

FY 2022 RAISE Grant Application



OKLAHOMA
Transportation

Reconnecting Neighborhoods in West Tulsa W. 51st Street Extension Project

Tulsa, Oklahoma

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1.0 PROJECT DESCRIPTION

To reconnect neighborhoods that were severed with the construction of US-75 in West Tulsa over 60 years ago, the Oklahoma Department of Transportation (ODOT) proposes to construct a multimodal extension of W. 51st Street under US-75. The W. 51st Street Extension Project will reestablish this neighborhood connection and provide additional transportation choices to the residents of these underserved communities. ODOT will complete this project as part of improvements to the I-44 and US-75 interchange, a major interchange for regional freight movement with high volumes of traffic in all directions. In addition to the benefits of the interchange, the W. 51st Street Extension Project will improve local access, community connectivity, and mobility for area residents. Improvements to W. 51st Street will reconnect residents with parks, churches, community services, and their neighbors. The Project will reduce barriers, increase safety and mobility for local and non-motorized users, increase use of lower carbon travel modes such as walking and transit, and increase equity and accessibility for travelers. Therefore, ODOT is requesting \$10 million in RAISE grant funds for the W. 51st Street Extension Project.

As shown in **Figure 2b**, the proposed project will reconstruct W. 51st Street under US-75, from east of S. Union Avenue east approximately one mile to W. Skelly Drive at the Arkansas River. The W. 51st Street roadway will have two 12-foot-wide concrete driving lanes, curb and gutter, and a 5-foot-wide concrete sidewalk on the north side (**Figure 1**). Sidewalk will also be included on the south side of W. 51st Street west of US-75. In addition to the sidewalk, pedestrian improvements will include a separate pedestrian bridge over the Tulsa-Sapulpa Union (TSU) Railroad and a

[View the Project Interactive Map at I-44/US-75 Interchange Improvements](#)

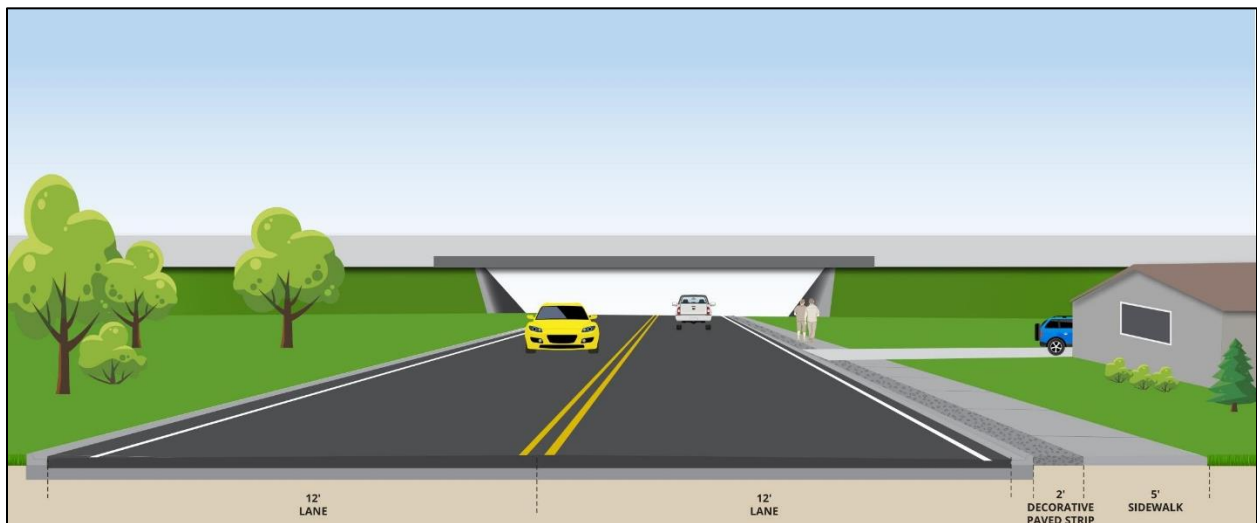


Figure 1: Proposed W. 51st Street Typical Section (looking west towards US-75 overpass)

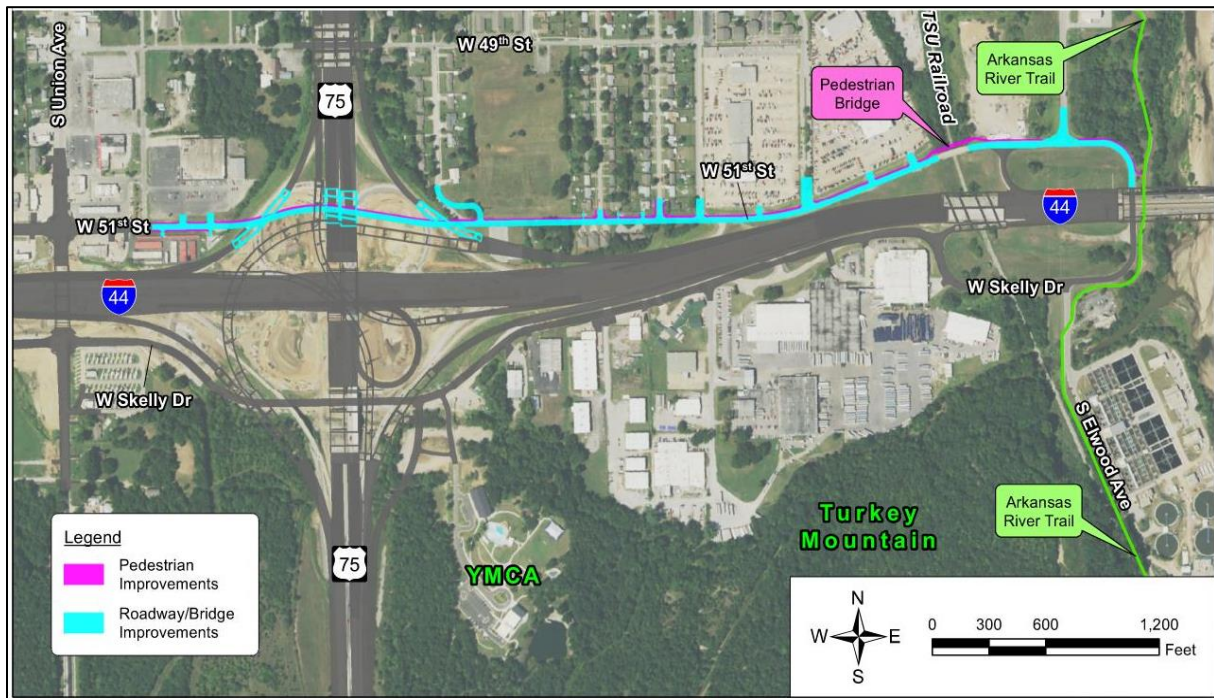


Figure 2a (TOP): W. 51st Street Existing Conditions (no connection across US-75);
Figure 2b (BOTTOM): Proposed W. 51st Street Extension

connection to the Arkansas River Trail. Connections to local streets and driveways will be reconstructed and maintained. The entire area will be illuminated by new high mast lighting provided within the I-44/US-75 interchange, with additional lighting in the US-75 underpass. The

Project includes construction of new bridges on US-75 over W. 51st Street, as well as bridges on the southbound to westbound and westbound to northbound ramps in the I-44/US-75 interchange. These bridges are necessary to span the new W. 51st Street extension. Detailed plans and supplementary information can be found at [W. 51st Street RAISE](#).

1.2 Project History

The proposed extension of W. 51st Street has been part of the plan to improve the I-44/US-75 interchange since ODOT's original corridor study of US-75 in the late 1990s. As the project has advanced through preliminary engineering and public involvement, ODOT has enhanced the multimodal aspects of the project, including new sidewalks, a pedestrian bridge, and trail connection on W. 51st Street. Design of these improvements has now advanced to the 65% level and the project recently received NEPA approval from the Federal Highway Administration (FHWA). Right-of-way acquisition has begun, with some parcels acquired through advanced acquisition. The remainder of the right-of-way acquisition and utility relocations have been funded and are underway. ODOT intends to complete those activities by mid-2023.

1.3 Transportation Challenges and Solutions

Improvements to the I-44/US-75 interchange are needed to address the rapid growth occurring in the Tulsa metropolitan area. One of the major challenges ODOT faces with this project is addressing local connectivity, access, and quality of life for the residents adjacent to the interchange while still providing for regional mobility. The needs of the neighborhoods and businesses surrounding the interchange present their own challenges and require different solutions (see **Figure 3**). These challenges include:

- Pedestrian safety – reducing collisions involving pedestrians tend to be more severe and more frequently result in injury or death. Statistically, minority and low-income communities are especially vulnerable.
- Environmental justice – providing equitable access and transportation choices for underserved communities.
- Overcoming barriers to opportunity – redressing the barrier of US-75 and increasing community connectivity.
- Increasing mobility – providing affordable transportation options including walking and access to transit, and freedom of movement with or without a car.
- Economic opportunities – considering local mobility, community revitalization and access to employment and job opportunities in this Opportunity Zone.

Solutions to these challenges are complex and multi-dimensional. Reconnecting and improving W. 51st Street across US-75 will provide a safe and affordable mode of travel for the historically disadvantaged communities in the area. With increased mobility, these residents will have better access to basic services like grocery shopping and to some of Tulsa's premier recreational opportunities that have been in these neighborhoods' backyards but have been inaccessible since the construction of US-75.



Figure 3: W. 51st Street Extension: Existing Issues

2.0 PROJECT LOCATION

The W. 51st Street Extension Project is in West Tulsa on the west side of the Arkansas River (**Figure 4**). The project is within the Tulsa Urbanized Area (UA-88948). According to the 2010 U.S. Census, the Tulsa UA had a population of 655,479. Therefore, **this project is considered urban**. The project is located within Census Tract 49 in Tulsa County. According to guidance provided by USDOT, this tract meets both the definition of an **Area of Persistent Poverty** and a **Historically Disadvantaged Community**. Census Tract 49 is also a designated **Opportunity Zone** and a **Priority Enterprise Zone**.

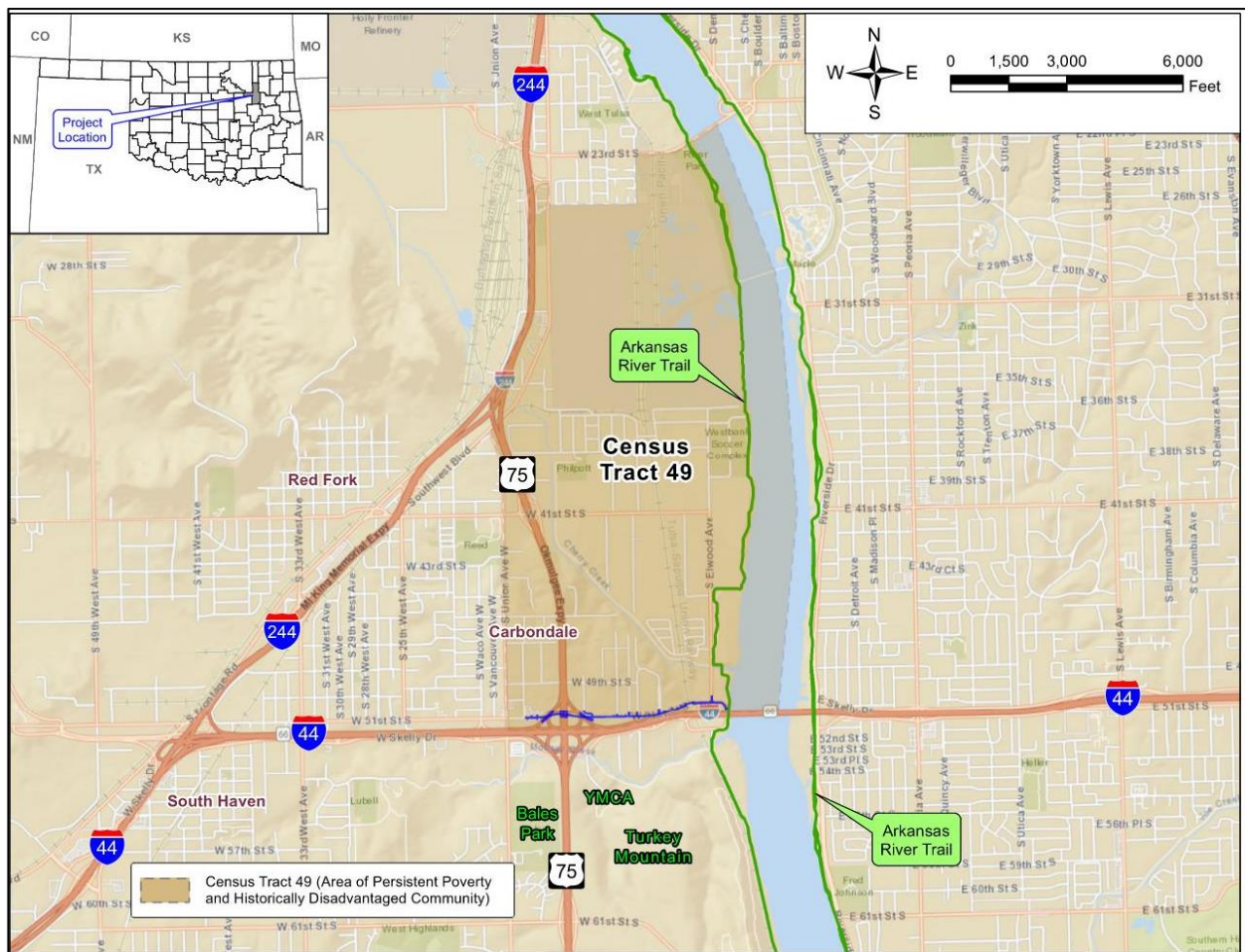


Figure 4: The W. 51st Street Extension Project Location

The Project is within the historic community of Carbondale which developed in the early 1920s to house workers at the nearby Sunlight Carbon Company. By 1927, the first edition of the Carbondale News reported the town had a population of 1,400, an established post office, water, electricity, gas, schools, a community church, an interurban rail line and bus service, and a real 32-piece band*. However, in 1928 the Sunlight Carbon Company was destroyed by fire, and Carbondale was annexed by the City of Tulsa. By the 1950s, Carbondale had expanded east, and homes were scattered between Union Avenue and Cherry Creek. US-75 was constructed in the mid-1960s and created a barrier within this community (**Figure 5**).

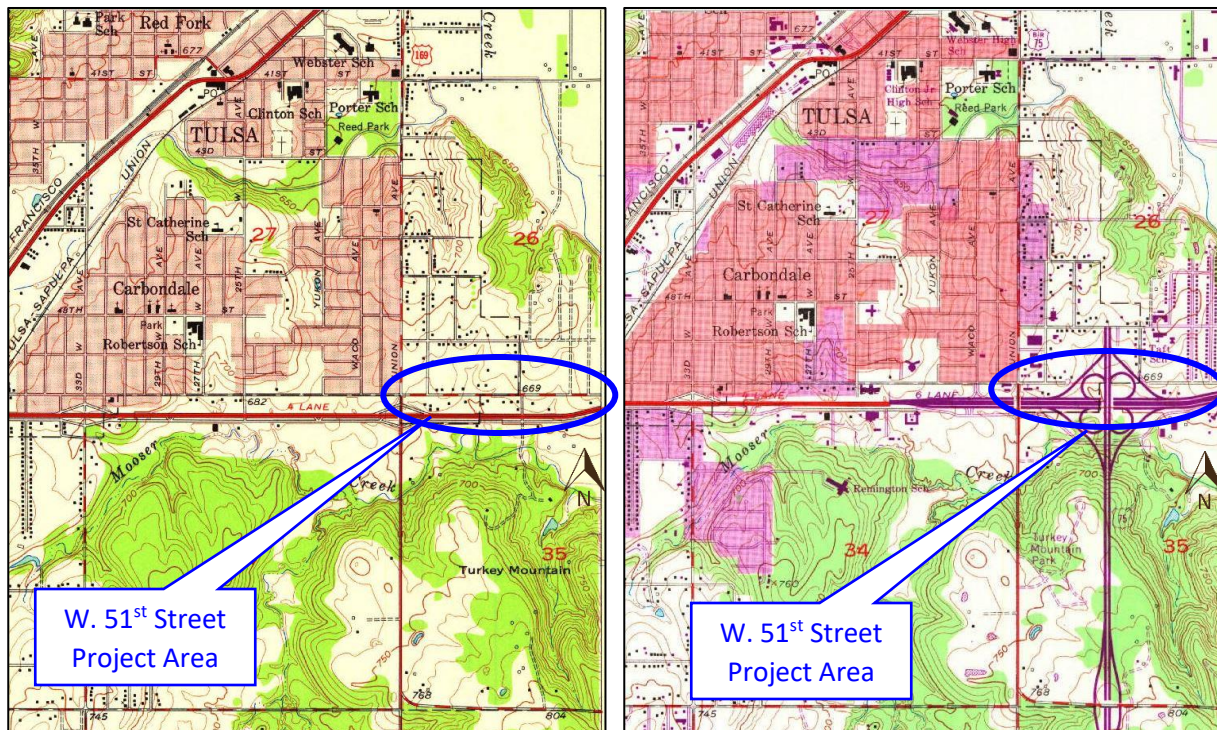


Figure 5a (LEFT): Project Area Prior to US-75 Construction

**Figure 5b (RIGHT): Project Area After I-44 and US-75 Construction
(Sapulpa North USGS 7.5' quadrangles, 1956 and 1967)**

3.0 GRANT FUNDS, SOURCES AND USES OF PROJECT FUNDS

ODOT is requesting \$10 million in FY 2022 RAISE funds to contribute to the construction of the project. ODOT intends to utilize Federal aid and state dollars to fund the remainder of the project cost. The future eligible cost for the project components covered in this application is \$15.5 million, based on 65% design.

Cost estimates were developed by ODOT based on estimated quantities and recent similar projects. The budget and schedule include the cost of each project component, and how non-

* Southwest Tulsa Historical Society

federal (state), RAISE, and other federal funds will be allocated to each component. A summary of the future costs of the different project components and the anticipated cost share is presented in **Table 1**.

Table 1: Sources and Uses of Funding

USE OF FUNDS	SOURCES OF FUNDING (in \$1,000s)			
	State Funds	Other Federal Funds	RAISE Funds	Total Future Project Cost
Construction	\$2,480	\$1,860	\$8,060	\$12,400
W. 51 st Street Roadway	\$329	\$247	\$1,071	\$1,647
Ped/Bike Bridge	\$260	\$195	\$845	\$1,300
US-75 and Ramp Bridges	\$1,655	\$1,241	\$5,377	\$8,273
Retaining Walls	\$236	\$177	\$767	\$1,180
Contingency and Other	\$620	\$465	\$2,015	\$3,100
TOTAL FUTURE ELIGIBLE COSTS	\$3,100	\$2,400	\$10,000	\$15,500
Percent	20%	15%	65%	100%

Design and environmental costs will be covered 100 percent by ODOT's state transportation funds. Right-of-way acquisition will include use of federal aid funds; however, all of these funds will be expended prior to RAISE grant obligation and are not included in **Table 1**. These funds are incorporated into the total capital costs for purposes of the Benefit-Cost Analysis. Construction funds are anticipated to be 65 percent RAISE funds, 20 percent state funds, and 15 percent other federal funds. The cost estimate includes a 20 percent contingency. ODOT is committing \$3.1 million in state funds to the construction of the W. 51st Street Extension Project. ODOT's Commitment Letter is available at [W. 51st Street RAISE](#). The source of the \$3.1 million in non-federal funds is the Rebuilding Oklahoma Access and Driver Safety (ROADS) Fund created by Title 69, Section 1521, Oklahoma Statutes. This funding has no limit or conditions to satisfy.

Future maintenance of W. 51st Street, including the pedestrian bridge, will be the responsibility of the City of Tulsa and is anticipated to cost \$950,000 over the next 20 years. The city includes funds for street maintenance in its annual budget. The city recognizes that while construction of the project is a necessary part of the I-44/US-75 interchange and will be covered by ODOT, the project will be part of the city street network and future maintenance will be the city's responsibility. A letter of commitment from the City of Tulsa can be found at [W. 51st Street RAISE](#). Because they will be included on the state highway system, ODOT will maintain the new bridges on US-75 and the interchange ramps over W. 51st Street. ODOT has dedicated funds for maintenance as well as an approved Transportation Asset Management Plan (TAMP). The TAMP dedicates funding to improving surface conditions, rehabilitating bridges, and providing access improvements.

4.0 MERIT CRITERIA

4.1 Safety

The W. 51st Street Extension Project will provide improved safety for both vehicles and pedestrians. Today, the disconnected segments of W. 51st Street carry approximately 3,520 vehicles per day (vpd) west of US-75 and 1,280 vpd east of US-75. There are currently no sidewalks and narrow or no shoulders. Cyclists and pedestrians that do use W. 51st Street are at greater risk of a severe injury or fatality if they are involved in a collision, due to the higher traffic speeds. Local data suggest that between 75-85% of pedestrian and bicycle collisions occur on arterial streets^{†‡}. This exposure will increase without the connection of W. 51st Street. The adjacent interchange project will combine local I-44 ramp access east and west of US-75 resulting in a demand for approximately 2,500 more vehicles to cross US-75. Without the W. 51st Street extension, this traffic is likely to use the W. 49th Street connection – a neighborhood street lacking pedestrian facilities, with two 10-foot lanes and no shoulders or sidewalks.

The region has experienced a significant increase in pedestrian fatalities. The Connected 2045 Regional Transportation Plan (RTP) for the Tulsa Transportation Management Area (TMA) reports

Year	Bicycle	Pedestrian
2011	63	154
2012	57	140
2013	50	144
2014	55	130
2015	53	158

in 2006 there were 7 pedestrian fatalities in the region. Since then, fatalities have been on the rise, resulting in 13 fatalities in 2015 (**Figure 6**). Over the past decade, pedestrian and bicycle fatalities have been on average 17% of all collision fatalities in the region. In 2015, that number rose to 23% and were all pedestrian related.

Adding sidewalks to W. 51st Street is anticipated to increase the comfort, convenience, and safety of the facility for pedestrian use. The separated sidewalk

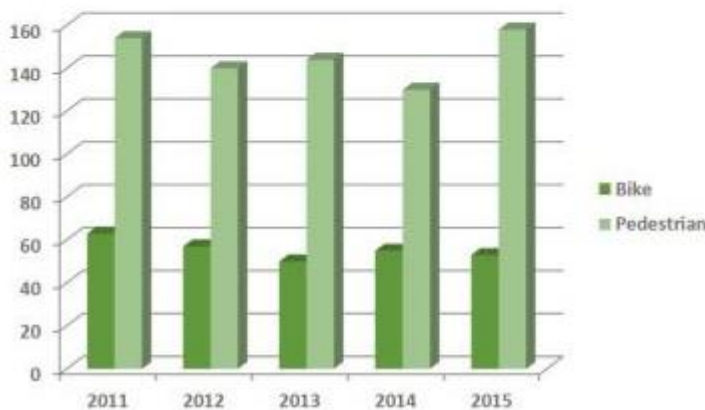


Figure 6: Recorded Bicycle and Pedestrian Collisions in the Tulsa Metropolitan Area (Connected 2045 Tulsa RTP).

Over the past decade, pedestrian and bicycle fatalities have comprised on average 17% of all collision fatalities in Tulsa.

[†] Connected 2045 Regional Transportation Plan, Tulsa Metropolitan Area, 2017
[‡] GO Plan (Tulsa Regional Bicycle and Pedestrian Master Plan), 2015

will allow for distance between pedestrians and traffic, leading to improved safety, decreased noise exposure, and increased comfort. Per FHWA, provision of sidewalk reduces pedestrian in roadway crashes by 65-89%.

Over a 10 year period from 2010 to 2019, a total of 91 collisions occurred on W. 51st Street and along local roads (Olympia Avenue, W. 49th Street, and S. Union Avenue) that connect W. 51st Street around the I-44/US-75 interchange – including 3 serious injury and 38 injury-related collisions, along with 50 property-damage collisions. Of those 91 collisions, 3 involved a pedestrian or bicyclist – with one being a severe injury and two injury-related (see **Figure 7**). The overall interchange project will significantly reduce collisions at a location with a collision rate at nearly twice the state average. Without the W. 51st Street extension, subsequent users of the W. 49th Street underpass would experience approximately 5 crashes per year without mitigation.

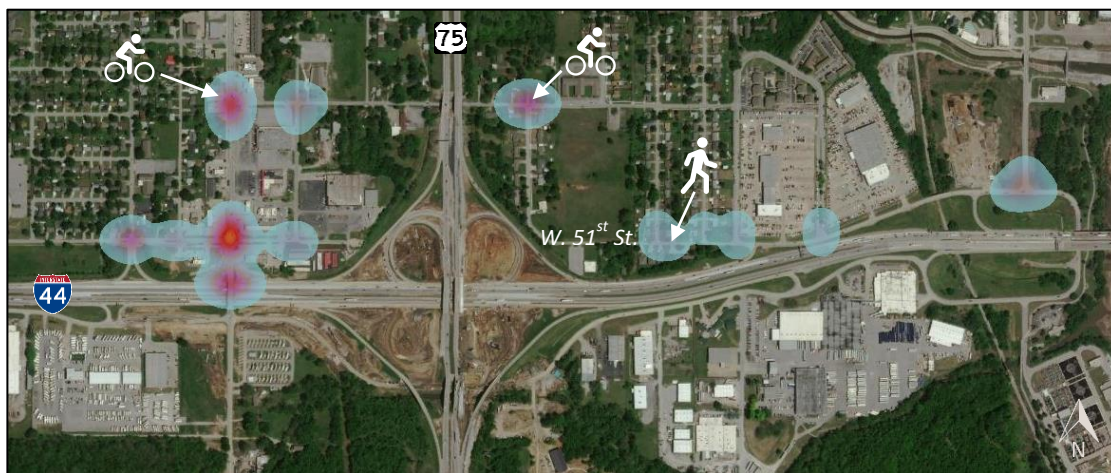


Figure 7: W. 51st St and Local Roads Collision Heat Map, 2010-2019

As depicted in the heat map in **Figure 7**, high frequency collision areas occur at at the S. Union Avenue and W. 51st Street intersection, along with collisions on W. 49th Street and S. Union Avenue. These collisions are attributed to vehicles, pedestrians, and bicyclists traveling around the I-44/US-75 interchange due to lack of connectivity of W. 51st Street. The lack of connectivity on W. 51st Street on either side of the I-44/US-75 interchange increases the potential for crashes due to the longer travel distances and the increased number of turns from stop controlled intersections to get across the freeway. Each time a vehicle must stop at an intersection and make a turn, travel time and collision exposure is increased. Today, vehicles wanting to access 51st Street across US-75 encounter three stop controlled intersections. The W. 51st Street Extension Project will eliminate the need for these stops and left turns.

Implementation of additional elements such as connecting to a signalized intersection with turn lanes (39% of all collisions), systematic signing and striping (4.5% of all collisions), lighting addition (38% of nighttime collisions), wider lanes (3% of all collisions), and sidewalk connection (65% of pedestrian collisions) would assist with the reduction of overall collisions, along with pedestrian and bicycle collisions.

4.2 Environmental Sustainability

The W. 51st Street Extension Project supports a primary goal to use lower-carbon modes of travel such as walking and transit. The Project will also reduce emissions and increase resiliency of at-risk infrastructure. The project has not only considered environmental justice in planning but is intended to specifically serve these communities that experience disproportionate environmental impacts.

4.2.1 Emissions and VMT Reduction

The travel time savings of the project (discussed in more detail in **Section 4.5**), will create a positive and lasting impact on emissions in the area through alleviating congestion and vehicle miles traveled (VMT). Emission reductions are anticipated to be over 4,700 metric tons of greenhouse gasses. These impacts will strongly benefit the local vulnerable populations and the sensitive environmental assets of the Arkansas River and Turkey Mountain adjacent to the project area. By providing a shorter connection for W. 51st Street traffic across US-75, the project is anticipated to reduce VMT by nearly 10 million miles over the next 20 years.

The project is anticipated to reduce over 4,700 tons of greenhouse gas emissions through 2045

The project will encourage the use of active transportation modes and rolling access for the disabled. The area lacks a connected sidewalk network connecting area residents to employment, shopping, recreation, and community facilities. Physical barriers such as US-75 and the TSU Railroad prevent pedestrians from being able to reach these destinations quickly and safely. Without a separated sidewalk, pedestrians feel unsafe walking on the roadways and choose to drive even when their destination is within walking distance. A continuous sidewalk along the one mile stretch of W. 51st Street will link neighborhoods with the Arkansas River Trail, a grocery store, two churches, and the Zarrow Regional Library, access which today is indirect and unsafe. The W. 51st Street connection will provide a more direct pedestrian connection and will provide a safe, lighted facility separated from traffic. All sidewalks will be ADA compliant and wheelchair accessible. While not quantified, provision of these facilities is likely to shift some vehicle trips to pedestrians, further reducing VMT.

4.2.2 Resiliency

The City of Tulsa is a leader in promoting resiliency and disaster preparedness in its infrastructure development. After a devastating flood in 1984, Tulsa implemented a widespread network of flood control devices and a rigorous floodplain management policy. After another massive flood event in 2019, the City and Tulsa County have aggressively pursued and were recently awarded funding to upgrade the Arkansas River levee system. In 2022, **Tulsa received a Class 1 rating from FEMA's Community Rating System (CRS), one of only two cities in the nation with this top**

rating. These improvements will continue to protect lives and property as extreme weather and flooding become more common.

In response to the 2019 Arkansas River flood, the Indian Nations Council of Governments (INCOG) which serves as the Metropolitan Planning Organization for the Tulsa area published an addendum to their Comprehensive Economic Development Strategy (CEDS, **Figure 8**). This addendum specifically addressed economic and natural disaster resilience in the region, citing the unique partnership amongst various economic development organizations, private industry, and local governments as key to the region’s ability to withstand extreme events.

One of most impactful resiliency policies implemented by the City of Tulsa is the requirement that all new or improved city streets be designed to accommodate the 100-year storm⁵, a much larger storm event than normally required by municipal roadways. Construction may not cause a rise in base flood elevations within mapped floodplains. This design standard will apply to the W. 51st Street improvements. The existing W. 51st Street roadway is a two-lane roadway with no shoulders and open ditches. The new roadway will include a new enclosed storm drain system capable of carrying the 100-year storm event, resulting in improved stormwater management.

4.2.3 Environmental Justice

The W. 51st Street Extension Project has considered environmental justice throughout project planning. From the initial Preliminary Engineering Report completed in 2016 through three subsequent public meetings, ODOT has considered the effects of this project and the overall I-44/US-75 interchange on adjacent low-income and minority communities.

According to the Environmental Protection Agency (EPA)’s EJSCREEN tool, the areas around the W. 51st Street Extension Project have high concentrations (80-90th percentile compared to the state) of minority and low-income populations (**Figure 9**). EJSCREEN also indicates the residents

⁵ The 100-year storm refers to the estimated probability of a storm event occurring in a given year. A 100-year event has a 1 percent chance of occurring in any given year.

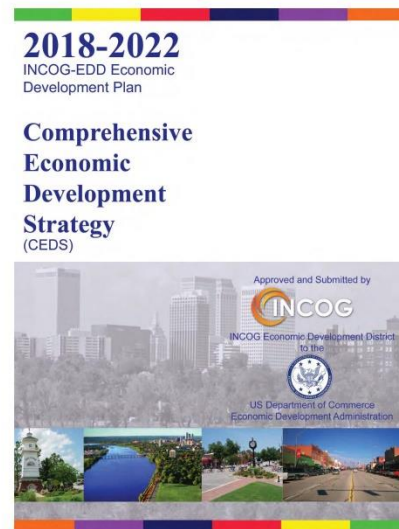


Figure 8: INCOG Comprehensive Economic Development Strategy, 2018-2022

The City of Tulsa requires all streets to be designed with drainage systems to accommodate the 100-year storm event



Figure 9: EPA EJSCREEN Minority and Low-Income Population Maps

of the area are disproportionately impacted by environmental hazards. The area is within the 95-100th percentile for pollutants such as particulate matter, air toxins, lead paint, hazardous waste, wastewater discharge, and traffic proximity. Providing sustainable transportation choices is especially important in these overburdened communities. Data from the American Community Survey (2019 5-year estimates) for Census Tract 49 show:

- Twenty-eight percent (28%) of the population is below the poverty level,
- Median incomes are under \$33,000/year,
- Forty-six percent (46%) of the population is non-white
- Almost 4% of the population either walks to work or takes public transit,
- Five percent (5%) of workers do not have access to an automobile.

While these appear to be small percentages, they are almost double the percentages in the state and the larger Tulsa metro area. These underserved populations tend to be more dependent on non-vehicular transportation modes. Providing a sidewalk connection on W. 51st Street across US-75 and the TSU Railroad will improve safety and mobility for all users, but particularly for pedestrians in this economically distressed area.

Increasing connectivity along W. 51st Street will also provide increased connections to public transit. Tulsa Transit currently runs fixed route bus service on W. 51st Street (Route 490, see **Figure 10**). However, the bus currently uses 49th Street to cross US-75, which has no sidewalks or other pedestrian accommodations (**Figure 11**) and must complete left turns from stop-controlled approaches. Reconnecting W. 51st Street under US-75 will not only reduce operating costs, travel

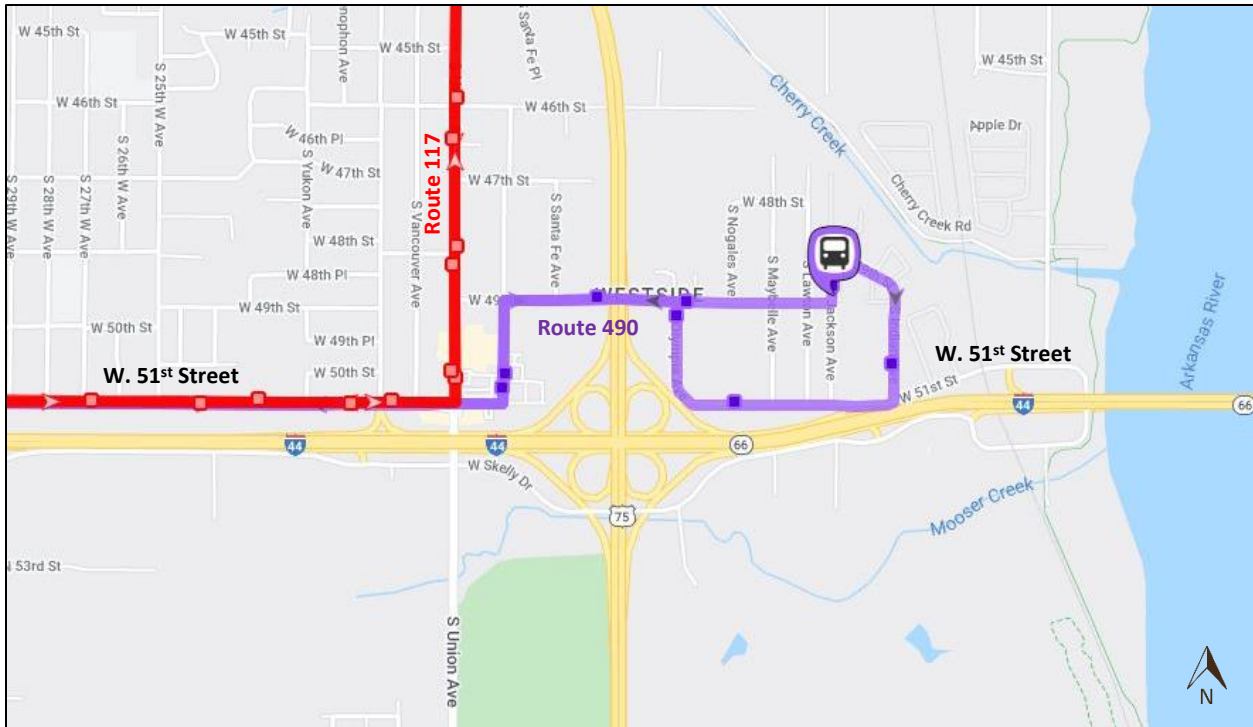


Figure 11: Existing Tulsa Transit Routes in the Project Area

times, and emissions for transit vehicles, but will also allow a safer, more direct pedestrian connection to adjacent transit routes such as Route 117 on S. Union Avenue that provide access to downtown Tulsa.

The project received NEPA approval with a Documented Categorical Exclusion (DCE) in March 2022 as part of the larger interchange project. The DCE concluded that the project does not individually or cumulatively have a significant impact on the environment as defined by NEPA, or involve unusual circumstances as defined in 23 CFR 771.117(b) and is therefore excluded from the requirements to prepare an Environmental Assessment or Environmental Impact Statement. Through this determination, FHWA has concluded that significant adverse impacts to air and water quality, wetlands, and protected species and habitat will be avoided by the project.

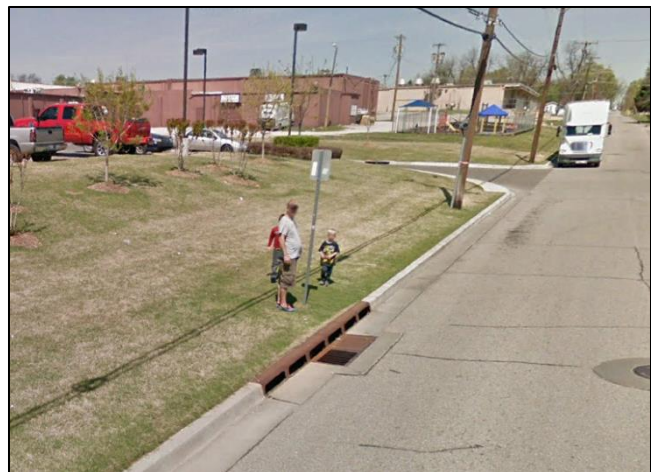


Figure 10: Pedestrians at a Bus Stop on Route 490

4.3 Quality of Life

The W. 51st Street Extension Project will increase equity and access for travelers, particularly the underserved residents of the local community. Inclusion of sidewalk will provide more connectivity and lower-carbon transportation choices. The Project emphasizes increased pedestrian mobility in the area including improvements to sidewalk gaps identified in the [INCOG GO Plan](#), Tulsa’s regional bicycle and pedestrian masterplan. Enhancing pedestrian mobility reduces transportation cost burdens and automobile dependence and increases the walkability of area neighborhoods. US-75 and the TSU Railroad act as barriers to transportation and reduce access to employment opportunity, shopping, and recreation. **The W. 51st Street Extension Project will redress the barrier that US-75 created when it was constructed and reconnect the Carbondale neighborhood.**

4.3.1 Barriers to Opportunity

Highways can inhibit connections and isolate neighborhoods from parks, schools, and other community destinations. When I-44 and US-75 were built, neighborhoods on the west side of US-75 lost access to the Arkansas River, and neighborhoods on the north and south sides of I-44 were cut off from each other. As discussed above, the neighborhoods in the vicinity have a high minority concentration and a high concentration of low-income households. These income statistics further enhance the need for the project to reconnect neighborhoods to amenities such as grocery shopping, the local library, the Herman and Kate Kaiser YMCA, Turkey Mountain, and the 26 miles of River Parks’ multi-use trails that connect gathering areas, playgrounds, fountains, and sculptures along the banks of the Arkansas River.

The W. 51st Street Extension Project includes a physical-barrier mitigating connection under US-75 and over the TSU Railroad. US-75 has been a barrier within the historic Carbondale neighborhood since it was constructed (see **Figure 3**). The new W. 51st Street connection offers redress to the past bisection of this neighborhood.

The Warehouse Market at W. 51st Street and S. Union Avenue is one of only two grocery stores serving the entirety of West Tulsa. **The**

area is considered a food desert by the USDA Economic Research Service (Figure 12). Providing a safe pedestrian connection to this store is essential to increase local food security.

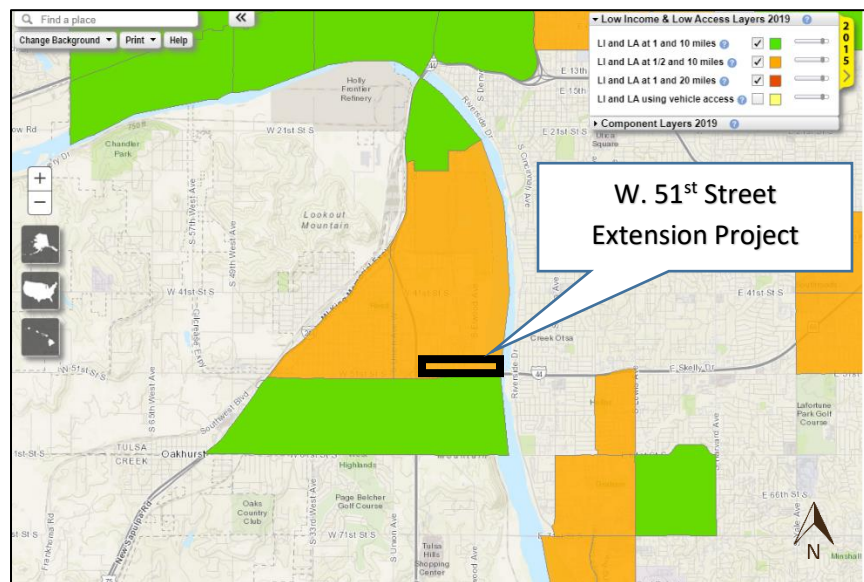


Figure 12: Low Income and Low Food Access (2019 Food Access Research Atlas)

Along 51st Street, new sidewalk will connect the recently constructed sidewalk corridor on Union Avenue east to the Arkansas River Trail. The Arkansas River Trail connects to Tulsa River Parks' 26 miles of multi-use trail and to Turkey Mountain, Tulsa's only urban wilderness with over 600 acres and extensive trails for running, hiking, mountain biking, and horseback riding. The Tulsa River Parks Authority recently completed the [Turkey Mountain Master Plan](#) (2020) that outlines the goals and future projects to expand and improve access to the Turkey Mountain Urban Wilderness. The Turkey Mountain Master Plan includes improvements to W. 51st Street and the I-44/US-75 interchange, including landscaping and new access as well as a new trail along Mooser Creek on the south side of I-44 (**Figure 13**). The Master Plan incorporates the proposed improvements to the I-44/US-75 interchange, including the W. 51st Street Extension. The W. 51st Street Extension Project removes a barrier for local residents to access this significant community asset and will enhance access to future picnic areas and trails. Today, if a person on the west side of US-75 wants to access River Parks, they must travel over one mile on a route with no shoulders or sidewalks to the nearest access point. Residents of the project area rely on non-vehicular travel modes in higher numbers than the city or state general population. Providing more non-vehicular mobility increases transportation equity for this underserved group.

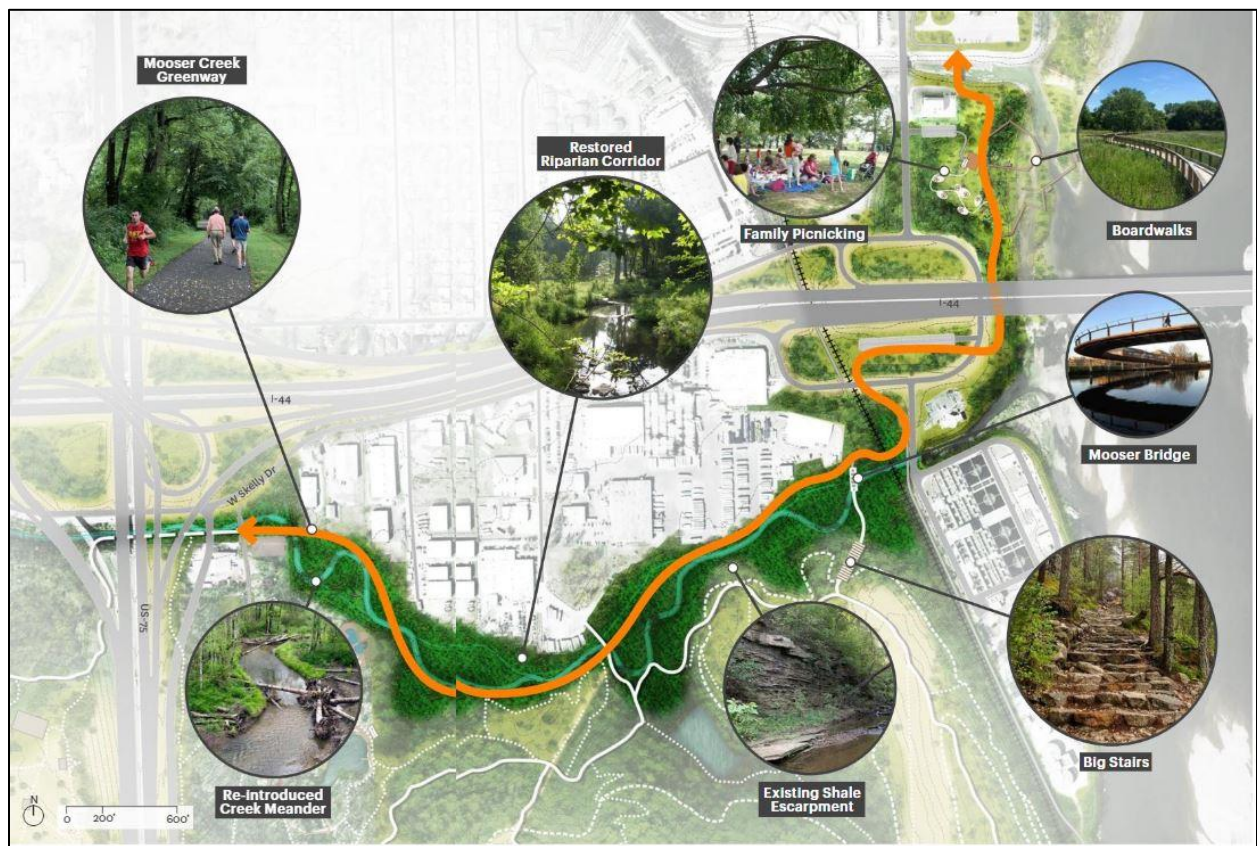


Figure 13: Mooser Creek and Northern Access, Turkey Mountain Master Plan (2020)

The W. 51st Street Extension Project will provide improved access within a federal Opportunity Zone, enhancing opportunities for economic development in this underserved area. The improved vehicular access will enhance safe and efficient access to goods and services. More information on planned economic development and job creation is discussed in **Section 4.5**.

4.4 Mobility and Community Connectivity

One of the primary benefits of the W. 51st Street Extension Project is an increase in mobility and expanded connectivity for all users, particularly pedestrians and other non-motorized users. W. 51st Street is identified as both a desired pedestrian/bicycle route and a sidewalk gap in the [INCOG GO Plan](#), the Bicycle/Pedestrian Regional Master Plan for the Tulsa Transportation Management Area (TMA) (**Figure 14**). Once complete, the W. 51st Street sidewalks will connect to sidewalks and bicycle lanes recently completed by the City of Tulsa on S. Union Avenue, designated as a Multimodal Corridor in the city's [Complete Streets Procedural Manual](#).

The project will connect to S. Union Avenue, a City of Tulsa Multimodal Corridor

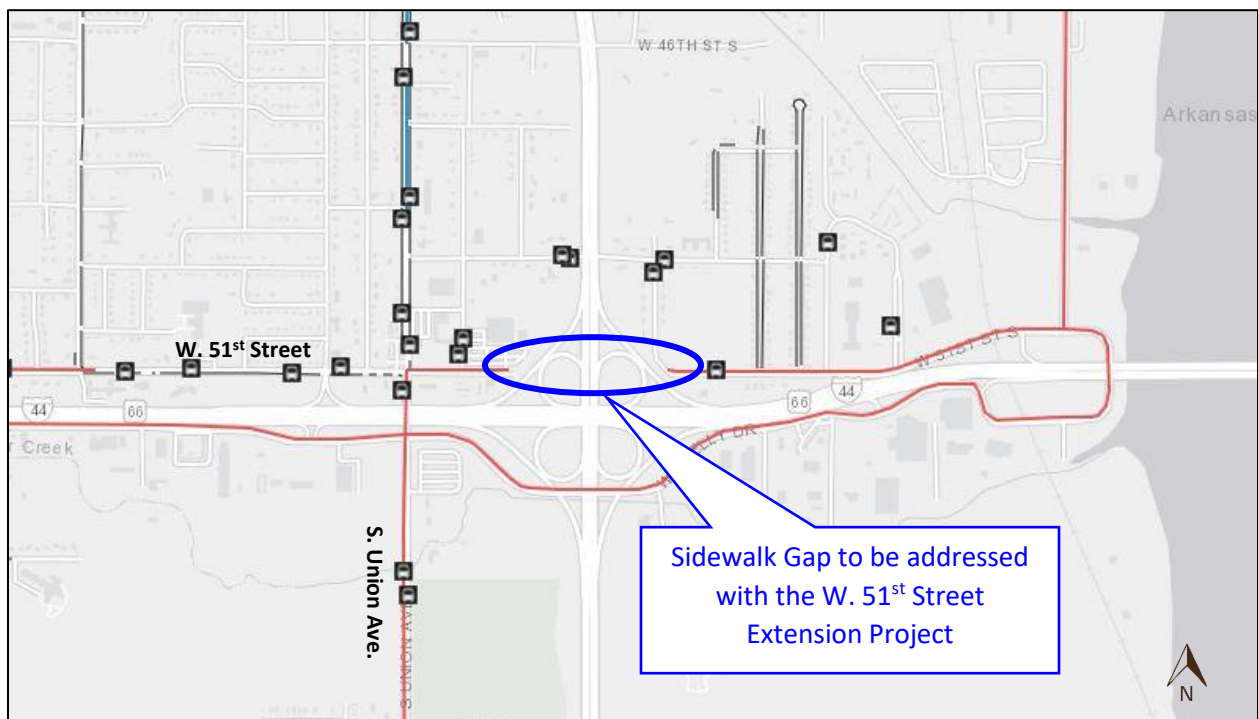


Figure 14: Sidewalk Gap Map, INCOG GO Plan

As shown on **Figures 10 and 14**, with the completion of the new bridge on S. Union Avenue over I-44 currently under construction by ODOT, the W. 51st Street sidewalks will connect to the city's larger bicycle/pedestrian and transit network. The map in **Figure 15** shows the city's planned and recently completed capital improvement projects in the vicinity of W. 51st Street, which is

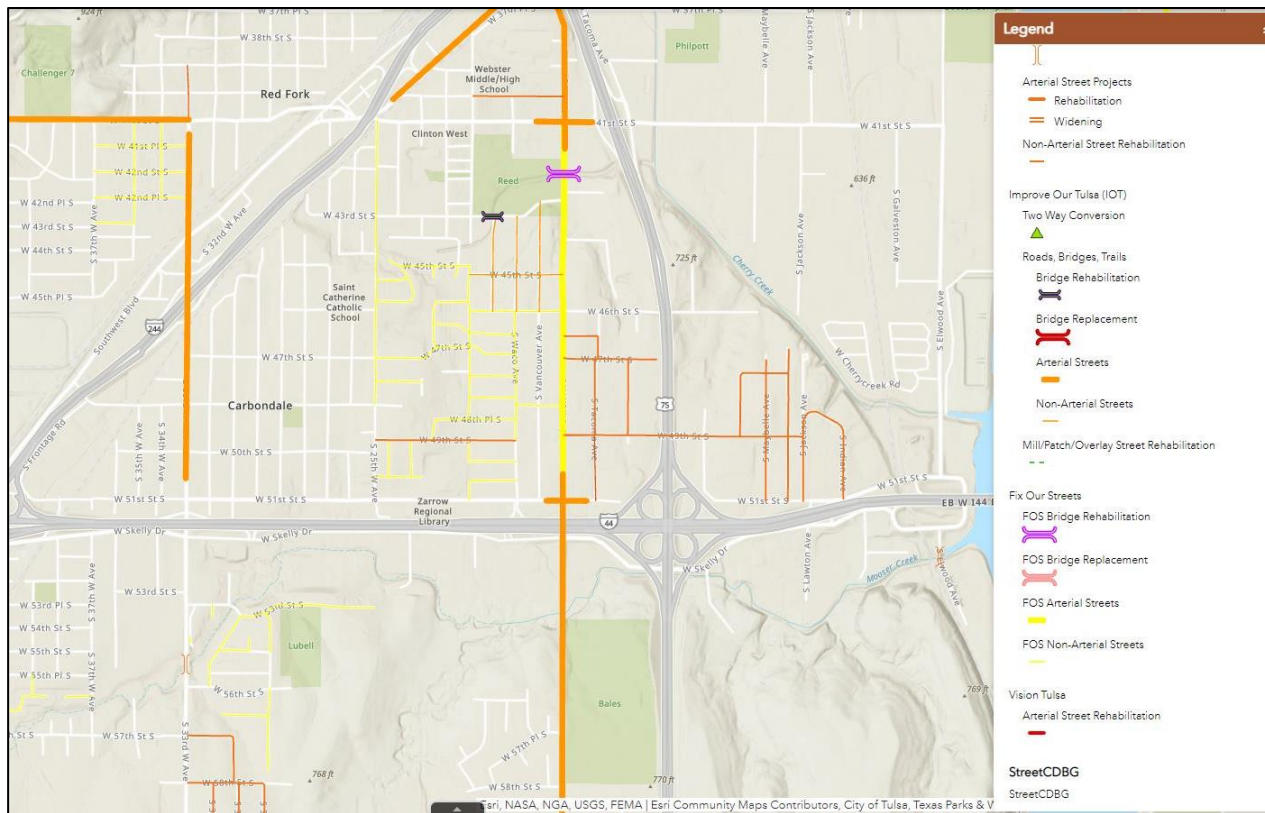


Figure 15: City of Tulsa Capital Improvement Street Projects (colors represent bond funding sources)

designated by the city as a Multimodal Corridor. Sidewalks, bicycle lanes, bicycle racks, transit stops, and transit shelters are all considered essential elements of a Multimodal Corridor.

The W. 51st Street Extension Project will increase access to affordable transportation options including public transit. Walking and public transit are more highly utilized in underserved areas like Carbondale where many families have limited or no access to an automobile. The project will increase neighborhood connectivity and walkability, reconnecting area neighborhoods that were bisected with the construction of US-75. Connections to shopping and recreation will also be improved, with linkages to the Arkansas River Trail (see **Section 4.3** above), a local grocery store, and a regional library. All improvements will be designed to current ADA standards to provide a safe and functional facility for all users.

The W. 51st Street connection will also provide important local access for vehicular traffic with the reconfigured I-44/US-75 interchange. Removal of local on-and-off-ramps from I-44 will necessitate the use of W. 51st Street and other local roads for access. Improving the connectivity of the local network will not only improve mobility on the adjacent highways but will also make local automobile trips easier and more direct. Extending W. 51st Street will provide a direct connection, safe road features, and restore W. 49th Avenue back to a low-volume neighborhood street.

4.5 Economic Competitiveness and Opportunity

Tulsa is a fast-growing center of employment within the state and region. In 2018, Tulsa-area employment grew 39 percent faster than the state and 47 percent faster than U.S. employment. Tulsa's real gross product grew 6.9 percent, while Oklahoma and the U.S. grew at 4.4 percent and 2.9 percent, respectively. ** As outlined in the Regional Transportation Plan, CEDS, and a host of other local planning documents, one of the primary goals of the City of Tulsa and INCOG is ensuring that all Tulsa residents have equitable access to transportation, employment, and job opportunities.

The W. 51st Street Extension Project is expected to generate wide-ranging benefits for travel time savings (both vehicular and non-vehicular), increased travel time reliability, neighborhood revitalization, and job opportunities. The benefits of improved safety and more efficient and faster movement of goods and people will accumulate over the project design life for local residents and businesses and will serve to stimulate growth. Designated as an Opportunity Zone, an improved multimodal transportation network connected on either side of US-75 will provide additional incentive for future business development.

***The W. 51st Street Extension Project
will eliminate over 2 million person-
hours of travel time***

Economic competitiveness benefits flow from the Project's **improved travel times**. Travel time reliability increases the efficiency of movement of goods and people. W. 51st Street Extension Project will reduce delay for both vehicles and pedestrians. The project will eliminate over 2 million person-hours of travel time over the life of the project^{††}.

The project will provide additional affordable transportation options and improve system connectivity. By increasing the linkages across US-75, residents will have a safe way to access neighborhoods historically separated by the construction of the highway. Increased access to churches, shopping, parks and trails, transit service, and the local library could increase cohesion and revitalize these isolated areas. Access to employment may also be improved, with safer and more direct access to S. Union Avenue, a multimodal commercial corridor providing transit service to downtown Tulsa, the region's largest employment hub.

Increasing job opportunities and improving business performance are particularly important for regional economic well-being, as Oklahoma has historically lagged other states in measures of economic well-being such as per capita and median household income. Based on multipliers provided by the

***The W. 51st Street Extension
Project will create 77
construction jobs***

** Tulsa Regional Chamber of Commerce, <https://www.tulsasfuture.com/data-and-research-tools/economic-profile>

†† See Benefit-Cost Analysis Technical Memo at [W. 51st Street RAISE](#)

Bureau of Economic Analysis' Regional Input-Output Modeling System (RIMS II)^{##}, the W. 51st Street Extension Project is projected to generate 77 jobs in construction. The RIMS II model produces multipliers specific to construction projects in the Tulsa metropolitan area. These multipliers are then applied to the anticipated construction cost of the project^{##}. The RIMS II multipliers used in this calculation are provided at [W. 51st Street RAISE](#).

4.6 State of Good Repair

Existing W. 51st Street is a narrow, two-lane facility with narrow or no shoulders, no sidewalks, and shallow roadside ditches. Pavement condition is deteriorating with cracking and potholes evident (**Figure 16**). The project will reconstruct approximately one mile of pavement and will add sidewalk, curb and gutter, and storm drain. The project will also construct a new pedestrian bridge over the TSU Railroad. The W. 51st Street Extension Project will improve the condition and resiliency of the roadway and will address system vulnerabilities (lack of safe facilities for pedestrians, lack of connectivity) affecting the underserved community.



Figure 16: (L) W. 51st Street east of US-75, (R) W. 51st Street Poor Pavement Condition

4.6.1 Lifecycle Costs

Using recent maintenance costs for nearby City of Tulsa projects, operations and maintenance (O&M) costs for the W. 51st Street Extension Project are anticipated to be approximately \$950,000 for the 20-year analysis period. Projected no-build O&M costs for the same period are approximately \$902,000. Maintaining the roadway today has a relatively high per square foot cost due to poor pavement condition. While the per square foot cost of maintenance will be reduced with the Project, the amount of pavement will be increased and will include the pedestrian bridge. Table 2 shows the lifecycle costs of the build and no-build scenarios.

^{##} Tulsa, OK Metropolitan Area, Transportation structures and highways and streets (2232F0)

^{##} Deflated to 2019 dollars per RIMS II guidance

Table 2: Lifecycle Costs for the W. 51st Street Extension Project, No-Build and Build (2022 dollars)

Year	No-Build	BUILD		
	Maint & Rehab Costs for 51st Street	Capital Costs	Maintenance	TOTAL
2016				
2017				
2018				
2019				
2020				
2021				
2022				
2023				
2024		7,750,000		7,750,000
2025	902,400	7,750,000		7,750,000
2026				
2030			25,000	25,000
2035			25,000	25,000
2040			25,000	25,000
2045			875,000	875,000
2050	902,400			
2055				
2060				
TOTAL	\$1,804,800	\$15,500,000	\$950,000	\$16,450,000

Without the W. 51 Street improvements, non-vehicular road users will continue to lack a safe, direct connection across US-75 and the TSU Railroad. These users would remain vulnerable to injury or death if involved in a collision. Access to community amenities such as grocery shopping, the library, and the Arkansas River Trail would remain challenging. In addition to mobility limitations, not building the W. 51st Street Extension project would have significant impacts to traffic mobility. The reconfiguration of the I-44/US-75 interchange will require that traffic use W. 51st Street rather than the current ramp connections to collector-distributor roads fronting I-44. The proposed interchange project will remove the single-lane collector-distributor roads as well as two ramps from W. 51st Street that presently have extremely short merge and diverge distances. This improvement will both reduce collisions at the interchange and increase local traffic on W. 51st Street. Without the W. 51st Street connection under US-75, local traffic would experience greater out of direction travel, increased travel times, and increase wear and tear on W. 49th Street.

4.7 Partnership

ODOT is the project sponsor and is supplying the funding for project construction, both through state funds and federal aid allocations. The City of Tulsa is supplying funding for future maintenance. The two parties worked closely together throughout development of the project, coordinating on roadway, sidewalk, and drainage design. The partnership between ODOT and the City of Tulsa is longstanding and has resulted in the construction of several similar projects. Often ODOT will construct improvements on the city's street network to improve operations or access to state facilities. The City of Tulsa then maintains these improvements after construction. The city is relieved of the burden of construction cost and ODOT can remain focused on maintenance and preservation of the state system.

One recent example of a successful ODOT/City of Tulsa partnership is the Pathway to Hope pedestrian trail (**Figure 17**). The Pathway to Hope is a 20-foot-wide pedestrian corridor with a meandering path that reconnects portions of Tulsa's Greenwood District. Historically, the Greenwood District was a thriving African American business district known as Black Wall Street that was the scene of the Tulsa Race Massacre in 1921. The Greenwood District was further bisected by I-244 when the freeway was built in the 1960s. To commemorate the 100th anniversary of the massacre and as partial redress to the barrier created by I-244, ODOT and the City of Tulsa designed and built the Pathway to Hope between John Hope Franklin Reconciliation Park and other sites in the Greenwood District. The Pathway includes landscaping, lighting, and artwork memorializing the Race Massacre mounted on the I-244 retaining wall. The project was dedicated on May 28, 2021, one year after it began construction. The project received a National Honor Award from the American Council of Engineering Companies (ACEC) in 2022.

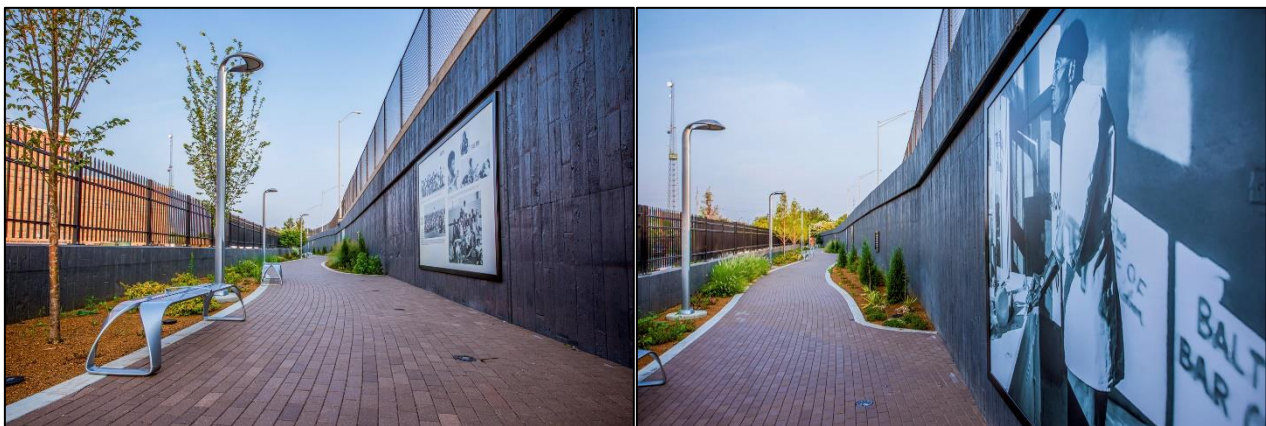


Figure 17: Pathway to Hope (photos courtesy of Crossland Construction)

The W. 51st Street Extension Project has also involved coordination with FHWA, INCOG, and Tulsa County. These agencies, and the public they represent, recognize that the W. 51st Street Extension Project will provide a needed connection, remove a barrier within the local community, and improve travel times throughout the area because of extensive outreach, coordination, and public engagement efforts by ODOT since 2002.

The Oklahoma Congressional Delegation, City of Tulsa, INCOG, Tulsa Chamber of Commerce, Bike Oklahoma, and Tulsa River Parks have all provided support letters for the W. 51s Street Extension Project. All letters of support are available at [W. 51st Street RAISE](#).



4.7.1 Public Involvement Plan

The Public Involvement Plan (PIP) for the project included several methods to inform and engage the local community in project input opportunities and collaborate with neighboring jurisdictions and community-based organizations (**Figure 18**). Regional elected officials as well as the neighboring cities of Tulsa, Sapulpa, Jenks, and Glenpool were sent written invitations to all public meetings. All three public meetings included targeted outreach to local minority churches, community centers offering services to low-income populations, and the Tulsa Housing Authority. Project information was also sent to all addresses within the study area via hand delivered flyers (in 2017) or by USPS Every Day Direct Mail (in 2020 and 2021 due to COVID-19). This ensured that every dwelling unit (including apartments and rental homes) received notification of public meetings. Handout materials at the first two public meetings were provided in Spanish, Chinese, and Vietnamese in addition to English. The PIP was approved by FHWA in its proposed approach and methods to address environmental justice communities. The PIP is available at [W. 51st Street RAISE](#).

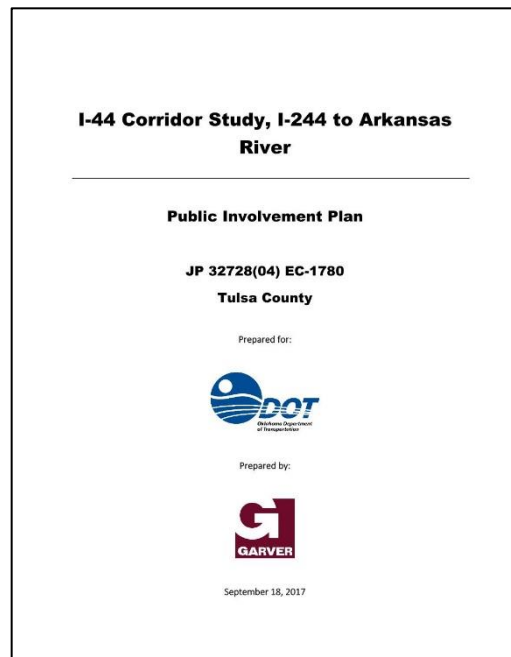


Figure 18: I-44/US-75 Interchange Public Involvement Plan (2017)

4.8 Innovation

4.8.1 Innovative Technology

The W. 51st Street Extension Project does not incorporate innovative technology.

4.8.2 Innovative Project Delivery

ODOT will make use of “No Excuses Bonuses” on the W. 51st Street Extension Project, including a substantial completion incentive of five percent to 10 percent of the contract with internal milestones included for key project elements. The internal milestones will also have incentives associated to encourage contractor innovation in early completion of major project components including stages that open portions of the corridor to traffic.

RAISE funding will allow the W. 51st Street Extension Project to be bundled with other pieces of the I-44/US-75 Interchange to achieve overall project savings. E-Construction methods will include mobile inspection and video monitoring and reporting of construction progress.

ODOT will incorporate stipulations that the contractor can make use of embedded strain gauges to serve as maturity meters in newly placed concrete. Current wireless technology allows for smart-phone connection or remote logger with cloud connections to track strength of concrete. The readings from these meters would be utilized by the contractor and ODOT to make critical real-time decisions during concrete curing. This allows for removal of concrete forms and opening to traffic earlier than conventional time constrained specifications.

ODOT commits to providing 3D computer models of the project as part of the contracting process. This technology will allow contractors to utilize the most recent GPS controlled equipment with Automated Machine Guidance in the construction process. Using and following the 3D model will minimize the potential for human error in establishing grades and elevations while improving efficiency in earthmoving during the construction process. These efficiencies improve quality while reducing the overall cost of construction.

4.8.3 Innovative Financing

While the W. 51st Street Extension project will be funded through traditional methods, ODOT has taken advantage of innovative programs for other portions of the I-44/US-75 interchange. ODOT received a 2018 INFRA grant for the first interchange construction project, which is now underway and expected to be complete in early 2023. In 2020, ODOT applied for an INFRA grant for construction of the remainder of the interchange. While the project was not awarded a grant, it was rated as Highly Recommended and eligible for the INFRA Extra program. ODOT intends to take advantage of this program with a TIFIA loan for a portion of the construction of the I-44/US-75 interchange.

5.0 PROJECT READINESS

5.1 Environmental Risk

As shown in **Figure 19**, ODOT has completed the 65% construction plans for right-of-way and has received NEPA approval for the W. 51st Street Extension project. Right-of-way acquisition and utility relocations have begun and will be completed by mid-2023. A detailed schedule is included at [W. 51st Street RAISE](#).

W. 51st Street Extension Project			
Task	2023	2024	2025
Pre-Construction (Start April 2022)			
Right of Way Acquisition	██████████		
Utility Relocation	██████████		
Authorization and Letting		██	
Construction			
Pedestrian Bridge and Approaches		██████████	
US-75 Bridges and W. 51st Street			██████████

Figure 19: W. 51st Street Extension Project Schedule

Obligation of RAISE funding can occur upon award, given that NEPA and 65% design plans are complete for the project. ODOT intends to authorize the W. 51st Street Extension Project in September of 2023 and let the project in October of 2023. Construction would begin in March of 2024 and be completed by September of 2025. The project is sufficiently advanced to begin construction in a timely manner and well within the funding deadlines for the 2022 RAISE program. Even with a significant unanticipated delay, the RAISE funds are in little danger of expiring prior to the obligation deadline. As described in **Section 5.2.1**, the project has meaningfully sought input through public involvement, with specific methods to engage the local environmental justice community.

5.2 Required Approvals

5.2.1 Environmental Permits and Reviews

ODOT recently received NEPA approval from FHWA Oklahoma Division to construct the remainder of the I-44/US-75 interchange, including the W. 51st Street Extension Project. Consultation with the State Historic Preservation Officer and the U.S. Fish and Wildlife Service has been completed and these agencies have agreed with ODOT’s finding of “No Adverse Effect” under Section 106 and “May Affect, Not Likely to Adversely Affect” under Section 7. The NEPA document and all supporting studies including a wetland delineation, biological assessment, cultural resources survey, initial site assessment for hazardous waste, a detailed noise study, and socioeconomic and environmental justice review are available at [W. 51st Street RAISE](#).

Section 404 Permitting

The W. 51st Street Extension Project is not anticipated to require Section 404 permitting; however, construction of the project will be depending on Section 404 permit approvals for the associated interchange improvements. Those projects include span bridges and a box over Mooser Creek as well as widening and re-decking of the I-44 bridges over the Arkansas River. Permitting for these projects is expected to fall under Nationwide Permit 14. USACE is familiar with ODOT's efforts and expectations within this corridor. Coordination with the USACE has already taken place with the efforts associated with WP 1, which was previously permitted under a Nationwide permit. Additionally, ODOT has agency liaisons in place at the USACE, which greatly accelerate and improve the consistency of permitting reviews.

Right-of-Way Acquisition and Relocation Plan

Relocations will not be required for the W. 51st Street Extension Project. ODOT has begun advanced right-of-way acquisition and the remainder is anticipated to be completed this year. All right-of-way acquisition and relocations will be completed according to the Uniform Relocation Act and applicable regulations.

Public Engagement

ODOT has completed an intensive program of public involvement for the I-44/US-75 Interchange Project (including the improvements to W. 51st Street). ODOT initially presented the project to the public in 2017 as part of the original preliminary engineering study (**Figure 20**). The 2017 meeting presented the concept for the ultimate interchange and included the W. 51st Street connection. More information on the 2017 public meeting can be found at [20171102 \(oklahoma.gov\)](https://www.oklahoma.gov/20171102). The project was then divided into five work packages for final design and construction.



Figure 20: I-44/US-75 Interchange Public Meeting, November 2017

After receiving the \$45 million INFRA grant from the US Department of Transportation in 2018 to construct WP 1, ODOT presented WP 1 to the public at a public open house on January 30, 2020. The open house included details on the project design and the anticipated construction sequence and impacts. More information on the 2020 public open house can be found at: [20200130 \(oklahoma.gov\)](https://www.oklahoma.gov/20200130).

Due to ongoing concerns about the spread of COVID-19, ODOT hosted a virtual public open house for WP 2, 3, 4, and 5 from June 9-30, 2021 (**Figure 21**). This open house presented the history of the project, the need for the project, and detailed design information. Information on right-of-way acquisition and noise impacts was presented, along with the project cost and schedule. The

public was able to submit feedback directly on the website or was given instructions to submit by mail or email. The virtual public open house received over 12,000 views over the three-week period. Feedback received was primarily in support of the project, recognizing the need to improve safety and mobility through the interchange. Concerns from the public were primarily related to access changes, noise, and construction impacts. Comments included a request to widen W. 51st Street.

Public concerns have been integrated into the project through changes to proposed construction phasing and access modifications to retain as much access to local properties as possible while the project is under construction. **The addition of the pedestrian bridge over the TSU Railroad was added to the project specifically to provide additional mobility and connectivity for pedestrians in this underserved and historically isolated community.** A traffic noise study was completed according to FHWA and ODOT policy and resulted in the addition of noise walls to the project. While not part of the W. 51st Street Extension Project, the noise walls will provide shielding for minority and low-income neighborhoods, including the Parkview Terrace affordable housing complex adjacent to US-75 near W. 61st Street.

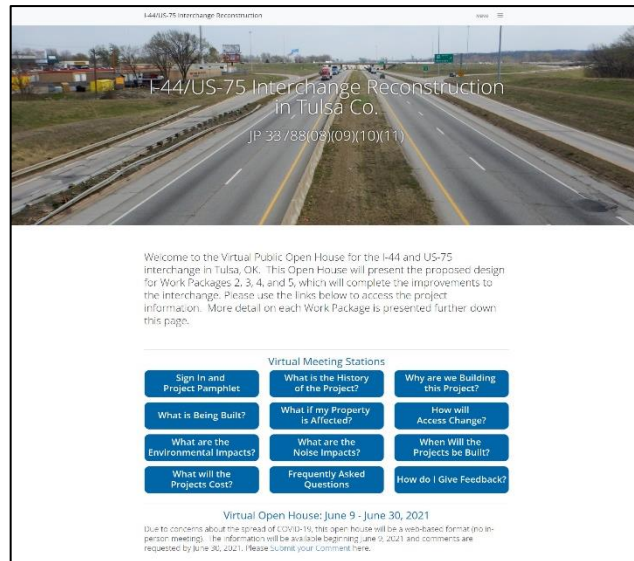


Figure 21: I-44/US-75 Virtual Public Open House

5.2.2 State and Local Approvals

The W. 51st Street Extension Project is currently programmed in ODOT’s 8 Year Construction Work Plan as well as the INCOG TIP as part of the I-44/US-75 Interchange. The City of Tulsa has reviewed the project design at all phases to verify it meets local requirements for city streets, drainage, and lighting. As discussed in **Section 5.2.1**, the project has widespread community support.

5.2.3 Federal Transportation Requirements Affecting State and Local Planning

INCOG Regional Transportation Plan (RTP): The INCOG RTP, [Connected 2045](#), includes the I-44/US-75 Interchange Project, which aligns with the 2045 goals related to safety, infrastructure condition, congestion, freight movement and economic vitality, and environmental viability and resilience.

Statewide Transportation Improvement Program (STIP): The [ODOT STIP](#) incorporates the first four years of the ODOT 8 Year CWP. Construction is included in the STIP.

Long Range Transportation Plan (LRTP): The [ODOT LRTP 2020-2045](#) is a policy document that provides a strategic direction for the development of the Oklahoma multimodal transportation system. The I-44/US-75 Interchange Project aligns with ODOT’s long range strategic direction.

The project is consistent with the goals set out in ODOT’s [2019-2028 Transportation Asset Management Plan \(TAMP\)](#) with the goal of maintaining and preserving Oklahoma’s transportation network.

5.3 Assessment of Project Risks and Mitigation Strategies

Potential risks and mitigation strategies to minimize the potential impact of those risks are summarized in **Table 3**. References to other sections of this application are included. Environmental and right-of-way related risks are minimal given that NEPA approval has been obtained and right-way acquisition is underway. Meaningful public involvement has occurred that engaged the environmental justice and disadvantaged community affected by the project. ODOT has sufficient capacity to implement the proposed activities according to the schedule presented. The agency has committed state matching funds in excess of what is required for projects in Historically Disadvantaged Communities and Areas of Persistent Poverty. This match will ensure ODOT is able to begin construction in a timely manner until grant funds are reimbursed.

Table 3: Project Risk and Mitigation Strategies

Project Risk (Probability of Occurrence)	Mitigation Strategies
Cost Increases (Moderate)	<ul style="list-style-type: none"> - ODOT has included the project in its 8 Year Work Plan and remains committed to adjusting as needed to meet all RAISE and statutory deadlines for funding obligation and expenditure. See Section 5.1. - Construction estimates are complete to a 65% level and contain 20% contingency, allowing for a margin of increase.
Delays Securing Right-of-Way (Moderate)	<ul style="list-style-type: none"> - NEPA has been approved authorizing right-of-way acquisition to proceed. ODOT has begun advanced right-of-way acquisition and anticipates completing the process in 2022. See Sections 1.2 and 5.1
Section 404 Permitting Delays (Moderate)	<ul style="list-style-type: none"> - The Project is anticipated to fall under Nationwide Permit 14 and is unlikely to require mitigation. Work in the Arkansas River will be limited to widening the existing structure and is not anticipated to require an Individual Permit.

	<ul style="list-style-type: none"> - ODOT has a liaison in place at the USACE to accelerate and streamline approvals if needed. See Section 5.2.1.
Weather Related Construction Delays (Moderate)	<ul style="list-style-type: none"> - ODOT works closely with contractors to renegotiate project time while still meeting project commitments.
Increase in Truck Traffic due to Gilcrease Expressway (Moderate)	<ul style="list-style-type: none"> - The traffic study for the I-44/US-75 interchange included the anticipated future traffic volumes from the Gilcrease Expressway, a new 4-lane turnpike approximately 3 miles to the west. The Gilcrease Expressway will open in 2022.
Issues with City of Tulsa Maintenance Agreement (Low)	<ul style="list-style-type: none"> - ODOT and City of Tulsa have negotiated numerous maintenance agreements on previous projects and have standard language and terms. See Sections 4.6.1 and 4.7. - City of Tulsa has been involved in project development since the initial study and are committed to their maintenance responsibilities. See attached letter of support.
Public Opposition (Low)	<ul style="list-style-type: none"> - ODOT has completed a robust program of public involvement, including methods to specifically engage the local low-income and minority community. See Sections 4.7.1 and 5.2.1. - The W. 51st Street project will provide additional connectivity and mobility to the which will directly benefit the local community. - Public comments have been largely in support of the project. Concerns from the public have been largely related to right-of-way acquisition and noise. ODOT will be working with property owners throughout the acquisition process. A noise study has been completed and the project will include three noise walls to reduce impacts.

<p>Contamination from Industrial Use/Underground Storage Tanks (Low)</p>	<ul style="list-style-type: none"> - ODOT has completed an Initial Site Assessment to identify potential contamination. No Recognized Environmental Conditions (RECs) are present in the project area. - ODOT has a well-defined, successful approach for addressing potential contamination and LUST sites. Locations where these issues may arise are identified and included within the construction plans as “Areas of Environmental Concern” to put the contractor and their employees on alert that the potential exists for encountering contamination.
<p>Delay of Ongoing Construction at the I-44/US-75 Interchange (Low)</p>	<ul style="list-style-type: none"> - The initial construction project is anticipated to be complete in early 2023. Letting for the W. 51st Street Extension Project would occur in October 2023, providing more than sufficient buffer for any delay. - ODOT uses incentives in construction contracts to encourage early completion and penalize delays.
<p>Earthquakes (Low)</p>	<ul style="list-style-type: none"> - Oklahoma’s drilling practices have reduced the number of earthquakes in the state. All structures have seismic designs.

6.0 BENEFIT COST ANALYSIS

6.1 Overview of Approach

A Benefit Cost Analysis (BCA) has been completed for the W. 51st Street Extension Project according to the latest USDOT guidance (March 2022). All monetary values in the BCA, including costs, are expressed in constant 2020 dollars. The general parameters and assumptions used in the BCA can be found in the BCA Technical Memo at [W. 51st Street RAISE](#).

6.2 Results

The estimated total capital cost of the W. 51st Street Project is \$18.7 million in 2020 dollars (including all design, right-of-way, and utility relocations costs, plus 20% contingency). A wide range of benefits have been captured by the BCA: travel time savings, vehicle operating cost savings, external highway cost savings, reduction in accident costs, pedestrian benefits, emissions cost savings, agency cost savings, and residual value. In addition to the monetized benefits, the project is expected to have benefits related to improved mobility and community connectivity, and increased transportation choices. These benefits are more difficult to quantify.

Based on the assumptions, methodology, and other information presented above, the project yields a Benefit-Cost Ratio of 1.55 and a Net Present Value of \$7.6 million. The results are summarized in **Table 4**.

Table 4: BCA Results

Project Evaluation Metric	Undiscounted	Present Value at 7% Discount Rate	Present Value at 3% Discount Rate
Total Benefits	\$64.4	\$21.4	\$38.8
Total O&M Costs	\$0.9	\$0.2	\$0.4
Total Capital Costs	\$18.7	\$13.6	\$16.3
Net Present Value	\$44.8	\$7.6	\$22.1
Benefit / Cost Ratio	3.40	1.55	2.36
Internal Rate of Return (%)	12.1%		