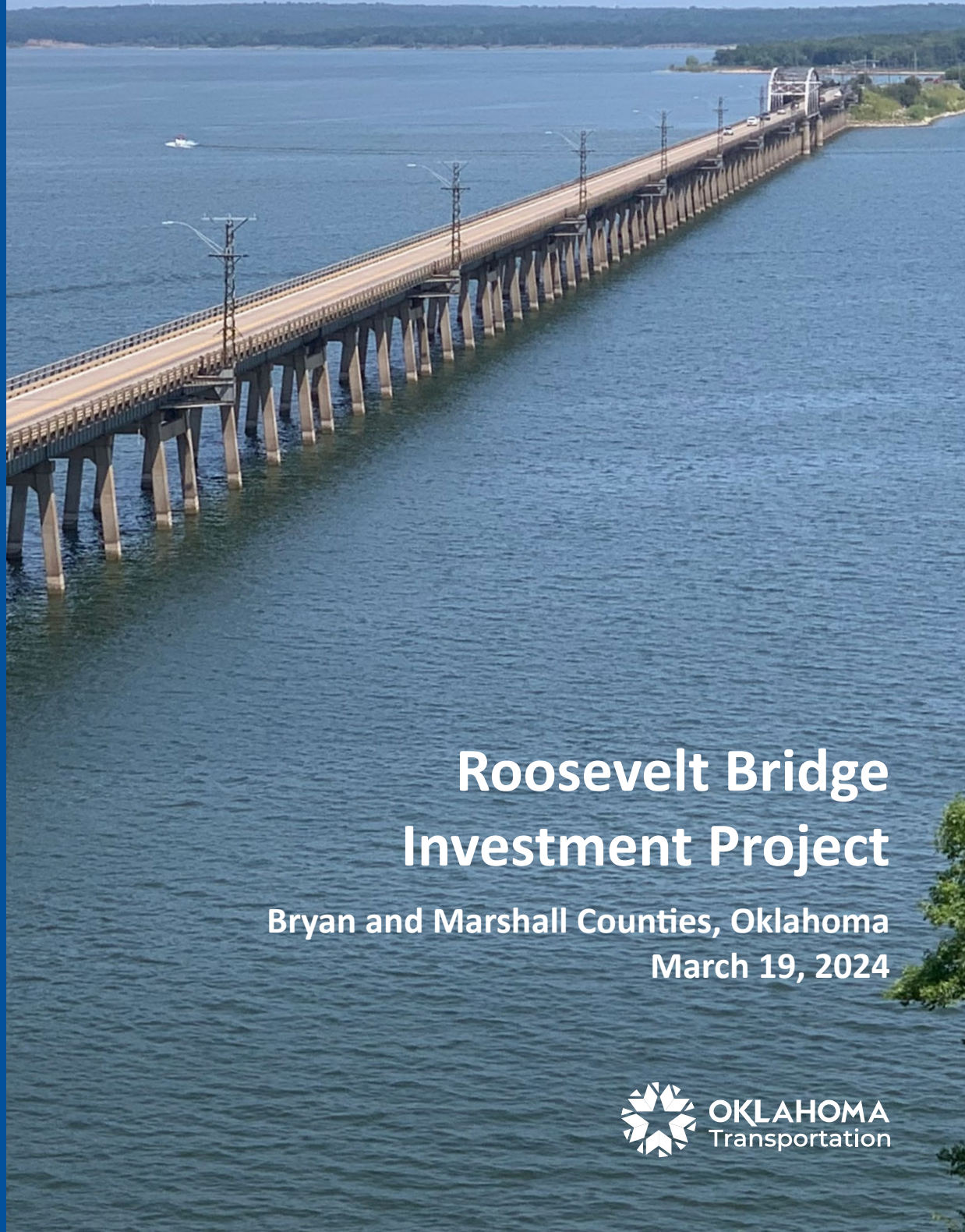


**Bridge Investment Program Large Bridge
Grant Application
Resubmittal**



**Roosevelt Bridge
Investment Project**

**Bryan and Marshall Counties, Oklahoma
March 19, 2024**

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I. Project Description, Location, and Parties

Project Description

The Roosevelt Memorial Bridge carries US-70 over Lake Texoma. The bridge is 4,943 feet long and carries two traffic lanes, one in each direction, on a 24-foot-wide deck with no shoulders (**Figure 1**). The bridge was constructed in 1945 and is composed of 87 spans, including a 250-foot-long Warren through-truss, and is eligible for inclusion in the National Register of Historic Places (NRHP). The bridge is functionally obsolete, fracture-critical, and at-risk of becoming structurally deficient. The bridge currently carries 8,500 vehicles per day (vpd). With major development underway, future traffic volumes are anticipated to exceed 27,000 vpd by 2050.



FIGURE 1: ROOSEVELT MEMORIAL BRIDGE

The Roosevelt Bridge Project will construct a new multimodal bridge across Lake Texoma on a new alignment south of the existing bridge. The new bridge will have a total length of 10,625 feet and consist of 72 spans. The superstructure will be made of prestressed concrete girders that will support a concrete deck. The substructure will consist of multi-column piers with 10-foot diameter drilled shafts that will be founded on bedrock. The bridge will have four lanes of traffic with 10-foot shoulders on each side and a median barrier to separate the directions of travel. The bridge will also have lighting fixtures to enhance visibility and safety at night. In addition, the Project will include multimodal accommodations for cyclists and pedestrians, such as a barrier separated path. US-70 between State Park Road and Willow Springs Road will be widened to a five-lane section (two driving lanes in each direction and center turn lane) to provide continuity with the sections to the east and west. Turn lanes will be provided where needed at intersections, and a traffic signal and crosswalk are anticipated at the State Park Road intersection to accommodate traffic from adjacent development.

Challenges of the Roosevelt Bridge project are related to the critical safety concerns of the existing structure, rapidly increasing traffic demand, a lack of affordable multimodal transportation options, increasingly frequent flood events, and the extraordinary cost of replacing the bridge. These issues are summarized below; more detail on how the Project will address these challenges is presented in the Merit Criteria section of this application. Through addressing these challenges, the Roosevelt Bridge Project will address the BIP Program goals of improving the safety, efficiency, and reliability of the movement of people and freight over bridges, improving the condition of bridges by reducing the number of bridges in fair condition at risk of falling into poor condition within the next 3 years, reducing the total person miles traveled over these bridges, and reducing the number of bridges and person miles traveled over bridges that do not meet current geometric design standards and do not meet the load and traffic requirements typical of the regional transportation network.

Safety: The Roosevelt Bridge has a demonstrated history of high collision rates, particularly severe collisions involving injuries and fatalities. Some of these fatal collisions were head-on or side swipe, likely due to the narrow bridge width and lack of separation between the two directions of traffic (**Figure 2**). The Project will improve safety by providing adding lanes and shoulders as well as safety features such as lighting, median barrier, and rumble strips. These improvements are anticipated to significantly reduce fatalities and serious injuries.



FIGURE 2: ROOSEVELT BRIDGE NARROW DECK WIDTH

Structure Condition (State of Good Repair): The Roosevelt Bridge is rated in fair condition and is at risk of becoming structurally deficient. The truss span is fracture-critical, meaning it lacks redundancy and failure of certain elements in tension could cause the bridge to collapse. There are extensive and serious deficiencies including deck spalling, corrosion and section loss of the floor beams, sheared bolts, and failed railing connections (**Figure 3**). Without major rehabilitation, the bridge would likely fall to poor condition within three years, if not sooner. Left unaddressed, the potential for load posting and/or closure of the bridge would threaten the future transportation network efficiency, mobility of goods and people, and economic growth.



FIGURE 3: EXISTING STRUCTURAL DEFICIENCIES

Capacity: Traffic demand on US-70 over Lake Texoma is anticipated to increase substantially due to local and regional development. The existing two-lane facility is not sufficient to accommodate the anticipated future traffic growth. The Pointe Vista development ([Pointe Vista | Premiere Master-Planned Community | United States](#)) is currently under construction at the west approach and is anticipated to more than double the traffic demand along US-70. Without improvement, mainline level of service (LOS) on the bridge would decline to LOS E, resulting in significant congestion. As a major freight corridor and the primary access to Lake Texoma State Park and the federal recreational lands managed by the USACE, the Roosevelt Bridge Project will eliminate a critical freight bottleneck and enhance freight, recreational, and tourism opportunities.

Flooding and Resiliency: The entire Roosevelt Bridge project is located within a mapped floodplain (FEMA Zone A/AE). Flooding of Lake Texoma has become more commonplace and

more frequently overtops the existing bridge and causeway. Two major flood events occurred in 1990 and 2015 that forced ODOT to close US-70 and the Roosevelt Bridge for several days (**Figure 4**). The new bridge will raise the roadway and bridge profiles approximately ten feet to provide additional clearance above high water, providing long-term resiliency to extreme weather events.



FIGURE 4: ROOSEVELT BRIDGE FLOODING, 2015

Project History

In 2020, ODOT initiated a Preliminary Engineering study to investigate alternatives to improve the Roosevelt Bridge. The study began with a detailed analysis of the existing bridge to assess the condition of its various components. Using the current Load and Resistance Factor Design (LRFD) Specifications as a baseline for comparison, the analysis showed that many of the existing bridge components do not meet the current expected levels of capacity or reliability (see Analysis of Existing Bridge Report at [ODOT Roosevelt Bridge](#)). Because of the bridge’s historic significance, ODOT performed an analysis of alternatives to correct the structural and geometric deficiencies of the existing bridge while preserving its historic integrity, as prescribed by Section 4(f) of the Department of Transportation Act. The Section 4(f) avoidance alternatives included rehabilitation of the existing structure to maintain vehicular traffic as well as preserving the existing bridge as one half of a one-way pair, a pedestrian facility, or as a monument.

As part of the Preliminary Engineering study, ODOT has completed a topographic survey, hydrologic analysis, environmental studies, traffic studies, geotechnical investigations, and an extensive alternatives analysis for both the Section 4(f) avoidance alternatives and replacement alternatives, in the event none of the Section 4(f) alternatives are found to be prudent and feasible. The alternatives analysis considered construction cost, user costs, right-of-way and utility impacts, constructability, and environmental impacts including loss of flood storage in Lake Texoma. Currently the design is approximately 15% complete. The complete Section 4(f) Design Analysis Report and Preliminary Engineering Report can be found at [ODOT Roosevelt Bridge](#). To date ODOT has expended roughly \$2.93 million towards planning, preliminary engineering, and environmental studies.

Project Location

The Roosevelt Bridge carries US-70 over Lake Texoma, which spans the Bryan and Marshall County lines in southeastern Oklahoma (**Figure 5**). US-70 is a major east-west connection across



FIGURE 5: ROOSEVELT BRIDGE LOCATION MAP

the southern portion of the state, providing a link between the major north-south freight routes of I-35, US-69, and US-75. The entire project area is within a Historically Disadvantaged Community (HDC) and the portion within Marshall County is an Area of Persistent Poverty (APP) (see **Table 1**). All of southeastern Oklahoma is considered rural, including the Project area. The Choctaw Nation Promise Zone is located approximately 6.75 miles east of the Roosevelt Bridge.

Table 1: Roosevelt Bridge Census Tract Designations

Census Tracts	Historically Disadvantaged Community	Area of Persistent Poverty
40095094805	Yes	Yes
40013796003	Yes	No
40013796004	Yes	No

Lead Applicant and Other/Private Parties

ODOT routinely receives and expends Federal-aid highway program funds under 23 U.S.C. ODOT has also been awarded several discretionary grants from various programs, including BIP, and is familiar with developing grant agreements, administering the funding, and providing the necessary reporting. ODOT’s Contract Compliance Division oversees the Department’s Disadvantaged Business Enterprise (DBE) program and ensures that ODOT and all its consultants and contractors comply with applicable Civil Rights requirements. No other parties will be involved in delivering the project. No private or non-private entity will receive a direct and predictable financial benefit if the project is selected for an award.

Additional Eligibility Requirements

Maintenance: ODOT will use dedicated maintenance funds to maintain the bridge. These funds are committed and available for this Project. As documented in ODOT’s [Transportation Asset Management Plan](#) (2022-3031) (TAMP), maintenance and preservation funds come from state and

federal sources. ODOT forecasts future funding based on historical data and allocates this revenue to its field districts. Maintenance funds are allocated based on a lifecycle analysis of existing assets to determine the most cost-effective uses of those funds. ODOT currently has \$43.7 million in the TAMP for bridge maintenance and preservation.

Accommodation for Bicyclists and Pedestrians: The existing Roosevelt Bridge is narrow and does not provide any pedestrian or bicycle accommodation. Bicycle/pedestrian accommodation could take one of two forms, either rehabilitating the existing bridge for bicycle/pedestrian use or adding bicycle/pedestrian facilities to the new bridge. With limited crossings of Lake Texoma, the Roosevelt Bridge project would provide a critical link for non-vehicular users.

Consistency with an Asset Management Plan: ODOT's TAMP is based on a lifecycle analysis of ODOT's existing assets, and includes funds for maintenance, preservation, rehabilitation, and reconstruction. While the TAMP does not list specific projects, the Roosevelt Bridge is consistent with the TAMP in that replacing the bridge has a lower lifecycle cost (over 30 years) than continued maintenance and preservation activities.

II. National Bridge Inventory Data

National Bridge Inventory (NBI) data is provided in the Project Application Form. All NBI data is accurate except for Average Daily Traffic, Average Daily Truck Traffic, Detour Length, and Inspection Date (a more recent inspection report is available). These values were substituted with data from the Project-specific traffic analysis (available at [ODOT Roosevelt Bridge](#)) and the detour length as described in **Criterion 3 of Section IV** below.

III. Project Budget: Grant Funds, Sources, and Use of all Project Funding

The total project cost for the Roosevelt Bridge project is \$250,633,846, based on a 15% level of design and a 20% contingency. This total cost includes previously incurred costs of \$2,933,846 that ODOT has expended on the Preliminary Engineering Study, Section 4(f) alternatives analysis, public involvement, and NEPA documentation. ODOT intends to deliver the project as Oklahoma's first Progressive Design Build (PDB) project. PDB is an innovative delivery method that promotes collaboration between the owner, designer, and contractor. Final design, right-of-way acquisition, utility relocation, and construction are anticipated to be completed by the PDB team. Final design costs are estimated at 6% of construction and include planning activities described in the FY 2022 BIP Planning Grant for which ODOT was awarded \$957,300 by FHWA. Future eligible costs include final design, right-of-way acquisition, utility relocation, and construction for a total of \$247.7 million (see **Table 2**).

ODOT is requesting \$123,850,000 in BIP funds, or 50% of the future eligible project costs. Other federal funds will total approximately \$61.9 million, which includes \$957,300 in BIP planning grant funds. ODOT intends to apply for a \$61 million TIFIA loan to fund the remainder of the Project. ODOT expects to receive authorization to enter into the TIFIA loan in the current legislative session. ODOT has had recent success in obtaining TIFIA loans for other large projects such as the 5-mile new alignment Gilcrease Expressway in Tulsa (joint project with Oklahoma Turnpike Authority, \$120.6 million), and two loans to help fund the Rural Two-Lane Advancement and Management Plan (RAAMP) Phase 1 and 2 Projects to enhance 56 miles of rural roadways by adding shoulders, rehabilitating pavement, and widening bridges (\$86.55 million). ODOT is familiar with TIFIA requirements and is confident a loan for the Roosevelt Bridge can be secured. TIFIA funds comprise 25% of the total future Project costs. Therefore, the

Table 2: Roosevelt Bridge Sources and Uses of Funds

USE OF FUNDS	SOURCES OF FUNDING (in \$1,000s)				Total Project Cost
	ODOT State Funds	Other Federal Funds	BIP Funds	Future Eligible Cost	
Previously Incurred Costs					
Preliminary Engineering & Environmental	\$2,933,846				\$2,933,846
Future Eligible Costs					
Final Design	\$12,242,700	\$957,300		\$13,200,000	\$13,200,000
Right-of-Way	\$2,500,000			\$2,500,000	\$2,500,000
Utilities	\$12,000,000			\$12,000,000	\$12,000,000
Construction	\$35,182,300	\$60,967,700	\$123,850,000	\$220,000,000	\$220,000,000
TOTAL	\$61,925,000	\$61,925,000	\$123,850,000	\$247,700,000	\$250,633,846
Percent of Eligible Costs	25%	25%	50%	100%	

total federal share for this project is 75%. The remaining 25% of the funding will come from ODOT state funds (\$61.9 million, not including previously incurred costs). Documentation of these funding commitments is included with this application. BIP funds will be used for construction only.

All funds are encumbered and available for the project except the TIFIA loan. In the unlikely event TIFIA is not received, ODOT will seek to finance the remaining funds through GARVEE or state-issued bonds back by federal and state appropriations. Alternatively, ODOT could rebalance funding in its fiscally-constrained [8-Year Construction Work Plan](#) to allocate more funds to the Roosevelt Bridge in the required year(s). ODOT is committed to funding the Roosevelt Bridge Project in full should BIP funding be awarded. ODOT has been the recipient of dozens of federal discretionary grants and has never failed to meet matching requirements.

None of the proposed funds are subject to the limit on freight rail, port, and intermodal infrastructure. The potential for cost overruns is known and is built into the 20% contingency included in the project budget. ODOT has included \$15.2 million for right-of-way, utility relocations, and construction of the project in its 8 Year Construction Work Plan and remains committed to adjusting as needed to meet all BIP and statutory deadlines for funding obligation and expenditure. ODOT’s history has consistently shown a contract growth of less than 3%, which is covered by other formula federal funds or Rebuilding Oklahoma Access and Driver Safety (ROADS) state funds.

IV. Merit Criteria

Criterion 1 – State of Good Repair

Constructing and maintaining a new crossing of US-70 over Lake Texoma in a state of good repair is a primary purpose of the Project. The Roosevelt Bridge is composed of 86 approach spans (concrete deck on steel floor beams and girders) and one truss span (250’ steel Warren through-truss) all of which are supported on a variety of concrete substructure elements. The bridge is rated in Fair condition and is at risk of becoming structurally deficient. The truss span is considered

fracture-critical, meaning failure of certain portions under tension could cause the bridge to collapse. Without major rehabilitation, the bridge will likely fall to poor condition in the near term, within three years if not sooner. ODOT restricted the bridge to overload traffic in 2020 due to the superstructure condition, specifically related to section losses to floor beam members. Emergency repairs completed in 2021 allowed ODOT to again open the bridge to all traffic. More detail on the existing bridge conditions can be found in the Analysis of Existing Bridge Report available at [ODOT Roosevelt Bridge](#).

The bridge is currently classified as functionally obsolete due to the substandard vertical clearance on the truss span (14'-9"), its narrow clear roadway width (24'). Based on 2021 traffic counts, existing average annual daily traffic (AADT) volumes on the Roosevelt Bridge are approximately 8,500 vpd, with 9% trucks. Analysis using Highway Capacity Software 7 (HCS7) determined that the bridge currently operates at LOS C¹.

Using a background growth rate of 1.5% alone, traffic volumes on the bridge are anticipated to grow to 12,200 vpd by 2050². However, Pointe Vista is planning 11 phases of development at the west end of the bridge on what is today a golf course and undeveloped land. By 2034, Pointe Vista will include approximately 2,700 acres of mixed-use development including 2,100 homes, three resort hotels, a convention/conference center, golf course, casino, marina, shops, restaurants, a water park, and entertainment venues at the west end of the bridge (see **Figure 12**).³ The additional demand of this development will significantly increase traffic volumes on the Roosevelt Bridge. Projected 2050 traffic volumes inclusive of the development were estimated at approximately 27,300 vpd based on a trip generation procedure consistent with the *ITE Trip Generation Manual*.

With no improvements to the bridge, the 2050 Level of Service is expected to worsen to LOS E, resulting in a significant bottleneck on the two-lane bridge. Delay is expected to extend beyond the peak hours given the recreational and entertainment activities proposed for the development. Adding two driving lanes for a total of four 12-foot lanes and 10-foot shoulders would improve LOS to B in 2050 (**Table 3**)⁴.

By 2050, traffic volumes on the Roosevelt Bridge are anticipated to reach

27,300
vehicles per day

Table 3: Bridge Level of Service Results

Scenario	AADT	Level of Service (LOS) Results	
	Vehicles per day	No-Build Condition	Build Condition
2021	8,500	C	A
2050 (with Development)	27,300	E	B

As part of the planning process to improve the condition of the Roosevelt Bridge, ODOT performed an evaluation of the existing structural condition of the bridge. Results of that analysis indicate the concrete deck has multiple large spalls throughout and areas where the deck lifts off

¹ Traffic Analysis Memo at [ODOT Roosevelt Bridge](#)

² Based on historic traffic counts on US-70, Sites 480031 and 070016, [AADT Traffic Counts | ODOT](#)

³ [DEVELOPMENT | Pointevista](#)

⁴ See BCA Tech Memo and Traffic Analysis Memo at [ODOT Roosevelt Bridge](#) for more information on traffic volumes

the steel floor beams due to pack rust. All joints have lost their seals allowing water to flow onto the steel beams and girders supporting the deck. Many of the steel floor beams in the approach spans have significant corrosion and section loss resulting in substantial member capacity reduction. Numerous bearings have sheared bolts and shifted bearing plates. The metal bridge rail has numerous connections that are sheared, missing, or other failed connections. The rail has also been impacted multiple times by vehicles resulting in misalignment and damaged posts throughout. The steel truss members have minor corrosion throughout. Due to the low vertical clearance, the bracing in the portal frames of the truss has impact damage from vehicular collisions. The concrete substructure elements have minor spalls and cracks throughout. **Figure 3 and Figure 6** show select photographs of existing bridge conditions. More photographs can be found at [ODOT Roosevelt Bridge](#).



FIGURE 6: ROOSEVELT BRIDGE INSPECTION PHOTOS (2021)

The latest routine bridge inspection report (1/29/2024) gives the existing deck and superstructure NBI ratings as “5 = Fair”; however, this is based on emergency repairs conducted in 2021 to avoid load posting the bridge and otherwise would have been rated “4 = Poor”, resulting in a load posting of the structure. The emergency repairs were not intended to be long term and did not address deficiencies such as the railing. It is anticipated that without the Project, the Roosevelt Bridge will fall into poor condition within three years. Should no major rehabilitation or replacement occur, it is estimated the existing bridge will require load

posting in approximately 10 years, and closure 10 years after that. This is a conservative estimate according to Justin Hernandez, P.E., Oklahoma State Bridge Engineer: “If this bridge makes it 5 years without cause for action (posting at least), I’d say we’re on borrowed time” (see [ODOT Roosevelt Bridge](#) for the latest inspection report). However, as a conservative approach, ODOT used the National Bridge Investment Analysis System (NBIAS) to estimate the years of posting and closure for the Roosevelt Bridge. The NBIAS estimates the bridge will require posting for 50% of trucks and buses in 2033, 100% of trucks and buses in 2048, and full closure in 2052⁵.

“If this bridge makes it five years without cause for action (posting at least), I’d say we’re on borrowed time”.
Justin Hernandez, P.E.
Oklahoma State Bridge Engineer

⁵ A sensitivity analysis was performed with ODOT’s estimates. See the BCA Tech memo for more details.

Load posting and potential closure of the bridge will threaten the future transportation network efficiency of southeastern Oklahoma. As discussed in **Criterion 3** below, US-70 is a critical freight link, connecting the major freight routes of US-75 and I-35. Should the bridge be load posted or closed, freight and passenger vehicles would be forced to detour nearly 40 miles, adding significant user costs and severely affecting the mobility of goods and people. Restricting or removing the Lake Texoma crossing will stifle the region’s economy by limiting freight movement, population growth, local investment, and recreational access.

The Roosevelt Bridge Project will provide a new structure designed to meet today’s geometric and load rating standards with a 75-year design life. A new structure will resolve the structural and geometric deficiencies of the existing bridge and will provide a reliable route for freight and passenger traffic. The Project will restore and modernize this structure through elimination of the fracture-critical truss span and will result in lower long-term maintenance costs. According to ODOT estimates, maintenance costs for the existing bridge through 2047 (the end of the BCA analysis period) will be \$14.2 million. With the Project, these costs will be reduced to \$180,000 for the same time period. Over the life of the Project maintenance savings are anticipated to be \$10.6 million.⁶ This lifecycle analysis is consistent with the methodology presented in ODOT’s [TAMP](#) and the Roosevelt Bridge project is consistent with that plan. Maintenance costs will be funded by ODOT through their dedicated maintenance fund. ODOT is responsible for maintenance for on-system facilities throughout the state. As such, ODOT has a \$500M 4-Year [Asset Preservation Plan](#) which is both federally and state funded to address pavement and bridge conditions throughout the state.

The Roosevelt Bridge Project will also provide long-term resiliency to extreme weather events. Flooding has become more commonplace, and water more frequently overtops the existing bridge and causeway. In 2015 a major flood event forced ODOT to close US-70 and the Roosevelt Bridge for nine days (see **Figure 4**). The new bridge will raise the roadway profile of the bridge and approaches between five and ten feet to 650-655 feet above mean sea level (amsl) to provide additional clearance above high water. More information about project resiliency is presented in **Criterion 4** below.

Criterion 2 – Safety and Mobility

Safety is a primary purpose of the Roosevelt Bridge Project. The bridge has a demonstrated history of high collision rates on and near the bridge, particularly severe collisions such as injuries and fatalities. From 2016 to 2020 there were 58 total collisions, including 18 injury collisions and 4 fatal collisions (**Figure 7**). The corridor crash rate (85 crashes per 1 00 million vehicle miles traveled [MVMT]) was somewhat higher than the statewide crash rate (75 per 100 MVMT). However, the **fatal crash rate for the corridor** was over twice as large at 5.9 per

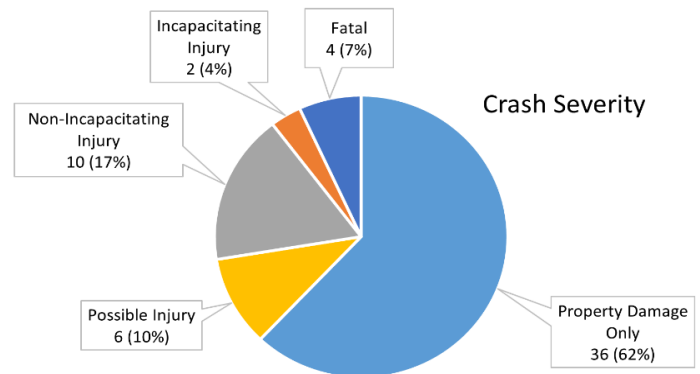


FIGURE 7: ROOSEVELT BRIDGE CRASH SEVERITY, 2016-2020

⁶ In 2021 discounted dollars. See BCA Tech Memo.

100 MVMT than the statewide fatal crash rate at 2.6 per 100 MVMT. The locations of the fatal collisions are shown on the Fatality Analysis Reporting System (FARS) map in **Figure 10**. As the Project will make safety improvements to the entire 4-mile area between State Park Road and Willow Springs Road, all the collisions within this portion of US-70 were included in the analysis. All collision data and maps are available at [ODOT Roosevelt Bridge](#).



FIGURE 9: FATAL COLLISION, MARCH 2018

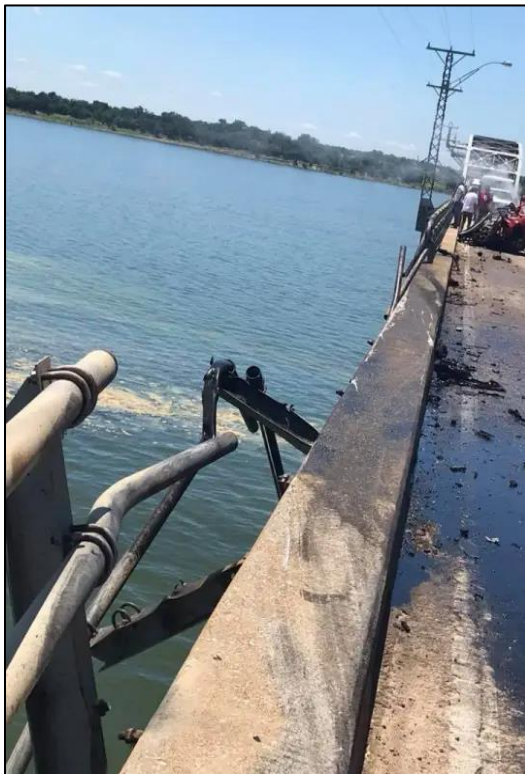


FIGURE 8: FATAL COLLISION, JUNE 2018

The current configuration of the bridge (two 12' lanes with no shoulders) is narrow and provides no opportunity for passing or safe refuge for vehicles. Widening the route from one lane to two lanes in each direction will provide additional passing opportunities and a safer route for the projected traffic volumes along US-70. The new Roosevelt Bridge will have four 12-foot driving lanes and two 10-foot outside shoulders with a center median

Almost 20% of the collisions involved head-on or sideswipes which tend to result in more severe outcomes. Close to half of the collisions were documented as “no improper action,” indicating conditions on the bridge and roadway may have contributed. “Left of center” was the cause of one fatal collision (**Figure 8**), likely due to the narrow width of the roadway and lack of separation between the two directions of traffic. As seen in **Figure 9**, the existing bridge railing

does not have sufficient capacity to withstand the impact of a crash and contain the vehicle(s) on the bridge. ODOT’s analysis of existing bridge condition showed that **approximately 1/3 of the metal railing attachments are missing, providing no protection.**

A closer look at the collision locations suggests that two areas related to the bridge have experienced a high number of collisions (**Figure 10**): the west approach, where the 5-lane US-70 roadway to the west transitions to the 2-lane bridge, and at the location of the truss span on the bridge itself. The intersections at either end of the project also have higher numbers of collisions.

The US-70 roadway in the vicinity of the bridge has characteristics that contribute to safety issues (**Figure 11**). There are no shoulders, median, or rumble strips on the bridge, leaving little room for error should a driver leave their lane. While there is lighting on the bridge, the roadway to the east and west is not illuminated. The west approach transitions from 5 lanes to 2 lanes on a steep grade (4.7%), and there is limited sight distance at the intersections on either end.

The current configuration of the bridge (two 12' lanes with no shoulders) is narrow and provides no opportunity for passing or safe refuge for vehicles. Widening the route from one lane to two lanes in each direction will provide additional passing opportunities and a safer route for the projected traffic volumes along US-70. The new Roosevelt Bridge will have four 12-foot driving lanes and two 10-foot outside shoulders with a center median

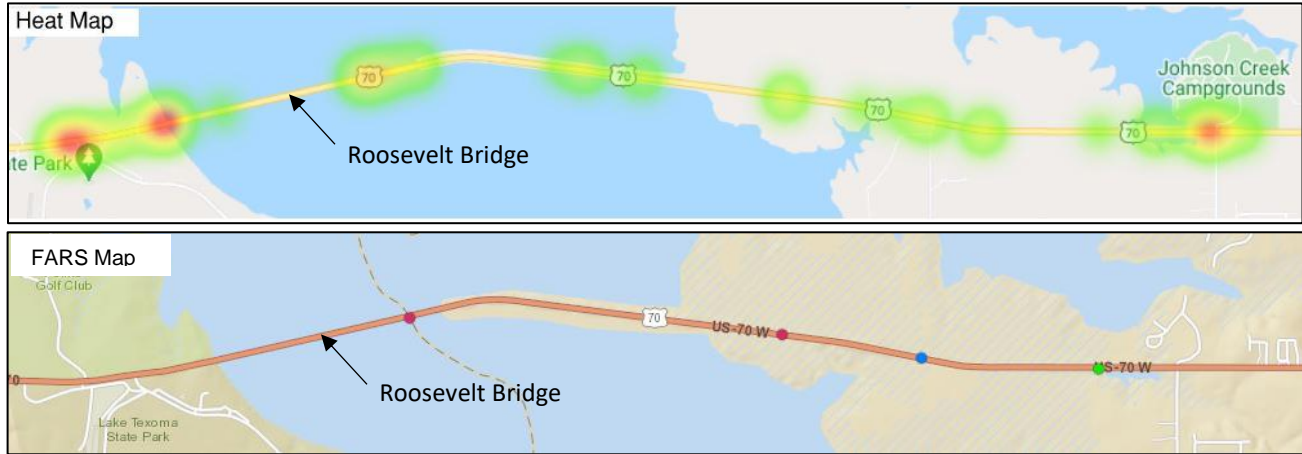


FIGURE 10: COLLISION FREQUENCY HEAT MAP AND FARS MAP, 2016-2020

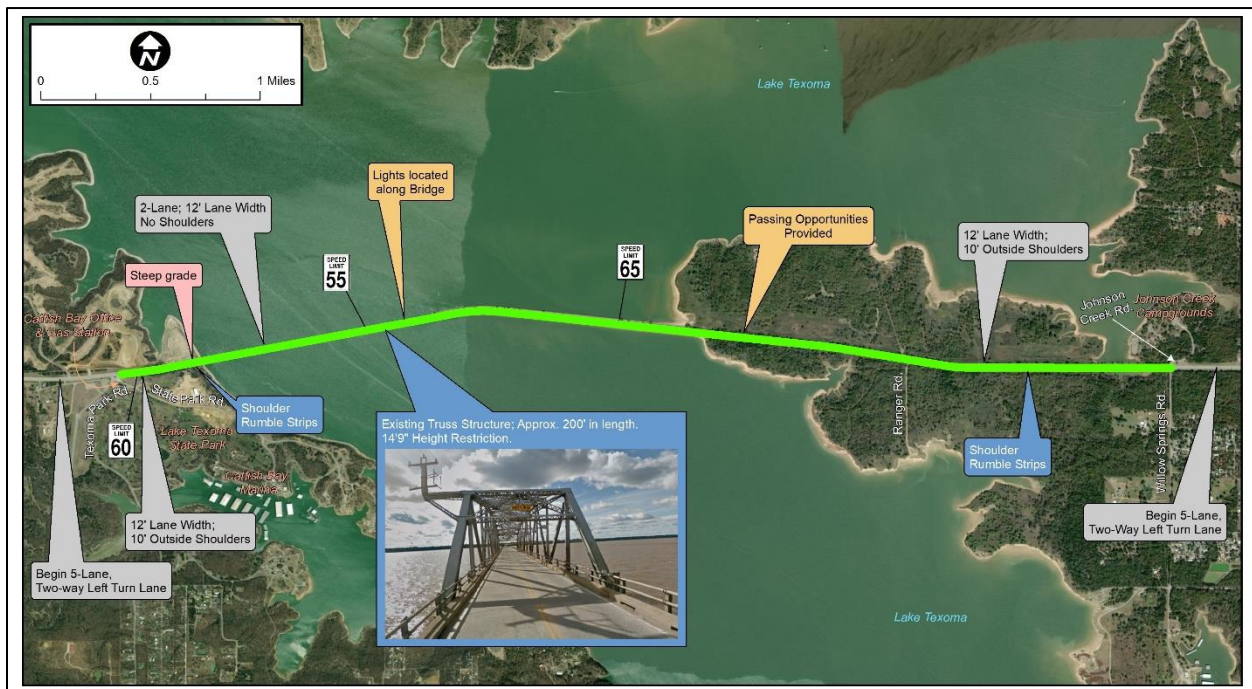


FIGURE 11: EXISTING SAFETY CONSIDERATIONS

barrier. While additional lanes are needed to accommodate future traffic volumes, they are also anticipated to increase safety. The Project will remove all vehicular traffic from the truss structure, eliminating the safety concerns related to the low vertical clearance. Modern crash-tested railing will be provided to minimize the potential of vehicles leaving the bridge. Pedestrians and bicycles will be provided with a barrier-separated designated path to provide a safe multi-modal crossing of Lake Texoma where none exists today.

The Roosevelt Bridge Project is consistent with the National Roadway Safety Strategy Safe System Approach by providing a safer road, a safe speed appropriate to the new bridge, and by increasing the expediency of post-crash care. The Traffic Analysis Memo at [ODOT Roosevelt Bridge](#) describes the methodology used to predict potential future collision reductions as a result of the Project. Quantified safety benefits include reduction in expected number of crashes through safety enhancements including widening from 2-lanes to 4-lanes, shoulder rumble strips, improved

lighting, and median barrier. A crash modification factor (CMF) is used to compute the expected number of crashes after implementing a countermeasure on a road or intersection. Several countermeasures with beneficial CMFs will potentially apply to the Project to reduce the number of collisions that occur on the route:

- Convert 2-lane roadway to a 4-lane divided roadway = 66% reduction (CMF ID: 7566)⁷
- Installation of any type of median barrier = 43% reduction (CMF ID: 42)
- Installation of street lighting (along the entire route) = 37% reduction of night-time collisions (CMF ID: 7774)

Intersection-related and fixed object collisions accounted for a significant number of crashes within the study area. According to the *CMF Clearinghouse* online database, removing or relocating fixed objects outside of a clear zone could result in a 38% reduction of crashes (CMF ID: 1024). The potential addition of an outside shoulder width would also allow additional clearance from objects located on the route (such as guardrails, trees, and signs as previously mentioned). Adding rumble strips on the outside shoulders of the non-bridge segments could also assist in reducing the number of fixed-object collisions by alerting drivers prior to vehicles departing the travel lane, which would result in a 16% crash reduction (CMF ID: 3442).

For simplicity, the BCA analysis selected one CMF (ID: 7566) to predict collision reduction. CMF 7566 is for conversion of urban and rural 2 lane roadways to 4-lane divided roadways⁸. This was considered appropriate since the Project will widen US-70 from a 2-lane undivided roadway to a 5-lane roadway (4 lanes with center turn lane). The new bridge will also be widened to 4 lanes divided with a center median barrier. ID 7566 produces a CMF of 0.34, or a 66% reduction in crashes. These safety improvements will result in a reduction of 7.6 crashes per year (including 0.79 incapacitating injury and fatal crashes), \$6.7 million in avoided crash costs per year, and a total safety benefit of \$135.3 million.⁹

*Safety elements on the bridge could
reduce collisions by*

66%

Safety was also the number one factor cited by the public in their overwhelming support of the project. In the over 280 comments received during the six-week public comment period, the vast majority cited safety as a major concern. All but two individuals indicated the need for a new bridge, with many mentioning the need to widen the bridge with additional lanes and shoulders for the safety of both vehicles and pedestrians/bicyclists.

By 2047, the project is anticipated to impact 921,343,533 person-miles traveled (PMT) based on the AADT projections for the project.¹⁰ PMT was calculated by multiplying the AADT by 1.67 persons/vehicle (per BCA guidance) traveling the 4-mile project distance for 365 days per year. Providing a new bridge with two lanes in each direction will allow the Roosevelt Bridge to operate at an acceptable level of service for both people and freight (see **Criterion 1**). In addition to delays due to congestion, load posting of the bridge will be required by 2033 without the Project. Requiring trucks to use a 21.5-mile detour will have significant safety, operating costs, and

⁷ Selected due to the anticipated traffic volume range and future signal need at State Park Road

⁸ [CMF Clearinghouse](#)

⁹ In 2021 discounted dollars. See BCA Tech Memo

¹⁰ See Table 53 in the BCA Tool

environmental (emissions and noise) impacts. Combined, the benefits of reduced delay and avoided detours is \$145.9 million.¹¹

Criterion 3 – Economic Competitiveness and Opportunity

ODOT has explicitly considered the impact of the project on freight movement and supply chains, specifically how the project will reduce congestion and improve travel times and reliability for both passengers and freight. Adding capacity to the Roosevelt Bridge will improve traffic flow and load requirements of the regional network. The existing Roosevelt Bridge currently carries 8,500 vpd with 9% trucks. This number is expected to increase to 27,300 vpd by 2050. The Pointe Vista development currently under construction on the west side of the bridge is contributing heavily to the future demand (**Figure 12**). At full build-out, Pointe Vista is anticipated to generate 30,000 trips per day with over half of those projected to use the Roosevelt Bridge (see Traffic Analysis Memo at [ODOT Roosevelt Bridge](#)). Without improvements, Level of Service on the US-70 mainline is anticipated to worsen to LOS E by 2050. Intersections at State Park Road and Willow Springs Road will be LOS F for some movements and result in significant congestion. The additional two lanes planned as part of the Roosevelt Bridge Project will improve safety and Level of Service on the bridge to LOS B and remove a critical freight bottleneck.

US-70 is an important link on the National Highway System (NHS) and provides critical east-west connectivity across southern Oklahoma, linking major freight routes such as I-35, US-69, and US-75 (**Figure 13**). US-69 carries approximately 5,300 trucks per day and represents a key north-south

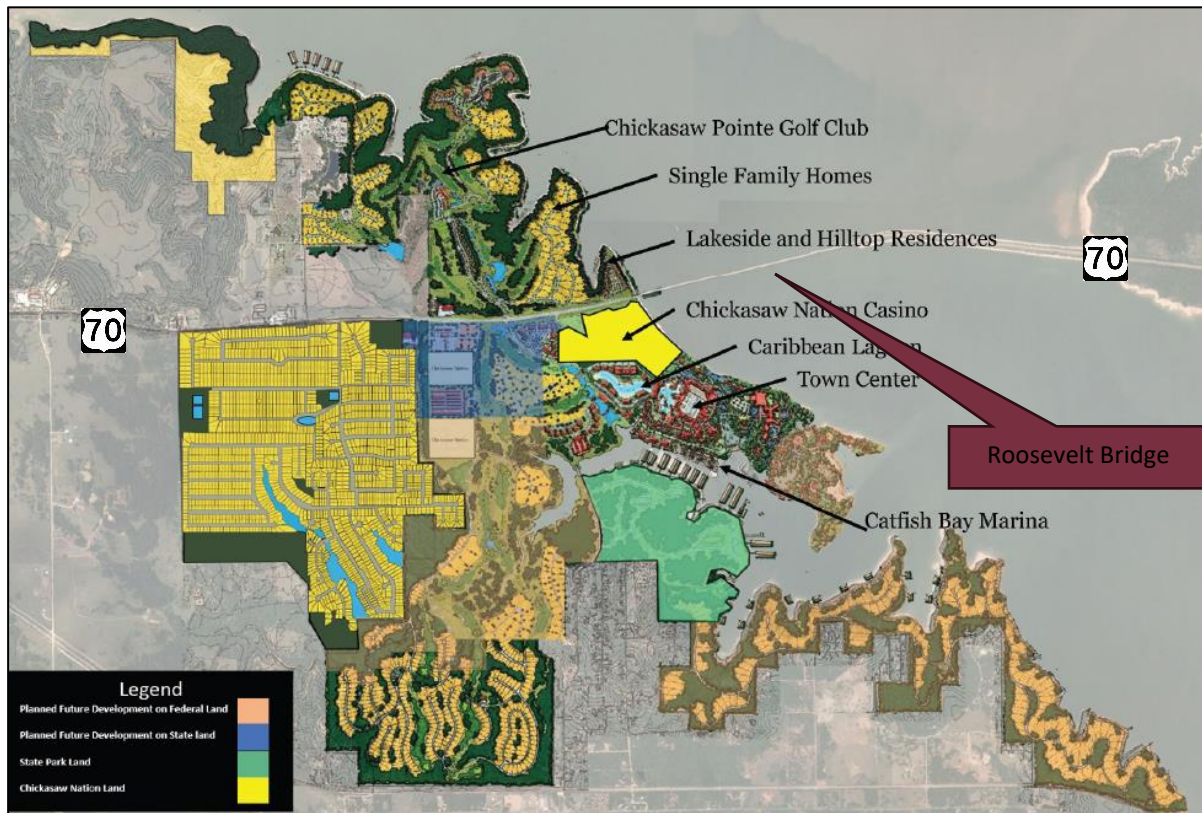


FIGURE 12: PROPOSED POINTE VISTA DEVELOPMENT

¹¹ Includes travel time, vehicle operating cost, emissions, and other environmental benefits in 2021 discounted dollars. See BCA Tech Memo

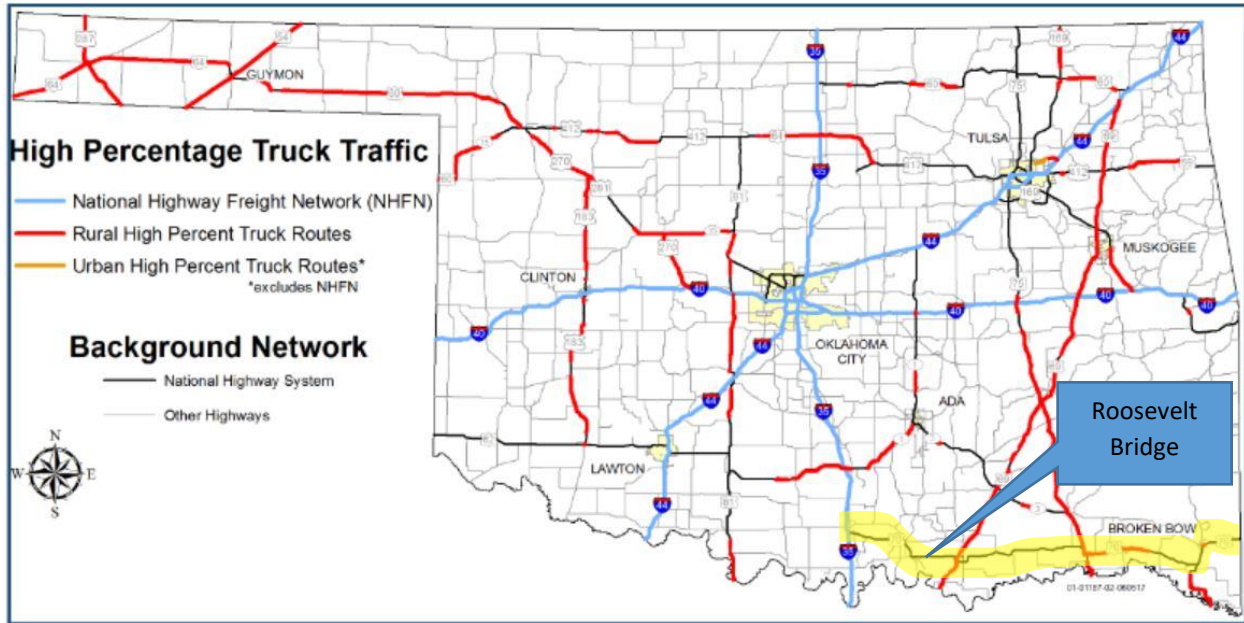


FIGURE 13: OKLAHOMA TRUCK FREIGHT ROUTES (US-70 HIGHLIGHTED IN YELLOW)

route that runs from Minnesota to Texas, forming an important connection between the Midwest and Dallas ([Oklahoma State Freight Plan 2023-2030](#)). With improvements to US-69 currently under construction near Durant, freight mobility on this corridor will be improved and volumes are expected to increase. I-35 is the highest volume freight route in the state, with over 8,000 trucks per day in 2021.

As previously discussed, the existing Roosevelt Bridge does not have sufficient capacity to accommodate the anticipated traffic demand. The City of Ardmore at I-35 and US-70 is the home of several large distribution centers including DOT Foods, Dollar General, and Best Buy. Congestion on I-35 is well documented and is the subject of a major study underway by ODOT. As congestion worsens on I-35, US-70 to US-69 becomes a more attractive route for the freight supply chain to the Dallas Metroplex.

The Roosevelt Bridge becomes an even more critical transportation link in the light of regional freight patterns and lack of alternative routes. Posting and eventual closure of the Roosevelt Bridge would result in a net detour of approximately 21.5 miles. Providing a new bridge would relieve the costs of thousands of vehicles per day using this lengthy detour.

Increasing job opportunities and improving business performance are particularly important for regional economic well-being, as Oklahoma has historically lagged other states in measures of economic well-being such as per capita and median household income. Based on multipliers provided by the Bureau of Economic Analysis' Regional Input-Output Modeling System (RIMS II), the Roosevelt Bridge Project is projected to generate over 1,500 jobs both in the construction of the project and in indirect employment generated by the project¹². As a predominantly tribal area classified as HDC/APP, Bryan and Marshall Counties had only 51-58% of the population over 16 in the workforce, with total employment at 16,493 jobs in 2021¹³. An increase of over

¹² RIMS II Type II multipliers, US Bureau of Economic Statistics, 2021

¹³ US Census Bureau QuickFacts, Bryan and Marshall Counties, OK [U.S. Census Bureau QuickFacts: United States](#)

1,500 jobs will have a significant impact on local employment, even though not all of these jobs will necessarily be filled with local labor. The Project is also anticipated to result in an increase in economic output of all industries by over 30%, providing direct benefit to the community⁷. The RIMS II model produces multipliers specific to construction projects in the Bryan and Marshall County areas. These multipliers are then applied to the anticipated construction cost of the project. The RIMS II multipliers used in this calculation are provided at [ODOT Roosevelt Bridge](#). The Project will provide good-paying jobs that will support a strong economy and labor market.

ODOT participates in a state comprehensive plan to promote equal opportunity, including removing barriers to hire and preventing harassment on work sites. ODOT requires contractors to comply with the Equal Employment Opportunity (EEO) Program requirements and create an inclusive environment. To further the initiative of inclusion and equity, ODOT set a 2023-2025 Triennial DBE goal of 16.0% and efforts to promote the program resulted in the FFY 2023 goal attainment of 17.33%. These efforts increased total dollars to DBEs almost 40% from 2022 to 2023, going above and beyond the federal requirement. Oklahoma's project-level goal setting is data-driven, utilizing current DBE certification information and historical DBE pay item performance to identify the project goal achievement possibility.

ODOT completes contractor compliance reviews on all projects to monitor the utilization of minorities and women on ODOT projects. Contractors must practice affirmative action in recruiting and hiring. Contractors must determine the availability of minority and women within their recruitment area to determine the degree to which action must be taken to seek minority and female recruits. Each contractor must appoint a responsible company official to serve as their EEO officer. Additionally, contractors must develop and post complaint procedures and promptly investigate all alleged complaints of discrimination within a reasonable timeframe.

Criterion 4 – Climate Change, Sustainability, Resiliency, and the Environment

The Roosevelt Bridge Project will address climate change through the reduction of emissions from motor vehicles and providing opportunity for lower-carbon travel modes such as walking and cycling that does not exist today. In addition, the Project will improve resiliency of the existing roadway and bridge by raising the grade above recently observed flood levels. As discussed under **Criterion 3**, without improvement, US-70 is anticipated to experience severe congestion and stop and go conditions. These conditions tend to increase air pollution as vehicles spend more time idling. In addition, without improvements the bridge will require load posting and eventual closure. Emissions savings includes avoiding thousands of vehicles using this detour, resulting in a total benefit of \$10.6 million.¹⁴ These numbers do not include any reduction in vehicle trips as a result of a shift to pedestrian or bicycle modes. While difficult to quantify, some percentage of vehicle trips can be expected to make this shift once a safe bicycle/pedestrian facility is provided.

Bicycle/pedestrian accommodations can take one of two forms, either rehabilitating the existing bridge for bicycle/pedestrian use or adding bicycle/pedestrian accommodations to the new bridge. While multiple alternatives are still under consideration, the project will address the need for pedestrians and cyclists to safely cross Lake Texoma, where no opportunity exists today. **Figure 2** shows the narrow deck on the existing bridge that currently does not provide space for bicycles

¹⁴ In 2021 discounted dollars. See BCA Tech Memo.

or pedestrians. With limited crossings of Lake Texoma, the Roosevelt Bridge project will provide a critical link for non-vehicular users.

The Roosevelt Bridge Project will improve the resiliency of at-risk infrastructure by raising the profile grade of the bridge to reduce flood risk. The entire Roosevelt Bridge Project is located within a mapped FEMA flood hazard area (Zone A/AE, see floodplain map at [ODOT Roosevelt Bridge](#)). As mentioned in the Project Description, historic floods have forced closure of the Roosevelt Bridge for several days. The most recent in 2015 saw record floodwaters (645.72 feet, the highest since the lake was constructed in 1945), and resulted in a full closure in both directions for nine days. To prepare for future floods and ensure long term resiliency, the Roosevelt Bridge Project will construct the new bridge and approaches approximately 5-10 feet higher than the existing. The elevation of the bridge approaches (causeway) will be raised approximately five feet to 650 feet and the bridge will be raised to 655 feet to allow the low beam of the new bridge (with an assumed 8-foot structural depth) to remain above the water surface elevation at the 200-year storm event. The entirety of the Project will be above the elevation of the 500-year storm (**Figure 15**) and above the elevation of the 2015 flood level. Savings from these resiliency improvements is estimated at \$2.1 million¹⁵. The project will be consistent with the Federal Flood Risk Management Standard.

Frequency	Annual Frequency	Pool Elevation
0.99	1-Yr	611.0
0.5	2-Yr	621.0
0.2	5-yr	628.8
0.1	10-Yr	636.0
0.05	20-Yr	641.0
0.04	25-yr	642.0
0.02	50-Yr	646.0
0.01	100-Yr	646.5
0.005	200-Yr	647.0
0.004	250-Yr	647.1
0.002	500-Yr	647.3

FIGURE 14: LAKE TEXOMA STORM EVENT SUMMARY (USACE)

The Roosevelt Bridge Project is within a HDC/APP. According to the [USDOT Equitable Transportation Community \(ETC\) Explorer](#), the area is also disadvantaged due to transportation insecurity and social vulnerability. Transportation access, cost burdens, and safety barriers are all above the 65th percentile nationwide. Additional time and cost caused by unreliable and deficient infrastructure places a disproportionately high burden on these already overburdened communities. Social vulnerability is high based on high poverty, high rates of disability, lack of insurance, lack of internet, and poor housing options. The Project will improve transportation safety and will avoid further impacts of access and cost burdens by providing a modern, reliable bridge before load postings and closure cause costly detours. Affordable bicycle and pedestrian options will also be added.

Criterion 5 – Equity and Quality of Life

The Roosevelt Bridge Project will improve the quality of life for local and regional users. As a critical east-west link, the Roosevelt Bridge provides one of only two crossings of Lake Texoma within the 30 miles between Tishomingo, OK and Denison, TX. Improving the bridge to provide a safe, multimodal crossing with sufficient capacity to meet current and future demand will improve mobility for all users for future generations. While congestion on the bridge is not common today unless there is an incident, future traffic volumes of over 27,000 vpd will far exceed

¹⁵ In 2021 discounted dollars. See BCA Tech Memo

the capacity of the existing two-lane facility. Reliability will be improved with increased capacity providing improved traffic flow, as well as additional bridge width to provide a safer facility, allow collisions to be cleared more quickly, and provide emergency responders better access. Today, if there is a collision on the bridge, there is no room to clear vehicles from the roadway and traffic can quickly back up, causing delay for travelers and acting as an obstacle for police and ambulances trying to reach the scene. Regional emergency care and other essential services such as jobs, healthcare, and post-secondary schools are concentrated in Durant, approximately 12 miles east of the Roosevelt Bridge. The bridge serves as a critical link for access to these services for residents in Kingston, Madill, and other communities on the west side of Lake Texoma.

As discussed under **Criterion 4**, the Project will provide accommodation for pedestrians and bicyclists where none exist today. It is desirable that these users have a safe, separated space to travel independently from vehicles. As a major recreational destination also serving to manage water and wildlife resources, Lake Texoma will benefit from a potential reduction in vehicle trips that will reduce emissions and provide better connectivity for its visitors. With the multiple recreational sites located in direct proximity to the Roosevelt Bridge, a pedestrian/bicycle path will provide opportunity for visitors to the area parks to access nearby amenities and connect to local hiking trails.

As a regional recreational destination, Lake Texoma sees more than 6 million visitors per year. The lake offers 580 miles of shoreline with two wildlife refuges, two state parks, 54 USACE-managed parks, and 23 commercial campgrounds. The lake’s primary attractions include camping, boating, fishing, and hiking (**Figure 16**). As primarily public land with abundant access, Lake Texoma provides an affordable recreation option for residents of Oklahoma, Texas, and surrounding states. Given the location of Lake Texoma within a HDC/APP, providing bicycle and pedestrian accommodations on the bridge will increase mobility options for local underserved communities.

ODOT has been engaged with stakeholders in the planning of the Roosevelt Bridge Project since early 2021. Initial stakeholder meetings were held with local elected officials and agencies including the USACE, Chickasaw Nation, Choctaw Nation, Oklahoma State Historic Preservation Office, Oklahoma Archaeological Survey, Oklahoma State Parks, Lake Texoma Association, and nearby Chambers of Commerce. These agencies were briefed on the existing condition of the bridge and the potential alternatives to provide a safe crossing of Lake Texoma that meets future demand. Alternatives that preserve the historic integrity of the existing structure as well as replacement alternatives have been presented. The project also has widespread support from local agencies and elected officials. Letters of support are included with this application.

Public engagement included in-person and virtual outreach opportunities. ODOT prepared a Public Involvement Plan describing the planned methods of outreach and notification, including identification of environmental justice communities. Notification of the in-person and online public meetings was conducted through several means, including letters to agencies, tribes, elected officials, local school districts, law enforcement, medical facilities, and emergency service

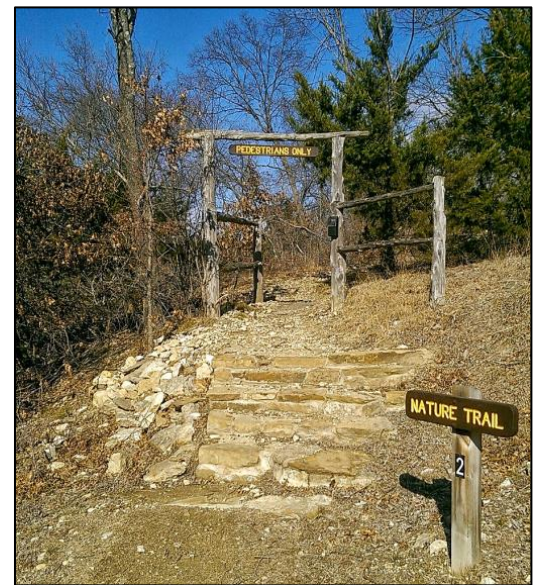


FIGURE 15: HIKING TRAIL AT LAKE TEXOMA

providers. In addition, 4,670 postcards were delivered via direct mail to all addresses in the vicinity of the Project on both sides of the lake. Using direct mail ensures that all addresses receive notification regardless of owner status. Local media also reported on the meeting and the informational website. The Chickasaw and Choctaw Nations provided early input into the planning and development of the project. Both tribes have expressed support for replacing the bridge and have offered assistance to ODOT staff performing studies. The Lake Texoma Association has advocated for a pedestrian/bicycle connection across Lake Texoma to provide an affordable, carbon-friendly alternative for lake visitors and provide an opportunity to enhance active transportation. The Project includes this multimodal connection and continued discussions with these and other stakeholders will take place as design continues.

ODOT concluded a six-week virtual public open house at www.odot.org/US70LakeTexoma in August 2023. Because US-70 is a significant regional facility, and Lake Texoma attracts visitors from a large area, on-line engagement was included to reach these users as well as to provide a convenient way for the public to access Project information. All webpages were Section 508 compliant for accessibility. The website presented a virtual tour of the project, providing visitors with a general overview of the project and then directing them to different pages with more detailed information. Pages on the Section 4(f) alternatives and the replacement alternatives were also provided. In the six weeks the site was live there were over 2,600 unique visitors and over 280 comments submitted. ODOT also held an in-person public meeting on July 25, 2023, in Kingston, OK (**Figure 17**). Over 140 people attended the public meeting where ODOT staff gave a presentation on the Project and answered questions. All but two of the comments received from the public expressed a desire for a new bridge due to safety concerns or to increase capacity. Stakeholder and public meeting summaries are included at [ODOT Roosevelt Bridge](#).



FIGURE 16: ROOSEVELT BRIDGE PUBLIC MEETING, JULY 25, 2023

Criterion 6 – Innovation

Progressive Design Build: ODOT intends to deliver the Roosevelt Bridge Project as the state’s first Progressive Design Build (PDB) project. PDB is an alternative delivery procurement method that uses a primarily qualifications-based selection process to select a Design-Builder. Once selected, ODOT and Design-Builder then progress towards an agreed upon design and construction price (thus the term “progressive”). The complexity of the US-70 over Lake Texoma Bridge has many features that will benefit from early owner and contractor collaboration, including the size of the drilled shafts, the depth of the lake, the length of the bridge, and the potential for Accelerated Bridge techniques. PDB delivery allows for:

- Early selection and involvement of a Design-Builder to ensure that design and construction-related decisions are informed by cost, schedule, risk, and other input from the Design-Builder.
- Project cost and schedule development and refinement during the preconstruction phase.
- Design advancement and risk mitigation which improves cost and schedule accuracy.

- Participation of an independent cost estimator (ICE). The role of the ICE is to develop independent cost estimates for the project that validate the costs submitted by the Design-Builder at pricing milestones.
- Incremental progression of the project over two phases (preconstruction and construction) with an option for ODOT or the Design-Builder to terminate, i.e., “off-ramp”, if the project is not progressing to the mutual satisfaction of the parties.

PDB allows ODOT enhanced ability to minimize unnecessary contingency during the preconstruction phase. If not needed, contingency can create a windfall to the contractor. If the contractor doesn’t estimate contingency correctly, it can cause shortfalls which have a significant negative impact on the overall health of the project and can result in delays and disputes. Use of PDB will improve the return on investment for ODOT because more project funding will go to actual design and construction instead of contingency which may or may not be needed. PDB is anticipated to result in time savings in project delivery, as designer and contractor coordination is initiated early in the process and these entities collaborate with the owner to develop contract requirements. Early constructability input from the contractor can mitigate long lead times and allow for expedited delivery. Permitting is streamlined and the potential for NEPA reevaluation is minimized.

While not calculated in the BCA for the Project, the benefits of the PDB delivery method were quantified. Compared to a traditional Design-Bid-Build delivery for the Roosevelt Bridge Project, PDB is anticipated to save ODOT approximately 16 months. This time delay would result in increased costs due to inflation. In general, costs of materials and labor are anticipated to increase year over year, resulting in a higher total project cost the longer a project takes to deliver. Using the FHWA’s National Highway Construction Cost Index (NHCCI), construction costs increased by 15.9% from Q2 of 2022 to Q2 of 2023¹⁶. If increasing the delivery schedule of the Project by 16 months meant 15.9% per year increase in cost, this would result in a substantial overall Project cost increase:

- Cost assuming project is delivered in 4 years (from PDB contract award to construction completion as presented in this application): \$250,633,846
- Cost assuming project is delivered in 5.3 years through traditional Design-Bid-Build: \$306,097,688
- Cost increase: \$55,463,842

Accelerated Bridge Construction: ODOT will consider Accelerated Bridge Construction (ABC) techniques for the new bridge over Lake Texoma. The use of ABC techniques has the potential to shorten construction time, reduce construction costs, reduce traffic impacts, improve worker safety, and improve the quality control of materials. Float-in Modular Spans, Precast Concrete Pier Caps and Precast Concrete Deck Panels are some of the techniques that can be further studied for benefit to the project. ABC methods could improve safety of the construction laborers by removing many activities from the hazards associated with lake construction. Construction time will be reduced because the superstructure can be constructed at the same time as the substructure. Repetition, efficiency, speed, safety, and control could be some of the benefits of this method.

¹⁶ [National Highway Construction Cost Index 2023 Q2 \(dot.gov\)](https://www.dot.gov/nhcci)

Innovative Financing: The size of the Roosevelt Bridge Project demands that ODOT pursue alternative funding sources to construct the project before potentially severe consequences force closure of the bridge. On other major projects, phased construction with separate projects of independent utility allows ODOT the ability to spread out project funding over multiple years; however, this project must be built as one and has a very high upfront cost. In addition to BIP and potential MPDG funds, ODOT intends to pursue a TIFIA loan to overcome this challenge (See **Section III**). This Project will be the single largest infrastructure investment in rural Oklahoma for the foreseeable future. In addition, the Oklahoma legislature recently appropriated \$200 million in the Rural Economic Transportation Reliability and Optimization Fund (RETRO) for projects to enhance economic development in rural areas. This was the largest appropriation for infrastructure in state history and shows Oklahoma’s commitment to improving safety and enhancing economic vitality in rural areas. The Roosevelt Bridge Project is an ideal candidate for this funding.

V. Benefit Cost Analysis

A Benefit Cost Analysis (BCA) has been completed for the Roosevelt Bridge Project utilizing the BCA Tool and accompanying User Guide published by USDOT as part of the Large Bridge BIP NOFO¹⁷. All monetary values in the BCA, including costs, are expressed in constant 2021 dollars. The general parameters and assumptions used in the BCA can be found in the BCA Technical Memo at [ODOT Roosevelt Bridge](#). Based on the BCA Tool the Project yields a Benefit-Cost Ratio of 1.36 and a Net Present Value of \$77.6 million. Results are summarized in **Table 4**.

Table 4: Summary of BCA Outcomes, Millions of Dollars in 2021

Category	Benefit	Percent of Total Benefits
Safety	\$135,301,892	46%
Travel Time	\$74,157,571	25%
VOC	\$61,003,923	21%
Resilience	\$2,070,971	1%
CO2 Emissions	\$6,004,347	2%
Non-CO2 Emissions	\$4,556,711	2%
Other Environmental	\$205,360	<1%
Maintenance	\$10,572,768	4%
Other Benefits	\$153,375	<1%
Total Benefits	\$294,026,919	100%
Total Discounted Costs	\$216,441,787	N/A
BCR	1.36	N/A
Net Present Value (NPV)	\$77,585,132	N/A

VI. Project Readiness and Environmental Risk

Technical Feasibility and Technical Competency

The proposed project will construct a new bridge on a new southern alignment that will span the entire lake. ODOT studied twelve superstructure types (materials and span lengths) to determine

¹⁷ The BCA was updated to incorporate the revised 3.1% (2% for CO2) discount rates per USDOT feedback on this application.

the most economical¹⁸. Various configurations of column and drilled shaft configurations were also studied for the concrete piers and were informed by the results of geotechnical testing¹⁹. Based on this analysis, the new bridge will have a total length of 10,625 feet and consist of 72 spans. The superstructure will be made of prestressed concrete girders that will support a concrete deck. The substructure will consist of multi-column piers with 10-foot diameter drilled shafts that will be founded on bedrock. The bridge will have four 12-foot driving lanes with 10-foot outside shoulders and a median barrier to separate the directions of travel. The bridge and approaches will have improved lighting fixtures to enhance visibility and safety at night. In addition, the project will include multimodal accommodations for cyclists and pedestrians, such as a barrier separated path.

US-70 between State Park Road and Willow Springs Road will be widened to a five-lane section (two driving lanes in each direction and center turn lane) with a 65-mph design speed to provide continuity with the sections to the east and west. Turn lanes will be provided where needed at intersections, and a traffic signal and crosswalk are anticipated at the State Park Road intersection to accommodate traffic from adjacent development. Retaining walls are anticipated south of US-70 on the west side of the bridge to minimize impacts to the Pointe Vista and Chickasaw Nation Casino developments. The Project will require approximately 63 acres of new right-of-way, primarily in the form of easements on USACE land, with no relocations.

The new bridge alignment will cross the lake to the south of the existing bridge and will tie in at the existing approach roadways. This will reduce traffic impacts because traffic can remain unaffected while almost the entire bridge and approaches are being constructed. This will also provide benefits to construction costs, duration, and safety for construction workers and the traveling public. It is anticipated that the construction of the tie-in roadways will cause moderate impact to the traffic and will last approximately 60 days for each approach. Scope, schedule, and budget risks and mitigation measures are shown in **Table 5** below.

Table 5: Project Risk and Mitigation Strategies

Project Risk (Probability of Occurrence)	Mitigation Strategies
Section 4(f)/NEPA Approval Delay (Moderate)	<ul style="list-style-type: none"> - FHWA approval of the Section 4(f) document is anticipated by mid-2025. Should this be delayed, it could affect the schedule for NEPA completion and funding obligation. However, funding obligation is scheduled well in advance of the statutory deadline. ODOT has begun consultations with the SHPO and FHWA and have presented information at multiple meetings.
Cost Increases (Moderate)	<ul style="list-style-type: none"> - If the existing bridge is preserved, this would add rehabilitation and future maintenance costs. ODOT’s cost estimates are conservative and include sufficient contingency to incorporate rehabilitation of the existing bridge for non-vehicular use. - Cost increases have become more common with rising inflation. Project estimates were completed in February of 2023 but are based on less than 30% design. All estimates include a 20% contingency reflecting the preliminary level of design.

¹⁸ See Section 4.4.2.1 of the Preliminary Engineering Report at [ODOT Roosevelt Bridge](#)

¹⁹ See Section 4.6 and Appendix O of the Preliminary Engineering Report at [ODOT Roosevelt Bridge](#)

	<ul style="list-style-type: none"> - The PDB Team will provide Guaranteed Maximum Price (GMP) figures for milestones throughout project delivery. Cost increases will be able to be absorbed as the project advances. - ODOT has included the project in its 8 Year CWP and remains committed to adjusting as needed to meet all BIP and statutory deadlines for funding obligation.
Geotechnical Issues (Moderate)	<ul style="list-style-type: none"> - Geotechnical data collected includes 5 borings taken within Lake Texoma that were used to inform the design of the drilled shafts. Additional geotechnical investigations will be performed during final design of the project but are not anticipated to change the drilled shaft design.
Utility Issues (Moderate)	<ul style="list-style-type: none"> - The large electric transmission line on the existing bridge will need to be relocated. ODOT has reached out to Oklahoma Gas & Electric to discuss this relocation. The cost estimate for relocation included in this project is conservative to account for multiple scenarios.
Delays Securing Right-of-Way (Low)	<ul style="list-style-type: none"> - Easements from USACE will be needed. ODOT has been coordinating with USACE throughout the study and has begun discussing the needed easements. The USACE has indicated support for the project and willingness to grant the easements.
Section 404 Permitting Delays (Low)	<ul style="list-style-type: none"> - ODOT has begun discussions with the USACE and has designed alternatives to reduce fill in Lake Texoma. - The Project is anticipated to fall under Nationwide Permit 14. - ODOT has a liaison in place at the USACE to accelerate and streamline approvals if needed. See Project Readiness.
Weather Related Construction Delays (Moderate)	<ul style="list-style-type: none"> - Storm events and flooding could hinder construction progress and could threaten the new bridge. The new bridge will be higher than the existing to avoid flood impacts. - PBD allows more control over the design build process and ODOT will work closely with the PDB Team to track project time and make necessary adjustments while still meeting project commitments.
Public Opposition (Low)	<ul style="list-style-type: none"> - Extensive public engagement has occurred, and the public is overwhelmingly in support of the project. See above and Criterion 5 of the Merit Criteria.

Project Schedule

ODOT is in the final stages of planning and preliminary engineering for the Roosevelt Bridge project. As shown in **Figure 19**, ODOT intends to procure a Progressive Design Build (PDB) team and a Program Manager in early 2024. ODOT will work with the PDB Team to finalize the design, secure right-of-way, relocate utilities, and ultimately construct the project. BIP funding obligation is anticipated to occur in April 2025 after the completion of NEPA, with construction beginning shortly afterwards.

The project is sufficiently advanced to begin construction in a timely manner and well within the funding deadlines for the 2023-2024 BIP program. ODOT obligates all required construction funding prior to advertising a project for construction and again prior to awarding a contract for construction. Funding obligation is anticipated to occur over a year before the statutory deadline of September 30, 2026. Even with substantial unanticipated delay, the BIP funds are in little danger of expiring prior to this deadline.

Required Approvals

Roosevelt Memorial Bridge Investment Project						
Task	2023	2024	2025	2026	2027	2028
Planning and Preliminary Design	█					
Procure Designer/Builder		★				
Public Involvement and NEPA	█					
Section 404 Permitting			█			
Approve Design/Builder Estimate			★			
Final Design			█			
Right-of Way Acquisition			█			
Utility Relocation				█		
BIP Funding Obligation			★			
Construction			█			

FIGURE 17: ROOSEVELT BRIDGE PROJECT SCHEDULE

Environmental Permits and Reviews: ODOT will complete the Programmatic Section 4(f) Evaluation for the Roosevelt Bridge for FHWA review and decision on prudence and feasibility. The Oklahoma Division FHWA has been involved in the development of alternatives and their analysis since the inception of the study and have been offered multiple opportunities for input. They have participated in several stakeholder meetings and have reviewed the Section 4(f) alternatives analysis report.

ODOT has completed environmental studies in the vicinity of the bridge to support the NEPA document. An archeological survey, threatened and endangered species studies, and a hazardous materials assessment have been completed. No significant impacts were identified. Concurrence has been received from the US Fish and Wildlife Service (USFWS) and conservation measures to avoid and minimize impacts to listed species will be integrated into the project. Environmental studies and USFWS concurrence can be found at [ODOT Roosevelt Bridge](#). ODOT will select the preferred alternative and complete the NEPA document, anticipated to be a Documented Categorical Exclusion (DCE). Given the extensive involvement of FHWA in the development of the project, no delays are anticipated in obtaining NEPA approval.

Permitting: Lake Texoma is owned and operated by the USACE, and the Roosevelt Bridge crosses USACE lands. Therefore, this agency has been a key stakeholder in the project. Representatives from the Tulsa District and Lake Texoma USACE offices have offered input at stakeholder meetings and have expressed their preferred outcomes and requirements. The flood storage capacity of Lake Texoma is of key concern. ODOT has investigated multiple ways to avoid or minimize fill into the lake, including retaining walls and removal of the existing causeway. If

required, compensatory storage for any loss of flood capacity in Lake Texoma will be negotiated with the USACE and included in the project.

The Project will require a Section 404 Clean Water Act permit from the USACE. Permitting for the Project is expected to fall under Nationwide Permit 14. In addition to the extensive coordination that has already taken place, ODOT has agency liaisons in place at the USACE which will greatly accelerate permitting reviews. ODOT will be required to obtain a Floodplain Development Permit from the Oklahoma Water Resources Board (OWRB) for construction within the mapped FEMA floodplain. ODOT and OWRB have a programmatic agreement to streamline these permits. The contractor will be required to obtain authorization under the Oklahoma Department of Environmental Quality (ODEQ) OKR10 general construction permit for stormwater. This permit is obtained after letting and before construction begins. No special conditions are anticipated.

Public Engagement: ODOT recently completed a six-week long public engagement process, including an on-line virtual open house (www.odot.org/US70LakeTexoma) and an in-person public meeting in Kingston, OK. ODOT requested input from tribes, local, city, state, and federal agencies as well as the public. Over 140 people attended the public meeting and over 280 comments were received. All but two comments were in support of improving and/or replacing the existing bridge. Many indicated a need for a four-lane structure and shoulders. Emergency service providers also attended the meeting and expressed a need to improve the bridge to allow for faster incident response.

ODOT's public involvement procedures for including environmental justice communities are documented in ODOT's [Public Involvement Plan](#) and are consistent with USDOT's *Promising Practices for Meaningful Public Involvement in Transportation Decision Making Guide*. Outreach to environmental justice populations in the study area is done through coordination with area tribes as well as direct mail deliveries to reach all households, regardless of owner status. More information about the proposed public involvement strategy for the Roosevelt Bridge Project can be found in **Criterion 5** of the Merit Criteria.

State and Local Approvals: The Project is currently included in the [ODOT 8-Year Construction Work Plan](#). Construction is currently programmed in 2029 but is not fully funded. Should BIP funding become available this project will be accelerated and moved into the [ODOT Statewide Transportation Improvement Program \(STIP\)](#). A letter demonstrating ODOT's commitment to provide matching funding and to appropriately program the project is included with this application.

Federal Transportation Requirements Affecting State and Local Planning:

ODOT Statewide Freight Transportation Plan: US-70 is included in ODOT's [Freight Transportation Plan, 2023-2030](#) Freight Investment Plan.

Statewide Transportation Improvement Program (STIP): The [ODOT STIP](#) incorporates the first four years of the ODOT 8 Year CWP. The Project will be added to the STIP upon BIP award.

Long Range Transportation Plan (LRTP): The [ODOT LRTP 2020-2045](#) is a policy document that provides a strategic direction for the development of the Oklahoma multimodal transportation system. The Roosevelt Bridge Project aligns with ODOT's long range strategic direction.

Transportation Asset Management Plan (TAMP): The project is consistent with the goals set out in ODOT's [2022-2031 TAMP](#) with the goal of maintaining and preserving Oklahoma's transportation network.

Assessment of Project Risks and Mitigation Strategies: Potential risks and mitigation strategies to minimize the potential impact of those risks are summarized in **Table 5** above. There is some environmental risk to the project given FHWA and the State Historic Preservation Officer (SHPO) have not yet approved the Section 4(f) Evaluation and NEPA document. Meaningful public involvement has occurred that engaged the disadvantaged community affected by the project and the public overwhelmingly supports the project. ODOT has sufficient capacity to implement the proposed activities according to the schedule presented. The agency has committed state matching funds from reliable and dependable sources that meet statutory match requirements. This match will ensure ODOT is able to begin construction in a timely manner until grant funds are reimbursed. The PDB method is anticipated to reduce construction phase risk through the authorization of multiple work packages.

Administration Priorities and Departmental Strategic Plan Goals

Safety: Safety benefits of the project are described in **Merit Criterion 2**.

Climate Change & Sustainability: Discussion of how the project has considered climate change and environmental justice in planning and project delivery is included in **Merit Criterion 4**.

Equity: The equity assessment of the Project is included in **Merit Criterion 5**.

Workforce Development, Job Quality, and Wealth Creation: These items are discussed in **Merit Criterion 3**.

VII. DOT Priority Selection Considerations

The Project is consistent with the following DOT priority considerations:

- The geometric design standards used for the construction of the bridge met the applicable standards at the time but no longer meet the current geometric design standards. The Roosevelt Bridge was designed and constructed in the mid-1940s and no longer meets today's loading or geometric standards.
- This application demonstrates a need for a BIP grant of no less than \$100 million (\$123,850,000 as described in **Section III**).
- The project readiness evaluation demonstrates that the project can distribute a BIP grant of not less than \$100 million over a multiple year period if a multi-year grant is awarded. ODOT is willing to distribute a BIP grant over multiple years.
- The project will be ready to proceed to the next stage of project delivery within 12 months of a CE Determination. The schedule shown in **Figure 19** demonstrates that final design will be done concurrently with approval of NEPA as part of the PDB delivery.
- The project has regional economic significance for freight movement as described in **Merit Criterion 3**.
- The project considers Workforce Development, Job Quality and Wealth Creation as described in **Merit Criterion 3**.
- Without a BIP grant, construction of the project is unlikely to commence prior to 2029. The Roosevelt Bridge Project represents the largest project ever to be undertaken by ODOT's Field District 2 covering SE Oklahoma.