CHAPTER 1: INTRODUCTION

Table of Contents

"I thought of that while riding my bicycle."
- Albert Einstein on the Theory of Relativity

CHAPTER 1: INTRODUCTION

Our Plan

The adoption of plan**okc** in 2015 has been a crucial step in making Oklahoma City a more competitive city among its peers, being a desirable place for businesses to invest and for people to live, work and play. plan**okc** called for the creation of a bicycle and pedestrian master plan to address the needs of users of all skill levels. Furthermore, connect**okc**, the transportation element of plan**okc**, introduced 43 policies to address transportation design standards, as well as 15 initiatives related to active transportation. Active transportation refers to any form of human-powered transportation, such as walking, cycling, and using a wheelchair. plan**okc** prioritizes active transportation as a form of transportation that needs considerable attention, and this plan, bikewalk**okc**, addresses this priority.

bikewalk**okc** serves as the bicycle and pedestrian master plan for Oklahoma City, and as the foundation for future active transportation development and planning efforts within Oklahoma City. The City adopted three previous plans, the 1997 Trails Master Plan, the 2008 Oklahoma City Bicycle Transportation Plan, and the 2012 MAPS 3 Sidewalk Plan, which were used in the formation of bikewalk**okc**. The 2018 bikewalk**okc** replaced these previous plans as the City's first comprehensive plan addressing both bicycle and pedestrian infrastructure. This updated 2023 version of bikewalk**okc** replaces the original plan adopted in 2018.

bikewalk**okc** is also the City of Oklahoma City's response to keeping up with current transportation regulations. Since its adoption in May 2018, bikewalk**okc** has been very successful as a tool for directing the Citywide capital investment programs into bicycle and pedestrian improvements. Paired with available funding opportunities, such as the City's general obligation bonds and Metropolitan Area Projects (MAPS), as well as various federal programs, the plan has helped to guide investment to address bicycle and pedestrian needs. This 2023 update of bikewalk**okc** addresses needs that emerged during the process of implementing the original plan.

Above: 4th Street and Robinson Ave., streetcar stop protected bike lane.

Nationally, bicycling and walking as means of transportation have been gaining momentum over the past 15 years. Oklahoma City has a great start with a significant number of trails, bike facilities, and sidewalks already constructed, but there is still a long way to go in developing a comprehensive, connected, and safe active transportation network. bikewalk**okc** aims to transform the transportation landscape for bicycling and walking in Oklahoma City.

The city has been built in a way that reflects people's primary dependence on the automobile for transportation, but growing interest in using active modes of transportation within Oklahoma City is reflected in the bikewalk**okc** survey (discussed later in this plan).

To meet the public demand for world-class active transportation infrastructure, this plan proposes bicycle and pedestrian projects and policy changes, with the broader goal of improving residents' quality of life and transforming how we get around in Oklahoma City.

bikewalk**okc** is organized into the following chapters:

1. **Chapter 1: Introduction –** Discusses the plan's goals and initiatives, public outreach efforts, accomplishments since the adoption of the 2018 document, and the focus on safety.
2. **Chapter 2: Bicycle and Trail Plan** – Includes descriptions of the transformative bicycle and trail projects identified through the planning process.
3. **Chapter 3: Pedestrian Plan** – Includes pedestrian planning analysis and identifies immediate needs for pedestrian infrastructure.
4. **Chapter 4: Implementation** – Describes project priorities, funding opportunities, and performance goals.

Goals and Initiatives

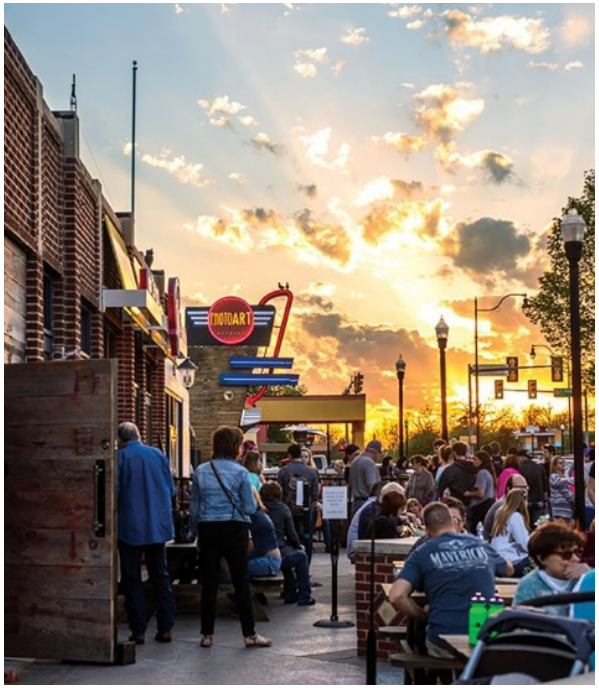
Bikewalk**okc** created goals with associated initiatives and policies to guide future planning and implementation of bicycle, pedestrian and trail facilities in Oklahoma City. These goals, initiatives, and policies guided the direction of the planning team and steering committee in developing bikewalk**okc**.

Our Goals

1. Walking and Cycling is Safe in Oklahoma City

Safety for residents who walk and bicycle in our community is the highest priority goal of this plan. We reach this goal by ensuring that infrastructure exists, and that said infrastructure is sufficient to provide actual safety during interactions with automobiles, as well as perceived safety to keep residents encouraged to choose an active form of transportation.

Above: Cyclists participate in the Full Moon Bike Ride starting at the Myriad Gardens (Photo by Nate Billings, The Oklahoman, Copyright 2013)



2. Greater Numbers of People Are Walking and Cycling For Transportation

While residents of downtown Oklahoma City and some of the surrounding neighborhoods presently walk and bicycle at rates comparable with large cities, it is the goal of this plan to increase these levels, not only in the most urban areas of the city, but in all areas. This requires investment in new infrastructure, as well as policy changes and educational efforts.

3. Neighborhoods Are Connected to Jobs, Transit, Commercial Districts, Schools, and Parks

The sidewalk and bicycle network of Oklahoma City has many gaps. The approach of this plan is to leverage existing facilities by filling in gaps and growing the networks so that residents can safely get to the places they need and want to get to. As gaps are filled, new areas will become accessible to a greater cross-section of Oklahoma City residents.

4. Barriers to Walking and Cycling are Removed

One of the most often stated reasons for not walking or cycling in Oklahoma City is the difficulty associated with crossing major barriers. Whether these are interstates, major arterials, railroads, or bodies of water, this plan focuses on ensuring that there are safe and convenient places for pedestrians and cyclists to cross.

Our Initiatives

1. Increase the availability of pedestrian and bicycle infrastructure.

The crux of this plan is a capital improvements strategy that identifies where the greatest need for pedestrian and bicycle improvements are. These improvements are prioritized to ensure the most efficient use of funding as it becomes available in the future.

2. Provide education for residents related to safe walking, cycling, and driving.

What cannot be achieved by simply building infrastructure for pedestrians and cyclists can be addressed through marketing campaigns that seek to educate residents to learn safe driving, cycling, and walking skills. This should include training for City staff and police officers, so that the City is united in its efforts to promote safety on our streets.

3. Ensure that all new infrastructure is ADA accessible, and identify locations that require retrofitting.

Standards for pedestrian infrastructure have changed since a great deal of the sidewalks and crossings in Oklahoma City were constructed. This plan emphasizes the importance of accessible design by ensuring those infrastructural elements needed for Americans with Disabilities Act (ADA) compliance, such as ramps and push buttons, are accounted for, and gaps are identified for improvement.

4. Empower residents to be a part of active transportation decision-making.

The residents of Oklahoma City already know where they need and want to walk and bicycle; it's the City's responsibility to identify those needs and wants and ensure that what we do addresses these desires in a meaningful and transparent manner. Including stakeholders from the community during the planning process as well as the project implementation process will ensure that residents feel ownership for new infrastructure, which will in turn ensure better maintenance and justification of future projects.

Table 1. bikewalk**okc** Goals and Initiatives

bikewalk**okc** Initiatives	bikewalk**okc** Goals 1	2	3	4
1. Increase the availability of pedestrian and bicycle infrastructure.	■	■	■	■
2. Provide education for residents related to safe walking, cycling, and driving.	■	■		
3. Ensure that all new infrastructure is ADA accessible, and identify locations that require retrofitting.	■			■
4. Empower residents to be a part of active transportation decision-making.		■	■	
5. Increase bicycle and pedestrian connections from neighborhoods to the places people want and need to go.	■	■	■	■
6. Add safe crossings over interstates, major arterials, and water bodies.	■	■	■	■
7. Provide the needed investment to tip high-opportunity areas toward walkability.		■	■	
8. Identify ordinances, statutes, and other regulations that need to be updated to better facilitate a robust active transportation culture.	■			■

5. Increase bicycle and pedestrian connections from neighborhoods to the places people want and need to go.

Results from the bikewalk**okc** survey, input from the steering committee and the general public all inform the planning process, ensuring that popular destinations are included. Increasing access to jobs, public transit, commercial districts, schools, and parks will result in a greater return on the City's investments in these areas.

6. Add safe crossings over interstates, major arterials, and water bodies.

Connectivity across barriers is critical to the success of an active transportation network in Oklahoma City. Presently, there are too many locations that cause potential pedestrians and cyclists to choose to drive because they do not seem to be traversable. Additionally, for those who do not own automobiles, we must ensure that the public infrastructure is usable.

7. Provide the needed investment to tip high-opportunity areas toward walkability.

There are areas of the city with great opportunity to become fully walkable with relatively minimal investment in the pedestrian infrastructure. Areas with high amounts of jobs, transit ridership, schools, parks, and multi-family residential development are great opportunities for improvement.

8. Identify ordinances, statutes, and other regulations that need to be updated to better facilitate a robust active transportation culture.

In order to facilitate safe walking and cycling in Oklahoma City, there are regulations that need to be updated. These include definitions, ordinance amendments, and more to ensure that equal protection is given to pedestrians, cyclists, and drivers on our roads.

Benefits of an Active Community

Increasing bicycle and pedestrian friendliness can substanstially benefit a community's health, safety, economic performance, and environmental health.

HEALTH

Easy access to active transportation options has many health benefits for individuals and communities. Active transportation increases individuals' physical activity levels, reducing the risks for obesity, cardiovascular disease, diabetes, degraded bone health, cancer, and depression.[1] Creating a citywide active transportation system will allow residents to more easily incorporate physical activity into their daily lives. Additionally, providing transportation options other than automobile travel can have profound impacts on the health of the population and the environment. For example, the motor vehicle-miles traveled (VMT) are directly correlated to the proliferation of air pollutants such as ozone and particulate matter.[2] This leads to increased rates of respiratory and cardiovascular diseases.[3]

Other concerns associated with a transportation system dominated by automobile travel include: greater risk for debilitating or fatal vehicle collisions, lower amounts of physical activity, and a greater percentage of household income used for transportation costs. This illustrates the need for a transportation system that provides options that can meet the individual needs of a wide spectrum of transportation users.

Active transportation also carries various benefits to mental health. A 2020 study found that "older people have a heightened risk of social isolation and loneliness; walkable neighborhoods and using different modes of transport (bicycle, public transport) can significantly reduce loneliness in older people",[4] while the Centers for Disease Control articulates the benefits of physcial activity and active transportation in reducing, among other things, the risk of depression and anxiety in children.[5] A more recent 2023 study in Spain drew a connection between driving, and long commute times, with poorer mental health outcomes.[6]

In short, active transportation builds the benefits of physical activity into the daily lives of individuals. While gyms and wellness centers are valuable community amenities, many struggle to commit the time and money required for their regular usage. Providing alternative transportation choices can help break down socio-economic barriers to more active and healthy lifestyles.

"A city is successful not when it's rich but when its people are happy. Creating bikeability and walkability shows respect for human dignity. We're telling people 'You're important - not because you're rich, but because you're human."

-Meik Wiking

SAFETY

Improving the safety and comfort of active transportation is a key component of bikewalk**okc**. Historically, Oklahoma City, along with most cities across the U.S., constructed roadways specifically to accomodate an increasing number of automobiles. With the resurgence of active transportation, cities are reconsidering the way roadways are configured in order to accommodate all modes of transportation. By installing appropriate bicycle and pedestrian facilities, greater separation is created and conflict points with automobile traffic are reduced. These facilities also improve the predictability of bicyclist and pedestrian behavior, which leads to better communication and coordination between modes. Communities with bicycle and pedestrian infrastructure, policies, programs, and enforcement are able to improve safety for all modes of transportation.

According to the Oklahoma Department of Transportation (ODOT), there were 2,421 unique reports of pedestrians being hit by motor vehicles between 2003 and 2020 in Oklahoma City, and 232 of these incidents resulted in death. Ninety-four percent of the fatalities occurred on roads with speed limits above 30 miles per hour. Pedestrians are twice as likely to be fatally injured on streets without sidewalks. And while pedestrian trips make up less than 2% of total trips made in the city, nearly 15% of traffic fatalities are pedestrians.

There were 962 reported automobile/cyclists collisions between 2003 and 2020, 19 of which resulted in fatality. Nearly two-thirds of the collisions occurred on streets with speed limits above 30 miles per hour. While the statistics for cyclist collisions are less dramatic than those of pedestrians in Oklahoma City, providing cyclists with safer, protected facilities can help to bring that figure down over time.

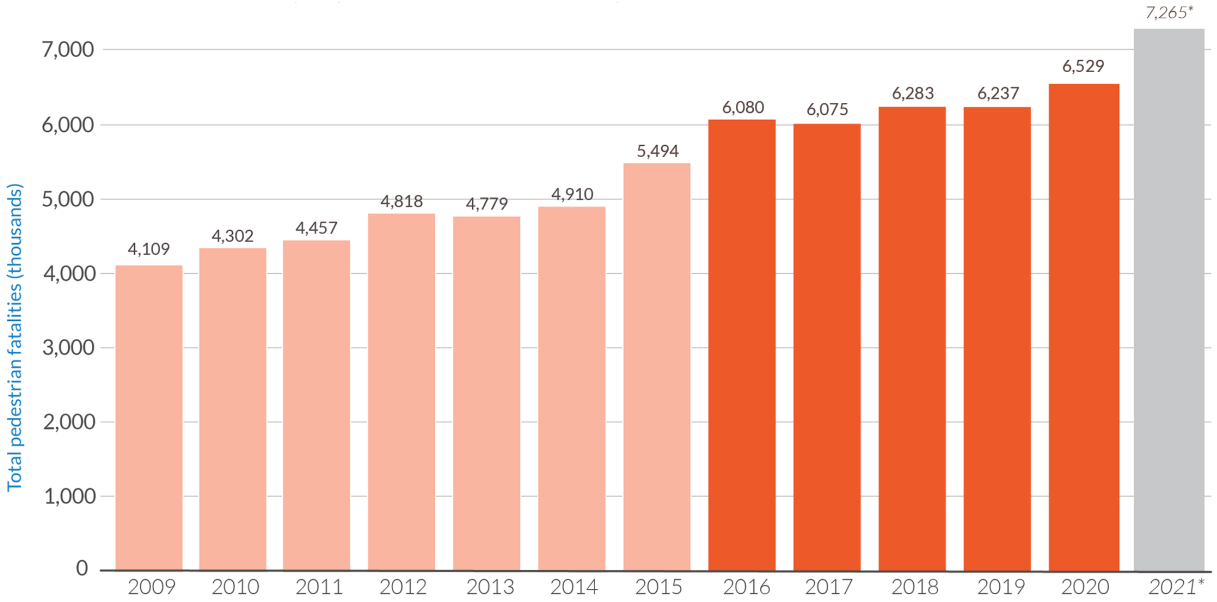
An important reference for street safety is Smart Growth America's annual Dangerous by Design report.[7] This report provides valuable crash data analysis and abundant evidence that, in fact, the way streets are designed have a profound impact on crashes and fatalities. While it documents that fatal pedestrian collisions are increasing year-over-year nationwide, it also dives into more of the attributes and patterns of those incidences.

According to the 2022 report, the pandemic magnified what was always known: Our nation's streets are dangerous by design, designed primarily to move cars quickly at the expense of keeping everyone safe. The result in 2020 and 2021 was a significant increase in all traffic fatalities, even with less driving overall. 2020's record high also marks an astonishing 62 percent increase since 2009, the year these deaths first started increasing after years of improvement. In that time period drivers struck and killed a total of 64,073 people while walking (Figure 1.1).

Although everyone is affected by dangerous street design in some way, not everyone shares this burden equally. Despite other changes, the pandemic perpetuated existing disparities in who is being killed: Black and Native Americans (Figure 1.2) and people walking in low-income neighborhoods (Figure 1.3) were also struck and killed at much higher rates than other populations in 2020, as in past years.

Figure 1.1 US Pedestrian Fatalities (2009-2020)

Source: https://smartgrowthamerica.org/dangerous-by-design/



**This estimate for 2021 is produced by applying the 11.5 percent increase for 2021 projected by the Governors Highway Safety Administration (GHSA) to the federal FARS data for 2020 used in this report.*

Figure 1.2 Pedestrian Deaths per 100,000 by rate & ethnicity (2016-2020)

Source: https://smartgrowthamerica.org/dangerous-by-design/

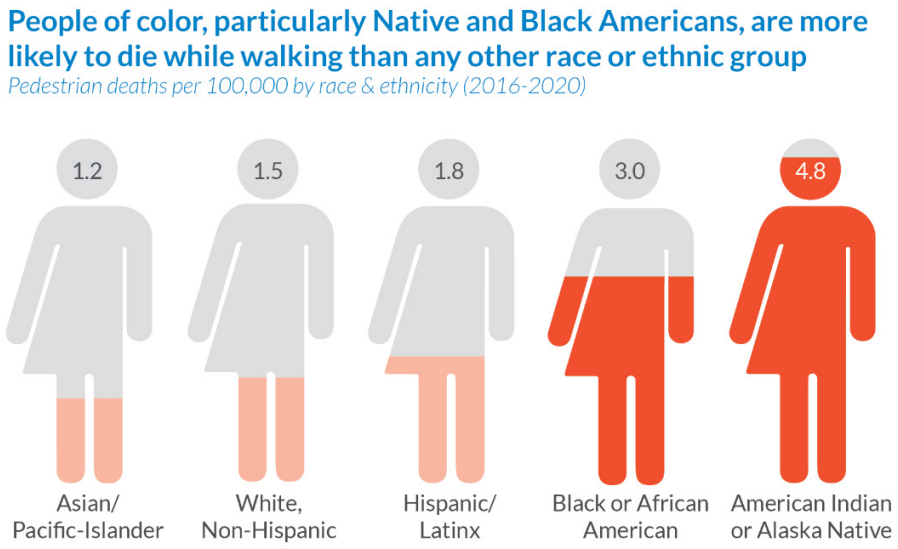
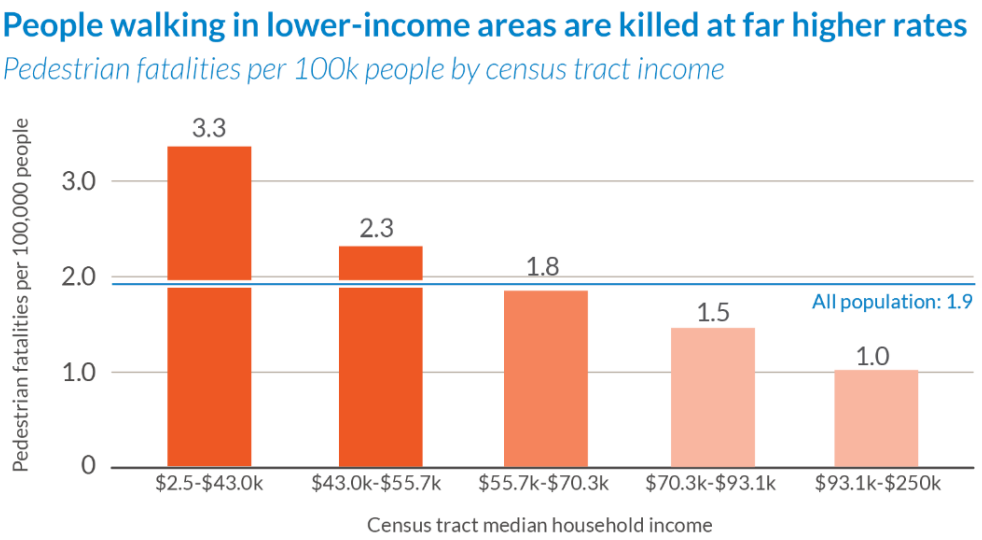


Figure 1.3 Pedestrian Fatalities per 100,000 people by income (2016-2020)

Source: https://smartgrowthamerica.org/dangerous-by-design/



ECONOMIC PERFORMANCE AND DEVELOPMENT

Oklahoma City has untapped potential in utilizing active transportation for economic development. According to the FHWA white paper, "Evaluating the Economic Benefits of Non-Motorized Transportation,"[8] there are multiple potential economic benefits from bicycle and pedestrian investments. These benefits include the following:

- Commute cost savings for bicyclists and pedestrians;
- Direct benefits to pedestrian, bicycle, and tourism-related businesses;
- Indirect economic benefits due to changing consumer behavior, such as lower transportation expenses leading to more disposable income); and
- Individual and societal cost savings associated with health and environmental benefits.

While the indirect and societal benefits are difficult to express in dollar amounts, direct benefits include a job creation rate of approximately 11-14 construction jobs per $1 million in spending on bike and pedestrain infrastructire as compared to only approximately seven jobs per $1 million in roadway infrastructure spending. This is due to the high labor to materials ratio that bicycle and pedestrian projects typically require.

Additional findings from the FHWA white paper on the economic impacts of non-motorized transportation include the following:

- Bicyclists and pedestrians who have more disposable income due to reduced travel expenses are more willing to spend a greater portion of their income on local goods and services.
- Bicycle and pedestrian infrastructure may make a commercial corridor more accessible to foot traffic, increasing consumers' browsing opportunities and encouraging more access to local goods and services.
- Bicycle and pedestrian infrastructure, along with other forms of traffic calming, make commercial streets more attractive to visitors and increase visitors' perceptions of safety.

The limited amount of active transportation infrastructure and low mode share within Oklahoma City show the economic benefits are not yet realized. Studies like FHWA's indicate that business revenues improve in areas with great walkability and bikeability, and bicyclists and pedestrians generate more sales tax revenue on local goods than those who travel by car. The bicycle and pedestrian network improvements in this plan are economic development opportunities.

ENVIRONMENT

While reliance on the automobile for transportation brings negative impacts on the environment. The increase of active transportation commuting can lead to a reduction in regional motor VMT, which reduces vehicle emissions, particulate mater, and improves air quality. Additionally, while providing ample surface parking is essential to the success of a business or public facility, vast amounts of impervious surface are required. Presently, about 87 of Oklahoma City's 621 square miles is impervious, the largest portion of that being surface parking lots. This leads to contaminated run-off that negatively impacts the quality of our soil and water bodies.

Impervious coverage refers to land covered by hard surfaces, preventing the ground from naturally absorbing rainwater. According to plan**okc**, when 10% of a watershed has been converted to impervious surface, significant ecological damage has already been done. In Oklahoma City, 16 of the 40 sub-watersheds already have greater than 10% of their area covered by impervious surfaces, while eight more are close to that level. Additionally, in Oklahoma City today roughly 70% of the water bodies are considered "impaired" by the Environmental Protection Agency (EPA). This illustrates the importance of minimizing additional impervious surface construction, and active transportation systems can help in this effort.

Another negative impact of motor vehicle traffic is the degradation of air quality associated with automobile emissions. According to the website stateoftheair.org, Oklahoma City is ranked 24th in the country for worst air quality by ozone amounts, with a score of F for the number of "orange ozone days". Ground-level ozone is not emitted directly into the air by automobiles, but is the result of chemical reactions between nitrogen oxides (NOx) and volatile organic compounds (VOCs) with sunlight. Motor vehicle emissions and gasoline vapors are major sources of NOx and VOC, and the resultant ground-level ozone can exacerbate or trigger respiratory conditions such as asthma, especially among the elderly population and young children.

"Active transportation systems foster economic health by creating dynamic, connected communities with a high quality of life that catalyzes small business development, increases property values, sparks tourism and encourages corporate investment that attracts a talented, highly educated workforce."

-Partnership for Active Transportation

bikewalkokc Accomplishments (2018-2023)

Since the adoption of bikewalk**okc** in 2018, the City has reached important milestones related to becoming more walkable and bikeable. Examples include the adoption of policies and the completion of projects. Some of them are discussed in this chapter. In addition, in 2021 the Planning Department grew its transportation planning program by adding a new senior planner position dedicated to working on the update and implementation of bikewalk**okc**.

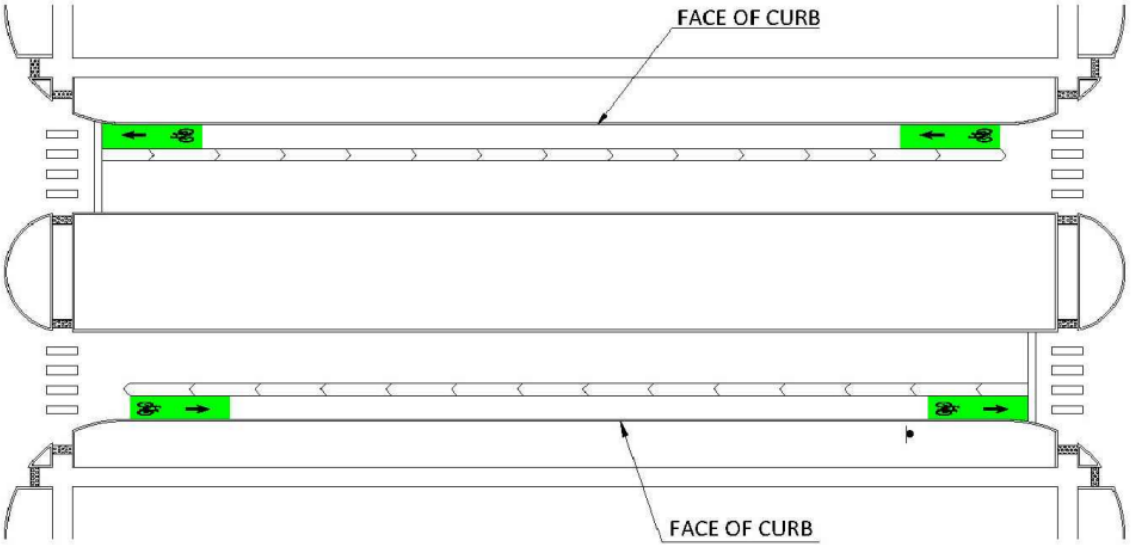
PUBLIC WORKS DEDICATED BIKE LANE MAINTENANCE CREW

The City has a well-organized facility maintenance program in place. The mission of the Public Works Department is to provide infrastructure construction and maintenance, private construction review and inspection, and emergency first response services to the public, so they can live, work, and play in a safe environment. Currently, the Streets, Traffic, and Drainage Maintenance Division maintains over 3,900 miles of public streets with 794 signalized intersections and 90,000 traffic signs throughout the City. With the addition of new bicycle lanes and sidewalks, the City recognized the need to maintain the new facilities. Three new positions were added in the Public Works Department in the fiscal year 2021-2022 budget for the purpose of maintaining the City's bike infrastructure.

BIKE LANE DESIGN STANDARDS

In November 2020, the Public Works Department approved bike lane design standards for the City to adhere to.

The City's standards define the roadway treatment type and speed range for each bike tier level. According to the standards, bike lane symbols shall be at every intersection. Shared bike lane symbols should be placed with a maxiums of 250' spacing. Shared bike lane symbols should only be used on roadways of 35 mph or less. Green pavement markings are only to be used on bike lanes. Shared lane pavement markings shall have black contrast pavement markings behind the symbol.



Above: Image from the OKC bike design standards showing a marked on-street bike lane with a bike buffer.

IDAHO STOP

In 1982, the State of Idaho passed a law, commonly known as the Idaho stop, that allows cyclists to treat a stop sign as a yield sign, and a red light as a stop sign.

While the best safety measure is safe infrastructure, the timescale of infrastructure inherently leaves a lot to be desired. While waiting for ideal infrastructure to be built, the Idaho Stop is a proven measure that provides some immediate safety benefits.

In November 2021, the State of Oklahoma amended 47 OK Stat. § 11-202.1 to allow bicyclist to cautiously make a right or left turn or proceed through the intersection without stopping at the stop sign, if they determine that there is no immediate hazard. The amendment also allows bicyclists, in the abscence of an immediate hazard, to proceed through the steady red traffic-control signal with caution.

On May 11, 2022, Mayor Holt signed Ordinance No. 27,065 to incorporate the Idaho Stop into the Oklahoma City Municipal Code.

Above: Downtown OKC street sweeper, credit downtownokc.com

NO PARKING IN BIKE LANES

On March 2, 2021, Mayor Holt signed ordinance No. 26,674 to disallow parking in bike lanes. The new ordinance forbids standing, parking or driving a motor vehicle in a bicycle lane except in the following cases: "(a) to park where parking is permitted, (b) to enter or leave the roadway, (c) while executing a turn, (d) when a motor vehicle is disabled, and when no other means are available to park the motor vehicle on the side of the road; or (e) when a motor vehicle is actively loading or unloading passengers or materials." Further, the ordinance limits the parking of disabled vehicles within a bicycle lane to two hours.

LEADING PEDESTRIAN INTERVAL (LPI) IMPLEMENTATION

According to the FHWA, a leading pedestrian interval (LPI) gives pedestrians the opportunity to enter the crosswalk at an intersection 3-7 seconds before vehicles are given a green indication. Pedestrians can better establish their presence in the crosswalk before vehicles have priority to turn right or left. LPIs provide the following benefits:

- Increased visibility of crossing pedestrians.
- Reduced conflicts between pedestrians and vehicles.
- Increased likelihood of motorists yielding to pedestrians.
- Enhanced safety for pedestrians who may be slower to start into the intersection.
- Costs for implementing LPIs are very low when only signal timing alteration is required.

The City of Oklahoma City has deployed LPI at intersections in commercial districts and Downtown.

Above: Rendering of parking protected bike lanes on N. Lottie Ave.

PARKING PROTECTED BIKE LANES

In October 2020, the City was awarded a federal grant under the Air Quality Small Grants Program to implement a bicycle infrastructure project on N. Lottie Ave. from NE 4th St. to NE 23rd St., then north to E. Madison St. and east to N. Kelly Ave. The grant was made possible through Congestion Mitigation and Air Quality (CMAQ) funds and the City provided a local match through the Better Streets, Safer City program.

When completed, the route will feature the first parking protected bike lanes in Oklahoma City.

Parking protected bike lanes offer an additional safety feature to bicyclists, allowing them to bike on the right, non-passenger side of parked vehicles, between the sidewalk curb and the parking lane. Parking protected bike lanes make streets safer and less stressful to all street users.

Above: Parking protected bike lane sign in Pittsburg, PA

Above: Parking protected bike lane in Austin, TX

MICROMOBILITY

Micromobility is defined as transportation over short distances provided by lightweight, usually single-person vehicles, such as bicycles and scooters. Micromobility has rapidly proliferated in cities nationwide, proving to be a popular transportation option for many users.

The City actively participates in the national trend towards implementing micromobility programs. Since the adoption of the original bikewalkokc plan in 2018, the City amended § 32-1. Definitions of the Municipal Code to include the definition of electric bike. According to article 32-1.20, electric-assisted bicycle means any bicycle with: (a) two or three wheels; and (b) fully operative pedals for human propulsion and equipped with an electric motor with a power output of not more than 750 watts that meets the requirements of one of the following three classes:

1. Class 1 electric-assisted bicycle shall mean an electric-assisted bicycle equipped with a motor that provides assistance only when the rider is pedaling, and that ceases to provide assistance when the bicycle reaches the speed of 20 miles per hour,

2. Class 2 electric-assisted bicycle shall mean an electric-assisted bicycle equipped with a motor that may be used exclusively to propel the bicycle, and that is not capable of providing assistance when the bicycle reaches the speed of 20 miles per hour, and

3. Class 3 electric-assisted bicycle shall mean an electric-assisted bicycle equipped with a motor that provides assistance only when the rider is pedaling, and that ceases to provide assistance when the bicycle reaches the speed of 28 miles per hour.

EMBARK's Spokies program launched in 2012 as the city's only bike share program in Central Oklahoma at the time. The service offers a convenient and healthy way to commute downtown. Funding for the E-bikes came from the Federal Transportation Alternative Program (TAP) grant program. In 2022, EMBARK's Spokies Bike Share program introduced the addition of 53 new electric bikes to their existing fleet. The system expansion introduces new bike technology while growing the overall fleet to 112 total dockless bicycles.

Spokies Electric is equipped with an electric motor to assist riders when pedaling. The motor turns on automatically when pedaling starts and stops running when riders stop pedaling. When the battery is fully charged, the pedal-assist feature can operate for as many as 25 miles or two hours of sustained use. Once the battery is depleted, the bike is still rideable without the motor's pedal assistance. With the new E-bikes, customers can expand their trip length and make the trip with ease. The electric bikes can be more comfortable to operate than pedal-only bikes, especially when going uphill. Our vision is to create a transportation system that all want to access. No gears are required for the E-bikes.

WATCH FOR ME OKC

Watch for Me OKC is a program to help teach pedestrians, cyclists, drivers, and police officers how to reduce the risk of serious injuries and death from collisions on our roadways. The program includes components related to safety, education, encouragement, enforcement, and demonstration. It is a multifaceted outreach effort to everyone who uses the City's roadways. As Oklahoma City grows and changes, more cars, pedestrians, and bicyclists are using its streets and all need to safely share the roadway.

Watch for Me OKC partners with local governments and advocacy groups to get their help in reaching the widest audience. The City's Planning Department is working with the Oklahoma City Police Department to desseminate information to cyclists and drivers.

The program includes marketing through radio, bus advertising, a website, flyers, brochures, sidewalk decals, and videos. Additionally, City staff has worked at multiple health fairs and various other events to educate individuals on how to be safe as a cyclist or pedestrian, and how drivers should respect other modes.

Classes for bicycle and pedestrian safety complement handouts, marketing, signs, events and more about the best ways for cyclists, pedestrians and drivers to navigate Oklahoma City's streets. Watch for Me OKC is also building bicycle lanes demonstrating the latest innovations in safe street construction.

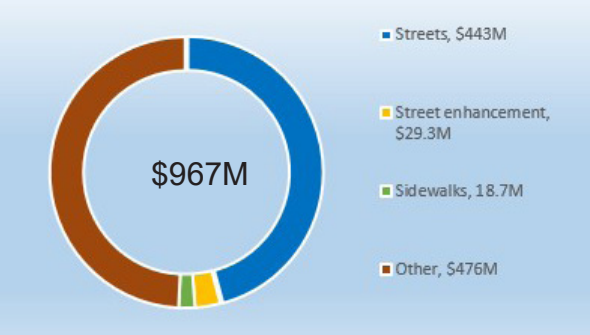
In partnership with the Association of Central Oklahoma Governments (ACOG) and the Oklahoma Highway Safety Office (OHSO), the Watch for Me safety campaign has been revamped to include the entire metro area. More information about the broader campaign is available at watchformeok.org.

BETTER STREETS, SAFER CITY (BSSC)

In 2017, the voters of Oklahoma City approved an unprecedented investment in streets, traffic infrastructure and sidewalks known as Better Streets, Safer City. It included two sources of funding for sidewalks, bike projects and street improvements:

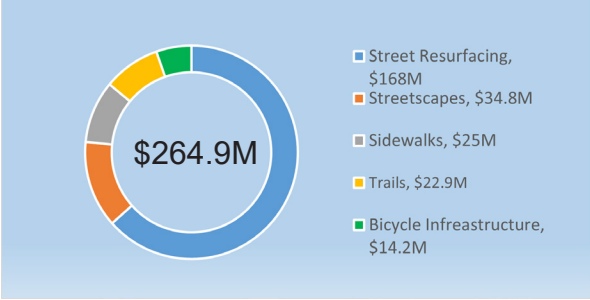
- A 10-year, $967 million general obligation bond authorization(Figure 1.4).

Figure 1.4. Better Streets, Safer City General Bond Obligations Program



- A temporary, 27-month sales tax to fund $264.9 million for street resurfacing, streetscapes, trails, sidewalks and bicycle infrastructure (Figure 1.5).

Figure 1.5. 27-Month Temporary Sales Tax



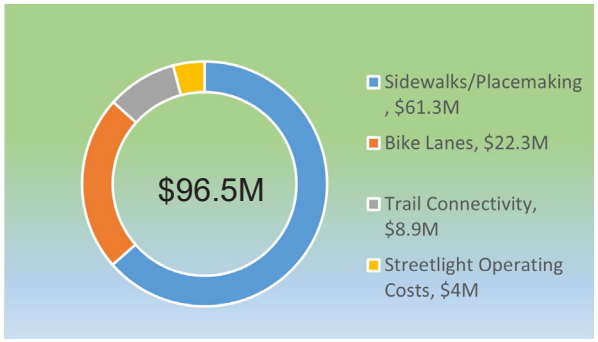
More information is available at: www.okc.gov/residents/better-streets-safer-city-projects.

Projects funded with Better Streets Safer City can be found on Map 1.1.

METROPOLITAN AREA PROJECT 4 (MAPS 4) FUNDING

MAPS 4 is a public improvement program funded by an eight-year penny sales tax that will raise a projected $1.1 billion. A total of $96.5 million are budgeted for sidewalks, bike lanes, trail connectivity to Lake Stanley Draper and the Oklahoma River in south Oklahoma City, and 10 years of operating costs for 1,000 new streetlights, as shown on Figure 1.6. In addition, $25 million are budgets for Innovation District connectivity.

Figure 1.6. MAPS 4 Sidewalks, Bike Lanes, Trails, Streetlights



MAPS 4 allows for the City to invest in the construction of sidewalks, sidewalk amenities and placemaking. The amenities potentially include trees, sustainable infrastructure, landscaping, drainage and public art. Priorities are given to the Pedestrian Priority Areas and schools identified by the bikewalk**okc** plan and other districts and community assets. MAPS 4 also enables the construction of bicycle lanes and related bicycle facilities, taking into consideration the guidance of the bikewalk**okc** plan.

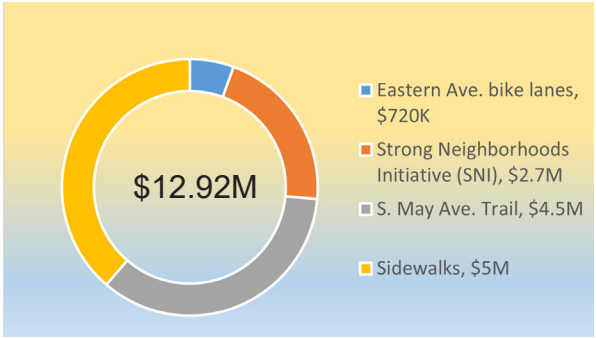
More information is available at: www.okc.gov/government/maps-4.

AMERICAN RESCUE PLAN ACT (ARPA)

The American Rescue Plan Act of 2021 includes $30.5 billion in federal funding to support the nation's public transportation systems as they continue to respond to the COVID-19 pandemic. The funds are distributed nationwide to fund various formula and competitive programs for urbanized and rural areas and tribal governments, transit grant recipients with additional pandemic-associated needs, the Capital Investment Grants Program, and the Enhanced Mobility of Seniors and Individuals with Disabilities formula program.

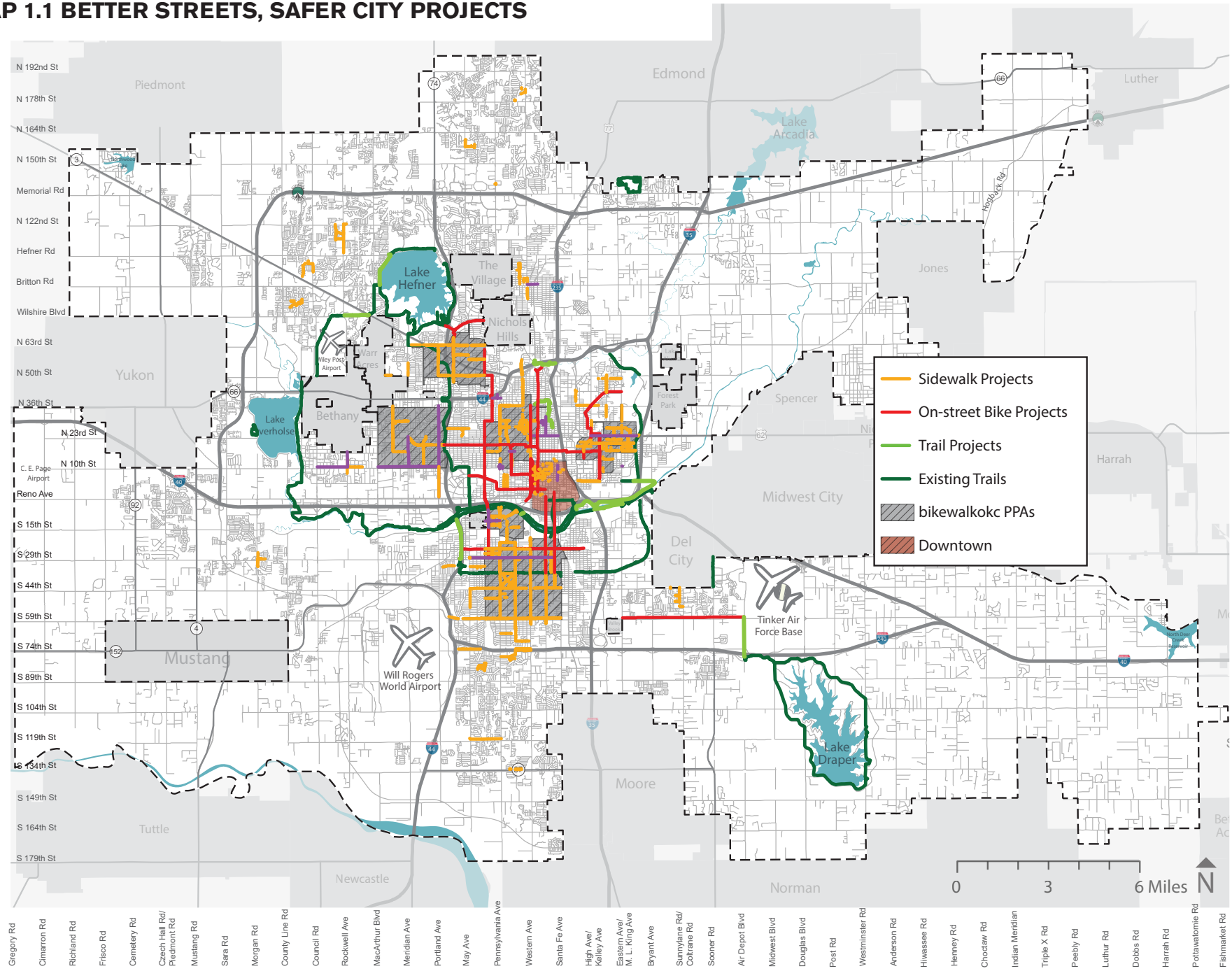
The City of Oklahoma City received over $122.5 million of ARPA funds. The amount has been split among three project categories – Public Health Response, Negative Economic Impact of COVID-19 and City Projects Revenue Loss. The latter category accounts for the most sizeable share of the funding and includes funds for several transportation projects. The bike and pedestrian projects that have been funded with ARPA funds include bike lanes on Eastern from S. Grand to SE 59th Street, S. May Ave. Trail (aka Airport Trail), sidewalks projects and the Strong Neighborhoods Initiative (SNI), as shown on Figure 1.7.

Figure 1.7. American Rescue Plan Act (ARPA)

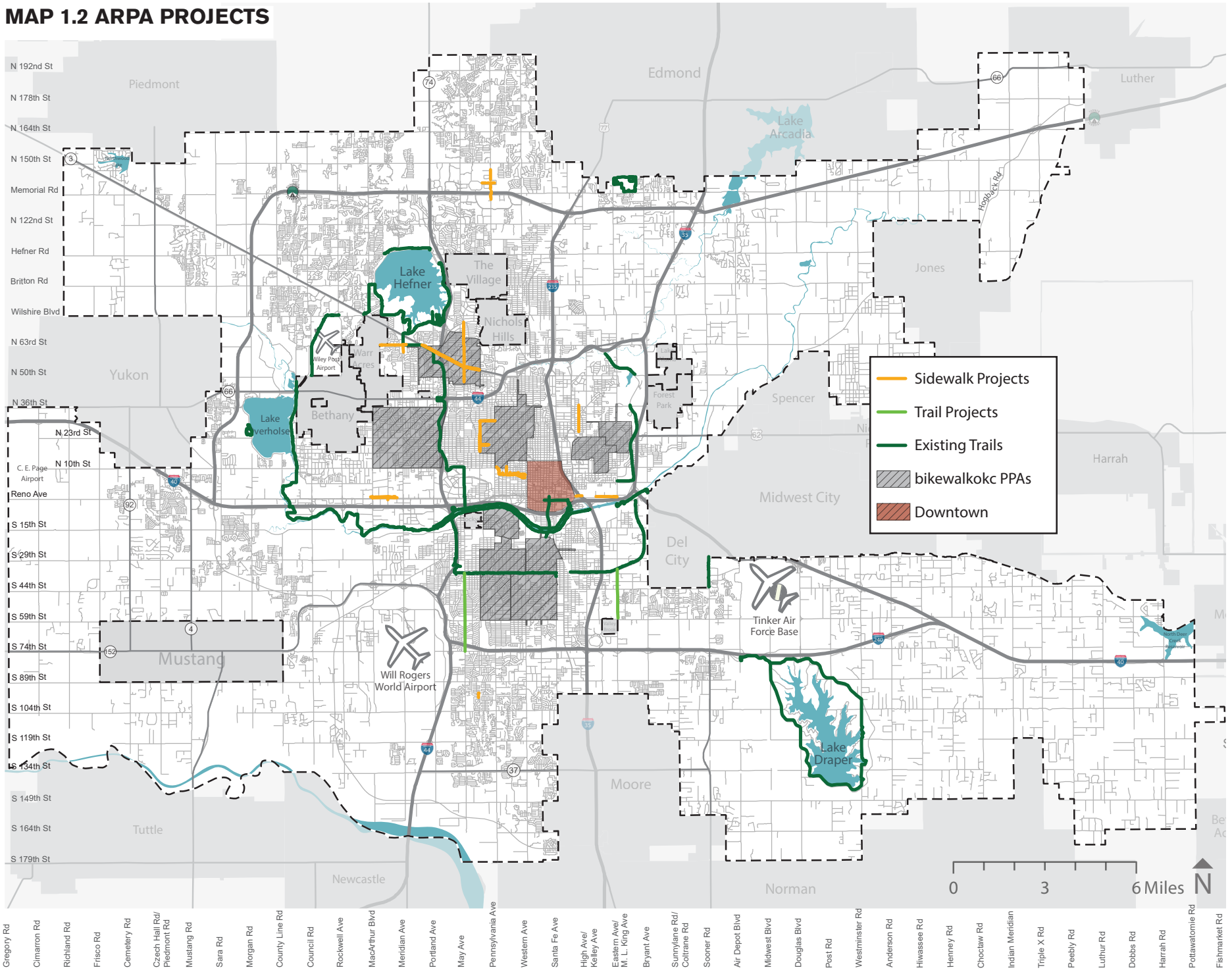


Projects funded with ARPA funds are listed in Map 1.2.

MAP 1.1 BETTER STREETS, SAFER CITY PROJECTS



MAP 1.2 ARPA PROJECTS



Public Engagement

bikewalkokc 2023 UPDATE AND PUBLIC ENGAGEMENT

connect**okc**, the transportation component of the City's comprehensive plan**okc**, calls for the development of a bike and pedestrian plan. In 2018, bikewalk**okc** was developed to serve this purpose. The City has been very strategic with identifying and allocating funding for bicycle, trail and sidewalk projects. Many of the projects identified in bikewalk**okc** have been completed since 2018.

ADVISORY GROUP FEEDBACK

This 2023 bikewalk**okc** update was informed by the advice and expertise of an Advisory Group comprised of elected and appointed officials, local partners and stakeholders from bike and walk advocacy groups, as well as City staff from several departments. The Advisory Group was tasked with evaluating the plan's Performance Measures, making technical edits and advising on the plan refinements, updating data and maps, the feasibility of the remaining projects and prioritization, and identifying new projects based on public input, trends and needs. The development of this updated project list helps prioritize projects for implementation under MAPS 4 and other funding sources in the future.

City staff collected feedback and recommendations on the Pedestrian Priority Areas (PPA) boundaries and new pedestrian projects within these boundaries from the Advisory Group and public feedback surveys (Map 1.3).

The Advisory Group engages in discussions related to the plan implementation. Topics included funding opportunities, ongoing system maintenance, staffing resource needs, performance measures, and action plans. Consideration was given to the inclusion of a Safe Corridors and Crossings Component to the plan, which resulted in identifying the need of a separate Vision Zero plan to address transportation safety issues citywide.

The Advisory Group convened four times and provided review and recommendations that guided the bikewalk**okc** update. Members completed worksheets that went into depth about each section and chapter of the plan and provided recommendations based on their specific expertise and representations.

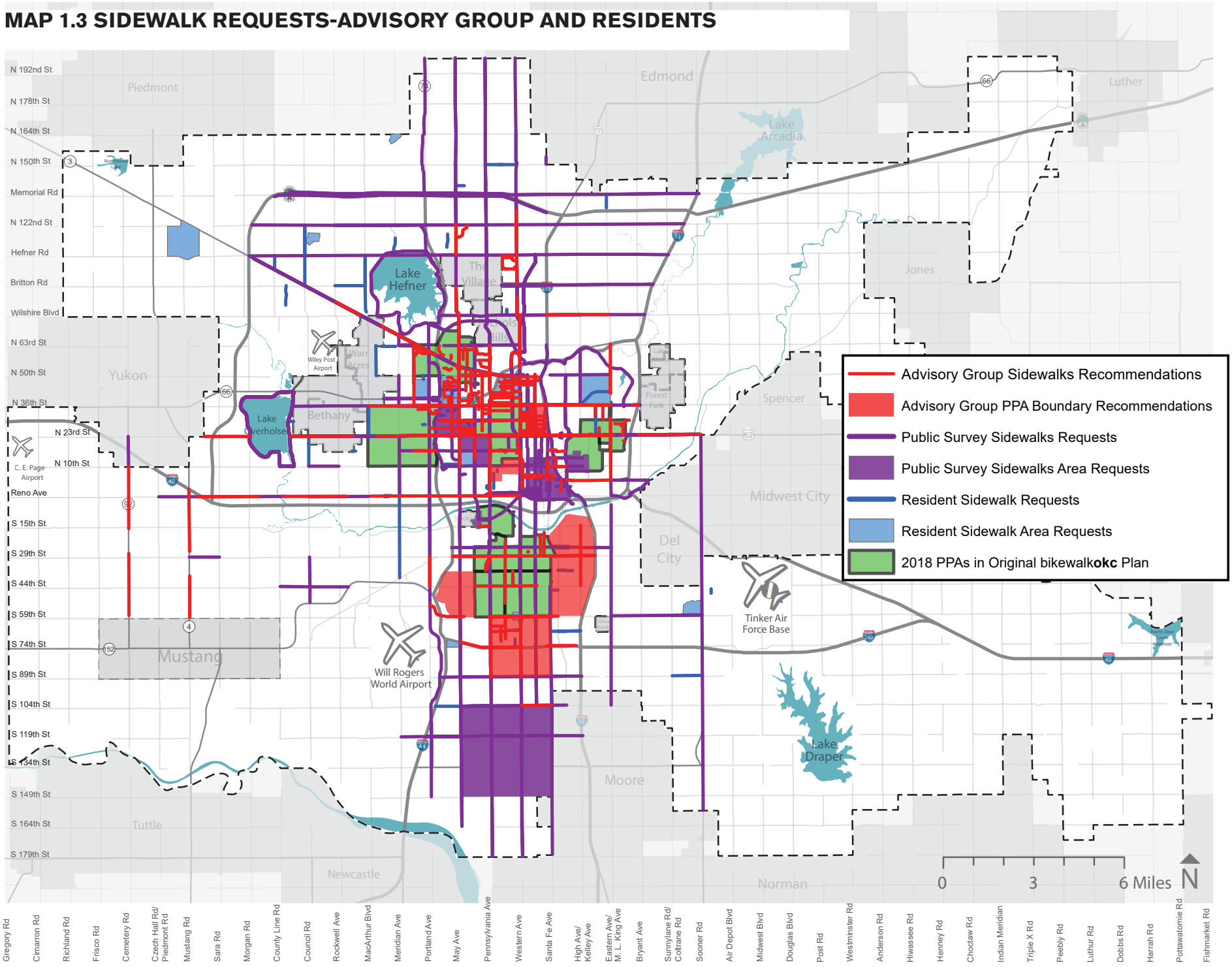
PUBLIC FEEDBACK

As part of the bikewalk**okc** update, the City conducted a survey to collect feedback from the community regarding topics and issues that needed to be addressed in the period between the adoption of the original plan and the update. The survey was posted online at the bikewalk**okc** page on the City website and staff received over 300 responses. Respondents were encouraged to share their opinion on whether their City is doing enough to become a modern bicycle and pedestrian-friendly city in the near future. They were also asked what types of projects they would invest in, if they were tasked with the decision making. In addition, the survey inquired on locations where the respondents believed there is a need of pedestrian, on-street bike and multi-use trail infrastructure, as well as safer pedestrian and bike crossings.

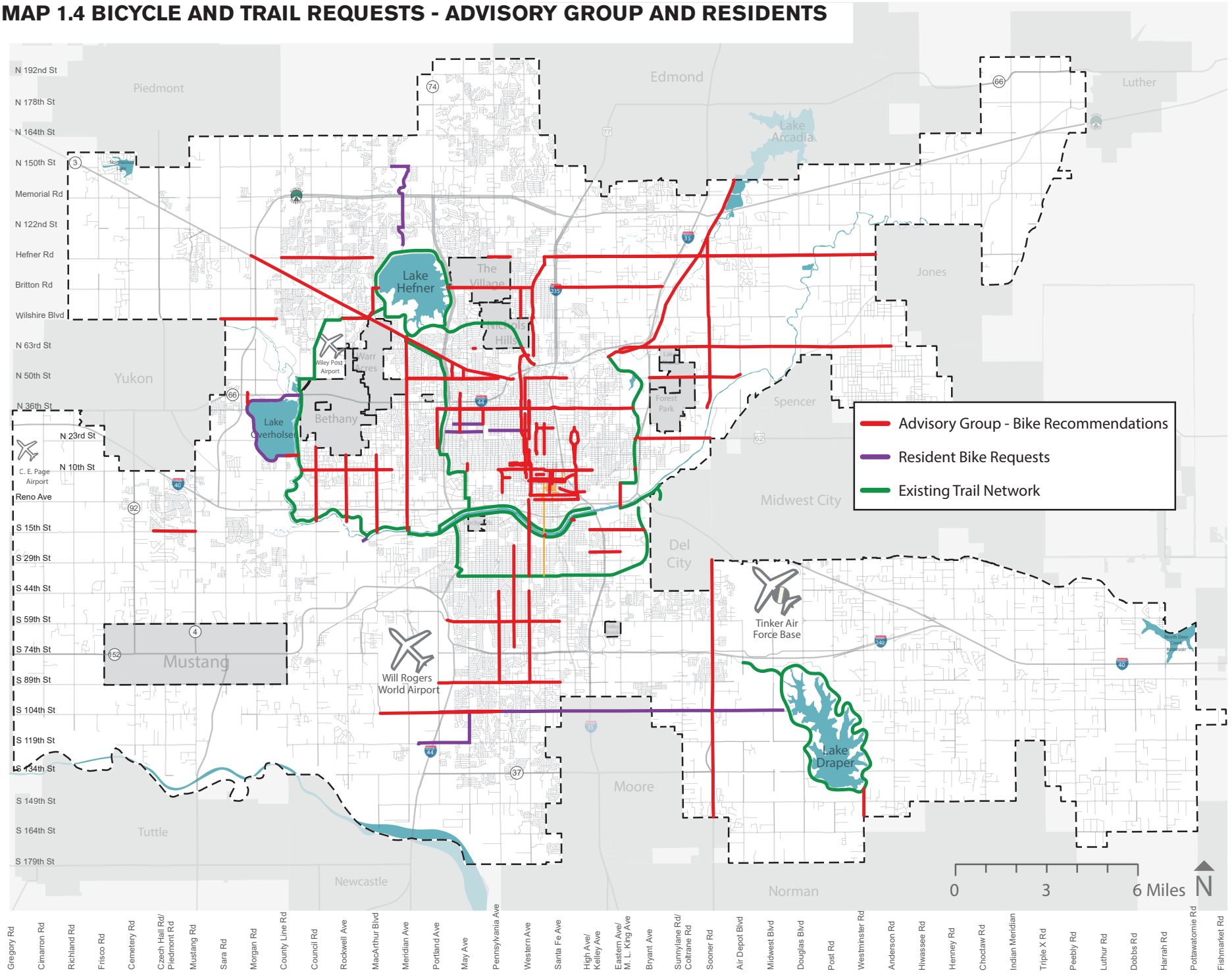
City staff summarized the feedback received through the oureach efforts. Maps 1.3 and 1.4 show the sidewalks and bike facilites, respectively, that were requested or identified as needs in the public engagement process.

Ward 2 Town Hall meeting, July 26, 2022, Will Rogers Garden Exhibition Center.

MAP 1.3 SIDEWALK REQUESTS-ADVISORY GROUP AND RESIDENTS



MAP 1.4 BICYCLE AND TRAIL REQUESTS - ADVISORY GROUP AND RESIDENTS



PROJECT ENGAGEMENT

For complex projects, there is typically a certain level of public engagement that is conducted before and simultaneously with the project's construction.

Projects with bike facilities can vary in the level of engagement. For example, bike routes that require sharrows or conventional bike lanes without any changes to on-street parking may have only minimal engagement, while bike lanes that change how the street is designed and functions may entail more robust community input. Similarly, where sidewalks are constructed along major arterial streets, or where they may be filling in existing gaps or replacing sidewalks in disrepair, public engagement may be limited to notifying residents and property owners.

Another good example is the City's "Street Enhancement" category. A light street enhancement project may consist of sidewalks, ADA upgrades, street lighting and other visibility improvements. The approach to this kind of project can be contrasted with street enhancement that focus on neighborhood commercial districts. Improvements to places like Paseo Arts District, Capitol Hill, and NE 23rd St involve extensive community outreach and collaboration, and programs like the Commercial District Revitalization Program and the Strong Neighborhoods Initiative are well-suited to facilitate these discussions.

Example of a postcard sent out by the Public Works department in advance of project construction.

Community meeting held for the N Lottie Ave bike project at Amos Memorial CME Church.

COMMERCIAL DISTRICT REVITALIZATION PROGRAM (CDRP)

For over 20 years, the City has been working with business and property owners to transform their areas, attracting more patrons to work, shop and play in their district. The City's CDRP provides opportunities and assistance for local business districts to create vibrant destinations. As part of the Better Streets, Safer City and MAPS 4 programs, many commercial districts were identified for street enhancement projects. Beyond the basic infrastructure of sidewalks, these projects aimed to increase walkability with the inclusion of amenities, such as better lighting, improved crossings, public art, traffic calming elements, transit stop upgrades, and trees and landscaping. Each District's improvements are customized to the needs and preferences of the district, and each project includes a public engagement process.

STRONG NEIGHBORHOODS INITIATIVE (SNI)

The SNI program started in 2012 to address the need for a more comprehensive and coordinated approach to neighborhood revitalization. The program supports the physical revitalization of housing and infrastructure in participating neighborhoods, and the expansion of economic and citizen opportunities to improve their quality of life. Walkability and accessibility to transit and services are SNI priorities. City staff works closely with neighborhood residents, local stakeholders and city departments to develop and implement revitalization strategies. Key indicators are measured annually and shared with the community and stakeholders.

Safety Focus

SAFETY CULTURE

Safety is a priority in current transportation legislation and desired federal practices. The Federal Highway Administration (FHWA) defines safety culture as the shared values, actions, and behaviors that demonstrate a commitment to safety over competing goals and demands. Safety culture involves understanding the risks associated with transportation and choosing to make safe choices.

In 2020, 38,824 people lost their lives on American roads - the highest number since 2007. This national crisis is both unacceptable and preventable. Zero is the only acceptable number of deaths on the Nation's roads. The FHWA embraces a Safe System Approach, which builds multiple layers of protection around road users and is based on the reality that although people make mistakes, those mistakes do not have to be fatal.

"VISION ZERO"

The zero deaths vision acknowledges that even one death on our transportation system is unacceptable and focuses on safe mobility for all road users. This idea was first adopted in Sweden in 1997 as "Vision Zero" and since then has spread around the world. Reaching zero deaths requires the implementation of a Safe System approach. Applying the Safe System approach involves anticipating human mistakes by designing and managing road infrastructure to keep the consequences of those mistakes low; and so that when a mistake leads to a crash, the impact on the human body doesn't result in a fatality or serious injury. Road design and management should encourage safe speeds and manipulate appropriate crash angles to reduce injury severity.

The Infrastructure Investment and Jobs Act (IIJA) established a new Safe Streets and Roads for All (SS4A) discretionary program with $5 billion in appropriated funds over 5 years. The SS4A program funds regional, local, and Tribal initiatives through grants to prevent roadway deaths and serious injuries.

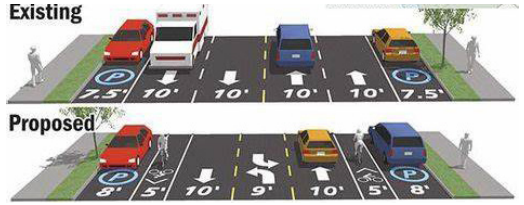
bikewalkokc supports the Federal goal of zero deaths on the roads and the efforts of implementing safety countermeasures. In 2023, the City of Oklahoma City received an $800,000 grant under the Safe Streets and Roads for All (SS4A) program. The funding will enable the City to develop a Vision Zero Plan.

SAFE STREET DESIGN AND COUNTERMEASURES

Speed matters to safety, when it comes to crash frequency and severity outcomes. The fatality risk of pedestrians increases as the impact speed increases. When a vehicle is traveling 23 mph, the fatality risk of a pedestrian is approximately 10 percent. However, when a vehicle is operating at 58 mph at the time of impact, the pedestrian's fatality risk is approximately 90 percent.[9]

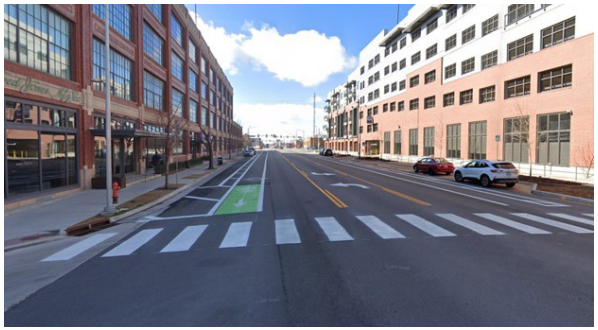
The FHWA has made available a list of 28 Proven Safety Countermeasures (PSC) effective in reducing roadway fatalities and serious injuries. They are grouped into five categories, including Speed Management, Pedestrian/ Bicyclist, Roadway Departure, Intersections, and Crosscutting. Transportation agencies are encouraged to consider implementation of the the PSC to accelerate the achievement of local, State, and National safety goals.

A roadway reconfiguration known as a Road Diet offers several high-value safety improvements at a low cost. The primary benefits include enhanced safety, mobility and access for all road users and a "complete streets" environment to accommodate a variety of transportation modes. A classic Road Diet typically involves converting an existing four-lane, undivided roadway segment to a three-lane segment consisting of two through lanes and a center, two-way left-turn lane. The resulting benefits include a crash reduction of 19 to 47 percent, reduced vehicle speed differential, improved mobility and access by all road users, and integration of the roadway into surrounding uses that results in an enhanced quality of life. A key feature of a Road Diet is that it allows reclaimed space to be allocated for other uses, such as turn lanes, bus lanes, pedestrian refuge islands, bike lanes, sidewalks, raised crosswalks, curb bulb-outs, bus shelters, on-street parking or landscaping.

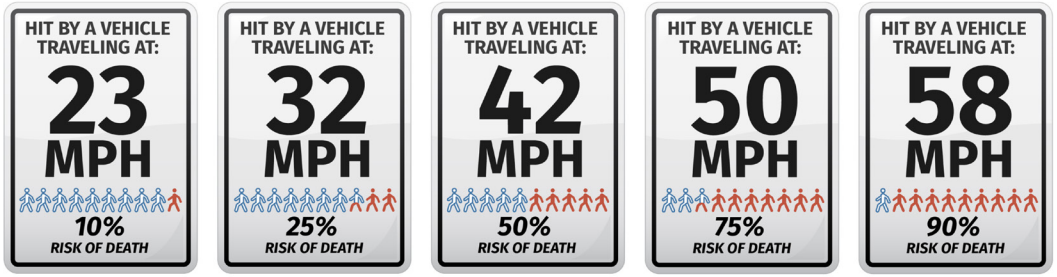


Road Diet on Delta Ave, Cincinnati, OH

Road Diet: W. Main Street, Oklahoma City, OK - Before



Road Diet: W. Main Street, Oklahoma City, OK - After



Source: https://www.transportation.gov/NRSS/SaferSpeeds

References

[1] Booth, G. L. (2012). Unwalkable neighborhoods, poverty, and the risk of diabetes among recent immigrants to Canada compared with long-term residents. *Diabetes Care*, 36(2), 302-308. Retreived from http://care.diabetesjournals.org/content/36/2/302.long

[2] U.S. Environmental Protection Agency. (1970-2013). National emission inventory (NEI) air polluntant emissions trends data [data set]. Retrived from http://www.epa.gov/ttn/chief/trends/index.html#tables

[3] World Health Organization. (2011). *Air quality and health* [fact sheet]. Retrieved from http://www.who.int/mediacentre/factsheets/fs313/en/

[4] Frontiers in Public Health. (2018). *The Urban Built Environment, Walking and Mental Health Outcomes Among Older Adults: A Pilot Study*

[5] Center for Disease Control and Prevention. (2020) *Physical Activity Guidelines for Americans, 2nd edition*

[6] Health and Territory Research, Universidad de Sevilla, Seville, Spain. (2023). *Can the mode, time, and expense of commuting to work affect our mental health?*

[7] Smart Growth America. (2022). *Dangerous by Design*. Retrived from https://smartgrowthamerica.org/dangerous-by-design/

[8] U.S. Department of Transportation, Federal Highway Administration, Office of Human Environment. (2015). *Evaluating the economic benefits of nonmotorized transportation: case studies and methods for the nonmotorized transportation pilot program communities* (FHWA-HEP-15-027). Retrieved from National Transportation Library website: https://rosap.ntl.bts.gov/view/dot/12173

[9] U.S. Department of Transportation, Federal Highway Administration *Safer Speeds.* Retrieved from https://www.transportation.gov/NRSS/SaferSpeeds.