

Bridging the Gap: Multimodal Connections on I-35 over the Oklahoma River

Oklahoma Department of Transportation RAISE Grant Application
February 28, 2023



MERIT CRITERIA



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Merit Criteria

The proposed new 10-foot-wide multimodal path on the I-35 bridge southbound span (the Project) across the Oklahoma River will provide safe and needed active transportation connections for the Capitol Hill district on the south side of the Oklahoma River. For non-automobile owners located in this Historically Disadvantaged Community and Area of Persistent Poverty adjacent to and near the Project, the Project will provide walking and biking access to jobs, healthcare, and increased transit options on both sides of the Oklahoma River. The Project is likely to improve safety, provide environmental benefits through mode shift and access to green space, improve local and citywide quality of life, promote mobility, connect communities, support economic growth in existing and new developments, leverage community partnerships, and benefit from multiple innovative practices.

Safety

Adding a new multimodal path along the I-35 SB bridge across the Oklahoma River will protect non-motorized travelers from safety risks, and the I-35 river bridge replacement project will also improve safety for motorized travelers.

Safety Summary

The Oklahoma Department of Transportation (ODOT) recorded a total of 4,371 collisions at the I-35/I-40 interchange (the project area) in its Highway System Collision Listing between January 1, 2012, and December 31, 2021 (latest available data) involving 1,686 injured persons and 24 fatalities as shown in **Table 1**. This is the equivalent of 1.2 collisions per day over 10 years. Of those injuries, 110 were of sufficient severity that the injured person was incapacitated.

Table 1. I-35/I-40 Interchange Collisions

Type of Collision	Fatality	Injury	Property Damage	Total
Rear-End	3	646	1,656	2,305
Head-On	4	4	1	9
Right Angle	1	64	81	146
Angle Turning	1	54	149	204
Other Angle		1	3	4
Sideswipe Same Direction	1	137	934	1,072
Sideswipe Opposite Direction	1	5	4	10
Fixed Object	6	143	226	375
Pedestrian	2	6		8
Pedal Cycle		1		1
Animal			1	1
Overturn/Rollover	1	38	23	62
Other Single Vehicle Crash		7	29	36
Other		24	114	138
Total	20	1,130	3,221	4,371
<i>SOURCE: ODOT</i>				

Safety Benefits for Non-Motorized Travelers

Although interstates do not permit pedestrians and cyclists, the I-35/I-40 interchange had nine collisions involving pedestrians or cyclists, two of which resulted in fatalities. With the Oklahoma River trails currently under construction (**Figure 3** in the **Project Description**) along the north and south banks of the Oklahoma River, there is also the potential for a greater number of pedestrians or cyclists trying to cross the existing bridge upon the completion of the trails which could increase the number of collisions. The Project would provide a safe connection for non-motorized travelers between the north and south side of the Oklahoma River and would be the primary crossing within a mile of the current riverfront development at the First Americans Museum and Riversport development (described further in the **Economic Competitiveness and Opportunity** section). The Project would help reduce pedestrian and cyclist crashes along the interstate at this interchange in the future. The **Benefit Cost Analysis Narrative** includes additional details about the safety benefits of the bridge replacement.

Crash Reduction Factors

The FHWA Desktop Reference for Crash Reduction Factors was used to determine how each of the proposed safety improvements would impact the collision rates. When multiple collision rates were given for the same improvement, the median value is represented here:

- Replacing the bridges has the highest crash reduction factor (CRF) of the design improvements. The CRF for bridge replacement is 45, correlating to a reduction in the rate of collisions of 45 percent for all types of collisions.
- The CRF factor for increasing the number of travel lanes has a CRF of 25. This indicates it would further reduce the rate of collisions by approximately 25 percent for all types of collisions.
 - However, increasing the number of lanes has a greater impact on rear-end and sideswipe collisions, reducing them by approximately 40 percent and 35 percent respectively. As shown in **Table 1**, these are the two most common accident types making up over 75 percent of the total collisions found on the roadway extent.
 - This would further reduce the rate of collisions by increasing the CRF from the initial 25 percent to 35 percent reduction due to the lane increase.
- Widening the shoulders from 4-foot to 12-foot will result in a CRF of 20. This correlates to an additional reduction of collisions by 20 percent.

Combining the Crash Reduction Factors results in a total reduction in crashes; it is anticipated that a total collision reduction of between 45 percent (bridge) and 48 percent (roadway) should occur through the Project extents.

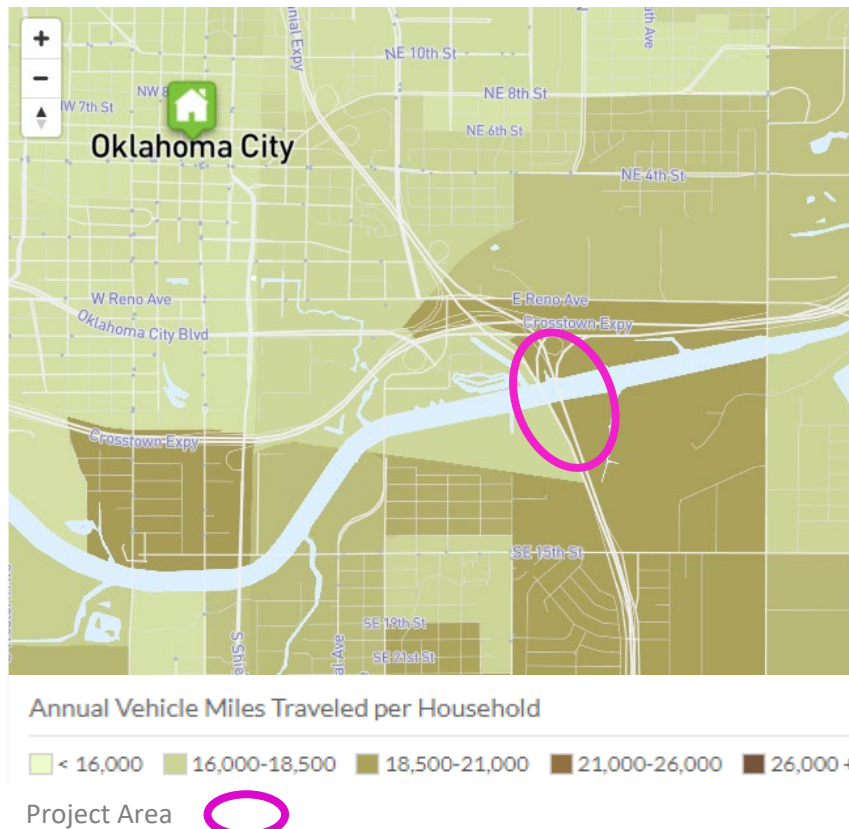
In summary, the I-35 bridge replacement and roadway improvements would help enhance safety and operation, protecting motorized travelers by reducing the number of accidents in the I-35/I-40 interchange area by almost 50 percent.

Environmental Sustainability

Mode Shifts

The addition of a new, safe, and accessible bike and pedestrian connection across the Oklahoma River to downtown would allow residents and visitors to safely access more opportunities via lower or no emissions modes like walking or bicycling and reduce their annual VMT.¹ According to analysis by the Neighborhood Center for Technology, the Annual CO₂ Emissions from Auto Use Per Household for Census Tract 1053², which includes the Project location, is 9 – 10.5, higher than the majority of the surrounding tracts. Households in the areas that will be connected by the new multimodal path currently drive more per year (as measured in vehicle miles traveled – VMT) than households in neighboring areas (**Figure 1**).

Figure 1: Annual Vehicle Miles Traveled per Household and Project Area



SOURCE: CENTER FOR NEIGHBORHOOD TECHNOLOGY³

In addition to reducing VMT due to mode shift to walking and cycling on the multimodal path, the improved capacity of the I-35 bridge may also encourage mode shift to transit. Oklahoma City’s transit agency EMBARK route 024, also known as the Norman Express, crosses on the existing I-35 bridge. The Norman Express intercity bus provides service between Norman, OK to downtown Oklahoma City, the Oklahoma State Capitol and surrounding offices, the OU Medical

¹ <https://www.okc.gov/home/showpublisheddocument/18882/637299972915330000>

² <https://htaindex.cnt.org/compare-greenhouse-gas/>

³ <https://htaindex.cnt.org/map/>

Center, and cultural attractions including the Oklahoma City National Memorial & Museum, the Oklahoma City Museum of Art, and the Civic Center Music Hall among others. The 2022 OKC Moves Bus Study identified that “Ridership and productivity on Route 024 may be improved by making the service faster...The route may also be improved by adding later evening service, and operating at more consistent, clockface service frequency.”⁴ Improving congestion across the I-35 bridge may enable the Norman Express to operate more quickly and reliably and encourage more commuters between Norman and Oklahoma City to shift to public transit and reduce VMT.

Local Air Quality, Public Health, and Vulnerable Populations

The Project’s connections to existing active transportation infrastructure may encourage mode shift from driving to non-polluting modes as described above, which would benefit air quality in the entire Oklahoma City urbanized area, but especially in the Historically Disadvantaged Community and Area of Persistent Poverty in the Capitol Hill district adjoining the Project location. The congestion reduction that a new, expanded Interstate bridge would bring would also offer air quality improvements.

Census Tract 1053, which includes 100 percent of the Project, has been categorized as “Disadvantaged” using the most recent Justice40 methodology and as Historically Disadvantaged Community and an Area of Persistent Poverty based on the RAISE mapping application. Over 50 percent of its population is Hispanic or Latino, and the share of people who have asthma is in the 94th percentile. The tract’s assessment for “low life expectancy” is in the 98th percentile, according to Justice40 data. The National Institutes of Health have determined that there is “consistent evidence that exposure to traffic-related air pollution...is associated with an increased risk of developing asthma.”⁵ Reducing congestion at the Project location and encouraging mode shift to walking, biking, or transit as described above, may reduce residents’ exposure to potentially dangerous air pollution.

Greenhouse Gas Emissions

As traffic volumes in Oklahoma City increase, the replacement of the I-35 bridges and addition of the multimodal path is paramount to encourage mode shift to active transportation and reduce congestion on this section of I-35, which may reduce the air pollution from carbon dioxide (CO₂). The Project may also reduce the effect of ozone (O₃), for which the Oklahoma City region has worked tirelessly to remain in attainment with EPA air quality standards. Oklahoma City is one of the very few major metropolitan areas in the United States to remain in air quality attainment. This Project would be a huge contributor to maintaining attainment in the region.

Resiliency and Risk Management

Replacing the existing bridges with new infrastructure and modern materials would address concerns regarding the structural deficiency of the existing bridge and offer an opportunity to improve resiliency to hazards and disasters of all types (i.e., natural and human-made).

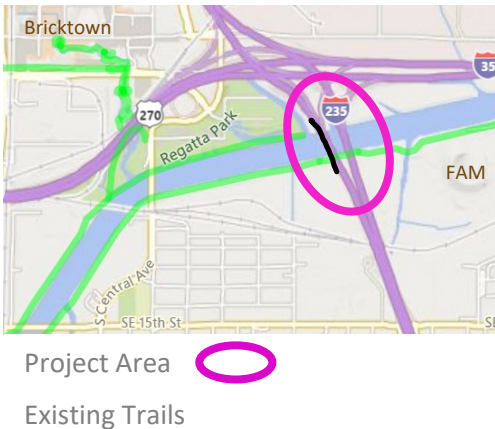
⁴ https://www.okcmoves.org/files/ugd/b59736_25bf184f61804995b948d08b970cb45f.pdf

⁵ <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7648850/>

Scour, or the erosion of soil around a bridge pier, is also one of the main reasons for bridge collapse. The current I-35 bridges have five piers in the water (10 total). The new steel girder span structure will include two piers (four total), and this would eliminate six piers in the Oklahoma River and reduce the risk of scouring.

Increasing the vertical clearance on the new I-35 bridges is not necessary since this section of the Oklahoma River is a dammed facility. This feature improves the resiliency of the multimodal path and the two I-35 bridges.

Figure 2: Existing OKC Paths and Trails



SOURCE: CITY OF OKLAHOMA CITY,
 DATA.OKC.GOV

Walkable and Accessible Green Space and Development

The Project will provide a new accessible active transportation connection between two brownfield grant redevelopment sites which now feature green space and trails on the banks of the Oklahoma River: the Riversports Rapids in Regatta Park and the First Americans Museum (FAM) (**Figure 2**). The First Americans Museum is a one-of-a-kind center highlighting the trials and triumphs of the Indigenous People of North America. Its unique landscaping and architecture provide a place of cultural history and a sanctuary for learning and solitude. In 2022, the First Americans Museum was awarded the Phoenix Award which honors “outstanding expansion, redevelopment, or reuse of land that may be complicated by the presence or potential presence of

a hazardous substance, pollutant, or contaminant.”⁶ The Project will provide further access to free and accessible green space surrounding the First Americans Museum and upcoming OKANA development (described further in **Economic Competitiveness and Opportunity** section), the north and south Oklahoma River trails, as well as Regatta Park and the Bricktown River Walk Park on the north side of the Oklahoma River. The Bricktown River Walk Park provides green space and access to the Bricktown District, an entertainment and dining district reconstructed from an underused warehouse district. The multimodal path will enable residents and visitors to access jobs, healthcare, shopping, parks, and events on the Oklahoma River.

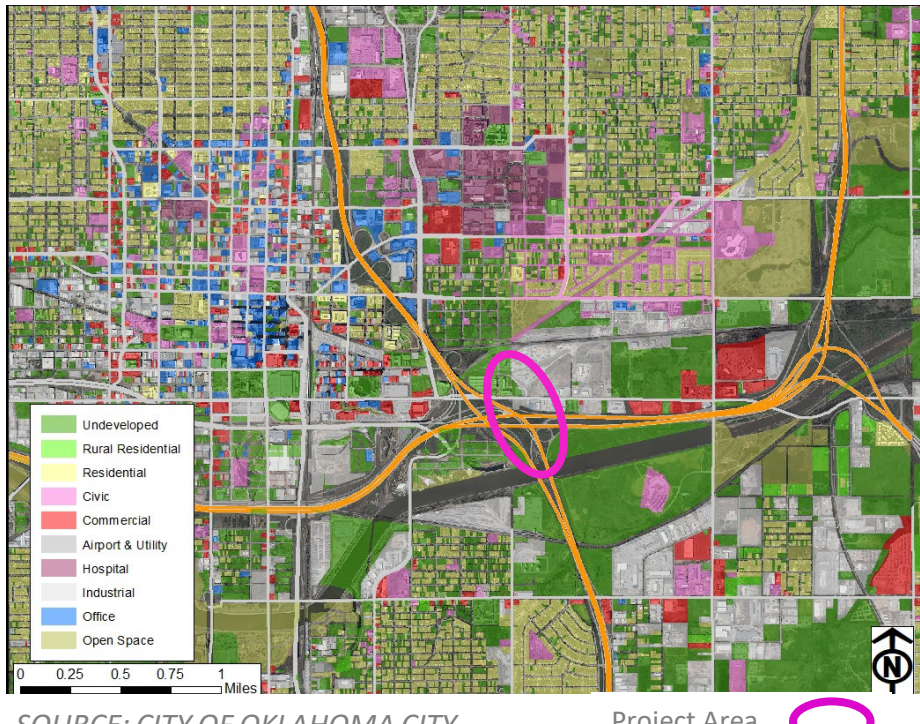
Quality of Life

The Project would improve the quality of life for residents by improving bicycle and pedestrian access and enable Oklahoma city to host and benefit from Olympic-quality rowing events. As noted in the **Project Description** and **Partnership and Collaboration** section, an integral part of the project development process has been consistent discussion with stakeholders to arrive at a “consensus built” design solution for the Oklahoma River crossing that meets stakeholder

⁶ <https://journalrecord.com/2022/08/25/first-americans-museum-honored-for-land-revitalization/>

needs and Project sponsors’ financial ability. Two meetings were held in 2022 that brought together stakeholders including senior officials from ODOT, City of Oklahoma City, Riversport Authority or Riversport Authority and Boathouse District, First American Museum, and the Chickasaw Nation. This partnership will continue during the design of the I-35 bridges and multimodal path.

Figure 3: City of Oklahoma City Land Use



SOURCE: CITY OF OKLAHOMA CITY

Project Area

Equity

The Project is in Census Tract 1053, Oklahoma County, Oklahoma, which is a Historically Disadvantaged Community and an Area of Persistent Poverty. The public involvement process will continue to partner with Capitol Hill residents – the largely Hispanic area of the city located just south of the I-35 bridge – to ensure the equity considerations are integrated into the

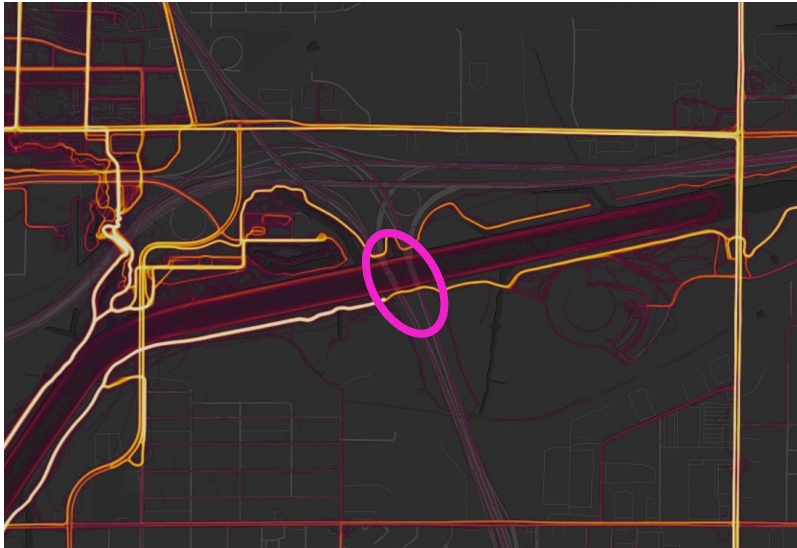
Project design. The public involvement process will continue to engage diverse input from community-based organizations, Historically Disadvantaged Communities, and Areas of Persistent Poverty. It is anticipated that the Project will be constructed primarily within the existing right-of-way, and there will be no displacements. The Project will provide significant connectivity, mobility, accessibility, health, and other benefits to nearby residents, described in detail throughout the merit criteria.

Transportation Choices and Health

The Project will increase affordable and healthy transportation choices in the Project area and reduce transportation cost burdens by improving and expanding active transportation options. The multimodal path on the bridge will potentially help reduce auto dependence and residents that do not own a vehicle in this underserved community as described in the **Community Connectivity** and **Environmental Sustainability** sections. In addition to those mobility and accessibility benefits, the Project may also improve public health by connecting this area of Oklahoma City to the entire Oklahoma City trails system that offers a network of 10 inter-connected trails that cover over 80 miles and can take you to almost every point in Oklahoma City. Strava data indicates that recreational bicyclists wish to cross the Oklahoma River at

existing bridges, so adding a new multimodal path may encourage new or increased recreational activities and provide public health benefits (**Figure 4**).

Figure 4: Bicycle Usage Recorded on Strava (primarily recreational)



SOURCE: STRAVA

Project Area



Land Use

The [planOKC Interactive Map](#) shows that the Project location is in a mix of Urban Medium Intensity and Urban High Intensity land use areas (**Figure 3**). Medium intensity urbanized areas are reflective of the historic urban core, which balances small-and medium-lot housing and commercial districts. High intensity areas apply to the area surrounding the central business district, where developments may likely have notably higher densities, scale, and mixture of uses. The Project also aligns with numerous safety, streets, sidewalks and trails, health, parks and recreation, economic development, and land use and urban design goals laid out in [planOKC](#).

The Project location is adjacent to a Revitalize Retail Priority Area, which is identified in the [Oklahoma City Retail Plan](#) as an area needing policies geared toward strengthening existing retail uses through re-tenanting of vacant space, the elimination of retail space to “right size” the node or corridor, landscape and beautification efforts, façade programs, business coordination, and the potential introduction of new complementary land uses.

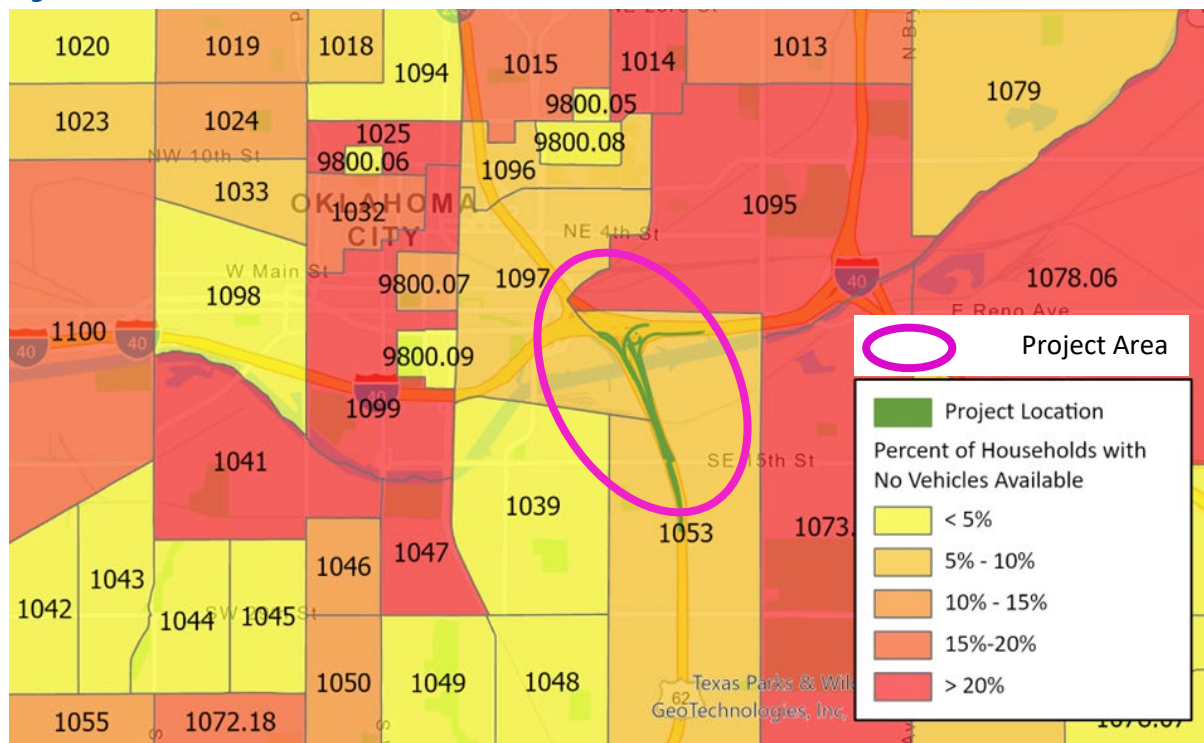
The Project provides an opportunity to promote greater public and private investments in land use productivity. The OKANA resort, which is described in the **Economic Competitiveness and Opportunity** section, is a mixed-use development just one mile from the easternmost point of the Project location. The Project may also improve service on the EMBARK Normal Express Bus Route 024, which is described in greater detail in the **Environmental Sustainability** and the **Improves Mobility and Community Connectivity** sections.

Improves Mobility and Community Connectivity

Community Connectivity and Mobility

One of the primary purposes of the Project's connection across the Oklahoma River is to remove barriers and connect communities, especially for non-motorized travelers from underserved communities. 100 percent of the Project area is in Census tract 1053 and this area of Oklahoma City is a Historically Disadvantaged Community and an Area of Persistent Poverty. Contiguous to this Census tract are 11 other Census tracts (1072.07, 1073, 1073.03, 1073.05, 1073.06, 1074, 1078.01, 1054, 1048, 1049, and 1050) that are also Historically Disadvantaged Communities and Areas of Persistent Poverty. The Project would provide unique and needed access to the largely Hispanic Capitol Hill district, a Historically Disadvantaged Community, and an Area of Persistent Poverty located on the south side of the Oklahoma River. Many of these disadvantaged communities also have relatively low access to vehicles (**Figure 5**), so the safe and accessible active transportation connection that the multimodal path would provide would be especially impactful.

Figure 5: Households with No Vehicles

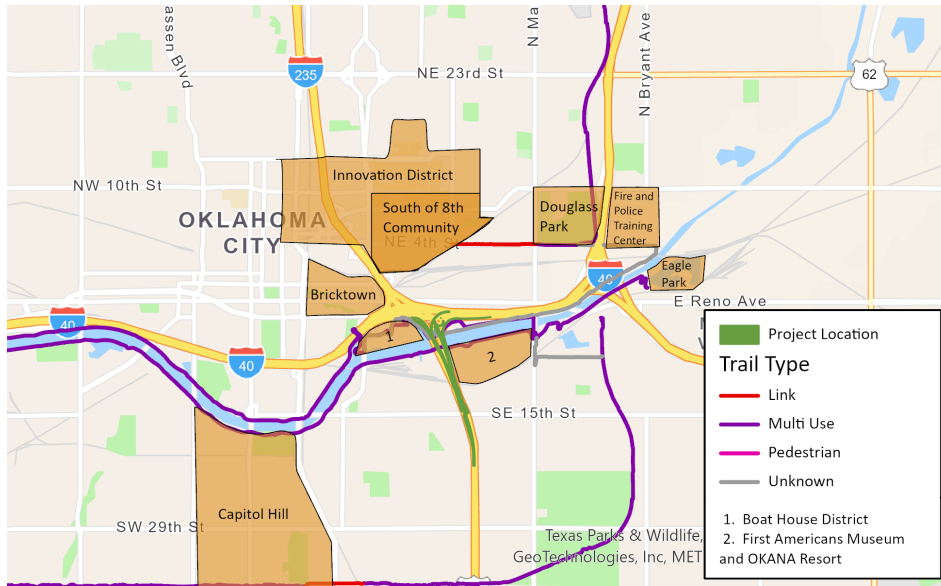


SOURCE: US CENSUS BUREAU, AMERICAN COMMUNITY SURVEY, SELECT HOUSING CHARACTERISTICS 5 YEAR ESTIMATES

Creating a new, safe, and comfortable walking and bicycling connection across the Oklahoma River and in the historically disadvantaged Capitol Hill region will fill a notable gap in the Oklahoma City existing and proposed bike network of on-road facilities, multimodal paths, and greenways and aligns with Oklahoma City's bike plan, bikewalkOKC, goals (**Figure 6, Figure 7**). There is currently a nearly 7 mile distance between pedestrian trail crossings over the Oklahoma River and the Project would provide a new, safe crossing opportunity which provides

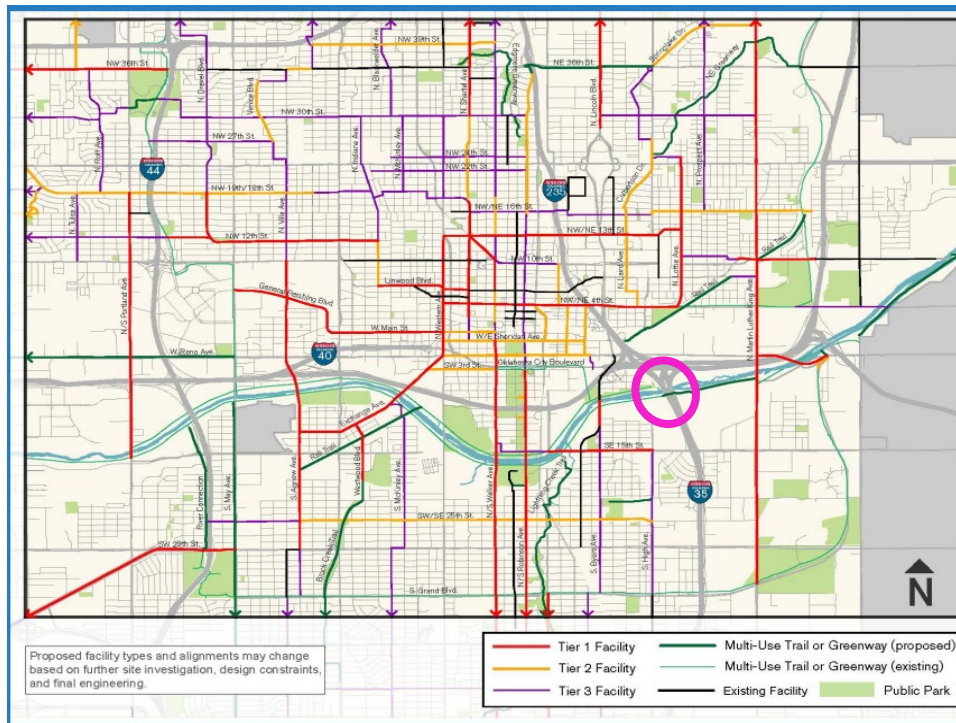
more direct access to central Oklahoma City opportunities than the existing crossings. In addition, the new multimodal path will begin to re-establish safe and accessible connections to the development and opportunities on the south side of the Oklahoma River for the historically Black [South of 8th](#) community which abuts the Project area and was disconnected from central Oklahoma City by the construction of I-235 in 1976.

Figure 6: Bicycle Facilities and Oklahoma River and City Trail Network



SOURCE: OKC TRAIL MAP AND GOOGLE MAPS

Figure 7: Project Location and Context



SOURCE: BIKEWALKOKC

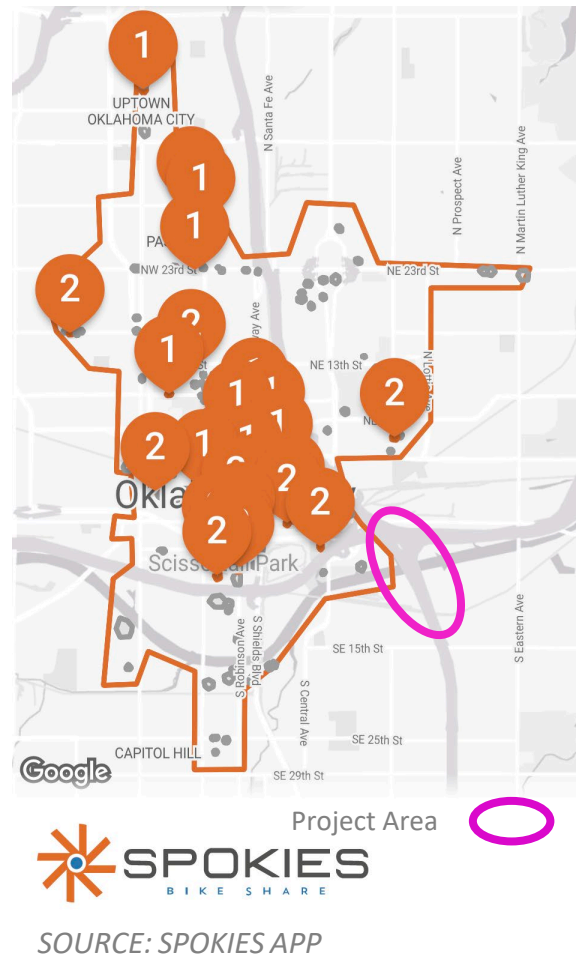
Project Area 

In addition, EMBARK planning managers indicate that completing the Project would allow EMBARK’s pedal-only bike and e-bike share program [Spokies](#) to extend its service area east, south, and southeast into the Historically Disadvantaged Community and an Area of Persistent Poverty census tracts which currently do not have direct access to the program (**Figure 8**). In tandem with the physical connection from the Project, access to the Spokies program would improve low-cost, non-motorized connectivity for households in those neighborhoods to extensive employment, educational, medical, cultural, and recreational destinations and opportunities in Spokies’ service area in central Oklahoma City. In addition to Spokies, Oklahoma City has several private micro-mobility services including Lime and Bird scooters. The extended Spokies service area and improved access for micro-mobility users would allow residents and visitors to safely access new developments along the Oklahoma River described in the **Economic Competitiveness and Opportunity** section, Bricktown, [South of 8th](#) historically Black community, the [Innovation District](#) (including the University of Oklahoma Medical Center), and [Historic Uptown Oklahoma City](#) via active transportation. In addition, the new I-35 bridges will improve freight movement as described in the **Economic Competitiveness and Opportunity** section below.

Accessible Design

The Project will incorporate Universal Design features to ensure that any user will be able to use the path comfortably and conveniently, including those who use mobility devices such as wheelchairs, children, and the elderly. To connect the Project to the Oklahoma River trail system, ADA-compliant ramps will branch off the existing Oklahoma River trail to provide pedestrians and cyclists access to the multimodal path on the bridge. Handrailing will be installed along the extent of the paths under the bridges on both banks of the river to deter pedestrians from straying toward the I-35 traffic. Lighting and other aesthetic enhancements will be provided on the multimodal path on the bridge and along the trail pathway to enhance the user experience and provide additional safety.

Figure 8: Existing Spokies Service Area (2023)



Economic Competitiveness and Opportunity

Oklahoma River Water Events and Tourism Opportunities

The Oklahoma River was dammed in 2004 as part of Oklahoma City's first Metropolitan Area Projects (MAPS) capital improvement program for new and upgraded sports, recreation, entertainment, and cultural facilities. The \$54 million project, supported by a self-imposed sales tax increase, rejuvenated the dry riverbed of the former North Canadian River by creating a dam-controlled river segment flanked by landscaped recreation Oklahoma River trails that connect to the larger Oklahoma City Trails network. This transformative public investment led to the privately funded construction of the Chesapeake Boathouse in 2006. There are now numerous boathouses, including the University of Central Oklahoma Boathouse and the \$10 million Devon Boathouse which is home to the U.S. Rowing National High Performance Center.

Because of these investments, and a temperate climate that allows year-round training on the water, the Oklahoma River has quickly emerged as one of the premier rowing venues in the world for both competition and training. In 2007, the USA Rowing World Challenge drew teams from Canada, Mexico, Australia, New Zealand, and Switzerland and in 2008, the U.S. Canoe and Kayak Olympic Trials for flatwater sprint were held on the Oklahoma River.

However, Olympic-level international rowing events require 2,000 meters of unobstructed linear river; the current I-35 bridge piers obstruct that course. The new I-35 bridges and the Project will only have two piers on each bridge; that design will provide adequate room to host future Rowing World Cups, NCAA rowing events, and other officially sanctioned events such as the U.S. Rowing National Championships and Olympic trials for rowing events. The Project will also include spectator viewing areas providing exceptional pedestrian-accessible observation opportunities for residents and visitors. The previous investments and the continued economic success of Oklahoma City will benefit from having a multimodal path on the I-35 SB bridge.

Riversport has estimated the economic impact of the races announced through 2025 will exceed \$10 million, with each competition drawing 400 to 800 athletes from more than 60 countries for pre-event training weeks the competitions. Executive Director Mike Knopp states, "Hosting international races at this level means that some athletes and coaches will actually move to Oklahoma City to live, work, and train ... You will also have officials, coaches, and family members as well as media. We will see the impact in our hotels, restaurants, transportation, tourism, and entertainment. That is not even considering the economic ripples that happen when a city is elevated like this on the world stage."

New Development - OKANA Resort

The Chickasaw Nation is developing a \$300 million private [OKANA resort](#) next to the First Americans Museum on the downtown riverfront shore and adjacent to the Project (**Figure 9**). In addition to an 11-story, 404-room hotel riverfront hotel, the private resort will include a spa, outdoor adventure lagoon, indoor waterpark, gold center, conference space amphitheater, restaurants, Native American marketplace, and retail outlets. The Project will provide a direct walking or biking connection to and from downtown Oklahoma City and the OKANA resort, which should increase tourism in downtown Oklahoma City and at the OKANA Resort.

The OKANA resort is a mixed-use development and is projected to have a \$97 million impact on Oklahoma City within one year of completion and a billion-dollar impact within the next decade. It is estimated that within the first decade, OKANA resort will create 800 full-time jobs.

The Project will enhance tourism connectivity between downtown Oklahoma City and OKANA resort.

Figure 9. OKANA Resort Site and Rendering



SOURCE: UNITED FOR OKLAHOMA Project Area



Freight Movement

While freight movement is not directly pertinent to the I-35 multimodal path Project, a short discussion of the I-35 freight movement may provide more context to the review team. The Project location is on a segment of I-35 that has been identified as a freight bottleneck in the [Oklahoma Freight Transportation Plan](#). The Truck Travel Time Reliability (TTTR) score is 2.49 on the I-35 bridges during the morning and afternoon peak travel times. ODOT's 2022 TTTR target on the Interstate is 1.33. Replacing and widening the I-35 bridges would most likely make this I-35 segment more reliable.

I-35 is the largest single North-South truck freight corridor in the Central United States. It traverses six states and is on the NHS, STRAHNET, and the NHFN. I-35 is one of the most significant truck freight corridors in the U.S and the highest volume truck corridor in Oklahoma. There are nearly 18,000 trucks per day that cross the I-35 NB and SB bridges with average daily truck traffic at 10 percent. I-35 is the highest volume truck route in the state of Oklahoma.

In Oklahoma City, I-35 intersects other major east-west freight corridors, I-40 and I-44, and thus the I-35 bridge in Oklahoma City is critically located at the crossroads of intercontinental goods movement, linking west and east coast ports to major urban areas throughout the country, and connecting to the major US-Mexican trade route. The new I-35 bridges are anticipated to reduce congestion and improve reliability for freight movement.

In Acres Park, which lies south of the Project location, there are several freight and logistic centers, including Pallet Logistics of America, Saia LTL Freight, Old Dominion Freight Line, and Estes Express Line.

State of Good Repair

The existing I-35 bridges do not have a multimodal path. Including a multimodal path on the new I-35 SB bridge would provide safe and efficient access to jobs, healthcare, transit options for residents living in Historically Disadvantaged Communities and Areas of Persistent Poverty.

Over the next 36 years, the estimated maintenance and rehabilitation costs to maintain the two I-35 bridges total \$8.1 million. Over 30 years, maintaining the two new bridges and multimodal path totals \$2.1 million, significantly reducing maintenance costs for ODOT. The millions of dollars in savings could be diverted to other critical maintenance needs around the state.

As a state transportation agency, ODOT plans, constructs, and maintains the state highway system in Oklahoma. ODOT will maintain the I-35 bridges and ODOT and Oklahoma City will maintain the multimodal path on I-35 and access from the bridge to the Oklahoma River trails in a state of good repair. ODOT and City of Oklahoma City have negotiated numerous maintenance agreements on previous projects and have standard language and terms. While the I-35 bridge river replacement project is not requesting RAISE grant funding, a short discussion of the bridge conditions may provide more State of Good Repair context to the review team.

In 2019, an interim ramp project was completed on the I-40 to I-35 ramps to add a lane and shoulder. The project added a lane to both the NB and SB I-35 bridges over the Oklahoma River by reconfiguring the striping and reducing the shoulder widths. The existing shoulder width was reduced from 10 feet to 4 feet to accommodate the additional 12-foot driving lane. This project, while helping reduce traffic queuing and improving safety concerns, caused the existing bridges to become functionally obsolete. The current bridges' lane configuration reduces traffic backups on I-40 that were leading to a high density of rear-end collisions in the ramp queues. The ramp project did not relieve capacity and collision issues south of the I-35 bridges, which are anticipated to increase with Oklahoma's growing population and the rising ADT numbers, which are expected to nearly double by the year 2040.

Prior bridge maintenance improvements have improved the bridges from previously being rated as Structurally Deficient (SD), but over time, continued wear has put the bridges at risk of becoming SD again. In the 2022 NBI bridge inspection report, the deck, superstructure, and substructure had a condition rating of 5 (Fair). If any of the three ratings were to decrease to a rating of 4 (Poor), the bridges would become SD. ODOT understands the urgency of replacing the I-35 Bridges and they are scheduled for construction in 2028.

Partnership and Collaboration

An integral part of the Project's development has been the consistent continued discussion with a broad base of stakeholders to arrive at a "consensus built" bridge solution for the Oklahoma River crossing that not only understands and meets the needs of each stakeholder and ensures equity considerations, but also meshes with the financial abilities of the Project sponsors. This public engagement process followed the features of meaningful public involvement identified in U.S. DOT's *Promising Practices for Meaningful Public Involvement in Transportation Decision-making*. While there was an initial desire to have an iconic structure with no bridge piers in the Oklahoma River, after meaningful discussion, the consensus resulted

in the recommendation of the steel girder span structure with two piers in the Oklahoma River with a multimodal path connecting the Oklahoma River trails on each side of the river.

ODOT is supplying the funding for constructing the I-35 bridges, through state funds and federal aid allocations. The I-35 bridge project is unique in that it is taking place in a new frontier of urban development with a unique meshing of cultural, commercial, and residential development with a broad partnership base. An Interchange Capacity Study, Long Span Bridge Study, and stakeholder involvement meetings have brought together a strong partnership between the State of Oklahoma (ODOT), Tribal Community (Chickasaw Nation), local municipalities and agencies (City of OKC, Riversport Oklahoma River Authority), community-based groups (ACOG, First American Museum, and OKC Chamber) and local resident groups (Capitol Hill Community), which is a historically underserved and underrepresented community.

The stakeholders met twice in 2022 and agreed on a steel girder span structure bridge design for this river crossing that also includes the Project: a 10-foot separated multimodal path crossing with river viewing areas located at key locations along the river crossing structure.

This strong partnership will continue through the development of the I-35 River bridge replacement and Oklahoma River trail multimodal connection. ODOT has worked with the City of Oklahoma City and the Chickasaw Nation to construct improvements to city and state facilities on many past projects and that relationship will continue to develop under the I-35 multimodal bridge project. ODOT will add needed capacity and improvements to I-35 while simultaneously providing a vital connection point to the Oklahoma River trail system.

The City of Oklahoma City Metropolitan Area Projects (MAPS) is a public improvement program that has provided for recent upgrades to Oklahoma City's trail systems near the river and has expanded the Oklahoma City trail network to over 80 miles. Future MAPS projects will include a ferry landing that will tie into the Oklahoma River trails on the south bank of the Oklahoma River and will be nestled between the First Americans Museum and the OKANA Resort. MAPS 4 also recommends beautification projects throughout Oklahoma City, including the I-35 bridges over the Oklahoma River.

Innovation

Technology Innovations

ITS Deployment During Construction – During construction, ODOT will use Intelligent Transportation Systems (ITS) to ensure work zones on I-35 are safe and to minimize travel delays for drivers. 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 Construct (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 will utilize barges next to the site to build the superstructure. Once complete, it will be floated and then lowered into place by a series of cranes. This will minimize the interruption of traffic by allowing the existing traffic to stay on the existing bridges during the construction of the superstructure.

Long Span Bridge Structure – This Project will use a long span bridge structure to allow for an enhancement to an existing river rowing racecourse. As of 2022, there are very few long span bridges in the state and few within the region. To enhance the racecourse, the proposed design calls for a three-span configuration using two continuous spans to accommodate the long span. The primary bridge span allows for vertical clearance over the river to accommodate navigable boat traffic without the need to significantly raise the roadway grade. Due to the proximity of the I-35/I-40 interchange, raising the grade of I-35 is problematic due to the number of ramps and bridges that would be impacted.

Aesthetic Improvements – Aesthetic improvements to the bridges will be incorporated to enhance the cultural and innovative development that is occurring directly adjacent to the I-35 corridor. These aesthetic improvements could reflect the local cultures including Native American and Capitol Hill Hispanic District and nearby amenities such as Riversport in the Boathouse District. Improvements will be added by utilizing form liners, reveals, stains, lighting, and other treatments.

Viewing Platform – A viewing platform and pedestrian walkway on the west side of the I-35 SB bridge will provide connectivity between the north and south banks of the Oklahoma River Trail system. A viewing platform will provide spectator seating and other amenities to enhance the boat racing experience.

Project Delivery Innovations

“No Excuses Bonus” – For construction, ODOT will incentivize contractors to achieve early delivery of the whole project and minimize traffic closures by deploying no excuses bonuses, including a substantial completion incentive valued at 5 to 10 percent of the contract and smaller incentives for internal milestones tied to key project elements.

Financing Innovations

Increased Revenue – Bills passed by the Oklahoma State Legislature in 2018 increase state revenue to ODOT by \$194.0 million per year, generated from the ownership or operation of a motor vehicle, and reduce transfers of general-purpose state revenue to ODOT by the same amount. Increased state revenue improves ODOT’s ability to meet the needs of the Project.

Funding Partnerships – ODOT will utilize multiple funding partners to unite the cultural, ethnic, and economic development districts that are accessed by using the I-35 corridor. Project partners such as ACOG, City of Oklahoma City, Chickasaw Nation, and WATCO railroad all have a history of financial partnership on large transportation projects in Oklahoma.