



# Roosevelt Memorial Bridge Investment Project

Bryan and Marshall Counties, Oklahoma  
May 2024

### Mega Project Data Collection Plan

This attachment to Oklahoma Department of Transportation (ODOT)'s Roosevelt Memorial Bridge Investment Project FY 2025 – FY 2026 Multimodal Project Discretionary Grant (MPDG) application describes ODOT's plan for collection and analysis of data to identify the actual impacts of the Project five years after construction relative to the MPDG application's quantitative forecasts and narrative predictions for various outcome criteria specified in Federal guidance. Note the application projects impacts to 2048, rather than 5 years after construction, so the methods described below adapt these projections to the shorter time span required of the Mega project reporting, which tends to somewhat reduce the apparent scale of impacts achieved.

#### Outcome Criterion – Safety

**Project outcomes measure: Actual annual average collisions reduced (compared to predicted reduction in collisions at the Project location)**

**Predicted Project Impact:** According to the MPDG application and Benefit Cost Analysis (BCA), the new, wider bridge and standard 10-foot shoulders are projected to achieve a crash reduction rate of 66 percent. The MPDG application predicts about 7.64 collisions including 0.8 serious injury and fatality collisions to be eliminated per year by the Project. An equivalent estimate for the first 5-year period from construction can be calculated for the required Mega project outcomes report.<sup>1</sup> Slightly fewer collisions per year are eliminated in the first 5-year period, since overall traffic volumes increase over the life of the project to 2048, which increases the risk of crashes over time and therefore the number of crashes eliminated.

#### Measure Methodology Summary

1. Project the number of forecasted serious injury/fatality collisions for 2029-2033 for the no-build scenario based on the 2016-2020 collision data.
2. Collect data on actual total annual collisions for each of the five years following the Project's substantial completion (2029-2033).
3. Subtract the number of post-Project serious injury/fatality collisions from the forecasted number produced in Step #1.
4. Determine if the Project's actual number of serious injury/fatality collisions eliminated is greater than 0.8 collisions per year, which is the forecasted impact of the project.

#### Outcome Criterion – State of Good Repair

**Project outcomes measure: Sufficiency ratings of bridge five years after substantial completion (compared to condition at the Project location prior to construction.)**

**Predicted Project Impact:** According to the MPDG application, the Roosevelt Bridge is at

---

<sup>1</sup> The magnitude of expected reduction in collisions is based on comparing the project's scope with FHWA's database of Crash Modification Factors to select the most applicable crash reduction factor (CRF), which is for widening from 2 to 4 lanes and adding shoulders and applying these CRFs to actual average annual crash data for 2016 to 2020 at the project's location, as well as adjusted crash projections over the life of the project to 2048.

risk of becoming structurally deficient with a sufficiency rating of 42.3 including a deck rating of 5, superstructure rating of 5, and substructure rating of 6. This condition would be improved to good condition immediately upon substantial completion of the Project. A bridge in good condition is substantially more economical to maintain compared to a bridge in fair or poor condition, while being safer for users and saving wear and tear costs for vehicles using the roadway.

### Measure Methodology Summary

1. Analyze data on actual bridge condition at the Project location for the year closest to the Project's construction (estimated 2026). The Roosevelt Bridge is currently inspected every year, which would continue until the start of construction. Sufficiency ratings for each major bridge component and an overall rating will be assigned.
2. Analyze data on actual bridge condition for the year closest to the Project's five-year timepoint after substantial completion (2033).
3. Compare the ratings of the deck, superstructure, and substructure as well as the overall sufficiency rating to the pre-construction ratings. The MPDG application predicts the new bridge will improve structural condition and this should be reflected in the ratings. It is anticipated the new bridge will be in good condition five years after completion (2033).

### Outcome Criterion – Economic Impacts, Freight, Job Creation

**Project outcomes measure: Actual vehicle delay hours reduced within the Project's limits each weekday five years after substantial completion (compared to forecasted vehicle delay hours reduction)**

**Predicted Project Impact:** According to the MPDG application and BCA, regional economic benefits flow from travel time savings which improve the cost-effectiveness of goods and people movement. The MPDG application and BCA predict the Project will save 0.67 minutes per vehicle.<sup>2</sup> With 18,906,643 vehicles projected to use the Project on weekdays through 2033<sup>3</sup>, this results in a projected delay savings of 12,667,450 minutes, or 211,124 hours of delay in the first five years.

### Measure Methodology Summary

1. If needed, run Synchro models to generate estimated weekday travel delay reductions for the Project's 'no build' scenario in 2026 prior to construction.
2. Calculate actual vehicle delay in hours (each workday) for the project limits for the time-period closest to the project's five-year timepoint (presumed to be 2033) after substantial completion using NPRMDS or other available data on travel time.
3. Calculate the estimated savings in travel delay achieved through the Project by subtracting the number derived in step 2 from the forecast of weekday travel delay in 2033 under the Project's 'no build' scenario obtained in step 1.

<sup>2</sup> Based on an increased speed from 55 to 65 miles per hour upon project completion.

<sup>3</sup> Based on AADT for 2029-2033 provided in Table 53 of the BCA tool multiplied by 260 to represent weekdays.

4. Determine if the Project's actual daily vehicle delay eliminated is the same or greater than the prediction of 211,124 hours of travel delay saved in the first five years.

### Outcome Criterion – Climate Change, Resiliency, Environment

#### **Project outcomes measure: Reduction in user costs due to flooding-related detours**

**Predicted Project Impact:** The existing Roosevelt Bridge has been subject to two major flood events in the last 30 years where Lake Texoma has overtopped the bridge and/or causeway and caused ODOT to close US-70 for several days. In 2015, a storm event with an elevation of 645.72 feet resulted in a closure that lasted nine days. The shortest detour length if the bridge is closed is approximately 21.5 miles. The BCA quantified the impacts of closing the bridge due to flooding events. These calculations included additional travel time and vehicle operating costs but did not include costs to repair the bridge after a flood event. The proposed Project will avoid future flood related detours by raising the profile grade of the new causeway and bridge approximately 5-10 feet to remain above these major storm levels. This criterion could be difficult to quantify over a 5-year period, as the frequency of the storm event of this magnitude is approximately 15-20 years. However, should such a flood event occur in the first five years after construction, the impacts could be measured.

#### **Measure Methodology Summary**

1. Determine the elevation of Lake Texoma during the storm event. Any event above 645 feet would have overtopped the previous bridge.
2. Determine the number of days before lake levels return to below 645 feet. This would be the number of days the previous bridge would have been closed.
3. Calculate increased travel times and vehicle operating costs that would have been incurred due to flood closure by using the monetization factors listed in the 2024 USDOT BCA guidance. Costs would factor in the average annual daily traffic volume (AADT) at the time of closure, the duration of the closure, and the length of the detour.
4. Compare the costs calculated in step 3 with the MPDG application's predicted cost savings of \$2,035,622 due to avoidance of flood detours.

### Outcome Criterion – Equity

#### **Project outcomes measure: Surveys of residents' perceptions of improvements in non-auto accessibility post Project.**

**Predicted Project Impact:** The MPDG application makes no quantitative projection of equity, multimodal and quality of life impacts, but describes increased multimodal opportunities through a new pedestrian/bicycle facility across Lake Texoma. Many public comments were received expressing a desire for a non-vehicular crossing that could be used for recreation, including walking, cycling, and fishing. The Project would include a separated pedestrian/bicycle crossing of Lake Texoma where none exists today.

#### **Measure Methodology Summary**

1. At the 5-year timepoint, conduct a survey of residents and visitors to Lake Texoma to determine if they perceive pedestrian and bicycle access has been improved. Surveys could

be distributed at Johnson Creek Campground, Lake Texoma State Park, Catfish Marina, and other nearby recreational facilities. The US Army Corps of Engineers could be a potential partner in gathering visitor input.

2. Conduct a count survey of users on the new pedestrian/bike bridge over Lake Texoma built as part of project. Any users above 0 would be considered an increase above the existing condition.