



OKLAHOMA
Transportation



CROSSROADS OF AMERICA: BRIDGES ON I-40 OVER I-44 AND PORTLAND

BRIDGE TEMPLATE

BRIDGE INVESTMENT PROGRAM -
BRIDGE GRANT APPLICATION

September 9, 2022



Project Template

Basic Project Information

Project Name	Crossroads of America: Bridges on I-40 over I-44 and Portland
--------------	---

ELIGIBILITY CRITERIA	
Project Description	<p>I-40 in Oklahoma City was constructed in the mid-1960s and since then it has served as a vital local, regional, and national highway connecting our east and west coasts. Since I-40 opened to traffic, Oklahoma Department of Transportation (ODOT) has spent over a billion dollars preserving, maintaining, and expanding the roadway and bridges. However, there are four I-40 bridges in downtown Oklahoma City that have reached the end of their design life, and either the deck, substructure, or superstructure is in Fair condition and each bridge is at risk to fall into Poor condition in the next two to three years.</p> <p>After the completion of the I-40 Crosstown Expressway in 2015, ODOT expressed the goal to widen the existing I-40 corridor and improve the bridge structures within the interchange extents, with the primary focus on the I-40 bridges over I-44 and Portland Avenue. The proposed improvements include widening I-40 roadway and bridges to a minimum of three travel lanes. The I-40 Crosstown Expressway (east of the I-40/I-44 interchange) carries five travel lanes and proposed I-40 improvements west of the I-40/I-44 interchange are being designed to carry four travel lanes. Adding capacity to the bridges would allow for driver continuity by providing lane balance through the I-40/I-44 and I-40/Portland Avenue interchanges and eliminate a critical bottleneck. Currently, the I-40 bridges over I-44 carry two travel lanes, which leads to daily congestion and safety concerns.</p> <p>ODOT is requesting \$41,760,000 in BIP Bridge Grant funds to replace and widen the two I-40 bridges over I-44; replace and widen the two I-40 bridges over Portland Avenue; rehabilitate two I-40 bridge culverts; rehabilitate the eastbound-to-northbound I-40 ramp bridge over the I-40/I-44 interchange and rehabilitate the eastbound-to-southbound I-40 ramp bridge over the I-40/I-44 interchange. <i>The Crossroads of America: Bridges on I-40 over I-44 and Portland</i> (The Project) would replace four bridges, rehabilitate two bridge ramps, rehabilitate two bridge culverts, provide lane balance across I-40 through the I-44 and Portland Avenue interchanges, include current design standard shoulder widths to</p>

	allow vehicles to pull off the roadway safely, and improve vertical clearances of the bridge structures.
BIP Request Amount	Exact amount in year-of-expenditure dollars: <u>\$41,760,000</u>
Total Project Cost	Estimate in year-of-expenditure dollars: <u>\$88,274,953</u>
Who is the Project Sponsor?	State of Oklahoma
Maintenance Commitment	Oklahoma Department of Transportation (ODOT) has recently updated its Transportation Asset Management Plan (TAMP). The TAMP establishes performance targets, performs asset condition surveys, and identifies investment strategies based on life cycle planning. All interstate bridges in Oklahoma are addressed and maintained in accordance with those published and established maintenance guidelines.
Bike and Pedestrian Accommodation, required by 23 U.S.C. 217(e)	Bicycles and pedestrians are not allowed on I-40. However, The Project location is adjacent to 13 miles of paved trails along both sides of the Oklahoma River and the trails and water activities provide popular outdoor recreation in the capital city. The Oklahoma River accommodates activities like kayaking, canoeing, rowing, and dragon boating, and several world-class facilities house impressive fitness and training areas. This project will reduce congestion and will provide opportunities for local residents to access the trails more conveniently.

Additional Project Information	
State(s) in which project is located	Oklahoma
Does the project serve an urban or rural community?	Urban: Oklahoma City
List all Project Co-Applicants	Not Applicable
Identify the Lead Applicant	Oklahoma Department of Transportation
Was an application for USDOT discretionary grant funding for this project previously submitted?	No
Is the project located (entirely or partially) in Federal or USDOT designated areas?	Historically Disadvantaged Communities: Entire project is in a HDC, Census Tract 1070.02. Contiguous to this Census tract there are seven other Census tracts (1069.13, 1056, 1057, 1041, 1043, 1044, and 1035) that are

	<p>Historically Disadvantaged Communities. See page 5 in the Supplemental Project Narrative.</p> <p>Areas of Persistent Poverty: No</p> <p>Opportunity Zones: Yes, there are two Opportunity Zones (40109106912, 40109106913) northeast of the Project area and east of the Project area there are 11 opportunities zones in downtown Oklahoma City. See page 5 in the Supplemental Project Narrative.</p> <p>Empowerment Zones: Yes, zones are located at the eastern project terminus and just south of the I-40 and I-44 interchange. See page 6 in the Supplemental Project Narrative.</p> <p>Promise Zones: No</p> <p>Choice Neighborhood: No</p>
--	---

National Bridge Inventory Data

There are a total of eight bridges included in this BIP Bridge grant application. The following table provides the requested National Bridge Inventory (NBI) Data for the four existing bridges on I-40 that will be replaced or rehabilitated. Structure 16396 (I-40 EB/WB over unnamed stream) is a culvert and rehabilitation includes a box extension and new end section. Structure 16660 (I-40 EB/WB over unnamed stream) is a culvert and the rehabilitation includes replacing both end sections. Bridges 16760 (EB I-40 over Portland) and 17045 (I-40 EB over I-44) will be replaced. The other four bridge NBI information begins on page 7.

Identification				
Item 1 – State Code & Name	Oklahoma	Oklahoma	Oklahoma	Oklahoma
Item 8 – Structure Number	16396	16660	16760	17045
Item 5A – Record Type	Route on Structure	Route on Structure	Route on Structure	Route on Structure
Item 3 – County Code & Name	Oklahoma	Oklahoma	Oklahoma	Oklahoma
Item 6 – Feature Intersected	Creek	Creek	FAU 9281 (PORTLAND) UND	I-44 UNDER

Item 7 – Facility Carried	I-40	I-40	I-40 EB	I-40 EB
Item 16 - Latitude	35° 27' 35.61"	35° 27' 36.51"	35° 27' 35.69"	35° 27' 35.89"
Item 17 – Longitude	097° 35' 33.60"	097° 34' 15.42"	097° 35' 00.93"	097° 34' 39.74"
Classification				
Item 112 – NBIS Bridge Length	Long Enough	Long Enough	Long Enough	Long Enough
Item 104 – Highway System of Inventory	On the NHS	On the NHS	On the NHS	On the NHS
Item 26 – Functional Classification	11 Urban Interstate	11 Urban Interstate	11 Urban Interstate	11 Urban Interstate
Item 110 – Designated National Network	On Interstate STRAHNE	On Interstate STRAHNE	On Interstate STRAHNE	On Interstate STRAHNE
Item 21 – Maintenance Responsibility	State	State	State	State
Item 22 – Owner	State	State	State	State
Age and Service				
Item 27 – Year Built	1965	1966	1966	1967
Item 106 – Year Reconstructed	-	-	-	-
Item 42 – Type of Service	Highway/ Waterway	Highway/ Waterway	Highway/ Highway	Highway/ Highway
Item 28A – Lanes on the Structure	9	8	3	2
Item 29 – Average Daily Traffic	98,800	96,200	49,400	49,400
Item 109 – Average Daily Truck Traffic	12%	12%	12%	12%

Item 19 – Bypass, Detour Length	3.0 mi	0.0 mi	0.1 mi	0.1 mi
Structure Type and Material				
Item 43 – Structure Type, Main	Concrete/Culvert	Concrete/Culvert	Conc. Cont./Slab	Steel Cont. Stringer/Girder
Condition				
Item 58 – Deck Condition	N/A (NBI)	N/A (NBI)	6 Satisfactory	5 Fair
Item 59 – Superstructure Condition	N N/A (NBI)	N N/A (NBI)	6 Satisfactory	5 Fair
Item 60 – Substructure Condition	N N/A (NBI)	N N/A (NBI)	5 Fair	6 Satisfactory
Item 61 – Channel and Channel Protection	7 Minor Damage	5 Bank Prot Eroded	N/A (NBI)	N/A (NBI)
Item 62 – Culverts	7 Minor Deterioration	6 Deterioration	N/A (NBI)	N/A (NBI)
Geometric Data				
Item 49 – Structure Length	47.00 ft	24.00 ft	169.99 ft	819.00 ft
Item 50 – Curb of Sidewalk Widths	0.00 ft (L) 0.00 ft (R)	0.00 ft (L) 0.00 ft (R)	0.50 ft (L) 0.50 ft (R)	0.00 ft (L) 0.00 ft (R)
Item 51 – Bridge Roadway Width, curb-to-curb	0.00 ft	0.00 ft	49.00 ft	37.00 ft
Item 52 – Deck Width, out-to-out	0.00 ft	0.00 ft	52.20 ft	40.00 ft
Item 32 – Approach Roadway Width	160.00 ft	184.00 ft	49.00 ft	50.00 ft
Item 47 – Inventory Route,	86.00 ft	55.00 ft	49.00 ft	37.00 ft

Total Horizontal Clearance				
Item 53 – Minimum Vertical Clearance over Bridge Roadway	99.99 ft	99.99 ft	99.99 ft	99.99 ft
Item 54 – Minimum Vertical Underclearance	0.00 ft	0.00 ft	14.83 ft	16.25 ft
Item 55 – Minimum Lateral Underclearance on Right	0.00 ft	0.00 ft	9.40 ft	10.00 ft
Item 56 – Minimum Lateral Underclearance on Left	0.00 ft	0.00 ft	5.80 ft	0.00 ft
Load Rating and Posting				
Item 70 – Bridge Posting	5 At/Above Legal Loads	5 At/Above Legal Loads	5 At/Above Legal Loads	5 At/Above Legal Loads
Item 41 – Structure Open, Posted, or Closed to Traffic	A Open, no restriction	A Open, no restriction	A Open, no restriction	A Open, no restriction
Item 113 – Scour Critical Bridges	5 Stable w/in footing	4 Stable, needs action	N Not Over Waterway	N Not Over Waterway
Appraisal				
Item 113 – Scour Critical Bridges	5 Stable w/in footing	4 Stable, needs action	N Not Over Waterway	N Not Over Waterway
Inspections				
Item 90 – Inspection Date	8/6/2020	11/4/2020	8/6/2020	6/3/2020

The NBI data for the remaining four bridges is in the table below. Bridge 17048 (I-40 WB over I-44) will be replaced, 19061 (I-40 WB over Portland Ave.) will be replaced, 19110 (EB I-40 to NB I-44 ramp bridge) will be rehabilitated, and 19111 (EB I-40 to SB I-44 ramp bridge) will be rehabilitated.

Identification				
Item 1 – State Code & Name	Oklahoma	Oklahoma	Oklahoma	Oklahoma
Item 8 – Structure Number	17048	19061	19110	19111
Item 5A – Record Type	Route On Structure	Route On Structure	Route On Structure	Route On Structure
Item 3 – County Code & Name	Oklahoma	Oklahoma	Oklahoma	Oklahoma
Item 6 – Feature Intersected	I-44 UNDER	FAU 9281 (PORTLAND) UND	I-40 /I-44/RMPS S-W/ N-E	I-44 /I-40/ RAMP E-S&S-W
Item 7 – Facility Carried	I-40 WB	I-40 WB	I-40 W-N RAMP	I-40 RAMP E-S
Item 16 - Latitude	35° 27' 38.00"	35° 27' 37.28"	35° 27' 36.47"	35° 27' 28.88"
Item 17 – Longitude	097° 34' 34.40"	097° 35' 01.00"	097° 34' 42.14"	097° 34' 28.31"
Classification				
Item 112 – NBIS Bridge Length	Long Enough	Long Enough	Long Enough	Long Enough
Item 104 – Highway System of Inventory	On the NHS	On the NHS	Not on NHS	Not on NHS
Item 26 – Functional Classification	11 Urban Interstate	11 Urban Interstate	11 Urban Interstate	11 Urban Interstate
Item 110 – Designated National Network	On Interstate STRAHNE	On Interstate STRAHNE	On Interstate STRAHNE	On Interstate STRAHNE
Item 20 – Toll	On free road	On free road	On free road	On free road
Item 21 – Maintenance Responsibility	State	State	State	State
Item 22 – Owner	State	State	State	State

Age and Service				
Item 27 – Year Built	1967	1966	1975	1975
Item 106 – Year Reconstructed	-	1975	-	-
Item 42 – Type of Service	Highway/ Highway	Highway/ Highway	Highway/ Highway	Highway/ Highway
Item 28A – Lanes on the Structure	2	4	1	1
Item 29 – Average Daily Traffic	56,150	56,150	47,500	47,500
Item 109 – Average Daily Truck Traffic	12%	12%	12%	12%
Item 19 – Bypass, Detour Length	0.1 mi	0.1 mi	2.0 mi	2.0 mi
Structure Type and Material				
Item 43 – Structure Type, Main	Steel Cont. Stringer/Girder	Conc. Cont. Slab	Steel Cont. Stringer/Girder	Steel Cont. Stringer/Girder
Condition				
Item 58 – Deck Condition	5 Fair	5 Fair	5 Fair	5 Fair
Item 59 – Superstructure Condition	5 Fair	6 Satisfactory	7 Good	7 Good
Item 60 – Substructure Condition	5 Fair	5 Fair	5 Fair	5 Fair
Item 61 – Channel and Channel Protection	N/A (NBI)	N/A (NBI)	N/A (NBI)	N/A (NBI)
Item 62 – Culverts	N/A (NBI)	N/A (NBI)	N/A (NBI)	N/A (NBI)
Geometric Data				
Item 49 – Structure Length	994.00 ft	169.00 ft	1,131.00 ft	1,236.91 ft

Item 50 – Curb of Sidewalk Widths	0.00 ft (L) 0.00 ft (R)	0.00 ft (L) 0.50 ft (R)	0.00 ft (L) 0.00 ft (R)	0.00 ft (L) 0.00 ft (R)
Item 51 – Bridge Roadway Width, curb-to-curb	37.00 ft	64.90 ft	25.75 ft	25.75 ft
Item 52 – Deck Width, out-to-out	40.00 ft	68.00 ft	28.70 ft	28.75 ft
Item 32 – Approach Roadway Width	50.00 ft	64.90 ft	28.00 ft	25.75 ft
Item 47 – Inventory Route, Total Horizontal Clearance	37.00 ft	64.90 ft	25.75 ft	25.75 ft
Item 53 – Minimum Vertical Clearance over Bridge Roadway	99.99 ft	99.99 ft	99.99 ft	99.99 ft
Item 54 – Minimum Vertical Underclearance	16.08 ft	14.83 ft	15.92 ft	16.40 ft
Item 55 – Minimum Lateral Underclearance on Right	10.00 ft	9.40 ft	6.40 ft	7.00 ft
Item 56 – Minimum Lateral Underclearance on Left	10.00 ft	5.80 ft	6.00 ft	8.00 ft
Load Rating and Posting				
Item 70 – Bridge Posting	5 At/Above Legal Loads	5 At/Above Legal Loads	5 At/Above Legal Loads	5 At/Above Legal Loads
Item 41 – Structure Open, Posted, or Closed to Traffic	A Open, no restriction	A Open, no restriction	A Open, no restriction	A Open, no restriction
Appraisal				
Item 113 – Scour Critical Bridges	N Not Over Waterway	N Not Over Waterway	N Not Over Waterway	N Not Over Waterway

Inspections				
Item 90 – Inspection Date	6/3/2020	8/6/2020	11/4/2020	11/4/2020

Project Selection Criteria

Criteria #1: State of Good Repair	The State of Good Repair response is included in the supplemental Project Narrative on page 8.
Criteria #2: Safety	The Safety response is included in the supplemental Project Narrative on page 12.
Criteria #3: Mobility and Economic Competitiveness	The Mobility and Economic Competitiveness response is included in the supplemental Project Narrative on page 13.
Criteria #4: Climate Change, Resiliency, and the Environment	The Climate Change, Resiliency, and the Environment response is included in the supplemental Project Narrative on page 16.
Criteria #5: Quality of Life	The Quality of Life response is included in the supplemental Project Narrative on page 17.
Criteria #6: Innovation	The Innovation response is included in the supplemental Project Narrative on page 18.

Project Costs

BIP Request Amount	Exact amount in year-of-expenditure dollars: <u>\$41,760,000</u>
Estimated Total of Other Federal Funding (excluding BIP Request)	Estimate in year-of-expenditure dollars: <u>\$0</u>
Estimated Other Federal Funding (excluding BIP), further detail	List each Federal Program and identify Formula or Discretionary and the amount for each Federal Program, for example: Program: <u>N/A</u> Amount: <u>\$0</u>
Estimated Non-Federal Funding	Identify each source of non-Federal funding and estimated amount, for example: Source: <u>State Funds</u> Amount: <u>\$41,760,000</u>
Future Eligible Project Cost (Sum of BIP request, Other Federal Funds, and	Estimate in year-of-expenditure dollars: <u>\$83,520,000</u>

Non-Federal Funds, above)	
Previously Incurred Project Costs (if applicable)	Estimate in year-of-expenditure dollars: <u>\$4,754,953</u>
Total Project Cost (Sum of "Previously Incurred" and "Future Eligible")	Estimate in year-of-expenditure dollars: <u>\$88,274,953</u>
Will more than one bridge, or bridge bundling, be used to deliver the Project?	Yes or No. If yes, explain the intended benefits of bridge bundling for this set of bridges. <u>There is no bridge bundling for this project. All structures need to be constructed as one project.</u>
If proposed project utilizes bundling, Cost of Unbundled Projects	Estimate in year of expenditure dollars: <u>N/A</u>
Amount of Future Eligible Costs by Project Type	<p>Indicate Improvement Type by Structure Number (Bridge Replacement, Bridge Rehabilitation, Bridge Preservation, Bridge Protection, or Culvert Replacement or Rehabilitation) and amount per bridge (if bundling, include the unbundled cost in brackets[\$__]¹). <u>Bridge cost below are strictly bridge items and does not include earthwork, retaining walls, etc.</u></p> <ol style="list-style-type: none"> 1. Culvert <u>Rehabilitation</u> Str.<u>16396</u>: <u>\$180,000</u> 2. Culvert <u>Rehabilitation</u> Str.<u>16660</u>: <u>\$200,000</u> 3. Bridge <u>Replacement</u> Str.<u>16760</u>: <u>\$3,960,000</u> 4. Bridge <u>Replacement</u> Str.<u>17045</u>: <u>\$10,450,000</u> 5. Bridge <u>Replacement</u> Str.<u>17048</u>: <u>\$12,250,000</u> 6. Bridge <u>Replacement</u> Str.<u>19061</u>: <u>\$4,050,000</u> 7. Bridge <u>Rehabilitation</u> Str.<u>19110</u>: <u>\$2,210,000</u> 8. Bridge <u>Rehabilitation</u> Str.<u>19111</u>: <u>\$2,200,000</u>

¹ Costs of unbundled project will be compared with bundled costs to determine potential amount of cost savings and as a factor in the ability to unbundle bridges for an award

	9. Will request <u>\$4,320,000</u> of the amounts awarded to the entity to pay subsidy and administrative costs necessary to provide to the entity Federal credit assistance under 23 U.S.C. chapter 6. ²
--	--

Benefit-Cost Analysis

Based on the assumptions, methodology, and other information presented above, the project yields a **Benefit-Cost Ratio of 1.59** and a **Net Present Value of \$30.7 million**.

The BCA Report provides additional details on the BCA analysis and it is in **Appendix B** and the BCA Excel Workbook is in **Appendix C** of the Supplemental Project Narrative.

Project Readiness and Environmental Risk

Other Federal Funding and Non-Federal Funding Secured	Yes, state funding is secured.
NEPA Status – Indicate if the determination will likely be the result of a Categorical Exclusion (CE), Environmental Assessment (EA), or Environmental Impact Statement (EIS)	Planned or Actual Start of NEPA Date: <u>February 2019</u> Planned or Actual Completion of NEPA Date: <u>Programmatic/Individual Categorical Exclusion approved in August 2022.</u> Final NEPA Determination or current status of NEPA process: <u>Approved.</u>
Is the project currently programmed in the: <ul style="list-style-type: none"> • TIP • STIP • MPO Long Range Transportation Plan • State Long Range Transportation Plan 	The project is included in the Eight-year Construction Work Program (CWP) . The eight bridges are included in the following two projects: <ul style="list-style-type: none"> • I-40 EB and WB bridges over Portland Avenue are on page 28 in the CWP (29852(04)) and this project includes one of the I-40 bridges over Portland Avenue (NBI# 16396) that will be rehabilitated. • I-40 EB and WB bridges over I-44 are on page 28 in the CWP (28951(04)). The I-40 EB to I-44 SB bridge ramp and the I-40 EB to I-44 NB bridge ramp are included in this project. The Project is aligned with the following goals in the 2018-2022 State Freight Plan . <ul style="list-style-type: none"> • Ensure the ability of urban and rural highways to safely accommodate growth in freight traffic. • Meet freight transportation needs by maintaining the Oklahoma State Highway System in a state of good repair.

² Receipt of a BIP award does not guarantee that an applicant will receive TIFIA credit assistance, nor does it guarantee that any award of TIFIA credit assistance will be equal to 49 percent of eligible project

	<ul style="list-style-type: none"> • Ensure the competitive performance of the Oklahoma freight system. • Capitalize on federal funding and finance programs to aid investment in the freight transportation system. • Safeguard industry supply chains by improving the resiliency of the freight transportation system to withstand disruptions. <p>The Project is aligned with the following goals in the 2020-2045 Long Range Transportation Plan.</p> <ul style="list-style-type: none"> • Safety and Security – Ensure a safe and secure transportation system for all users. • Infrastructure Preservation – Preserve and maintain the condition of Oklahoma’s multimodal transportation system in a state of good repair through risk-based, data-driven decision-making processes. • Mobility and Accessibility – Facilitate the movement of people and goods, improve connectivity between regions and activity centers, and increase travel mode choices. • Economic Vitality – Provide a reliable multimodal transportation system for people and goods that coordinates with land development patterns, strengthens communities, and supports a healthy and competitive Oklahoma economy. • Fiscal Responsibility – Sustainably fund and efficiently deliver quality transportation projects while continuing to leverage additional resources in coordination with ODOT’s partners.
<p>Is right-of-way acquisition necessary?</p>	<p>The Project design includes minimal right-of-way acquisition. The right-of-way acquisitions are needed for drainage improvements in two areas along with one utility easement. No permanent structures will be impacted due to right-of-way acquisitions. Use of existing right-of-way was maximized through the use of retaining walls.</p> <p>If yes, Planned or Actual Start of Right-of-Way Acquisition Date: <u>December 2022.</u></p> <p>Planned or Actual Completion of Right-of-Way Acquisition Date: <u>December 2023.</u></p>
<p>Right-of-Way Acquisition Considerations</p>	<p>If right-of-way must be acquired for the project:</p> <p>1. Would right-of-way acquisition require relocation of any people or businesses? <u>The Project design includes minimal right-of-way acquisition. Right-of-way acquisitions are needed for drainage improvements in two areas along with one utility easement. No permanent structures will be impacted due to right-of-way acquisitions. The use of existing right-of-way was maximized through the use of retaining walls.</u></p>

	2. If yes, are people or businesses being relocated members of traditionally underserved and underrepresented populations (Environmental Justice communities)? <u>No underserved and underrepresented populations property are being acquired.</u>
Design Status	Planned or Actual Start of Preliminary Design Date: <u>2012</u> Planned or Actual Completion of Preliminary Design Date: <u>2015</u> Planned or Actual Start of Final Design Date: <u>January 2017</u> Planned or Actual Completion of Final Design Date: <u>June 2024</u>
Anticipated Construction Start Date:	Date: <u>October 2024</u>
Anticipated Project Completion Date:	Date: <u>December 2026</u>
Maintenance and Preservation Costs	Identify sources of funding and commitments to maintain and preserve the completed structure: <u>All bridges, especially those that are on the Interstate highway network, are part of ODOT's responsibility to maintain using National Highway Performance Program (NHPP) federal funds.</u>
The summary on project readiness and environmental risk is included in the Supplemental Project Narrative on page 20.	

Project Priority Considerations

The following provides a response on how the I-40 bridge replacements and rehabilitations address DOTs Priority Considerations for Bridge Projects:

As shown in this *Crossroads of America: Bridges on I-40 Over I-44 and Portland* BIP Bridge Supplemental Narrative, six I-40 bridges are currently in Fair condition but each bridge is at risk of falling into a poor condition in the next two to three years. Due to the recent uptick in construction costs that have been experienced nationally, a multitude of critical projects in the Oklahoma City area are being reevaluated for construction costs and timelines. The current estimates used to account for the Eight-Year Construction Work Plan are often a few years old and do not account for recent inflationary issues. As such, the recent cost trends experienced within the construction industry will have consequences to which projects are able to be completed within their originally anticipated timeline. Award and receipt of the BIP Bridge grant funds for this project will ensure that this Project will be fully funded and will be constructed on schedule.

The Project will be ready to proceed to final design, and right-of-way acquisition, within 12 months of a Categorical Exclusion Determination, Finding of No Significant Impact, or Record of Decision. Currently, the design is 65 percent complete and the right-of-way acquisition will be complete in December 2023. Construction will begin in October 2024 and the Project will be completed in December 2026.



OKLAHOMA
Transportation



CROSSROADS OF AMERICA: BRIDGES ON I-40 OVER I-44 AND PORTLAND

**SUPPLEMENTAL
PROJECT NARRATIVE**

BRIDGE INVESTMENT PROGRAM -
BRIDGE GRANT APPLICATION

September 9, 2022



TABLE OF CONTENTS

Supplemental Project Narrative	1
Introduction.....	1
Project Description	1
Project Location	2
Transportation Challenges	3
BIP Goals.....	3
Project History	4
Interstate 40.....	4
Historically Disadvantaged Communities and Areas of Persistent Poverty.....	4
Federally Designated Opportunity Zones	4
Project Parties	6
National Bridge Inventory Data	7
Grant Funds, Sources, and Uses of Project Funding.....	7
Sources and Uses of Funds	7
Outcome Criteria	8
State of Good Repair.....	8
Safety.....	12
Mobility and Economic Competitiveness.....	13
Climate Change, Resiliency, and the Environment.....	16
Quality of Life.....	17
Innovation	18
Benefit-Cost Analysis	19
Costs	19
Benefits.....	20
Net Benefits.....	20
Project Readiness	20
Technical Feasibility	20
Project Schedule.....	21
Required Approvals	22
Project Priority Considerations.....	23

FIGURES

Figure 1: Project Map	2
Figure 2: Project Location and Large Employers in the Project Area	2
Figure 3: Existing I-40 Lane Configuration.....	3
Figure 4: Historically Disadvantaged Communities	5
Figure 5: Opportunity Zones	5
Figure 6: Empowerment Zones	6
Figure 7: I-40 Bridge over Portland (looking North)	8
Figure 8: Crack Progression.....	10
Figure 9: Concrete Spalling	10
Figure 10: Column Deterioration.....	11
Figure 11: Fracture Critical Members (FCM)	11
Figure 12: Concrete Spalling.....	11
Figure 13: Plywood Formwork	12
Figure 14: Concrete Spalling.....	12

TABLES

Table 1: Project Budget.....	7
Table 2: Entire Project Budget by Fiscal Year	7
Table 3: Person Miles Traveled in 2020 Over I-40 Bridges	9
Table 4: Person Miles Traveled in 2051 over I-40 Bridges.....	9
Table 5: Total Crashes 2012 to 2021	13
Table 6: Project Schedule.....	22

APPENDICES

- A. Letters of Support
- B. Benefit-Cost Analysis Report
- C. Benefit-Cost Analysis Worksheets (Excel format)

Supplemental Project Narrative

Introduction

Interstate 40 (I-40) is a critical 2,556-mile highway that connects the east coast of the United States (U.S.) to the west coast. Every day along the I-40 corridor, millions of people travel on this interstate and billions of dollars of freight are carried. Oklahoma sits at the crossroads of America and there are two I-40 bridges over I-44 and two I-40 bridges over Portland Avenue in Oklahoma City that are currently in Fair condition and at risk of falling into Poor condition in the next two to three years. There are also two bridge culverts and two ramp bridges from I-40 to I-44 that need to be rehabilitated. Replacing and rehabilitating the eight bridges will not only make I-40 in Oklahoma City more resilient, but the improvements will also yield safety, state of good repair, mobility, economic competitiveness, and quality of life benefits for local, regional, and national users of I-40. The *Crossroads of America: Bridges on I-40 over I-44 and Portland* is a critical project that is well-suited for a Bridge Investment Program (BIP) Bridge grant.

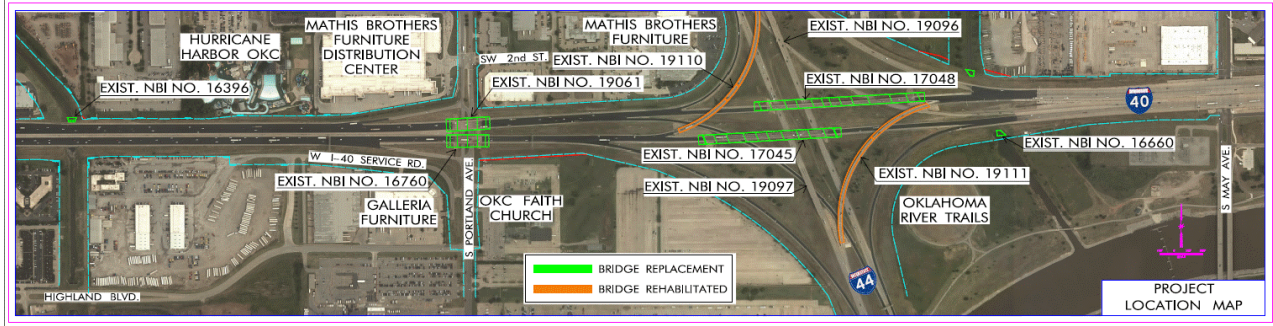
Project Description

I-40 in Oklahoma City was constructed in the mid-1960s and since then has served as a vital local, regional, and national highway connecting our east and west coasts. Since I-40 opened to traffic, the Oklahoma Department of Transportation (ODOT) has spent over a billion dollars preserving, maintaining, and expanding the roadway and bridges. However, there are six I-40 bridges in downtown Oklahoma City that have reached the end of their design life; either the deck, substructure, or superstructure is in Fair condition and each bridge is at risk to fall into Poor condition in the next two to three years future.

The *Crossroads of America: Bridges on I-40 over I-44 and Portland* project (The Project) includes eight bridges and is located just west of the I-40 Crosstown Expressway. After the completion of the I-40 Crosstown Expressway in 2015, the need to widen the existing I-40 corridor and improve the I-40 bridges over I-44 and Portland Avenue west of the Crosstown Expressway became apparent due to increased traffic, a mix of increasing and decreasing travel lanes that create confusion, crashes and bottlenecks, and decreasing infrastructure conditions.

ODOT is requesting \$41,760,000 in BIP Bridge Grant funds to replace and widen the two I-40 bridges over I-44; replace and widen the two I-40 bridges over Portland Avenue; rehabilitate two I-40 bridge culverts; rehabilitate the eastbound-to-northbound I-40 ramp bridge over the I-40/I-44 interchange and rehabilitate the eastbound-to-southbound I-40 ramp bridge over the I-40/I-44 interchange. The Project would replace four bridges, rehabilitate two bridge ramps, rehabilitate two bridge culverts, and provide lane balance across I-40 through the I-44 and Portland Avenue interchanges. The Project will include current design standard shoulder widths to allow vehicles to pull off the roadway safely and meet American Association of State Highway and Transportation Officials (AASHTO) vertical clearance requirements. Adding capacity to the bridges would allow for driver continuity by providing lane balance through the I-40/I-44 and I-40/Portland Avenue interchanges and eliminate a critical bottleneck. Currently, the I-40 bridges over the I-44 carry two travel lanes, which leads to daily congestion and safety concerns. **Figure 1** shows the location of the bridges that will be replaced (NBI# 16760, 17045, 17048, and 19061) in green and rehabilitated (NIB# 16396, 16660, 19110, 19111) in orange.

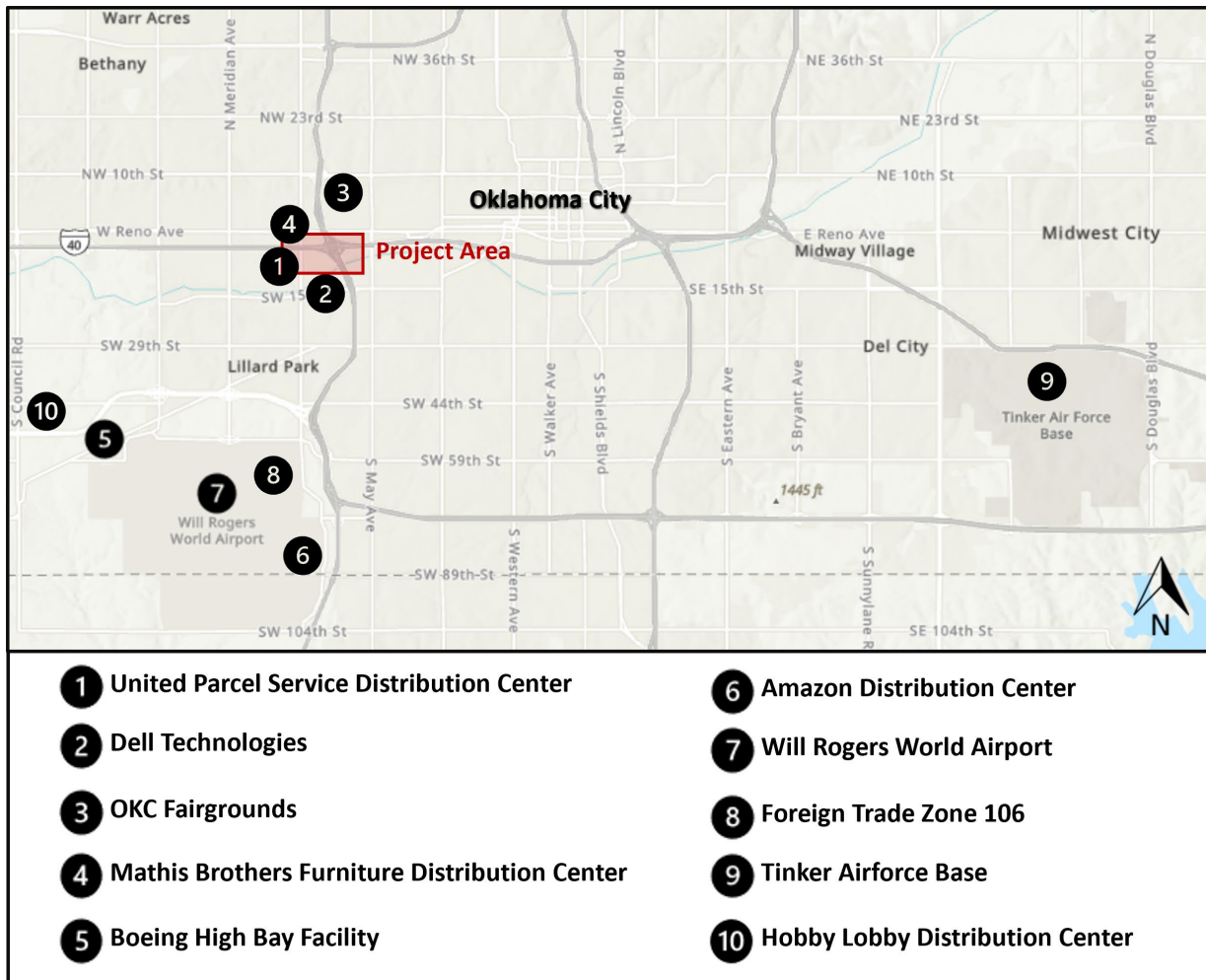
Figure 1: Project Map



Project Location

As shown in **Figure 2**, the Project is located in the Census-designated Urbanized Area of Oklahoma City, Oklahoma. Oklahoma City is in central Oklahoma, is the state capital, and is the largest city in the state. There are numerous large employers in the Project area, as discussed in the **Mobility and Economic Competitiveness** section.

Figure 2: Project Location and Large Employers in the Project Area



Transportation Challenges

The I-40 corridor through the Project area carries an average annual daily traffic (2020 AADT) of 127,660 east of the I-40/I-44 interchange; 59,390 on the I-40 bridges over I-44; and 124,660 west of the I-40/I-44 interchange. The traffic volumes are projected to increase across all three segments, reaching between 28 to 32 percent increase by 2051. Projected 2051 AADT is 177,056 (28% increase) east of the I-40/I-44 interchange; 87,112 (32% increase) over I-44; and 173,104 (28% increase) west of the I-40/I-44 interchange. The average annual daily truck traffic on I-40 in the Project area is 16 percent indicating nearly 20,000 trucks per day cross the I-40 eastbound and westbound bridges over I-44. Based on the 2051 traffic projections, truck traffic could approach 28,000 per day in the Project area. Existing traffic patterns and design configurations also present significant safety concerns. The **Safety** section provides details on the 3,063 collisions that injured 1,152 people and the eight fatalities in the Project area.

Figure 3 shows the existing I-40 through travel lanes in Oklahoma City and the bottleneck that is created due to the two-lane bridges over I-44. The **Mobility and Economic Competitiveness** section provide details on how this existing bottleneck will be removed and how travel times and reliability will be improved along this section of I-40 that is currently unreliable.

Figure 3: Existing I-40 Lane Configuration

3-lanes	4-lanes	2-lanes	5-lanes	6-lanes
3-lanes	3-lanes	2-lanes	5-lanes	6-lanes
Meridian Avenue	Portland Avenue Bridges	I-44 Bridges		May Avenue

BIP Goals

Replacing, widening, and rehabilitating the eight I-40 bridges meets the following BIP goals:

- The Project will improve safety (refer to the **Safety** section), and reliability of the movement of people and freight over bridges (refer to the **Mobility and Economic Competitiveness** section).
- The Project will replace four bridges, rehabilitate two bridge ramps, and rehabilitate two bridge culverts in fair condition that are at risk of falling into poor condition within the next two to three years.
- The Project will reduce the number of bridges that are in fair condition and at risk of falling into poor condition within the next two to three years. The total person miles traveled over the six bridges is 35,484 miles in 2020 and will grow to 50,770 miles by 2051 (refer to the **State of Good Repair** section).
- The Project will replace four bridges that currently do not meet the AASHTO minimum guideline of 16 foot 9 inches vertical clearance over the crossing roadways.

- The Project will reduce the total person miles traveled over bridges that do not meet current geometric design standards by 35,484 miles in 2020 and 50,770 by 2051 (refer to the **State of Good Repair** section).

Project History

In March and April 2012, ODOT initiated the I-40/I-44 and I-40/Portland Avenue Interchange Concept Reports, respectively. The I-40/I-44 Concept Report examined four design concepts and included a Reconnaissance Report, Preliminary Survey, Traffic Operational Analysis, and Conceptual Plans that initiated the scope for the final plans, specifications, and estimate (PS&E). The I-40/Portland Avenue Conceptual Study included a Reconnaissance Report, Preliminary Survey, Traffic Operational Analysis, and Conceptual Plans. In December 2015, the conceptual reports were completed and the alternative selected included replacing and widening the I-40 bridges over I-44 and Portland Avenue and rehabilitating the I-40 eastbound (EB) to I-44 southbound (SB) ramp and I-40 EB to northbound (NB) ramp.

The I-40 bridge replacements over Portland Avenue Conceptual Report was completed in May 2017. In February 2019, the environmental services for National Environmental Policy Act (NEPA) were initiated and the Programmatic/Individual Categorical Exclusion was approved by FHWA in August 2022. Right-of-way clearance was approved in March 2021. The Geotech Investigation Report was completed in May 2022. Currently, the design plans are 65 percent complete.



Interstate 40

I-40 is a major east-west Interstate Highway that traverses through the south-central U.S. and extends through California, Arizona, New Mexico, Texas, Oklahoma, Arkansas, Tennessee, and North Carolina for a total of 2,556 miles. In Oklahoma, I-40 extends 331 miles from the borders of Texas to Arkansas. Cities along I-40 include Erick, Sayre, Elk City, Clinton, Weatherford, Oklahoma City, Shawnee, Okemah, Henryetta, Checotah, and Sallisaw. I-40 in Oklahoma City intersects with I-44 (Project area), I-35, and I-235. I-40 is on the National Highway Freight Network (NHFN) and the Strategic Highway Network (STRAHNET). I-40 within the Project area is also identified as a freight bottleneck in the [2018-2022 Oklahoma Freight Plan](#).

Historically Disadvantaged Communities and Areas of Persistent Poverty

Based on USDOT's Transportation Disadvantaged Census Tract mapping tool and as shown in **Figure 4**, the Project area is in Census tract 1070.02, a Historically Disadvantaged Community. Contiguous to this Census tract are seven other Census tracts (1069.13, 1056, 1057, 1041, 1043, 1044, and 1035) that are also Historically Disadvantaged Communities. There are no Areas of Persistent Poverty in or adjacent to the Project area.

Federally Designated Opportunity Zones

Based on data provided by the Department of Housing and Urban Development (HUD) and the White House Opportunity and Revitalization Council, as shown in **Figure 5** there are two Opportunity Zones (40109106912, 40109106913) northeast of the Project area and east of the Project area there are 11 opportunities zones in downtown Oklahoma City. Also present in the Project area are Oklahoma City Empowerment Zones, as shown in **Figure 6**, which are part of an economic development initiative created by HUD to facilitate self-sustaining, long-term

revitalization. Oklahoma City Empowerment Zones encompass nearly 20 square miles of Oklahoma City’s most urban area and it is located east and south of the Project area.

Figure 4: Historically Disadvantaged Communities

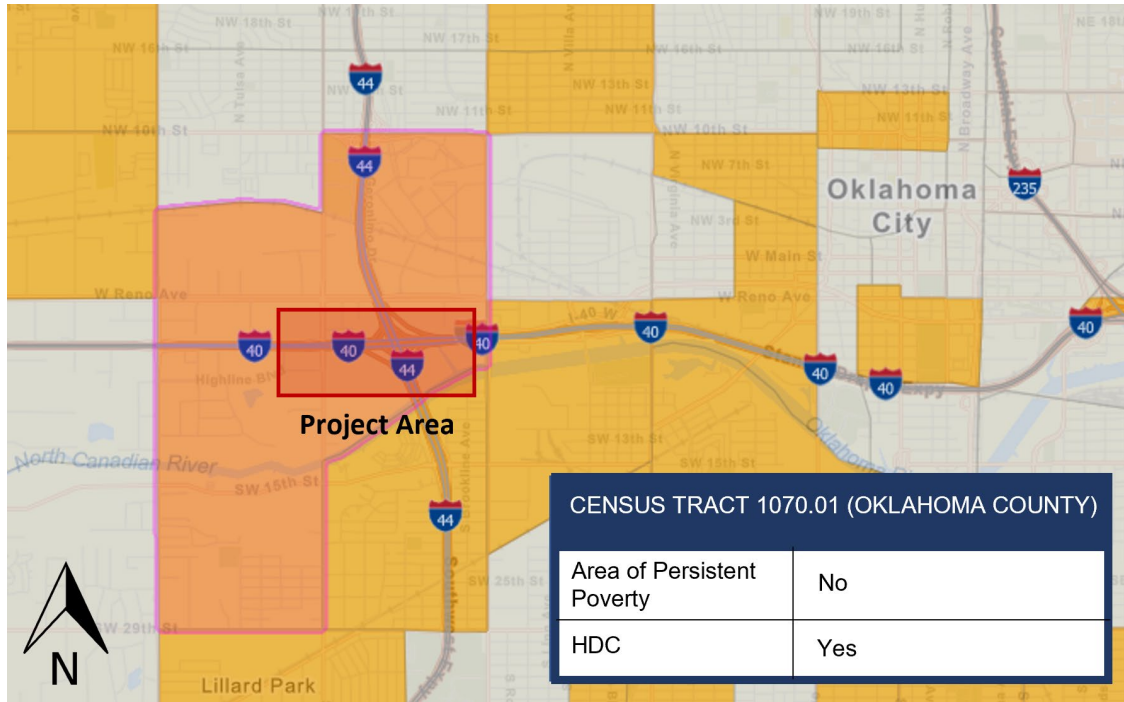


Figure 5: Opportunity Zones

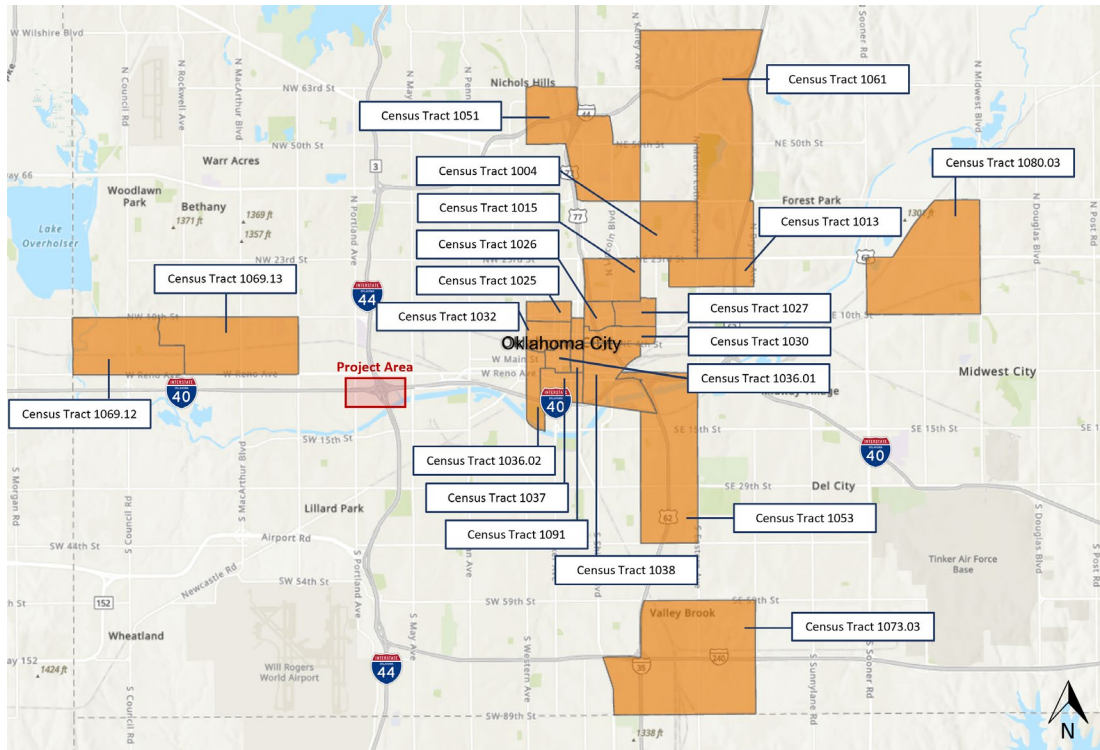
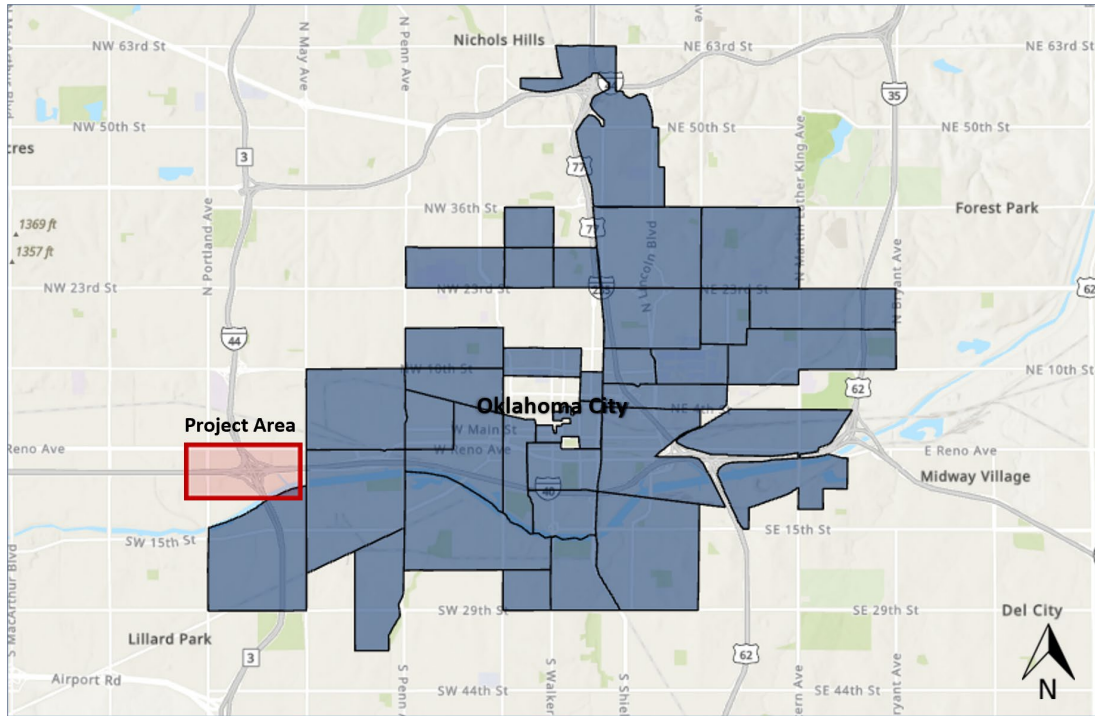


Figure 6: Empowerment Zones



Project Parties

The Project is led by ODOT. As a state transportation agency, ODOT plans, constructs, and maintains the highway system in Oklahoma. ODOT manages a large portfolio of Federal funds that are programmed within the ODOT [Eight-Year Construction Work Plan](#) (CWP). Specific to competitive federal grant funding, ODOT has experience with multiple large infrastructure projects funded in part by the United States Department of Transportation (USDOT), such as INFRA, RAISE, BUILD, CHBP, and TIGER grants. While ODOT will lead the Project, there is significant support from local, regional, state, and federal officials as evident from the following letters of support provided in **Appendix A**:



US Senate
 Senator James M. Inhofe



Oklahoma City
 Mayor David Holt



Department of Public Safety
 Commissioner Tim Tipton



Executive Director
 Mark Sweeney, AICP



President & CEO
 Roy Williams



Senior Vice President
 Emily Crouch



CEO & President
 Jim Newport



President & CEO
 Kirk Slaughter

National Bridge Inventory Data

The National Bridge Inventory (NBI) data for the eight existing bridges are provided in the separate BIP **Bridge Grant Template**.

Grant Funds, Sources, and Uses of Project Funding

As shown in **Table 1**, ODOT is seeking \$41,760,000 in FY 2022 BIP Bridge grant funding for construction costs to replace and rehabilitate eight I-40 bridges. ODOT will provide \$41,760,000 in state funds representing a non-federal cost share of 50 percent of the total proposed Project costs. The total Project cost is \$88,274,953 which includes incurred costs for right-of-way, environmental, and engineering totaling \$4,754,953. The construction costs total \$72,000,000 and **Table 2** shows the costs for Fiscal Year 2022 to 2027.

Sources and Uses of Funds

Non-Federal Sources: As noted in Secretary Gatz’s funding commitment letter in **Appendix A**, the non-federal sources will be provided by the State of Oklahoma. ODOT will provide a total of \$41,760,000 to be used for construction.

Federal Sources: ODOT will use \$41,760,000 in BIP Bridge grant funds for construction.

Table 1: Project Budget

Element	Non-Federal Sources State Funds		Federal Funds		BIP Bridge Funds	Total Project Cost
	Incurred	Future	Incurred	Future		
Environmental & Engineering	\$1,033,519	\$0	\$2,801,563	\$0	\$0	\$3,835,082
Right-of-Way & Utilities	\$183,975	\$0	\$735,896	\$0	\$0	\$919,871
Construction	\$0	\$36,000,000	\$0	\$0	\$36,000,000	\$72,000,000
Construction Management	\$0	\$2,160,00	\$0	\$0	\$2,160,00	\$4,320,000
Contingency & Other	\$0	\$3,600,000	\$0	\$0	\$3,600,000	\$7,200,000
TOTALS	\$1,217,494	\$41,760,000	\$3,537,459	\$0	\$41,760,000	\$88,274,953

Table 2: Entire Project Budget by Fiscal Year

Activity	FY2023	FY2024	FY2025	FY2026	FY2027	Total
Pre- Construction	\$0	\$0	\$0	\$0	\$0	\$0
Right-of-Way	\$0	\$0	\$0	\$0	\$0	\$0
Construction	\$0	\$5,000,000	\$36,000,000	\$35,000,000	\$7,520,000	\$83,520,000
TOTALS	\$0	\$5,000,000	\$36,000,000	\$35,000,000	\$7,520,000	\$83,520,000

Outcome Criteria

State of Good Repair

Bridge Condition

Each of the four bridges that will be replaced and the two ramp bridges that will be rehabilitated are at risk of falling into poor condition within the next two to three years. In the 2020 NBI bridge inspection reports, each bridge had a condition rating of five (Fair) in at least one of its structural aspects (deck, superstructure, and substructure). The I-40 westbound (WB) bridge over Portland Avenue (**Figure 7**), the I-40 EB bridge over I-44, and two ramp bridges have a rating of five in two of its structural aspects and the I-40 WB bridge over I-44 has a rating of five in each of its three structural aspects. In addition to being at risk of falling into poor condition, the two I-40 bridges (NBI 17048 and 17045) over I-44 have fracture critical members (FCM) as shown in **Figure 11**. The National Bridge Inspection Standards (NBIS) definition for an FCM is "a steel member in tension, or with a tension element, whose failure would probably cause a portion of or the entire bridge to collapse." Between the years 2016 and 2018, ODOT spent \$82,671 rehabilitating the I-40 bridges over I-44 to prolong their useful life.

Figure 7: I-40 Bridge over Portland (looking North)



As shown in **Figure 7**, the vertical clearance on Portland Avenue under I-40 is 14 foot 9 inches which does not meet AASHTO vertical clearance standards. United Parcel Service (UPS) has a large distribution center on Portland Avenue a quarter mile from the I-40/Portland interchange and the low vertical clearance creates a challenge for trucks accessing UPS. Each of the four bridges that would be replaced and the two ramp bridges do not currently meet the AASHTO minimum 16 foot 9 inches vertical clearance over the crossing roadways, which limits truck traffic on I-44 under the I-40 bridges.

Maintenance Costs

Over the next 20 years, the estimated cost of rehabilitation work needed to maintain the eight bridges totals \$21.3 million. Over 20 years, maintaining the eight new and rehabilitated bridges totals \$2.1 million. Replacing the four bridges and rehabilitating four bridges will significantly reduce maintenance costs for ODOT. The millions of dollars in savings could be diverted to other critical maintenance needs around the state.

Total Person Miles Traveled Impacted

As shown in **Table 3** and **Table 4**, the total person miles traveled (calculated by multiplying the length, AADT, and occupancy factor) impacted by replacing or rehabilitating six bridges that are at risk of falling into poor conditions totals 35,484 miles in 2020 and it grows to 50,770 miles by 2051.

Table 3: Person Miles Traveled in 2020 Over I-40 Bridges

NBI #	Location	Length in Miles	2020 AADT	FHWA Occupancy Factor	Person Miles Traveled
16760	EB, West of I-44	0.032195076	62,330	1.7	3,411
17045	I-40 Bridges over I-44	0.155113636	26,965	1.7	7,110
17048	I-40 Bridges over I-44	0.188257576	29,695	1.7	9,504
19061	WB, West of I-44	0.032007576	62,330	1.7	3,392
19110	EB to NB I-40 Ramp	0.214204545	18,510	1.7	6,740
19111	EB to SB I-40 Ramp	0.234263258	13,375	1.7	5,327
TOTAL					35,484

Table 4: Person Miles Traveled in 2051 over I-40 Bridges

NBI #	Location	Length in Miles	2051 AADT	FHWA Occupancy Factor	Person Miles Traveled
16760	EB, West of I-44	0.032195076	86,552	1.7	4,737
17045	I-40 Bridges over I-44	0.155113636	43,556	1.7	11,485
17048	I-40 Bridges over I-44	0.188257576	43,556	1.7	13,940
19061	WB, West of I-44	0.032007576	86,552	1.7	4,710
19110	EB to NB I-40 Ramp	0.214204545	24,387	1.7	8,880
19111	EB to SB I-40 Ramp	0.234263258	17,621	1.7	7,018
TOTAL					50,770

ODOT's Transportation Asset Management Plan

The three following objectives identified in ODOT's [Transportation Asset Management Plan](#) (TAMP) are aligned and consistent with replacing and rehabilitating the I-40 bridges.

- Maintain the condition of the state's bridges and roadways.
- Improve safety in the state's transportation system (refer to the **Safety** section).
- Enhance the mobility of people and goods (refer to the **Mobility and Economic Competitiveness** section).

Project Plan

To improve the condition of the I-40 bridges, four of the I-40 bridges over I-44 and Portland Avenue will be replaced to meet minimum vertical clearances. This Project will remove four bridges that are at risk of falling into poor condition on the I-40 corridor. Replacing the I-40 bridges over I-44 will also remove the fracture critical bridges from the system and eliminate the chance of a bridge collapse and the required additional cost and effort needed for fracture critical inspections. The new I-40 bridges will also eliminate the bottleneck at the I-40/I-44 interchange due to the additional travel lanes on the I-40 bridges and shoulders that would be constructed in each direction. The I-40 bridges over Portland Avenue will be replaced and widened to five lanes each, providing three through travel lanes and two travel lanes to access

entering or exiting the ramps. The bridge culvert on the west side of the Project will be extended to provide five lanes EB and four lanes WB. The I-40 EB to NB I-44 and the I-40 EB to SB I-44 ramp bridge decks will be replaced. These same ramp bridges will also undergo abutment and pier rehabilitation to prevent the ramp bridges from falling into poor condition. Finally, while the bridge culvert east of the I-40/I-44 interchange is structurally sound beneath the pavement, damage to the end sections will be replaced to improve the bridge culvert condition.

Seismic Protection

The new I-40 bridges will be designed to withstand seismic events that began increasing in frequency in the state in the late 2000s. To address this risk and increase preparedness, ODOT recently began implementing ShakeCast. Previously, following a seismic event, ODOT crews checked all bridges within a pre-determined radius of an earthquake's epicenter, resulting in many unneeded inspections. Using bridge and seismic data, ShakeCast automatically generates a priority order for bridge inspections after an earthquake based on several factors including bridge condition, age, proximity to an earthquake's epicenter, seismic movement data, and magnitude rating. ShakeCast provides ODOT with immediate earthquake detection and a plan to mitigate safety risks in a prioritized manner.

Figures 8 through **14** show the condition and describe the deterioration of the I-40 bridges. As noted earlier, the NBI condition data is from June 2020 and the bridges are quickly deteriorating.

Figure 8: Crack Progression



Crack progression was noted on an east abutment diaphragm member of the I-40 EB bridge over I-44. Between 2016 and 2020, the crack grew approximately four inches. On the I-40 WB bridge over I-44, similar cracks have propagated through entire members, causing them to break off and fall to the abutment below.

Figure 9: Concrete Spalling



Spalling on the underside of the I-40 WB bridge over I-44. Spalls such as this are typical around expansion joints and other locations where water has penetrated the deck of both I-40 bridges over I-44.

Figure 10: Column Deterioration



Column deterioration on the I-40 WB bridge over I-44. This column is near the east abutment of the bridge and next to traffic. Vertical cracks extend from the top to the bottom of the column. There are signs of water seeping through the column as well.

Figure 11: Fracture Critical Members (FCM)



FCM on the I-40 WB bridge over I-44. The I-40 WB bridge over I-44 has two FCMs and I-40 over EB bridge has one.

Figure 12: Concrete Spalling



Spalling on the underside of the I-40 WB bridge over Portland Avenue. The spalling is present along the entire bridge at the construction joint where the bridge was widened. In this picture, concrete has spalled to the point where part of the bottom mat of reinforcing is hanging unsupported below the bridge.

Figure 13: Plywood Formwork



Plywood formwork shows numerous deck patches on the I-40 EB bridge over I-44. Patches are throughout the undersides of the I-40 bridges over I-44.

Figure 14: Concrete Spalling



Concrete spalling at a pier on the I-40 WB bridge over I-44. Due to the spalling, part of the bearing pad is hanging over the pier, unsupported by concrete.

Safety

Crashes in Project Area

Due to the large traffic volumes and the high breaking occurrences at the bottleneck over I-44, collision rates on the I-40 corridor between the I-44 and Portland Avenue interchanges are high. Collision data was obtained from the ODOT Highway System Collision Listing Data to determine the nature and frequency of collisions along the I-40 mainline and ramps. Collision history was evaluated for the entire interchange area, extending 1.1 miles west (through the I-40 Portland interchange) and 0.75 miles east of the I-40/I-44 interchange along I-40 and 0.3 miles north and 0.2 miles south of the I-40/I-44 interchange along I-44. The collision information was collected and analyzed over 10 years from January 1, 2012, to December 31, 2021.

For the I-40 interchanges at I-44 and Portland, a total of 3,063 collisions were recorded involving 1,152 injured persons and eight fatalities. This is the equivalent of 0.8 collisions per day over the 10 years. Of those injuries, 61 were of sufficient severity that the injured person was incapacitated. **Table 5** provides more details about the collisions in the Project area.

The most prevalent collision type was rear-end (front to rear) collisions, accounting for over 60 percent (1,183 of the 3,063 total) of all collisions. This is a scenario that is commonly observed with congested roadways where stopped traffic occurs in the travel lanes and sudden deceleration from vehicles traveling at higher rates of speed is required. The transition from three travel lanes to two travel lanes over the I-40 Portland bridges creates a bottleneck and travelers must reduce speed to pass through the congested area.

The next most common collision type was sideswipe same direction at over 20 percent (657 of 3,063). The reduction of five lanes to two lanes in the EB direction and three lanes to two in the westbound direction with ramp entries on both the inside and outside of the mainline causes a weaving movement on I-40 EB and WB and this causes a significant number of sideswipe collisions as drivers seek to merge into traffic. To exacerbate the safety concern, the ramp lanes exit I-40 near the I-40 bottleneck as traffic becomes more congested. The combination of

weaving and stopped traffic on I-40 has resulted in five of the eight fatality collisions occurring at the ramp junction locations west of the I-40/I-44 interchange.

Table 5: Total Crashes 2012 to 2021

Collision Type	Fatal	Serious Injury	Property Damage	Total
Rear-End	2	510	1,371	1,183
Head-On	0	0	2	2
Right Angle	0	10	18	28
Angle Turning	0	37	51	88
Other Angle	0	2	3	5
Sideswipe Same Direction	0	97	560	657
Sideswipe Opposite Direction	0	0	1	1
Fixed Object	3	85	152	240
Pedestrian	2	2	0	4
Overturn/Rollover	1	28	9	38
Other Single Vehicle Crash	0	2	15	17
Other	0	26	74	100
Total	8	799	2,256	3,063

Source: ODOT Highway System Collision Listing Data

Replacing and widening the I-40 bridges over I-44 and Portland Avenue would increase the two travel lanes to three travel lanes and provide dedicated ramp lanes on the I-40 bridges over Portland Avenue. The improvements will help reduce the number of rear-end collisions by removing the I-40 bottleneck thus allowing traffic to flow more freely through the interchanges without having to suddenly stop due to traffic congestion. The additional lanes would also help reduce the number of sideswipe collisions by reducing the number of weaving movements.

Additionally, replacing and widening the I-40 bridges would also address the current insufficient shoulders. The new bridges would widen the bridge shoulders from four-foot inside shoulders and 10-foot outside shoulders to a full 12-foot inside and outside shoulders. Full shoulders are important for the safety of a bridge because they allow disabled vehicles to exit the travel lanes and enter the shoulder which prevents blocking a travel lane. The standard shoulders also permit emergency vehicles to bypass stopped traffic to access the scene of a crash or incident more quickly, allowing injured persons to receive medical attention sooner.

Mobility and Economic Competitiveness

Increased Mobility and Eliminating a Bottleneck

Based on a build vs. no-build VISSIM model analysis, the Project will reduce annual vehicle hours traveled (VHT) for autos by 3,140,025 and 556,992 for trucks. The Project will reduce annual person hours traveled (PHT) by 5,243,843 for autos and 556,992 for trucks. Based on the build vs. no-build results, the Project will improve mobility and access for local and regional traffic and freight, commuters, residents, and businesses.

As noted in the **State of Good Repair** section and shown in **Table 3** and **Table 4**, the total person miles traveled impacted by replacing or rehabilitating six bridges that are at risk of falling into poor conditions in the next two to three years totals 35,484 miles in 2020 and it grows to 50,770 miles by 2051.

The Project improves the mobility, efficiency, and reliability of people and freight by:

- Removing a critical freight bottleneck on the National Highway Freight Network and Strategic Highway Network.
- Improving travel times and travel time reliability.
- Reducing the total person miles traveling over bridges that are at risk of falling into poor conditions in the next two to three years.
- Accommodating projected traffic volumes to reduce congestion.
- Supporting tourism and commercial industries that sustain the local and regional economy.
- Providing employees and residents the ability to move quickly and safer through Oklahoma City.
- Providing employees improved access to good-paying union and non-union jobs.

National and Regional Economic Value

As noted above, rehabilitating the four bridges, and replacing and widening the four I-40 bridges over I-44 and Portland Avenue will increase mobility and eliminate a critical bottleneck in Oklahoma City. The improved mobility will also improve freight travel times on I-40 through Oklahoma City and in turn, improve supply chain movement due to less congestion and increased travel time reliability. The improved traffic flow would support a strong healthy Oklahoma City economy and would improve access to local and regional labor markets and recreational venues. Since the Project area is in a Historically Disadvantaged Community, equitable access to good-paying jobs would be improved for residents in this area.

Oklahoma has been known as the “Crossroads of America” and I-40, I-35, and I-44 provide access to regional and national markets to the north, south, east, and west. The 2018-2022 State Freight Plan noted that 48 percent and 69 percent of freight tonnage and value, respectively, are carried by trucks. As shown in the Project location map on page 2, there are several large businesses, distribution centers, and Tinker Airforce Base near the Project area that provides good-paying jobs.

Large Employers in the Area

Oklahoma City was ranked number one by GoBankingRates for high wages and low cost of living, thanks to an average annual income of \$72,385 and estimated annual expenses of \$18,701.¹ As shown in **Figure 2**, there are numerous large employers, Distribution centers, and a Military base near the Project area.

An example of good-paying jobs in the area is provided by Dell Technologies. Dell is located alongside the Oklahoma River one mile south of the Project area and since its opening in 2004,

¹ <https://www.okcchamber.com/index.php?src=news&srctype=detail&category=Chamber%20News&refno=1470>

has made a major impact in Oklahoma City. A recent economic impact study revealed Dell Technologies' business in Oklahoma generated more than \$800 million which accounts for approximately one percent of Dell Technologies' global annual revenue.²

Another example of a good-paying employer is Boeing, a company with over 3,000 employees in Oklahoma City. In April 2022, Boeing opened a 60,000-square-foot high bay facility that will bring hundreds of new jobs to Oklahoma City. The new facility is located near Will Rogers World Airport approximately seven miles from the Project area.³

Another large employer is the Amazon Fulfillment Center which is located six miles south of the Project area adjacent to the Will Rodgers Word Airport and I-44. In 2018, Amazon constructed its first Oklahoma fulfillment center in Oklahoma City. The facility started as a 600,000-square-foot facility but it has expanded to have more than 3.5-million-square-feet of distribution space. Today, Amazon is one of the largest employers in the region with a workforce of around 8,000.⁴

Near the Project area, UPS has a large distribution center on Portland Avenue a quarter mile from the I-40/Portland interchange. UPS employs over 18,000 people at this location and UPS is the single largest employer in the Teamsters Union.⁵

Oklahoma City is the headquarters of Hobby Lobby, one of the largest retailers in the U.S. The arts and craft giant processes orders for all its 900+ national stores from its 10-million-square-foot distribution center in Oklahoma City, which is located 6.5 miles from the Project area.⁶

The State Fairgrounds is located less than a mile north of the Project and cover 435 acres. The Fairgrounds host nearly 200 events each year with events including the annual State Fair, world-class equine and livestock events, conventions, consumer trade shows, sporting events, concerts, banquets, retreats, and more.⁷

Oklahoma City is home to Will Rogers World Airport which is in Foreign Trade Zone (FTZ) 106. The FTZ program is available to all U.S. based importers/exporters and can be established at warehouses/distribution centers and manufacturing facilities. FTZs help businesses reduce production, transaction, and logistics-related costs by allowing businesses to defer paying customs costs on goods imported into the U.S. until those goods leave the zone for consumption.⁸ Companies located in FTZ 106 have access to two Class 1 railways, proximity to two inland ports, adjacent to I-44, and I-40 is six miles to the north.

Tinker Air Force Base is located approximately seven miles southeast of the Project area and it employs 26,000 military and civilian employees.

² IHS Markit

³ <https://okcfox.com/news/local/boeing-oklahoma-city-dedicates-new-high-bay-facility-b-52-first-flight-nancy-anderson-david-holt-matt-pinnell-jobs>

⁴ <https://www.greateroklahomacity.com/industries/logistics/>

⁵ <https://teamster.org/divisions/package-division/>

⁶ <https://www.greateroklahomacity.com/industries/logistics/>

⁷ <https://okcfairgrounds.com/event-planner/general-information>

⁸ <https://www.sanantonio.gov/EDD/Development-Opportunities/Incentives/Foreign-Trade-Zone>

Replacing and rehabilitating the eight bridges on I-40 will improve mobility, efficiency, and reliability not only for major employers in the Project area but for all movement of people and freight using I-40 in Oklahoma City.

Climate Change, Resiliency, and the Environment

Resiliency

The proposed I-40 bridge replacements present a range of resiliency improvements. With the existing bridge conditions and high AADT, any crash or event in the existing corridor have cascading impacts on the safety and movement of people and goods. In addition to the significant risk posed by infrastructure conditions, the Project area also faces environmental risks, as outlined by the Federal Emergency Management Agency (FEMA) [National Risk Index](#). The National Risk index indicates census tract 1070.02, which covers most of the I-40 and I-44 interchange, is at very high risk for hail and ice storms as well as relatively high risk for tornados and relatively moderate risk for lightning and heat waves. These weather events, paired with aging and structurally deficient infrastructure can present serious health, safety, and mobility impacts and challenge the resilience of the regional transportation system. As referenced in the **State of Good Repair** section, ODOT is also working actively to ensure the new I-40 bridges will be designed to withstand seismic events that began increasing in frequency in the state in the late 2000s.

Due to undersized four-foot and 10-foot shoulders and inconsistent travel lanes, traffic incident management in the area may take hours to protect a scene, allow space for emergency response, and safely clear the scene. These lengthy closures are impactful to travelers and goods movement as few alternate routes exist.

Local Air Quality and Greenhouse Gas Emissions

The Environmental Protection Agency's (EPA) EJSscreen indicates the Project area has several pollution and source concerns. According to the [EJSscreen report](#), the Project area is in the 86th percentile (nationwide) for Ozone pollution, 83rd percentile for Particulate Matter 2.5 (PM2.5), and Air Toxics Cancer Risk and Respiratory Health Impacts also rate above the 80th percentile. Elevated exposure to ozone can harm our health and affect sensitive vegetation and ecosystems.⁹ PM2.5 also poses a great risk as it can be inhaled and cause serious health problems.¹⁰ The Project will contribute to better air quality through a reduction in on-road greenhouse gas emissions due to the reduction in congestion as discussed in the **Mobility and Economic Competitiveness** section. Based on the MOVES3 model runs and the assumed growth in electric vehicles (EV) share discussed in the **BCA Report (Appendix B)**, the Project will reduce NOx by 4.9 tons, CO2 by 28,218 tons, and PM2.5 by 0.177 tons.

Other Environmental Response

ODOT completed a [Programmatic/Individual Categorical Exclusion](#) for the Project and in July 2022 FHWA determined the Project does not have a significant environmental impact as

⁹ <https://www.epa.gov/ground-level-ozone-pollution/ground-level-ozone-basics>

¹⁰ <https://www.epa.gov/pm-pollution/particulate-matter-pm-basics>

defined by the NEPA. As a result, it was determined the Project is excluded from the requirements to prepare an Environmental Assessment or Environmental Impact Assessment. The only area of environmental concern (AEC) within the Project is the Oklahoma City Municipal Landfill. As such, ODOT will prepare a Contaminated Materials Management Plan, and any intrusive activities within the AEC will be monitored and coordinated with the ODOT Environmental Programs Division.

Quality of Life

Equity and Disadvantaged Communities

The Project will support economic activity and development in historically disadvantaged communities in the Oklahoma City area. As noted in the Project Location section, the Project area is in Census tract 1070.02 and is not considered an area of persistent poverty; however, it is designated as a Historically Disadvantaged Community. Additionally, there are seven other Census tracts (1069.13, 1056, 1057, 1041, 1043, 1044, and 1035) contiguous to the Project location that are also Historically Disadvantaged Communities.

Residents surrounding the Project location currently experience daily traffic congestion. Increasing capacity along the I-40/I-44 and I-40/Portland Avenue interchanges by widening the roadways and bridges will improve community access to good-paying jobs, recreation, healthcare, and education throughout Oklahoma City.

Benefits to Nonvehicular and Public Transportation Users

EMBARK is the public transportation provider in Oklahoma City which operates bus services. EMBARK has 28 bus routes in Oklahoma City with 1,447 bus stops. Currently, EMBARK bus service does not use the section of I-40 where the Project area is located. However, the [OKC Moves Bus Study](#) (map on page ES-7 in the OKC Bus Study) includes a long-term recommendation for a new bus route to Will Rogers World Airport that would use I-40 and the I-40/I-44 interchange. This new route could provide bus service to the numerous good-paying jobs located at and near the airport as discussed in the Mobility and Economic Competitiveness section. Reduced congestion and mobility enhancements may improve the potential for expanding public transportation services in this Historically Disadvantaged Area of Oklahoma City. These benefits may also help with the on-time performance of a new bus route and increase the attractiveness of public transportation due to travel time reliability improvements.

The Greyhound Bus Station in downtown Oklahoma City is also located adjacent to I-40 approximately 5.5 miles from the Project area. Greyhound offers east-west regional and interstate bus travel connecting through Oklahoma along I-40. Congestion mitigation and travel time reliability may improve Greyhound's on-time performance making this affordable mode of long-distance travel a viable transportation option for residents who cannot afford or choose not to own a car.

Person Mobility and Congestion Reduction and Reliability

Replacing and rehabilitating the eight I-40 bridges present opportunities for reducing congestion and improving travel time reliability that may result in reducing surface transportation-related greenhouse gas emissions. These outcomes will contribute to improved air quality in the surrounding area, which includes the 13 miles of the Oklahoma River Trails

system just south of the Project location and adjacent to the Oklahoma River. These public trails attract a variety of users including bicyclists, pedestrians, and other travelers using active transportation modes. There is also a boat ramp and river access point at South Portland Avenue and Southwest 15th Street. Air quality and mobility improvements from this Project may help attract more trail users to this attractive city asset. If the trails are more accessible, residents may be more likely to use more affordable, non-vehicular modes for commuting or recreational purposes.

Planning and Engagement Efforts that Avoid or Mitigate Displacement

Replacing and rehabilitating the eight I-40 bridges requires minimal right-of-way acquisition and there are no business or personal property displacements associated with this Project. The Project does not have the potential for disproportionately high and adverse impact on minority or low-income populations, according to the Programmatic/Individual Categorical Exclusion documentation approved by FHWA in July 2022. To date, the public involvement has included notifying property owners, and a letter was mailed to the neighboring community. ODOT has not conducted any public involvement meetings to date and any further public involvement meetings would be virtual.

Innovation Technology

ITS Deployment During Construction – During construction, ODOT will use Intelligent Transportation Systems (ITS) to ensure work zones on I-40 are safe and to minimize travel delays for drivers. Existing and new radar, cameras, Dynamic Message Signs (DMS), and probe data will be used together to monitor travel speeds and congestion and support incident management. Once construction is complete, these ITS assets will remain in place and will be used by ODOT to monitor traffic and provide travel information to the public.

3D Digital Project Plans – ODOT commits to providing 3D digital project plans as part of the contracting process. This technology will allow contractors to use state-of-the-art GPS-controlled automated equipment in the construction process, which reduces the risk of human error in establishing grades and elevations while improving efficiency in earthmoving during the construction process and reducing the overall cost of construction.

Accelerated Bridge Construction – ODOT will use Accelerated Bridge Construction (ABC) to improve site constructability, total project delivery time, and work-zone safety for the public, as well as reduce traffic impacts, onsite construction time, and weather-related delays. ABC uses innovative planning, design, materials, and construction methods safely and cost-effectively to reduce the onsite construction time that occurs when building new bridges or replacing and rehabilitating existing bridges. The Project's construction method anticipates using precast pier caps for the piers that will be replaced on the two ramp bridges to allow for the future widening of I-44. Using precast pier caps will eliminate the need for the piers to cure on site before the new deck can be cast. Additionally, high early strength concrete will be used for the ramp bridge decks along with strength gauges to determine when the concrete has reached its required strength so that the ramp bridges can be reopened sooner than if traditional concrete was used. Both of these methods will reduce the closure time of the ramps during their rehabilitation.

Aesthetic Improvements – While aesthetic improvements are not currently planned for the I-40 bridges, ODOT historically includes aesthetic improvements to the bridges during the final design to enhance the cultural and innovative development that is occurring directly adjacent to the I-40 corridor. Potential aesthetic improvements could be added by utilizing form liners, reveals, stains, lighting, and other treatments.

Project Delivery Innovations

“No Excuses Bonus” – For construction, ODOT will incentivize contractors to achieve early delivery of the whole Project and stages open to traffic early by deploying no excuses bonuses, including a substantial completion incentive valued at five to 10 percent of the contract and smaller incentives for internal milestones tied to key Project elements.

Single Contract and e-Contracting – Grant funding will save costs by allowing the Project to be let into a single construction contract of the kind envisioned in the FHWA’s Every Day Counts (EDC) Initiative, rather than staggering work over multiple project lettings as regular State and Federal funding becomes available. E-Construction methods will include mobile inspection and video monitoring and reporting of construction progress.

Financing Innovations

Increased Revenue – Oklahoma’s ROADS fund provides \$590 million per fiscal year into ODOT’s Eight Yea CWP which is funded with 43 percent state funds and 57 percent federal funds. This overmatching in state dollars allows Oklahoma to take advantage of additional federal opportunities when presented along with finding other innovative solutions.

Benefit-Cost Analysis

A Benefit-Cost Analysis (BCA) has been conducted for the Project. All monetary values in the BCA, including costs, are expressed in constant 2020 dollars. The following general parameters and assumptions were used in the BCA:

- A real discount rate of seven percent is applied to all costs and benefits except for carbon emissions reductions, which are discounted at three percent.
- A residual value is assumed at the close of the 25 years of operation, based on a full 50-year useful life of the Build Project, which includes four newly constructed bridges.
- The Project construction is assumed to commence in 2024 and end in late 2026, with operation commencing in 2027.
- All costs and benefits are in 2020 dollars.
- The year 2020 was used as the base year for discounting; that is, 2020 is considered year zero for discounting.

The BCA Report provides additional details on the BCA analysis in **Appendix B** and the BCA Excel Workbook in **Appendix C**.

Costs

The estimated capital cost totals \$85.6 million in 2022 dollars (including contingency). For the BCA, these costs have been de-escalated to 2020 dollars based on the 2020-2022 GDP Price Deflator from the U.S. Bureau of Economic Analysis.

Benefits

Six categories of benefits have been captured by the BCA: life cycle cost savings, travel time savings, crash reduction benefits, fuel benefits, emissions benefits, and freight logistics (supply chain) benefits. 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.

Net Benefits

Based on the assumptions, methodology, and other information presented above, the Project yields a **Benefit-Cost Ratio of 1.59** and a **Net Present Value of \$30.7 million**.

Project Readiness

Technical Feasibility

Engineering and Design Studies and Activities

The engineering and design studies for this Project include the I-40 bridges over I-44 and Portland Avenue. The Project area features and constraints that influenced the development and selection of the recommended concept alternatives include, but are not limited to 4(f) recreational areas, historic and cultural resources, biological resources, visual impacts, natural water sources, drainage, and floodplain impacts, preserving access to local streets, potential impacts to existing residents and businesses, and rolling and mountainous terrain. These elements were all defined and used to narrow down the concepts considered in the studies described below. ODOT, FHWA, Oklahoma Department of Environmental Quality, Oklahoma River Trails Authority, and the City of Oklahoma City provided input for a series of improvement studies that included:

Preliminary Reconnaissance Reports: [Preliminary reports](#) of both the I-40/I-44 interchange and the I-40/Portland Avenue interchange were undertaken before concept development to examine the general characteristics of the corridor. The purpose of the report was to identify design impacts for the proposed conceptual alternatives and provide support data for concept development. Included in the reconnaissance studies were topographic data, existing roadway plans, utility maps, aerial photographs with planimetric details, property identifications, environmental and cultural resource data, collision and accident history, and bridge and hydraulic data. These elements were used to determine the feasibility of the design concepts and assist in the estimating and evaluation of the concepts.

Design Concept Reports (DCR): Two separate [DCRs](#) were developed and submitted for review based on concepts developed using reconnaissance data and traffic operational analysis. The first DCR investigated three design concepts (and a no-build concept) for the I-40/I-44 interchange based on differing levels of construction efforts and operational improvements. Concurrently, a second DCR examined the adjacent I-40 corridor within a three-mile range west of the I-40/I-44 interchange. The second DCR also looked at three I-40 interchanges with the major arterials adjacent to the interchange. Included in the second DCR was the I-40/Portland Avenue interchange and it investigated operational improvements with each of the three interchanges with the primary goal to improve safety and alleviate congestion within the I-40

corridor. The second DCR included three interchange design concepts (and a no-build concept) with improvements to the mainline lane configurations to accommodate each of the concepts.

Overbuilt Bridge Study (OBS): The [OBS](#) evaluated the feasibility of over-widening the proposed I-40 bridges over I-44 to improve traffic operations during construction activities. The OBS investigation identified design challenges and associated costs with overbuilding the bridges.

Access Justification Report (AJR) I-40/I-44 Interchange: The [AJR](#) addressed FHWA Interstate Access Policy points. The AJR is considered a Determination of Engineering and Operational Acceptability (DEOA), which is an FHWA determination that a proposed new or revised access point is acceptable from an engineering and operational perspective. A DEOA allows ODOT to determine if a proposal is acceptable for inclusion as an alternative in the environmental review and public involvement processes. An Access Justification Report has been submitted to FHWA and is undergoing the review process.

Right-of-Way

The Project design includes minimal right-of-way acquisition. Right-of-way acquisitions are needed for drainage improvements in two areas along with one utility easement. No permanent structures will be impacted due to right-of-way acquisitions. The use of existing right-of-way was maximized using retaining walls.

Design Criteria

Design criteria for the I-40 bridge replacements and rehabilitations follow standard ODOT roadway design practices. ODOT has delivered numerous interstate bridge projects on time and within budget.

Cost Estimate

The cost estimate for the Project was based on the preliminary design plans and preliminary quantities/estimates. The prices for each quantity were updated to reflect current ODOT construction costs in the base year 2022.

Scope, Schedule, and Budget Risk-Mitigation

ODOT has gained tremendous experience in the delivery of projects along the I-40 corridor. Prior understanding of the local conditions and risks has been considered in the development of the Project scope, schedule, and budget as presented in this grant application. ODOT will develop a Risk Register early in the Project development to identify those risks along with solutions and mitigation strategies to deliver the Project work on time and within budget.

To reduce schedule risks, ODOT will maintain a detailed schedule highlighting the functional relationship of major tasks and key events to identify the critical path items. These will be broken into smaller sub-tasks for weekly tracking of progress and look ahead scheduling. To reduce budget risks, ODOT will use its extensive combined experience on similar projects to manage expenditures. The estimated costs included in the grant application are based on similar ODOT projects and include adequate construction contingencies.

Project Schedule

Table 6 shows the Project schedule. The Programmatic/Individual Categorical Exclusion was approved by FHWA in August 2022. Currently, the design plans are 65 percent complete and

plans will be at 90 percent complete in April 2024. Right-of-way acquisition is underway and will be completed by December 2023. The final PS&E Plan will be ready for submittal and the Project will be let in June 2024. The Project construction will begin in October 2024 and will be completed in December 2026.

Table 6: Project Schedule

I-40 Bridges over I-44 and Portland Avenue		2022				2023				2024				2025				2026			
		Quarter				Quarter				Quarter				Quarter				Quarter			
Activity	Status	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Design	Underway																				
% complete	65%																				
Environmental																					
NEPA Clearance	8/8/2022	Complete																			
Right of Way																					
ROW Plans	2/21/2021	Complete																			
ROW Acquisition	Underway																				
Advertise Construction	March-24																				
Project Letting	Jun-24																				
Begin Construction	Oct-24																				
Bridge Construction	Dec-26																				

Required Approvals

Environmental Approval

ODOT completed a [Programmatic/Individual Categorical Exclusion](#) for the Project and in July 2022 FHWA determined the Project does not have a significant environmental impact as defined by the NEPA. As a result, it was determined the Project is excluded from the requirements to prepare an Environmental Assessment or Environmental Impact Assessment

State and Local Approvals

The Project is included in the [Eight-year Construction Work Plan](#). The eight bridges are included in the following two projects:

- I-40 EB and WB bridges over Portland Avenue are on page 28 in the CWP (29852(04)) and this project includes one of the I-40 bridges over Portland Avenue (NBI# 16396) that will be rehabilitated.
- I-40 EB and WB bridges over I-44 are on page 28 in the CWP (28951(04)). The I-40 EB to I-44 SB bridge ramp and the I-40 EB to I-44 NB bridge ramp are included in this project.

Federal Transportation Requirements Affecting State and Local Planning

The Project is aligned with the following goals in the Oklahoma [2018-2022 State Freight Plan](#)

- Ensure the ability of urban and rural highways to safely accommodate growth in freight traffic.
- Meet freight transportation needs by maintaining the Oklahoma State Highway System in a state of good repair.
- Ensure the competitive performance of the Oklahoma freight system.

- Capitalize on federal funding and finance programs to aid investment in the freight transportation system.
- Safeguard industry supply chains by improving the resiliency of the freight transportation system to withstand disruptions.

The Project is also aligned with the following goals in the Oklahoma [2020-2045 Long Range Transportation Plan](#).

- **Safety and Security:** Ensure a safe and secure transportation system for all users.
- **Infrastructure Preservation:** Preserve and maintain the condition of Oklahoma’s multimodal transportation system in a state of good repair through risk-based, data-driven decision-making processes.
- **Mobility and Accessibility:** Facilitate the movement of people and goods, improve connectivity between regions and activity centers, and increase travel mode choices.
- **Economic Vitality:** Provide a reliable multimodal transportation system for people and goods that coordinates with land development patterns, strengthens communities, and supports a healthy and competitive Oklahoma economy.
- **Fiscal Responsibility:** Sustainably fund and efficiently deliver quality transportation projects while continuing to leverage additional resources in coordination with ODOT’s partners.

Assessment of Project Risks and Mitigation Strategies

As with most major transportation infrastructure projects, there are some risks inherent to meeting the Project schedule and budget. Mitigation of schedule and budget risks can be accomplished in the following ways.

Utility Delays: Utility delays are not anticipated as major utilities located along the I-40 corridor were avoided in the design of the Project.

Cost Overruns: Construction and real estate price increases have been trending high and factor in risk. Cost estimates include the most recent escalation factors to accommodate the foreseeable increases and right-of-way acquisition is minimal.

Procurement Delays: ODOT will use a design-bid approach for the entire Project to provide a more competitive bid as compared to the shorter individual segments due to the economy of scale.

Project Priority Considerations

As shown in this *Crossroads of America: Bridges on I-40 Over I-44 and Portland* BIP Bridge Supplemental Narrative, six I-40 bridges are currently in Fair condition and are at risk of falling into poor condition in the next two to three years. Due to the recent uptick in construction costs that have been experienced nationally, a multitude of critical projects in the Oklahoma City area are being reevaluated for construction costs and timelines. The current estimates used to account for the Eight-Year CWP are often a few years old and do not account for recent inflationary issues. As such, the recent cost trends experienced within the construction industry will have consequences on which projects can be completed within their originally anticipated

timeline. Award and receipt of the BIP Bridge grant funds for this Project will ensure that this Project will be fully funded and will be constructed on schedule.

The Project will be ready to proceed to final design within 12 months of a Categorical Exclusion Determination, Finding of No Significant Impact, or Record of Decision. Currently, the design is 65 percent complete and the right-of-way acquisition is currently underway. Construction will begin in October 2024 and the Project will be completed in December 2026.