

I-40 DOUGLAS BOULEVARD INTERCHANGE AND CORRIDOR IMPROVEMENTS

Oklahoma City, Oklahoma

Supporting information can be found at:

https://www.ok.gov/odot/Progress_and_Performance/Federal_Grant_Awards/INFRA_Grants/2020_I-40-Douglas.html

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Sponsor: Oklahoma Department of Transportation
Previously submitted for INFRA under the title "I-40 Douglas Boulevard Interchange Reconstruction and Related Widening."

INFRA Request:	\$64,264,461	<ul style="list-style-type: none"> Future eligible costs spent on components on NHFN 	\$107,107,435
Federal Funds (excluding INFRA):	\$0	<ul style="list-style-type: none"> Future eligible costs spent on components on NHS 	\$107,107,435
Non-federal funds:	\$42,842,974	<ul style="list-style-type: none"> Future eligible costs spent on railway-highway grade crossings or 	\$0
Future Eligible Costs:	\$107,107,435	<ul style="list-style-type: none"> Future eligible costs spent on intermodal or freight rail projects, or within a public or private freight rail, water, or intermodal facility 	\$0
Previously Incurred Cost:	\$5,363,422	Inclusion in Planning Documents:	
Total Project Cost:	\$112,470,857	<ul style="list-style-type: none"> TIP: 	NO*
<ul style="list-style-type: none"> Matching funds restricted to specific project component? 	NO	<ul style="list-style-type: none"> STIP: 	NO*
State:	Oklahoma	<ul style="list-style-type: none"> MPO LRTP: 	YES
Size of project:	Large	<ul style="list-style-type: none"> State LRTP: 	YES
Urbanized Area (UA):	Oklahoma City	<ul style="list-style-type: none"> State Freight Plan: 	YES
UA population, 2010 Census	861,505	In Opportunity Zone?	NO

* The most current STIP and TIP extend through 2023. The I-40/Douglas Interchange project is programmed in ODOT's 8 Year Work Plan in 2025. With INFRA funding, the project will be added into the TIP and STIP and advanced in the Work Plan.

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Supporting Materials

Supporting documentation can be found at the project website, https://www.ok.gov/odot/Progress_and_Performance/Federal_Grant_Awards/INFRA_Grants/2020_I-40-Douglas.html, and include:

- Certifications and Assurances
- Letters of Support
- Maps and Graphics
- Reports and Technical Information (including the BCA)



1. PROJECT DESCRIPTION

The I-40 Douglas Interchange and Corridor Improvements Project widens 5.5 miles of Interstate 40 (I-40) and reconstructs the I-40 and Douglas Boulevard Interchange in Oklahoma City and Midwest City, Oklahoma (**Figure 1**). The Project provides much needed improvements to access at Tinker Air Force Base (Tinker), and a more reliable commuter and freight route within the Oklahoma City metropolitan area, state and nation. Specifically, the project will provide enhanced mobility to suburban and rural populations east of the Oklahoma City metro area that use I-40 to commute to jobs and services in the city. It will also benefit freight (i.e. truck) traffic that is bringing products from rural areas to market.



Figure 1: I-40 Douglas Interchange and Corridor Improvements Project Location

1.1. Project Summary

This Project includes the following specific improvements:

- Widen 5.5 miles of I-40 from four lanes to six lanes between Industrial Boulevard and the I-240 interchange
- Reconstruct Douglas Boulevard Interchange using a single point urban interchange (SPUI) design that maintains a similar footprint, but with enhanced functionality and improved safety
- Raises the existing bridge at Westminister Road and lowers the I-40 mainline under Post Road to correct the substandard vertical clearances at these two locations,



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- Reconstructs the I-40 bridges over Anderson Road to accommodate the widened interstate and to increase vertical clearance
- Adds acceleration and deceleration lanes in the vicinity of Anderson Road Interchange
- Widens the bridges on mainline I-40 over the westbound I-240 ramps at the I-40/I-240 Interchange to accommodate six through-lanes

In sum, the Project modernizes and widens this segment of I-40, correcting substandard geometry, and utilizing an urban interchange design at Douglas Boulevard.

1.2. Challenges and How the Project will Address Them

The current state of the highway does not provide adequate mobility for the 44,000 cars and trucks that traverse it each day. **By 2045, daily traffic is expected to exceed 66,000 vehicles per day** with the new traffic from the Kickapoo Turnpike. Without improvement, severe congestion is expected to occur along multiple segments of I-40, as well as at ramps during peak hours. This congestion is compounded by traffic on the local street network. Streets such as Douglas Boulevard, Air Depot Road, and S.E. 29th Street carry tens of thousands of vehicles per day and affects mobility on I-40.

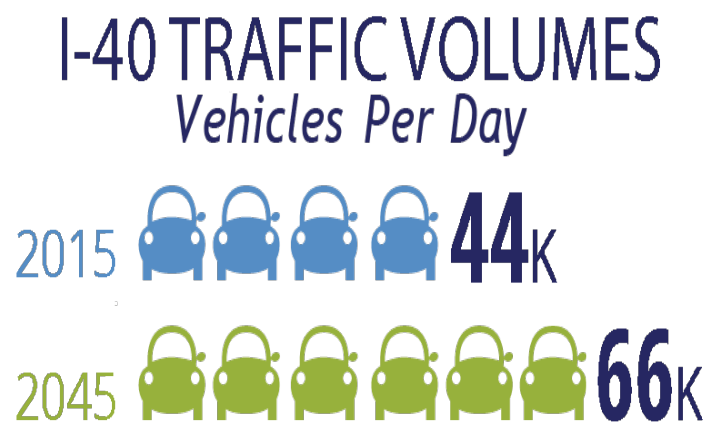
Traffic on Douglas Boulevard in the vicinity of I-40 is expected to grow from 22,400 in 2015 to 40,365 vehicles per day in 2045, an increase of 80%.

Reliability is a major problem along this corridor. There have been **over 1,200 recorded accidents** in the project area in the last ten years. High numbers of accidents cause multiple-lane shutdowns and ramp closures. During peak hours, local officials estimate that accidents close at least one lane of I-40 about once every three weeks.

The I-40 Douglas Project is designed to address the following concerns, described in more detail below: (1) state of good repair and geometric issues, (2) safety, and (3) inadequate capacity, leading to congestion and delay. All of these issues contribute to poor mobility and reliability in the corridor.

State of Good Repair and Geometric Issues

I-40 in the Project area, including the current I-40/Douglas Boulevard Interchange, was built in 1963 and is many years beyond its design life. The Douglas Boulevard Interchange is an outdated, functionally obsolete, and inadequate design for the level of traffic it now carries, and its **bridge structure is at risk** for becoming structurally deficient and needs to be replaced. Other bridges on the Project are too narrow, and most have **inadequate vertical clearance** compared to today's standards. For example, the bridges over Anderson Road require repairs approximately every five years due to damage from trucks with tall loads hitting the bridge as they pass underneath (Figure 2).



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In addition, the inside shoulders of I-40 are only paved for a four-foot width, and the acceleration and deceleration lanes near the Anderson Road Interchange are inadequate for the current levels of traffic, making it difficult for traffic to safely enter and exit I-40.

The Project addresses these concerns by widening the inside shoulders, replacing the Douglas Interchange, correcting the vertical clearances at Westminster Road, Anderson Road, and I-240, and by lengthening the acceleration and deceleration lanes at the Anderson Road Interchange.

Safety

Collision rates on the existing highway are **twice the state average** for a similar Interstate facility, averaging 2.5 collisions per week, with eight fatalities in the past 10 years. The interchanges at Douglas and Anderson have an average of 20 collisions per year. This is in part due to inadequate acceleration and deceleration lane lengths at the Anderson Road Interchange, and tight ramp curves and the need for merge lanes at the Douglas Boulevard Interchange. In addition, there is congestion throughout the Project caused

by inadequate capacity. The Project addresses these concerns by lengthening the acceleration and deceleration lanes, replacing the Douglas Boulevard Interchange with a new and more efficient design, and adding one through driving lane in each direction on I-40 to reduce congestion-related accidents.

***There is an average of OVER TWO
ACCIDENTS PER WEEK in the project
area***



Capacity, Congestion, and Delay

Congestion and delay are a problem today and are projected to worsen with traffic expected to grow by 1.3% annually through 2045 due to increasing development in eastern Oklahoma County and throughout the region. Growth in national freight traffic along I-40 is also a contributing factor. On top of this

growth, the Oklahoma Turnpike Authority's (OTA) Kickapoo Turnpike project is expected to add over 2,000 vehicles per day to this segment of I-40 when it opens in late 2020, and 3,400 vehicles by 2045.

Inadequate capacity causes two key problems: routine delays during peak hours, and severe delay when a lane-blocking accident occurs during peak travel hours. Accidents occur on average twice a week, causing hours of delay – an unacceptable situation for a major freight thoroughfare. Under normal peak hour traffic today, the I-40 corridor has segments that operate at Level of Service (LOS) D (i.e., speeds below posted speed limit) or worse. Without



Figure 2: Substandard Vertical Clearance under I-40 at Anderson Road

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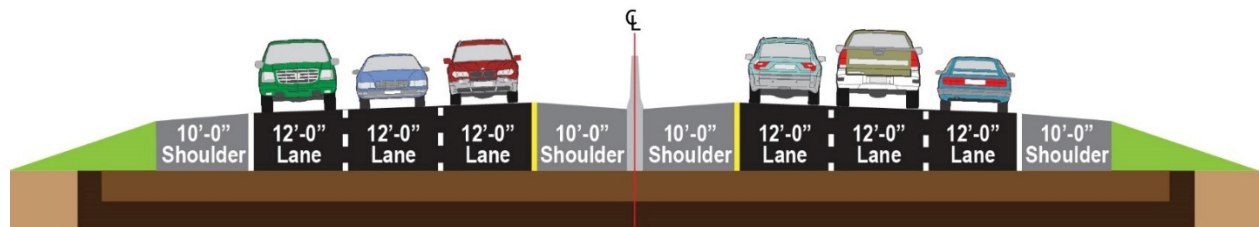
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improvement, **LOS F conditions** (i.e., traffic flow is irregular, and speeds vary substantially because of congestion) will result along most segments and ramps during peak hours. Delay reduces travel time and more importantly, especially for freight traffic, reliability. Freight businesses rely on predictable travel times to schedule their trips and unanticipated delays result in increased costs to the businesses and ultimately the consumers. This severe congestion results in additional vehicle emissions, and occasionally causes secondary accidents.

The Project will improve Level of Service from F to C in 2045

The Project addresses these concerns with its design of additional through-lanes (**Figure 3**). With these improvements alone, a 2016 LOS analysis shows that, at peak traffic times 2045 LOS would be improved from LOS F in the most congested segments of the corridor to a minimum of LOS C. The problems related to accident-caused delay will be dramatically reduced, as a single blocked lane would leave two lanes still open for traffic, and not just a single lane as is the case today.

Figure 3: Proposed Typical Section for I-40



Bridge Structure Deficiencies

The Douglas Boulevard Interchange bridge is at risk of becoming structurally deficient (sufficiency rating of 77.0) and needs to be replaced or undergo major rehabilitation (**Figure 4**). Several other bridges are too low for today's semi-trucks to pass safely underneath. The Project will replace the Douglas Boulevard Bridge. The bridges on I-40 over Anderson Road will be reconstructed at a greater height over the newly widened Anderson Road, and the bridge that carries Westminster Road will be raised. I-40 lanes under the Post Road Bridge will be lowered to provide adequate vertical clearance.

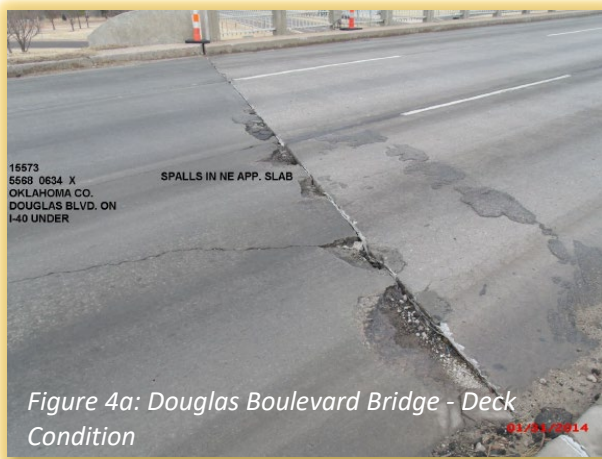


Figure 4a: Douglas Boulevard Bridge - Deck Condition



Figure 4b: Anderson Road Bridge - Beam Repairs



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1.3. Project History and Related Projects

I-40 in the Project area was built over 50 years ago. There have been pavement overlays, but no other major improvements. In recent decades, development has spread east from downtown, causing congestion on this commuter route during peak hours.

This Project is part of a **long-term strategy to widen I-40** through downtown and east to the new Kickapoo Turnpike interchange. There are several projects on I-40 included in the long-range plans of ODOT and the Oklahoma City Metropolitan Planning Organization, the Association of Central Oklahoma Governments (ACOG). ODOT's other high-cost projects to update and add capacity to I-40 east of downtown include widening the following segments:

- From the I-240 Interchange near Henney Road to Indian-Meridian Road, including Choctaw Road Interchange (construction nearing completion)
- From Indian-Meridian Road to Luther Road (project awarded in October 2017)
- Luther Road to the Harrah-Newalla Interchange (funded in FY 2021, to be coordinated with construction of the interchange with the new Turnpike, which terminates in this segment)

ODOT has also been working on a corridor study on I-40 from I-35 east to I-240, which encompasses the Douglas Interchange and related widening project presented in this application. The corridor study has looked at numerous alternatives for adding capacity and improving access within this 11-mile segment, which has a number of bridges with inadequate clearances, an undesirable number of access points, and two-way frontage roads that constrain mobility and contribute to accidents. The bridges at Scott Street, Sunnyslane Road, Sooner Road, and 15th Street/Crutcho Creek (all between 1-6 miles west of Douglas Blvd.) are funded for construction in ODOT's 8-Year Work Plan. Replacing these bridges will provide the needed clearance for future I-40 widening.

ODOT and the local municipalities lack the funding to widen all segments of I-40 simultaneously, so the effort was divided. With the funding of this INFRA grant request, much of the construction for this segment can be completed by the end of 2025. Without the Project, **each year of delay would worsen construction-related traffic impacts**, as traffic volumes would be 4% to 6% higher after the Turnpike is completed, on top of yearly background growth of 1.3%.

Kickapoo Turnpike Construction

The need for this Project is made more pressing given the traffic that will be added by the Kickapoo Turnpike extension, which is currently under construction, and is expected to be completed in late 2020 (Figure 5).

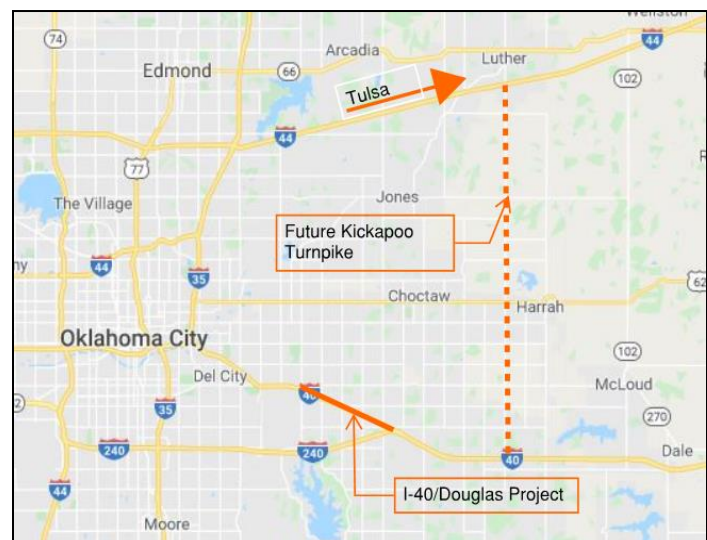


Figure 5: Kickapoo Turnpike Project (formerly known as Eastern Oklahoma County Turnpike)

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This 21-mile Turnpike extension¹, identified in the Turnpike Authority’s *Driving Forward OK* plan (<http://www.drivingforwardok.com/>), connects I-44 to I-40 five miles east of the I-40 Douglas Project. This toll road project will improve connections between the state’s two largest cities (Tulsa and Oklahoma City), relieve traffic on I-35 and parallel state and local roads in eastern Oklahoma County, and provide a reliable, access-controlled, high-speed connection between I-44 and I-40.

2. PROJECT LOCATION

The Project is situated in southeastern Oklahoma County, ten miles east of downtown Oklahoma City (see **Figure 1**). It begins one-half mile west of the I-40 Douglas Boulevard Interchange at Industrial Boulevard in Midwest City, and continues 5.5 miles east to the I-240 Interchange. Latitude and Longitude for the Project are from approximately 35.404N, -97.2915W to 35.434N, -97.379W.

2010 Population: 861,505
2040 Population: 1,113,926

29% *growth*

The majority of the Project lies within the Oklahoma City Urbanized Area. As of the 2010 Census, the population of the urban area was 861,505. **Population and employment are expected to grow substantially over the next 20 years in this area².** Notably, Oklahoma County is estimated to grow by 29.3% (2010-2040), with employment increasing an expected 34.7% over the same period. Other communities along the Project (mapped in **Figure 1**) are also growing in terms of both population and employment. More

commuters are driving from eastern Oklahoma County to the growing number of jobs and other opportunities in Del City, Midwest City, and Oklahoma City. **The inability of the I-40 corridor to handle the growing demand negatively impacts business location decision-making and harms the competitiveness of manufacturers, agricultural producers, and Oklahoma’s energy industry.** The I-40 Douglas Project is necessary to maintain the economy, ensure mobility for people and freight, and strengthen communities through job creation and increased access to Oklahoma City.

2.1. Connections to Existing Infrastructure

I-40 is part of the National Highway System and the National Highway Freight Network. Douglas Boulevard is a Principal Arterial, connecting residential areas to the north (e.g., Midwest City) to Tinker, and to I-40 into downtown. Douglas Boulevard carries 22,400 vehicles per day, a number expected to nearly double by 2045.

The Project’s national and regional significance is illustrated in **Figure 6**, which projects the average daily freight traffic across the nation in 2040. **I-40 carries more trucks than any other interstate in Oklahoma, almost 15,000 per day.** This includes over 6,600 through the Project segment. The Oklahoma Freight Plan indicates that I-40 is one of the top three “pass-through” routes in the state, with 76% of I-40’s truck miles passing through Oklahoma. The heaviest truck volumes occur in and around Oklahoma City, where I-40 converges with I-35 and I-44, illustrating the

¹ A map of the alignment is attached to the OTA support letter on the Application website.

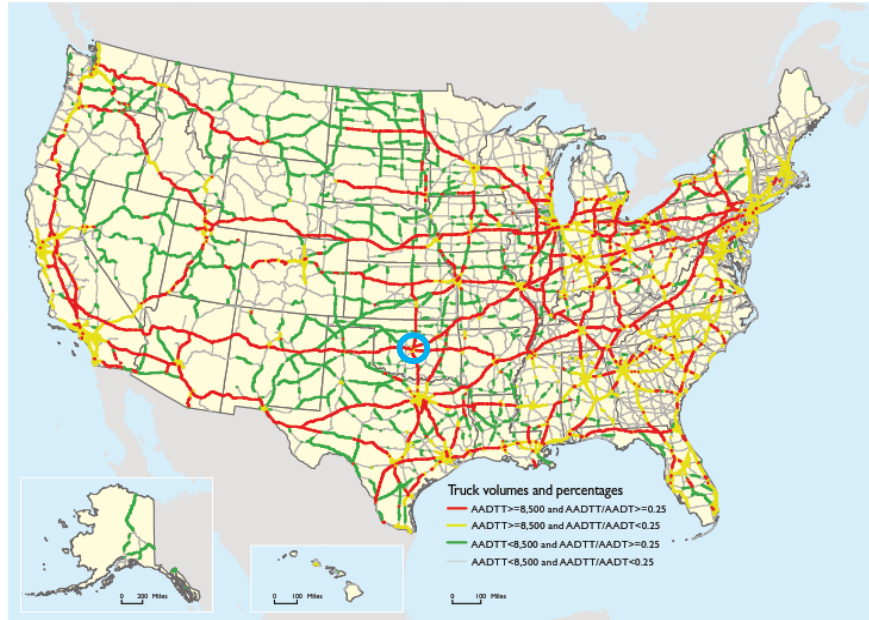
² Source: Association of Central Oklahoma Government’s (ACOG) *Encompass 2040* Metropolitan Area Plan, 2016.

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national freight industry's dependence on I-40. Statewide, the estimated freight volume growth across all modes is 41.9% from 2015 to 2040. For trucking, expected volume growth is even higher at 52.4%.

Maintaining Interstate roadways and bridges to support heavy truck traffic, without requiring re-routing due to height restrictions or delays, is vital to our national transportation system. Furthermore, key industries that accounted for close to half of the state's 2016 Gross Domestic Product (GDP) [Agriculture, Energy and Mining, Manufacturing, Transportation and Distribution, Trade, and Other Industry (e.g., retail and construction)] are particularly reliant on dependable freight transportation. The competitiveness of these industries in the global marketplace requires an integrated freight transportation system that can handle bulk shipments and intermodal containers and, relevant to this Project, reliable highways that can serve distribution centers and warehouses.



NOTES: Average annual daily truck traffic (AADTT) includes all freight-hauling and other trucks with six or more tires and includes all motor vehicles.
SOURCE: U.S. Department of Transportation, Federal Highway Administration, Office of Freight Management and Operations, *Freight Analysis Framework*, version 3.5, 2015.
Blue circle shows Project location. Source "Freight Facts and Figures 2015" USDOT BTS
Figure 6: 2040 Major Trucking Routes

2.2. Tinker Air Force Base

The Project is critical to the local economy not only for supporting freight movement, but because of its importance in bringing workers throughout the region to the major aerospace employment centers in and around the Project area. The Oklahoma City metropolitan area continues to attract residents with its low cost of living and job opportunities. Its sustained population growth through the Great Recession and into recovery sets it apart as one of the nation's fastest growing cities. The Oklahoma City Metropolitan Statistical Area population grew nearly 1.6% per year from 2007 to 2015.

I-40's Douglas Boulevard exit provides access to Tinker AFB, which employs more than 26,000 military and civilian personnel. The installation has an annual statewide economic impact of \$3.6 billion, stimulating an estimated 33,000 secondary jobs. Since it was founded in the 1940s, Tinker has provided continuous repair, logistics, and communications support to the Air Force. Tinker's largest operation is the Oklahoma City Air Logistics Complex, the US Air Force's largest repair complex, serving 92 Air Force Bases and 46 foreign nations.³ While many planes are flown to Tinker for maintenance, the base ships and receives the bulk of its goods and supplies by truck (**Figure 7**).

³ <http://journalrecord.com/tinkertakeoff/2002/08/30/labor-of-love-workers-responsible-for-tinker8217s-success/>

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Tinker is growing. An aircraft maintenance facility was recently built, and 1,300 more jobs are anticipated for a new center that will maintain the KC 46 Pegasus aerial refueling aircraft.

The Boeing Company is another major employer that benefits from the Project. The world's largest aerospace company, Boeing has long had a presence in Oklahoma City. In 2016, they opened an \$80 million Global Services and Support facility to service aging aircraft. This is the third Boeing facility on their campus and will house an additional 800 workers. In February 2020 Boeing was awarded a \$100 million contract for an Airborne Warning and Control System (AWACS) to be completed at Tinker AFB.



Figure 7: Shipping US Marine Corps F153 engines by truck from Tinker AFB after retrofit

3. PROJECT PARTIES

3.1. Project Sponsor (Grant Recipient)

The **Oklahoma Department of Transportation** is the Project sponsor and would be the grant recipient. ODOT's mission is to provide a safe, economical and effective transportation network for the people, commerce and communities of Oklahoma. ODOT will sponsor, manage and provide oversight for this Project.

3.2. Key Supporting Stakeholders

The **Association of Central Oklahoma Governments (ACOG)** supports the I-40 Douglas Project (see [Oklahoma I-40 INFRA](#)). As the region's metropolitan planning organization, ACOG is responsible for prioritizing critical transportation and transit needs. ACOG has developed the long-range Oklahoma City area Metropolitan Transportation Plan ("MTP") *Encompass 2040*, which includes the I-40 Douglas Project.

Tinker Air Force Base, the major employer and freight receiver along this stretch of I-40, is working closely with ODOT in planning for the Douglas Interchange improvements. Recognizing the importance of the improved access to and from the base, Tinker has provided a letter of support for this Project.

Oklahoma Turnpike Authority (OTA) is the organization responsible for constructing and managing the Kickapoo Turnpike, which will bring traffic from Tulsa onto I-40. OTA supports this project, recognizing the benefits an upgraded interchange and highway will provide to the users of their planned Turnpike project.

Project Sponsor



OKLAHOMA
DEPARTMENT OF TRANSPORTATION

Project Supporters



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Oklahoma County encompasses both the I-40 Douglas Project and the Kickapoo Turnpike project. Oklahoma County worked with ODOT to transfer some needed County property to ODOT for the project.

4. SOURCES/USES OF PROJECT FUNDS

In view of the importance of the Project, ODOT is submitting this request for **\$64,264,461** in INFRA funds for the I-40 Douglas Project (see **Table 1**). Over \$5.3 million has been expended as of the end of 2019, leaving just over \$107.1 million in future eligible Project costs. The total cost for the Project is estimated at \$112,470,857 including environmental review, design, and construction, as well as a 4.8% contingency. None of the funds are subject to the limit on freight rail, port, and intermodal infrastructure. Further, both the state funding and any INFRA funding can be used to fund any and all components of the Project. As discussed in Section 5.4 below, 10% of the requested INFRA funding will be contingent upon meeting the schedule described in this application.

Table 1: Sources and Uses of Project Funds

Uses	Cost Estimate	INFRA Funds (60%)	Other Federal (0%)	State Funds (40%)
Engineering, Environmental, Design	\$5,263,422	<i>Pre-incurred (not part of grant application)</i>		
ROW and Utility Relocation	\$100,000	<i>Pre-incurred (not part of grant application)</i>		
Total Pre-Incurred Costs	\$5,363,422	<i>Pre-incurred (not part of grant application)</i>		
Reconstruct Douglas Blvd. Interchange	\$46,000,000	\$27,600,000	\$0	\$18,400,000
Raise Westminster Rd.	\$537,000	\$322,200	\$0	\$214,800
Anderson Rd. & I-240 bridges	\$7,830,000	\$4,698,000	\$0	\$3,132,000
I-40 Widening	\$47,825,000	\$28,695,000	\$0	\$19,130,000
Contingency (4.8%)	\$4,915,435	\$2,949,261	\$0	\$1,966,174
Total Eligible Costs	\$107,107,435	\$64,264,461	\$0	\$42,842,974
Total Project Costs	\$112,470,857			

The \$112.5 million Project cost would place a heavy burden on ODOT in the absence of an INFRA grant. As of the latest Eight Year Construction Work Plan (2020-2027), the remaining cost of this Project would amount to approximately 72% of the yearly budget for ODOT District 4 (which averages \$157 million annually and is responsible for nine counties). Even spread out over two or three years, it would consume, respectively, 33% and 22% of the District's budget. **The Project cannot be easily and efficiently completed without other Federal funding or financial assistance.**

ODOT's Field District 4 (in charge of construction in this region) has set aside a portion of their allotted funding in recognition of the importance of this Project. **ODOT's 40% share is state funding and does not include federal funding sources.** A certification statement from ODOT assuring that the state has the local match funding available

is online at [Oklahoma I-40 INFRA](#), Certifications and Assurances. The cost estimates in **Table 1** are based on 90% engineering and recent experience with similar nearby projects and include a relatively small (<5%) contingency. ODOT has budgeted funds to cover this amount. **Ongoing operating and maintenance costs will be paid for by ODOT.** The total anticipated costs of maintenance, rehabilitation, and repairs that will be required for the pavement and bridges within the Project is \$47 million over the next 30 years. See Section 5.4 for a more detailed description of the lifecycle costs. These costs are included in the BCA but are not part of this request.

5. MERIT CRITERIA

5.1. Criterion #1: Support for National or Regional Economic Vitality

This section demonstrates the Project's benefits to national and regional economic vitality. These benefits flow from the Project's **increased capacity, reducing congestion and travel time delay, and increasing travel time reliability.** Travel time reliability benefits quality of life and is an important element in business travel and freight movement, especially with demand for efficient "just in time" freight delivery, and truck driver "hours of service" rules. This section also covers the Project's safety benefits, because safety is important to the flow of commerce – the cost of accidents (reflected in higher insurance rates) is a tangible cost of driving. Additionally, accidents are one of the main causes of the lack of travel time reliability for this segment of I-40. State of Good Repair also affects safety and travel time reliability, as frequent repairs cause slowdowns in travel, and poor geometrics contribute to accidents.

5.1.1. Cost Effectiveness (Benefit Cost Analysis)

A formal benefit-cost analysis (BCA) was conducted following the latest USDOT BCA guidance (January 2020). It is important to note that a formal BCA is not a comprehensive measure of a project's total economic impact, as many benefits cannot be readily quantified or occur under conditions of uncertainty. The BCA restricted its analysis to the following quantifiable benefits:

- Reduction in the number of accidents and corresponding social accident costs and travel delay costs;
- Reduction in travel times for autos and trucks; and
- Improvement in state of good repair with reduction in highway maintenance and repair costs.

BCA Assumptions

The analysis was performed for a period beginning in 2019 and ending in 2046. The first year of full benefits is expected to be 2027, so that 20 full years of discounted benefits are considered in the BCA. The monetized benefits and costs are estimated in 2018 dollars with future dollars discounted in compliance with INFRA requirements using a 7 percent real rate.

Results

Table 2 summarizes the cost and the quantifiable benefits of the Project in terms of Present Value. Federal guidance recommends that applicants discount future benefits and costs to present (2018) values using a real discount rate of 7% to represent the opportunity cost of money in the private sector. USDOT guidance also allows for present value analysis using a 3% discount rate as a sensitivity analysis.

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Detailed analysis of costs and benefits, including data sources and methodology descriptions, are available in the BCA Technical Memo on the Application website ([Oklahoma I-40 INFRA](#)). As shown in Table 2, the present value of the Project's cost is \$77.2 million (using the 7% discount rate), and the benefits have an estimated present value of \$108.4 million. The resulting benefit cost ratio and net present value (NPV) are 1.38 and \$31.2 million respectively. With a 3% discount rate, the benefit cost ratio and NPV are 2.26 and \$120.5 million.

Table 2: Benefit Cost Analysis Summary (\$2018)

Project Evaluation Metric	Undiscounted	Present Value at 7% Discount Rate	Present Value at 3% Discount Rate
Total Discounted Benefits	\$377.7	\$108.4	\$213.8
Total O&M Costs	\$6.3	\$1.5	\$3.2
Total Discounted Costs	\$108.3	\$77.2	\$93.3
Net Present Value	\$269.4	\$31.2	\$120.5
Benefit / Cost Ratio	3.43	1.38	2.26
Internal Rate of Return (%)		10.5%	

Accident cost savings account for the largest share of benefits at \$49.5 million (or 46 percent of total) followed by travel time savings at \$35.9 million (33 percent of total) and agency cost savings at \$11.9 million (11 percent of total).

BENEFIT COST ANALYSIS RESULTS

1.38 Benefit / Cost Ratio

at the **7%** Discount Rate

2.26 Benefit / Cost Ratio

at the **3%** Discount Rate

Safety Benefits

Increasing roadway safety is an important priority for ODOT. The Project introduces several roadway enhancements that increase safety and mobility. Collisions along this stretch of I-40 (outside of the interchanges) occur at a high rate, with over 1,200 collisions over the past ten years, an average of more than two collisions each week (**Table 3**). The overall collision rate on this segment of I-40 is **53% higher than the statewide average**, and the collisions involving injuries and/or fatalities are 19% higher.

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Table 3: Collision Statistics 2009-2018

Collisions I-40, Douglas Boulevard to I-240 (including interchanges)	
Fatal collisions	8
Total fatalities (persons)	8
Serious injury collisions	48
Other injury collisions (incl. possible injury)	301
Property damage only collisions	874
Total Collisions	1,231

Source: ODOT Collision Analysis & Safety

Estimated Safety Benefit of the Project (Discounted 7%):

\$49.5M

Evidence points to high traffic volumes and congestion as a factor in the high collision rate along the mainline lanes. Relieving peak hour congestion by increasing capacity will reduce many of these accidents. The crash mitigation factor (CMF) for adding an additional 12-foot lane suggests a 74% drop in the accident rate. Accidents at the interchanges will also be reduced by adding acceleration and deceleration lanes. The CMFs used for the Project are discussed in the Benefit-Cost Analysis Tech Memo.

Safety benefit impacts were estimated based on the number of accidents, by type, expected under No-Build versus the Build scenario and monetized using the social values of accident cost by type recommended by USDOT. Results suggest a **\$49.5 million dollar safety benefit** (discounted at 7%) over the life of the Project.

Travel Time Savings

Travel time savings and improved reliability will result from the widening of I-40. As explained above, increased capacity has two benefits: reduced peak hour congestion, and additional room for traffic when lane-blocking accidents occur. Travel time savings are a significant benefit to this Project, with travel speeds projected to increase by close to 38 miles per hour above No Build speeds on westbound in the AM peak. Interchange delay is also projected to improve, with future annual vehicle delay decreased 227 vehicle hours in the AM and 117 vehicle hours in the PM over the No Build. Results suggest a benefit of **\$35.9 million in travel time savings** (discounted at 7%) over the life of the Project.

Estimated Travel Time Savings Benefit of the Project (Discounted 7%):

\$27.8M Mainline I-40

\$8.1M Interchanges

The Project responds to the continuing growth in commuter traffic and freight movement by expanding the facility from four to six lanes. Traffic analysis shows that with one lane closed on the existing four-lane I-40, mainline speeds

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between Anderson Road and Douglas Boulevard are near zero (break down conditions) when traffic exceeds 3,250 vehicles per hour. Current peak hour traffic is close to that level (3,035 in the morning rush, and 3,140 in the evening peak). By 2045, traffic will exceed 5,000 vehicles in the highest volume peak hours.

Under the six-lane build condition, an accident that closes a lane of traffic will leave two lanes open, and traffic can still be able to travel over 40 mph even during the highest peak hour (projected to be 5,280 vehicles per hour in the PM Peak eastbound in 2045).

Agency Cost Savings

The existing I-40 pavement and Project structures are now well beyond their design life span. Without replacement they will require extensive maintenance and repairs to ensure that they are in a condition suitable for operations. If the Project is built, these expenditures will be eliminated, resulting in savings to ODOT. (Note that operations and maintenances costs of the Project under Build are captured separately under project costs). Based on the lifecycle costs of the Build and No Build scenarios, the Project is expected to realize over **\$11.9 million in maintenance savings** (discounted at 7%) over the Project life.

Estimated Maintenance Savings of the Project (Discounted 7%):

\$11.9M

Environmental Sustainability

The Project will contribute to environmental sustainability by reducing congestion within the project vicinity and improving access. Improved travel times, reliability, and safety within the corridor will contribute to a greater overall quality of life for users.

Summary of BCA Analysis

Table 4 provides the monetary estimates of the quantified and monetized benefits of this project. Note that project benefits include the residual value structures renewed or replaced under this Project.⁴ The table shows that **total project benefits amount to \$108.4 million** in 2018 dollars discounted at 7%. Accident cost savings account for the largest share of benefits at \$49.5 million (or 46 percent of total) followed by travel time savings at \$35.9 million (\$27.8 on I-40 mainline, \$8.1 on interchanges, or 33 percent of total) and agency cost savings at \$11.9 million (11 percent of total).

⁴ Residual value was calculated with respect to structures (i.e. excluding expenditures on engineering and design), assuming a design life of 75 years and a straight line depreciation.



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Table 4: Summary of Project Benefits; Millions of 2018 Dollars

Benefit Categories	Over Project Lifecycle		
	Undiscounted	Present Value at 7% Discount Rate	Present Value at 3% Discount Rate
Reduction in Accident Costs	\$154.6	\$49.5	\$92.3
Travel Time Savings - Mainline	\$95.3	\$27.8	\$54.6
Travel Time Savings - Interchanges	\$28.4	\$8.1	\$16.1
Residual Value	\$68.7	\$11.1	\$30.9
Agency Cost Savings	\$30.8	\$11.9	\$19.9
Total Benefits	\$377.7	\$108.4	\$213.8

5.1.2. Other Benefits Supporting Economic Vitality

There are other benefits to the project that are not as easily quantified as those presented in the BCA, including improvements to the regional and national freight networks, congestion relief and travel time reliability, job creation, and secondary accidents.

Freight Mobility

Figure 8 illustrates that I-40, and the project corridor in particular, play a key role in the freight network of Oklahoma and the south-central U.S. I-40 is part of the national Primary Highway Freight System, and improvements to this corridor will reduce congestion on this key freight corridor – which enhances access to markets and contributes toward the region’s and nation’s economic competitiveness. Oklahoma freight flows are primarily through the state; and thus improvements on this segment of Interstate will benefit shipping and goods movement effort nationwide.

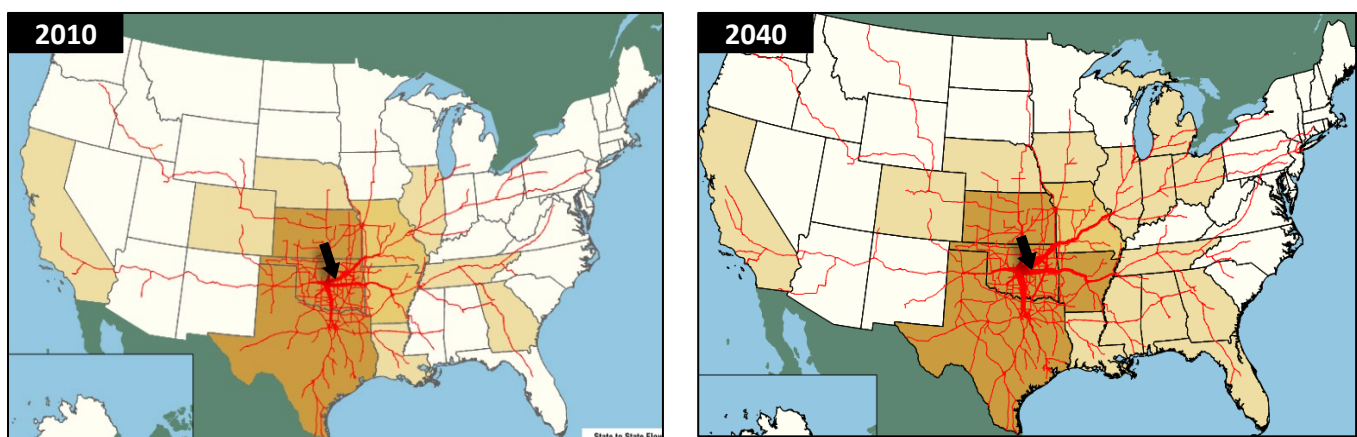


Figure 8: Major Truck Flows To, From, and Within Oklahoma

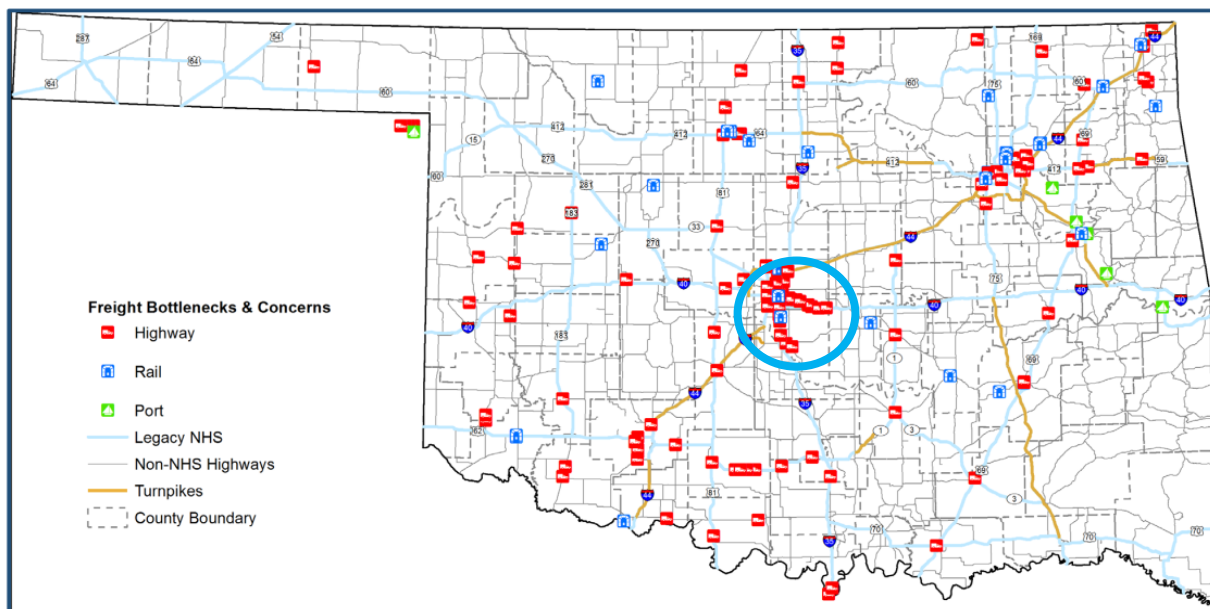
The economic outcomes generated by the different project components improve the connectivity between home and workplaces and between production and consumption sites. At the same time, they increase the competitiveness of the United States by increasing efficiency in the movement of goods along the I-40 corridor. Travel time savings will be realized by passenger vehicles, which will be able to take advantage of higher average speeds compared to those

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experienced in the no-build scenario, in which the project does not occur. Truck drivers will also benefit and save time as well. It is estimated that 13 percent of traffic on I-40 in the study corridor is composed of trucks.

With only two lanes in each direction today, the Project section of I-40 backs up for hours when an accident blocks a lane during peak hours, which occurs approximately every three weeks. This greatly reduces I-40's reliability east of Oklahoma City, as indicated by the map of freight stakeholders' top concerns (**Figure 9**). The Project's three lanes in each direction will double the current capacity when an accident blocks a lane (two lanes of moving traffic compared to just one). Analysis of traffic volumes for 2045 indicate that the additional lane should greatly diminish accident-related delay.



Source: OK State Freight Plan *Highway Bottleneck Analysis Technical Report, 2017*

Figure 9: Stakeholder-Identified Freight Concerns, showing the Project Area

There is also potential for this segment of I-40 to become a bottleneck between the wider sections in downtown Oklahoma City to the west, and the sections to the east that are currently being widened to six lanes in anticipation of the coming Kickapoo Turnpike project. The Project would widen I-40 to six lanes to tie in with the six-lane section to the east, including the recently completed I-40 & Choctaw Road interchange.

Congestion and Reliability Impacts

In addition to the monetized travel time savings, the higher speeds and increased reliability along the corridor provided by the project imply that trucks spend less time on the road and can reach their destinations faster. The delivery times will lead to inventory cost savings, which are important to improve connectivity between production and consumption sites and to increase the fluidity of the movement of goods. Inventory cost savings were not monetized as part of the BCA. A commonly used measure of trip time reliability is the buffer index, which is simply the additional time required to make the trip compared with uncongested conditions. Given that crashes and incidents can add to these times, these “buffers” indicate a current high degree of future trip unreliability.

Employment Benefits

In the long-term, this Project enhances access to existing regional jobs and helps secure future jobs in the shipping industry nationwide, as well as improving the competitiveness of the many industries that rely on trucking, both in-state and outside of Oklahoma. In the short term (over the 2023-2026 construction period), it gives residents an opportunity to participate in the three-year construction Project. At the peak in 2024, over 600 people are estimated to be working on the Project.

State of Good Repair and Geometrics

The project will replace five bridges all of which are over 50 years old. The bridge on Douglas Blvd. over I-40 is at risk of becoming structurally deficient, while the remaining four bridges are functionally obsolete. Replacing these bridges will not only address these issues but will provide renewed infrastructure with improved geometrics that will benefit traffic operations, safety, and maintenance for decades to come.

The substandard geometry and inadequate capacity on I-40 in the Project area cause delays and accidents. Problems include a paved inside shoulder of four feet (the standard is ten feet). Ramps at the Douglas Boulevard Interchange are tightly curved, with 25 mph speed limits. The weaving section is short as well. Acceleration and deceleration lanes at the Anderson Interchange are too short.

The Project will pave ten-foot median shoulders and lengthen the acceleration and deceleration lanes (**Figure 10**). The new SPUI interchange design eliminates loop ramps and tight curves at Douglas Boulevard, and removes the weaving section where traffic entering I-40 must cross traffic exiting the highway. The SPUI separates these two movements.

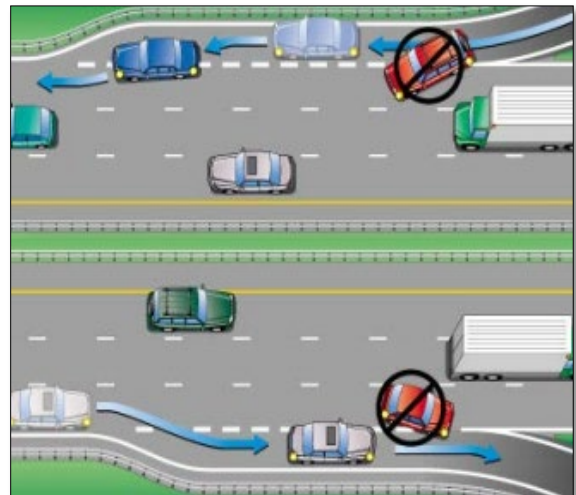


Figure 10: Acceleration and Deceleration Lanes

5.2. Criterion #2: Leveraging of Federal Funding

As shown in Section 4, this Project will be completed using 40% state funds and 60% federal INFRA funds. ODOT has provided a Certification Statement (posted on [Oklahoma I-40 INFRA](#)) that the Department has the funds available to provide the promised local match. No other federal funding will be used. This amounts to **double the minimum required non-federal match for this Project**. As described in Section 4.2, the cost of this project is almost three-quarters of the annual budget for the nine-county ODOT District in which it is located. The Project cannot be easily and efficiently completed without other Federal funding or financial assistance.

While not specifically part of this Project, the Kickapoo Turnpike is a multi-million-dollar investment in adjacent transportation infrastructure that is being built without federal funds. The I-40/Douglas Blvd Project will enhance the performance of the Kickapoo Turnpike by providing needed additional capacity to accommodate the additional traffic demand. The I-40/Douglas Project will leverage the investment made in the Kickapoo Turnpike through improvements to local and regional mobility.

5.3. Criterion #3: Potential for Innovation

5.3.1. Innovation Area #1: Technology

Importantly, this Project is one of the nation’s newly-designated **Alternative Fuel Corridors** (“AFC”). In 2016 the FHWA established the first pieces in a national network of alternative fuel corridors, along which drivers are assured a consistent supply of stations providing alternative fuel. Thanks to years of proactive efforts by Oklahoma’s state and local governments, the entire statewide length of I-40 (along with I-35 and I-44) is now recognized by FHWA as a compressed natural gas (“CNG”) corridor. Oklahoma recently achieved its goal of having at least one CNG fueling station for every 100 miles of Interstate. There are now 20 CNG stations along the 331 miles of I-40 in Oklahoma.



I-40 is also planned to be a **future Electric Vehicle corridor**. I-40 has eight electric charging stations today, including two existing Tesla “Superchargers.” Most of these facilities are near Oklahoma City, and more are planned elsewhere along I-40. The Project segment is close to both an electrical charging station and a CNG fueling station; both located east of the Project.

The Project corridor already carries fiber optic cable for broadband access and ITS infrastructure in the form of dynamic message boards. The potential for additional technological innovation lies in the use of existing infrastructure. The existing dynamic message boards will be available for use during construction to provide motorists **real-time information regarding lane and/or bridge closures and congestion** (see **Figure 11**). Use of these systems as well as variable speed limit systems can increase driver compliance with displayed speed limits and improve work zone safety. Dynamic message signs are also used to **warn travelers of adverse weather conditions**.

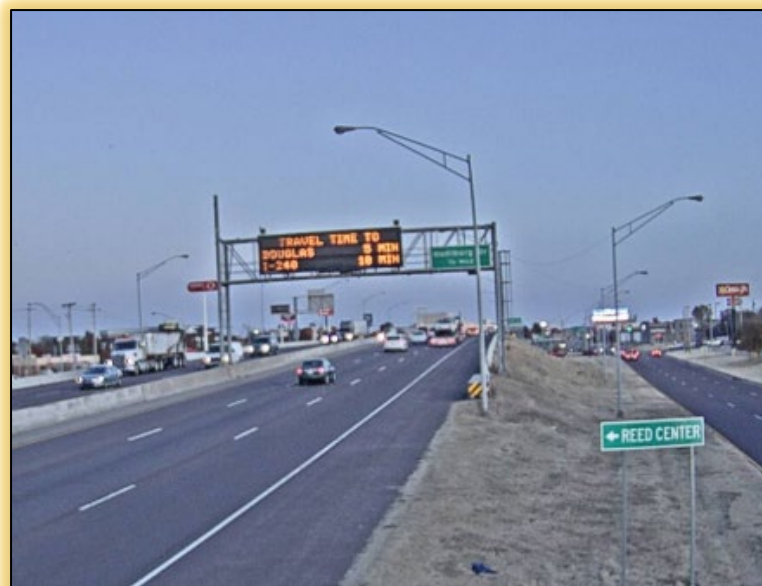


Figure 11: Dynamic Messaging Sign on Eastbound I-40

5.3.2. Innovation Area #2: Project Delivery

This Project will raise the slab span bridge over I-40 carrying Westminster Road. This type of bridge rehabilitation has not been done before in Oklahoma. Raising the bridge will accommodate six lanes of traffic and maintain appropriate vertical clearance, without having to build an entirely new structure. The slab span bridges are in good condition and structurally sound and do not otherwise need to be replaced. The benefits of this innovation are the **cost and schedule savings of preserving much of the existing bridge, while improving the vertical clearance**. Impacts

to the traveling public are greatly reduced over a traditional bridge replacement. See [Oklahoma I-40 INFRA](#) for a video of this innovative technique. ODOT also routinely encourages its contractors to come up with innovative ways to build projects that save time and money.

ODOT also uses **agency liaisons** to assist with environmental authorization and permitting. ODOT has designated representatives at the US Fish and Wildlife Service and at the US Army Corps of Engineers that process only ODOT projects. ODOT can direct these liaisons to prioritize projects as needed. ODOT also utilizes a Programmatic Agreement with FHWA and the Oklahoma State Historic Preservation Officer to process Section 106 reviews on behalf of FHWA for certain projects. ODOT will complete the Section 404 permitting for the Project using its USACE liaison.

5.3.3. Innovation Area #3: Financing

ODOT has a practice described in State statute (Oklahoma Statutes, [Title 69, O.S. 2016 § 1001-1004](#)) from the **sale of excess or unused publicly owned land or assets** through authorization by the State Transportation Commission and managed through ODOT's Facilities Management Division. By statute the recycled funds from the sale of land or equipment is deposited in the State Highway Construction and Maintenance Fund. These funds remain dedicated to being used toward design, permitting, construction or maintenance of authorized and programmed highway and bridge projects, and cannot be reallocated by the State legislature. Should the INFRA grant be awarded these recycled funds would be available for use as a portion of the State's matching funds.

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 million annually. A combined 95.5% of these revenues are credited to the Rebuilding Oklahoma Access and Driver Safety (ROADS) Fund created under Title 69, Section 1521, Oklahoma Statutes (Oklahoma Tax Commission, 2018).

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 revenues 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. (Oklahoma Tax Commission, 2018).

5.4. Criterion #4: Performance and Accountability

ODOT uses incentives in contracts to achieve project milestones and will use these on the Project to reduce construction time and stay within Project timelines.

Life Cycle Costs

INFRA funding is only sought for Project construction. ODOT is responsible for operations (mowing, pot-hole patching, etc.), as well as for future maintenance and rehabilitation of the project. As shown in **Table 5**, if the Project is not

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implemented, the costs of maintenance, rehabilitation, and repair that will be required are estimated at \$32 million over the next 20 years. This is compared to just over \$113.6 million for the Project, including capital and maintenance costs. ODOT considers it a priority to maintain a state of good repair on existing assets before funding other activities and includes maintenance in all budgets. ODOT has an approved **Asset Preservation Plan** that dedicates funding to improving surface conditions, rehabilitating bridges, and providing access improvements. This Plan is in addition to budgeted routine maintenance funds.

Table 5: Lifecycle Costs, No-Build and Build Alternatives

Year	No-Build				BUILD		
	Maint & Rehab Costs for I-40	Bridge Rehab Costs	Bridge Damage repair	TOTAL	Capital Costs	Maintenance	TOTAL
2020							
2021							
2022							
2023					20,593,359		\$20,593,359
2024					27,696,359		\$27,696,359
2025					35,838,859		\$35,838,859
2026	5,500,000	2,000,000	100,000	7,600,000	22,978,859	1,000,000	\$23,978,859
2030	5,500,000	1,000,000	100,000	6,600,000			
2035	5,500,000	1,000,000	100,000	6,600,000			
2040	5,500,000		100,000	5,600,000			
2045	5,500,000		100,000	5,600,000		5,500,000	\$5,500,000
TOTAL	\$27,500,000.00	\$4,000,000.00	\$500,000.00	\$32,000,000.00	\$107,107,436.00	\$6,500,000.00	\$113,607,436.00

Accountability: ODOT is willing to agree to meet the specific construction start and completion dates of May 18, 2023 and June 10, 2026 as described in this application. Completion is defined as open to traffic. ODOT understands that if these dates are not met the Project will be subject to forfeit or return of up to 10% of the awarded funds.

**ODOT will be Accountable for the
Construction Schedule of the I-40/Douglas
Interchange Project**

6. PROJECT READINESS

6.1. Technical Feasibility

This project has been in development since 2015 and has been extensively studied. Design plans are now 90% complete, and all right-of-way needed for the project has been acquired. The cost estimate reflects this level of certainty, with a contingency of less than 5%. The detailed statement of work is as follows:

- Widen 5.5 miles of I-40 from four lanes to six lanes between Industrial Boulevard and the I-240 interchange. The existing pavement will be replaced with new asphalt, and inside shoulders will be widened to 10-feet per current standards. Median barrier will be used to separate the east and westbound lanes.
- Reconstruct Douglas Boulevard Interchange using a single point urban interchange (SPUI) design (see **Figure 12**) that maintains a similar footprint, but with enhanced functionality and improved safety. This



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includes removal of the existing out-of-service bridge at Engle Road, and removal of the east side ramps at Industrial Blvd.

- Raises the existing bridge at Westminster Road approximately one foot to correct the substandard vertical clearance. This innovative technique will allow for widening of I-40 under the existing bridge.
- Lowers the profile of I-40 under Post Road to achieve sufficient vertical clearance
- Reconstructs the I-40 bridges over Anderson Road with a single 117-foot-wide prestressed concrete beam bridge to accommodate the widened interstate and to increase vertical clearance.
- Adds acceleration and deceleration lanes in the vicinity of Anderson Road Interchange.
- Widens the bridges on mainline I-40 over the westbound I-240 ramps at the I-40/I-240 Interchange with a single 117-foot-wide prestressed concrete beam bridge to accommodate six through-lanes on I-40.

Detailed plans for the Project are available at [Oklahoma I-40 INFRA](#), along with the detailed budget and schedule. Contingency and basis of cost are discussed in Section 4.



Figure 12: ODOT's recently completed SPUI interchange at I-35 & Main Street in Norman, OK

6.2. Schedule

With preliminary engineering and environmental work 90% complete, **all pre-construction activities, including final PS&E plans and utility relocations, will be completed by April 2022.** All needed right-of-way has been acquired. ODOT's timeline assumes an award for the I-40 Douglas Project to be **obligated in Fall of 2022**, well before the September 30, 2023 deadline. The Project is scheduled to **begin construction in Spring of 2023**, within 8 months of INFRA obligation, with completion of all construction by June 2026. The schedule chart shows major milestones;



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a detailed Project schedule can be found on the application website, [Oklahoma I-40 INFRA](#), along with 90% Project plans and draft environmental documents. A summary of that schedule is shown in **Figure 13**.

Risks to this schedule are primarily funding related. Should the Oklahoma legislature severely cut funding to the agency in the next two to three years, this could impact ODOT’s ability to meet the required 40% match for the INFRA grant. However, ODOT does not anticipate budget cuts of this magnitude. Historically, ODOT’s budget has fared relatively well in years of economic downturn statewide.

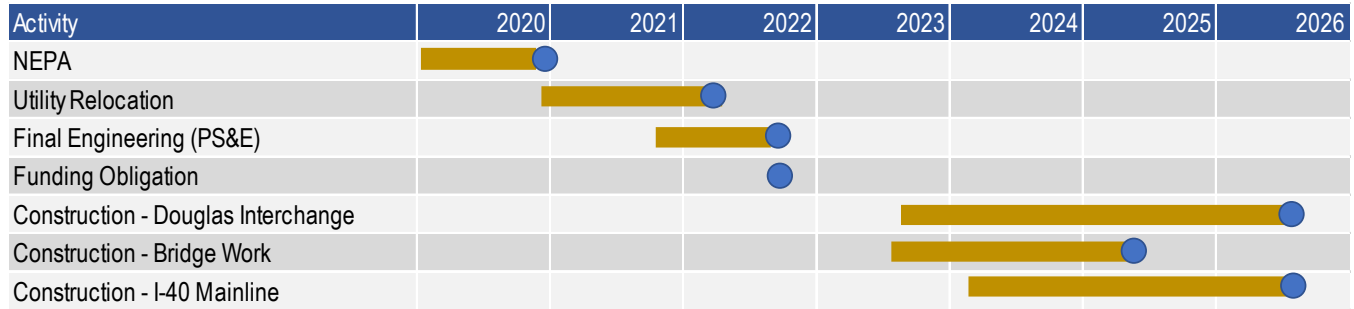


Figure 13: Project Schedule

6.3. Project Approvals and Coordination

6.3.1. Environmental Permits and Reviews

NEPA Approval

For NEPA purposes, the Project consists of two distinct components, each with a separate NEPA document: the Douglas Boulevard Interchange reconstruction, and the widening of I-40. The DCE for the I-40 widening was approved in January of 2018. The DCE for the Douglas Interchange is complete and awaiting FHWA approval of the Access Justification Report (AJR) to be completed (see below). That approval is expected by Summer of 2020.

NEPA is complete for the I-40 Widening Project and is in FHWA review for the Douglas Blvd. Interchange

Reviews, Approvals, and Permits from Other Agencies

The project will require a Section 404 permit for the crossings of Hog Creek and three other tributaries. It is anticipated that Nationwide Permit 14 will apply, which ODOT routinely uses for its bridge/culvert replacements. ODOT will obtain the appropriate permit prior to construction, with the assistance of the ODOT-USACE liaison.

Environmental Studies

Environmental studies for the project have been completed and approved by the relevant agencies. These studies do not indicate significant environmental impacts as a result of the Project. The studies can be found on the Project website at [Oklahoma I-40 INFRA](#).

Discussions with FHWA

ODOT staff presented the Project concept to the Oklahoma Division of FHWA in 2016. Communication and coordination is ongoing. The required AJR for the I-40/Douglas Interchange is pending FHWA approval and is expected to be completed in summer of 2020.

Public Engagement

ODOT began the stakeholder engagement process in 2015. The initial public meeting for the Interchange took place on January 17, 2017, and on February 21, 2017 for the roadway element. The public comments on the Interchange component generally expressed support for a particular alternative, or for the Project as a whole. Public input at the meeting for the roadway part of the Project expressed concern for safety, and requests to add a lane to the Anderson Boulevard on-ramps, but no controversy was noted. As the Project progresses into construction, ODOT will be proactive in keeping the public informed of road closures or other changes in traffic patterns.

6.3.2. State and Local Planning Documents

The Project is included in the current ACOG Metropolitan Transportation Plan, *Encompass 2040*. The Project is also consistent with the 2015-2040 Oklahoma Long Range Transportation Plan (LRTP). The LRTP, adopted in August 2015, is a policy document. The Project addresses two policies in particular: **Highway/Bridge Policy #2**: Preserve and improve the condition of highways and bridges, and **Highway/Bridge Policy #5**: Provide for a safe, efficient, and effective National Highway System to improve commercial motor vehicle mobility and connectivity. For Policy #2, the Project addresses vertical clearance issues at Post, Westminster and Anderson Roads. Policy #5 is addressed by improved commercial vehicle mobility and connectivity, and reduced collisions.

The project addresses TWO ODOT planning policies:

**Highway
Bridge
Policy #2**

Preserve and improve the condition of highways and bridges

**Highway
Bridge
Policy #5**

Provide for a safe, efficient, and effective National Highway System to improve commercial motor vehicle mobility and connectivity

The Project is included in the **Oklahoma Freight Transportation Plan**, adopted in 2017. The Project complies with the Plan’s goals, which are consistent with national freight goals, including improving reliability, congestion and bottleneck reduction, safety, state of good repair, ensuring the competitive performance of the state’s freight system, and promoting competitive access to domestic and international markets for its industries. I-40 is second only to I-35 in the volume of truck traffic it carries in the state.

6.3.3. State and Local Approvals

The support for this Project is indicated by the wide range of letters available on the Application website (see Letters of Support at [Oklahoma I-40 INFRA](#)). The Greater Oklahoma City Chamber of Commerce particularly notes the vital

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importance of safety, mobility, and access to Tinker and the surrounding aerospace businesses. The corridor is of daily importance to employment, commerce, education, medical care, and safe travel. Any required state and local approvals are expected to be quickly and easily obtained. ACOG supports the project and will add the Project into the TIP upon notice of award. The Project is also supported by the Oklahoma Turnpike Authority, Tinker AFB, the Oklahoma Trucking Association, and the City of Midwest City.

6.4. Risks and Mitigation Strategies

Much of the risk of this project is mitigated by ODOT's extensive experience completing projects of similar scope on time, on budget, and without incident. Specifically, ODOT has:

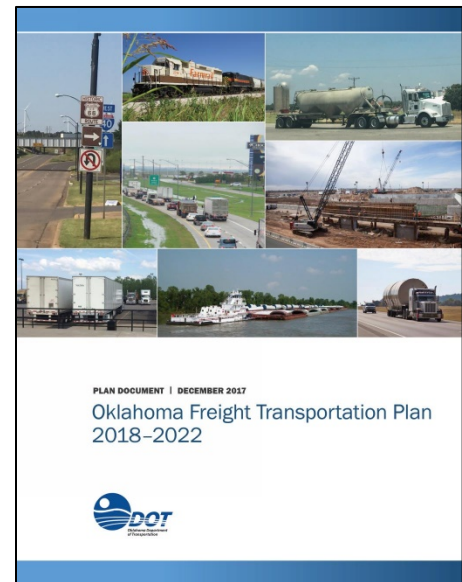
- Awarded 18 similar interchange projects with a construction total of \$188.1 million statewide
- Widened portions of I-40 from four to six lanes in Oklahoma and Canadian counties for 12 miles
- Recently successfully completed construction on the \$71 million I-40/Choctaw Road Interchange project just east of the Douglas Blvd. project.
- Completed the \$720 million I-40 Crosstown Relocation which increased capacity of I-40 from six lanes to ten lanes through the heart of Oklahoma City

Risks to environmental approvals and right-of-way acquisition are essentially zero since these steps are all but complete. Discussions with FHWA have assured ODOT that the required AJR and NEPA documents will be approved in the near future. ODOT has committed to matching 40% of the project costs with state funds, see Certifications and Assurances at [Oklahoma I-40 INFRA](#). See Section 6.2 above for a discussion of the risks to ODOT's matching funds. To mitigate construction schedule risks, ODOT uses contract incentives for project milestones, and will use these on the I-40 Douglas Project to reduce construction time and stay within Project timelines.

7. LARGE PROJECT REQUIREMENTS

Information regarding the INFRA Large Project Requirements is summarized in Table 6. The I-40 Douglas Project supports economic vitality and national defense. President Eisenhower championed the formation of the Interstate Highway System to provide critical ground transport routes for military supplies and troop deployments in case of national necessity. The I-40 Douglas Project is needed to improve safety and reduce delay on a facility which will continue to experience traffic growth arising from local population and employment growth and increases in local and long-distance freight movement. I-40 also continues to serve national defense by providing access to Tinker AFB. It is also critical for maintaining a State of Good Repair on a significant link in the national highway network.

While the cost of this Project is substantial, ODOT has moved ahead with design plans, environmental approvals, and public engagement so that it can be implemented as soon as funding becomes available. Waiting to implement this Project will only cause further deterioration in service, reliability and safety on this critical piece of America's



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National Highway Freight Network, National Highway System, and now the emerging network of Alternative Fuel Corridors. Time is also critical because of two connecting projects that are currently underway; a widening of I-40 immediately east of the Project, and the Turnpike extension.

Table 6: Large Project Requirements

Does the project generate national or regional economic, mobility, safety benefits	Yes, see Sections 1.2, 2.1, & 5.1
Is the project cost effective?	Yes, see Section 5.1.1 on BCA
Does the project contribute to one or more of the Goals listed under 23 USC 150? <ul style="list-style-type: none"> • Safety • Infrastructure condition • Congestion reduction • System reliability • Freight movement and economic vitality • Environmental sustainability • Reduced project delivery delays 	Yes, including: <ul style="list-style-type: none"> • 1.2 & 5.1.1 • 1.2 & 5.1.2 • 1.2, 5.1.1, & 5.1.2 • 1.2, 5.1.1 & 5.1.2 • 2.1, 5.1.2 • 5.1.1 • 5.3.2 & 5.4
Is the project based on the results of preliminary engineering?	Yes, Plans are 90% complete. (Plans are on website)
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, see Sections 4 & 5.4
Are contingency amounts available to cover unanticipated cost increases?	Yes, see Section 4
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, see Sections 4 & 5.2
Is the project reasonably expected to begin construction not later than 18 months after the date of the obligation of funds for the project?	Yes, see Section 6, especially Section 6.2