FY2021 INFRA GRANT APPLICATION

I-44 AND US-75 CORRIDOR IMPROVEMENT PROJECTS: TULSA, OKLAHOMA

Project Name: I-44 and US-75 Corridor Improvement Projects
Project Sponsor: Oklahoma Department of Transportation
Previously submitted INFRA Application: Yes, submitted as FY2020 INFRA Grant Application: I-44 and US-75 Corridor Improvement Projects: Tulsa, Oklahoma.

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Project Costs

INFRA Request:	$85,000,000
Estimated Federal Funding:	$79,671,000
Estimated non-Federal funding:	$41,168,000
Future Eligible Project Cost:	$205,839,000
Previously incurred costs:	$129,460,000
Total Project Cost	$335,229,000
Are matching funds restricted to a specific project component?	No

Project Eligibility

NHFN Components:	$205,839,000
NHS Components:	$205,839,000
Railway-highway grade crossing or grade separation:	$10,168,300
Intermodal or freight rail project, or freight project within freight rail, water, or intermodal facility?	$0

Additional information available at the I-44 and US-75 Corridor Improvement Projects Application Site

Project Location

State:	Oklahoma
Small or large project:	Large
Urbanized Area:	Tulsa, OK
Population of Urbanized Area (2010 Census)	655,479
Is project located (entirely or partially) in Federally designated community development zones?	Yes. Census tract 40143004900 is an Opportunity Zone. The 2017 Eugene Field Tulsa Choice Neighborhood is ~2 miles north of the project.

Project Currently Programmed in:

TIP*:	No, current TIP extends only to 2023.
STIP*:	No, current STIP extends only to 2023
MPO Long Range Transportation Plan:	Yes
State Long Range Transportation Plan:	Consistent
State Freight Plan:	Yes

*This project is programmed in ODOT's 8 Year Work Plan. Work Packages 2 & 5 are programmed in 2025 and Work Package 3 is programed in 2028. With INFRA funding, the project will be added into the TIP and STIP and advanced in ODOT's 8 Year Work Plan.

OKLAHOMA Transportation

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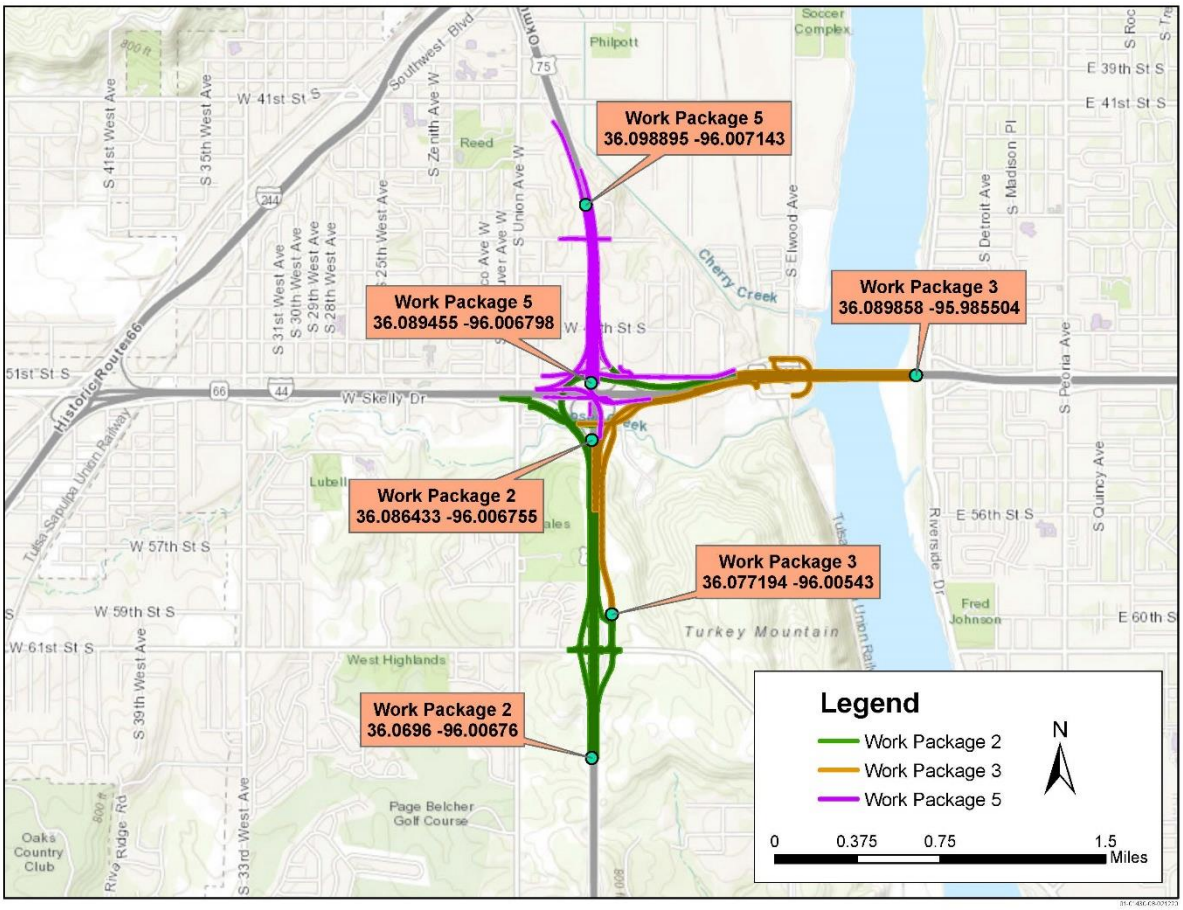
PROJECT DESCRIPTION

In Tulsa, Oklahoma, along I-44 between I-244 and the Arkansas River is a four-lane divided highway that has not been upgraded since its construction in 1953. As one of Oklahoma's oldest sections of interstate, the pavement has deteriorated over time earning a "Fair to Poor" performance rating and creating a noticeable lack of investment in an important low-moderate income community.

To address increasing congestion levels, substantially elevated crash rates, and the state of good repair of the related infrastructure, the Oklahoma Department of Transportation (ODOT) is requesting $85.0 million in 2021 INFRA funds to assist with I-44 and US-75 Corridor Improvement Projects shown in **Figure 1**.

Figure 1: Project Map



Connected to key job centers and surrounded by environmental and community assets, the I-44 and US-75 Corridor Improvement Projects improve quality access to opportunities for low-moderate income communities as well as the regional, statewide, and national community.

PROJECT SUMMARY

The I-44 and US-75 Corridor Improvement Projects are part of a larger effort to improve the I-44 corridor in west Tulsa. The entire 2.5-mile segment from I-244 to the Arkansas River will eventually be completely reconstructed to meet the growing intra- and interstate freight demands, address significant safety issues, and upgrade the corridor to current interstate standards. However, it is necessary to proceed in phases. The first phase, funded in part by a 2018 INFRA grant of $45.0 million, is currently underway and will open to traffic in Winter 2022.

This application encompasses three of the remaining project work packages (WP) of a larger collection of I-44 and US-75 corridor projects. These work packages together form a component of independent utility. This grant application covers projected future eligible costs of $205.8 million. The three work packages for which ODOT is requesting 2021 INFRA funding are summarized below and maps are provided in the Appendix A**.**

Work Package 2 constructs several directional ramps and bridges at the I-44/US-75 interchange, reconstructs a portion of US-75 from south of Mooser Creek to near 71st Street, reconstructs the US-75/61st Street interchange, including the 61st Street bridge over US-75, and reconstructs a portion of Skelly Drive from Union Avenue east to US-75.

Work Package 3 continues the widening of I-44 to six lanes east of US-75 onto the bridge over the Arkansas River, widens the I-44 bridge over the Arkansas River, constructs the I-44 bridge over the Tulsa-Sapulpa Union Railway, continues widening of US-75 to six lanes south of the bridge over Mooser Creek, constructs Skelly Drive east of US-75, and completes the US-75 Frontage Road and the I-44 access road.

Work Package 5 completes the widening of US-75 to six lanes from 41st Street to 51st Street, constructs the US-75 Bridge over 51st Street while joining 51st Street under US-75, replaces existing US-75 bridges over 49th Street, completes several directional ramps and bridges at the I-44/US-75 interchange, and and reconstructs 46th Street under US-75.

PROJECT HISTORY

ODOT requested $63.8 million, and received $45.0 million, in 2018 INFRA funds to support the first component of this project, known as Work Package 1. This component widens I-44 to six lanes from near Union Avenue to prior to the bridges over the Tulsa-Sapulpa Union Railway, constructs US-75 bridges over I-44 and Mooser Creek, reconstructs a portion of US-75 in association with new bridges, reconstructs I-44/US-75 loop ramps to match new grade on US-75, partially reconstructs the I-44/US-75 outer ramps, and advances pier construction of select future interchange ramp bridges.

To date, ODOT has incurred $129.4 million on I-44 and US-75 Corridor Improvement Projects. Expended funds include $15.0 million for environmental and engineering studies and $20.0 million for right-of-way and utilities associated with WPs 2, 3, and 5.

Since the FY 2020 INFRA Grant submission, project design has increased from 30 percent to 60 percent providing the momentum and the strong base for a successful FY 2021 project. In

addition to gaining greater clarity on project elements discussed in this application, the design of the I-44 and US-75 Corridor Improvement Projects took additional factors into consideration beyond standard roadway and bridge design criteria.

TRANSPORTATION CHALLENGES AND SOLUTIONS

THE TRANSPORTATION CHALLENGE

Tulsa County – in particular, the cities of Tulsa, Jenks, and Glenpool – is experiencing tremendous growth through residential and commercial development. The I-44 corridor provides access to important Tulsa County industrial and manufacturing facilities, large employment centers, schools and education facilities, and recreational amenities. In 2018, the I-44/US-75 interchange averaged 148,000 vehicles per day, and future use is anticipated to reach over 195,000 vehicles per day as Tulsa County grows through 2045.

As the only remaining four-lane interstate highway segment in the Tulsa metropolitan area, growth in Tulsa County cannot be met with existing I-44 infrastructure conditions. This section is the only 4-lane urban interstate bottleneck in the State of Oklahoma's section of National Highway Freight Network. Congestion and frequent crashes along the corridor pose a regionally significant transportation challenge, affecting the efficient movement of people and freight which results in greater carbon dioxide (CO_2) emissions. Today, freight trucks represent approximately 14 percent of daily I-44 corridor vehicles but the limited number of suitable highway crossings across the Arkansas River has made the river a barrier for oil and gas tanker trucks and the current unimproved, decrepit interchange further inhibits freight movements of Tulsa's asset-based logistics companies. A system of adjacent collector/distributor roads and US-75 ramps with access to I-44 results in congestion and disrupted reliability. Additionally, the system of roads and ramps and the relationship between the existing interchange and surrounding communities restricts local bicycle and pedestrian access, creating a mobility barrier between concentrated minority, low-moderate income neighborhoods, and the opportunities of the region.

ADDRESSING THE CHALLENGE

The I-44 and US-75 Interchange Corridor Improvement Projects will relieve a significant interstate system bottleneck and contribute to a safer and more environmentally friendly, continuous six-lane interstate corridor through the City of Tulsa. Although they are not the first or final stages of the larger I-44 and US-75 corridor improvements, the components that are the subject of this INFRA grant request will improve the most congested areas and will allow ODOT to accelerate and fast track delivery of the remaining corridor improvements.

Designing to modern standards will yield significant safety benefits on bridges and roadways. The work covered under this application will include the construction of seven directional ramps and bridges between I-44 and US-75 replacing the current obsolete and unproductive cloverleaf interchange configuration. Bridge construction will include a new bridge rail on all replaced bridges, a new barrier wall and impact attenuators on bridge approaches, pier protection, and a new barrier wall on bridge departures. Roadway safety improvements include

a new median barrier protecting both directions and standard 12-foot inside and outside shoulders on mainline I-44.

Existing assets, including the 61st Street bridge over US-75, portions of US-75, and Skelly Drive from Union Avenue to the east of US-75, will be reconstructed to improve safety and traffic flow. The four-lane I-44 will be widened to six lanes east of US-75 over the Arkansas River bridge, relieving a major interstate bottleneck and improving regional connectivity over a significant geographic barrier.

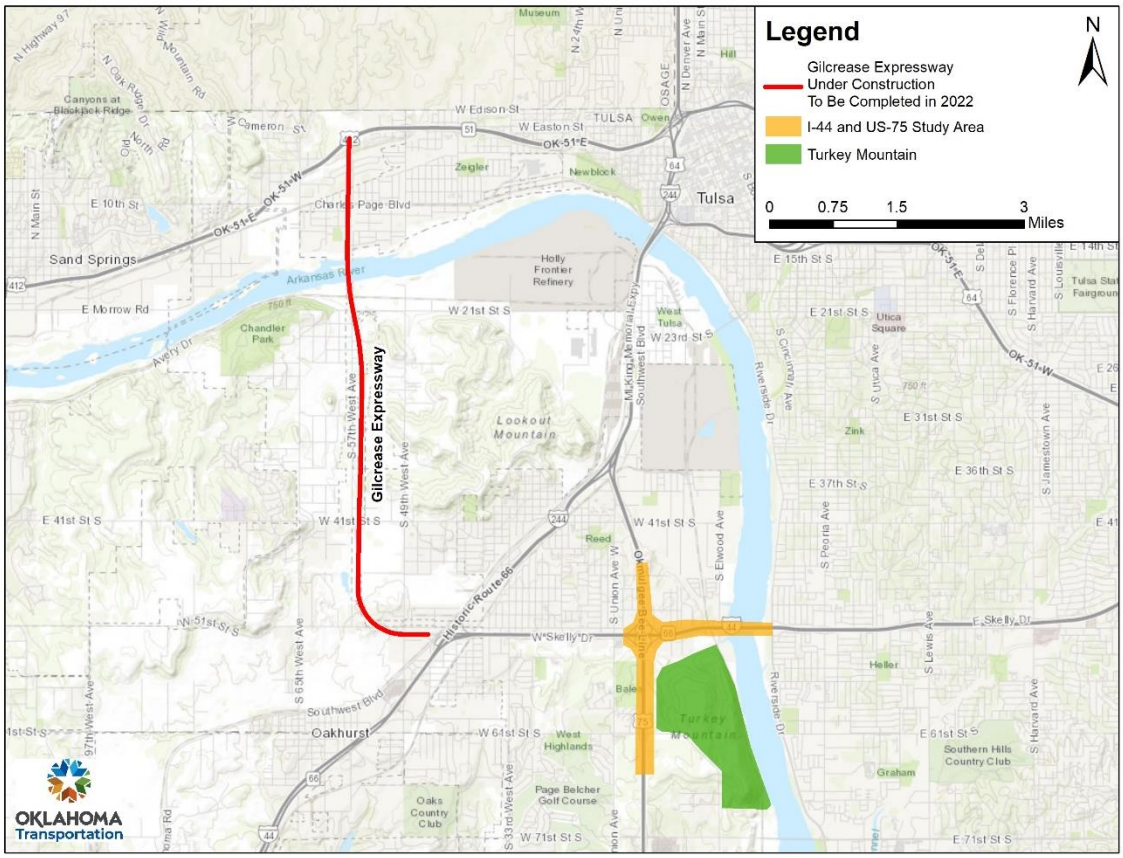
Importantly, WP 2, 3, and 5 will include improved local street connections, including the extension of West 51st Street under US-75 north of I-44, helping to reconnect Carbondale and Winnetka Heights - historic neighborhoods that are majority (over 51%) low-moderate income and were separated when US-75 was constructed. The I-44 and US-75 Corridor Improvement Projects will also enhance personal mobility and accessibility, not only for regional users accessing jobs and services but to the residents in the immediate project area through the construction of bicycle lanes on sections of the Tulsa street system that connect to I-44 and US-75. Local street improvements are also being designed with either finished sidewalks or shelf spacing for future sidewalk installation. A pedestrian bridge extending over the Sand Springs Rail line along 51st Street will connect the aforementioned Carbondale and Winnetka Heights neighborhoods to the existing River Park Trail System and connect Winnetka Heights to the Zarrow Regional Library in Carbondale. Additional active transportation improvements are provided in the Climate Change and Environmental Justice Impacts section on page 14.

OTHER INFRASTRUCTURE INVESTMENTS IN THE TULSA AREA

Heightening the urgency for improvements to the I-44 and US-75 interchange is the ongoing construction work on the Oklahoma Turnpike Authority (OTA)'s Gilcrease Expressway West Turnpike. The extension of the Gilcrease Expressway, from I-44 north to US 412 and Edison Street (**Figure 2**), is part of the region's long-term plan to complete an outer expressway loop around Tulsa's central business district. When the Gilcrease Expressway expansion opens in 2022, tolling will raise revenue to invest in future infrastructure and extensive new trips will be added to the I-44 corridor putting extreme pressure on the I-44/US-75 interchange. Major portions of the Gilcrease Expressway have been completed by the City of Tulsa and Tulsa County. The 5.6-mile section currently under construction will provide a critically needed Arkansas River bridge crossing, increasing access to the traditionally underserved west Tulsa area. Notably, the Gilcrease Expressway will unload an additional 10,000 vehicles per day into the west side of the I-44/US-75 interchange, exacerbating the existing interstate bottleneck. This is another reason the I-44 and US-75 Corridor Improvement Projects are timely and must be expedited.

The Gilcrease Expressway project utilized funding from many local entities to leverage federal investment through innovative financing and leveraging of public and private dollars. This included contributions from Federal Highway Administration (FHWA), ODOT, City of Tulsa, Tulsa County, and the Tulsa Metropolitan Planning Organization (MPO) - the Indian Nations Council of Governments (INCOG). This illustrates a historically strong local funding commitment.

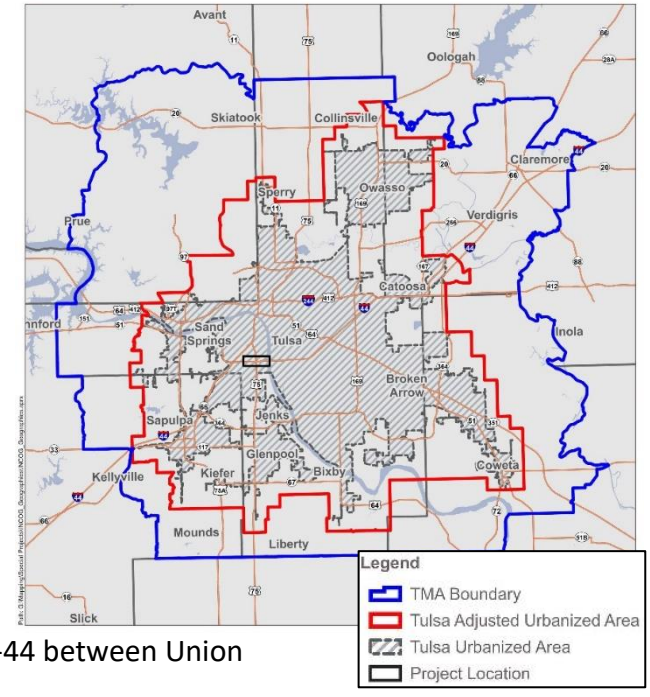
Figure 2: Relation to Gilcrease Expressway and Turkey Mountain



PROJECT LOCATION

The project is within the Tulsa Urbanized Area (UA-88948) and the Tulsa Transportation Management Area (TMA). The blue line in **Figure 3** is the Tulsa TMA boundary, the red line is the Tulsa UA boundary, and the black box represents the project location.

Figure 3: Tulsa UA (2010) and Tulsa TMA (2012)



The project is located within the I-44 corridor, a portion of the National Highway System (NHS) and the Primary Highway Freight Network (PHFN), from the I-244 Interchange and extending east approximately two and one-half miles to the Arkansas River.

The location of the proposed improvements for which 2021 INFRA funding is requested is I-44 between Union

Avenue and the east bank of the Arkansas River, and US-75 from 41st Street south through the 61st Street exits.

PROJECT PARTIES

ODOT is the project sponsor and is coordinating the project with FHWA, INCOG, OTA, the City of Tulsa, and Tulsa County.

GRANT FUNDS, SOURCES, AND USES OF PROJECT FUNDS

The I-44 and US-75 Corridor Improvement Projects are a true partnership, using state and federal funds as shown in **Table 1**. The previously incurred funds total $129.4 million. The future eligible cost for the project components covered in this application is $205.8 million. A project of this magnitude is beyond the capabilities of ODOT to fund with state and federal appropriations alone. Without INFRA funding, ODOT would be forced to build the project in multiple phases over many decades. ODOT is requesting $85 million of 2021 INFRA funds to accelerate this project and its significant safety, accessibility, and mobility benefits.

Table 1: Sources and Uses of Funding

USE OF FUNDS	SOURCES OF FUNDING (in $1,000s)						
	State Funds		Federal Funds		INFRA Funds	Future Eligible Costs	Total Project Cost
	Previously Incurred	Future	Previously Incurred	Future			
Environmental and Engineering	$2,010	-	$12,996	-	-	-	$15,006
ROW and Utilities	$15,000	-	$5,000	-	-	-	$20,000
Construction	$27,087	$37,425	$67,367	$72,428	$77,273	$187,127	$281,581
Contingency and Other	-	$3,743	-	$7,243	$7,727	$18,712	$18,712
TOTAL	$44,097	$41,168	$85,363	$79,671	$85,000	$205,839	$335,299

Cost estimates were developed by the design engineer based on estimated quantities and recent similar projects constructed in Oklahoma. The budget and schedule include the cost of each project component, and how non-federal (state), INFRA, 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 2**.

Table 2: Summary of Future Eligible Costs

PROJECT COMPONENT	FUNDING TYPE	COST SHARE (%)	COST ($1,000s)
Construction	INFRA	41.3%	$77,273
	Other Federal	38.7%	$72,428
	ODOT	20.0%	$37,425
Contingency and Other	INFRA	41.3%	$7,727
	Other Federal	38.7%	$7,243
	ODOT	20.0%	$3,743
Total	INFRA	41.3%	$85,000
	Other Federal	38.7%	$79,671
	ODOT	20.0%	$41,168

Design, environmental, and right-of-way costs will be covered 100 percent by ODOT's state transportation funds and federal-aid allocation. Construction funds are anticipated to be 41.3 percent INFRA funds, 20 percent state funds, and 38.7 percent other federal funds. The cost estimate also includes a 10 percent contingency.

ODOT's 8 Year Construction Work Plan (CWP) outlines ODOT's commitment to allocate future state transportation funds to the projects in the I-44/US-75 corridor. ODOT has traditionally used state funding sources for all of its maintenance activities, and funding for the future maintenance of the I-44/US-75 improvements would be no different. ODOT is committed to building and maintaining the I-44/US-75 improvements for decades to come.

ODOT currently has over $102 million in improvements programmed in the 8 Year CWP for the corridor, including portions of the I-44 and US-75 Corridor Improvement Projects. An INFRA funding award would accelerate the delivery of the I-44 and US-75 Corridor Improvement Projects. WP 2 and 5 are currently programmed in 2025 and WP 3 is programed in 2028. With INFRA funding, the project will be advanced to 2023 in the 8 Year CWP.

FUNDING COMMITMENTS

ODOT is committing $41.1 million to the future work of I-44 and US-75 Corridor Improvement Projects. The Commitment Letter is available in Appendix B**.** The source of the $41.1 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.

MERIT CRITERIA

SUPPORT FOR NATIONAL AND REGIONAL ECONOMIC VITALITY

The I-44 and US-75 Corridor Improvement Projects provide an opportunity to allocate resources that provide a positive cost-benefit and support national and regional economic vitality.

BENEFIT-COST ANALYSIS

Overview of Approach

A BCA has been conducted for WP 2, 3, and 5 in Tulsa County, Oklahoma. All values from that guidance are in 2019 dollars. All monetary values in the BCA, including costs, are expressed in constant 2019 dollars.

The following general parameters and assumptions were used in the BCA:

- A real discount rate of 7 percent is applied to all costs and benefits except for carbon emissions reductions, which are discounted at 3 percent.
- A project life cycle of 25 years is assumed, which represents a mid-point between a recommended 20-year horizon of analysis for rehab and replace projects, vs. 30 years for new right-of-way and facilities. The I-44 and US-75 Corridor Improvement Projects comprises multiple individual elements reflecting a mix of old and rehabbed infrastructure.
- No residual value is assumed at the close of the 25 years of operation.
- With INFRA funding, the project construction is assumed to commence in 2024 and end in late 2026, with operation commencing in 2027. Some advance right-of-way acquisition for interchange construction will occur in the years 2020 – 2024.
- All costs and benefits are in 2019 dollars.
- The year 2019 was used as the base year for discounting; that is, 2019 is considered year zero for discounting.

BCA documentation including the spreadsheet and BCA Report provide additional details and data source information in Appendix C.

Project Costs

Capital Cost

The estimated capital cost of combined WP 2 ($75.1 million), WP 3 ($60.2 million), and WP 5 ($70.5 million) totals $205.8 million in 2019 dollars (including contingency).

Operations and Maintenance Costs

The I-44 and US-75 Corridor Improvement Projects will result in very little difference in lane mileage compared to the No-Build and as such, no incremental difference in routine lane-related maintenance costs has been assumed. However, as seen in the cost summary, there are significant differences in non-routine maintenance, bridge repair, and rehabilitation costs, and bridge damage costs. Under the no-build, $52 million has been and will be spent on non-routine roadway and bridge maintenance, compared with $8.5 million under the build (i.e., with I-44 and US-75 Corridor Improvement Projects). Except for $9.1 million already spent for the existing infrastructure, the build costs represent significant life cycle cost savings which are included as benefits for BCA purposes. Major capital, maintenance, and bridge rehab and repair costs are summarized in **Table 3**.

Table 3: Build and No-Build Costs by Year (in $1,000s)

YEAR	NO-BUILD				BUILD		
	Maint. & Rehab Costs for I-44/ US-75	Bridge Rehab Costs	Bridge Damage repair	TOTAL	Capital Costs	Maintenance	TOTAL
2016	4,900	-	-	4,900	-		-
2017	-	2,500	-	2,500	-		-
2018	1,700	-	-	1,700	-		-
2019	-	-	-	-	-		-
2020	-	-	-	-	-		-
2021	-	2,400	-	2,400	-		-
2022	-	-	-	-	-		-
2023	-	-	-	-	-		-
2024	-	-	-	-	68,600		68,600
2025	-	-	-		68,600		68,600
2026	-	-	-	-	68,600	1,000	69,600
2030	6,600	2,000	100	8,700	-	-	-
2035	-	3,300	100	3,400	-	-	-
2040	6,600	4,900	100	11,600	-	-	-
2045	-	-	100	100	-	5,000	5,000
2050	6,600	10,000	100	16,700	-	2,500	2,500
2055	-	-	-	-	-	-	-
2060	-	-	-	-	-	-	-
TOTAL	**$26,400**	**$25,100**	**$600**	**$52,000**	**$205,800**	**$8,500**	**$214,300**

Description of Project Benefits Included in the BCA

Four primary categories of benefit have been captured by the BCA: reduced motor vehicle crashes, travel delay savings, logistics (freight) cost savings, and emissions cost reductions. Economic benefits such as enhanced productivity (over and above those embodied in travel time savings) are not included. However, the overall improvements in regional accessibility may generate such agglomeration benefits.

Crash Reductions: Because much of the I-44 and US-75 Corridor Improvement Projects involve reconfiguring the complex network of US-75 and I-44 interchanges, approach lanes and roadways to the interchanges, a significant share of the benefits anticipated will be reduced vehicular collisions and improved pedestrian safety. To estimate these likely impacts, a detailed data list of all collisions that occurred throughout the I-44 and US-75 Corridor Improvement Projects limits between the years 2014 and 2018 were collected, by severity. Levels of severity were measured across a scale of one to five, including fatal crashes, injury crashes of three degrees of severity, and property-damage-only crashes.

During the five years (covering full calendar years 2014 through 2018), the following count of crashes was obtained from ODOT:

408 PDO (property damage only)	201 Injury Severity 2 (least severe)
134 Injury Severity 3	25 Injury Severity 4
5 Fatal (including 1 pedestrian fatality)	

Based on these data, combined with annual vehicle miles traveled (VMT) measured across the project, crash rates were calculated (crashes per million VMT) and applied to ODOT's estimates of project-wide VMT in the future, and a baseline of total anticipated crashes without the I-44 and US-75 Corridor Improvement Projects was calculated for the entire project horizon of 25 years. Next, the FHWA's Crash Modification Factor (CMF) database was used to obtain the most applicable Crash Reduction Factor (CRF). This search yielded a most relevant CMF of 55 percent (and thus a CRF of 45 percent). The selected CMF/CRF is obtained from research involving the safety effects of replacing cloverleaf interchanges with directional lanes. The relevant CMF was then applied to the future stream of no-Build crashes (by category of severity) to obtain estimates of reduced annual crashes over the study period.

The I-44 and US-75 Corridor Improvement Projects will generate significant savings in the human costs of crashes. Over the 25 years, it is estimated that 15 lives will be saved, and another 77 serious injury-crashes will also be avoided. These crash benefits are conservatively low; additional secondary crashes that occur outside of the project area were not considered in benefits that can be attributed to this bottleneck of the Interstate.

Travel Delay Savings: The 2045 travel delay reductions are based on VISSIM traffic simulation model results. The model simulated the 2045 effects of the I-44 and US-75 Corridor Improvement Projects (WP 2, 3, and 5). The BCA analysis assumes that 75 percent of the total I-44 and US-75 corridor travel delay reductions can be attributed to WPs 2, 3 and 5. Delay savings for years before 2045 were reduced based on the anticipated compound annual growth rates (CAGR) in VMT projected for the corridor of about 1.5 percent per year. For the years after 2045, delay was correspondingly increased by the same CAGR. In 2030, approximately 933 hours of delay would be saved by the I-44 and US-75 Corridor Improvement Projects each workday, covering morning and evening peak periods combined. Delay savings increases to approximately 1,075 hours of delay per workday in 2045.

Air Emissions Reductions: To support the air emissions reduction analysis, INCOG ran the Environmental Protection Agency's Motor Vehicle Emission Simulator (MOVES3) model for years 2030 and 2045. Based on model runs, air emissions rates were derived per hour of travel delay for carbon dioxide (CO_2), nitrous oxide, sulfur oxide, and particulate matter 2.5. Based on air emission rates, combined with the travel delay reductions, annual emissions reductions were calculated, and monetized. The I-44 and US-75 Corridor Improvement Projects will reduce over 8.6 tons of CO_2 through reduced congestion in 2045.

Shipper/Logistics Cost Savings: Shipper/logistics cost savings are based on Freight Analysis Framework (FAF) Tulsa FAF region for 2020, truck travel delay savings, and data from the TREDIS-based Multimodal Benefit Cost Analysis (MBCA) tool. The FAF data were used to

develop a commodity mix breakdown of the trucking data, and the commodity mixes were cross referenced to Standard Classification of Transportation Goods (SCTG) data. These values are then applied to the truck travel delay savings to derive ton hours saved by commodity type and SCTG category. Ton hours saved are then multiplied by the hourly value of shipper delay for each commodity (hourly values are obtained from the TREDIS-based MBCA model). Costs are summed across all commodity types to derive the annual savings.

Freight Rating

The 2021 INFRA grant guidance considers a new metric, the project Freight Rating, which is the ratio of benefits attributable to freight as a share of total benefits. The two freight benefits that were measured included shipper/supply chain cost savings, and truck travel time reductions. The present value of those two freight benefits equates to 11.2 percent of total the I-44 and US-75 Corridor Improvement Projects benefits. The present value of truck delay savings equal $12.2 million, while the present value of logistics cost savings sum to $4.9 million over the 25-year time horizon.

BCA Results

Based on the assumptions, methodology, and other information presented above, the project yields a Benefit-Cost Ratio of 1.21 and a Net Present Value of $27.1 million. The results are summarized in **Table 4**.

Table 4: BCA Results

BENEFIT-COST	AMOUNT
Discounted Initial Capital Costs	$137.34
Discounted Life Cycle Cost Savings	-$10.46
Facilities Residual Value Undiscounted	$0.00
Discounted Present Value of Capital Costs	$126.88
Total Discounted Costs (millions $2019)	**$126.88**
Total Discounted Benefits - Total (millions $2019)	**$153.97**
Travel delay cost savings	$54.41
Accident reduction benefits	$92.25
Emissions reduction benefits	$2.23
Shipper/supply chain cost savings	$4.95
Benefit-Cost Ratio	**1.21**
Net Present Value	**$27.09**

Other Regional and Economic Vitality Benefits

The I-44 and US-75 Corridor Improvement Projects will enhance the metropolitan Tulsa regional economy, the second-largest metro area in Oklahoma, and 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.[1]

Projected increases in area population support the need for the project. **Table 5** summarizes forecasted population growth trends for the region and study area, which are in the 25 to 30-

[1] Tulsa Regional Chamber of Commerce, https://www.tulsasfuture.com/data-and-research-tools/economic-profile

percent range between 2010 and 2040. To accommodate the anticipated population growth and commuter traffic, improvements must be made along the I-44 and US-75 corridor.

Table 5: Forecasted Population Growth Trends

	2010	2040	% INCREASE
Tulsa MSA	937,478	1,195,66	27.5%
Tulsa County	605,127	754,740	24.7%

Source: Oklahoma Department of Commerce

The components of the I-44 and US-75 Corridor Improvement Projects are expected to generate wide-ranging benefits for the current and future passenger and commercial vehicles of a growing Tulsa. The improved safety, more efficient and faster movement of goods and people, and reduced congestion quantified in the BCA will accrue to residents, businesses, government entities, and organizations located in the Tulsa metro region and the State of Oklahoma. Additional mobility benefits from improved sidewalk connectivity (as outlined in the Climate Change and Environmental Justice Impacts section), as well as emissions reductions outlined previously, will continue to improve the quality of life in Tulsa County.

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 an Impact Analysis for Planning (IMPLAN) model, the I-44 & US-75 Corridor Improvement Project is projected to generate 1,468 direct jobs in the highway construction industry including well-paying, union jobs and a total of 2,283 include indirect employment. Additionally, the project will reduce delay and improve mobility for over 500,000 jobs in the Tulsa Transportation Management Area. There are also substantial national economic benefits, particularly related to the significant volumes of interstate truck freight moving through the corridor, a major national crossroad of commerce. In addition, the Project benefits waterborne interstate commerce, as it provides improved access to the Tulsa Ports, Port of Catoosa, a major inland waterway and multimodal port. In meeting the 23 U.S.C. § 150 National Goals, the I-44 and US-75 Corridor Improvement Projects are also promoting economic vitality across the state and nation as shown in **Table 6**.

Table 6: Economic Vitality Benefits

PROJECT BENEFITS	ECONOMIC VITALITY METRIC
• Improves access to major national intermodal facilities.	• Facilitates delivery to and from the Port of Catoosa in Tulsa, a major hub in the McClellan-Kerr Arkansas River Navigation System (MKARNS). It enhances the national goods movement network and provides more modal choice and efficiency.
• Enhances safety	• Eliminates approximately 15 fatalities and 77 serious injury accidents over the life of the project.

PROJECT BENEFITS	ECONOMIC VITALITY METRIC
• Replaces aging critical transportation infrastructure.	• Over $100 million will be saved in future bridge and other rehab costs for aging facilities, saving taxpayer dollars. • Replacing aging infrastructure sends strong signals to businesses that the region is doing well and can provide a good environment for business investment and expansion.
• Eliminates bottlenecks in the freight supply chain. • Reduces delay and improves reliability for trucks and the movement of time-sensitive goods. • The project will eliminate approximately 350,000 hours of excess vehicle delay over the life of the project; of that, about 35,000 hours will be truck vehicle hours.	• I-44 (part of Primary Highway Freight System) plays a key role in the freight network of Oklahoma and the south-central U.S. • The project will reduce congestion on this key freight corridor, expand access to markets and contribute to the region and the nation's economic competitiveness. • Oklahoma freight flows are primarily through the state and therefore improvements on this segment will benefit goods movements nationwide. • About ten percent trucks out of total vehicle volume through the project limits. • Tulsa is home to several freight-generating businesses and is also expanding the energy and tech economy.

FREIGHT AND GOODS MOVEMENT & THE ROUTES INITIATIVE

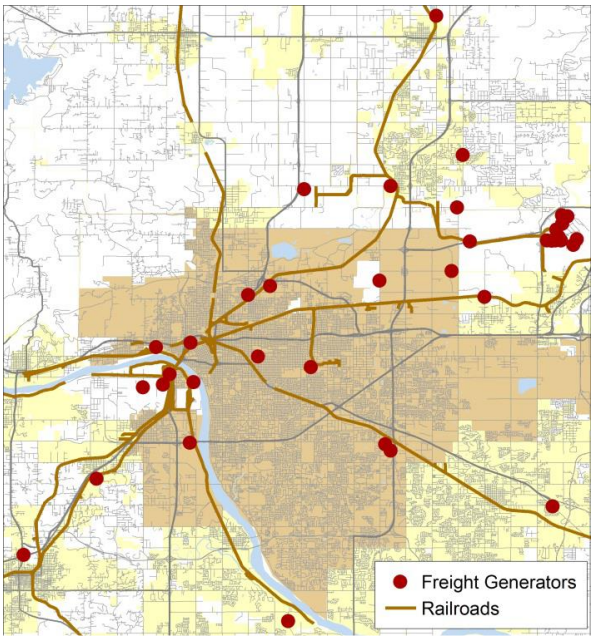
I-44 is part of the National Highway Freight Network (NHFN) and the corridor plays a key role in the Oklahoma Freight Network. Consistent with Rural Opportunities to Use Transportation for Economic Success (ROUTES), the I-44 and US-75 Corridor Improvement Projects will strengthen the ability of rural communities to access national and international trade markets. While Tulsa is a freight generator, many more use the corridor from the south and west. As discussed in the BCA Freight Rating section, improvements to this section of the NHFN deliver greater safety and travel time reliability that supports economic development throughout the region.

I-44 and US-75 corridors play a key role in the Oklahoma Freight Network and the south-central United States. Freight flows as illustrated by the Office of Freight Management and Operations, Freight Analysis Framework, Version 4.3 is available in Appendix D**.** Oklahoma freight flows are primarily through the state, and improvements on this segment of interstate will benefit shipping and goods movement nationwide. I-44 is part of the national Primary Highway Freight Network, and improvements to I-44 and US-75 corridors will reduce congestion on this key freight network – which enhances access to markets and contributes toward the region's and nation's economic competitiveness.

The economic outcomes generated by the project components improve the connectivity between home and workplaces and between production and consumption sites. At the same time, they increase the competitiveness of the United States by increasing efficiency in the movement of goods along the I-44 corridor. Shippers will also benefit and save time as well. It is estimated that 14 percent of the traffic on I-44 in the study corridor is composed of trucks.

As **Figure 4** indicates, Tulsa is home to several significant freight-generating businesses including QuickTrip, XPO Logistics, Amazon, and Macy's. Several of these freight-generating businesses are located adjacent to or within just a few miles of the I-44 and US-75 corridors. Improved and streamlined I-44 and US-75 corridors helps these regionally and nationally significant freight-generating businesses efficiently ship goods. For many more, the corridors are a significant route to and from the south and west. As the figure also indicates, many of these generators are along rail lines, and in some cases, intermodal freight transfers occur between rail and truck. The Tulsa Ports Port of Catoosa, located to the east and north, supports barge, rail, and truck freight modes. The I-44 and US-75 Corridor Improvement Projects support local, regional, and national freight movements to and from the Port it will also provide more reliable road infrastructure for the transportation of equipment that is manufactured at the industrial complex.

Figure 4: Major Freight Generators and Rail



CLIMATE CHANGE AND ENVIRONMENTAL JUSTICE IMPACTS

Subsequent to the Preliminary Engineering Study, the design of the I-44 and US-75 Corridor Improvement Projects took additional factors into consideration beyond standard roadway and bridge design criteria. ODOT carefully coordinated with partners and planned the I-44 and US-75 Corridor Improvement Projects to respond to the surrounding environment. Based on the Interstate 44 and I-244 Junction to the Arkansas River Access Justification Report (April 2020) NEPA authorization was processed with a re-evaluation of the 2002 Environmental Assessment for the Interchange, which included WP-1 and was submitted to FHWA for approval in May 2020. No significant environmental impacts resulted from project and there is no significant public controversy on environmental grounds.

The I-44 and US-75 Corridor Improvement Projects emphasize increased pedestrian mobility in the area including improvements to several sidewalk gaps identified in the Go Plan Tulsa's regional bicycle and pedestrian masterplan. Based on coordination with regional partners, the I-44 and US-75 Corridor Improvement Projects include the following active transportation improvements to eliminate barriers to opportunity for the surrounding community.

- The 49th Street Bridge will be retained over local roads to allow for safe and efficient pedestrian crossing. Sidewalk improvements are also included for local roads and an offset shelf will be incorporated for the City of Tulsa to install sidewalks at a later time.

- Along 51st Street, a new sidewalk will join a recently constructed sidewalk corridor from an earlier project over S. Union Avenue that continues east and connects to River Parks' 26 miles of multi-use trail. The new sidewalk removes a significant barrier to a community asset. Today if a person on the west side of US-75 wants to access River Parks, they must drive approximately one mile due to lack of sidewalk access. The sidewalk continues to span the railroad corridor via a new pedestrian bridge, allowing connection to the River Parks West Trail while preserving the rail infrastructure.
- A new sidewalk corridor along Skelly Avenue connects to an established sidewalk corridor west of the I-44 and US-75 interchange and continues east under Mooser Creek Bridge to the I-44 access road. This new sidewalk corridor will provide residents safe and direct access to Turkey Mountain Urban Wilderness which has over 600 acres of parkland with hiking trails.
- A new offset shelf will be included for a future multi-use trail construction by the City of Tulsa along the south side of I-44. The multi-use trail will serve as a connection to the low-income residents on the west side of US-75 and provide safe and direct access to the Herman and Kate YMCA and Turkey Mountain, which is located on the east side of US-75.
- Along the northbound US-75 frontage road, a new sidewalk will be installed to allow pedestrian access from 61st Street to Skelly Avenue.
- Bike lanes and sidewalks will be added the 61st Street, which crosses over US-75. Bicycle and pedestrian travel have increased in 2020 and the new bike lane and sidewalk will provide a safe and efficient connection for low-income residents to access Turkey Mountain, which will remove a barrier to accessing these community assets.

Additionally, corridor delay savings, as discussed in the Support for National and Regional Economic Vitality section, will create a positive and lasting impact on the emissions in the Tulsa area through alleviating congestion. The emission reduction impacts will strongly benefit the vulnerable populations and the sensitive environmental assets of Turkey Mountain adjacent to the project area. WP 2, 3, and 5 also further enhance the availability and access to 157 existing electric charging stations located throughout the Tulsa metropolitan region. Several fast-charging stations are located within five miles radius of the project location.

Turkey Mountain

Adjacent to the project area is a unique recreational treasure, over 300 acres of existing rugged park land, with another 300 acres that are recently added through a donation, under the administration of the City of Tulsa- River Parks Authority called the Turkey Mountain Urban Wilderness. This hill of wilderness with thick canopy of native trees, Blackjack oak, Hickory & Redbud trees is located immediately southeast of the I-44 and US-75 Corridor Improvement Projects as depicted in **Figure 2** on page 5. The I-44 and US-75 Corridor Improvement Projects offer tremendous partnership opportunities with ODOT and the City of Tulsa to allow both a safe, efficient interchange and access to and from the Turkey Mountain Urban Wilderness.

Donated land from the George Kaiser Family Foundation prevents future development in this urban wilderness so this land will remain undeveloped with only hiking trails in perpetuity. The

City of Tulsa recently completed the Turkey Mountain Master Urban Wilderness Master Plan that establishes four core principles to guide the future transformation of Turkey Mountain: 1) restore nature, 2) maximize access, 3) enhance trails, and 4) integrate program.

The Turkey Mountain Urban Wilderness offers a tremendous opportunity for the Tulsa region to proactively play a key part in arresting climate change as this park will never be developed and therefore never increase the carbon footprint associated with improvements in this area. The I-44 and US-75 Corridor Improvement Projects have been intentionally designed to have no direct effect on this pristine park property and additionally, the improvement projects will provide improved accessibility to Turkey Mountain especially for the underserved population who reside in this area.

RACIAL EQUITY AND BARRIERS TO OPPORTUNITY

I-44 and US-75 is a critical link in the Tulsa intercity transportation network. In a network with limited river crossings, I-44 carries local and regional traffic to work, school, and other important destinations. The I-44 and US-75 Corridor Improvement Projects support racial equity by providing additional capacity and improved mobility for Tulsa residents and removes barriers to opportunities for the surrounding community and Opportunity Zone.

Highways can inhibit connections and cut off 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 from the Arkansas River, and neighborhoods on the north and south sides of I-44 were cut off from each other. As shown in the demographic maps in Appendix E, the neighborhoods surrounding the I-44 and US-75 Corridor Improvement Projects have a high minority concentration (30.5%) and have a high concentration of low to moderate-income households where 19 percent of the residents are below poverty level. These income statistics further enhance the need for the I-44 and US-75 Corridor Improvement Projects to reconnect neighborhoods to amenities including the Herman and Kate Kaiser YMCA of Greater Tulsa just south of the interchange off of West Skelly Drive 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 pedestrian and bicycle improvements, outlined in the Climate Change and Environmental Justice section, will improve active, low-cost transportation access to vital community resources for these previously cut-off communities. As described in the Regional and Economic Vitality Benefits section, improved access to I-44 and US-75 and reduced congestion along the corridor will also offer these neighborhoods better access to the job centers and services in Tulsa.

LEVERAGE FEDERAL FUNDING

ODOT will leverage $79.6 million in federal taxpayer dollars and will commit $41.1 million in non-federal funding, meeting the 20 percent minimum threshold to qualify for INFRA grants. ODOT strives to be a good steward of public resources and will demonstrate the I-44 and US-75 Corridor Improvement Projects' importance to Oklahoma by committing as many in-state funds as possible. The $85 million in requested 2021 INFRA funds are justified by the project's 1.21

BCR. Also, by accelerating a project that would otherwise need to be completed over a much longer timescale, the 2021 INFRA funding will save Oklahoma and federal taxpayers millions of dollars in avoided construction cost inflation.

ODOT recently approved the $6 billion FY 2021-2028 8 Year Construction Workplan (CWP) that includes a federal share of approximately 50 percent to fund more than 1,300 critical highway and bridge improvements across the state. The 50 percent federal share is much lower than the 80 percent share on federal-aid projects resulting in greater spending power and effectiveness of the federal funds returned to Oklahoma taxpayers.

An extremely unique aspect to Oklahoma's leveraging of precious federal funding is the massive commitment of state funding to Oklahoma's transportation system through the Oklahoma Turnpike Authority. Over the past four years, the OTA has been actively constructing the $1.5 billion Driving Forward Program with 100 percent state funds committed to three new alignment turnpikes (34 miles) and upgrading 4 other turnpikes. Specifically, the 5.2-mile extension of the new alignment Gilcrease Expressway is a $300 million state commitment that abuts and will bring extensive traffic to the I-44/US-75 corridors. There is massive commitment of state funds to leverage requested INFRA grant funds for the critical corridor project.

POTENTIAL FOR INNOVATION

Accelerated Deployment of Innovative Technology

ODOT will deploy Intelligent Transportation Systems (ITS) to ensure work zones on I-44 and US-75 are safe and that drivers are informed about travel times during the project. Radar, cameras, Dynamic Message Signs (DMS), and probe data will be used to monitor travel speed, congestion and incident management. These assets will help reduce congestion during construction while improving safety and efficiency of movement through the work zone. Once construction is complete, ITS will remain to provide the information needed for ODOT and the public to travel safely and efficiently. There are currently seven DMS boards and two cameras that provide ODOT opportunities to monitor traffic and provide vital travel information to the public.

Use of Innovative Permitting, Contracting, and Other Project Delivery Practices

ODOT will make use of No Excuses Bonuses on the I-44 and US-75 Corridor Improvement Projects, 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.

ODOT will also make use of the e-Construction and Project Bundling innovations outlined in the Every Day Counts Initiative. INFRA funding will allow the I-44 and US-75 Corridor Improvement Projects to be bundled into one construction contract to achieve overall project savings whereas without the INFRA award, construction will be phased, with multiple project lettings as funding is available. E-Construction methods will include mobile inspection and video monitoring and reporting of construction progress.

ODOT is willing to 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.

Together these innovative delivery practices will result in more efficient project implementation to advance safe, efficient, and reliable corridor improvements.

Innovative Financing

In 2018, the Oklahoma State Legislature enacted House Bill 1010XX, which raised the state's motor fuel taxes on gasoline and diesel by three and six cents per gallon, respectively. According to the Oklahoma Tax Commission, the increased gasoline tax was estimated to generate $52.0 million annually and the increased diesel tax was estimated to generate $53.0 annually. A combined 95.5 percent of these revenues are credited to the Rebuilding Oklahoma Access and Driver Safety (ROADS) Fund created by Title 69, Section 1521, Oklahoma Statutes.[2]

House Bill 1014XX of 2018 reduced general-purpose tax revenue to ODOT by the amounts attributable to the House Bill 1010XX tax increases and redirected certain Oklahoma Vehicle License and Registration Act from the General Revenue Fund to the ROADS Fund. The net impact of House Bills 1010XX and 1014XX was to increase state revenue to ODOT generated from the ownership or operation of a motor vehicle by $194.0 million per year and to reduce transfers of general-purpose state revenue to ODOT by the same amount.[3]

Increased state revenue improves ODOT's ability to meet the needs of the I-44 and US-75 Corridor and achieve all the performance upgrades of the project including reducing highway congestion and bottlenecks, and improving safety, equity, accessibility, and reliability.

PERFORMANCE AND ACCOUNTABILITY

Accountability Measures

ODOT commits to start construction by March 29, 2024, and complete construction by December 31, 2026. ODOT acknowledges that non-performance of these deadlines subjects it

[2] From the HB 1010XX fiscal impact statement. http://www.oklegislature.gov/BillInfo.aspx?Bill=HB1010&Session=172X

[3] From the HB 1014XX fiscal impact statement: http://webserver1.lsb.state.ok.us/cf_pdf/2017-18%20SUPPORT%20DOCUMENTS/impact%20statements/fiscal/senate/HB1014XX%20ENR%20FI.PDF

to forfeit or return of awarded funds as specified in Criterion #6 of Section E.1.a of the Notice of Funding Opportunity.

Lifecycle Costs

ODOT Staff has projected that operations and maintenance (O&M) costs for the I-44 and US-75 Corridor Improvement Projects will total $8.5 million through 2060. Projected no-build O&M costs to 2060 are $52.0 million, including $26.4 million for projected maintenance and rehabilitation costs for I-44 and US-75 corridor improvements, $25.1 million in bridge rehabilitation costs, and $0.6 million in projected bridge damage repair costs.

ODOT submitted its Transportation Asset Management Plan (TAMP) to FHWA on June 30, 2019, and FHWA approved it on August 29, 2019. ODOT's dedication to asset management and its adherence to the TAMP will ensure adequate resources to maintain the I-44 and US-75 Corridor Improvement Projects for the next 30 years.

PROJECT READINESS

TECHNICAL FEASIBILITY

ODOT has relied upon and excelled for many years at planning, creating, and delivering complex multi-phased projects. This project delivery method allows ODOT to maximize the use of federal and state funding combinations over time to best meet the needs of communities throughout Oklahoma by ensuring the most critical improvements are being addressed. Large capital projects, especially those on interstate facilities demand a reasoned approach when completed in a segmental fashion. A well-thought-out approach to the phasing and sequencing of the individual projects, construction contracts, and all facets of the project's interaction with the community and the populations the project serves is necessary. ODOT previously completed a similar set of projects on I-44 just east of WP 2, 3, and 5 of the I-44 and US-75 interchange, improving five interchanges and investing more than $300 million over eight years. That work was completed on schedule and within budget.

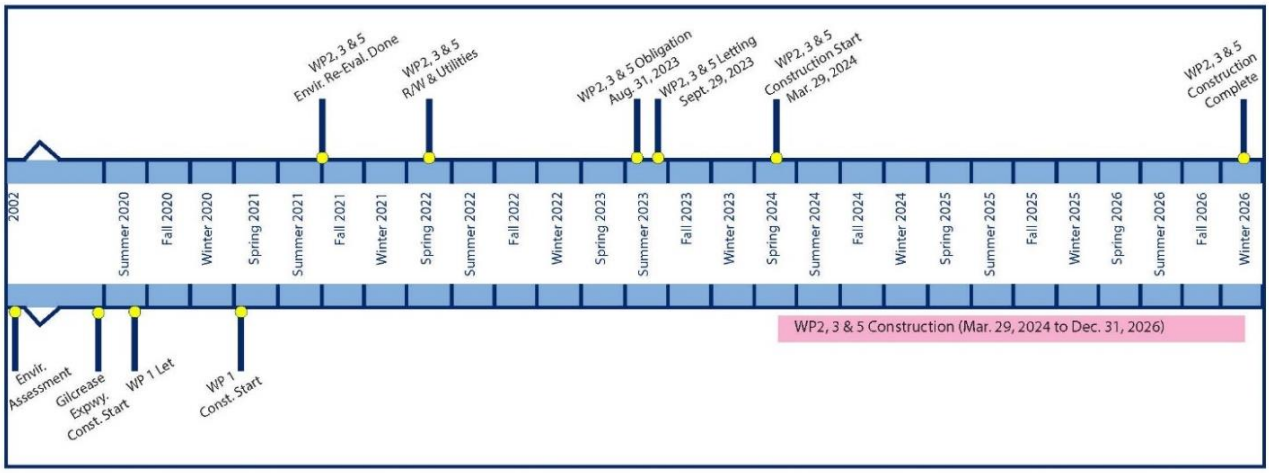
As noted, ODOT has an extensive history of delivering multi-phase projects of a similar nature to the I-44 and US-75 Corridor Improvement Projects. ODOT understands that success in a project of this magnitude starts with a well-reasoned plan for moving forward. As such, ODOT commissioned a Preliminary Engineering (PE) Study to be completed for the corridor. The PE Study was completed in September 2018 and includes information specifically developed for I-44 from I-244 to the Arkansas River, of which the interchange with US-75 is the most substantial component. Subsequently, ODOT proceeded with WP 1, as funded under the 2018 INFRA grant and the project was let to construction in fall 2020. A team of consulting engineers has been assembled under the direction of the ODOT Project Management Division and design plans for the I-44 and US-75 Corridor Improvement Projects (WP 2, 3, and 5) are 60 percent complete. Advanced right-of-way acquisition began in December 2020, ODOT is nearing the completion of the appraisal phase, and right-of-way acquisition will begin as early as June 2021.

PROJECT SCHEDULE

As shown in **Figure 5**, ODOT has been proceeding with improvements within this critical corridor for years and remains committed to completing these final projects to update one of the last original interstate pavement sections in Tulsa.

ODOT opened bids on WP 1 in August 2020 and WP 1 will be completed in Winter 2022. The re-evaluation of the original Environmental Assessment (EA) of the corridor is ongoing and will be completed by end of Summer 2021. WP 2, 3, and 5 right-of-way acquisition and utility relocations are programmed in the 8 Year CWP to commence in 2022, but advance acquisitions began in the fall of 2020. ODOT is nearing the completion of the appraisal phase and right-of-way acquisition will follow. The obligation of funds for assumed letting and construction of the I-44 and US-75 Corridor Improvement Projects (WP 2, 3, and 5) will occur on August 3, with assumed letting scheduled for September 29, 2023. Construction is anticipated to start on March 29, 2024 and be completed on December 31, 2026.

Figure 5: Assumed Project Schedule



REQUIRED APPROVALS

ENVIRONMENTAL PERMITS AND REVIEWS

The NEPA clearance process for the I-44 and US-75 Corridor Improvement Projects is ongoing. An Environmental Assessment completed in June 2002 for US-75 originally covered the work within this interchange and ODOT previously utilized their programmatic agreement with FHWA to update and clear the environmental processes for the associated WP 1. A re-evaluation of the 2002 EA is currently underway by ODOT to provide clearance for the projects in this application and is scheduled to be completed by end of Summer 2021. A significant portion of the update, including data collection and compilation, noise study, socioeconomic and environmental justice review, initial site assessment, and other pertinent studies, have already been completed. However, ODOT is awaiting additional information as the consultant team develops design plans to capture the most current and accurate data possible before finalizing the re-evaluation. A Public Meeting is anticipated for sharing the most recent information with the community in May 2021.

The I-44 and US-75 Corridor Improvement Projects contain span bridges and a box over Mooser Creek as well as a bridge widening and redecking of the I-44 bridges over the Arkansas River. These will require coordination with the U.S. Army Corps of Engineers (USACE) for securing Section 404 permits. However, permitting for these projects is expected to be minimal and likely limited to Section 404 Nationwide permits. 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 as well as the U.S. Fish and Wildlife Service, which greatly accelerate and improve the consistency of permitting reviews. ODOT expects to complete the environmental review and permitting process for the I-44 and US-75 Corridor Improvement Projects utilizing its traditional process.

State and Local Approvals

The Oklahoma Congressional Delegation, City of Tulsa, INCOG, Tulsa Chamber of Commerce, State Chamber of Oklahoma, and the Oklahoma Trucking Association have all provided support letters for the I-44 and US-75 Corridor Improvement Projects. All letters of support are available in Appendix F**.** These agencies, and the public they represent, recognize that the I-44 and US-75 Corridor Improvement Projects will reduce congestion and improve access throughout the area as a result of extensive outreach, coordination, and public engagement efforts by ODOT since 2002. INCOG has already included WP 1, partially funded by a prior INFRA grant, in its current Transportation Improvement Program (TIP). Due to the community support established for the I-44 and US-75 Corridor Improvement Projects, all state and local approvals will be readily obtained.

State and Local Planning

INCOG Regional Transportation Plan (RTP): The INCOG RTP, Connect 2045, includes the I-44 and US-75 Corridor Improvement Projects, which align 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. As such, WP 1 is already incorporated into the STIP and the right-of-way and utility relocation for WP 2, 3, and 5 are included for 2022.

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 and US-75 Corridor Improvement Projects align with ODOT's long range strategic direction.

Assessment of Project Risks and Mitigation Strategies

Potential risks and mitigation strategies to minimize the potential impact of those risks are as follows:

- **Contamination risk due to prior industrial use:** There are 22 hazardous waste sites within or adjacent to the project area. None are anticipated to have significant impediments to construction.

- **Leaking Underground Storage Tank (LUST) sites:** There are 13 storage tank sites within or adjacent to the project area, three of which are LUST sites. However, the LUST cases in the project area have been closed, implying levels of contaminants are at or below levels considered appropriate for the site by the Oklahoma Corporation Commission (OCC).

For the risks noted above, 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.

- **Cost and schedule:** ODOT has established the anticipated costs of the three WPs contained within this application. The estimated capital cost of combined WP 2, 3, and 5 is $205.8 million in 2019 dollars (including contingency)

ODOT has placed these projects into the 8 Year CWP with right-of-way acquisition and utility relocation funding commitment of over $20 million set aside in 2022. Letting the construction contracts for WP 2 and 5 is currently set for 2025 within the 8 Year CWP and WP 3 is currently set for 2028. However, ODOT remains committed to adjusting the current schedule to meet the INFRA grant requirements that project funds are obligated by September 30, 2023. ODOT commits to ensuring this occurs as part of the annual process of rebalancing the 8 Year CWP. ODOT undertakes this rebalancing every year to keep estimates accurate, account for project progress, address changes in needs, and maintain fiscal responsibility. Currently, ODOT has final designs under contract for the I-44 and US-75 Corridor Improvement Projects. This will allow ODOT to remain committed to adjusting the current schedule if funding becomes available through the INFRA grant process.

- **Delay of adjacent/involved projects:** With other work occurring in the corridor, the I-44 and US-75 Corridor Improvement Projects rely on Work Project 1.

ODOT opened bids for WP 1 in August 2020 and anticipates this package to be completed and open to traffic by 2023. This clears the interchange to allow the I-44 and US-75 Corridor Improvement Projects (WP 2, 3, and 5) to be tied and let to construction in 2023, with completion in 2026 should INFRA grant funds be received. This also allows a single contracting team to phase these packages together allowing for significant time and costs savings compared to letting the WPs separately in staggered years.

- **Earthquakes:** Earthquakes have been a concern to ODOT for the impact on its facilities over the past 5-10 years. This is especially true for bridges after any magnitude 3.0 or greater event.

The State of Oklahoma has instituted significant changes to the drilling activities which has greatly diminished the number of earthquakes in Oklahoma. All structures have seismic designs incorporated for this region of the country.

- **Economic downturn/employment changes:** Economic issues are a constant consideration in state funding and with the recent impacts of the COVID-19 pandemic, employment changes and their impacts on travel became clear risks for transportation funding.

Oklahoma has made tremendous strides since 2006 to ensure increased transportation funding. The construction industry has responded robustly with joint ventures and A+B contracts to guarantee project completion commitments. ODOT has a tremendous record of timely delivery of major projects over the past decade. Additionally, the funding commitment from ODOT has no limit or condition to satisfy to use the funds and provides a stable source against future economic changes.

- **Inability to secure right-of-way:** Failure to secure right-of-way can cause significant project delay.

The ODOT Right-of-Way Division performed a planning-level analysis to determine an approximate cost for right-of-way acquisition. All ROW estimates included a 20 percent contingency to account for administrative and miscellaneous items such as corrals, sheds, and other ancillary structures.

The recent development of 60 percent design plans indicates that Turkey Mountain, as well as minority and traditionally underserved neighborhoods, are not incorporated into any right-of-way takings necessary for the project.

ODOT follows all the FHWA policies and federal laws regarding securing right-of-way for federal aid projects. As such, if landowners are unwilling to successfully negotiate, ODOT can, and will, as a last resort, utilize the eminent domain process to secure necessary rights-of-way for the project.

- **Inability to secure permits:** The proposed US-75 bridges over Mooser Creek, as well as the proposed I-44 bridge improvements over the Arkansas River, were not calculated as impacts to the watercourses under either alternative since these will be span bridges and should not greatly affect the stream. However, Section 404 permits will likely be required for these activities.

Permitting for these projects is expected to be minimal, limited to a Section 404 Nationwide permit. Coordination with the USACE has already begun and the USACE has indicated no issues. ODOT has agency liaisons in place at the USACE as well as the U.S. Fish and Wildlife Service, which greatly accelerate and improve the consistency of permitting reviews. ODOT expects to complete the environmental review and permitting process for the I-44 and US-75 Corridor Improvement Projects under its traditional process.

- **Weather-related construction delays:** The past few years have offered challenges to the construction industry with major rain events and subsequent flooding.

ODOT is now seasoned in working closely with contractors to renegotiate project time while still delivering the project within projected time constraints. History has shown weather can work both ways as contractors may allow winter downtime in their bids and then get a mild winter which can accelerate their completion date.

LARGE AND SMALL PROJECT REQUIREMENTS

1. Does the project generate national or regional economic, mobility, or safety benefits?
Yes. As outlined in the Support for National and Regional Economic Vitality section, results of the BCA prove that the I-44 and US-75 Corridor Improvement Projects will have national, regional, and both local and regional benefits that contribute to economic vitality. Based on ODOT estimates, the BCA analysis assumes that 75 percent of the total delay reductions can be attributed to WPs 2, 3, and 5. The I-44 and US-75 Corridor Improvement Projects will generate significant savings in the human costs of crashes. Over the 25 years, it is estimated that 15 lives will be saved, and another 77 serious injury-crashes will be avoided.

2. Is the project cost-effective?
Yes. The project components for which ODOT is requesting INFRA funding have a benefit/cost ratio of 1.21.

3. Does the project contribute to one or more of the Goals listed under 23 U.S.C. § 150?
Yes. Relationships to the National Goals are outlined throughout the application. In summary:

- **Safety:** A significant reduction in traffic fatalities and serious injuries on all public roads is achieved through modernizing the I-44 and US-75 interchange and incorporating safety infrastructure on roadways and bridges.
- **Infrastructure Conditions:** The project maintains the highway infrastructure asset system in a state of good repair through capital improvements and asset management.
- **Congestion Reduction:** Significant reduction in congestion on the National Highway System will be achieved through interstate widening and modernizing the I-44 and US-75 interchange.
- **System Reliability:** The project improves the efficiency of the surface transportation system by easing a significant bottleneck on the National Highway System.
- **Freight Movement and Economic Vitality:** Delivering greater safety and travel time reliability through a major urban interchange will improve the National Highway Freight Network, strengthen the ability of rural communities to access national and international trade markets, and support regional economic development.
- **Environmental Sustainability:** The project will enhance the performance of the transportation system while protecting and enhancing the natural environment through congestion-related emission reductions and enhancing connectivity to the Turkey Mountain Urban Wilderness Area, which borders the project location.

- **Reduced Project Delivery Delays:** With committed funding, ongoing progress, integration into other plans, and the use of innovative project delivery practices, the project is well prepared to continue to meet delivery deadlines.

4. Is the project based on the results of preliminary engineering?

Yes. The PE Study was completed in September 2018. The following are complete: topographic surveys, traffic studies, financial plans, and general estimates of the types and quantities of materials. A re-evaluation of a 2002 Environmental Assessment is ongoing and is scheduled to be completed by end of Summer 2021. Design plans have reached the 60 percent status level and right-or-way acquisition is at 65 percent. Advanced right-of-way acquisition started in fall 2020 and is currently in the appraisal phase.

5a. With respect to non-Federal financial commitments, does the project have one or more stable and dependable funding or financing sources to construct, maintain, and operate the project?

Yes. Non-federal funds to construct, maintain and operate the I-44 and US-75 Corridor Improvement Projects will come from Oklahoma's state transportation funds. The principal funding sources for these funds are the state's motor fuel excise taxes on gasoline, diesel, compressed natural gas, liquefied natural gas, and other special fuels, as well as annual vehicle registration fees.

5b. Are contingency amounts available to cover unanticipated cost increases?

Yes. With design reaching 60 percent completion, ODOT's budgetary figures for each of the work packages include a 10 percent contingency.

6. Is it the case that the project cannot be easily and efficiently completed without other Federal funding or financial assistance available to the project sponsor?

Yes. It is ODOT's policy to consolidate its apportionments of federal highway funding into a relatively small number of relatively large projects; however, the magnitude of the I-44 and US-75 Corridor Improvement Projects is beyond ODOT's ability to complete in a compact timeframe. As noted in the Leverage Federal Funding section, ODOT will leverage federal taxpayer dollars by committing $41.1 million to qualify for INFRA grants. ODOT strives to be a good steward of public resources and will demonstrate the project's importance to Oklahoma by committing as many in-state funds as possible.

7. Is the project reasonably expected to begin construction not later than 18 months after the date of obligation of funds for the project?

Yes. Each of the three work packages will commence construction within 18 months of the obligation of funds. The obligation of funds for letting and construction of the I-44 and US-75 Corridor Improvement Projects will occur on August 31, 2023, with letting scheduled for September 29, 2023. Construction is anticipated to start on March 29, 2024 and be completed on December 31, 2026.