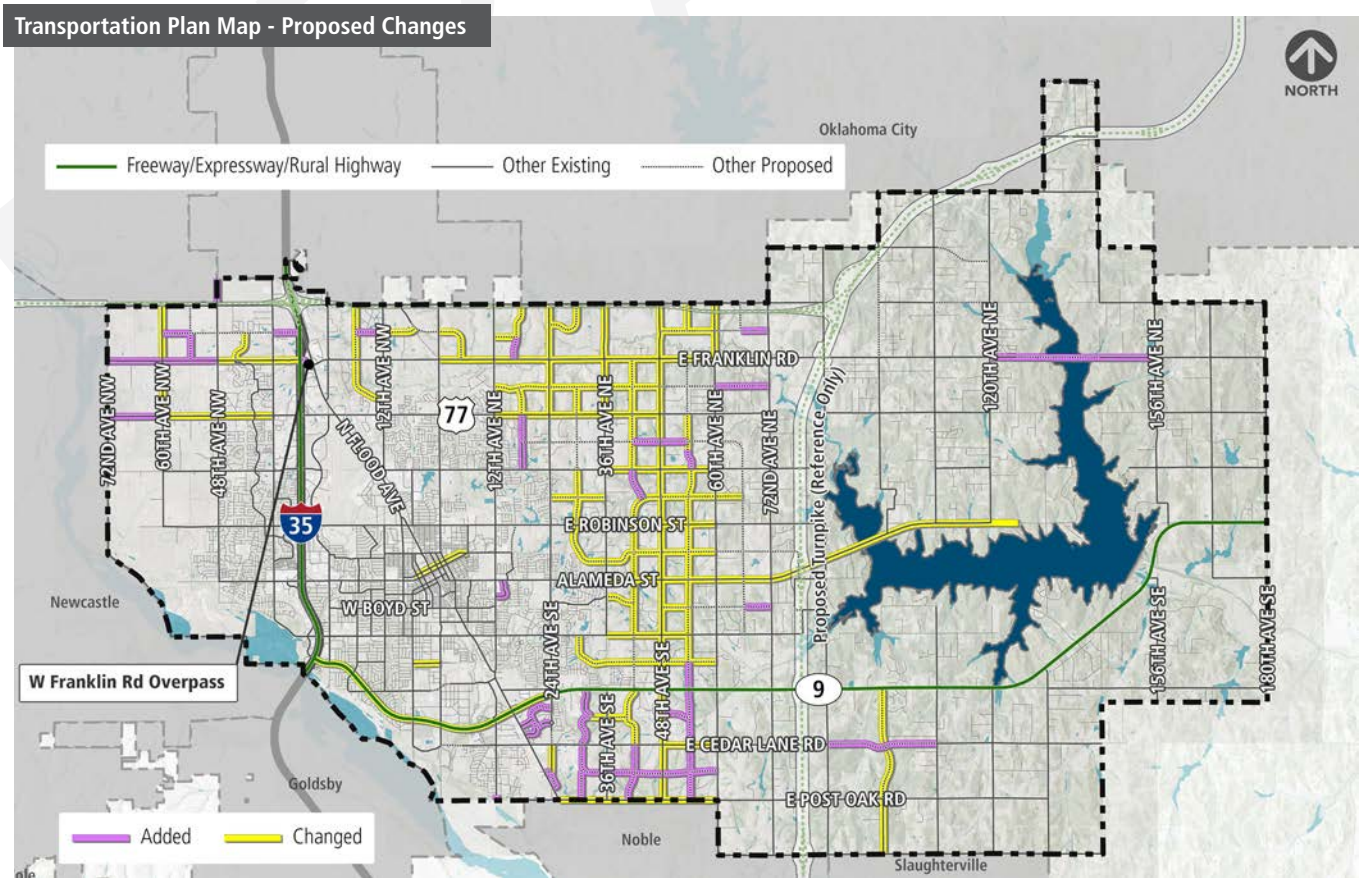


**Table 5-1**

| Segment | New Classification | Previous Classification |
|---|---|---|
| 60th Ave NW from Indian Hills Rd to W Tecumseh Rd | Minor Arterial - Urban | Minor Arterial - Rural |
| W Tecumseh Rd from 60th Ave NW to 48th Ave NW | Minor Arterial - Urban | Minor Arterial - Rural |
| W Tecumseh Road from 48th Ave NW to 36th Ave NW | Principal Arterial - Urban | Minor Arterial - Urban |
| W Franklin Rd from N Flood Ave to Interstate Dr | Minor Arterial - Urban | N/A |
| Franklin Rd from N Porter Ave to 60th Ave NE | Minor Arterial - Urban | Minor Arterial - Rural |
| 24th Ave NE from Tecumseh Rd to Indian Hills Rd | Minor Arterial - Urban | Minor Arterial - Rural |
| 36th Ave NE from Tecumseh Rd to Indian Hills Rd | Minor Arterial - Urban | Minor Arterial - Rural |
| 48th Ave E north of SH-9 | Principal Arterial - Urban | Principal Arterial - Rural |
| 48th Ave E south of SH-9 | Principal Arterial - Urban | Minor Arterial - Rural |
| E Tecumseh Rd from 12th Ave NE to 36th Ave NE | Principal Arterial - Urban | Minor Arterial - Urban |
| E Tecumseh Rd from 36th Ave NE to 48th Ave NE | Principal Arterial - Urban | Minor Arterial - Rural |
| E Robinson St from 36th Ave NE to future 54th Ave NE | Minor Arterial - Urban | Minor Arterial - Rural |
| Alameda St from 36th Ave SE to 72nd Ave SE | Principal Arterial - Urban Special Corridor | Principal Arterial - Rural |
| Alameda St from 36th Ave SE to 120th Ave NE | Principal Arterial - Urban Special Corridor | Minor Arterial - Rural |
| E Lindsey St from 36th Ave SE to future 54th Ave SE | Minor Arterial - Urban | Minor Arterial - Rural |
| E Cedar Lane Rd from 48th Ave SE to 60th Ave SE | Minor Arterial - Urban | Minor Arterial - Rural |
| E Post Oak Rd from Classen Blvd to 60th Ave SE | Minor Arterial - Urban | Minor Arterial - Rural |
| 96th Ave SE from SH-9 to E Etowah Rd | Minor Arterial - Rural | Collector - Rural |
| SH-9 from I-35 to 24th Ave SE | Expressway | Rural Highway |

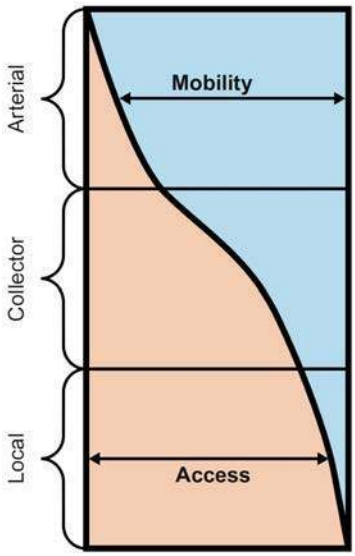
**Transportation Plan Map - Proposed Changes**



# FUNCTIONAL CLASSIFICATION AND CROSS SECTIONS

The following functional classification and cross sections are provided to govern the construction of street and bicycle/pedestrian facilities by the City of Norman and through private resources by developers. The functional classification and cross sections work in tandem with the Norman Subdivision Regulations, Norman Engineering Design Criteria, and Norman Standard Specifications and Construction Drawings, all of which are officially adopted as city ordinances.

The application of the functional classification and cross section is meant to applied in a manner that acknowledges the street's relationship to the surrounding built environment. Context sensitive design approaches should be implemented upon direction of the City Engineer. A typical street cross section may from block to block, without altering the functional classification on the Transportation Plan Map. Additionally, the functional classification of a street may change from one major intersection to the next depending on the collection zone of that street segment.




The role of transportation facilities vary by type and overall the system should function like a circulatory system rather than a direct hierarchy. By their nature freeways and arterials allow for the highest throughput of traffic and providing mobility. As such, limitations and management of access are highly necessary. Conversely, local streets function best in providing access to adjacent property with little focus on throughput.

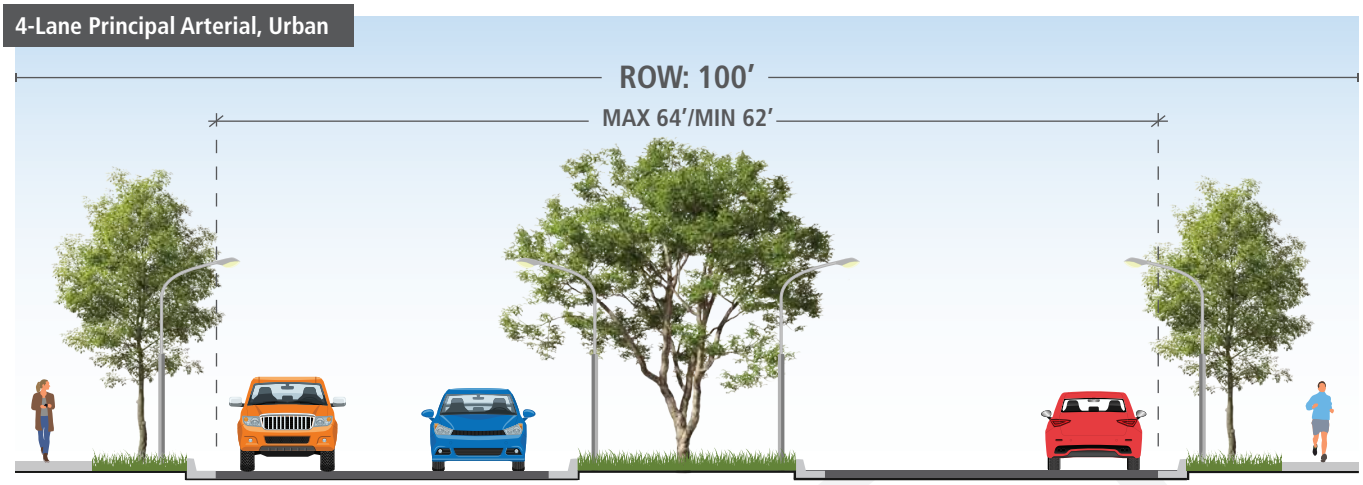
## STREET TYPES

The following street types form the functional classification:

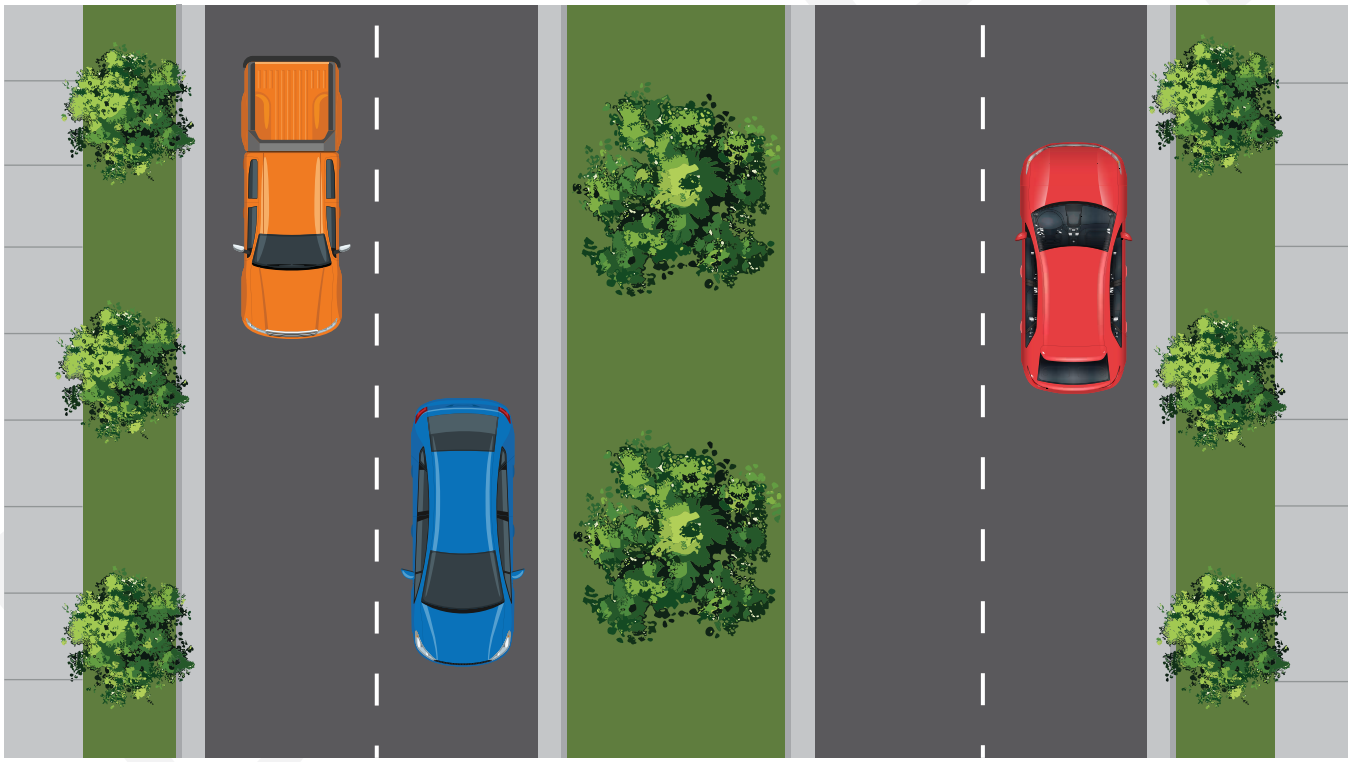
- **Expressways.** Expressways are designed to carry large volumes of traffic for long distances and through urban areas at high speeds. To achieve this, access is typically controlled or partially controlled with access ramps and/or medians.
- **Freeways.** The freeway network includes the interstate, US, State, and Turnpike Highway roadways controlled by the state DOT and Oklahoma Turnpike Authority. Limited access roadways are those that control access to the facility at designated locations, typically at other freeways and arterial streets. The City of Norman does not maintain or directly control these roadways.
- **Principal Arterials.** Principal arterial roadways carry traffic across major segments of the city, with a primary function of throughput, rather than access. Driveway access onto principal arterials is often limited by spacing requirements, and parking along arterial roadways is typically prohibited. Some US or State Highways may be designated as principal arterials.
- **Minor Arterials.** Minor Arterial roadways also carry traffic across major segments of the city, with a primary function of throughput, rather than access. Driveway access onto minor arterials is not as constrained as on principal arterials. Parking along minor arterial roadways is typically strong discouraged unless the local context is supportive. US or State Highways are rarely designated as minor arterials.
- **Collectors.** The function of collector roadways is to primarily serve as a conduit between local roadways and the network of arterial streets, but may also function to carry traffic longer distances similar to arterials. Collector streets are differentiated from arterials streets by their typical length and degree of access to adjacent development. Collector streets often span short distances between arterial roadway, but may extend further to serve as an alternative to arterial roadways. Driveway access onto collector roadways is seldom limited and parking along collectors is often allowed, consistent with adjacent land use. Collector roadways are often good candidate streets for accommodating bicycles.
- **Local Streets.** Local streets have the lowest speed and carrying capacity, and filter traffic to collector and arterial streets. Local streets also are primarily designed to permit access to abutting property and have very limited capacity with slow speeds. Parking is typical unless local land use or the nature of the facility precludes it.

# PRINCIPAL ARTERIAL, URBAN

**4-Lane Principal Arterial, Urban**




| SIDEWALK/ SIDE PATH | GREENSPACE | TRAVEL LANE | TRAVEL LANE | RAISED LANDSCAPED MEDIAN | TRAVEL LANE | TRAVEL LANE | GREENSPACE | SIDEWALK/ SIDE PATH |
|---|---|---|---|---|---|---|---|---|
| 5'-12' | 6'-12' | 12' | 12' | 14'-16' | 12' | 12 ' | 6'-12' | 5'-12' |



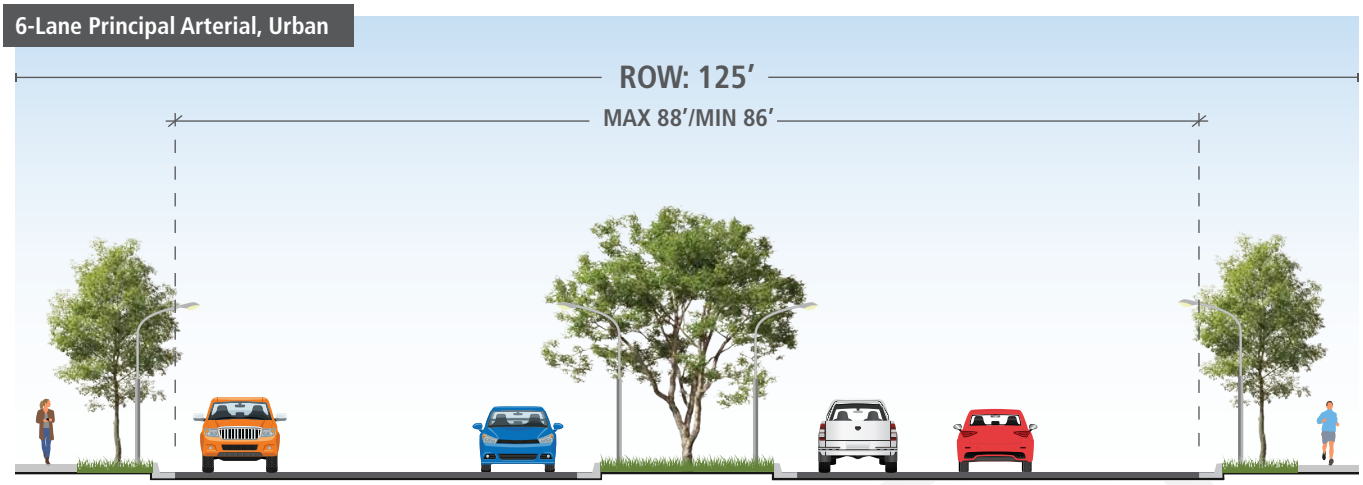
4-Lane Principal Arterial (Urban) with Raised Landscape Median

## ELEMENTS

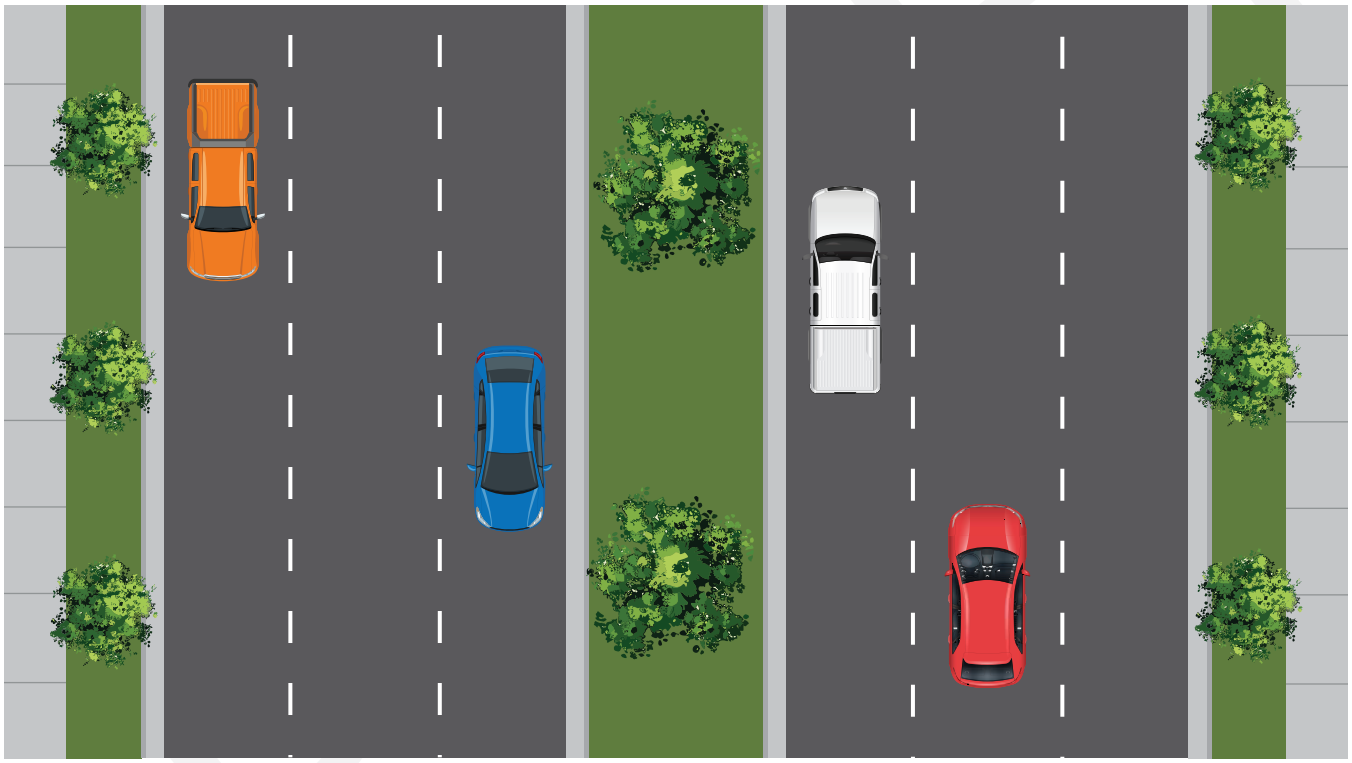
- **Right-of-way.** All required design elements must be included in the cross section and located on publicly owned ROW. Sidewalks or side paths may be located on permanent dedicated easements. The right-of-way must be sufficient to accommodate planned lanes for the roadway.
- **Transit.** Norman Parking and Transit should be consulted on necessary transit accommodations along existing and planned transit routes.
- **Pedestrian Crossings.** Pedestrian refuge islands and other techniques may be required by the City Engineer when a pedestrian must cross more than three vehicle lanes.
- **Active Transportation.** The appropriate active transportation element shall be included based on the facility indicated on the Active Transportation Plan Map. Sidewalks are required on both sides of the street.
- **Dimensions.** All dimensions are expressed as maximums except where ranges are indicated and may be reduced upon City approval.

# PRINCIPAL ARTERIAL, URBAN

## 6-Lane Principal Arterial, Urban




| SIDEWALK/ SIDE PATH | GREENSPACE | TRAVEL LANE | TRAVEL LANE | TRAVEL LANE | RAISED LANDSCAPED MEDIAN | TRAVEL LANE | TRAVEL LANE | TRAVEL LANE | GREENSPACE | SIDEWALK/ SIDE PATH |
|---|---|---|---|---|---|---|---|---|---|---|
| 5'-12' | 6'-12' | 12' | 12' | 12' | 14'-16' | 12' | 12' | 12 ' | 6'-12' | 5'-12' |



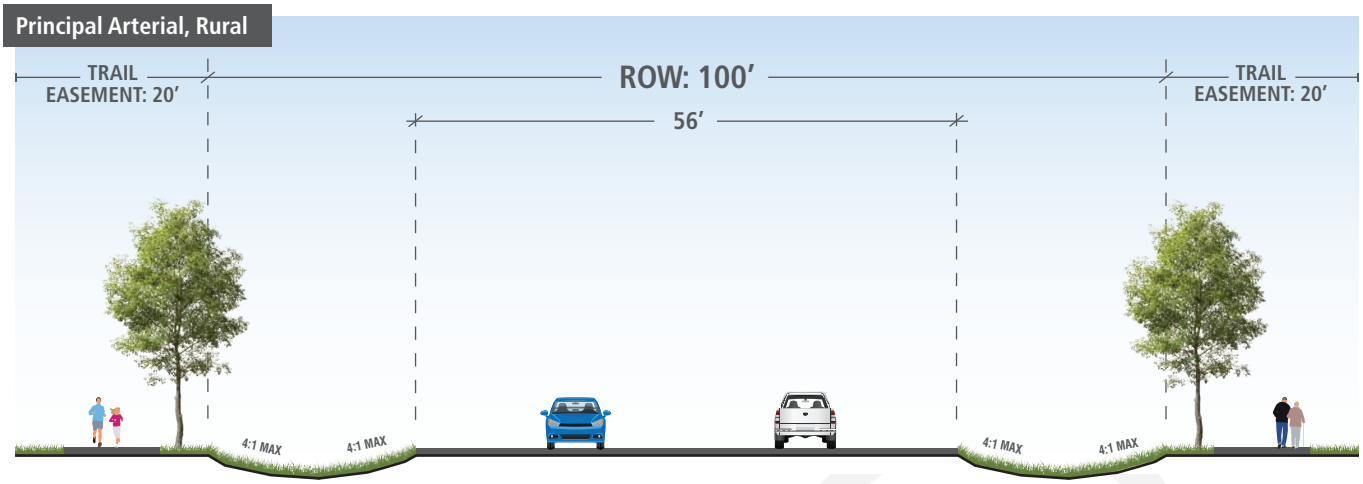
6-Lane Principal Arterial (Urban) with Raised Landscape Median

## ELEMENTS

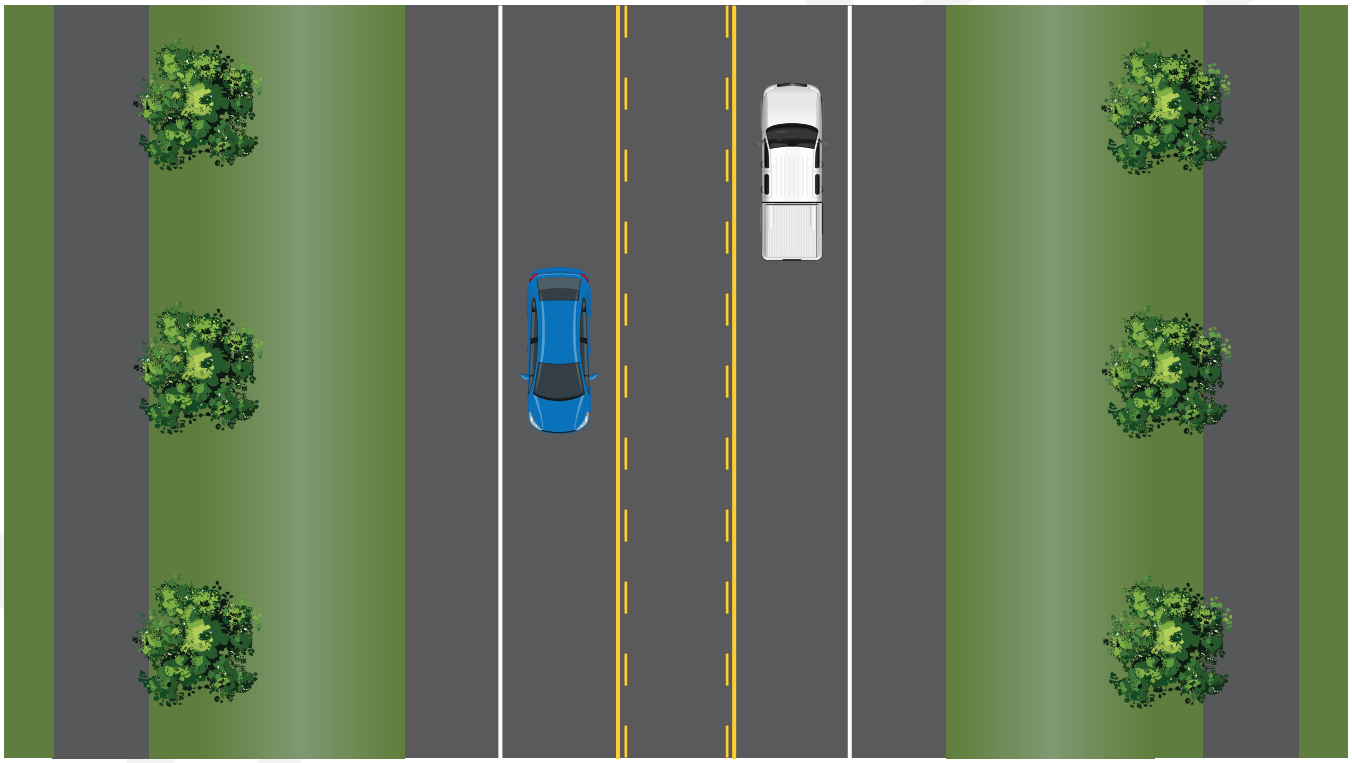
- **Right-of-way.** All required design elements must be included in the cross section and located on publicly owned ROW. Sidewalks or side paths may be located on permanent dedicated easements. The right-of-way must be sufficient to accommodate planned lanes for the roadway.
- **Transit.** Norman Parking and Transit should be consulted on necessary transit accommodations along existing and planned transit routes.
- **Pedestrian Crossings.** Pedestrian refuge islands and other techniques may be required by the City Engineer when a pedestrian must cross more than three vehicle lanes.
- **Active Transportation.** The appropriate active transportation element shall be included based on the facility indicated on the Active Transportation Plan Map. Sidewalks are required on both sides of the street.
- **Dimensions.** All dimensions are expressed as maximums except where ranges are indicated and may be reduced upon City approval.

# PRINCIPAL ARTERIAL, RURAL

**Principal Arterial, Rural**




| | TRAIL | | OPEN DITCH | PAVED SHOULDER | TRAVEL LANE | CENTER TURN LANE | TRAVEL LANE | PAVED SHOULDER | OPEN DITCH | | TRAIL | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| - | 12′ | - | 22′ | 10′ | 12′ | 12′ | 12′ | 10′ | 22′ | - | 12′ | - |



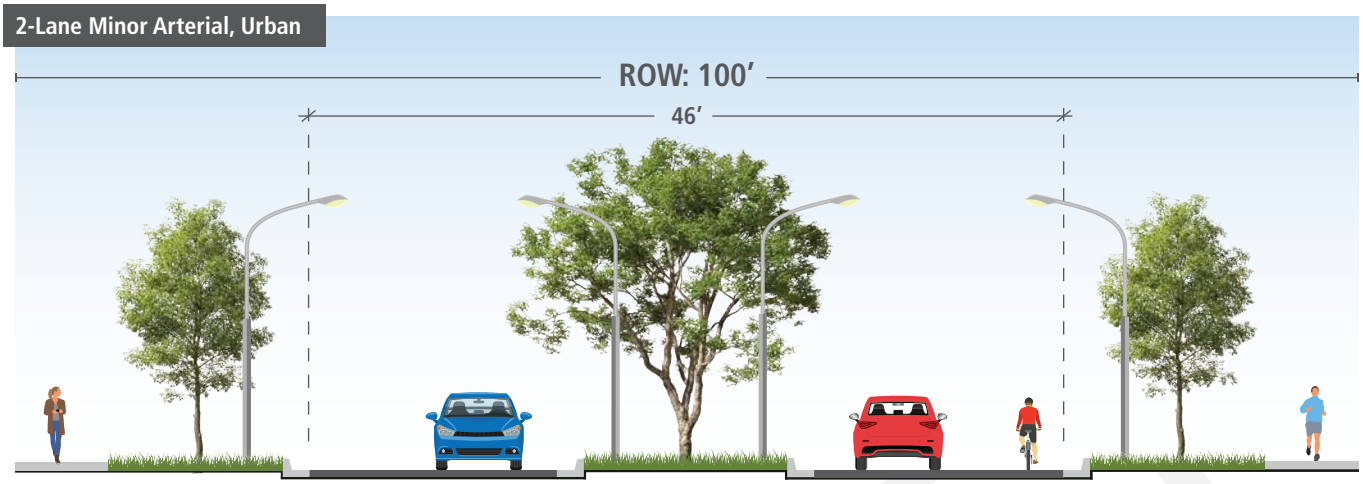
Principal Arterial (Rural)

## ELEMENTS

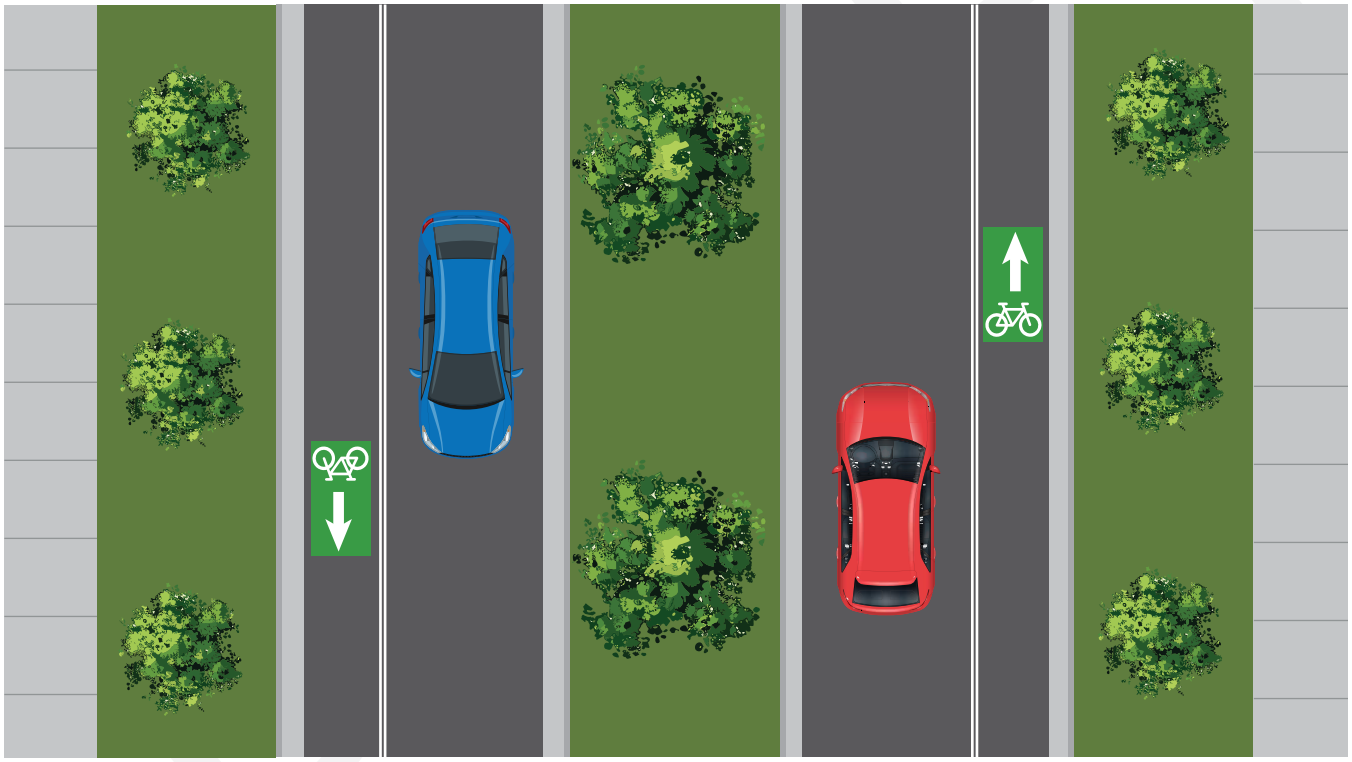
- **Right-of-way.** All required design elements must be included in the cross section and located on publicly owned ROW. Sidewalks or side paths may be located on permanent dedicated easements. The right-of-way must be sufficient to accommodate planned lanes for the roadway.
- **Transit.** Norman Parking and Transit should be consulted on necessary transit accommodations along existing and planned transit routes.
- **Pedestrian Crossings.** Pedestrian refuge islands and other techniques may be required by the City Engineer when a pedestrian must cross more than three vehicle lanes.
- **Active Transportation.** The appropriate active transportation element shall be included based on the facility indicated on the Active Transportation Plan Map.
- **Dimensions.** All dimensions are expressed as maximums except where ranges are indicated and may be reduced upon City approval.

# MINOR ARTERIAL, URBAN

## 2-Lane Minor Arterial, Urban




| SIDEWALK/ SIDE PATH | GREENSPACE | BIKE LANE | TRAVEL LANE | RAISED LANDSCAPED MEDIAN | TRAVEL LANE | BIKE LANE | GREENSPACE | SIDEWALK/ SIDE PATH |
|---|---|---|---|---|---|---|---|---|
| 5′-12′ | VARIES | 5′ | 12′ | 12′ | 12′ | 5′ | VARIES | 5′-12′ |



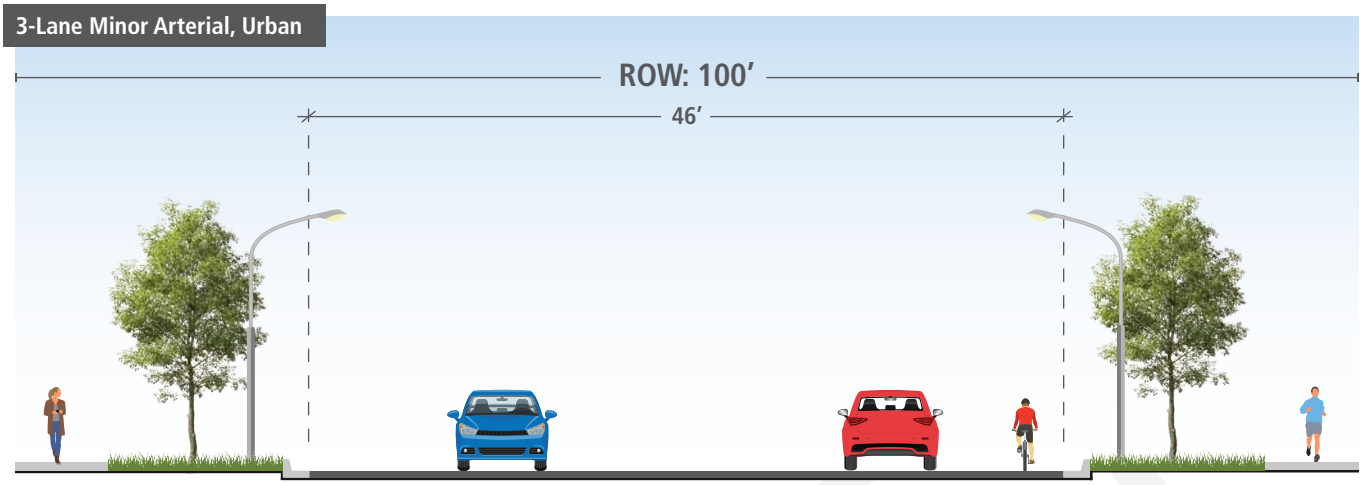
2-Lane Minor Arterial (Urban) with Raised Landscape Median

## ELEMENTS

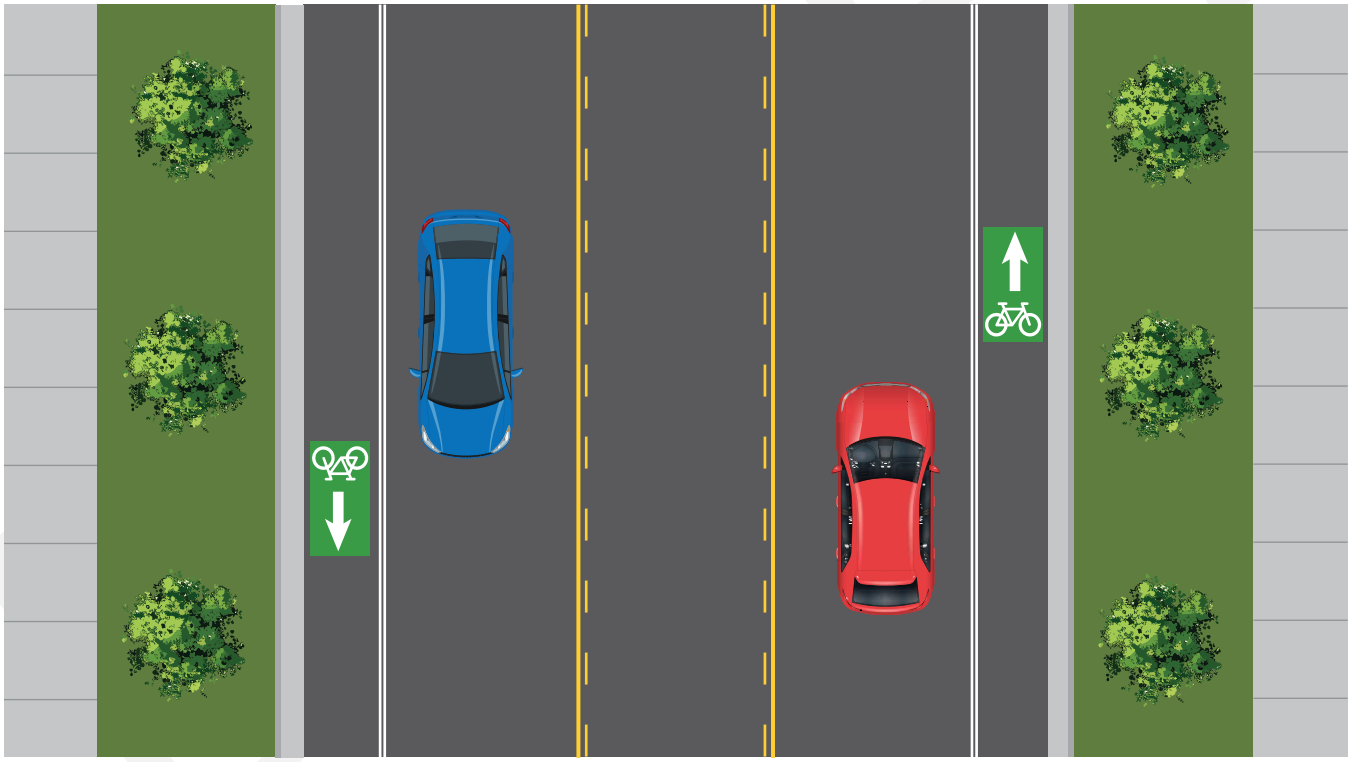
- **Right-of-way.** All required design elements must be included in the cross section and located on publicly owned ROW. Sidewalks or side paths may be located on permanent dedicated easements. The right-of-way must be sufficient to accommodate planned lanes for the roadway.
- **Transit.** Norman Parking and Transit should be consulted on necessary transit accommodations along existing and planned transit routes.
- **Pedestrian Crossings.** Pedestrian refuge islands and other techniques may be required by the City Engineer when a pedestrian must cross more than three vehicle lanes.
- **Active Transportation.** The appropriate active transportation element shall be included based on the facility indicated on the Active Transportation Plan Map. Sidewalks are required on both sides of the street.
- **Bike Lanes.** Bike lanes shall be placed and measured exclusive of gutters.
- **Dimensions.** All dimensions are expressed as maximums except where ranges are indicated and may be reduced upon City approval.

# MINOR ARTERIAL, URBAN

**3-Lane Minor Arterial, Urban**




| SIDEWALK/ SIDE PATH | GREENSPACE | BIKE LANE | TRAVEL LANE | CENTER TURN LANE | TRAVEL LANE | BIKE LANE | GREENSPACE | SIDEWALK/ SIDE PATH |
|---|---|---|---|---|---|---|---|---|
| 5′-12′ | VARIES | 5′ | 12′ | 12′ | 12′ | 5′ | VARIES | 5′-12′ |



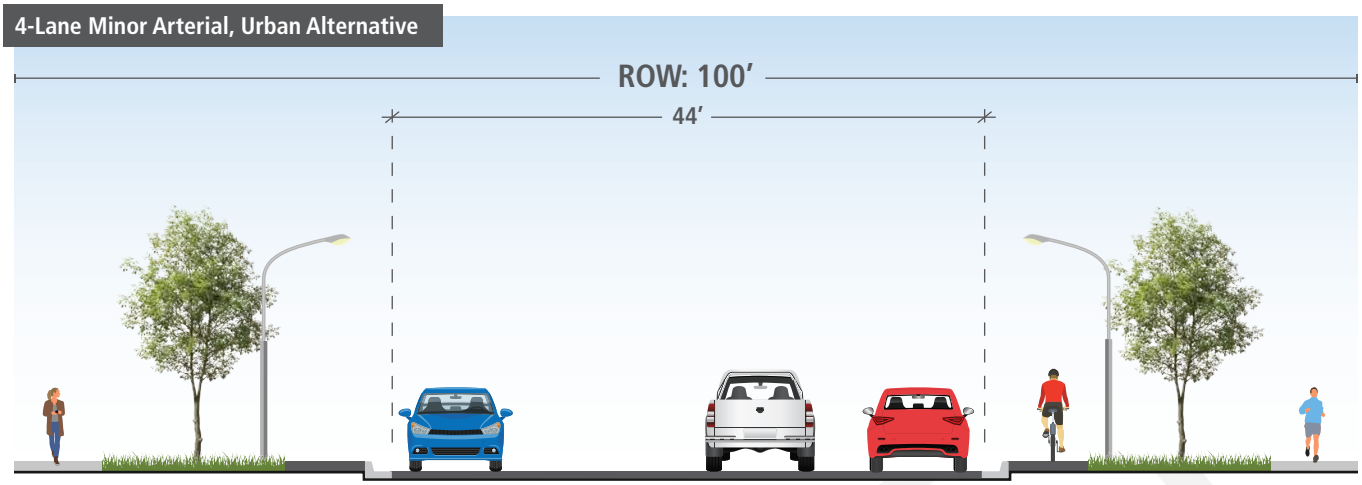
3-Lane Minor Arterial (Urban) with Center Turn Lane

## ELEMENTS

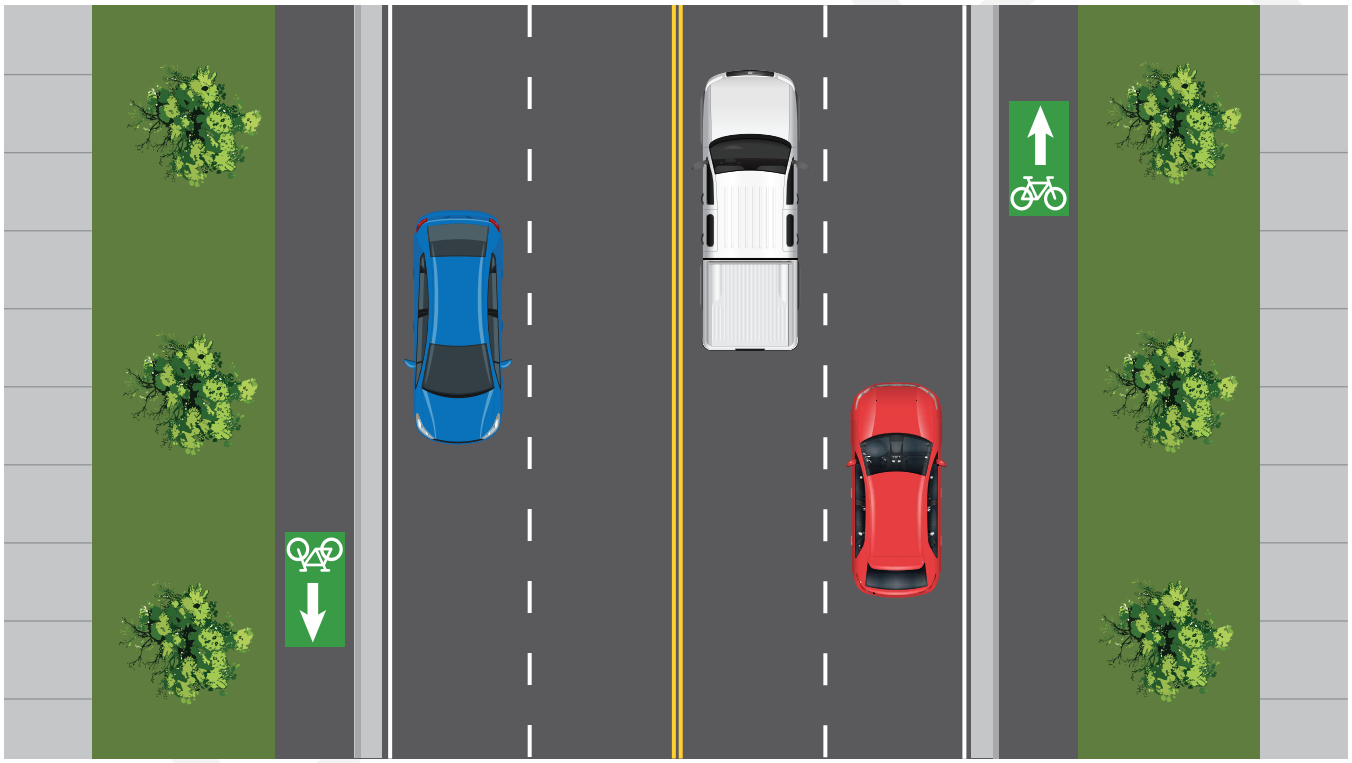
- **Right-of-way.** All required design elements must be included in the cross section and located on publicly owned ROW. Sidewalks or side paths may be located on permanent dedicated easements. The right-of-way must be sufficient to accommodate planned lanes for the roadway.
- **Transit.** Norman Parking and Transit should be consulted on necessary transit accommodations along existing and planned transit routes.
- **Pedestrian Crossings.** Pedestrian refuge islands and other techniques may be required by the City Engineer when a pedestrian must cross more than three vehicle lanes.
- **Active Transportation.** The appropriate active transportation element shall be included based on the facility indicated on the Active Transportation Plan Map.
- **Bike Lanes.** Bike lanes shall be placed and measured exclusive of gutters.
- **Dimensions.** All dimensions are expressed as maximums except where ranges are indicated and may be reduced upon City approval.

# MINOR ARTERIAL, URBAN

**4-Lane Minor Arterial, Urban Alternative**




| SIDEWALK | GREENSPACE | BIKE LANE | TRAVEL LANE | TRAVEL LANE | TRAVEL LANE | TRAVEL LANE | BIKE LANE | GREENSPACE | SIDEWALK |
|---|---|---|---|---|---|---|---|---|---|
| 5′-8′ | VARIES | 6′ | 11′ | 11′ | 11′ | 11′ | 6′ | VARIES | 5′-8′ |



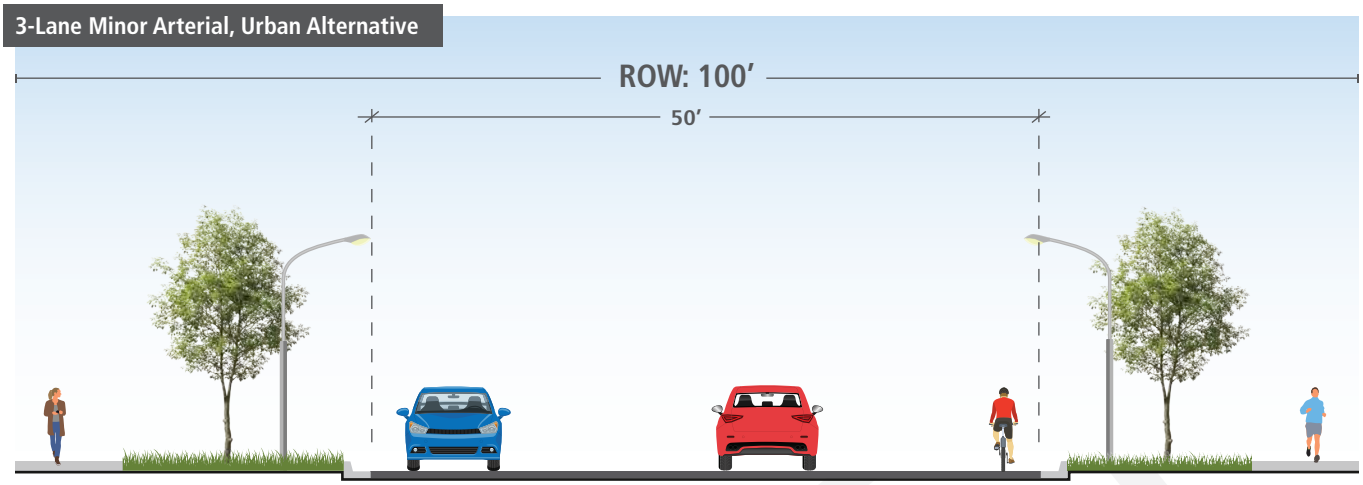
4-Lane Minor Arterial (Urban) with Separated Bike Lanes

## ELEMENTS

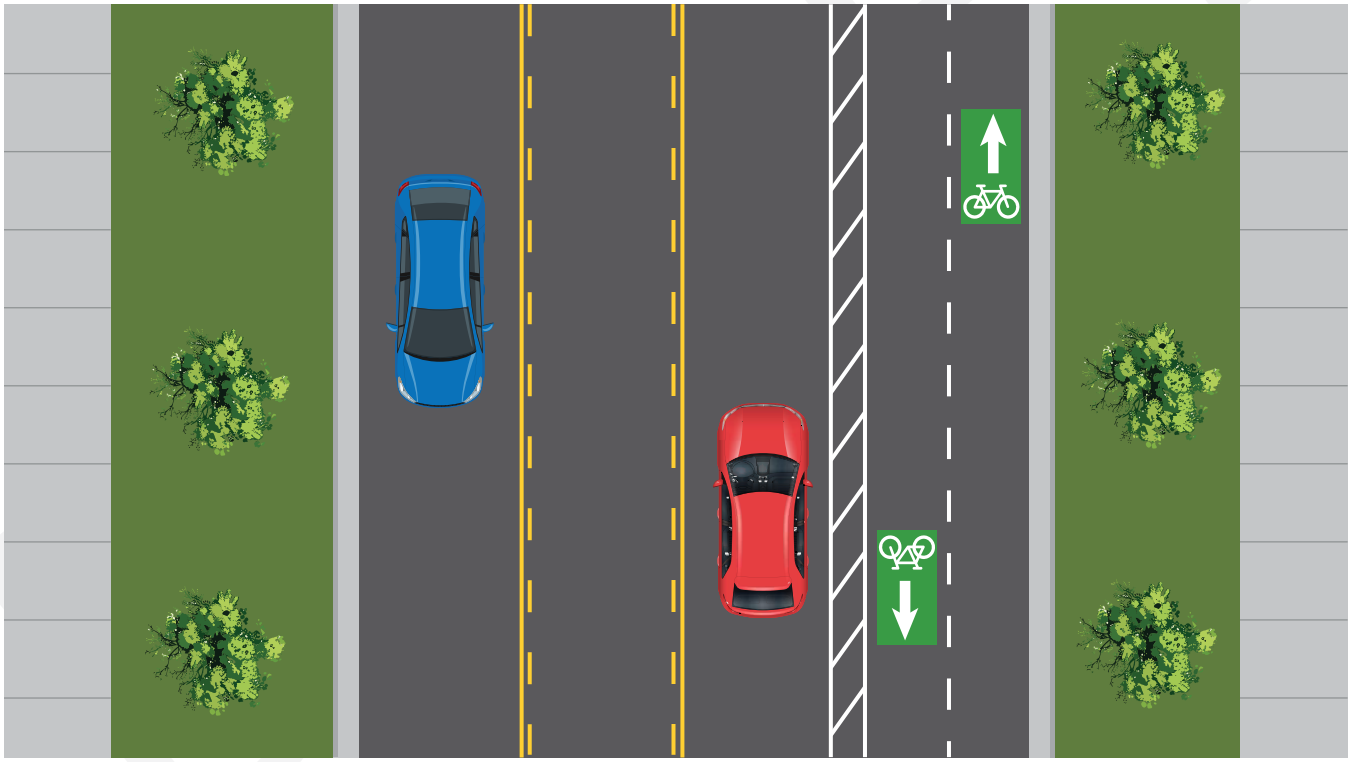
- **Right-of-way.** All required design elements must be included in the cross section and located on publicly owned ROW. Sidewalks or side paths may be located on permanent dedicated easements. The right-of-way must be sufficient to accommodate planned lanes for the roadway.
- **Transit.** Norman Parking and Transit should be consulted on necessary transit accommodations along existing and planned transit routes.
- **Pedestrian Crossings.** Pedestrian refuge islands and other techniques may be required by the City Engineer when a pedestrian must cross more than three vehicle lanes.
- **Active Transportation.** The appropriate active transportation element shall be included based on the facility indicated on the Active Transportation Plan Map. Sidewalks are required on both sides of the street.
- **Bike Lanes.** Bike lanes shall be placed and measured exclusive of gutters.
- **Dimensions.** All dimensions are expressed as maximums except where ranges are indicated and may be reduced upon City approval.

# MINOR ARTERIAL, URBAN

**3-Lane Minor Arterial, Urban Alternative**




| SIDEWALK | GREENSPACE | TRAVEL LANE | CENTER TURN LANE | TRAVEL LANE | BUFFER | CYCLE TRACK | GREENSPACE | SIDEWALK |
|---|---|---|---|---|---|---|---|---|
| 5′-8′ | VARIES | 11′ | 11′ | 11′ | 3′ | 12′ | VARIES | 5′-8′ |

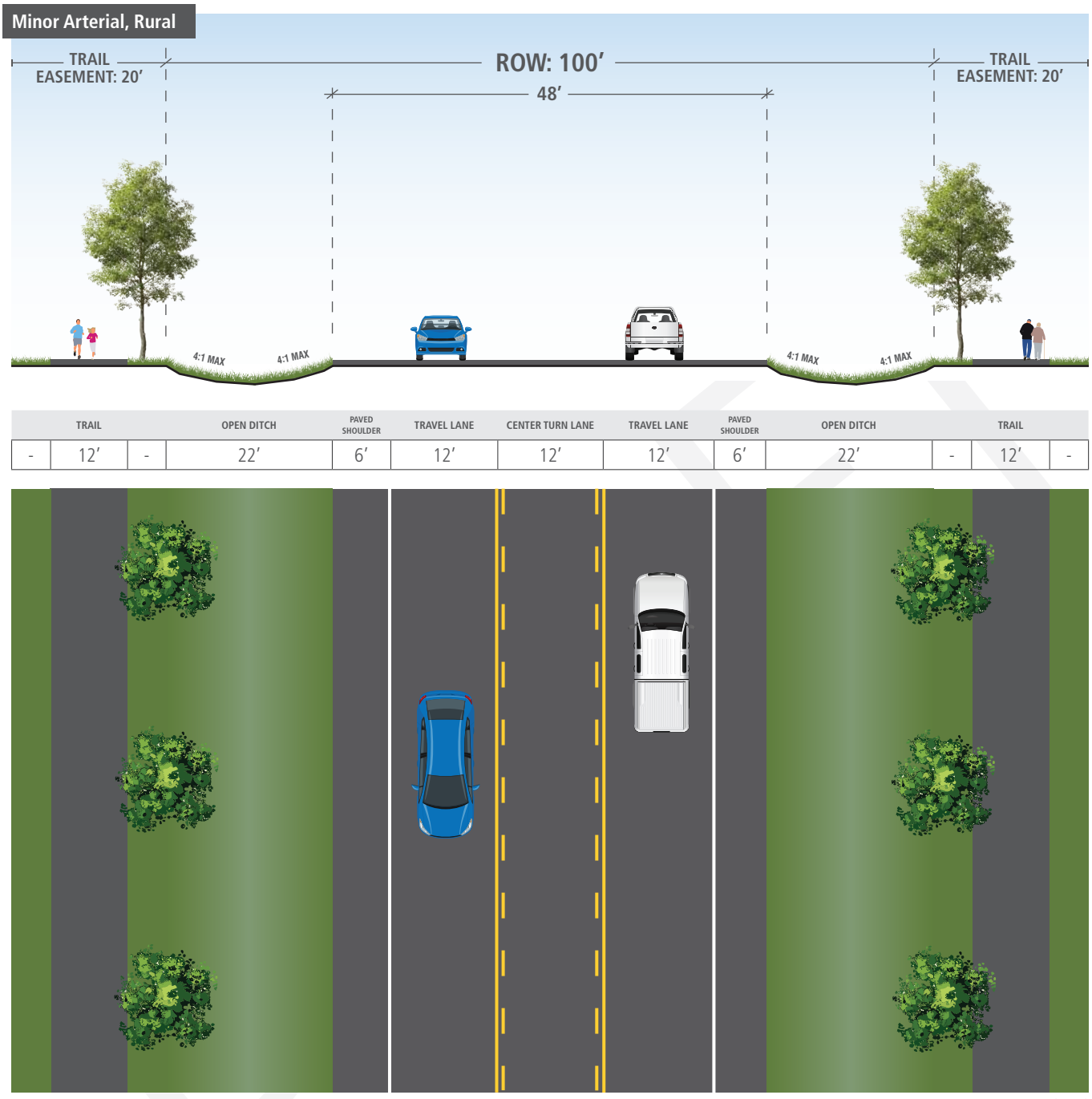


Minor Arterial (Urban) Alternative

## ELEMENTS

- **Right-of-way.** All required design elements must be included in the cross section and located on publicly owned ROW. Sidewalks or side paths may be located on permanent dedicated easements. The right-of-way must be sufficient to accommodate planned lanes for the roadway.
- **Transit.** Norman Parking and Transit should be consulted on necessary transit accommodations along existing and planned transit routes.
- **Pedestrian Crossings.** Pedestrian refuge islands and other techniques may be required by the City Engineer when a pedestrian must cross more than three vehicle lanes.
- **Active Transportation.** The appropriate active transportation element shall be included based on the facility indicated on the Active Transportation Plan Map. Sidewalks are required on both sides of the street.
- **Bike Lanes.** Bike lanes shall be placed and measured exclusive of gutters.
- **Dimensions.** All dimensions are expressed as maximums except where ranges are indicated and may be reduced upon City approval.

# MINOR ARTERIAL, RURAL



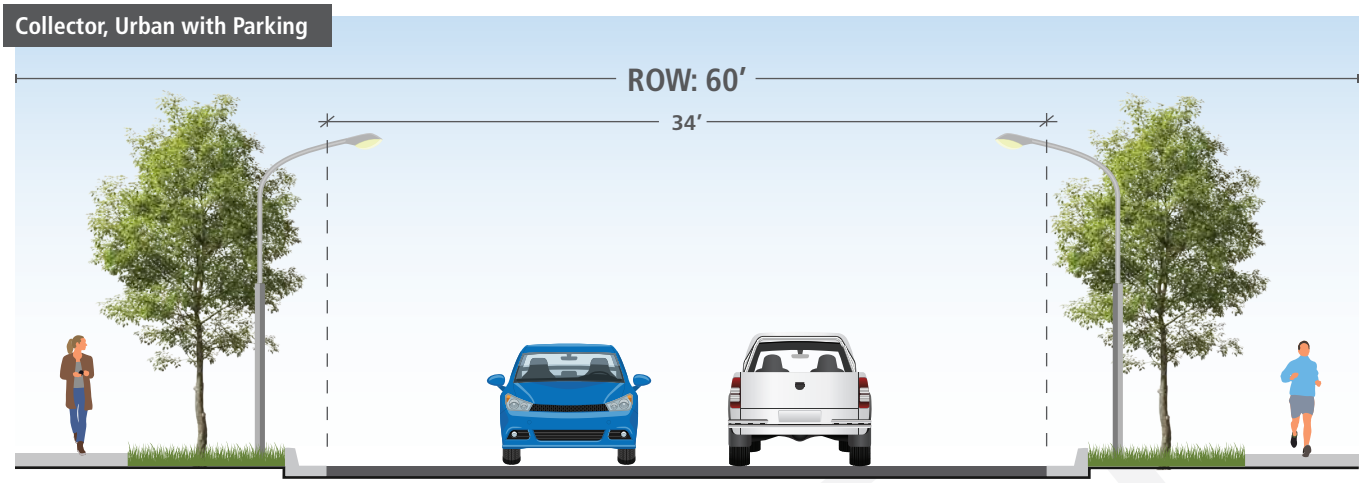

Minor Arterial (Rural)

## ELEMENTS

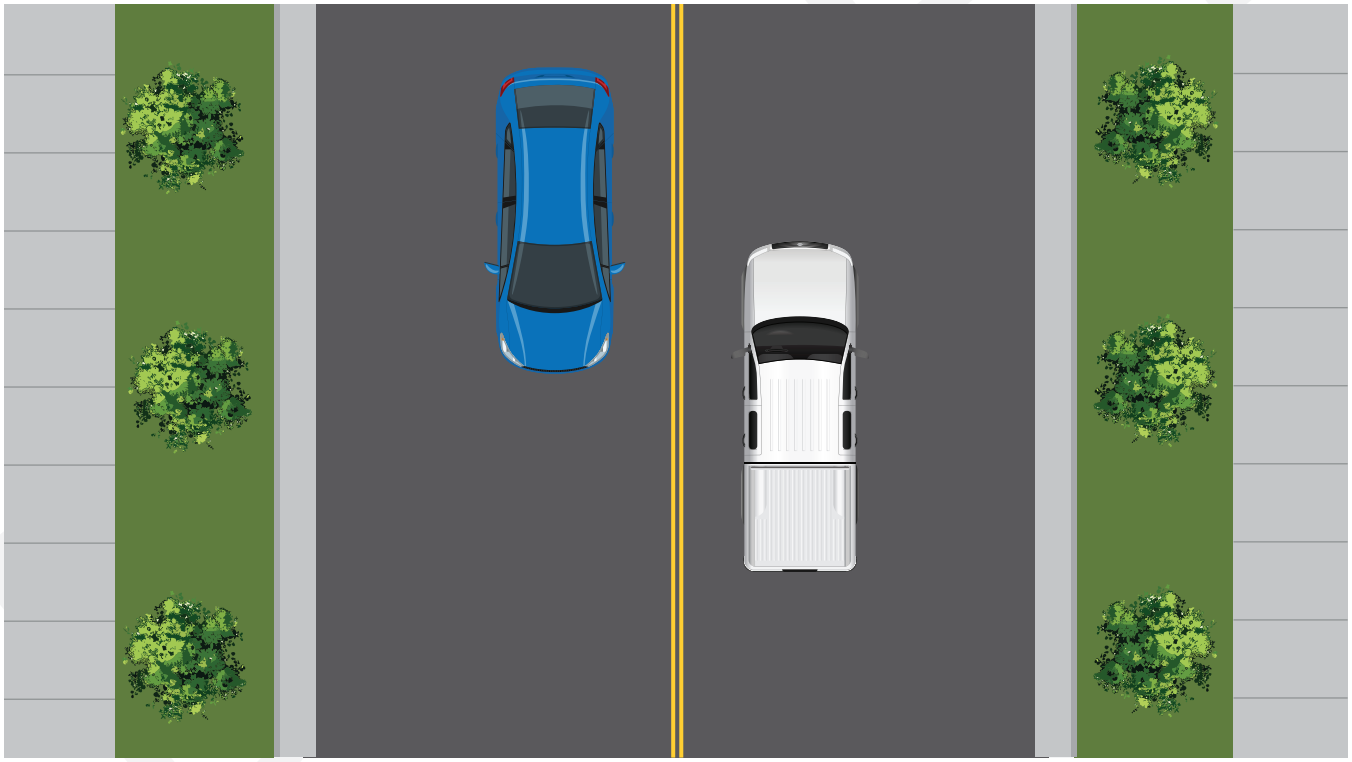
- **Right-of-way.** All required design elements must be included in the cross section and located on publicly owned ROW. Sidewalks or side paths may be located on permanent dedicated easements. The right-of-way must be sufficient to accommodate planned lanes for the roadway.
- **Transit.** Norman Parking and Transit should be consulted on necessary transit accommodations along existing and planned transit routes.
- **Pedestrian Crossings.** Pedestrian refuge islands and other techniques may be required by the City Engineer when a pedestrian must cross more than three vehicle lanes.
- **Active Transportation.** The appropriate active transportation element shall be included based on the facility indicated on the Active Transportation Plan Map.
- **Dimensions.** All dimensions are expressed as maximums except where ranges are indicated and may be reduced upon City approval.

# COLLECTOR, URBAN

**Collector, Urban with Parking**




| SIDEWALK | GREENSPACE | TRAVEL LANE WITH PARKING ALLOWED | TRAVEL LANE WITH PARKING ALLOWED | GREENSPACE | SIDEWALK |
|---|---|---|---|---|---|
| 5′ | 7′ | 17′ | 17′ | 7′ | 5′ |



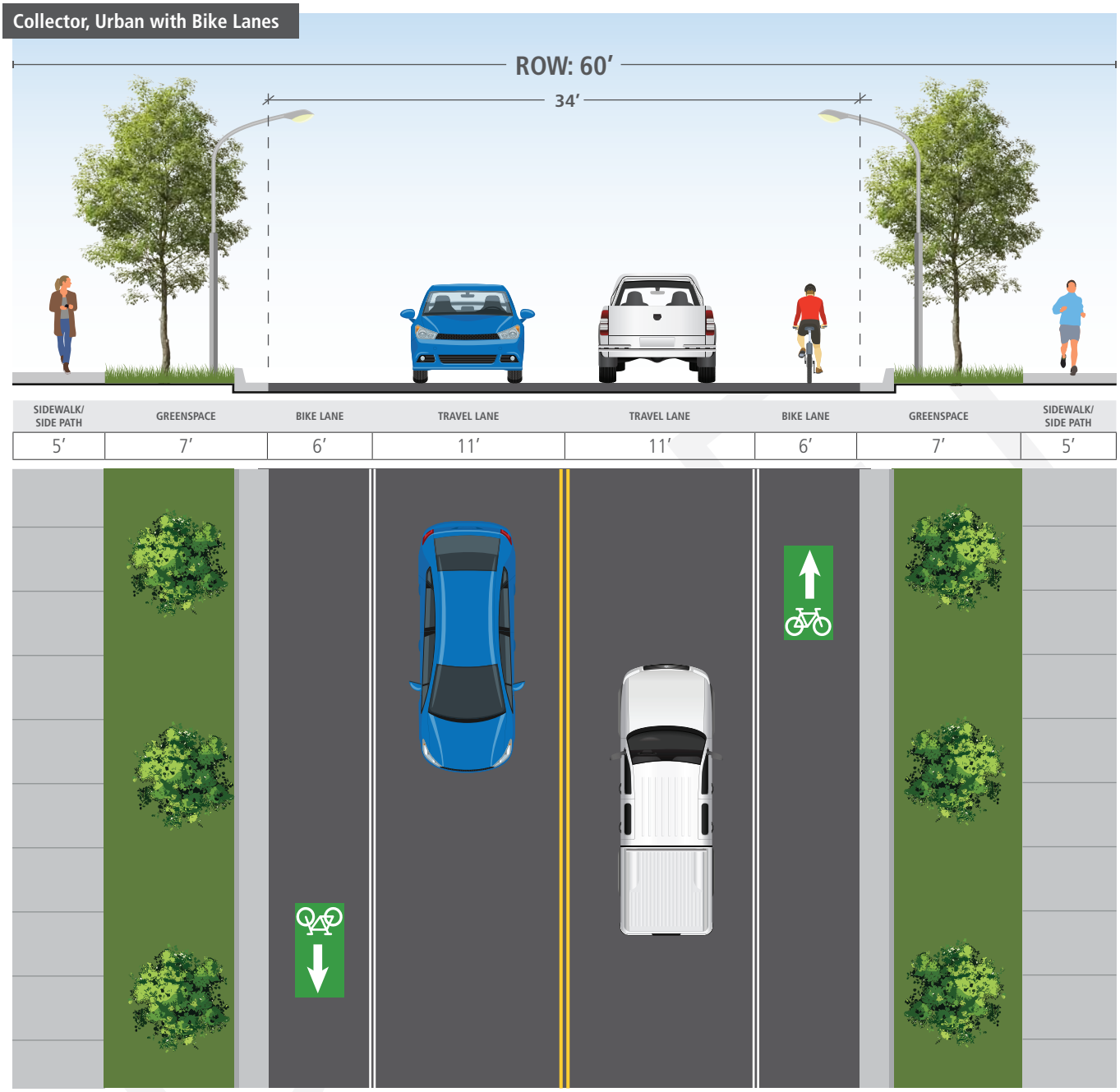
Collector (Urban) with Parking

## ELEMENTS

- **Right-of-way.** All required design elements must be included in the cross section and located on publicly owned ROW. Sidewalks or side paths may be located on permanent dedicated easements. The right-of-way must be sufficient to accommodate planned lanes for the roadway.
- **Transit.** Norman Parking and Transit should be consulted on necessary transit accommodations along existing and planned transit routes.
- **Pedestrian Crossings and Traffic Calming.** Pedestrian refuge islands and/or traffic calming techniques may be required by the City Engineer when warranted.
- **Active Transportation.** The appropriate active transportation element shall be included based on the facility indicated on the Active Transportation Plan Map. Sidewalks are required on both sides of the street.
- **Dimensions.** All dimensions are expressed as maximums except where ranges are indicated and may be reduced upon City approval.

# COLLECTOR, URBAN

**Collector, Urban with Bike Lanes**



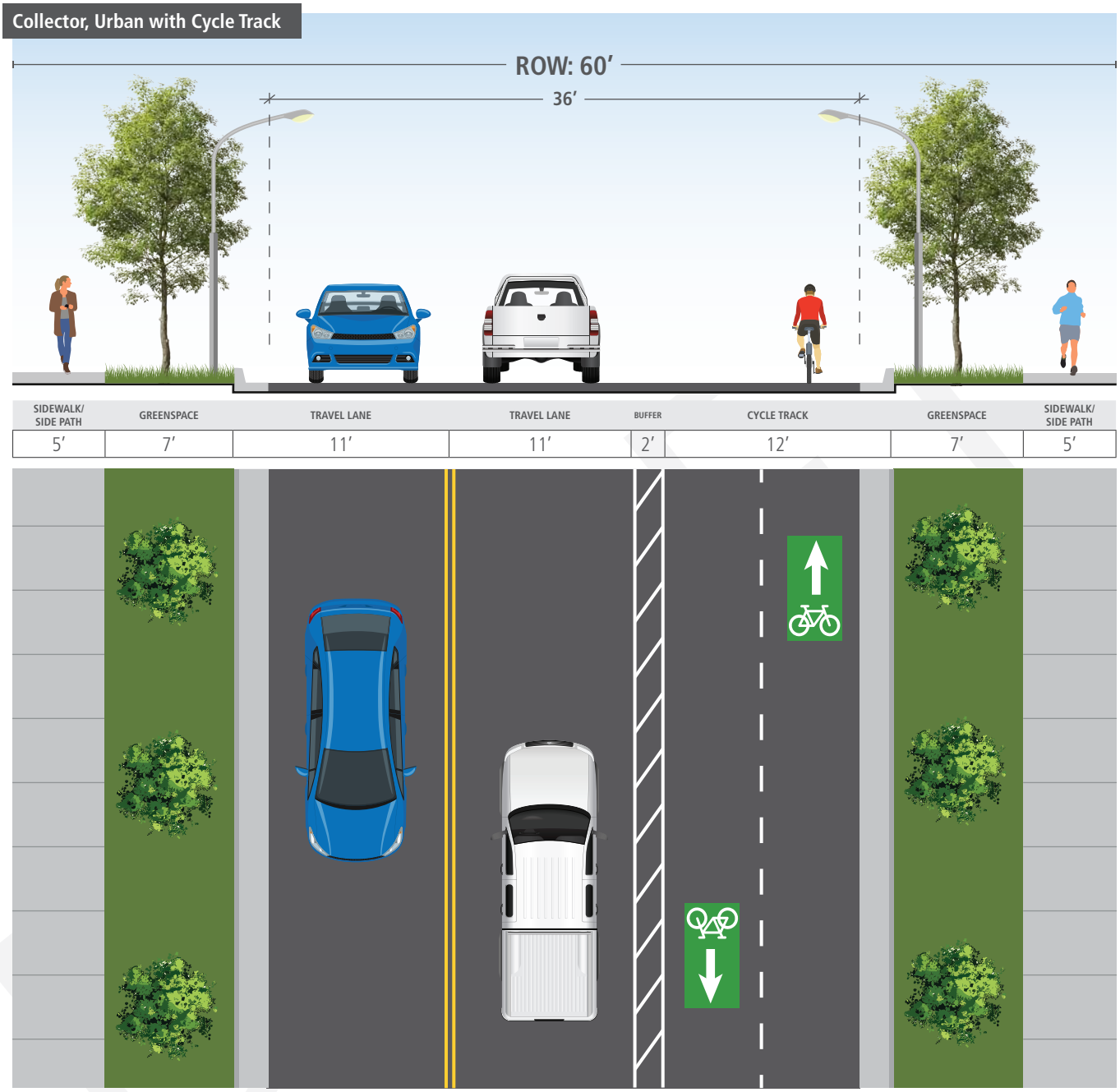

Collector (Urban) with Bike Lanes

## ELEMENTS

- **Right-of-way.** All required design elements must be included in the cross section and located on publicly owned ROW. Sidewalks or side paths may be located on permanent dedicated easements. The right-of-way must be sufficient to accommodate planned lanes for the roadway.
- **Transit.** Norman Parking and Transit should be consulted on necessary transit accommodations along existing and planned transit routes.
- **Pedestrian Crossings and Traffic Calming.** Pedestrian refuge islands and/or traffic calming techniques may be required by the City Engineer when warranted.
- **Active Transportation.** The appropriate active transportation element shall be included based on the facility indicated on the Active Transportation Plan Map. Sidewalks are required on both sides of the street.
- **Bike Lanes.** Bike lanes may be unmarked within residential neighborhoods to function as a multi-purpose fog lane.
- **Dimensions.** All dimensions are expressed as maximums except where ranges are indicated and may be reduced upon City approval.

# COLLECTOR, URBAN

**Collector, Urban with Cycle Track**



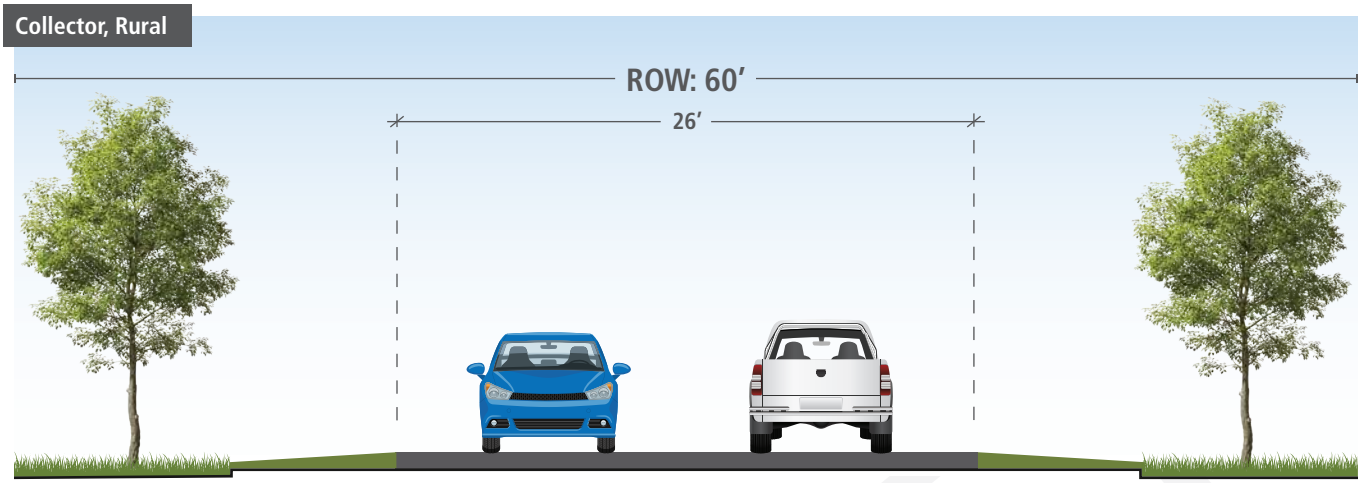

Collector (Urban) with Cycle Track

## ELEMENTS

- **Right-of-way.** All required design elements must be included in the cross section and located on publicly owned ROW. Sidewalks or side paths may be located on permanent dedicated easements. The right-of-way must be sufficient to accommodate planned lanes for the roadway.
- **Transit.** Norman Parking and Transit should be consulted on necessary transit accommodations along existing and planned transit routes.
- **Pedestrian Crossings and Traffic Calming.** Pedestrian refuge islands and/or traffic calming techniques may be required by the City Engineer when warranted.
- **Active Transportation.** The appropriate active transportation element shall be included based on the facility indicated on the Active Transportation Plan Map. Sidewalks are required on both sides of the street.
- **Bike Lanes.** Bike lanes shall be placed and measured exclusive of gutters.
- **Dimensions.** All dimensions are expressed as maximums except where ranges are indicated and may be reduced upon City approval.

# COLLECTOR, RURAL

Collector, Rural




| GREENSPACE | GRADED SHOULDER | TRAVEL LANE | TRAVEL LANE | GRADED SHOULDER | GREENSPACE |
|---|---|---|---|---|---|
| VARIES | 4′ | 13′ | 13′ | 4′ | VARIES |

Collector (Rural)

## ELEMENTS

- **Right-of-way.** All required design elements must be included in the cross section and located on publicly owned ROW. Sidewalks or side paths may be located on permanent dedicated easements. The right-of-way must be sufficient to accommodate planned lanes for the roadway.
- **Transit.** Norman Parking and Transit should be consulted on necessary transit accommodations along existing and planned transit routes.
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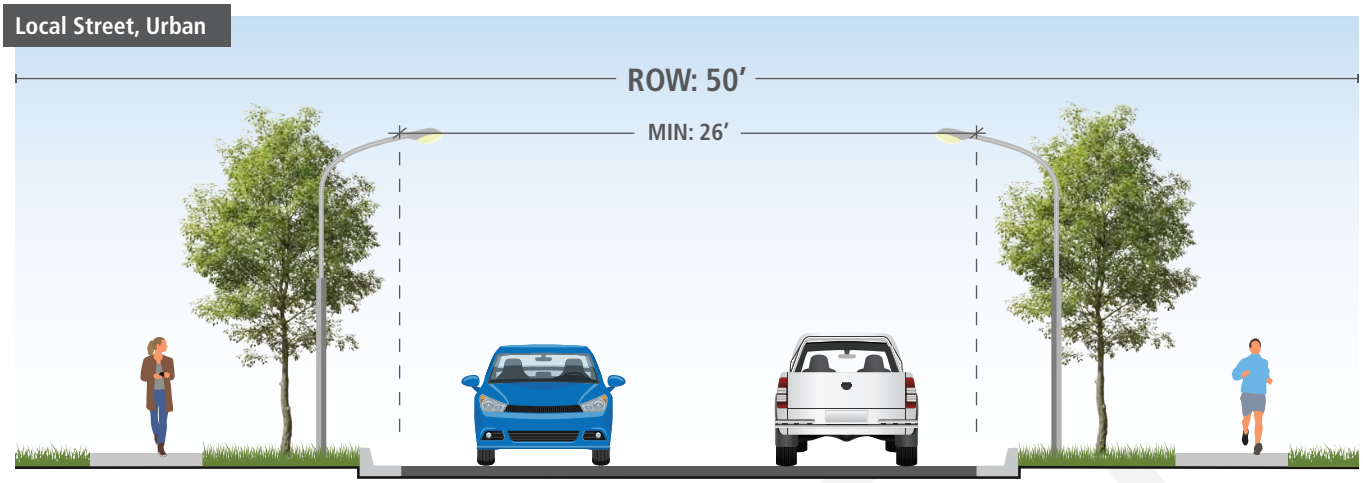
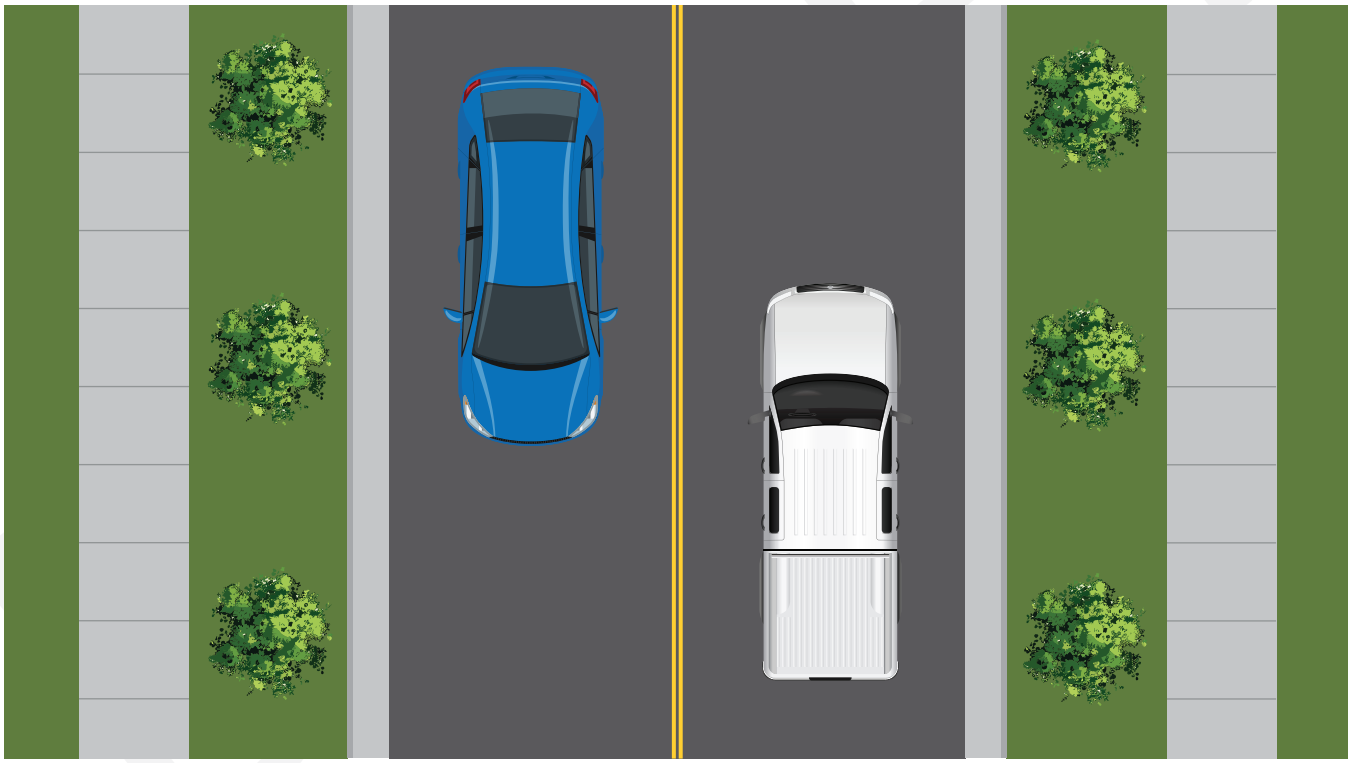
- **Active Transportation.** The appropriate active transportation element shall be included based on the facility indicated on the Active Transportation Plan Map.
- **Dimensions.** All dimensions are expressed as maximums except where ranges are indicated and may be reduced upon City approval.

# LOCAL STREET, URBAN

**Local Street, Urban**




| - | SIDEWALK/ SIDE PATH | GREENSPACE | TRAVEL LANE w/ PARKING ALLOWED | TRAVEL LANE w/ PARKING ALLOWED | GREENSPACE | SIDEWALK/ SIDE PATH | - |
|---|---|---|---|---|---|---|---|
| VARIES | 4′ | 7′ | 13′ | 13′ | 7′ | 4′ | VARIES |



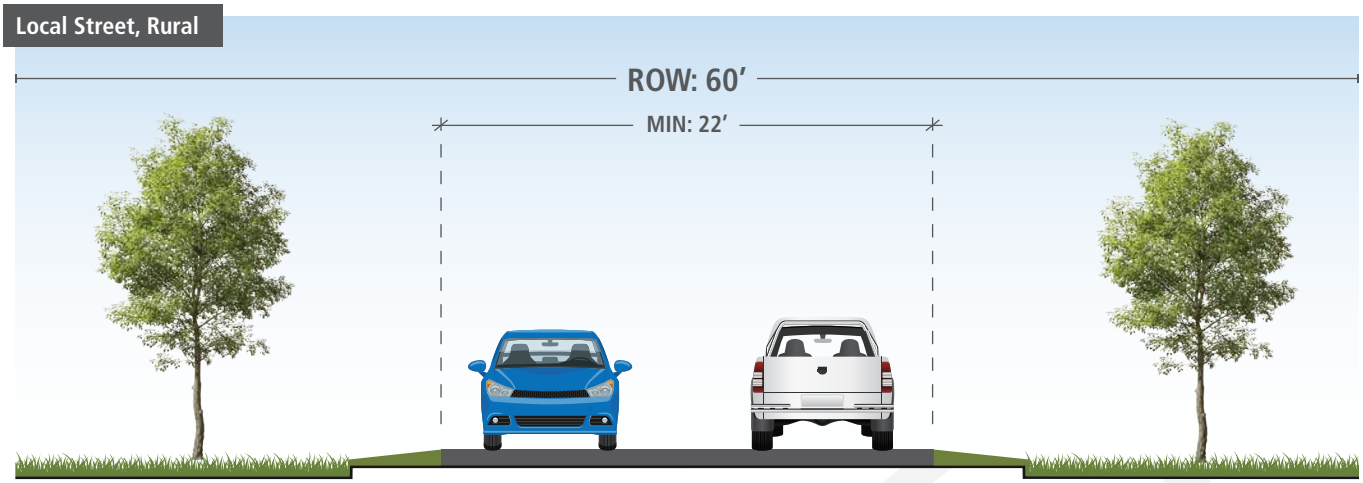
Local (Urban)

## ELEMENTS

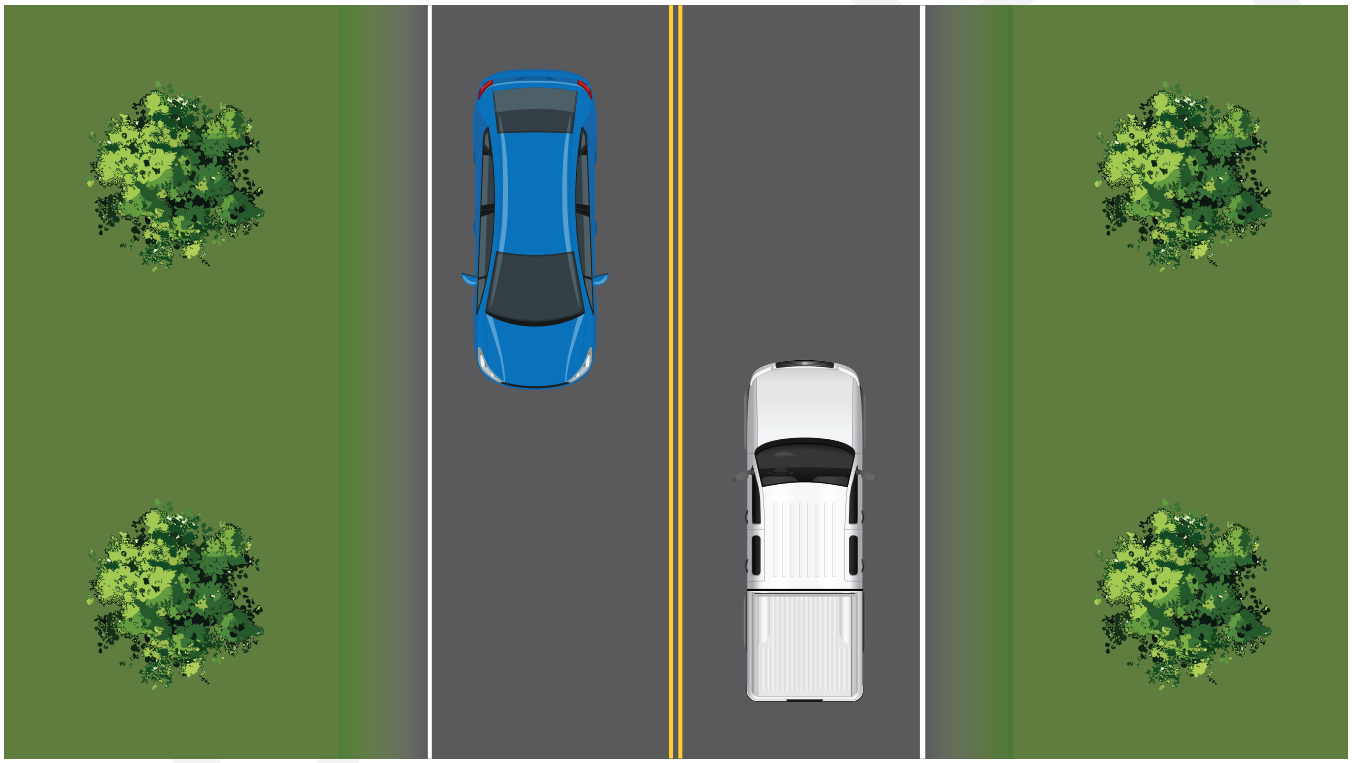
- **Right-of-way.** All required design elements must be included in the cross section and located on publicly owned ROW. Sidewalks or side paths may be located on permanent dedicated easements. The right-of-way must be sufficient to accommodate planned lanes for the roadway.
- **Transit.** Norman Parking and Transit should be consulted on necessary transit accommodations along existing and planned transit routes.
- **Pedestrian Crossings and Traffic Calming.** Pedestrian refuge islands and/or traffic calming techniques may be required by the City Engineer when warranted.
- **Active Transportation.** The appropriate active transportation element shall be included based on the facility indicated on the Active Transportation Plan Map. Sidewalks are required on both sides of the street.
- **Dimensions.** All dimensions are expressed as maximums except where ranges are indicated and may be reduced upon City approval.

# LOCAL STREET, RURAL

**Local Street, Rural**




| GREENSPACE | GRADED SHOULDER | TRAVEL LANE | TRAVEL LANE | GRADED SHOULDER | GREENSPACE |
|---|---|---|---|---|---|
| VARIES | 4' | 11' | 11' | 4' | VARIES |



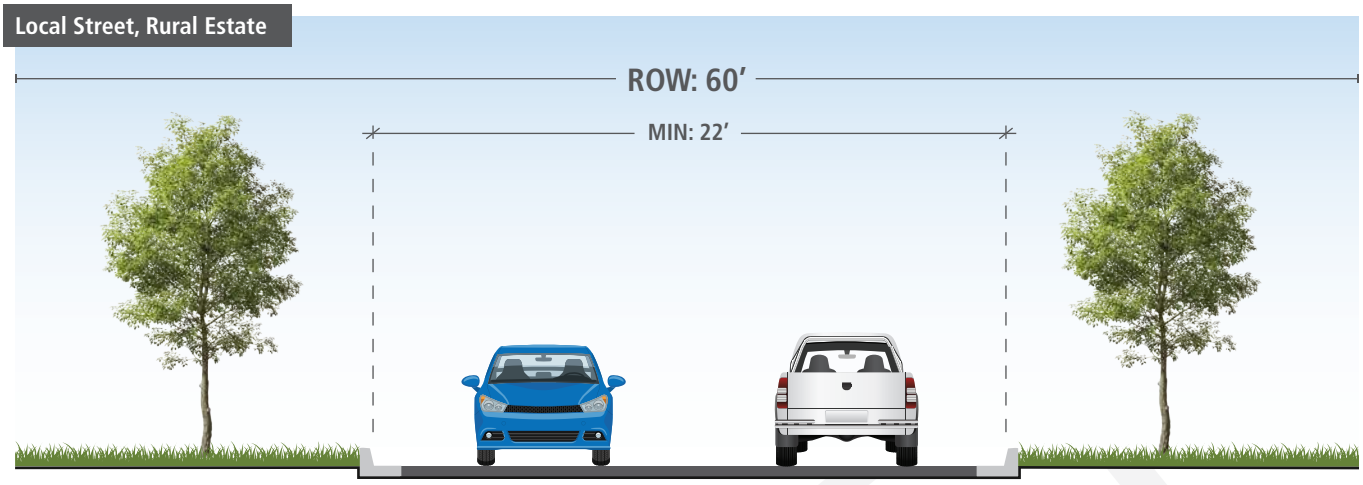
Local (Rural)

## ELEMENTS

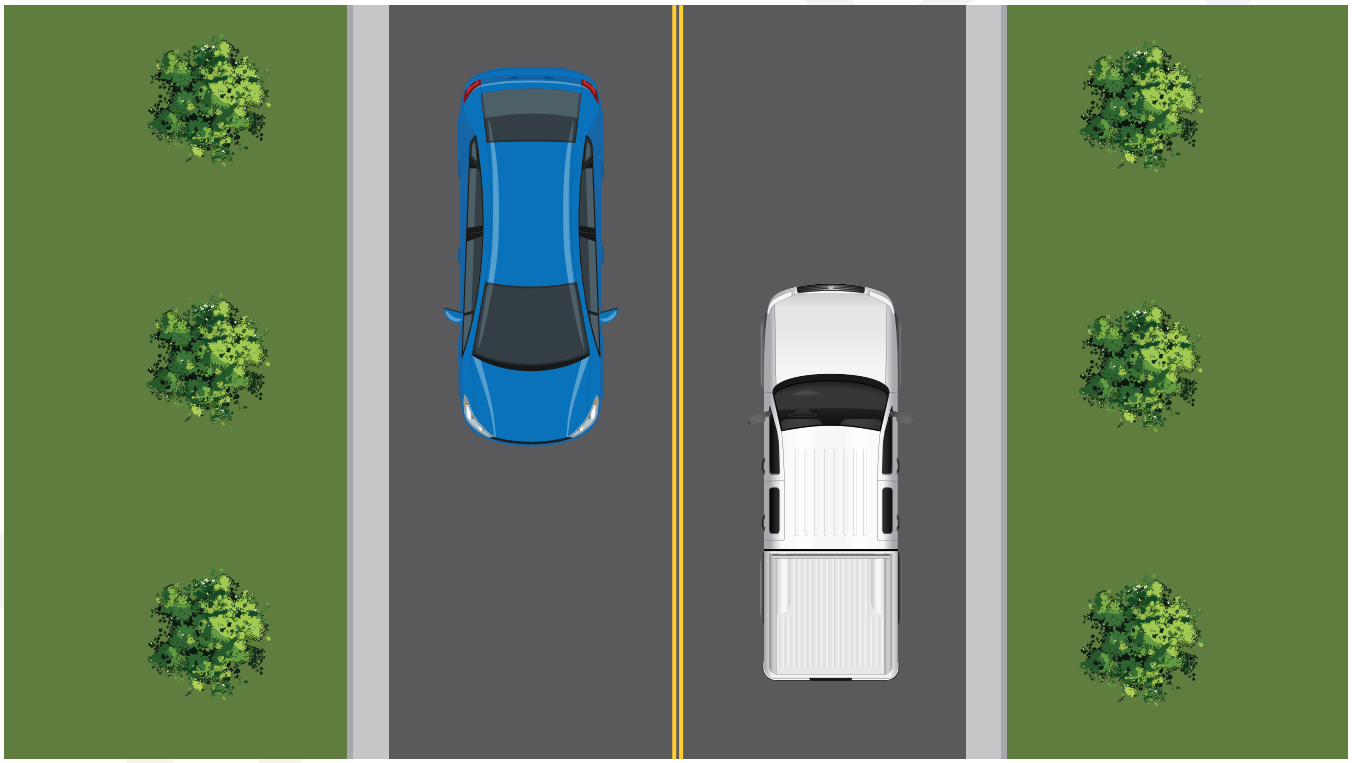
- **Right-of-way.** All required design elements must be included in the cross section and located on publicly owned ROW. Sidewalks or side paths may be located on permanent dedicated easements. The right-of-way must be sufficient to accommodate planned lanes for the roadway.
- **Transit.** Norman Parking and Transit should be consulted on necessary transit accommodations along existing and planned transit routes.
- **Pedestrian Crossings and Traffic Calming.** Pedestrian refuge islands and/or traffic calming techniques may be required by the City Engineer when warranted.
- **Active Transportation.** The appropriate active transportation element shall be included based on the facility indicated on the Active Transportation Plan Map.
- **Dimensions.** All dimensions are expressed as maximums except where ranges are indicated and may be reduced upon City approval.

# LOCAL STREET, RURAL

**Local Street, Rural Estate**




| GREENSPACE | CURB AND GUTTER | TRAVEL LANE | TRAVEL LANE | CURB AND GUTTER | GREENSPACE |
|---|---|---|---|---|---|
| VARIES | - | 11' | 11' | - | VARIES |



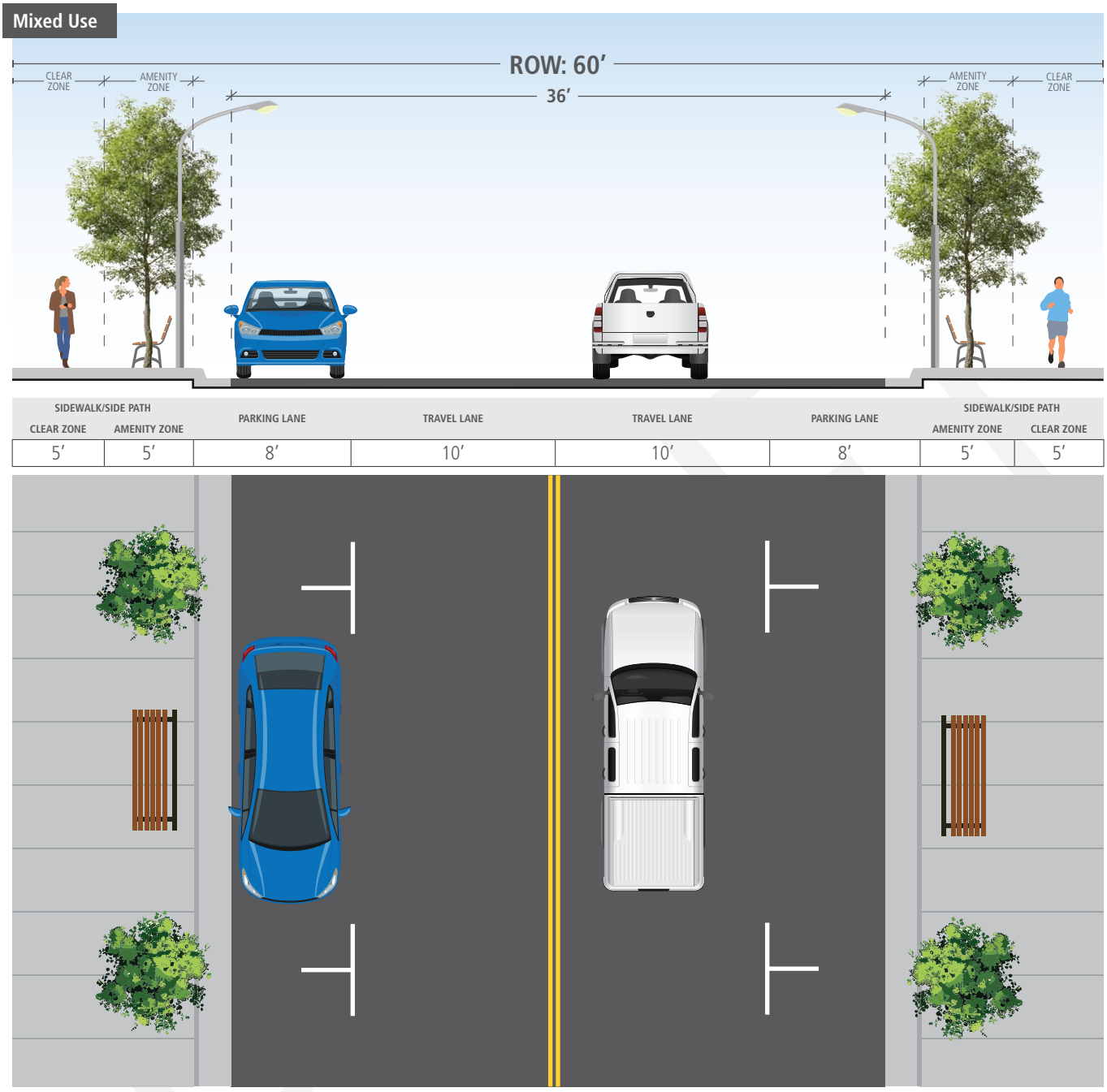
Local (Rural) Estate

## ELEMENTS

- **Right-of-way.** All required design elements must be included in the cross section and located on publicly owned ROW. Sidewalks or side paths may be located on permanent dedicated easements. The right-of-way must be sufficient to accommodate planned lanes for the roadway.
- **Transit.** Norman Parking and Transit should be consulted on necessary transit accommodations along existing and planned transit routes.
- **Pedestrian Crossings and Traffic Calming.** Pedestrian refuge islands and/or traffic calming techniques may be required by the City Engineer when warranted.
- **Active Transportation.** The appropriate active transportation element shall be included based on the facility indicated on the Active Transportation Plan Map.
- **Dimensions.** All dimensions are expressed as maximums except where ranges are indicated and may be reduced upon City approval.

# MIXED USED STREET

Mixed Use




| SIDEWALK/SIDE PATH | | PARKING LANE | TRAVEL LANE | TRAVEL LANE | PARKING LANE | SIDEWALK/SIDE PATH | |
|---|---|---|---|---|---|---|---|
| CLEAR ZONE | AMENITY ZONE | | | | | AMENITY ZONE | CLEAR ZONE |
| 5′ | 5′ | 8′ | 10′ | 10′ | 8′ | 5′ | 5′ |



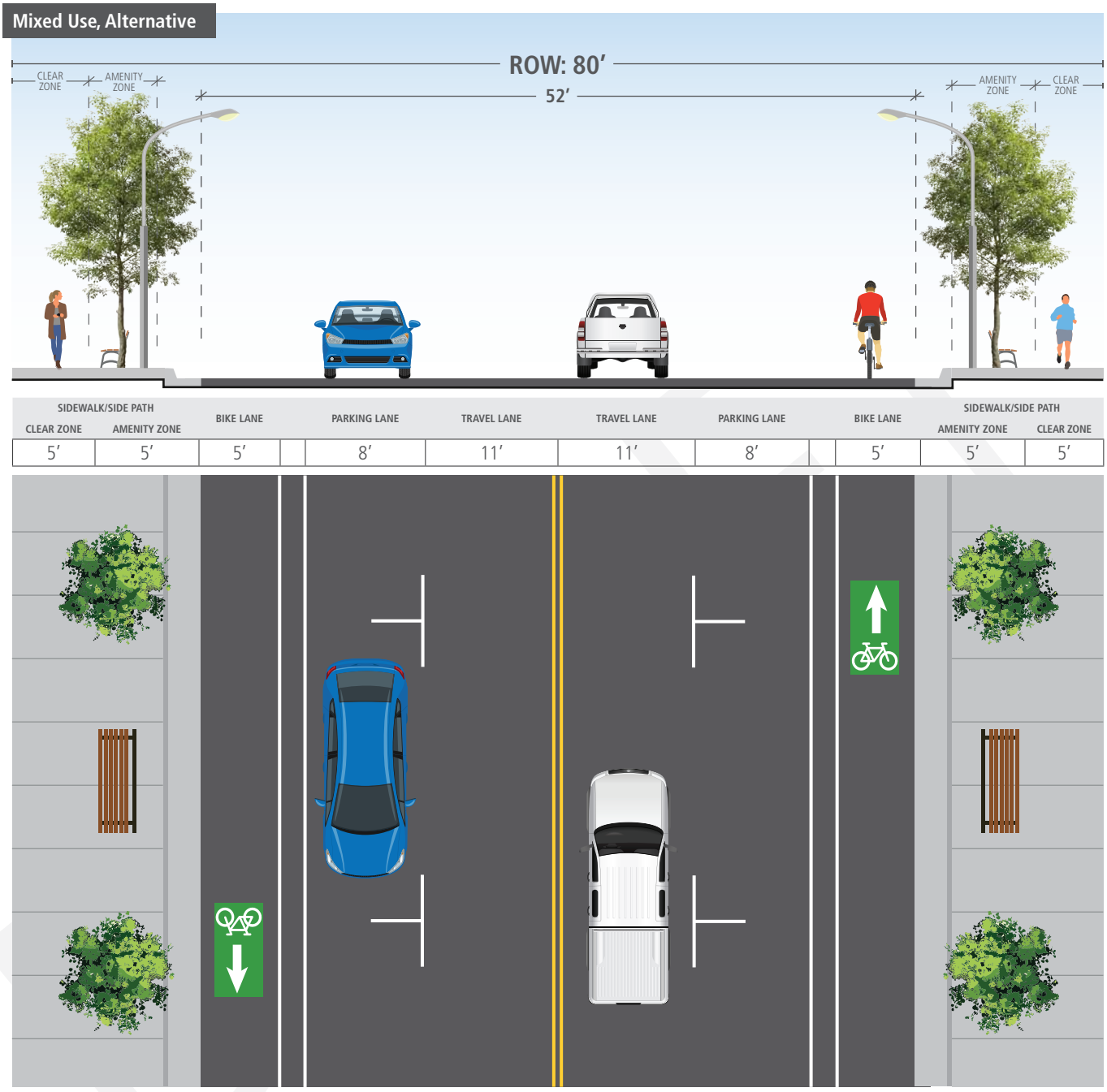
Mixed Use

## ELEMENTS

- **Right-of-way.** All required design elements must be included in the cross section and located on publicly owned ROW. Sidewalks or side paths may be located on permanent dedicated easements. The right-of-way must be sufficient to accommodate planned lanes for the roadway.
- **Transit.** Norman Parking and Transit should be consulted on necessary transit accommodations along existing and planned transit routes.
- **Pedestrian Crossings and Traffic Calming.** Pedestrian refuge islands and/or traffic calming techniques may be required by the City Engineer when warranted.
- **Active Transportation.** The appropriate active transportation element shall be included based on the facility indicated on the Active Transportation Plan Map.
- **Bike Lanes.** Bike lanes shall be placed and measured exclusive of gutters.
- **Dimensions.** All dimensions are expressed as maximums except where ranges are indicated and may be reduced upon City approval.

# MIXED USE STREET, ALTERNATIVE

**Mixed Use, Alternative**




| SIDEWALK/SIDE PATH | | BIKE LANE | PARKING LANE | TRAVEL LANE | TRAVEL LANE | PARKING LANE | BIKE LANE | SIDEWALK/SIDE PATH | |
|---|---|---|---|---|---|---|---|---|---|
| CLEAR ZONE | AMENITY ZONE | | | | | | | AMENITY ZONE | CLEAR ZONE |
| 5′ | 5′ | 5′ | 8′ | 11′ | 11′ | 8′ | 5′ | 5′ | 5′ |

Mixed Use, Alternative

## ELEMENTS

- **Right-of-way.** All required design elements must be included in the cross section and located on publicly owned ROW. Sidewalks or side paths may be located on permanent dedicated easements. The right-of-way must be sufficient to accommodate planned lanes for the roadway.
- **Transit.** Norman Parking and Transit should be consulted on necessary transit accommodations along existing and planned transit routes.
- **Pedestrian Crossings and Traffic Calming.** Pedestrian refuge islands and/or traffic calming techniques may be required by the City Engineer when warranted.
- **Active Transportation.** The appropriate active transportation element shall be included based on the facility indicated on the Active Transportation Plan Map.
- **Bike Lanes.** Bike lanes shall be placed and measured exclusive of gutters.
- **Dimensions.** All dimensions are expressed as maximums except where ranges are indicated and may be reduced upon City approval.

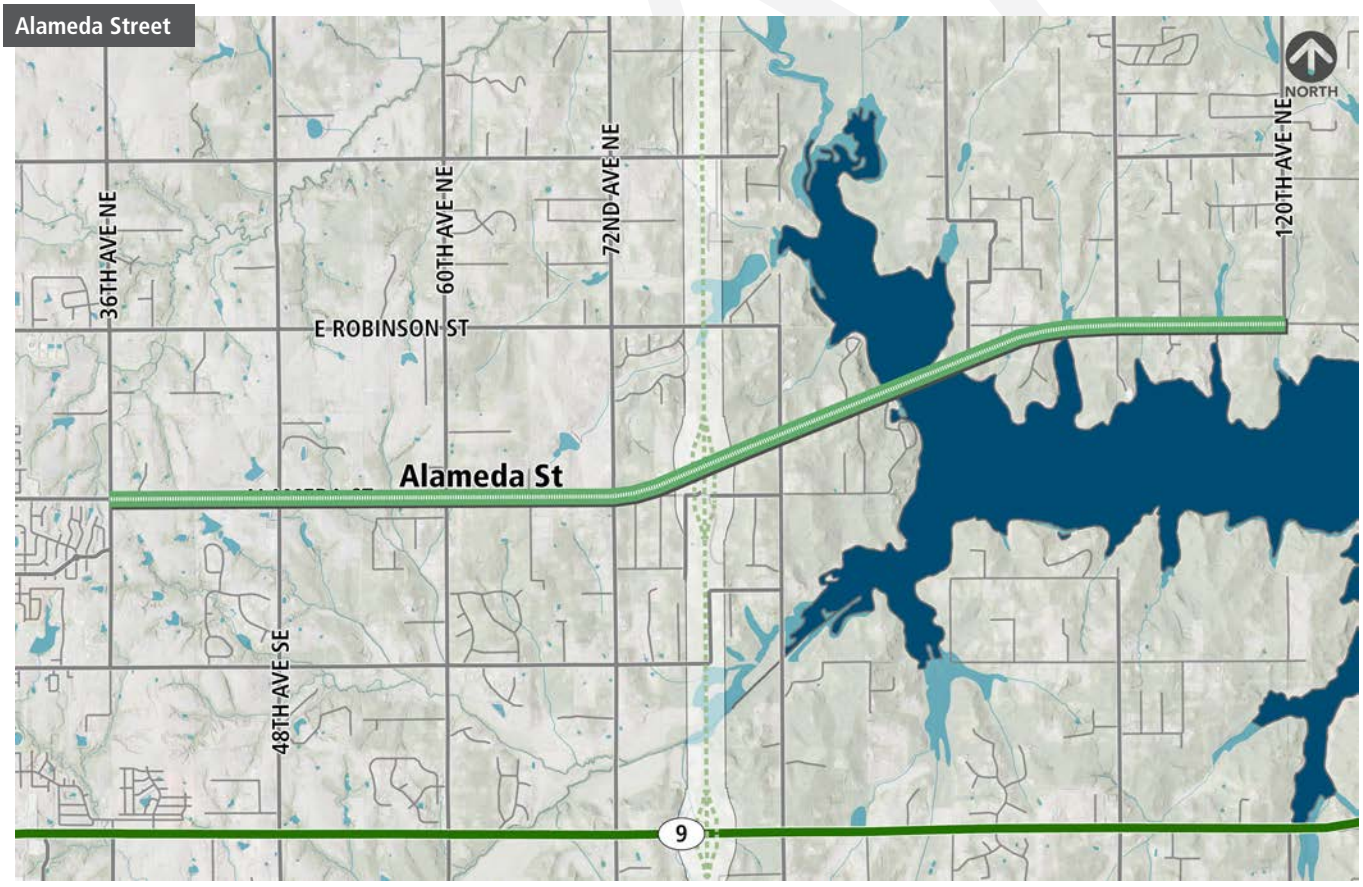
# SPECIAL CORRIDORS

While all corridors should be designed with Complete Street concepts and context sensitive solutions, the following corridors have been designated for heightened attention for such special considerations. One corridor, Alameda Street from 36th Avenue E to 120th Avenue E, has been designated as a new special context sensitive corridor as part of this Plan. The remainder for which no improvements have been made or carried over.

## ALAMEDA STREET

AIM Norman acknowledges there has been a paradigm shift in transportation planning by envisioning different means of transportation co-mingling along our streets. Alameda Street presents a unique opportunity to re-imagine transportation between downtown Norman, new development, and one of The City's most visible recreational assets, Lake Thunderbird. With ever increasing traffic volumes and larger vehicle types using Alameda Street, safety is a prime reason to plan a new eastern gateway into Norman. The prospect of Alameda Street as a tree-lined boulevard with improved intersections and multi-modal side paths to accommodate bikes and pedestrians translates to a more complete street design. Additionally, this special corridor would provide connectivity to other quality of life elements such as greenbelt trails, parks, and recreational activities at Lake Thunderbird.

Alameda Street

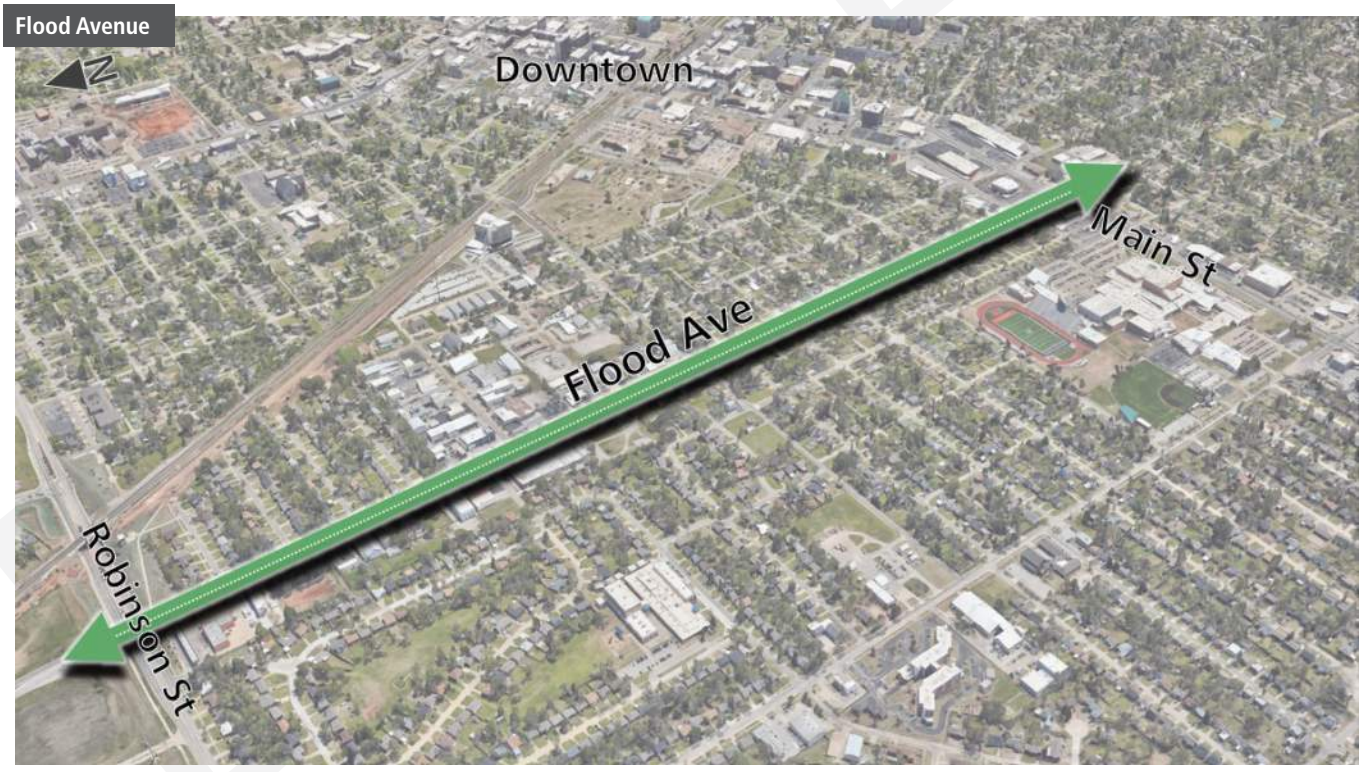


## FLOOD AVENUE

*The following is taken from the 2014 CTP.*

US 77/Flood Avenue forms a direct conduit from the core of Norman to and from I-35 to the north. Simulation of the 2035 travel demand and roadway network with the James Garner Extension in place from Acres Street to Flood Avenue north of Robinson Street indicates that the extension will relieve some of the traffic demand from Flood Avenue south of Robinson Street, reducing future congestion on Flood Avenue to a less severe condition. To alleviate the remaining congestion on Flood Avenue, once the James Garner Extension is in place, operational improvements should be assessed that would be supportive of the adjacent land uses. Such improvements could consist of roundabout intersection traffic control, provision of sidewalks continuously along the corridor to facilitate walking between neighborhoods and retail, and access management of driveways along the roadway. A concept for this treatment is shown in Appendix E of the 2014 CTP. The segment between Robinson and Acres Streets would receive one treatment concept, while the segment between Acres and Main Streets would receive another more residential set of treatments.

**Flood Avenue**



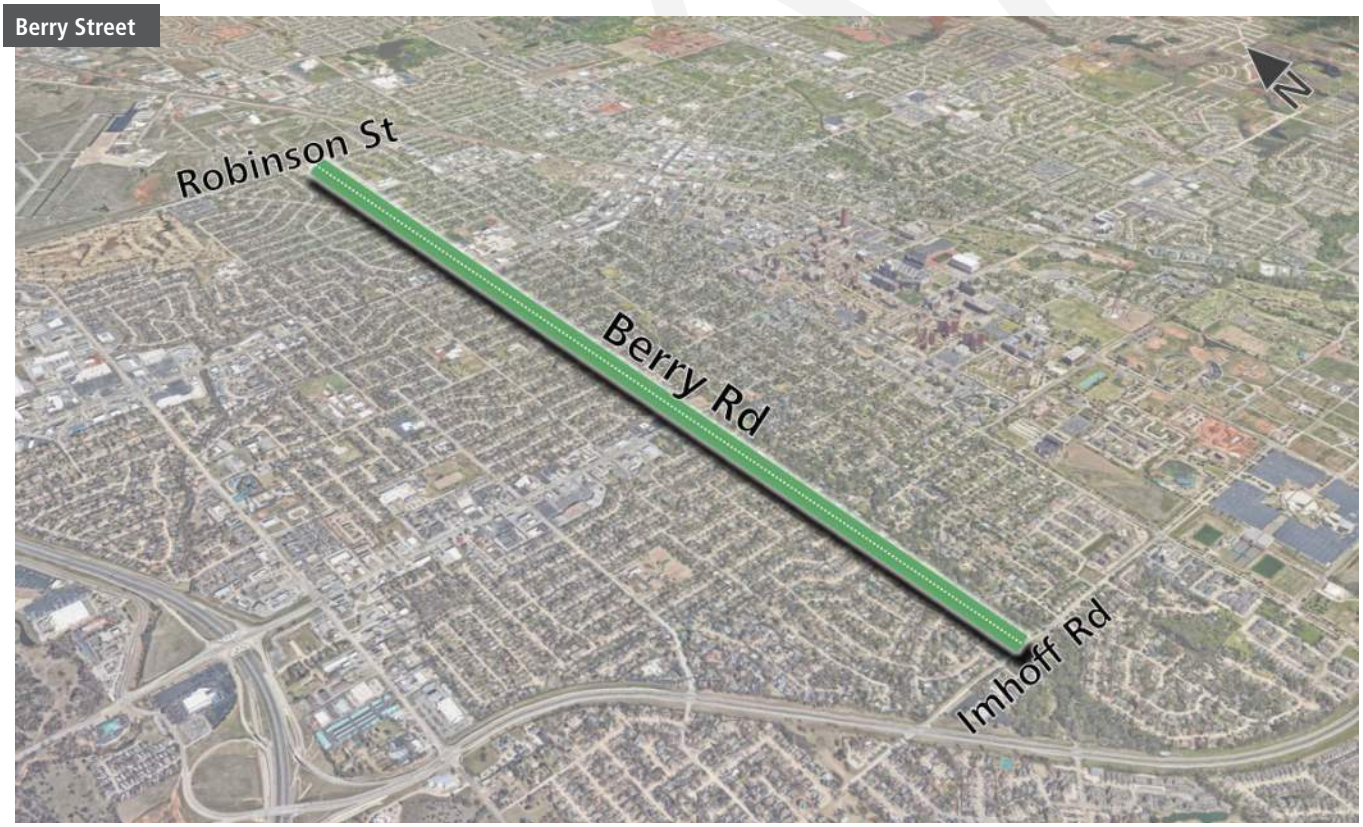
# SPECIAL CORRIDORS
continued

## BERRY ROAD

*The following is taken from the 2014 CTP.*

Berry Road is predominantly a two-lane roadway, with auxiliary lanes provided at major intersections. The development along Berry Road can be characterized as predominantly residential, with commercial development at the major intersections of Robinson Street, Main Street and Lindsey Street. Norman High School lies at the northeast corner of Berry Road at Main Street. South of Lindsey Street, adjacent development is single family homes. Some parallel parking provisions have been installed, with financial participation by adjacent residents, along Berry Road between Dakota and Dorchester Streets. Travel demand modeling for 2035 estimates that Berry Road will operate at acceptable levels of service as a two-lane roadway with auxiliary lanes at major intersections. As such it would make a good bicycling corridor given a few more feet of width. The Pavement Condition Index along the majority of Berry Road is below acceptable standards. Future reconstruction of Berry Road will allow the opportunity to provide a two-lane corridor with bike lanes along its length from Robinson Street to Imhoff Road. Roundabouts may be considered for intersection traffic control treatments in lieu of traffic signals at all except Robinson, Main and Lindsey Streets to affect corridor traffic calming. Other considerations for this roadway may include constructing a three-lane roadway with bike lanes between Robinson Street and Lindsey Street that could be re-striped to a four-lane roadway if needed in the future to serve as a north-south circulator roadway to provide an alternative to 24th Avenue W. and Flood Avenue as traffic volumes increase over time.

Berry Street



# DESIGN GUIDELINES AND SPECIAL CONSIDERATIONS

## DESIGN GUIDELINES

A variety of established standards and design guidelines, including regional guides, are available as valuable resources to guide design and development of The City's roadway, bicycle, and pedestrian facilities. The following should be referenced:

### ROADS

- NACTO: Urban Street Design Guide, latest edition
- ITE: Implementing Context Sensitive Design Handbook, 2017
- ITE: Designing Walkable Urban Thoroughfares – A Context Sensitive Approach, 2010
- AASHTO: A Policy on Geometric Design of Highways and Streets, latest edition
- TRB: Highway Capacity Manual, latest edition
- City of Norman: Engineering Design Criteria
- City of Norman Standard Specifications and Construction Drawings *(including a Complete Streets policy with its 2023 adoption)*

### BICYCLE/PEDESTRIAN FACILITIES

- NACTO: Urban Bikeway Design Guide, latest edition
- AASHTO: Guide for Planning, Design, and Operation of Pedestrian Facilities, latest edition
- AASHTO: Guide for Development of Bicycle Facilities, latest edition
- FHWA: Small Town and Rural Multi-modal Networks, latest edition
- OCARTS: Regional Active Transportation Plan – Appendix A: Facility and Design Guidance

### SPECIAL CONSIDERATIONS

- NACTO: Transit Street Design Guide, latest edition
- NACTO: Urban Street Stormwater Guide, latest edition
- MUTCD: Manual on Uniform Traffic Control Devices – Oklahoma, latest edition

## COMPLETE STREETS/CONTEXT SENSITIVE DESIGN

The focus of a complete streets initiative is to consider all modes during the planning, design, construction, operation, and maintenance of The City's street network. Effective Complete Streets policies help communities routinely create safe and inviting road networks for everyone, including bicyclists, drivers, transit operators and users, and pedestrians of all ages and abilities. Instituting a Complete Streets policy ensures that transportation planners and engineers consistently design and operate the entire roadway with all users in mind. For the Complete Streets policy to be effective, a program of supporting policies and procedures need to be put in place in all City departments, including a program of land use planning guidelines, a series of project development checklists, established responsibilities for addressing modal issues, and design and operating standards for implementation and maintenance.

The Comprehensive Transportation Plan, Active Transportation Plan, and Transit Plan elements of this Plan are meant to work in a complementary fashion to provide for consideration of all elements in the design process. The City of Norman Complete Streets Design Manual is included as an appendix to the City of Norman Engineering Design Criteria.

# DESIGN GUIDELINES AND SPECIAL CONSIDERATIONS continued

## ACCESS MANAGEMENT

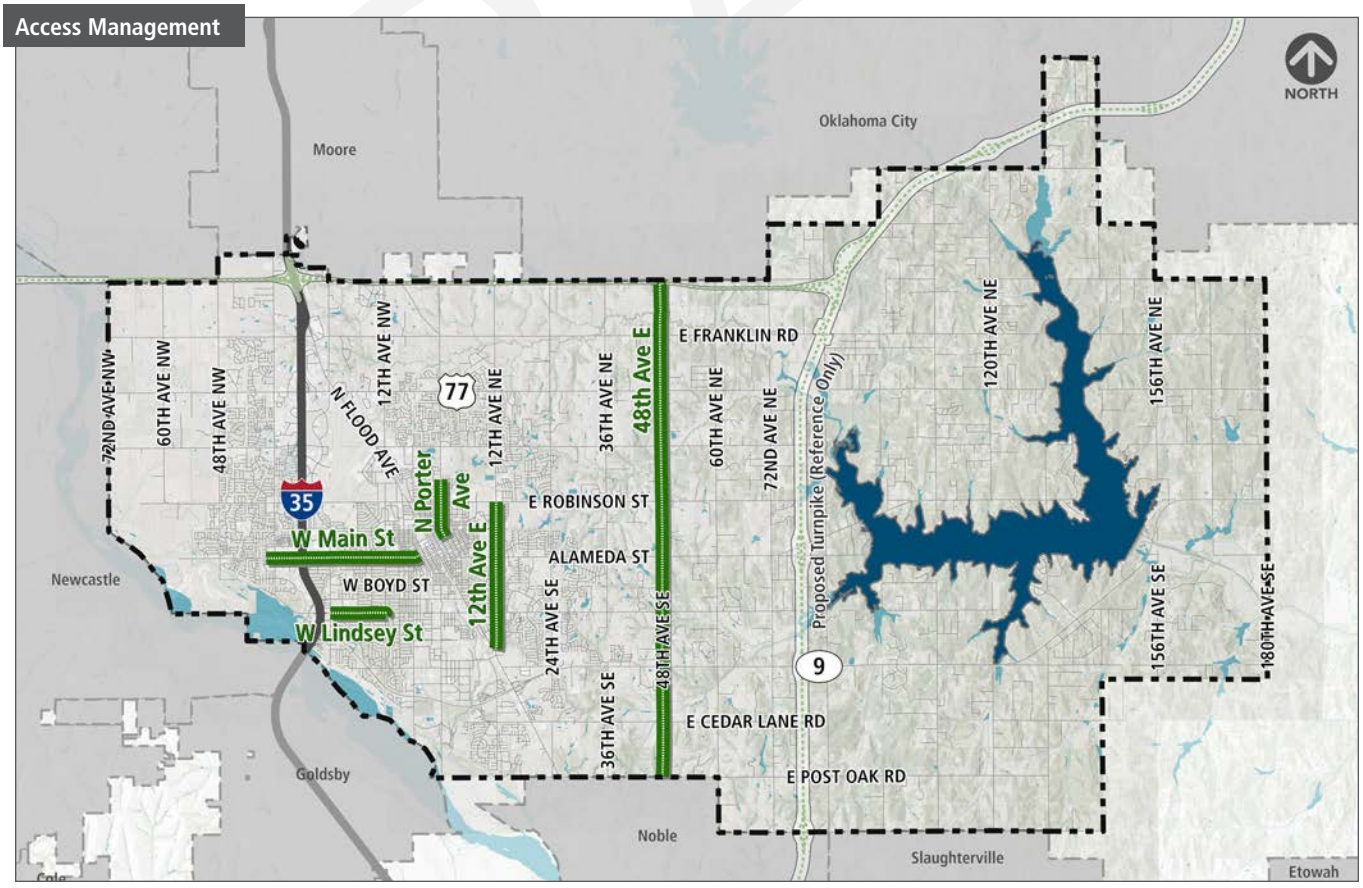
Managing access to roadways is a critical part of ensuring the function of a street is preserved and traffic flows safely. Poor access management causes safety issues for drivers, cyclists, and pedestrians. Effective access management can additionally help delay the need for costly widening of streets by help maintain traffic flow as traffic counts rise on a road.

The City of Norman has adopted access management standards as part of its Engineering Design Criteria. These standards are specifically adopted for arterial roadways and include requirements limiting access to arterials, driveway spacing standards, and cross access requirements. Given the increasing importance of The City's collector street network and growing bike and pedestrian network, consideration should be given to access on collector streets as well or to establishing general access management standards. These might include limitations on the number of driveway based on street frontage, joint access requirements at the time of development, and enhanced cross access standards.

Access management of corridors which developed prior to implementation of standards can prove difficult as redevelopment occurs along the street. A tool that can help in such situation is a Corridor Access Management Plan. Such plans involve detailed study of the operations of intersections and all driveways along a street to develop a specific plan for future consolidation, corridor specific spacing standards, and spacing of future signalization/roundabouts. The following corridors are good candidates for such study.

| STREET | SEGMENT |
|---|---|
| 12th Ave E | Robinson St to Classen Blvd |
| W Main St | Creekdale Dr to University Blvd |
| 48th Ave E | South City Limits to North City Limits |
| W Lindsey St | I-35 to S Berry Rd |
| N Porter Ave | Sandpiper Ln to E Gray St |

Access Management




Access Management Map

# ACTIVE TRANSPORTATION

# EXISTING CONDITIONS AND CONTEXT

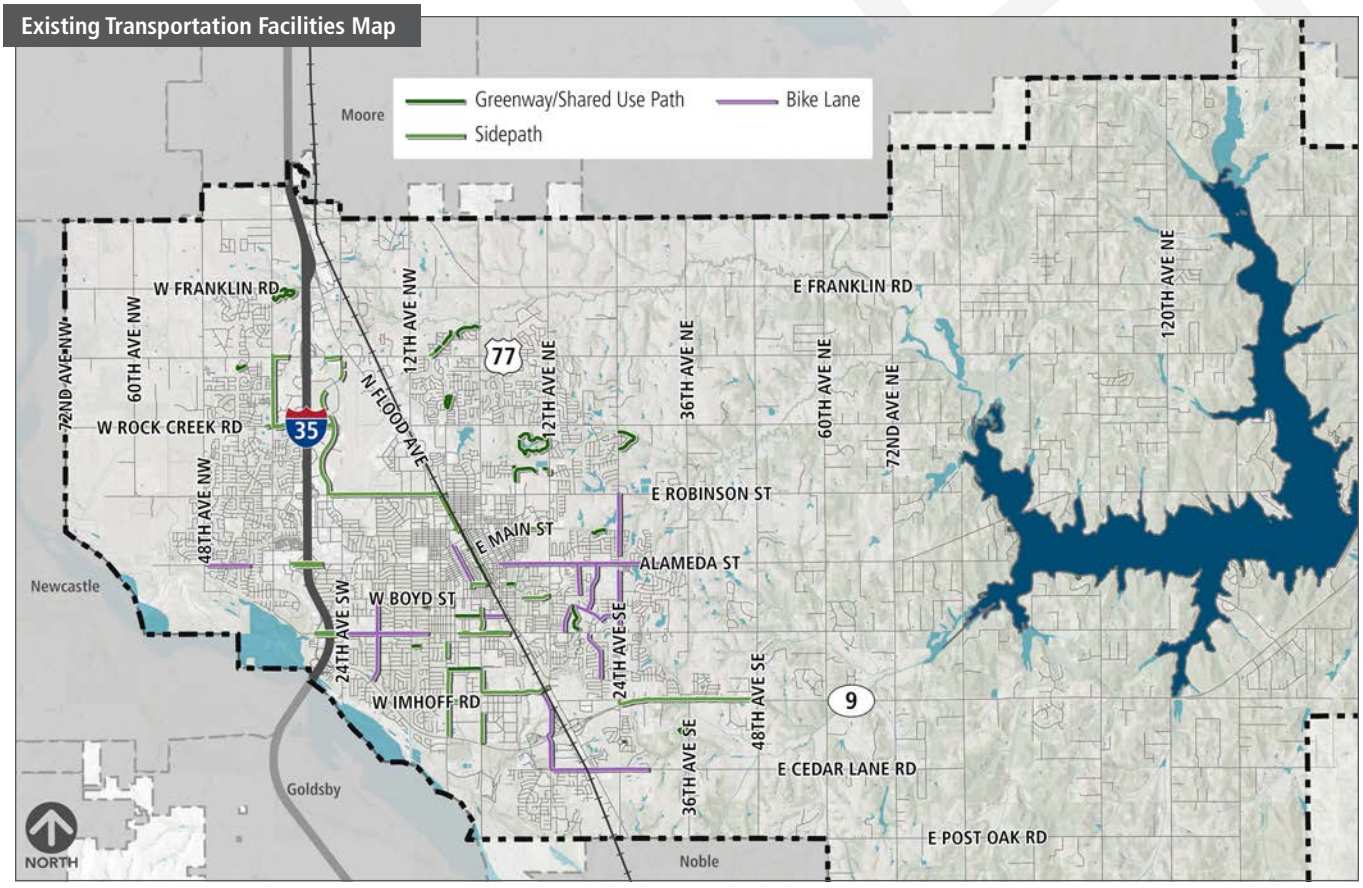
## EXISTING FACILITIES

Active transportation facilities in Norman are both indicative of the progress The City has made in developing a network of facilities and the work still to be done to make it a viable alternative transportation option for residents.

The primary spine of the system is the Legacy Trail. This connection is composed primarily of greenway and side path facilities that extend from downtown along the BNSF railroad/James Garner Avenue north to Robinson Street and on to 24th Avenue NW and University North Park and beyond.

Existing plans call for the trail to be extended to Ruby Grant Park. This facility is a great example of the type of low stress facility that is comfortable for most users.

**Existing Transportation Facilities Map**




*Sidewalks not shown due to space constraints*

## USER TYPES

When designing bicycle and pedestrian facilities it is important to keep in mind the types of users that will be or are intended to be accommodated by the facilities constructed. *This plan is designed around more readily accommodating pedestrians and Interested but Concerned bike riders.* As such, more emphasis has been placed on bike and pedestrian facilities that separate users from traffic and make them feel safer. Below is a description of the user types adapted from *AASHTO's Guide for the Development of Bicycle Facilities, 4th and 5th Editions.*

### HIGHLY CONFIDENT/ SOMEWHAT CONFIDENT RIDERS

This group includes bicyclists who are comfortable riding on most types of bike facilities, including roads without any special treatments for bicyclists. This group also includes utilitarian and recreational riders of many ages who are confident enough to ride on busy roads and navigate in traffic to reach their destination. However, some may prefer to travel on low-traffic residential streets or shared use paths. Such bicyclists may deviate from the most direct route to travel in their preferred riding conditions. Experienced bicyclists may include commuters, long-distance road bicyclists, racers, and those who regularly participate in rides organized by bike clubs.

### INTERESTED BUT CONCERNED RIDERS

This group includes a majority of the population, and includes a wide range of people:

1. Those who ride frequently for several purposes
2. Those who enjoy biking occasionally but may only ride on trails or low-traffic and/or low-speed streets in favorable conditions
3. Those who ride for recreation, perhaps with children
4. Those for whom the bike is a necessary mode of transportation

In order for this group to regularly choose biking as a mode of transportation, a physical network of visible, convenient, and well-designed bike facilities is needed.

Table 6-1

| Highly/Somewhat Confident Riders | Interested but Concerned |
|---|---|
| **High Stress Tolerance**<br>**Less than 15% of Users** | **Low Stress Tolerance**<br>**50+% of Users** |
| Most are comfortable riding with vehicles on streets, and are able to navigate streets like a motor vehicle, including using the full width of a narrow travel lane when appropriate, using left-turn lanes. | Prefer shared-use trail, bike boulevards, or bike lanes that are buffered or along low-volume, low-speed streets. |
| While comfortable on most streets, some prefer on-street bike lanes, paved shoulders, or shared-use trails when available. | May have difficulty gauging traffic and may be unfamiliar with the rules of the road as they pertain to bikes; may walk bike across intersections. |
| Prefer a direct route. | May use less direct route to avoid high stress facilities. |
| Avoid riding on sidewalks. Ride with the flow of traffic on streets. | If no on-street facility is available, may ride on sidewalks. |
| May ride at speeds up to 25 mph on level grades, up to 45 mph on steep descents. | May ride at speeds around 8 to 12 MPH. |
| May cycle long distances. | Cycle shorter distances: 1 to 5 miles is a typical trip distance. |

# EXISTING CONDITIONS AND CONTEXT continued

## BENEFITS

### Equity Benefits

Active transportation facilities offer significant equity benefits by providing accessible and affordable transportation options for all community members. These facilities help reduce reliance on personal vehicles, which can be costly to own and maintain, thereby easing the financial burden on low-income households. Additionally, they promote inclusivity by ensuring that people of all ages, abilities, and socioeconomic backgrounds can travel safely and independently. By improving access to essential services, employment opportunities, and recreational activities, active transportation facilities contribute to a more equitable and connected Norman, fostering social cohesion and enhancing overall quality of life.

### Economic Benefits

Cities in the 21st Century are in an amenities arms race. Cities compete not just regionally, but nationally for attracting business and new residents. Active transportation facilities provide a valuable amenity that makes a community attractive to prospective residents. These facilities also promote economic growth by enhancing accessibility and connectivity, making it easier for residents to reach businesses, schools, and recreational areas. This increased mobility can attract new businesses and tourists, boosting local commerce and creating job opportunities. By supporting a diverse and vibrant local economy with a strong tax base, these facilities help reduce the fiscal burden on residents and contribute to a more sustainable and prosperous community.

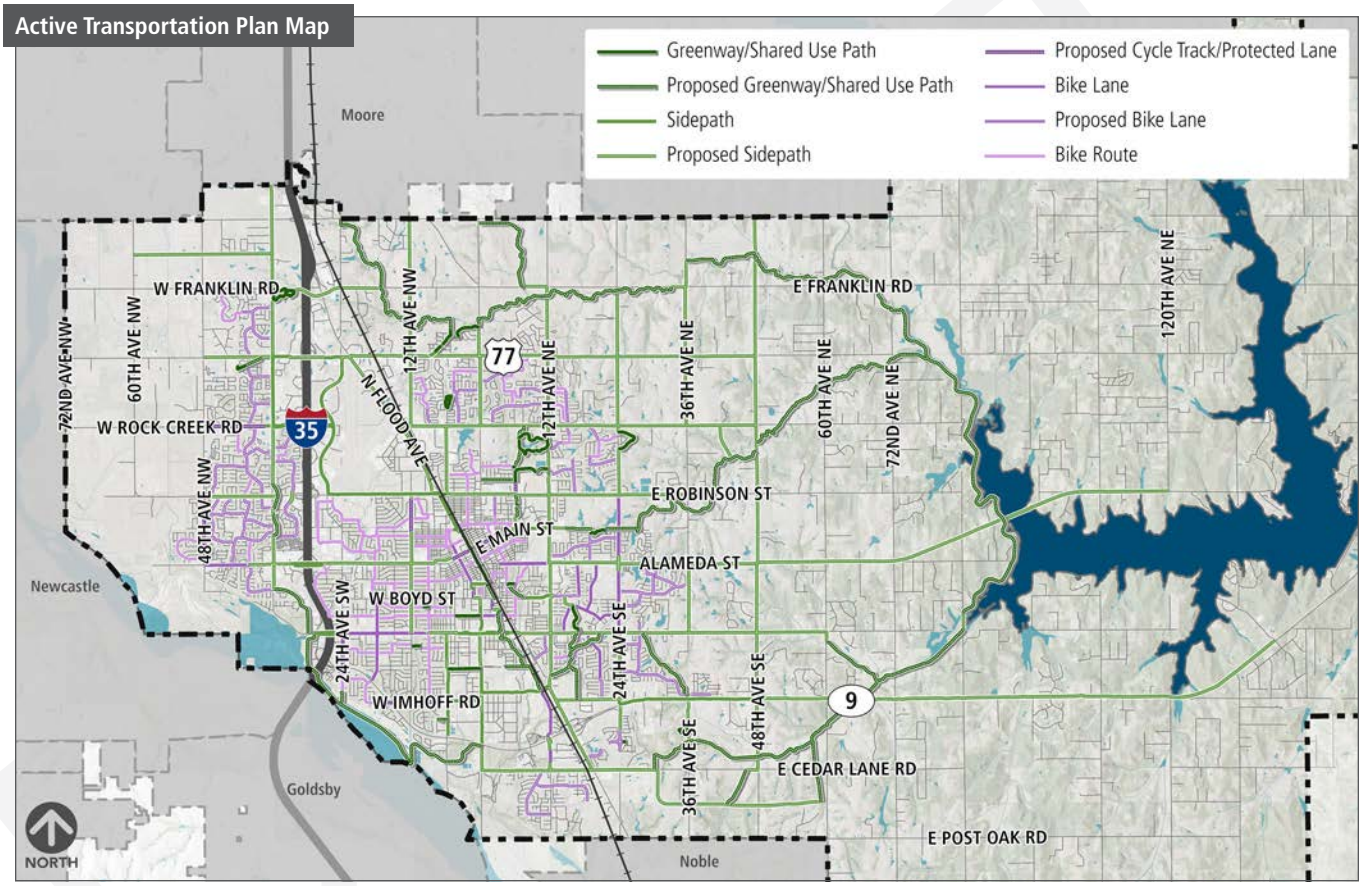
### Environmental Benefits

By encouraging walking, cycling, and the use of public transit, active transportation facilities help reduce the number of vehicles on the road, leading to lower greenhouse gas emissions and improved air quality. This reduction in vehicle emissions also decreases the prevalence of smog and other pollutants, contributing to a healthier environment. Additionally, active transportation can encourage mixed-use development, helping reduce the need for extensive road networks and slowing sprawl.

# ACTIVE TRANSPORTATION PLAN

The Active Transportation Plan Map establishes the location of facility types for bike and pedestrian facilities across the City of Norman. The plan works in conjunction with the Transportation Plan Map, which contains the locally designated classification system for existing and proposed roads. The facility types indicated on the Active Transportation Plan Map (below) relate to the Functional Classification and Cross Section contained in Roadways chapter, which establish the standards for improvements related to each type of facility.

**Active Transportation Plan Map**

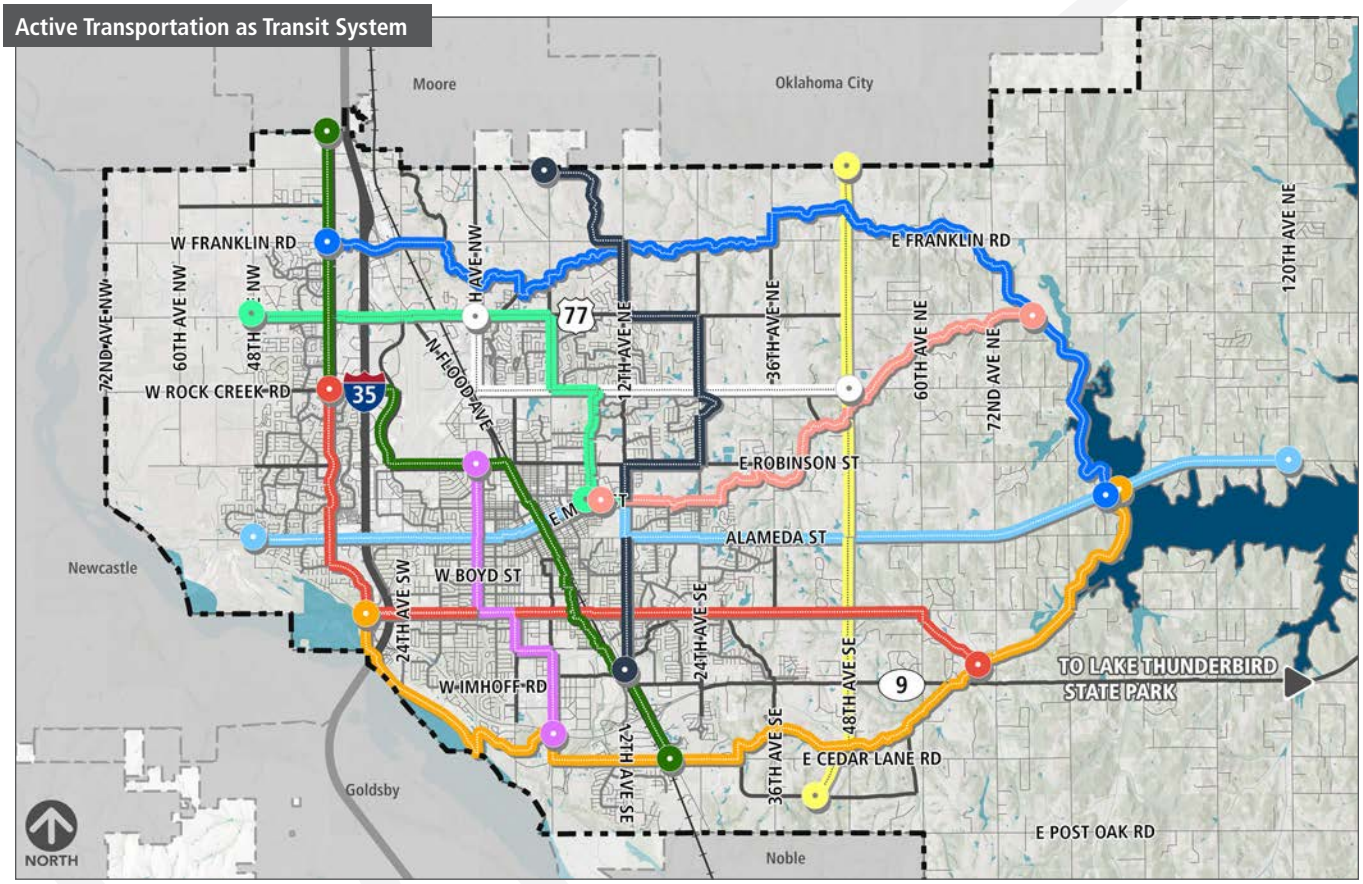


# ACTIVE TRANSPORTATION PLAN continued

## ACTIVE TRANSPORTATION AS TRANSIT SYSTEM

The map below depicts the Active Transportation Plan Map as a series of routes similar to a manner in which a transit system works, connecting between parts of The City and key destinations. These routes are largely contained on lower stress facilities that accommodate the highest number of potential users for the system.

**Active Transportation as Transit System**




Active Transportation Plan Map with routes* illustrated as a transit system
**Individual colors are used to distinguish unique routes and carry no additional meaning*

Example of active transportation users on a low-stress facility

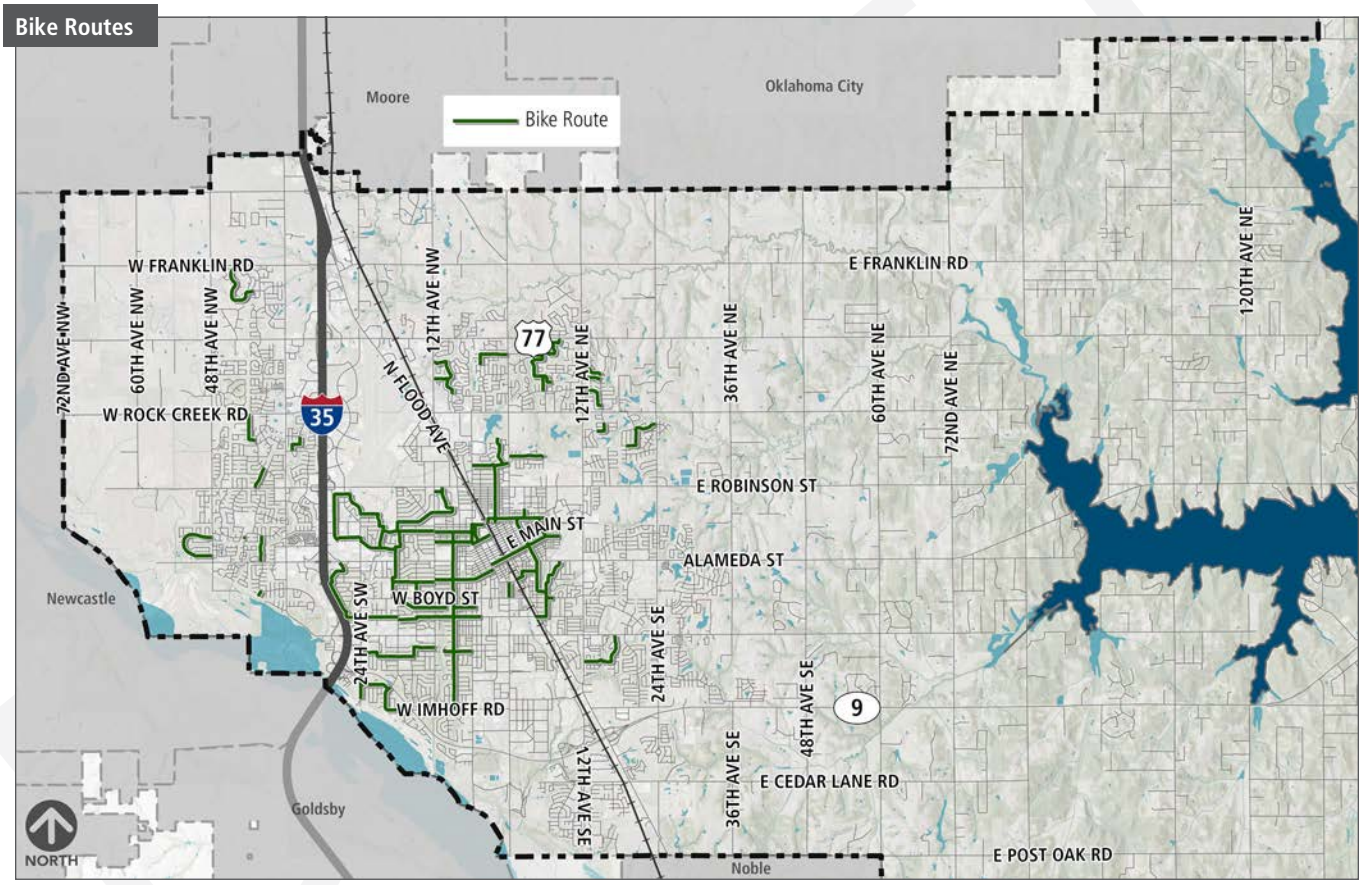
# FACILITY TYPES

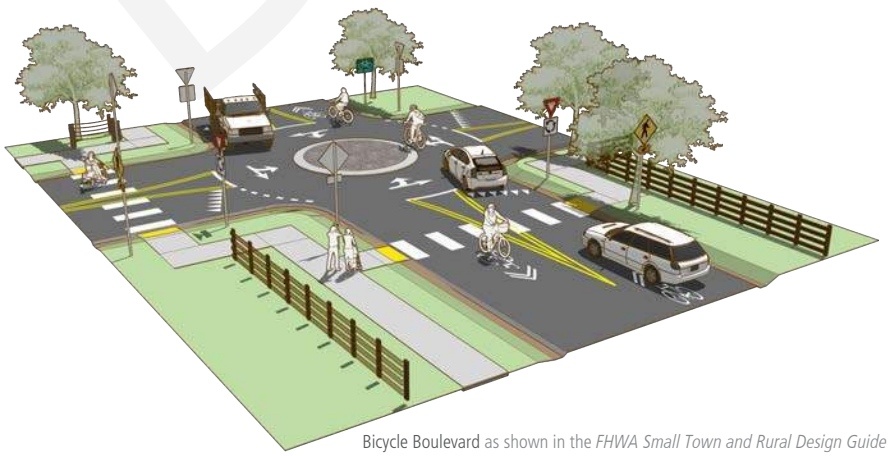
## BIKE ROUTE

A traffic lane with pavement markings and signage, typically a sharrow or wide shoulder, that indicates the user is on a bicycle route and is to be shared between vehicles and bicycles. These routes optimally feature some form of traffic calming such as a mini-roundabout to help keep traffic slow. These facilities are to be used on the lowest stress roadways.

These facilities are planned across The City within residential neighborhoods. They are intended to provide linkages to side paths and greenways or serve as connections between neighborhoods where continuous paths of low-stress streets exist.

**Bike Routes**



Bicycle Boulevard as shown in the *FHWA Small Town and Rural Design Guide*


Example of a Bicycle Boulevard

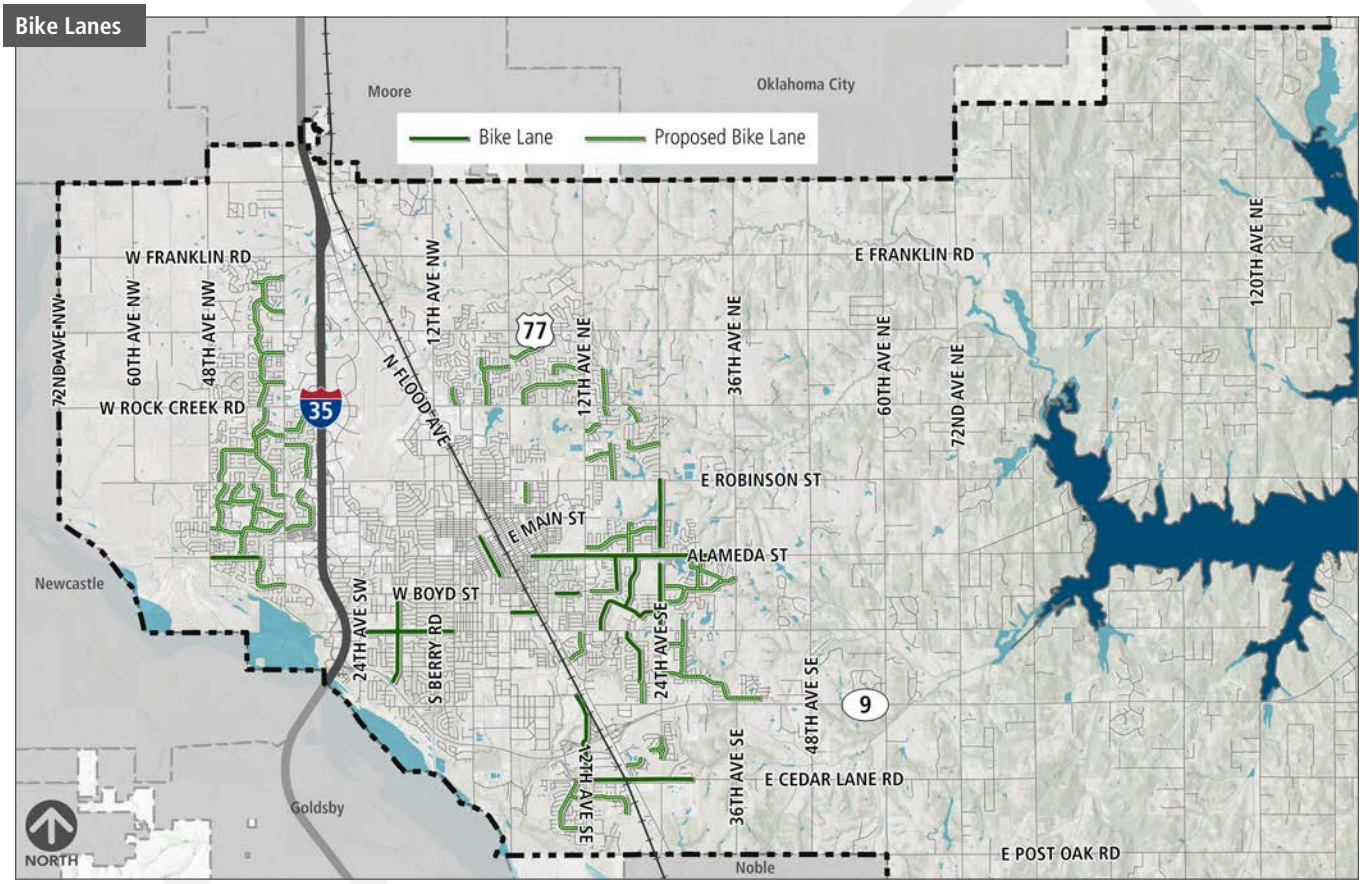
# FACILITY TYPES
continued

## BIKE LANE

Bike lanes designate an exclusive space for bicyclists through the use of pavement markings and optional signs. A bike lane is located directly adjacent to motor vehicle travel lanes and follows the same direction as motor vehicle traffic.

These facilities are planned across The City within residential neighborhoods and along lower volume roadways. They are intended to provide linkages to side paths and greenways or serve as connections between neighborhoods where continuous paths of low stress streets exist. Within residential neighborhoods bike lanes may be unmarked, allowing occasional parking use and primarily serving as a traffic calming measure.

**Bike Lanes**




Bike Lane as shown in the *FHWA Small Town and Rural Design Guide*

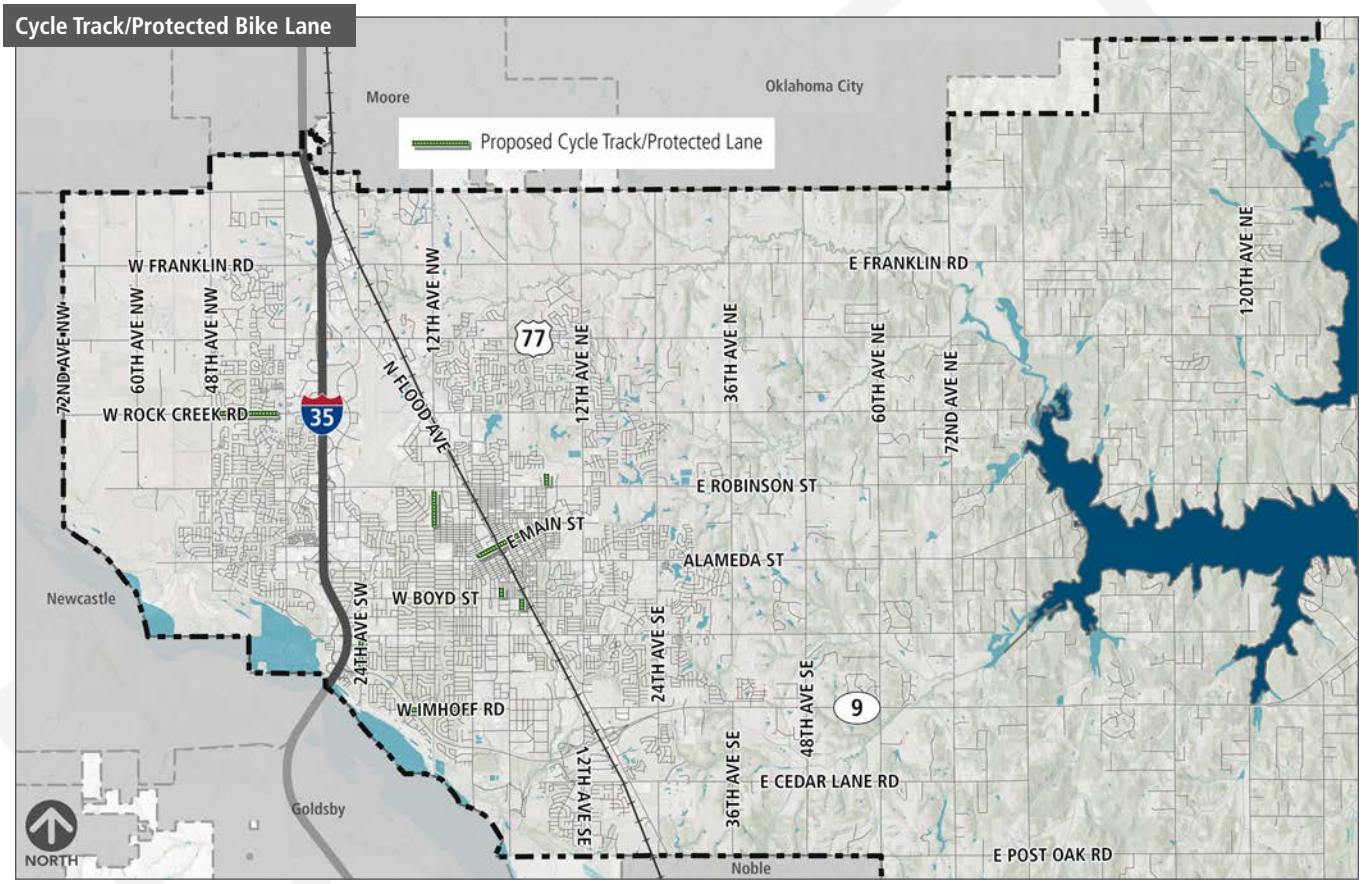

Example of a Bike Lane

## CYCLE TRACK / PROTECTED BIKE LANE

Cycle tracks and protected bike lanes are facilities for exclusive use by bicyclists within or adjacent to the roadway and is physically separated from motor vehicle traffic with a vertical element or a striped buffer.

These facilities are selectively planned as adaptation for existing facilities such as the alley north of Main St in downtown or along W Rock Creek Rd west of 36th Ave NW. The use of buffers on these facilities help reduce the of the facility and are only meant to be used in instances where traffic counts or pavement widths and driveway density allows for conversion of the existing street.

**Cycle Track/Protected Bike Lane**





Separated Bike Lane
as shown in the *FHWA Small Town and Rural Design Guide*

Example of a Cycle Track

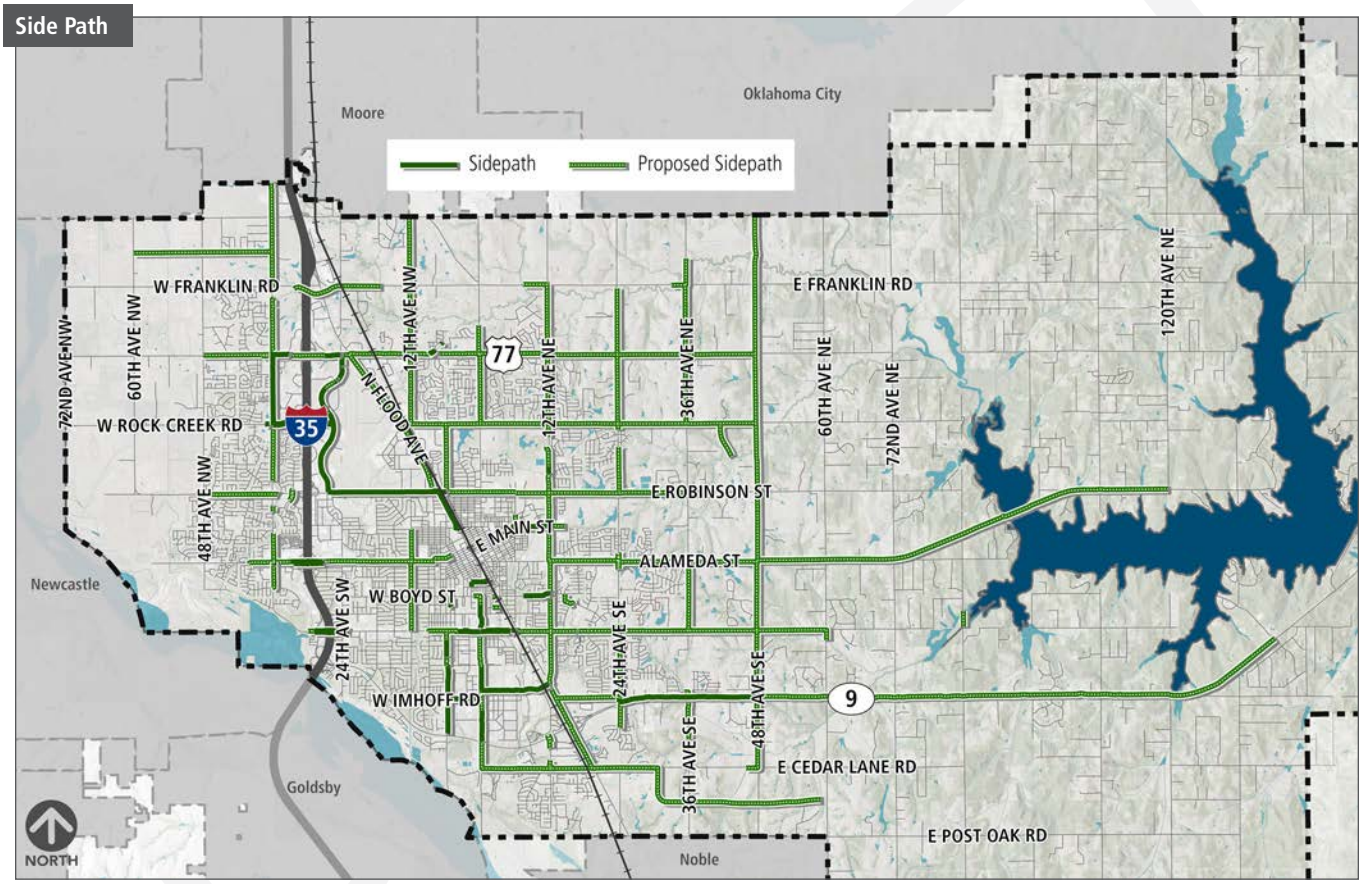
# FACILITY TYPES
continued

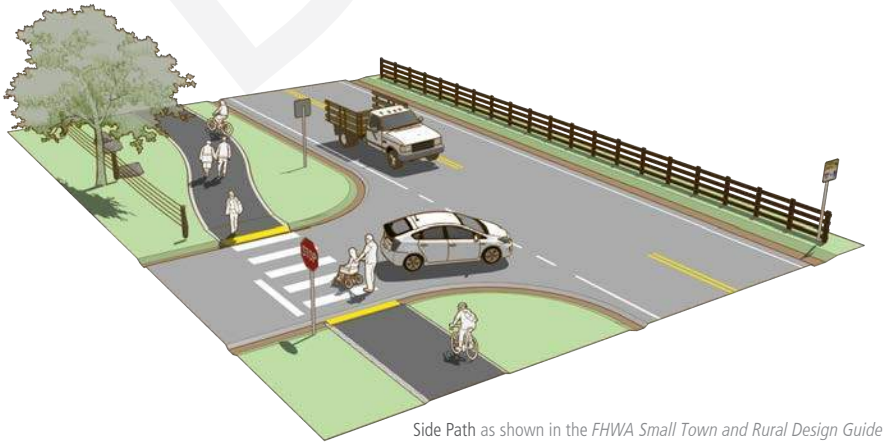
## SIDE PATH

A side path is a bidirectional shared-use path located immediately adjacent and parallel to a roadway. Side paths can offer a high-quality experience for users of all ages and abilities as compared to on-roadway facilities in heavy traffic environments and allow for reduced roadway crossing distances.

These facilities are planned along numerous principal and minor arterials due to safety and comfort concerns for potential users. These facilities are well adaptable to high speed, high stress roadways. Side paths will form much of the backbone of The City's active transportation network. A good example of an existing side path is the facility along 24th Ave NW in University North Park.

**Side Path**



Side Path as shown in the *FHWA Small Town and Rural Design Guide*

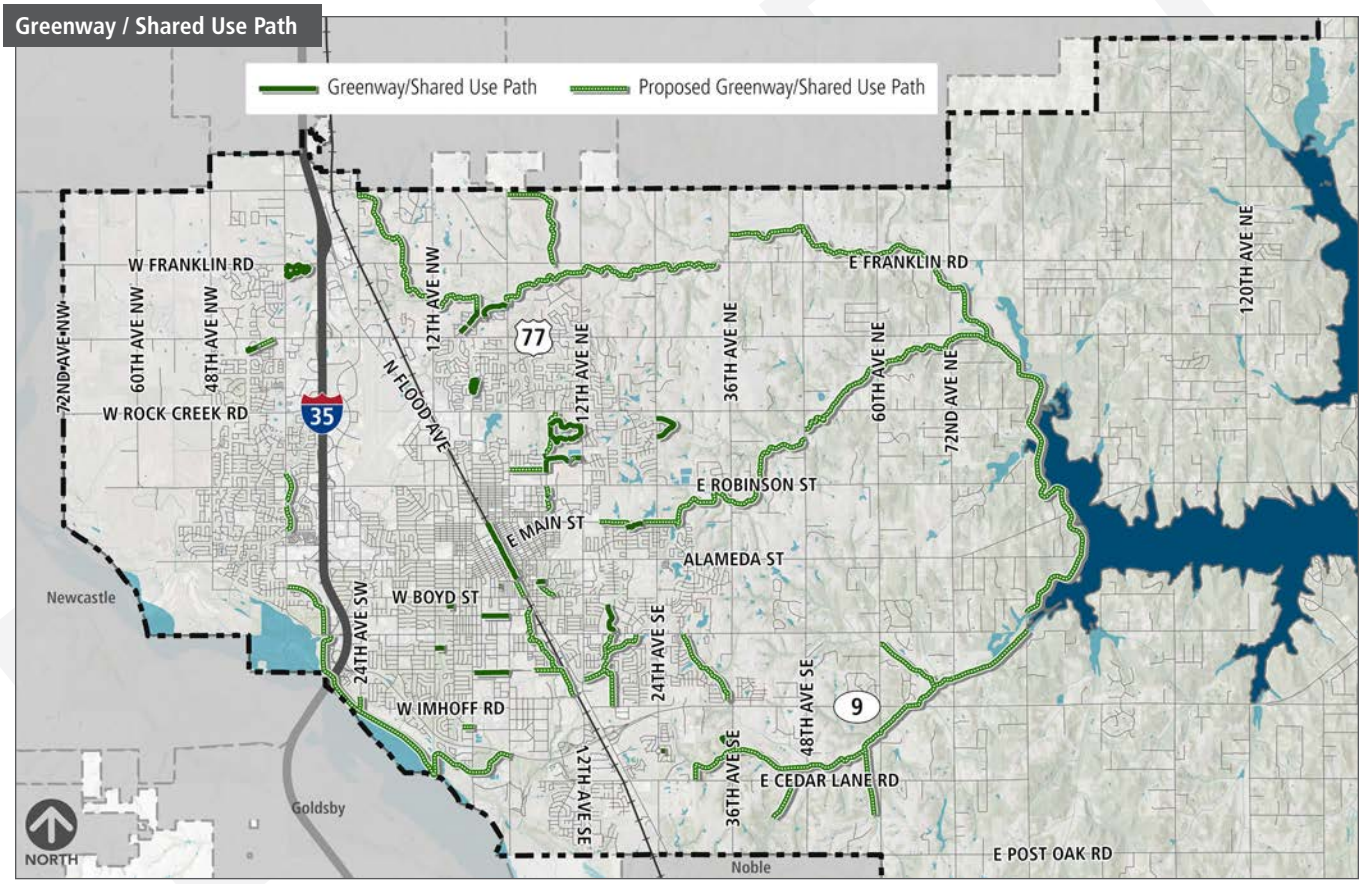
Example of a Side Path

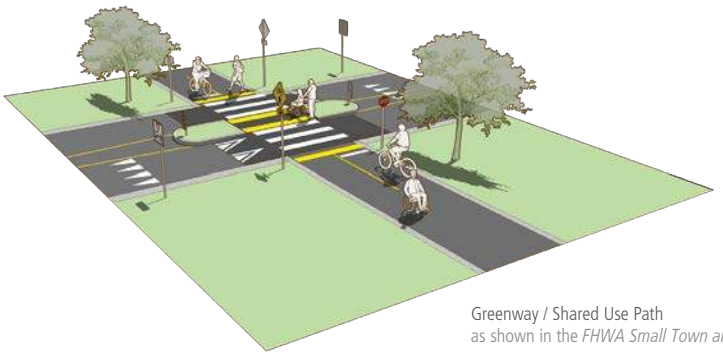
## GREENWAY / SHARED USE PATH

A greenway/shared use path provides a travel area separate from motorized traffic for bicyclists, pedestrians, skaters, wheelchair users, joggers, and other users. They can provide a low-stress experience for a variety of users using the network for transportation or recreation.

These facilities are planned along many of The City's creeks and rivers to provide for linear park and open space. Greenways/shared used path were selected through the public engagement as the most preferred facility type and provide the highest levels of safety and user comfort. Together with the network of side paths, these facilities will form the backbone of the active transportation system. Examples include the proposed Little River, Rock Creek, and Dave Blue Creek Greenways across northern and eastern Norman.

**Greenway / Shared Use Path**



Greenway / Shared Use Path
as shown in the *FHWA Small Town and Rural Design Guide*

Example of a Greenway

# FACILITY TYPES
continued

## BICYCLE FACILITY STRESS LEVELS

The stress level of a bicycle facility directly impacts those riders which are willing and able to use a facility. As stated, this plan is designed around more readily accommodating pedestrians and Casual/Less Confident bike riders. This means the preferred facility types are those which are the least stressful to the highest number of potential users – greenways, side paths, and cycle tracks.

The table below is adapted from ACOG's Regional Active Transportation Plan and provides a matrix for the appropriate use of facility types:

| | Average Daily Traffic Volume | | |
|---|---|---|---|
| **Average Motor Vehicle Operating Speed** | **Less than 2,000** | **2,001 - 10,000** | **Over 10,000** |
| | **Appropriate Facility Type** | | |
| **Less than 30 MPH** | Bike Route, No Facility | Bike Lane, Wide Shoulder | Bike Lane (Buffer Pref.) |
| **31-40 MPH** | Bike Lane, Wide Shoulder | Bike Lane (Buffer Pref.) | Buffered Bike Lane, Cycle Track, Side path |
| **41-50 MPH** | Bike Lane, Wide Shoulder | Buffered Bike Lane, Cycle Track, Side path | Side path |
| **Over 50 MPH** | Bike Lane (Buffer Pref.) | Buffered Bike Lane, Cycle Track, Side path | Side path |


# PARKING

# PLAN UPDATES

## PARKING'S VALUE TO A TRANSPORTATION PLAN

Parking is a key component to any transportation planning because it complements not only the roadway network, but also the active transportation network and transit facilities. As the means in which Normanites use the entire transportation system progressively changes, each transportation component needs to evolve.

Parking is vital to commercial districts as it connects consumers directly to businesses. The goal is always to have adequate parking as close as possible without having too many vacant spaces. The balance between parking and other usable space is very difficult in central business districts. With the inclusion of local and county government facilities typically located in centralized downtown areas, the increased need for short term and long-term parking becomes amplified.

In communities that have institutions of higher education (i.e. universities) parking is a critical factor to commuter students and local businesses. Again, the space balance between university-owned parking lots and building structures is incredibly challenging to university officials as well. Coupled with specialized retail districts and nearby off-campus residential development, parking becomes costly.

The goal of the parking section of the CTP Update is to understand what the existing conditions and challenges are for both parking providers and end users. There have been two relatively recent parking studies commissioned by the City of Norman and Cleveland County. The Kimley Horn 2018 Parking Strategic Plan was a shared effort between these two governmental agencies and has been generally accepted to date. A copy of this study is included in the A

## EXAMINATION OF THE NORMAN PARKING PROGRAM AND ITS FUNCTION

It would not be uncommon for a daily commuter to drive their vehicle to a daily public-use parking lot, load their bike onto a bus rapid transit vehicle whose route takes them to a neighboring city, then ride their bike the last mile to their place of work. Another scenario is a small group of co-worker's car-pool to lunch and need a parking space near a Campus Corner restaurant. Likewise the Norman business owner desires to have ample store front parking available for consumers to conveniently shop at their store. Adequate and ample parking for all of these uses continues to be a focal point in Norman.

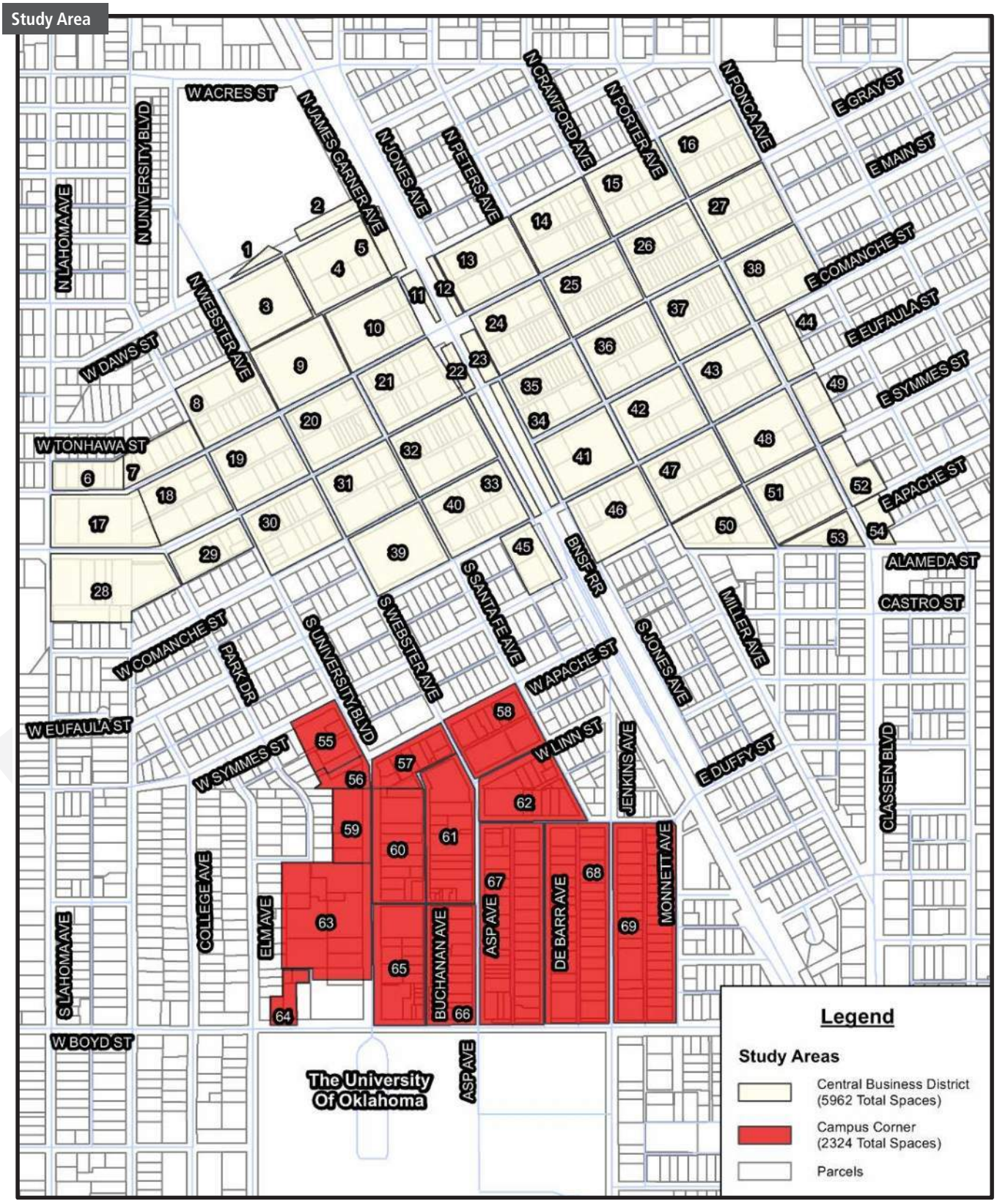
Currently, the City of Norman, the University of Oklahoma, and Cleveland County all own and operate independent public parking facilities throughout Norman. From the downtown city-owned hourly pay lots, to daily commuter lots at The County courthouse facilities, or long-term parking lots at The University, to private on-street parking for multi-family complexes, and large retail parking lots adjacent to shopping malls, commercial strip centers or large box stores, parking spaces are a necessity that are generally considered a premium.

Currently there are two primary parking locations in Norman that generate the most parking opportunities (both good and bad) for vehicular parking: Norman's Central Business District which includes downtown Norman, the Norman Transit Center, and the Cleveland County Courthouse and County Offices; and the Campus Corner commercial district at the north end of the University of Oklahoma's main campus.

These two locations account for approximately 8,300 parking spaces (on-street or parking lots) that are both publicly and privately managed and operated. The following map highlights the general location of these parking space.

# EXISTING CONDITIONS

Study Area




2018 City of Norman and Cleveland County Parking Strategic Plan prepared by Kimley Horn & The Solesbee Group

# FUTURE CONSIDERATIONS

As mentioned earlier, The City and Cleveland County jointly commissioned a strategic parking study in 2018. Kimley Horn's study was presented to both entities in December 2018. The study did a great job of researching previous parking plan documents and regional planning documents to get a better understanding of the historical problems and challenges. No less than ten documents are referenced by the study that deals with parking in some manner. The study also did a in-depth review of the existing parking conditions and identified areas where potential parking sites could be developed. Additionally, the study engaged the community and local stakeholders to identify parking challenges and opportunities. Some of those challenges and opportunities include:

- Inadequate amounts of parking for downtown businesses and Cleveland County operations during peak demand periods (am peak, lunchtime and evenings, weekends, and special events)
- A consistent parking management system that allows for uniformity of hourly, daily and monthly parking fees
- Multiple entities (city, county and OU) operating, enforcing and managing different parking facilities across Norman
- An opportunity to create a mixed use parking facility in downtown Norman to serve Cleveland County, the Norman train depot, the Norman Transit Center and downtown businesses
- An opportunity to construct other surface parking lots in downtown Norman and near Campus Corner

## WHAT IS PLANNED FOR NORMAN PARKING

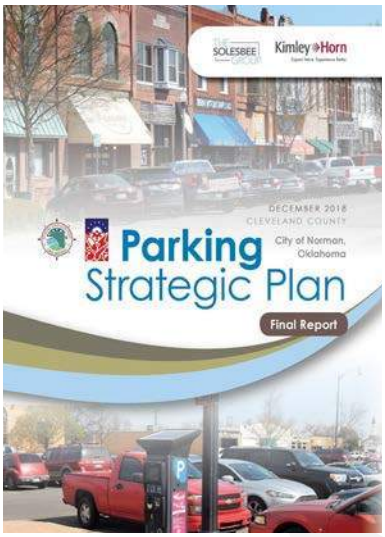
The City of Norman and Cleveland County committed a significant amount of time and resources to Kimley Horn's December 2018 Strategic Parking Study. The take aways from both governmental entities and several stakeholders, were the reasoning and recommendations behind the study are sound and should be followed. During this Comprehensive Transportation Plan Update, it is still evident the study participants are committed to the study recommendations, however the time frame for implementation is still unsettled.

It is recommended with this Comprehensive Transportation Plan Update, a City/County Parking Authority should still be considered to operate and manage all existing and new public parking facilities within Norman per the recommendations of the 2018 Strategic Plan. First steps of the Parking Authority should be to:

1. Implement a "hybrid" project management model that hires an outside program management team that reports back to the Parking Authority
2. Hire a specific program manager that has a strong customer service orientation
3. Develop a long-range maintenance and operational plan for parking spaces (on-street and off-street lots) managed by the Parking Authority

# ACTION ITEMS AND RECOMMENDATIONS

The 2018 Strategic Plan also outlined ten Primary Action Items the Parking Authority should implement in order to fully achieve the desired recommendations.




Those items are:

1. Adopt New Program Organizational Structure, Vision and Mission Statements, and Recommend Parking Guiding Principles
2. Engage a private parking management firm and develop operational policies and procedures; Begin a process to evaluate investments in a new on-street and off-street parking technology
3. Leverage parking as a community and economic development strategy; Develop a comprehensive parking planning function
4. Develop a proactive facility maintenance program
5. Develop a new parking program brand and marketing program; Include significant on-going community outreach strategies
6. Invest in training and staff development
7. Develop a detailed facility opening/operation plan for the County garage; Invest in on-street meter upgrades and system wide expansion
8. Critically assess the current parking enforcement program using modern technology and tools provided
9. Establish the parking program as a separate fund and combine all parking related revenue streams into this fund
10. Expand the scope of the Parking Program over time to be more supportive of Alternative Modes of Transportation and embrace more of a "mobility management" philosophy

## POLICY RECOMMENDATIONS

- Adopt the 2018 Cleveland County/City of Norman Parking Strategic Plan as part of the AIM Norman Comprehensive Transportation Plan 2025 Update and be included in the Appendices for reference
- Work closely with the University of Oklahoma, Cleveland County, core Norman businesses and the city planning staff to address parking requirements, enforcement, and applicable revisions to zoning codes
- Ensure that multi-modal connectivity between the Norman Depot, the new County Parking Facility, and the Norman Transit Center is implemented

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# TRANSIT

# OVERVIEW

The Go Norman Transit Plan was formally adopted in 2021. The Plan, included as an appendix (D) to this Plan, provides a detailed and prioritized road map for improving and expanding transit for Norman residents and visitors.

The following are key recommendations of the Go Norman Transit Plan:

- **Update and streamline the route network.** Realign bus routes to better serve the needs of existing and potential transit riders by improving access to key destinations and reducing travel time. *Realigned bus routes have been implemented and will be evaluated in the future.*
- **Establish a Downtown Transit Center.** Relocate the local route transfer hub from the OU campus to downtown Norman to maximize efficiency and allow for future service expansion. *Update: The downtown transit center has been established. This plan establishes new recommendations for improvements.*
- **Strategically expand bus service.** Extend routes to service emerging destinations, offer longer hours and more frequent service, and operate on Sundays. *Update: This issue will be explored after implementation of the new route network can be evaluated for effectiveness.*
- **Upgrade and standardize the fleet.** Replace aging vehicles and assemble a uniform fleet to minimize maintenance costs. Pursue Federal Transit Administration (FTA) grants for replacement buses. *Update: Much of the fleet has been replaced with efforts ongoing for the few remaining vehicles.*
- **Continue to operate fare-free.** Avoid costly fare collection equipment on new buses. Allow riders to adjust to route changes and the local economy to recover from the pandemic before re-evaluating the fare policy. *Update: The policy of fare-free rides continues and will be evaluated at a future date.*
- **Promote transit supportive land use.** Make transit easier to access and encourage more sustainable development. Maximize rider safety, comfort, and convenience. *Update: This issue has been discussed and included within consideration of the AIM Norman Land Use Plan.*

GO NORMAN TRANSIT PLAN

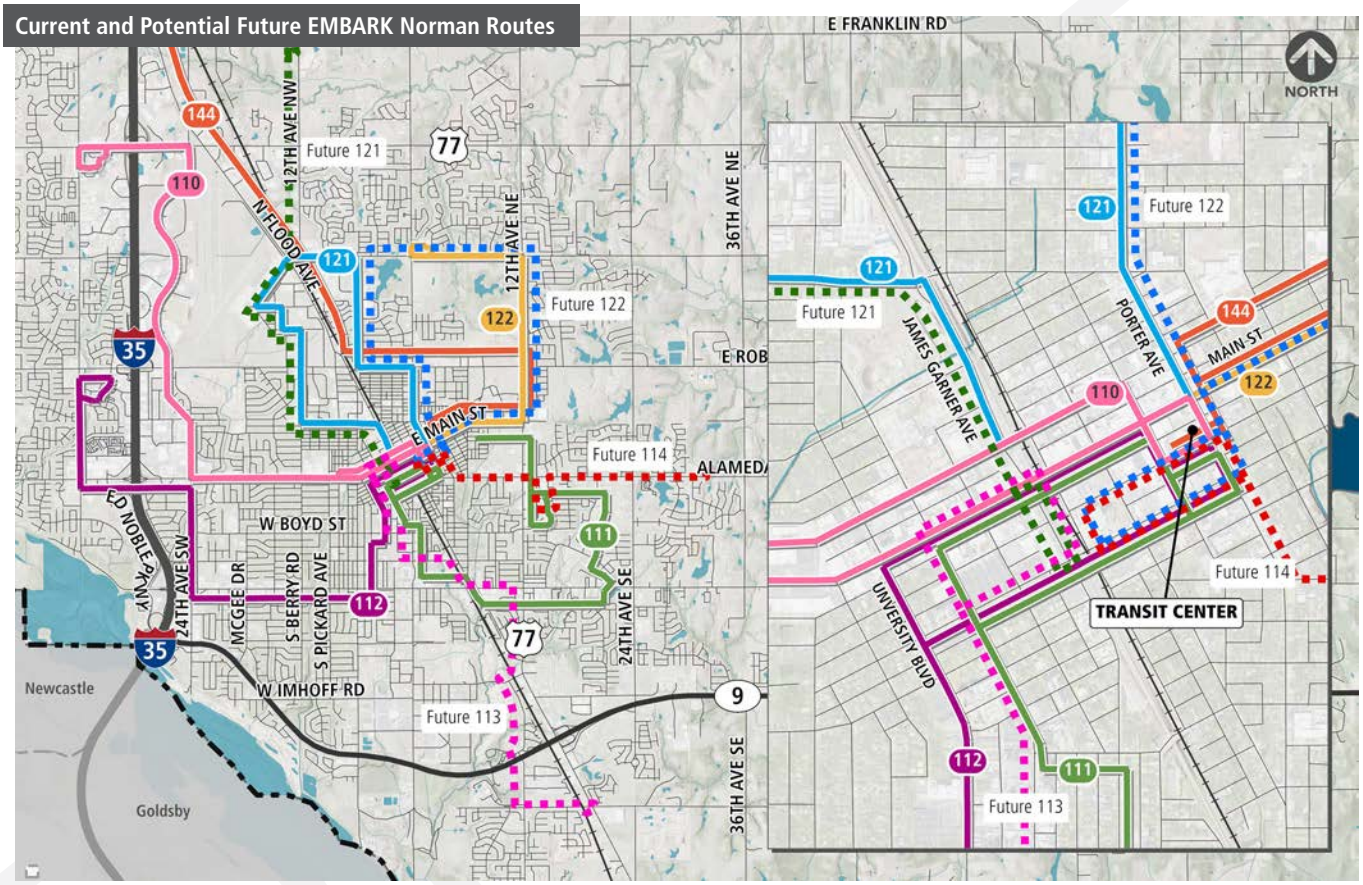
**Final Report**

**June 2021**

# ROUTES

The following map indicates the current routes for EMBARK Norman, as implemented from the Go Norman Transit Plan. These routes will be evaluated in the future. The map additionally shows future route for implementation as the transit system evolves to meet growing needs.

**Current and Potential Future EMBARK Norman Routes**



# RECOMMENDATIONS

## GENERAL RECOMMENDATIONS

Based on updated conditions and lessons learned from the Go Norman Transit Plan. The following recommendations are provided for future development of The City's transit system:

1. Explore adoption of a formal policy to consider transit supportive design for future roadway projects. Such consideration would be to ensure transit needs such as loading zones and enhanced stop amenities are evaluated along current and planned transit routes. Additionally, connecting bike and pedestrian infrastructure and context sensitive design should be considered in accordance with the city's Complete Streets Policy. Included with this Plan is reference to new guidelines for transit supportive design by way of NACTO's Transit Street Design Guide.
2. Consider formally including transit staff in development review processes to allow transit needs to be considered along current and planned transit routes. This can be specifically supported in areas identified within AIM Norman for transit-oriented development.
3. Conduct yearly review of the Annual Development Summaries produced by the City of Norman to assist in evaluation of transit needs on annual basis.
4. Develop public engagement tools to actively seek ongoing public feedback on needs and opportunities for improvement.
5. Explore funding options and operational changes to promote more efficient service on heavily used routes.
6. In advance of implementation of the RTA commuter rail, study how a City Transit Center can be enhanced and leveraged to promote use of the commuter rail and bus transit in conjunction with the downtown RTA stop. This may include relocation of the center.
7. Consider how micro-transit can continue to be strategically used as an option to expand transit service to areas where density/demand makes fixed route service inefficient.
8. Work with regional partners to explore development of regional guidelines on transit supportive design to allow better integration of transit into roadway and active transportation infrastructure.
9. Explore adoption of formal policy to consider transit as part of any amendment or change to Norman's Land Use Plan or sub-areas plan, as applicable.
10. Consider creation of a transit advisory board or greater inclusion of transit-focus in an existing advisory body.

## TRANSIT CENTER RECOMMENDATIONS

In advance of implementation of the RTA commuter rail, study how a City Transit Center can be enhanced and leveraged to promote use of the commuter rail and bus transit in conjunction with the downtown RTA stop. This may include relocation of the center.

The following recommendations are provided in support:

1. Plan for the transit center to function as an intermodal hub for interconnection between commuter rail to bus transit, personal vehicle, rideshare, bikes, and pedestrian users.
2. Plan for the use of the transit center and commuter rail stop to function as a seamless and connected center.
3. Ensure the transit center can be adaptable to changes in technology and emerging changes in mobility technology and demand.
4. Ensure future parking accommodations provide for a variety of modes uses including vehicles and bikes.
5. Pursue public engagement and feedback for any future major redesign changes that may be considered for the transit center.


# BRIDGES

# BRIDGES – PART OF THE TRANSPORTATION NETWORK

## WHAT'S INCLUDED IN THIS SECTION:

- **Update of 2014 Plan**
- **10-year bridge bond program**
- **Coordination with stormwater and roadway**
- **Project list for the next 20 years**

The 2014 City of Norman Comprehensive Transportation Plan (2014 CTP) did not include a detailed chapter on bridges as part of the CTP. For the most part, bridges were considered somewhat part of the 2009 Stormwater Master Plan. Although there were never specific inventory, analysis, or ranking criteria of The City's bridge infrastructure, general recommendations of bridge and culvert replacements were made as part of channel improvements within a specified drainage basin.

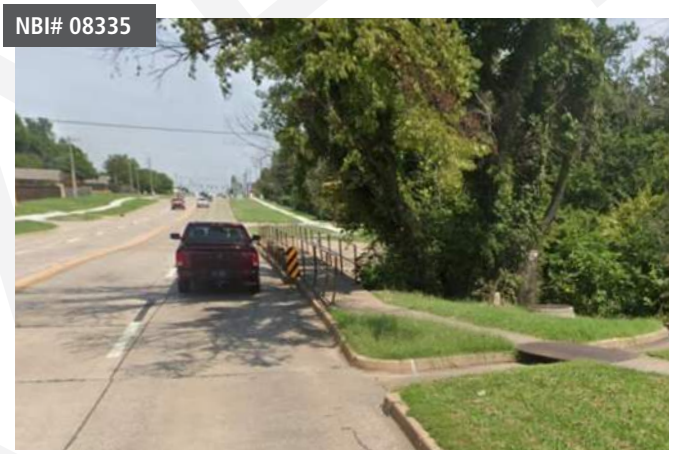
As part of the update to the 2014 CTP, we have included bridges as part of the transportation network because of the connectivity to roadways, trails, and sidewalks. We have also cross-referenced the bridge findings and recommendations of this update with the Stormwater Master and Parks Master Plans that are concurrently being updated.

The City of Norman bridge classified currently has 91 structures within the 194 square miles of Norman City Limits. Current funding for construction and maintenance of The City's bridges comes from two sources. The Capital Fund, which allocates one million dollars annually for general bridge maintenance activities to maintain or slightly improve existing bridge sufficiency ratings and condition. The second funding source is a voter approved bridge maintenance bond program (2023 Bridge Bond Program) that allocates 50 million dollars over the course of ten years for major bridge rehabilitation or full bridge replacement activities creating significant improvement to bridge sufficiency ratings, load bearing capacities, and condition.

BRIDGE BY BRIDGE

Connecting our Community

**NBI# 08335**



24th Ave. SW: 0.4mi south of W. Main St.

**NBI#18802**

24th Ave. NE: 0.9mi north of E Robinson St.

# 2023 BRIDGE BOND PROGRAM

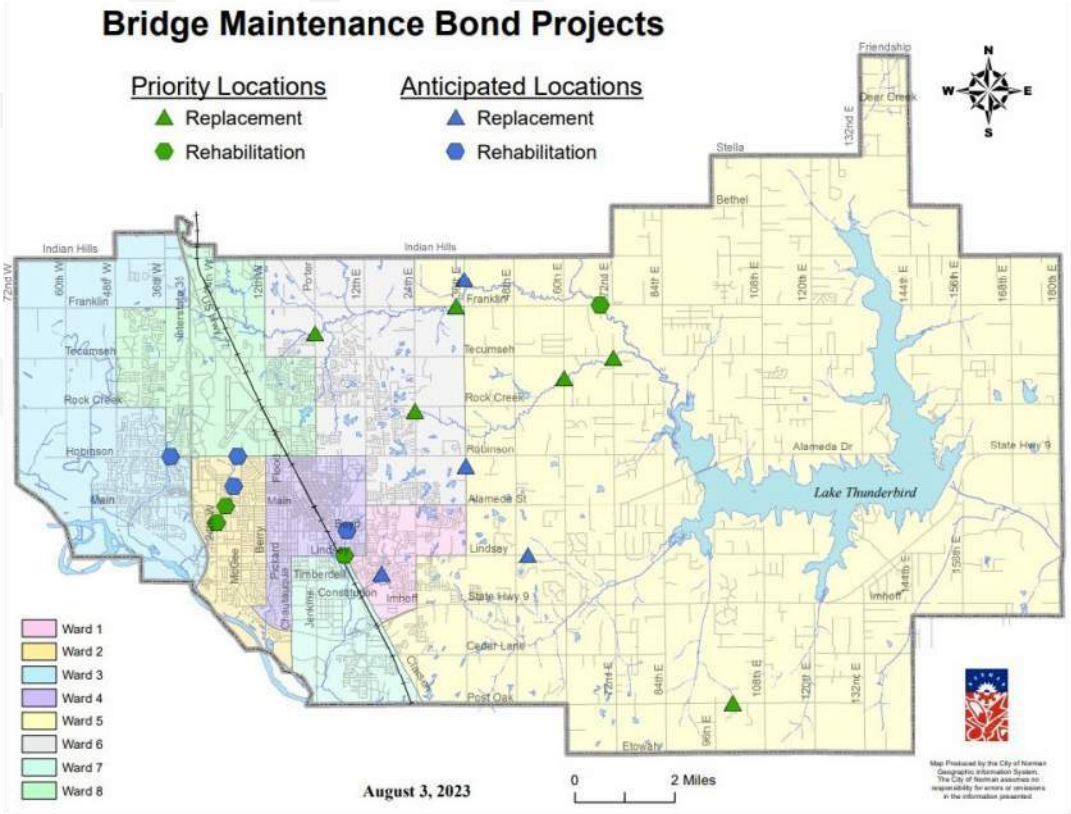
## MAINTENANCE BOND PROGRAM

The passage of the bridge maintenance bond program by voters in October of 2023 has greatly improved the outlook for The City's bridge inventory. The $50 Million dollar program was developed to address a minimum of ten structures in need of major rehabilitation and replacement beyond the reach of average annual capital fund allocations and in doing so will help accelerate The City's bridge inventory condition to a more stable status following the ten years of planned construction. Below is a map of the bridges that will be replaced or significantly rehabilitated.

There are an additional eight project locations identified for major rehabilitation or replacement within this bond program assuming that planned construction is completed within the intended budget. Any saving rendered within the Bridge Maintenance Bond Program will be used to continue major rehabilitation and replacement of structures in need based upon condition assessment and program ranking criteria. Tables have been added to support both the information relating to the bridge bond program and the citywide inventory assessment following biennial NBIS bridge inspection process.

The Capital Fund program for general bridge maintenance allows for maintenance activities on several bridge locations annually with roughly 40% of the bridges on our citywide inventory having received maintenance since 2018. As bridge conditions stabilize with regular performance of general maintenance activities, the program is expected to begin utilizing capital funds to support more intensive rehabilitation and replacement projects. This program growth is expected to create a need for annual adjustments to the capital fund allocations to support the larger program goals.

Following completion of the 2023 Bridge Maintenance Bond Program, The City's bridge inventory and maintenance schedule is expected to be more refined and maintainable with an expected need to replace or substantially rehabilitate roughly two bridges on an annual basis alongside general maintenance activities. This will require increased funding from tax revenues in the next decade to support the regular need for replacement of outdated infrastructure based upon average design life of a bridge.




Bridge Maintenance Bond Program October 2023 Projects

# INVENTORY + PROJECTS

The City is finding previously undocumented structures almost yearly and assuming ownership of new structures through development construction on a regular basis. Thus, The City's bridge inventory is always growing. As The City identifies new structures that have not yet been added to the inventory, that information is provided to the bridge inspector and the bridges will be inspected during the most current inspection cycle. By the end of 2025, The City will have both NBI and Local ID's for these locations and the data for these structures will be available to be added to the inventory ranking. An updated inventory ranking is included in Appendix C.

**"Bridge maintenance is critical for public safety."**

–Mayor Larry Heikkila

# AVIATION

# MASTER PLAN UPDATES

## NORMAN'S GENERAL AVIATION AIRPORT

Norman is somewhat unique as the Max Westheimer Airport (KOUN) is owned and operated by the University of Oklahoma (OU). Previous City of Norman transportation master plans did not fully embrace the importance of aviation to a community's overall transportation system. As this document plans for all modes of transportation for the next 25 years, aviation is a vital component that moves people and goods in and out of Norman, how it functions with other transportation elements, and the need to be strategic in its planned growth.

With continued and planned growth of Norman and the University of Oklahoma, it will require that all forms of transportation will also need to grow and improve. Diverse modes of transportation will also need to work hand in hand to efficiently and effectively move people and goods. Max Westheimer Airport will continue to grow and improve as a general aviation airport for the next 25 years. In the fall of 2024 a long-range master plan was completed; it has been approved by the Federal Aviation Administration (FAA) and adopted by the University. This airport master plan update will serve as a tool for the city to work in partnership with OU to plan for immediate and future improvements of the overall transportation master plan.

### HIGH-LEVEL EXAMINATION OF THE


### AIRPORT TYPE AND ITS FUNCTION

Max Westheimer Airport is classified as a regional, general aviation airport which has freight delivery and fuel base operations (FBO) functions. FBOs include private aviation companies, private hangers, aviation fuel providers, aviation maintenance companies, and private instructional services. Max Westheimer Airport is also the home of OU's School of Aviation that educates and trains students for various careers in the aviation industry. It is also a General Aviation Reliever Airport for Oklahoma City's Will Rogers World Airport.

### WHAT IS PLANNED FOR THE OU-OWNED AIRPORT

The following is a summary taken from the 2024 Max Westheimer Airport Master Plan Update that basically sets the tone for future airport facility requirements.

*"A key step in the planning process is developing requirements of airport facilities, which will allow airside and landside evolution over the term of the planning period. By comparing the existing conditions of the Airport to forecast aviation activity based upon both existing and future aircraft usage, the requirements for runways, taxiways, aprons, terminal, and other related facilities to accommodate growth over the short, intermediate and long-term planning periods can be determined. Demand-capacity analyses aid in the identification of airport deficiencies, surpluses, and opportunities for future development."*

Based upon the anticipated demands outlined in the 2024 Master Plan Update, the following areas will be the focus over the next 20 years:

- Airfield Capacity, Runway Orientation, Design Standards including Runway and Taxiway Systems
- Approach and Navigational Aids
- Airfield Lighting, Signage, and Pavement Markings
- Aircraft Parking Aprons
- Aircraft Storage Hangers
- Aircraft Fuel Storage
- Public Automobile Parking
- Ground Access
- Airport Security and Fencing

## “I see the future of aviation in the state of Oklahoma being nothing but bright.”

–Lance Lamkin, Airport Operations Officer
Max Westheimer Airport

The Recommended Development Plan exhibit (below) was taken from the FAA approved KOUN Master Plan that shows what development might look like.

**Recommended Development Plan**

KSA

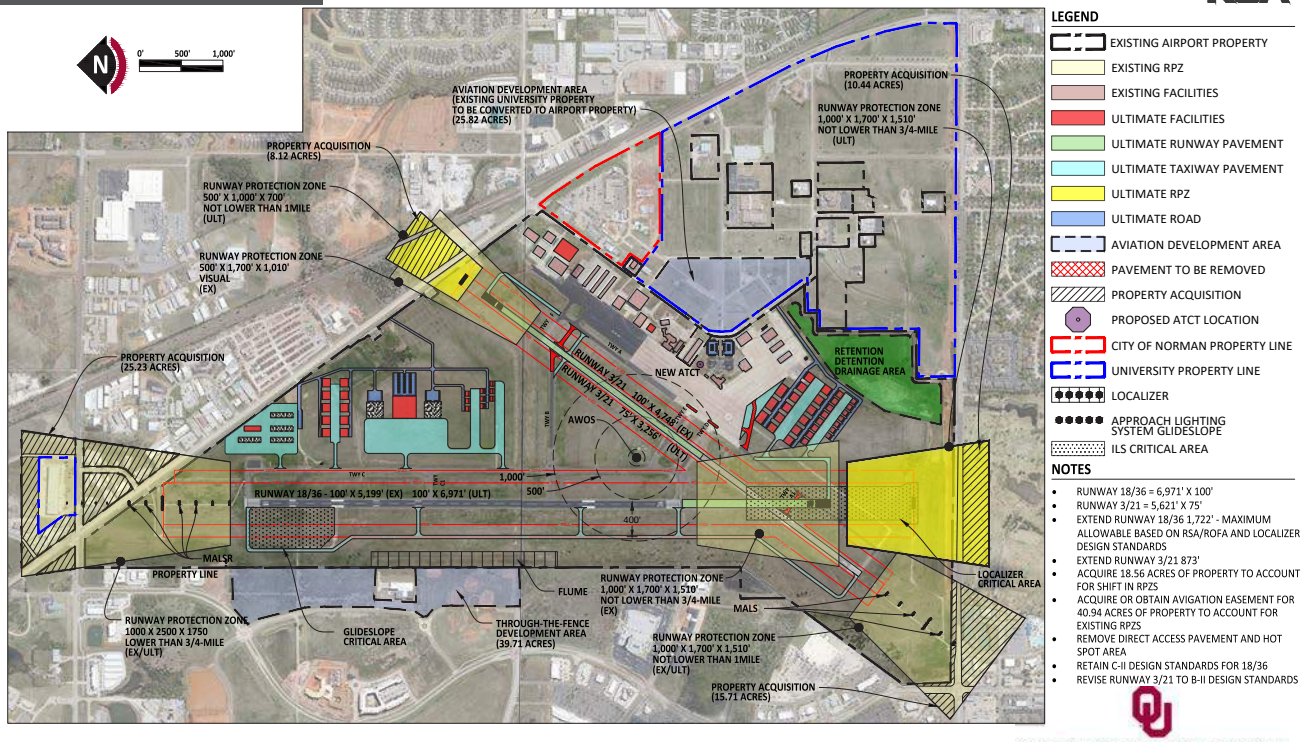



**EXHIBIT 4.10 - RECOMMENDED DEVELOPMENT PLAN**

Exhibit from Master Plan Update - Development Alternatives developed by KSA Engineers Inc.

# MASTER PLAN UPDATES
## continued

The University will be responsible for these improvements because they all fall within the airport's property boundary or "inside the fence".

Also a part of the Airport Master Plan is the protection of airspace in and around The Airport. This is where The City of Norman can cooperate with OU in order that the University successfully execute it's planned improvements and comply with the stringent requirements of the FAA.

One of the primary requirements of the FAA is for an airport to protect what is call a Runway Protection Zone (RPZ). An RPZ is an area off the runway end intended to enhance the protection of people and property on the ground. This is typically accomplished with the airport controlling (owning) the RPZ property. With the case of KOUN, a majority of the RPZ on the south end of the main runway is currently owned by the City of Norman and operated as the Westwood Golf Course. Private property comprises a majority of the RPZ on the north end of the main runway. In the past, property ownership not controlled by KOUN was seen as unfavorable to the FAA when it came to master planning The Airport's development. The City is currently in discussions with OU regarding agreements that can address the University's RPZ deficiencies in a manner consistent with The City's needs for the concerned property. The City can coordinate efforts to reference and recognize applicant compliance with the Oklahoma law and regulations controlling the permitting of structures according to FAA height restrictions and state-defined "incompatible land uses" (Oklahoma Aircraft Pilot and Passenger Protection Act (APPPA), Okla. Stat. tit. 3, §120.1 et seq.).

Below is the Airport Airspace Plan that will help guide and control the airspace and RPZ areas for the next 20 years.

**Airport Airspace Plan**

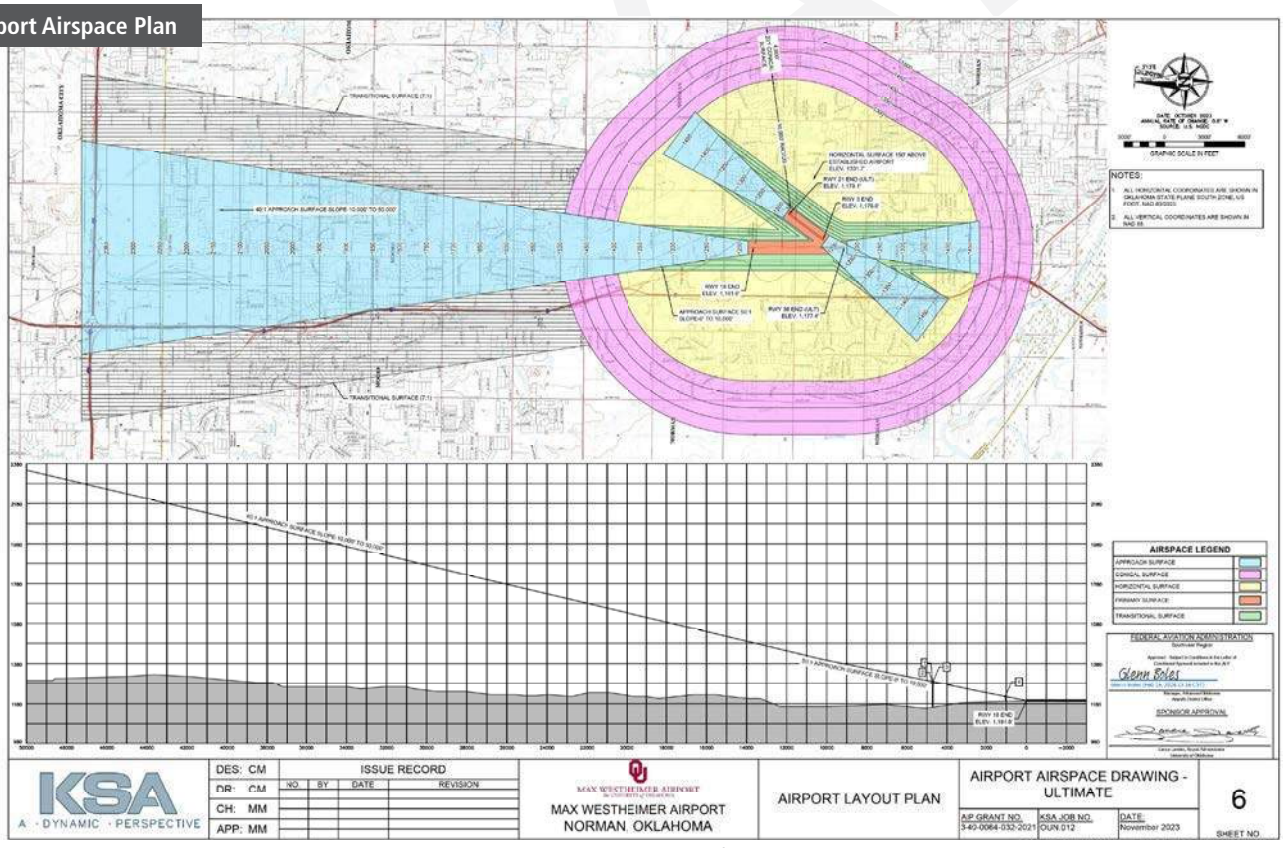



Exhibit from Airport Master Plan Update - Airport Plans developed by KSA Engineers Inc.

# IMPACT + RECOMMENDATIONS

## OKLAHOMA AVIATION ACADEMY'S IMPACT

The Oklahoma Aviation Academy is a new Science, Technology, Engineering, Art and Math (STEAM)-focused, comprehensive program with an emphasis on aviation and aerospace. The Academy is the vision of the Norman Public Schools, University of Oklahoma, Moore-Norman Technology Center and other public/private aviation industry partners. High school students will have opportunities for hands-on career and industry experiences that transforms the traditional education environment to authentically connect student learning to high-tech, aviation and aerospace industry readiness.

The Academy will be located immediately east of the Max Westheimer Airport Terminal Building with direct access to the airport property. Public transit does not service this area because it is currently under construction. However, once the facility is operational a dedicated bus route should be evaluated between the downtown Transit Center, Moore-Norman Technology Center, and the Aviation Academy. The City of Norman should also partner with the University of Oklahoma to extend and connect the multi-modal paths along Flood Avenue and Robinson Street to the Aviation Academy.

City's function should be to support and help facilitate the execution of The Airport's Master Plan:

- Land uses (Zoning Map and Land Use Map) that function with and support aviation and the FAA approved MWA Master Plan
- City's development and zoning processes should include a review of aviation easements and airport approach zones or "corridors" that will limit potential development from interfering with MWA's master plan
- Support the development and improvement of freight corridors (I-35, Tecumseh Road, Robinson Street and Flood Avenue) to and from the airport
- Provide more Active Transportation and Transit options to and from the airport
- Look at RTA connections with local transit, multi-modal paths, and sidewalks from the planned Tecumseh Road Station to and from the airport

## TRANSPORTATION MASTER PLAN UPDATE – AVIATION POLICY RECOMMENDATIONS

1. Control development immediately outside of the "fence" to support The Airport's Master Plan with zoning overlays and FAA development guidelines
2. Provide more public transit opportunities to serve The Airport
3. Provide more active transportation improvement projects to serve The Airport
4. Continue to improve municipal owned infrastructure (water, sewer, stormwater, roadway) to support The Airport's mission and function as a general aviation airport
5. Develop and improve a more defined freight corridor to support aviation

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# PROJECTS

# PROJECT RECOMMENDATIONS

## Roadway

The following list of project recommendations composes the master list of proposed roadway projects for this CTP Update. The list includes projects which originated from a number of sources. These sources include noncommitted 2014 CTP projects, Encompass 2045 projects from ACOG, future ODOT projects, and new project recommendations. The scope of previously identified projects may have been modified.

The project score indicated in the table is the cumulative score of the project after being rated against the priority criteria developed by the plan subcommittee.

| Priority Criteria | Weighting Score |
|---|---|
| Safety | 9.1 |
| Equity Impact | 7.6 |
| Environmental Impact | 7.9 |
| Bike/Ped Access | 7.3 |
| Quality of Life/Place | 9.1 |
| Connectivity | 7.7 |
| Construction Duration | 5.6 |
| Economic Development | 7.3 |
| Public Transit Access | 7.7 |
| Maintenance Impact | 7.1 |
| Flood Hazard/Drainage | 7.2 |
| Congestion | 5.1 |
| Partners | 6.2 |
| Community Impact | 7.6 |

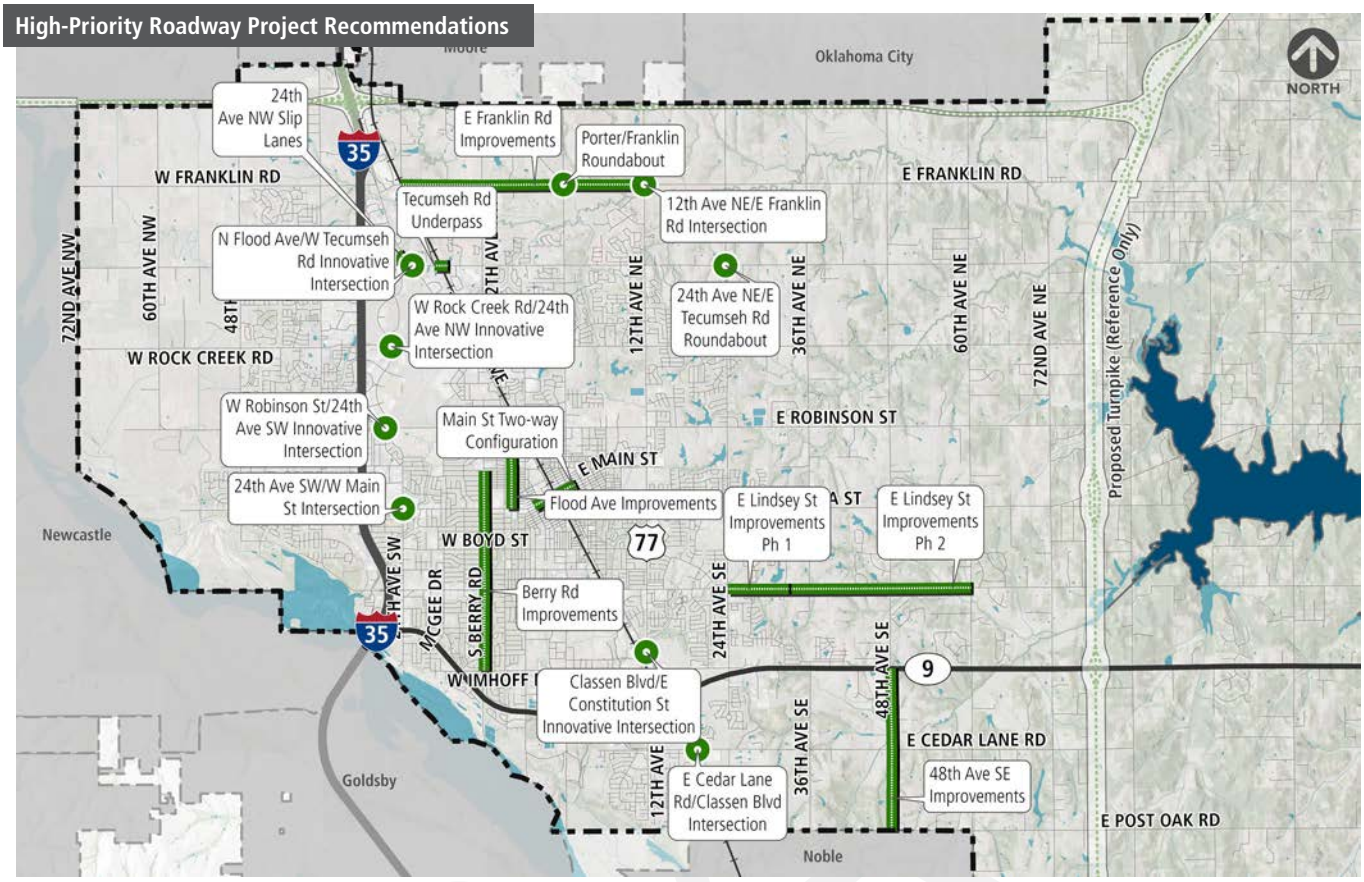
**ROADWAY PROJECT RECOMMENDATIONS MASTER LIST BY SCORE**

| Project Name | Segment | Details | Score |
|---|---|---|---|
| N Flood Ave/W Tecumseh Rd Innovative Intersection | - | Innovative Intersection | 148.9 |
| Main St Two-way Configuration | from University Blvd to Porter Ave | One-way to two-way reconfiguration | 147.1 |
| Classen Blvd/E Constitution St Innovative Intersection | - | Innovative Intersection | 139.7 |
| W Robinson St/24th Ave SW Innovative Intersection | - | Innovative Intersection | 132.1 |
| W Rock Creek Rd/24th Ave NW Innovative Intersection | - | Innovative Intersection | 125.2 |
| Berry Rd Improvements | from Imhoff Rd to Dakota St | Additional turn lanes and selective improvement to 3 lanes | 123.2 |
| Tecumseh Rd Underpass | BNSF Rail Crossing | Underpass under BNSF | 119.4 |
| E Cedar Lane Rd/Classen Blvd Intersection | - | Turn Lanes | 114.1 |
| Flood Ave Improvements | from W Robinson St to W Main St | Improve from 2 to 3 lanes | 112.6 |
| 48th Ave SE Improvements | from SH-9 to Post Oak Rd | Improve from 2 lanes to 2 lane boulevard | 110.2 |
| 24th Ave NW Slip Lanes | from Tecumseh Rd to Flood Ave | Right In - Right Out Slip Lanes | 108.7 |
| 24th Ave SW/W Main St Intersection | - | Turn Lanes | 108.6 |
| E Franklin Rd Improvements | from 24th Ave NW to 12th Ave NE | Improve from 2 to 3 lanes. | 107.8 |
| E Lindsey St Improvements Ph 1 | from 24th Ave SE to East of Siena Springs Dr | Improve from 2 to 5 lanes | 107.7 |
| E Lindsey St Improvements Ph 2 | from E of Siena Springs Dr to 60th Ave SE | Improve from 2 to 3 lanes | 107.7 |
| 12th Ave NE/E Franklin Rd Intersection | - | Turn Lanes | 106.5 |
| Jenkins Ave Improvements | from SH-9 to E Cedar Lane Rd | Widen from 2 to 3 lanes | 105.7 |

## ROADWAY PROJECT RECOMMENDATIONS MASTER LIST BY SCORE

| Project Name | Segment | Details | Score |
|---|---|---|---|
| E Alameda St Special Corridor | from 36th Ave NE to 120th Ave NE | Improve from 2 to 3 lanes | 104.9 |
| 12th Ave NW Improvements | from W Rock Creek Rd to W Tecumseh Rd | Improve from 2 to 3 lanes | 104.4 |
| Cedar Lane Rd Extension/Improvements | from 12th Ave SE to Jenkins Ave | Extend and improve from 2 to 3 lanes | 103.5 |
| E Rock Creek Rd Improvements | from 24th Ave NE to 48th Ave NE | Improve from 2 to 3 lanes | 102.9 |
| 48th Ave E Improvements | from SH-9 to Indian Hills Rd | Improve from 2 lanes to 2 lane boulevard | 102.5 |
| 24th Ave NE/E Tecumseh Rd Roundabout | - | Roundabout | 99.3 |
| E Tecumseh Rd Improvements | from 24th Ave NE to 48th Ave NE | Improve from 2 lanes to 2 lane boulevard | 97.0 |
| E Imhoff Rd Improvements | Classen Blvd to 24th Ave SE | Improve from 3 to 4 lanes | 91.7 |
| Acres St Improvements | from Berry Rd to N Porter Ave | Turn lanes at key intersections | 89.6 |
| Porter Ave/Franklin Rd Roundabout | Franklin Rd | Roundabout | 89.5 |
| W Imhoff Rd Road Diet | from Cynthia Cir to Chautauqua Ave | Convert to 2 lanes and cycle track | 89.3 |
| Classen Blvd Improvements | from E Lindsey St to 12th Ave SE | Improve from 3 to 4 lanes | 89.1 |
| 48th Ave NW Improvements | from W Robinson St to W Tecumseh Rd | Improve from 2 to 3 lanes | 87.9 |
| Broadway Ave Improvements/Relocation | from Indian Hill Rd to N Porter Ave | Relocate/Improve from 2 to 3 lanes | 87.7 |
| 36th Ave SE Improvements | from SH-9 to E Cedar Lane Rd | Improve from 2 to 3 lanes | 87.6 |
| N Porter Ave Improvements | from Indian Hills Rd to Tecumseh Rd | Improve from 2 to 3 lanes | 85.1 |
| W Franklin Rd Improvements Ph 1 | from Interstate Dr to 48th Ave NW | Improve from 2 to 3 lanes | 83.2 |
| E Cedar Lane Rd Improvements Ph 2 | from 36th Ave SE to 48th SE | Improve from 2 to 3 lanes | 83.1 |
| 48th Ave NW Road Diet | from W Main St to W Robinson St | Road diet from 4 to 3 lanes | 81.7 |
| E Robinson St Improvements | from 24th Ave NE to 48th Ave NE | Improve from 2 lanes to 2 lane boulevard | 80.0 |
| E Franklin Rd Improvements Future Phase | from 12th Ave NE to 60th Ave NE | Improve from 2 to 3 lanes | 79.9 |
| W Boyd St Improvements | from Flood Ave to 24th Ave SW | Add additional turn lanes | 78.0 |
| Chautauqua Ave Improvements | from W Imhoff Rd to W Timberdell Rd | Widen to 4 lane boulevard | 76.3 |
| W Franklin Rd Improvements Ph 2 | from 48th Ave NW to 60th Ave NW | Improve from 2 to 3 lanes | 75.5 |
| E Franklin Rd Bridge | from E Highland Dr to 144th Ave NE | New road and bridge across lake | 75.1 |
| 36th Ave E Improvements | from Lindsey St to Tecumseh Rd | Improve from 2 to 3 lanes | 72.7 |
| James Garner Ave/Acres St Intersection | - | Intersection Improvements | 69.1 |
| W Rock Creek Rd Improvements | from Grand View Ave to 36th Ave NW | Improve from 2 to 3 lanes | 68.7 |
| 24th Ave NE/E Franklin Rd Roundabout | - | Roundabout | 68.0 |
| 48th Ave NW Improvements | from Indian Hills Rd to W Tecumseh Rd | Improve from 2 to 3 lanes | 61.1 |
| W Robinson St Improvements | from 48th Ave NW to 60th Ave NW | Improve from 2 to 4 lanes | 52.6 |
| SH-9 Improvements | from 24th Ave SW to 12th Ave SE | Improve from 4 to 6 lanes | ODOT |
| 12th Ave E Improvements | from Indian Hills Rd to Classen Blvd | Improve from 4 to 6 lanes | ODOT |
| SH-9 Improvements East Norman | from 168th Ave NE to 180th Ave NE | Improve from 2 to 4 lanes | ODOT |
| SH-9 Improvements Future Phase | from 108th Ave E to 168th Ave NE | Improve from 4 to 5 lanes | ODOT |
| Rock Creek Interchange | - | Interchange Improvements | ODOT |
| SH-9 ITS/Signal Timing | I-35 to E City Limits | ITS/Signal Timing | ODOT |

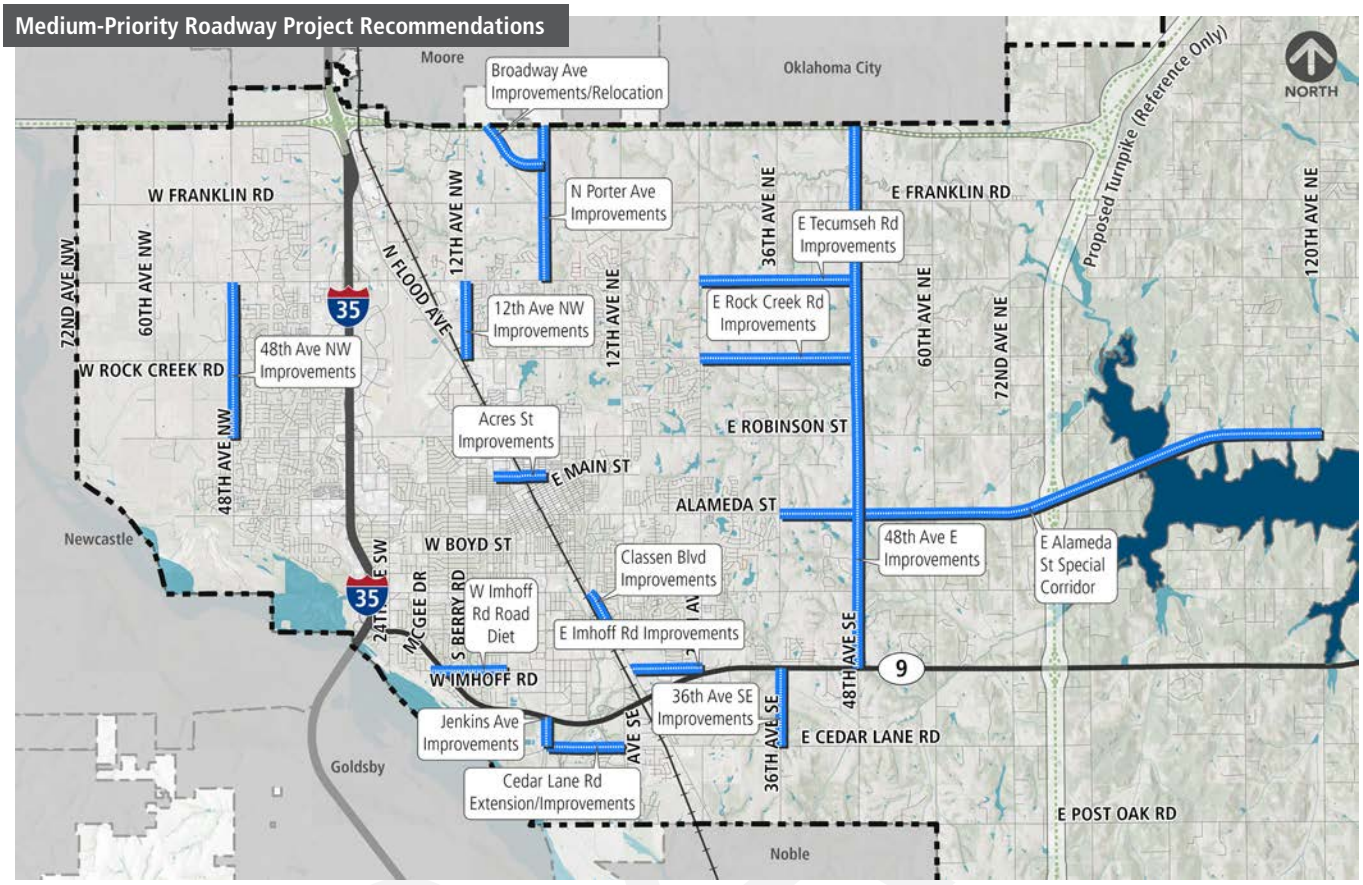
## High-Priority Roadway Project Recommendations




### HIGH-PRIORITY ROADWAY PROJECT RECOMMENDATIONS

| Project Name | Segment | Details | Score |
|---|---|---|---|
| N Flood Ave/W Tecumseh Rd Innovative Intersection | - | Innovative Intersection | 148.9 |
| Main St Two-way Configuration | from University Blvd to Porter Ave | One-way to two-way reconfiguration | 147.1 |
| Classen Blvd/E Constitution St Innovative Intersection | - | Innovative Intersection | 139.7 |
| W Robinson St/24th Ave SW Innovative Intersection | - | Innovative Intersection | 132.1 |
| W Rock Creek Rd/24th Ave NW Innovative Intersection | - | Innovative Intersection | 125.2 |
| Berry Rd Improvements | from Imhoff Rd to Dakota St | Additional turn lanes and selective improvement to 3 lanes | 123.2 |
| Tecumseh Rd Underpass | BNSF Rail Crossing | Underpass under BNSF | 119.4 |
| E Cedar Lane Rd/Classen Blvd Intersection | - | Turn Lanes | 114.1 |
| Flood Ave Improvements | from W Robinson St to W Main St | Improve from 2 to 3 lanes | 112.6 |
| 48th Ave SE Improvements | from SH-9 to Post Oak Rd | Improve from 2 lanes to 2 lane boulevard | 110.2 |
| 24th Ave NW Slip Lanes | from Tecumseh Rd to Flood Ave | Right In - Right Out Slip Lanes | 108.7 |
| 24th Ave SW/W Main St Intersection | - | Turn Lanes | 108.6 |
| E Franklin Rd Improvements | from 24th Ave NW to 12th Ave NE | Improve from 2 to 3 lanes. | 107.8 |
| E Lindsey St Improvements Ph 1 | from 24th Ave SE to East of Siena Springs Dr | Improve from 2 to 5 lanes | 107.7 |
| E Lindsey St Improvements Ph 2 | from E of Siena Springs Dr to 60th Ave SE | Improve from 2 to 3 lanes | 107.7 |
| 12th Ave NE/E Franklin Rd Intersection | - | Turn Lanes | 106.5 |

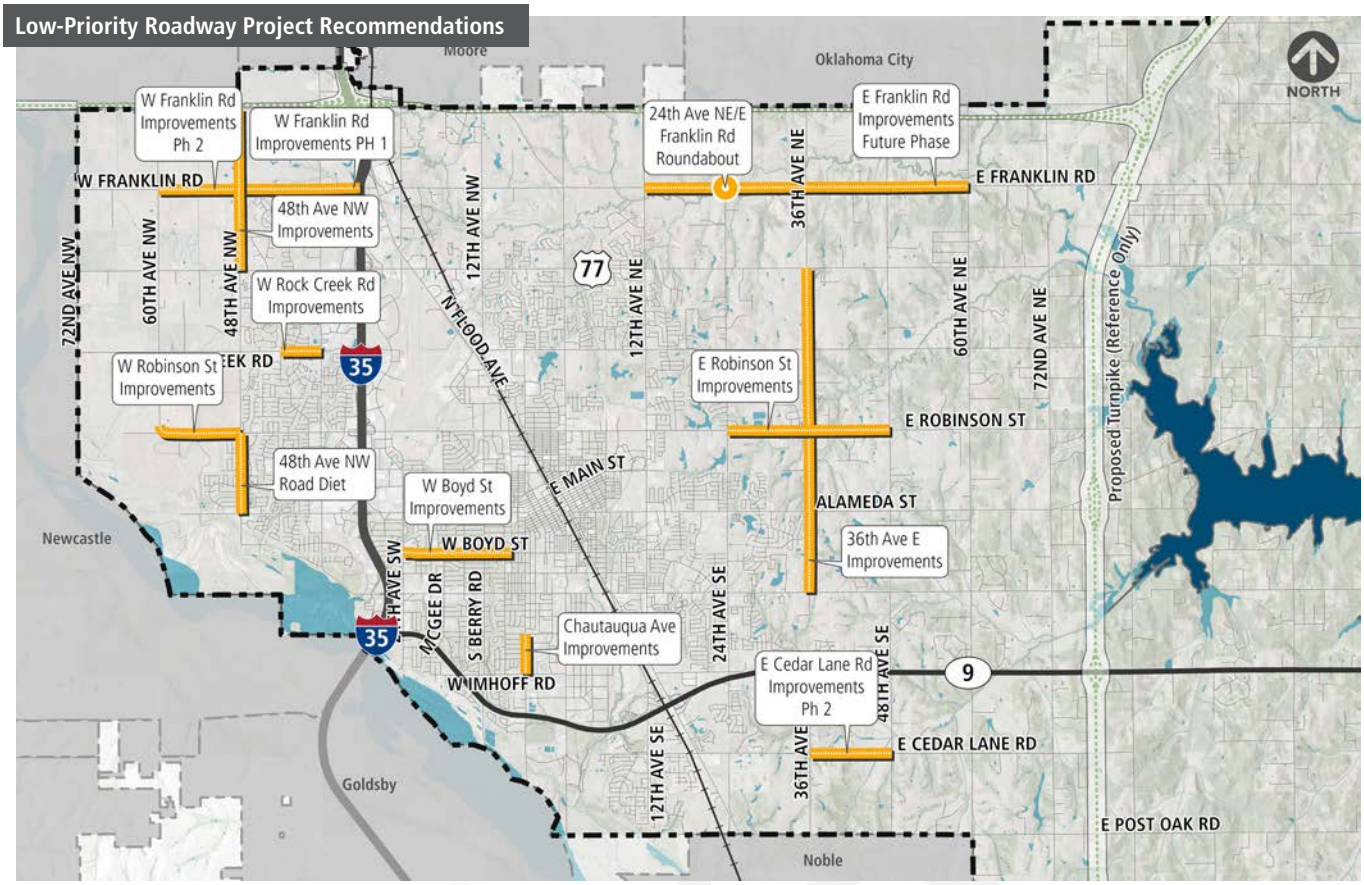
## Medium-Priority Roadway Project Recommendations




### MEDIUM-PRIORITY ROADWAY PROJECT RECOMMENDATIONS

| Project Name | Segment | Details | Score |
|---|---|---|---|
| Jenkins Ave Improvements | from SH-9 to E Cedar Lane Rd | Widen from 2 to 3 lanes | 105.7 |
| E Alameda St Special Corridor | from 36th Ave NE to 120th Ave NE | Improve from 2 to 3 lanes | 104.9 |
| 12th Ave NW Improvements | from W Rock Creek Rd to W Tecumseh Rd | Improve from 2 to 3 lanes | 104.4 |
| Cedar Lane Rd Extension/Improvements | from 12th Ave SE to Jenkins Ave | Extend and improve from 2 to 3 lanes | 103.5 |
| E Rock Creek Rd Improvements | from 24th Ave NE to 48th Ave NE | Improve from 2 to 3 lanes | 102.9 |
| 48th Ave E Improvements | from SH-9 to Indian Hills Rd | Improve from 2 lanes to 2 lane boulevard | 102.5 |
| 24th Ave NE/E Tecumseh Rd Roundabout | - | Roundabout | 99.3 |
| E Tecumseh Rd Improvements | from 24th Ave NE to 48th Ave NE | Improve from 2 lanes to 2 lane boulevard | 97.0 |
| E Imhoff Rd Improvements | Classen Blvd to 24th Ave SE | Improve from 3 to 4 lanes | 91.7 |
| Acres St Improvements | from Berry Rd to N Porter Ave | Turn lanes at key intersections | 89.6 |
| Porter Ave/Franklin Rd Roundabout | Franklin Rd | Roundabout | 89.5 |
| W Imhoff Rd Road Diet | from Cynthia Cir to Chautauqua Ave | Convert to 2 lanes and cycle track | 89.3 |
| Classen Blvd Improvements | from E Lindsey St to 12th Ave SE | Improve from 3 to 4 lanes | 89.1 |
| 48th Ave NW Improvements | from W Robinson St to W Tecumseh Rd | Improve from 2 to 3 lanes | 87.9 |
| Broadway Ave Improvements/Relocation | from Indian Hill Rd to N Porter Ave | Relocate/Improve from 2 to 3 lanes | 87.7 |
| 36th Ave SE Improvements | from SH-9 to E Cedar Lane Rd | Improve from 2 to 3 lanes | 87.6 |
| N Porter Ave Improvements | from Indian Hills Rd to Tecumseh Rd | Improve from 2 to 3 lanes | 85.1 |

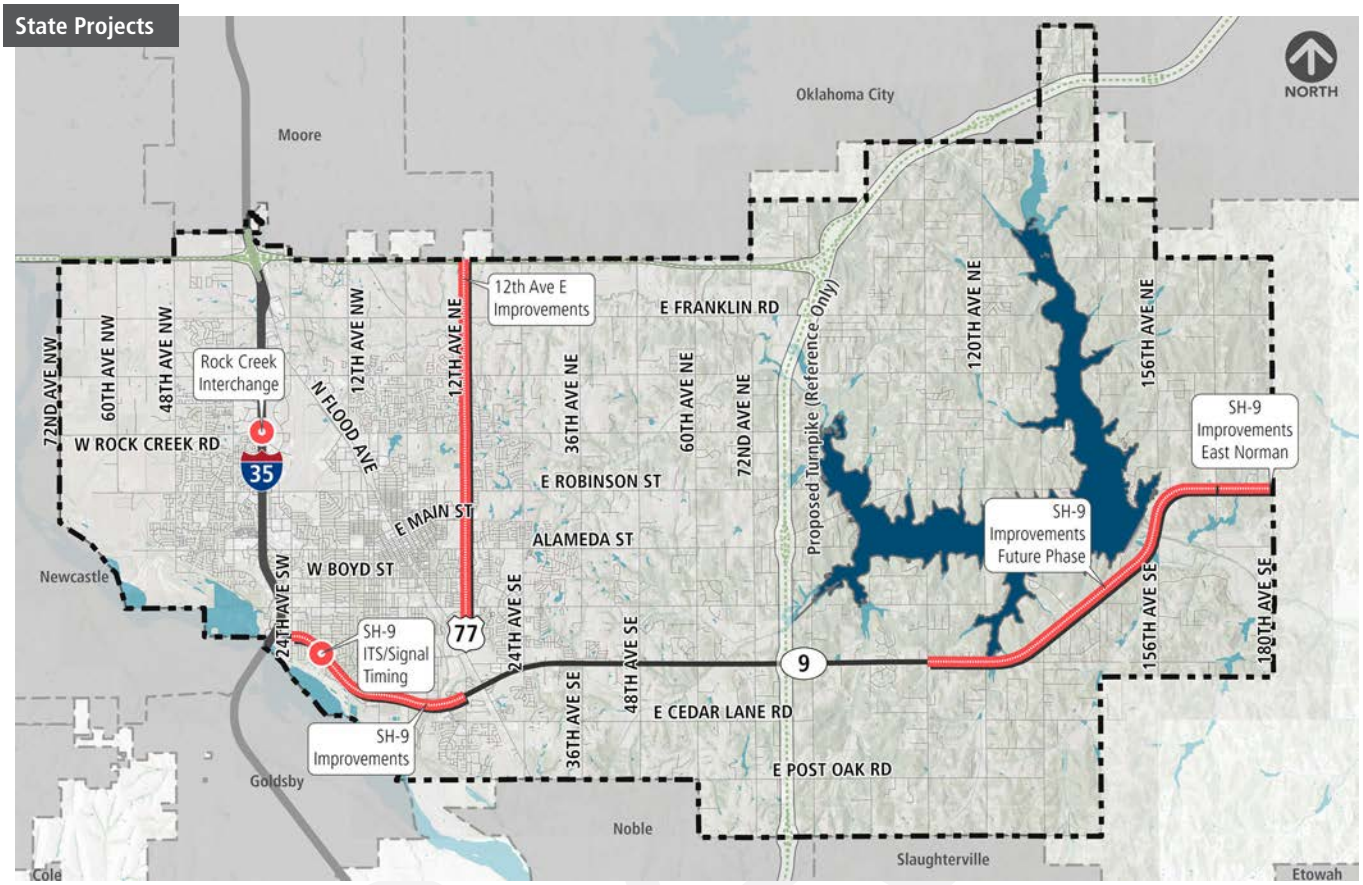
## Low-Priority Roadway Project Recommendations




### LOW-PRIORITY ROADWAY PROJECT RECOMMENDATIONS

| Project Name | Segment | Details | Score |
|---|---|---|---|
| W Franklin Rd Improvements Ph 1 | from Interstate Dr to 48th Ave NW | Improve from 2 to 3 lanes | 83.2 |
| E Cedar Lane Rd Improvements Ph 2 | from 36th Ave SE to 48th SE | Improve from 2 to 3 lanes | 83.1 |
| 48th Ave NW Road Diet | from W Main St to W Robinson St | Road diet from 4 to 3 lanes | 81.7 |
| E Robinson St Improvements | from 24th Ave NE to 48th Ave NE | Improve from 2 lanes to 2 lane boulevard | 80.0 |
| E Franklin Rd Improvements Future Phase | from 12th Ave NE to 60th Ave NE | Improve from 2 to 3 lanes | 79.9 |
| W Boyd St Improvements | from Flood Ave to 24th Ave SW | Add additional turn lanes | 78.0 |
| Chautauqua Ave Improvements | from W Imhoff Rd to W Timberdell Rd | Widen to 4 lane boulevard | 76.3 |
| W Franklin Rd Improvements Ph 2 | from 48th Ave NW to 60th Ave NW | Improve from 2 to 3 lanes | 75.5 |
| E Franklin Rd Bridge | from E Highland Dr to 144th Ave NE | New road and bridge across lake | 75.1 |
| 36th Ave E Improvements | from Lindsey St to Tecumseh Rd | Improve from 2 to 3 lanes | 72.7 |
| James Garner Ave/Acres St Intersection | - | Intersection Improvements | 69.1 |
| W Rock Creek Rd Improvements | from Grand View Ave to 36th Ave NW | Improve from 2 to 3 lanes | 68.7 |
| 24th Ave NE/E Franklin Rd Roundabout | - | Roundabout | 68.0 |
| 48th Ave NW Improvements | from Indian Hills Rd to W Tecumseh Rd | Improve from 2 to 3 lanes | 61.1 |
| W Robinson St Improvements | from 48th Ave NW to 60th Ave NW | Improve from 2 to 4 lanes | 52.6 |

State Projects

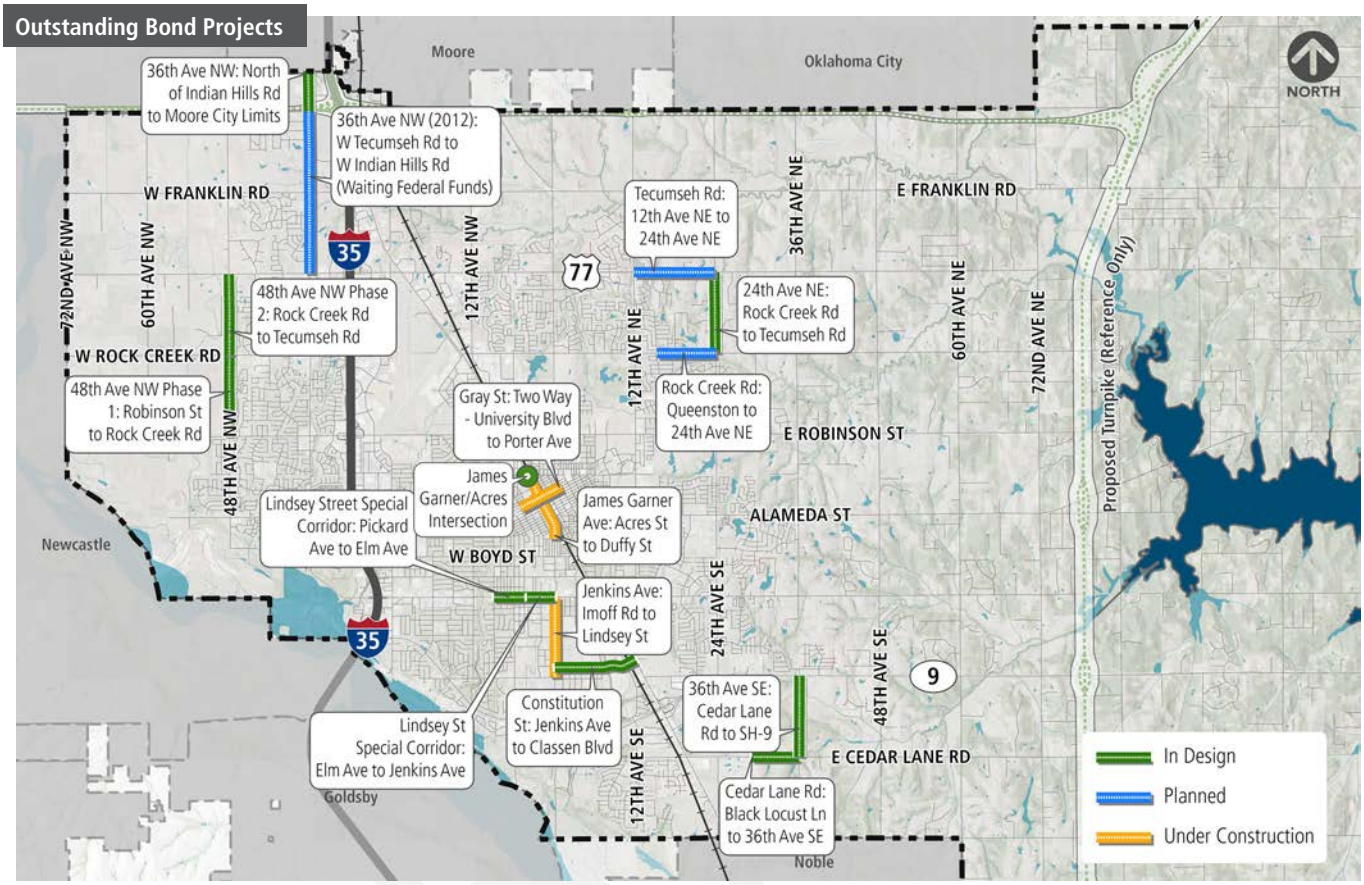



## STATE PROJECTS

| Project Name | Segment | Details | Score |
|---|---|---|---|
| SH-9 Improvements | from 24th Ave SW to 12th Ave SE | Improve from 4 to 6 lanes | ODOT |
| 12th Ave E Improvements | from Indian Hills Rd to Classen Blvd | Improve from 4 to 6 lanes | ODOT |
| SH-9 Improvements East Norman | from 168th Ave NE to 180th Ave NE | Improve from 2 to 4 lanes | ODOT |
| SH-9 Improvements Future Phase | from 108th Ave E to 168th Ave NE | Improve from 4 to 5 lanes | ODOT |
| Rock Creek Interchange | - | Interchange Improvements | ODOT |
| SH-9 ITS/Signal Timing | I-35 to E City Limits | ITS/Signal Timing | ODOT |

# OUTSTANDING BOND PROJECTS

Outstanding Bond Projects



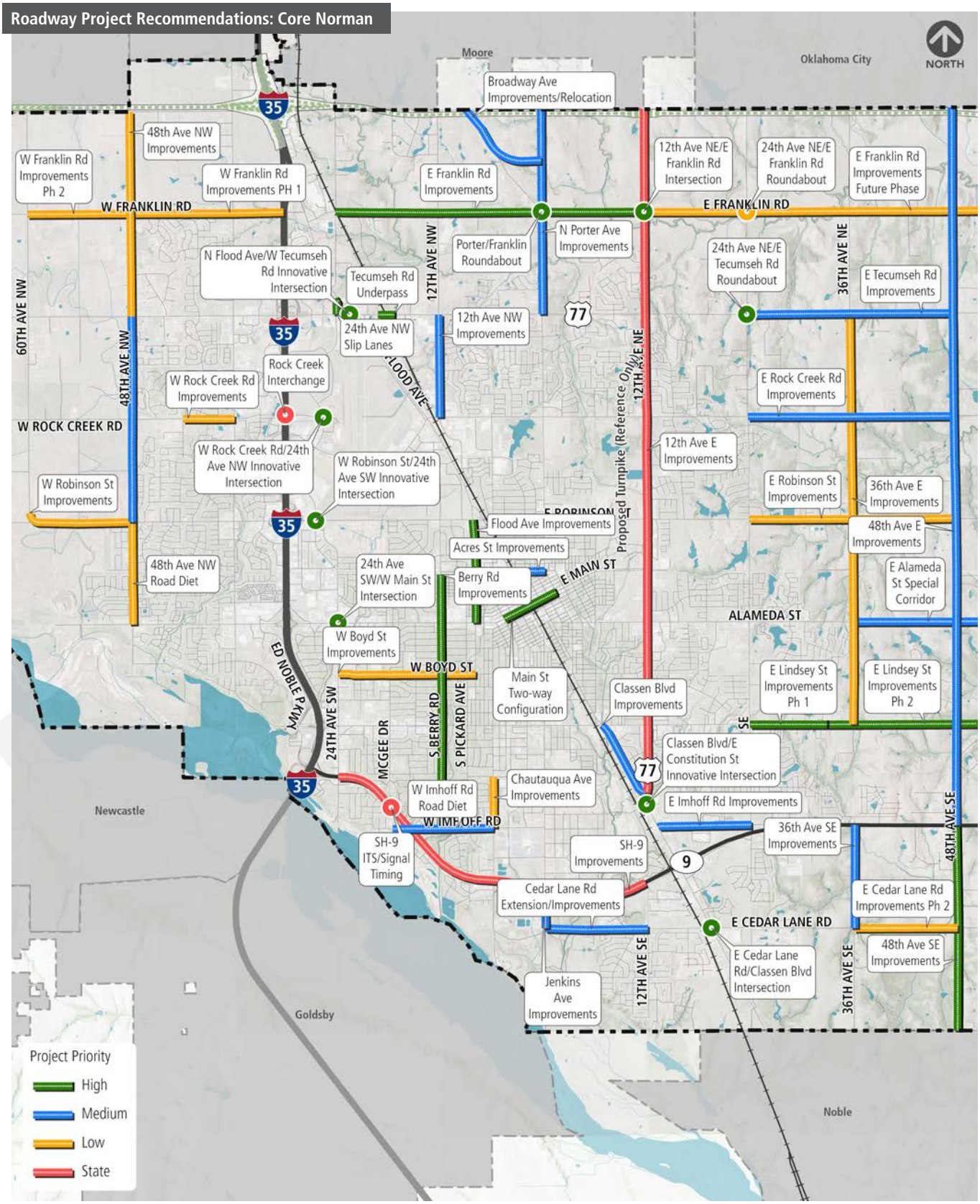

## OUTSTANDING BOND PROJECTS

| Project | Status |
|---|---|
| 36th Ave NW: North of Indian Hills Rd to Moore City Limits | In Design |
| 24th Ave NE: Rock Creek Rd to Tecumseh Rd | In Design |
| 48th Ave NW Phase 1: Robinson St to Rock Creek Rd | In Design |
| 48th Ave NW Phase 2: Rock Creek Rd to Tecumseh Rd | In Design |
| Lindsey St Special Corridor: Pickard Ave to Elm Ave | In Design |
| Constitution St: Jenkins Ave to Classen Blvd | In Design |
| 36th Ave SE: Cedar Lane Rd to SH-9 | In Design |
| Cedar Lane Rd: Black Locust Ln to 36th Ave SE | In Design |
| James Garner Ave/Acres St Intersection | In Design |
| 36th Ave NW (2012): W Tecumseh Rd to W Indian Hills Rd | Planned |
| Tecumseh Rd: 12th Ave NE to 24th Ave NE | Planned |
| Rock Creek Rd: Queenston to 24th Ave NE | Planned |
| Jenkins Ave: Imhoff Rd to Lindsey Street | Under Construction |
| James Garner Ave: Acres St to Duffy St | Under Construction |
| Gray St: Two Way - University Blvd to Porter Ave | Under Construction |

# PROJECTS BY LOCATION

## Roadway

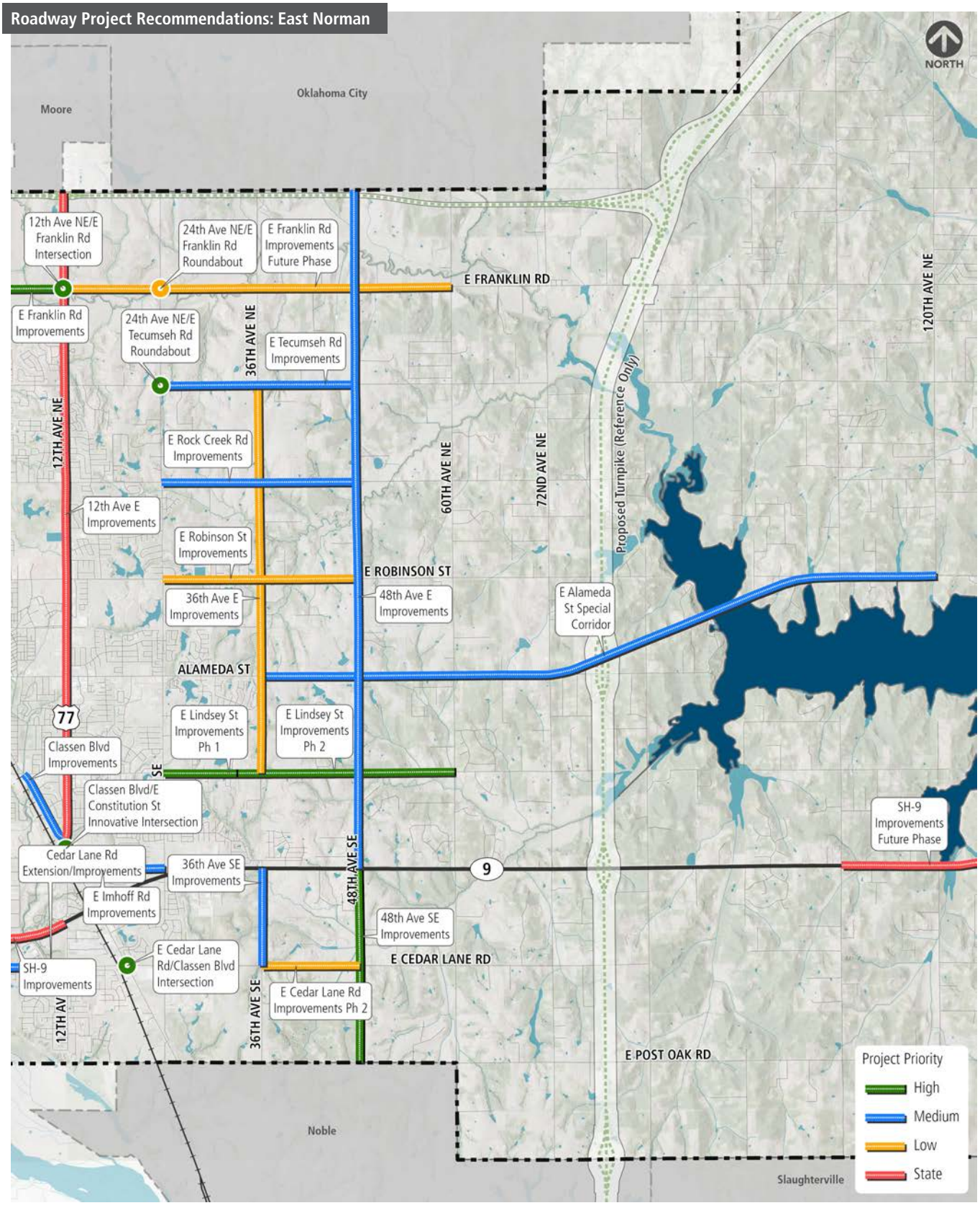
**Roadway Project Recommendations: Core Norman**



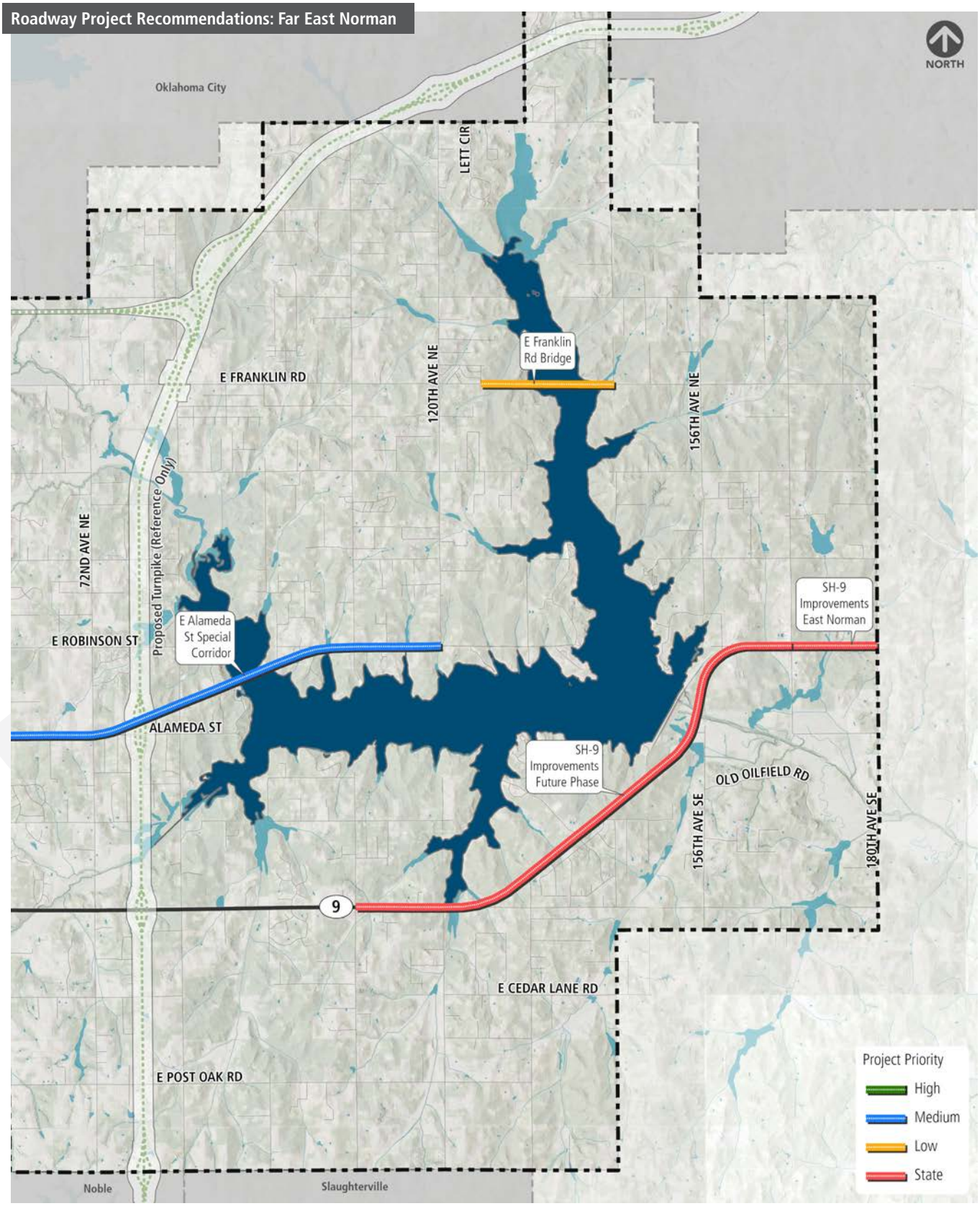
# PROJECTS BY LOCATION

## Roadway, continued

**Roadway Project Recommendations: East Norman**



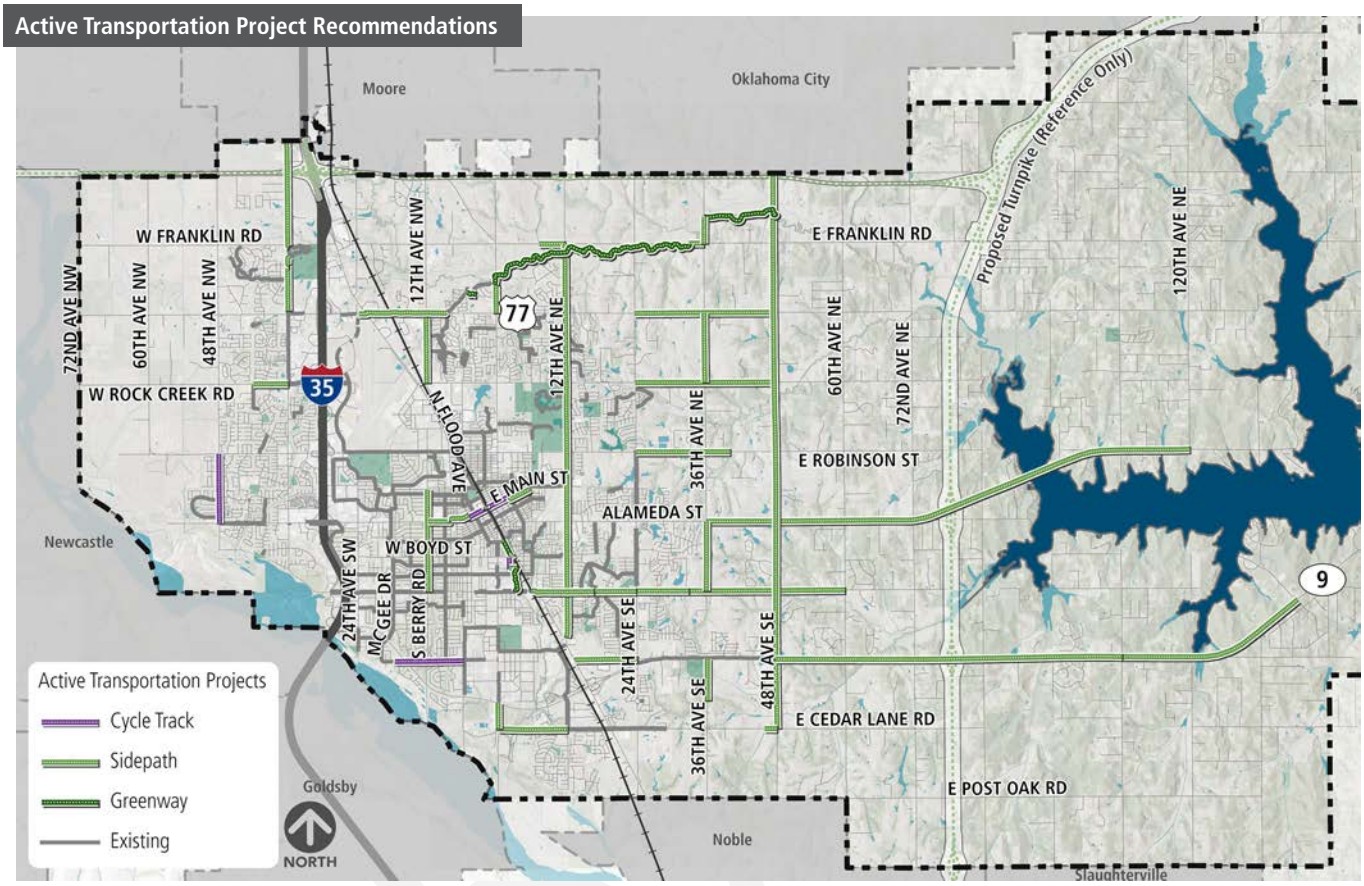
## Roadway Project Recommendations: Far East Norman



# PROJECT RECOMMENDATIONS

## Active Transportation

**Active Transportation Project Recommendations**




### ACTIVE TRANSPORTATION PROJECT RECOMMENDATIONS

| Project | Facility Type | Details |
|---|---|---|
| E Alameda St Special Corridor | Side path | Construct with road improvements |
| 48th Ave SE Improvements | Side path | Construct with road improvements |
| Cedar Lane Rd Extension/Improvements | Side path | Construct with road improvements |
| E Franklin Rd Improvements | Side path | Construct with road improvements |
| E Lindsey St Improvements Ph 2 | Side path | Construct with road improvements |
| 36th Ave E Improvements | Side path | Construct with road improvements |
| Berry Rd Improvements | Side path | Construct with road improvements |
| E Tecumseh Rd Improvements | Side path | Construct with road improvements |
| E Rock Creek Rd Improvements | Side path | Construct with road improvements |
| E Robinson St Improvements | Side path | Construct with road improvements |
| E Cedar Lane Rd Improvements Ph 2 | Side path | Construct with road improvements |
| 12th Ave NW Improvements | Side path | Construct with road improvements |
| E Franklin Rd Improvements Future Phase | Side path | Construct with road improvements |
| E Imhoff Rd Improvements | Side path | Construct with road improvements |
| E Lindsey St Improvements Ph 1 | Side path | Construct with road improvements |
| N Porter Ave Improvements | Side path | Construct with road improvements |

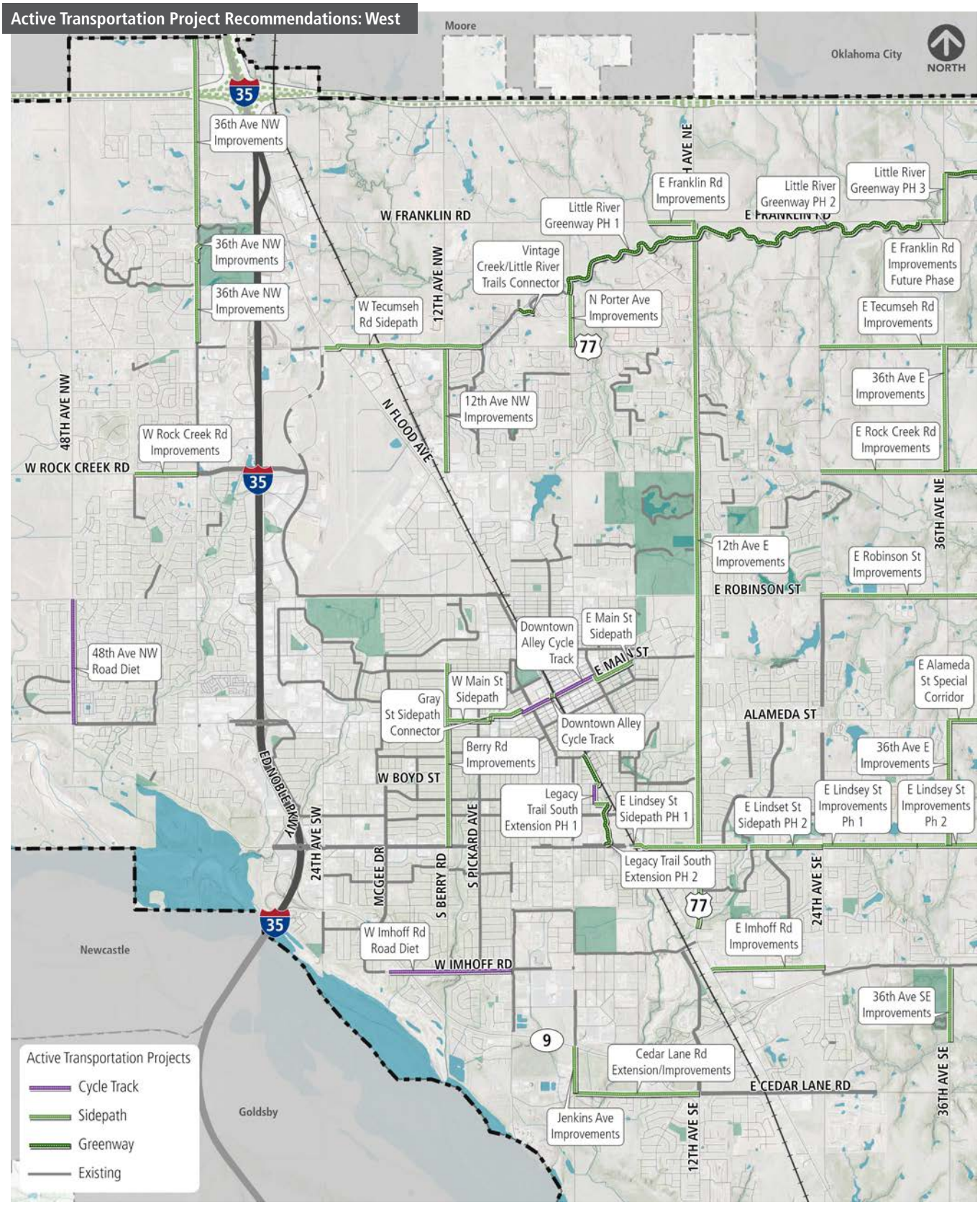
## ACTIVE TRANSPORTATION PROJECT RECOMMENDATIONS

| Project | Facility Type | Details |
|---|---|---|
| W Rock Creek Rd Improvements | Side path | Construct with road improvements |
| 48th Ave E Improvements | Side path | Construct with road improvements |
| 12th Ave E Improvements | Side path | Construct with road improvements |
| SH-9 Improvements Future Phase | Side path | Construct with road improvements |
| 48th Ave NW Road Diet | Cycle Track | Road Diet |
| 36th Ave SE Improvements | Side path | Construct with road improvements |
| Jenkins Ave Improvements | Side path | Construct with road improvements |
| W Imhoff Rd Road Diet | Cycle Track | Road Diet |
| 36th Ave E Improvements | Side path | Construct with road improvements |
| 36th Ave NW Improvements | Side path | Construct with road improvements |
| 36th Ave NW Improvements | Side path | Construct with road improvements |
| 36th Ave NW Improvements | Side path | Construct with road improvements |
| W Tecumseh Rd Side path | Side path | Standalone side path improvements |
| Vintage Creek/Little River Trails Connector | Greenway | Standalone greenway improvements |
| Little River Greenway Ph 1 | Greenway | Standalone greenway improvements |
| Legacy Trail South Extension Ph 1 | Greenway | Standalone greenway improvements |
| Legacy Trail South Extension Ph 1 | Side path | Standalone side path improvements |
| Legacy Trail South Extension Ph 1 | Cycle Track | Alley cycle track improvement |
| Legacy Trail South Extension Ph 2 | Side path | Standalone side path improvements |
| Legacy Trail South Extension Ph 2 | Greenway | Standalone greenway improvements |
| E Lindsey St Side path Ph 1 | Side path | Standalone side path improvements |
| E Lindsey St Side path Ph 2 | Side path | Standalone side path improvements |
| Downtown Alley Cycle Track | Cycle Track | Alley cycle track improvements |
| Downtown Alley Cycle Track | Cycle Track | Alley cycle track improvements |
| Downtown Alley Cycle Track | Side path | Standalone side path improvements |
| E Main St Side path | Side path | Standalone side path improvements |
| W Main St Side path | Side path | Standalone side path improvements |
| Gray St Side path Connector | Side path | Standalone side path improvements |
| Little River Greenway Ph 2 | Greenway | Standalone greenway improvements |
| Little River Greenway Ph 3 | Greenway | Standalone greenway improvements |
| Little River Greenway Ph 3 | Side path | Standalone side path improvements |
| SH-9 Side path | Side path | Standalone side path improvements |

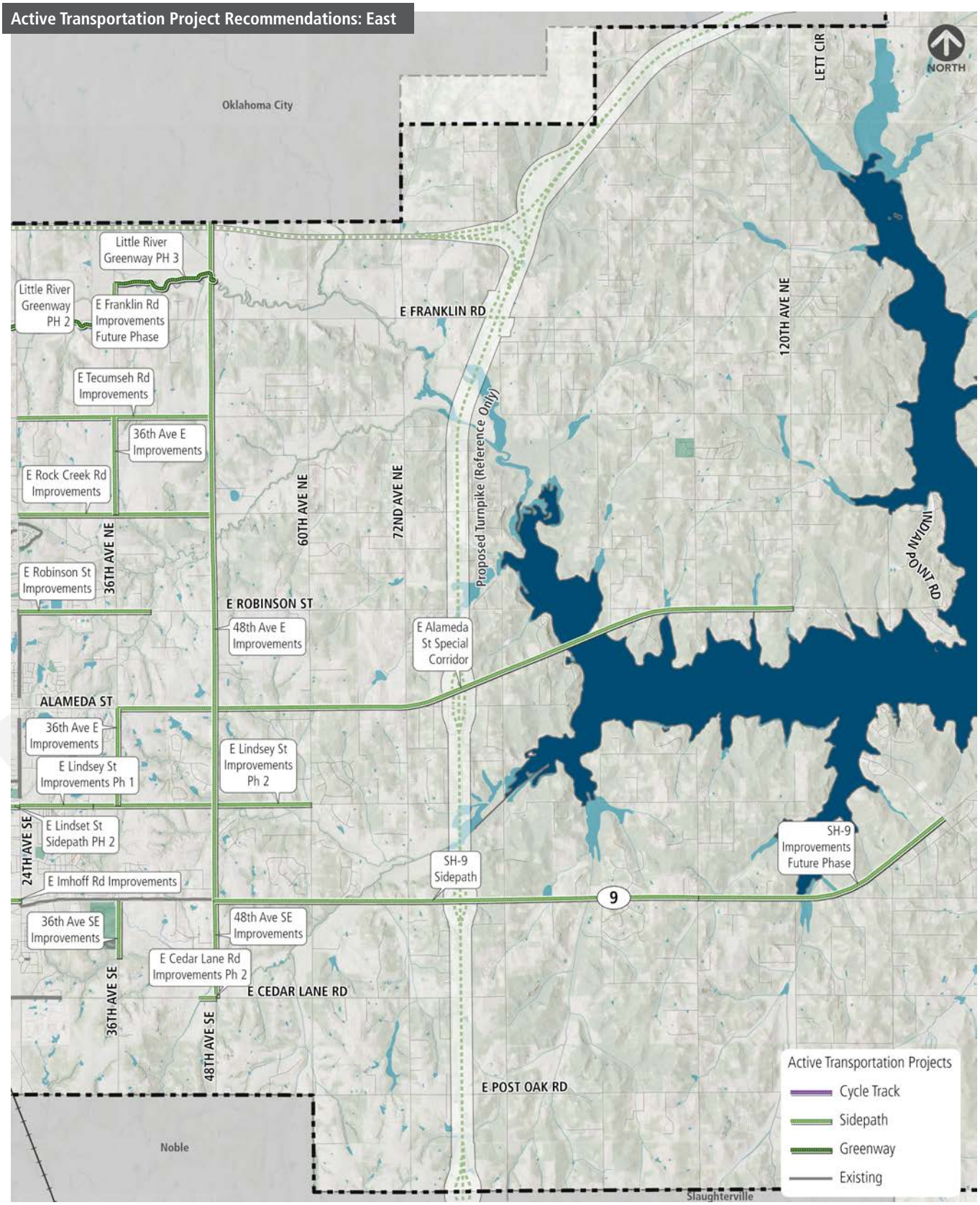
# PROJECTS BY LOCATION

## Active Transportation

**Active Transportation Project Recommendations: West**



## Active Transportation Project Recommendations: East



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# APPENDICES

# APPENDIX A -
## Priority Criteria & Scoring Indicator Guide

A Scoring Indicator Guide has been developed to provide clarification on how the overall Transportation Priority Matrix was developed and completed. This guide is organized into two sections:

- **Priority Criteria.** This section provides background and context that relates priority criteria to the overall Transportation Priority Matrix.
- **Scoring Indicator Guide - Overview and Process.** This section outlines the actual scoring process for the reviewer.

## PRIORITY CRITERIA AND WEIGHTING SCORES

Recognizing a diverse and substantial list of needed transportation improvements across The City, the AIM Norman Transportation Sub-Committee identified a set of priority criteria for prioritizing future transportation projects.

Reflecting the guiding principles of the CTP, the Sub-Committee structured the criteria with a representative weighting score to provide a base for prioritizing projects. These corresponding weighting score for each of the priority criteria is shown in table to the right.

The priority criteria are used to create an overall cumulative score for each proposed transportation project, and these cumulative scores then allow for prioritization or rank by cumulative score.

| Priority Criteria | Weighting Score |
|---|---|
| Safety | 9.1 |
| Equity Impact | 7.6 |
| Environmental Impact | 7.9 |
| Bike/Ped Access | 7.3 |
| Quality of Life/Place | 9.1 |
| Connectivity | 7.7 |
| Construction Duration | 5.6 |
| Economic Development | 7.3 |
| Public Transit Access | 7.7 |
| Maintenance Impact | 7.1 |
| Flood Hazard/Drainage | 7.2 |
| Congestion | 5.1 |
| Partners | 6.2 |
| Community Impact | 7.6 |

## SCORING INDICATOR GUIDE – OVERVIEW AND PROCESS

To direct the criteria scoring process, this Scoring Indicator Guide has been developed. Goals of the guide include providing transparency and clarification on the scoring process and keeping the process both organized and objective. To use the guide, the reader can follow the below guidance, which outlines the approach that was also followed during the completion of the finalized Transportation Prioritization Matrix.

Criteria Tables are provided to outline the scoring process for each of the priority criteria. The tables contain category scores, category summaries, and additional details for scoring purposes--each of which are further outlined in the following tables.

| SAFETY | | |
|---|---|---|
| CATEGORY SCORE | CATEGORY SUMMARY | ADDITIONAL DETAILS FOR SCORING PURPOSES |
| 2 | Provides significant safety benefit | The proposed project will provide a benefit to all road users (vehicles and pedestrians/bicyclists) in an area that has a history of crashes, as reflected in crash data from 2012 to 2021 time period. Or, addresses an intersection that was listed in the top 5 for crashes from 2012 to 2021. |
| 1 | Provides minor safety benefit | The proposed project will provide a benefit that targets a specific crash experience as seen in historical crash data from 2012 to 2021. |
| 0 | Does not provide safety benefit | The proposed project does not provide a safety benefit. |

| EQUITY IMPACT | | |
|---|---|---|
| CATEGORY SCORE | CATEGORY SUMMARY | ADDITIONAL DETAILS FOR SCORING PURPOSES |
| 2 | Project is located in an Area of Persistent Poverty and positively impacts a disadvantaged group | The proposed project is located entirely within an **Area of Persistent Poverty/Historically Disadvantaged Community** and includes or addresses infrastructure that can benefit persons without consistent access to a vehicle. |
| 1 | Project is located in/adjacent to an Area of Persistent Poverty | The proposed project is located adjacent to or in an Area of Persistent Poverty/Historically Disadvantaged Community. |
| 0 | No positive equity impact | The project has no equity benefits. |

| ENVIRONMENTAL IMPACT | | |
|---|---|---|
| CATEGORY SCORE | CATEGORY SUMMARY | ADDITIONAL DETAILS FOR SCORING PURPOSES |
| 2 | Net environmental benefits or no impact | The proposed project is designed to significantly benefit the environment—including but not limited to: conversion of grey infrastructure to green (nature based solutions) or substantial restoration of roadside or riparian/floodplain landscapes utilizing nature-based solutions and other best management practices. While virtually all transportation projects involve at least initial environmental impacts, these proposed projects are planned to result in a net positive environmental impact. |
| 1 | Environmental impacts that can be mitigated | The proposed project will initially involve environmental impacts, but these can be easily be mitigated on the local level, and are not expected to involve outside agency permitting beyond typical stormwater control (SWPPP) requirements. |
| 0 | Impacts that cannot or are not mitigated | The proposed project involves significant environmental impacts, which may or may not be fully mitigated even if permitting requirements are achieved. |

| BIKE AND PEDESTRIAN ACCESS | | |
|---|---|---|
| CATEGORY SCORE | CATEGORY SUMMARY | ADDITIONAL DETAILS FOR SCORING PURPOSES |
| 2 | Significant improved access to a park, trail network, school, business center, or across a major road | The proposed project includes shared use paths, bike facilities, or side paths that connect directly to the primary greenway or is part of a primary greenway, which connects to a school, park, or key destinations, or which addresses bike and pedestrian infrastructure at an intersection or crossing of a freeway/highway or principal/minor arterial. |
| 1 | Includes a bike or pedestrian element | The proposed project includes sidewalks, bike facilities, or side paths. |
| 0 | Provides no improved access | The proposed project does not incorporate bike/pedestrian improvements. |

# APPENDIX A -
## Priority Criteria & Scoring Indicator Guide

| QUALITY OF LIFE/PLACE | | |
|---|---|---|
| CATEGORY SCORE | CATEGORY SUMMARY | ADDITIONAL DETAILS FOR SCORING PURPOSES |
| 2 | Significant improvement on quality of life/place | The project will incorporate public art or streetscape improvements that will significantly impact the aesthetics of an area. |
| 1 | Minor improvement on quality of life/place | The project will incorporate public art or streetscape improvements that will significantly impact the aesthetics of an area. |
| 0 | No improvement on quality of life/place | The proposed project does not incorporate improvements that build quality of life/place. |

| CONNECTIVITY | | |
|---|---|---|
| CATEGORY SCORE | CATEGORY SUMMARY | ADDITIONAL DETAILS FOR SCORING PURPOSES |
| 2 | Project provides significant opportunities for connectivity | The proposed project includes a street extension or pedestrian extension at a collector level or above that connects between two existing streets. |
| 1 | Minor opportunities for connectivity | The proposed project includes minor street or pedestrian extensions or which helps foster development of the City's collector roadway network. |
| 0 | No opportunities for connectivity | The proposed project doesn't offer any of the above connectivity benefits. |

| CONSTRUCTION DURATION | | |
|---|---|---|
| CATEGORY SCORE | CATEGORY SUMMARY | ADDITIONAL DETAILS FOR SCORING PURPOSES |
| 2 | Expected construction of less than six months | The construction duration of the proposed project is anticipated to involve the respective amounts of time. |
| 1 | Expected construction between six and twelve months | - |
| 0 | Expected construction longer than one year | - |

| ECONOMIC DEVELOPMENT | | |
|---|---|---|
| CATEGORY SCORE | CATEGORY SUMMARY | ADDITIONAL DETAILS FOR SCORING PURPOSES |
| 2 | Project provides significant opportunities for economic development | The proposed project will provide transportation enhancements that will directly aid or assist in the creation of an industrial/ commercial/mixed-use development in excess of 20 acres in size or which will create a significant number of jobs. |
| 1 | Minor opportunities for economic development | The proposed project supports economic development in at least a minor way. |
| 0 | No opportunities for economic development | The proposed project is not a type that would directly impact economic development. |

| PUBLIC TRANSIT ACCESS | | |
|---|---|---|
| CATEGORY SCORE | CATEGORY SUMMARY | ADDITIONAL DETAILS FOR SCORING PURPOSES |
| 2 | Significant enhancement of Public Transit Access | The proposed project directly benefits access to public transit facilities—including transit supportive design on an existing or planned transit route, additional public parking accommodations, additional bike/pedestrian accommodations adjacent to an existing or planned transit route, or other associated improvements at or adjacent to a public transit facility along an existing or planned transit route. |
| 1 | Minor enhancement of Public Transit Access | The proposed project directly benefits access to public transit facilities—including additional parking accommodations, additional bike/pedestrian accommodations, or other associated improvements within ¼ mile of a public transit facility or existing/planned transit route |
| 0 | No enhancement of Public Transit Access | The proposed project offers no Public Transit Access enhancements. |

| MAINTENANCE IMPACT | | |
|---|---|---|
| CATEGORY SCORE | CATEGORY SUMMARY | ADDITIONAL DETAILS FOR SCORING PURPOSES |
| 2 | Significant reduction in long-term maintenance need and/or costs | The proposed project addresses an existing long-term maintenance issue in a way that reduces future maintenance costs such as replacing a bridge with box culverts. Or, the project involves a road diet or other infrastructure project that right-sizes potentially overbuilt infrastructure with significant long-term maintenance cost. |
| 1 | Minor reduction in long-term maintenance need and/or costs | The proposed project incorporates another technique that at least minimally reduces long-term maintenance—this could be through a more resilient construction detail, among other techniques. Or, the project addresses an existing maintenance issue in a timely manner before maintenance costs for the facility increase significantly. |
| 0 | No reduction in long-term maintenance need and/or costs | The proposed project represents an expansion of infrastructure and is not anticipated to reduce long-term maintenance needs/costs. |

| FLOOD HAZARD/DRAINAGE | | |
|---|---|---|
| CATEGORY SCORE | CATEGORY SUMMARY | ADDITIONAL DETAILS FOR SCORING PURPOSES |
| 2 | Significant reduction of flood hazards and drainage issues | Lying within a FEMA Special Flood Hazard area, the proposed project **reconstructs** existing infrastructure in a way that addresses known or anticipated drainage or flooding issues. |
| 1 | Minor reduction of flood hazards and drainage issues | Lying within an area of poor drainage, the proposed project **builds new or reconstructs** existing infrastructure in a way that addresses known or anticipated drainage issues. |
| 0 | No reduction of flood hazards and drainage issues | The proposed project does not address flood hazard or drainage issues. |

# APPENDIX A -
## Priority Criteria & Scoring Indicator Guide

| CONGESTION | | |
|---|---|---|
| CATEGORY SCORE | CATEGORY SUMMARY | ADDITIONAL DETAILS FOR SCORING PURPOSES |
| 2 | Directly addresses a present capacity/congestion issue | The proposed project will address congestion at an intersection currently at a LOS D or higher or a street segment experiencing significant congestion during peak traffic. |
| 1 | Indirectly addresses a present capacity/congestion issue or provides for future growth | The proposed project will provide additional capacity at identified growth areas to support future needs of the City or relieves adjacent routes that are currently congested. |
| 0 | Provides no additional capacity | The proposed project is a type of improvement that would not add capacity or address congestion. |

| PARTNERS | | |
|---|---|---|
| CATEGORY SCORE | CATEGORY SUMMARY | ADDITIONAL DETAILS FOR SCORING PURPOSES |
| 2 | Over 50% of project funds from a private/public funder | The funding of the proposed project is anticipated to involve the respective percentages. |
| 1 | Up to 50% of project funds from a private/public funder | - |
| 0 | No involvement with other private/public funders | - |

| COMMUNITY IMPACT | | |
|---|---|---|
| CATEGORY SCORE | CATEGORY SUMMARY | ADDITIONAL DETAILS FOR SCORING PURPOSES |
| 2 | Project will have a citywide impact | The proposed project will have a citywide impact. |
| 1 | Project will have neighborhood-wide impact | The proposed project includes improvements that impact a neighborhood scale. |
| 0 | Project will affect few people | The proposed project impacts only a handful of residents or property owners. |

# APPENDIX B –
## Public Engagement Materials

**A complete collection of public engagement materials are appended as a separate document.**

# APPENDIX C –

## Bridge Inventory Ranking 2024

**2024 OFF-SYSTEM NBIS BRIDGE INVENTORY**

| NBI # | Local # | Facility Carried | Feature Intersected | Location | Year Built | Wt | Structure Material | Structure Type | Structure Details | ADT | Wt2 | Status | Wt3 | Suff. Rating | Wt4 | Load Rating (tons) | Wt5 | Ranking Score | Last Maint. Year | Projected |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 05850 | 017A | E Robinson St | Unnamed Creek | 0.6E of 72nd Ave NE | 1938 | -0.01 | Steel | Stringer/Girder | 26' I-Beam | 718 | 0 | SD | 15 | 15.6 | 84.4 | 5.0 | 25.0 | 105.0 | | 2025 |
| 09189 | 022A | 60th Ave NE | Rock Creek | 0.5N of Rock Creek | 1940 | -0.01 | Steel | Stringer/Girder | 15'-36'-15' WF Beam | 1,669 | 0 | SD | 15 | 27.2 | 72.8 | 4.3 | 25.7 | 94.1 | | Bond |
| 09991 | 013A | Franklin Rd | Little River | 0.1W of 36th Ave NE | 1942 | -0.01 | Steel | Stringer/Girder | 60' I-Beam | 3,788 | 0 | FO | 10 | 24.3 | 75.7 | 12.8 | 17.2 | 83.5 | 2021 | Bond |
| 26914 | 044 | E Post Oak Rd | Unnamed Creek | 0.2E of 96th Ave SE | 2002 | -0.01 | Steel | Stringer/Girder | 32' Steel Girder | 220 | 0 | FO/AR | 10 | 47.5 | 52.5 | 12.8 | 17.2 | 59.7 | | Bond |
| 05274 | 005A | N Porter Ave | Little River | 0.6S of Franklin Rd | 1937 | -0.01 | Concrete | Arch-Deck | 30' Arch Widened w/ (2) 2'x 30' I-beam ea side | 6,782 | 0 | FO | 10 | 41.2 | 58.8 | 20.0 | 10.0 | 59.4 | | Bond |
| 14930 | 015 | Willow Grove Dr | Brookhaven Creek | 0.3E of 48th Ave SW | 1960 | -0.01 | Concrete | Culvert | (2) 8' x 4' x 27' RCB and (4) 6' x 27' CGMP | 100 | 0 | SD | 15 | 44.5 | 55.5 | 23.0 | 7.0 | 57.9 | | N/A |
| 19418 | 006A | E Indian Hills Rd | North Fork Creek | 0.4E of N Porter Ave | 1978 | -0.01 | Concrete | Culvert | (12'-17'-12') x 15' x 34' RCB | 256 | 0 | FO/SD | 15 | 44.6 | 55.4 | 23.0 | 7.0 | 57.6 | | 5+ |
| 07923 | 038A | E Lindsey St | Unnamed Creek | 0.1E of 48th Ave SE | 1940 | -0.01 | Steel | Culvert | (2) 11' x 6.75' x 50' CGMP Arch | 1,405 | 0 | FO | 10 | 49.2 | 50.8 | 23.0 | 7.0 | 48.4 | | Bond |
| 12549 | 055 | Lindsey St | Bishop Creek | 2.7E of I-35 | 1951 | -0.01 | Concrete | Culvert | (2) 10' x 12' x 115' RCB SK30° | 16,875 | 0 | FO/AR | 10 | 53.7 | 46.3 | 23.0 | 7.0 | 43.8 | | Bond |
| 08335 | 007 | 24th Ave SW | Merkle Creek | 0.4S of W Main St | 1940 | -0.01 | Concrete | Culvert | (3) 12' x 12' x 56' RCB SK45° | 19,805 | 0 | ND | 0 | 49.1 | 50.9 | 23.0 | 7.0 | 38.5 | | Bond |
| 06106 | 021A | 72nd Ave NE | Rock Creek | 0.1S of Tecumseh Rd | 1938 | -0.01 | Concrete | Arch-Deck | 30' Concrete Arch | 651 | 0 | FO | 10 | 67.0 | 33.0 | 23.0 | 7.0 | 30.6 | | Bond |
| 18802 | 052 | 24th Ave NE | Unnamed Creek | 0.9N of E Robinson St | 1975 | -0.01 | Concrete | Culvert | (2) 10' x 4' x 47' RCB | 1,406 | 0 | FO | 10 | 66.8 | 33.2 | 23.0 | 7.0 | 30.5 | | Bond |
| 26906 | 002 | Concord Dr | Unnamed Creek | 0.4S of E Lindsey St | 2001 | -0.01 | Concrete | Culvert | (2) 10' x 8' x 39' RCB | 1,341 | 0 | FO | 10 | 71.2 | 28.8 | 23.0 | 7.0 | 25.8 | 2021 | 5+ |
| 19348 | 010A | Franklin Rd | Little River | 0.2W of 72nd Ave NE | 1977 | -0.01 | Concrete | Stringer/Girder | 65'-75'-65' PC Beam SK45° | 1,971 | 0 | AR | 10 | 72.9 | 27.1 | 23.0 | 7.0 | 24.3 | | Bond |
| 19913 | 042 | 72nd Ave SE | Dave Blue Creek | 0.5N of SH-9 | 1981 | -0.01 | Concrete | Culvert | (13'-17'-13') x 13' x 32' RCB | 1,097 | 0 | FO/AR | 10 | 74.7 | 25.3 | 23.0 | 7.0 | 22.5 | 2021 | 5+ |
| 09865 | 028 | W Robinson St | Merkle Creek | 0.5E of I-35 | 1942 | -0.01 | Concrete | Culvert | (2) 10' x 6' x 106' RCB | 27,549 | 0 | ND | 0 | 65.2 | 34.8 | 23.0 | 7.0 | 22.4 | | Bond |
| 28743 | 056 | E Rock Creek Rd | Unnamed Creek | 0.4E of Porter Ave | 2013 | -0.01 | Concrete | Culvert | (2) 12' x 9.5' x 83' RCB | 8,500 | 0 | ND | 0 | 66.8 | 33.2 | 23.0 | 7.0 | 20.1 | 2024 | 10+ |
| 24966 | 009 | Crestmont St | Merkle Creek | 150'E of Merkle Dr | 1996 | -0.01 | Concrete | Culvert | (3) 10' x 8' x 42' RCB | 839 | 0 | ND | 0 | 68.7 | 31.3 | 23.0 | 7.0 | 18.3 | 2024 | 10+ |
| 19584 | 017 | Willow Branch Rd | Brookhaven Creek | 0.1N of W Main St | 1979 | -0.01 | Concrete | Tee Beam | 50' Dbl Tee Span | 1,191 | 0 | ND | 0 | 68.9 | 31.1 | 23.0 | 7.0 | 18.3 | | 10+ |
| 20034 | 046A | Cedar Lane Rd | Prairie Creek | 0.8E of Indian Meridian Ave | 1982 | -0.01 | Concrete | Culvert | (2) 10' x 8' x 36' RCB SK30° | 634 | 0 | FO | 10 | 79.1 | 20.9 | 23.0 | 7.0 | 18.1 | 2022 | 5+ |

# APPENDIX C –

## Bridge Inventory Ranking 2024 continued

**2024 OFF-SYSTEM NBIS BRIDGE INVENTORY**

| NBI # | Local # | Facility Carried | Feature Intersected | Location | Year Built | Wt | Structure Material | Structure Type | Structure Details | ADT | Wt2 | Status | Wt3 | Suff. Rating | Wt4 | Load Rating (tons) | Wt5 | Ranking Score | Last Maint. Year | Projected |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 10801 | 010 | Iowa St | Merkle Creek | 150'E of Merkle Dr | 1948 | -0.01 | Concrete | Culvert | (2) 10' x 6' x 38' RCB | 1,638 | 0 | ND | 0 | 71.0 | 29.0 | 23.0 | 7.0 | 16.5 | | Bond |
| 07175 | 036 | E Stella Rd | Unnamed Creek | 0.3W of 144th Ave NE | 1939 | -0.01 | Concrete | Culvert | (3) 12' x 10' x 29' RCB SK45° | 1,375 | 0 | ND | 0 | 71.6 | 28.4 | 23.0 | 7.0 | 16.0 | 2023 | 10+ |
| 20609 | 016A | Franklin Rd | North Fork Creek | 0.7E of N Porter Ave | 1984 | -0.01 | Steel | Culvert | (1) 29' x 10' x 48' CGMP Arch Rotated 20° | 3,788 | 0 | AR | 10 | 83.6 | 16.4 | 23.0 | 7.0 | 13.6 | 2023 | 5+ |
| 12330 | 012 | E Boyd St | Bishop Creek | 500'E of Oklahoma Ave | 1970 | -0.01 | Concrete | Tee Beam | 35' Dbl Tee Span | 5,850 | 0 | AR | 10 | 84.4 | 15.6 | 23.0 | 7.0 | 12.9 | 2021 | Bond |
| 19298 | 054 | Lindsey St | Trib of Bishop Creek | 2.5E of I-35 | 1977 | -0.01 | Concrete | Culvert | (2) 10 ' x 7' x 109' RCB & (1) 14' x 7' x 109' RCB | 16,875 | 0 | AR | 10 | 76.1 | 23.9 | 32.0 | -2.0 | 12.1 | | 10+ |
| 12282 | 006 | W Brooks St | Merkle Creek | 0.2W of 24th Ave SW | 1950 | -0.01 | Concrete | Tee Beam | 32' Dbl Tee Span | 1,026 | 0 | FO | 10 | 85.7 | 14.3 | 23.0 | 7.0 | 11.8 | 2021 | 10+ |
| 18958 | 004 | W Imhoff Rd | Imhoff Creek | 0.2E of S Berry Rd | 1975 | -0.01 | Concrete | Culvert | (3) 12' x 21.1' x 34' RCB SK20° | 600 | 0 | ND | 0 | 75.5 | 24.5 | 23.0 | 7.0 | 11.8 | 2022 | 10+ |
| 20394 | 014 | Creekside Dr | Unnamed Creek | 0.2S of Lindsey St | 1983 | -0.01 | Steel | Stringer/Girder | 32' I-Beam SK65° | 503 | 0 | ND | 0 | 79.6 | 20.4 | 20.1 | 9.9 | 10.5 | | Bond |
| 07546 | 032 | 156th Ave NE | Unnamed Creek | 0.3N of Franklin Rd | 1940 | -0.01 | Steel | Culvert | (4) 4' x 45' CGMP SK30° | 3,269 | 0 | ND | 0 | 77.5 | 22.5 | 23.0 | 7.0 | 10.1 | 2021 | 10+ |
| 19288 | 009A | Franklin Rd | Unnamed Creek | 0.1W of 72nd Ave NE | 1977 | -0.01 | Concrete | Culvert | (2) 12' x 10' x 25' RCB | 2,440 | 0 | AR | 10 | 87.6 | 12.4 | 23.0 | 7.0 | 9.6 | | 10+ |
| 28824 | 057 | 36th Ave NW | Brookhaven Creek | 0.6S of Robinson | 2012 | -0.01 | Concrete | Culvert | (4) 12' x 7' x 96' RCB | 17,889 | 0 | ND | 0 | 77.4 | 22.6 | 23.0 | 7.0 | 9.5 | 2023 | 10+ |
| 10269 | 031 | 156th Ave NE | Willow Branch Creek | 0.3S of Franklin Rd | 1945 | -0.01 | Concrete | Culvert | (4) 10' x 6' x 33.7' RCB | 2,177 | 0 | ND | 0 | 80.1 | 19.9 | 23.0 | 7.0 | 7.5 | 2023 | 10+ |
| 20014 | 041 | 72nd Ave SE | Unnamed Creek | 0.6N of SH-9 | 1982 | -0.01 | Concrete | Culvert | (2) 10' x 10' x 34' RCB | 1,097 | 0 | AR | 0 | 80.4 | 19.6 | 23.0 | 7.0 | 6.8 | 2024 | 10+ |
| 25115 | 001 | E Alameda St | Bishop Creek | 20'E of S Carter Ave | 1997 | -0.01 | Concrete | Culvert | (3) 8' x 4' x 91' RCB SK60° | 14,639 | 0 | ND | 0 | 80.3 | 19.7 | 23.0 | 7.0 | 6.7 | 2023 | 20+ |
| 25114 | 000 | E Alameda St | Unnamed Creek | 0.1W of S Carter Ave | 1997 | -0.01 | Concrete | Culvert | (3) 8' x 4' x 110' RCB | 14,639 | 0 | ND | 0 | 81.3 | 18.7 | 23.0 | 7.0 | 5.7 | 2023 | 20+ |
| 18911 | 008 | W Main St | Merkle Creek | 0.3E of 24th Ave SW | 1975 | -0.01 | Concrete | Culvert | (3) 10' x 10' x 127' RCB SK45° | 29,824 | 0 | ND | 0 | 83.0 | 17.0 | 23.0 | 7.0 | 4.3 | | Bond |
| 12331 | 013 | E Brooks St | Bishop Creek | 300'E of Oklahoma Ave | 1950 | -0.01 | Concrete | Tee Beam | 32' Dbl Tee Span | 4,388 | 0 | ND | 0 | 84.5 | 15.5 | 23.0 | 7.0 | 3.0 | 2023 | 20+ |
| 10884 | 043 | 72nd Ave SE | Unnamed Creek | 0.1S of Cedar Lane Rd | 1948 | -0.01 | Concrete | Culvert | (3) 10' x 5' x 60' RCB SK45° | 1,971 | 0 | ND | 0 | 84.7 | 15.3 | 23.0 | 7.0 | 2.8 | 2023 | 20+ |
| 20084 | 019 | Crossroads Blvd | Brookhaven Creek | 0.2E of 36th Ave NW | 1982 | -0.01 | Concrete | Culvert | (3) 10' x 6' x 52' RCB | 1,162 | 0 | ND | 0 | 84.7 | 15.3 | 23.0 | 7.0 | 2.5 | 2023 | 20+ |

# APPENDIX C –

## Bridge Inventory Ranking 2024 continued

**2024 OFF-SYSTEM NBIS BRIDGE INVENTORY**

| NBI # | Local # | Facility Carried | Feature Intersected | Location | Year Built | Wt | Structure Material | Structure Type | Structure Details | ADT | Wt2 | Status | Wt3 | Suff. Rating | Wt4 | Load Rating (tons) | Wt5 | Ranking Score | Last Maint. Year | Projected |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 12203 | 005 | W Brooks St | Imhoff Creek | 0.1E of S Berry Rd | 1950 | -0.01 | Concrete | Tee Beam | 32' TT Beam SK15° | 1,602 | 0 | ND | 0 | 85.7 | 14.3 | 23.0 | 7.0 | 1.8 | 2024 | 20+ |
| 20167 | 039 | 60th Ave SE | Dave Blue Creek | 0.4S of SH-9 | 1982 | -0.01 | Steel | Stringer/Girder | 55' I-Beam SK30° | 632 | 0 | ND | 0 | 74.6 | 25.4 | 35.0 | -5.0 | 0.6 | 2024 | 20+ |
| 20663 | 025 | W Robinson St | Unnamed Creek | 0.3E of 60th Ave NW | 1984 | -0.01 | Steel | Culvert | (6) 4' x 50' Steel Pipe | 2,994 | 0 | ND | 0 | 82.9 | 17.1 | 27.0 | 3.0 | 0.3 | | 20+ |
| 30152 | 026 | 60th Ave NW | Trib of S Canadian | 0.4N of Tecumseh Rd | 2013 | -0.01 | Concrete | Culvert | (3) 15' x 4' x 108' RCB | 1,000 | 0 | ND | 0 | 87.7 | 12.3 | 23.0 | 7.0 | -0.8 | | 20+ |
| 09930 | 020A | E Alameda Dr | Unnamed Creek | 0.3W of 108th Ave NE | 1942 | -0.01 | Concrete | Culvert | (3) 10' x 6' x 34' RCB | 197 | 0 | ND | 0 | 88.7 | 11.3 | 23.0 | 7.0 | -1.1 | 2024 | 20+ |
| 21494 | 029 | 156th Ave SE | Prairie Creek | 0.2S of Alameda St | 1987 | -0.01 | Concrete | Culvert | 913'-17'-13') x 7' x 52' RCB | 200 | 0 | ND | 0 | 88.7 | 11.3 | 23.0 | 7.0 | -1.6 | | 20+ |
| 21945 | 025B | 84th Ave SE | Dave Blue Creek | 1.0N of SH-9 | 1988 | -0.01 | Concrete | Stringer/Girder | 80' PC Beam SK45° | 1,557 | 0 | ND | 0 | 86.9 | 13.1 | 27.0 | 3.0 | -3.8 | | 20+ |
| 06203 | 023A | E Rock Creek Rd | Rock Creek | 0.2E of 48th Ave NE | 1992 | -0.01 | Concrete | Stringer/Girder | 92' PC Beam SK30° | 762 | 0 | ND | 0 | 89.0 | 11.0 | 27.0 | 3.0 | -5.9 | | 20+ |
| 20182 | 018 | Havenbrook St | Brookhaven Creek | 300'E of 36th Ave NW | 1982 | -0.01 | Steel | Culvert | (9) 8' x 50' CGMP | 1,200 | 0 | ND | 0 | 92.0 | 8.0 | 27.0 | 3.0 | -8.8 | | 10+ |
| | 015A | 24th Ave NE | Trib of Little River | 0.4S of Indian Hills Rd | 1992 | -0.01 | Steel | Culvert | (3) 8.5' x 67' CGMP SK36° | 464 | 0 | ND | 0 | 92.1 | 7.9 | 27.0 | 3.0 | -9.0 | | 10+ |
| 07921 | 025A | E Robinson St | Rock Creek | 0.3E of 36th Ave NE | 1940 | -0.01 | Steel | Culvert | (2) 8.5' x 51' CGMP | 3,812 | 0 | ND | 0 | 94.9 | 5.1 | 27.0 | 3.0 | -11.3 | 2024 | 20+ |
| 24915 | 049 | 120th Ave SE | Clear Creek | 0.7S of SH-9 | 2019 | -0.01 | Concrete | Culvert | (4) 3' x 36' CGMP | 2,713 | 0 | ND | 0 | 94.3 | 5.7 | 27.0 | 3.0 | -11.5 | | 20+ |
| 22628 | 014A | 24th Ave NE | Little River | 0.1S of Franklin Rd | 1990 | -0.01 | Concrete | Stringer/Girder | (3) 40' PC Beam | 464 | 0 | ND | 0 | 95.0 | 5.0 | 27.0 | 3.0 | -11.9 | | 20+ |
| 20794 | 012A | 48th Ave NE | Little River | 0.4N of Franklin Rd | 1984 | -0.01 | Concrete | Stringer/Girder | 100' PC Beam SK30° | 499 | 0 | ND | 0 | 96.0 | 4.0 | 27.0 | 3.0 | -12.8 | | 20+ |
| 29596 | 058 | BNSF RR | Robinson St | 0.5W of Porter Ave | 2012 | -0.01 | Steel | Stringer/Girder | 55' - 59.5' I-Beam Spans | N/A | 0 | ND | 0 | 99.9 | 0.1 | 23.0 | 7.0 | -13.0 | | 20+ |
| 25220 | 001i | E Constitution St | Bishop Creek | 0.3W of US 77 | 2001 | -0.01 | Concrete | Stringer/Girder | 95' PC Beam | 10,629 | 0 | ND | 0 | 75.8 | 24.2 | 47.9 | -17.9 | -13.7 | 2024 | 20+ |
| 22642 | 008A | 36th Ave NE | Little River | 0.2N of Franklin Rd | 1990 | -0.01 | Concrete | Stringer/Girder | 40'-60'-40' PC Beam SK30° | 139 | 0 | ND | 0 | 98.0 | 2.0 | 27.0 | 3.0 | -14.9 | | 20+ |
| 19451 | 020 | W Robinson St | Brookhaven Creek | 0.2E of 36th Ave NW | 1978 | -0.01 | Concrete | Stringer/Girder | (3) 35' PC Beam | 7,000 | 0 | ND | 0 | 97.7 | 2.3 | 28.0 | 2.0 | -15.5 | | Bond |
| 22300 | 002A | 24th Ave NW | Little River | 0.1S of Indian Hills Rd | 1989 | -0.01 | Concrete | Stringer/Girder | 95' PC Beam | 2,000 | 0 | ND | 0 | 98.9 | 1.1 | 27.0 | 3.0 | -15.8 | | 20+ |
| 22313 | 011A | 60th Ave NE | Little River | 0.1N of Franklin Rd | 1989 | -0.01 | Concrete | Stringer/Girder | 100' PC Beam SK30° | 76 | 0 | ND | 0 | 100.0 | 0.0 | 27.0 | 3.0 | -16.9 | | 20+ |
| 31194 | 003A | Franklin Rd | Little River | 0.6E of 24th Ave NW | 2017 | -0.01 | Concrete | Stringer/Girder | 30'-50'-30' PC Beam | 4,153 | 0 | ND | 0 | 99.8 | 0.2 | 27.0 | 3.0 | -17.0 | | 20+ |
| 26488 | 004A | 12th Ave NW | Little River | 0.6S of Franklin Rd | 2006 | -0.01 | Concrete | Stringer/Girder | 45'-60'-45' PC Beam SK30° | 1,462 | 0 | ND | 0 | 83.1 | 16.9 | 44.9 | -14.9 | -18.1 | | 20+ |
| 23373 | 048 | Indian Hills Rd | Little River | 0.1W of 24th Ave NW | 1993 | -0.01 | Concrete | Stringer/Girder | 40'-70'-40' PC Beam SK45° | 4,388 | 0 | ND | 0 | 99.2 | 0.8 | 29.0 | 1.0 | -18.1 | | 20+ |
| 07896 | 022 | Franklin Rd | Unnamed Creek | 0.5E of 60th Ave NW | 1940 | -0.01 | Steel | Culvert | (4) 4' x 40' CGMP | 329 | 0 | ND | 0 | 84.5 | 15.5 | 46.9 | -16.9 | -20.8 | | 5+ |

# APPENDIX C –

## Bridge Inventory Ranking 2024 continued

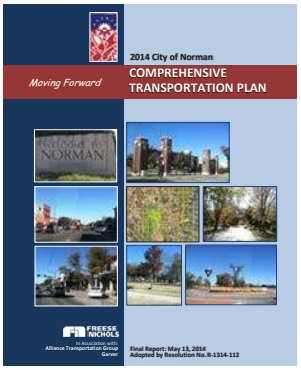
**2024 OFF-SYSTEM NBIS BRIDGE INVENTORY**

| NBI # | Local # | Facility Carried | Feature Intersected | Location | Year Built | Wt | Structure Material | Structure Type | Structure Details | ADT | Wt2 | Status | Wt3 | Suff. Rating | Wt4 | Load Rating (tons) | Wt5 | Ranking Score | Last Maint. Year | Projected |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 31728 | 016 | W Main St | Brookhaven Creek | 0.5W of 36th Ave NW | 2018 | -0.01 | Concrete | Culvert | (3) 16' x 8' x 60' RCB SK30° | 12,844 | 0 | ND | 0 | 79.4 | 20.6 | 52.5 | -22.5 | -22.1 | | 20+ |
| 31195 | 003B | Franklin Rd | Little River Overflow | 0.7E of 24th Ave NW | 2017 | -0.01 | Concrete | Stringer/Girder | (3) 50' PC Beam | 4,153 | 0 | ND | 0 | 99.8 | 0.2 | 38.0 | -8.0 | -28.0 | | 20+ |
| 25221 | 002i | E Constitution St | Unnamed Creek | 0.2W of US 77 | 2001 | -0.01 | Concrete | Stringer/Girder | 60' PC Beam | 10,629 | 0 | ND | 0 | 93.4 | 6.6 | 45.9 | -15.9 | -29.3 | | 20+ |
| 22080 | 019A | E Alameda Dr | Lake Thunderbird | 0.9NE of 84th Ave NE | 1988 | -0.01 | Concrete | Stringer/Girder | 82'-100'- 93' PC Beam | 2,602 | 0 | ND | 0 | 97.4 | 2.6 | 51.0 | -21.0 | -38.3 | | 20+ |
| 21455 | 037 | 72nd Ave SE | Unnamed Creek | 0.4S of SH-9 | 1987 | -0.01 | Steel | Culvert | (5) 6' x 43" x 87' CGMP Arch SK45° | 1,971 | 0 | AR | 10 | 96.0 | 4.0 | 77.0 | -47.0 | -52.9 | | 10+ |
| 05645 | 040A | 48th Ave SE | Dave Blue Creek | 0.8S of SH-9 | 1938 | -0.01 | Steel | Culvert | (2) 10' x 50' CGMP | 955 | 0 | ND | 0 | 96.8 | 3.2 | 69.7 | -39.7 | -55.9 | 2022 | 10+ |
| 30396 | 039A | 36th Ave SE | Dave Blue Creek | 0.7S of SH-9 | 2015 | -0.01 | Concrete | Stringer/Girder | 100' Type IV PCB RR' CLR w/ TR4 | 400 | 0 | ND | 0 | 99.9 | 0.1 | 70.0 | -40.0 | -60.1 | | 20+ |
| 31231 | 053 | Lindsey St | Imhoff Creek | 1.2E of I-35 | 2017 | -0.01 | Concrete | Culvert | (1) 60' x 55' RCB | 15,400 | 0 | ND | 0 | 93.6 | 6.4 | 80.5 | -50.5 | -64.3 | | 20+ |
| 26487 | 024A | 48th Ave NE | Rock Creek | 0.3S of E Rock Creek Rd | 2005 | -0.01 | Concrete | Slab | 30'-40'-30' Concrete Slab SK30° | 818 | 0 | ND | 0 | 99.8 | 0.2 | 74.8 | -44.8 | -64.7 | 2024 | 20+ |
| 22039 | 018A | E Alameda Dr | Lake Thunderbird | 1.0NE of 84th Ave NE | 1988 | -0.01 | Concrete | Stringer/Girder | (2) 90' PC Beam | 2,602 | 0 | ND | 0 | 96.4 | 3.6 | 82.0 | -52.0 | -68.3 | | 20+ |
| 24898 | 058A | E1210 | Ten Mile Creek | 1.9W of I-35 | 1998 | -0.01 | Concrete | Culvert | (3) 4.5m x 1.5m x 28m RCB | 1,976 | 0 | ND | 0 | 84.4 | 15.6 | 99.6 | -69.6 | -74.0 | | 20+ |
| 09863 | 023 | W Rock Creek Rd | Unnamed Creek | 0.6W of 48th Ave NW | 1942 | -0.01 | Steel | Culvert | (6) 4' x 50' CGMP | 3,366 | 0 | ND | 0 | 97.8 | 2.2 | 99.7 | -69.7 | -86.9 | 2021 | 5+ |
| 33049 | 002B | 24th Ave NW | Trib to Little River | 0.2S of Franklin Rd | 2011 | | Concrete | Culvert | | 1,462 | | | | | | | | | | |
| 33051 | 030B | 120th Ave NE | Unnamed Creek | 0.3S of Indian Hills Rd | 2017 | | Concrete | Culvert | | 1,900 | | | | | | | | | | |
| 05634 | 026A | 36th Ave NE | Rock Creek | 0.2S E Robinson St | 1938 | | Steel | Stringer/Girder | Temporary 10' CGMP | 813 | | | | | | | | | | Bond |
| 07545 | 007A | 36th Ave NE | Unnamed Creek | 0.5N of N Franklin Rd | 1940 | | Steel | Stringer/Girder | Temporary 10' x 79' CGMP | 139 | | | | | | | | | | Bond |
| 33050 | 030A | Tecumseh Rd | Unnamed Creek | 0.3E of 84th Ave NE | 2017 | | Concrete | Culvert | | 200 | | | | | | | | | | |
| 33052 | 047A | 108th Ave SE | Unnamed Creek | 0.2S of SH-9 | 2017 | | Concrete | Culvert | | 400 | | | | | | | | | | |

# APPENDIX D –
## Existing Plans and Studies

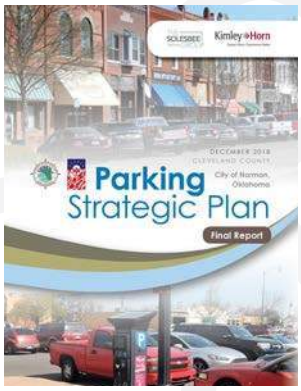
**A complete copy of each of the following plans and studies are appended as separate documents:**

### NORMAN COMPREHENSIVE TRANSPORTATION PLAN (2014)

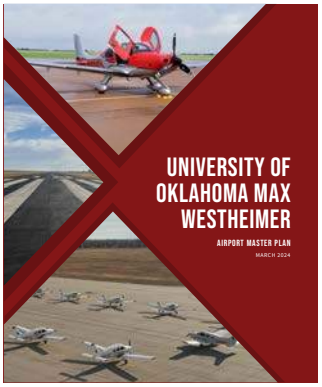



### GO NORMAN TRANSIT PLAN (2021)


### CITY OF NORMAN & CLEVELAND COUNTY STRATEGIC PARKING PLAN (2018)




### OU MAX WESTHEIMER AIRPORT MASTER PLAN (2024)




### ACOG ENCOMPASS 2045 (2021)

RDg...
PLANNING ● DESIGN

GARVER