

**FY 2022
RAISE Grant
Application**



**Old Iron Bridge Deck Park
Bastrop, Texas**

Table of Contents

1.0 PROJECT DESCRIPTION ----- 1

 1.2 Project History ----- 1

 1.3 Transportation Challenges and Solutions ----- 2

 1.4 Statement of Work----- 3

2.0 PROJECT LOCATION ----- 5

3.0 GRANT FUNDS, SOURCES AND USES OF PROJECT FUNDS ----- 5

4.0 MERIT CRITERIA ----- 6

 4.1 Safety----- 6

 4.2 Environmental Sustainability ----- 7

 4.3 Quality of Life -----10

 4.4 Mobility and Community Connectivity-----12

 4.5 Economic Competitiveness and Opportunity -----15

 4.6 State of Good Repair -----16

 4.7 Partnership-----17

 4.8 Innovation-----18

5.0 PROJECT READINESS -----19

 5.1 Environmental Risk -----19

 5.2 Required Approvals-----20

 5.3 Assessment of Project Risks and Mitigation Strategies -----22

6.0 BENEFIT COST ANALYSIS -----24

 6.1 Overview of Approach -----24

 6.2 Results -----25

List of Figures

Figure 1: Old Iron Bridge 1

Figure 2: Camino Real de los Tejas - Historic Routes (National Park Service) 2

Figure 3: Old Iron Bridge Location Map 4

Figure 4: Existing Sidewalk Adjacent to SL-150..... 6

Figure 5: Downtown Bastrop Historic District 7

Figure 6: EPA EJSCREEN Minority Population and Unemployment Rate Maps (National Percentiles)..... 9



Figure 7:Failing Lead Paint on the Old Iron Bridge 9

Figure 8 - FEMA Floodplain 10

Figure 9: City of Bastrop Mid-Year Budget Workshop Presentation, 2018 11

Figure 10: Rendering of Future Old Iron Bridge Deck Park..... 11

Figure 11: June Hill Pape Walking Trail 12

Figure 12: Existing and Future Sidewalk and Trail Network in Bastrop 13

Figure 13: Conceptual Bicycle Framework, Bastrop Comprehensive Plan 2016-2036..... 14

Figure 14: Proposed Movie Studio in Bastrop 16

Figure 15: Photos of Existing Bridge Condition..... 16

Figure 16: Bastrop E-Cab..... 18

Figure 17: Example of Shrouded Lead Paint Removal Process..... 20

Figure 18: Incorporation of Old Iron Bridge into Local Business Marketing..... 21

List of Tables

Table 1: Sources and Uses of Funding.....5

Table 2: Forecasted Population Growth Trends.....15

Table 3: Old Iron Bridge Deck Park Schedule.....19

Table 4: Project Risk and Mitigation Strategies.....23

Table 5: BCA Results.....25

1.0 PROJECT DESCRIPTION

The City of Bastrop, Texas is seeking \$13.3 million in fiscal year (FY) 2022 Rebuilding America's Infrastructure with Sustainability and Equity (RAISE) grant funding to rehabilitate and reopen the historic Old Iron Bridge (**Figure 1, 3**) as a pedestrian/bicycle facility and deck park. The Old Iron Bridge is an iconic structure for the city and its residents, and the project will restore the bridge's transportation function in addition to preserving its historic and cultural significance. The project will provide a critical crossing of the Colorado River, which is a natural barrier separating the downtown business district from the city's west side. The project will provide additional multi-modal transportation choices to connect users to Bastrop's downtown businesses, neighborhoods, and recreational amenities. The Old Iron Bridge will reduce barriers, increase mobility for non-motorized users, increase use of lower carbon travel modes, and increase equity and accessibility for travelers. The Old Iron Bridge deck park will attract residents and tourists to this iconic structure, preserve and enhance the unique historic character of the community and support economic growth. This application will describe the merits of the project in detail. Supplemental information can be found at [Bastrop Old Iron Bridge](#).



Figure 1: Old Iron Bridge

The Old Iron Bridge Deck Park Project will provide a critical multimodal connection across the Colorado River and enhance the unique historic character of Bastrop

1.2 Project History

The Old Iron Bridge was constructed in 1923 and is one of the earliest surviving examples of the Parker Truss in Texas. The bridge originally carried vehicular traffic over the Colorado River, following the route of the Camino Real de los Tejas, a major overland route established by the Spanish in the 1600s to connect Spanish missions in what is now east Texas to government centers in Mexico. Bastrop, founded by Stephen F. Austin in 1827, served as a way station on this route utilized by settlers and others expanding into Texas. The first bridge at this location was built in 1890 and was a private toll bridge. Bastrop County funded the construction of the Old Iron Bridge with assistance from the Texas State Highway Department and the federal Bureau of Roads. The bridge opened in January of 1924 and was lit at night by the town of

Bastrop. The Camino Real de los Tejas is now part of the National Historic Trail system (**Figure 2**).

The bridge was transferred to the Texas Highway Department (now the Texas Department of Transportation or TxDOT) sometime during the Great Depression. The bridge carried State Highway (SH) 71 and then State Loop (SL) 150 over the Colorado River until the 1990s when the new vehicular bridge was constructed. TxDOT then transferred ownership of the

bridge back to the City of Bastrop. The Old Iron Bridge continued to carry pedestrian and bicycle traffic until 2018, when structural concerns forced the city to close the bridge to all traffic. The bridge was listed in the National Register of Historic Places in 1990 for its association with the Camino Real de los Tejas and Bastrop's history, as well for its engineering significance embodying the design and construction technology of the early period of highway construction in Texas.

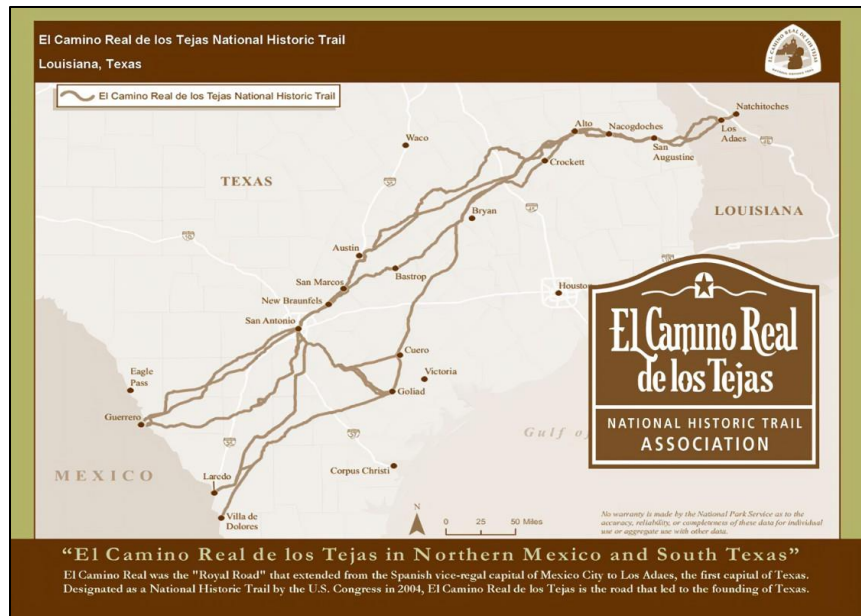


Figure 2: Camino Real de los Tejas - Historic Routes (National Park Service)

1.3 Transportation Challenges and Solutions

The existing pedestrian and bicycle network in Bastrop is constrained by limited crossings of the Colorado River. Since the 2018 closure of the Old Iron Bridge, the only existing crossing is on SL-150, and consists of a 6-foot-wide sidewalk*. While adequate for pedestrians, this does not meet current design standards for safe two-way bicycle traffic, is constrained by barrier on either side, and is adjacent to a state highway carrying nearly 19,000 vehicles per day. Reopening the Old Iron Bridge will provide a safe bicycle and pedestrian crossing of the Colorado River separate from the highway bridge, and will connect to proposed multi-modal improvements on SL-150 through downtown Bastrop. Bastrop has made significant investments in its sidewalk and trail network which provides significantly less benefit without the Colorado River connection. More information on Bastrop's sidewalk and bicycle network is provided in **Section 4.4**.

Bastrop faces some unique transportation challenges around preserving the historic character of the city while accommodating population growth and economic development. Both bring benefit to the local community and require a wide range of solutions. In an effort to guide future development, the city recently adopted the [Bastrop Building Block \(B3\) Code](#), a set of land use regulations that enable the community to be fiscally sustainable, geographically sensitive, and

* Sidewalks are included in TxDOT's improvements to SH-71 over the Colorado River, currently under construction.

authentic to its character. The B3 Code provides for multimodal accommodations city-wide, with emphases on the pedestrian and walkability. Central to the B3 Code is increasing the multi-modal opportunities in the downtown area, where capacity improvements are constrained by the historic commercial district and dense residential development (**Figure 3**). These challenges include:

- Pedestrian and bicycle safety and comfort – these users must currently use sidewalks adjacent to high speed, high volume roadways to cross the Colorado River.
- Environmental justice – providing equitable access to transportation choices for underserved communities.
- Overcoming barriers to opportunity – provide an accessible crossing of the Colorado River and increase connectivity to government and community services.
- Increasing mobility – providing affordable transportation options and freedom of movement, including for the disabled.
- Economic opportunities – promote and enhance Bastrop’s tourism and film industries by drawing visitors and movie/TV productions to the bridge, encouraging patronage of downtown businesses and the Colorado River trail system.

Rehabilitating the Old Iron Bridge will not only provide a safe and affordable mode of travel for the community, but also a gathering place resulting in increased economic, social, and recreational opportunities. The Old Iron Bridge is deeply woven into Bastrop’s community character, serving as a link to the past while also a gateway to Bastrop’s future economic growth.

1.4 Statement of Work

The project will rehabilitate the Old Iron Bridge to carry bicycle and pedestrian traffic while preserving its historic integrity. The bridge is currently closed to all traffic due to structural deficiencies, particularly in the bridge superstructure. The bridge is currently rated 3 out of 10 per the National Bridge Inventory (NBI) rating system which indicates serious condition.

The City of Bastrop proposes to replace and/or strengthen key components of the truss, replace the deck with lightweight concrete, repair the substructure, and remove the existing lead paint and recoat the bridge. A complete Rehabilitation Evaluation Report (available at [Bastrop Old Iron Bridge](#)) was completed in 2019 that describes the needed improvements in detail. **The 21.5-foot-width will sufficiently accommodate striped bicycle/pedestrian paths as well as deck park amenities such as seating, plantings, and public art.**

The Old Iron Bridge is currently rated 3 out of 10 and is closed to all traffic

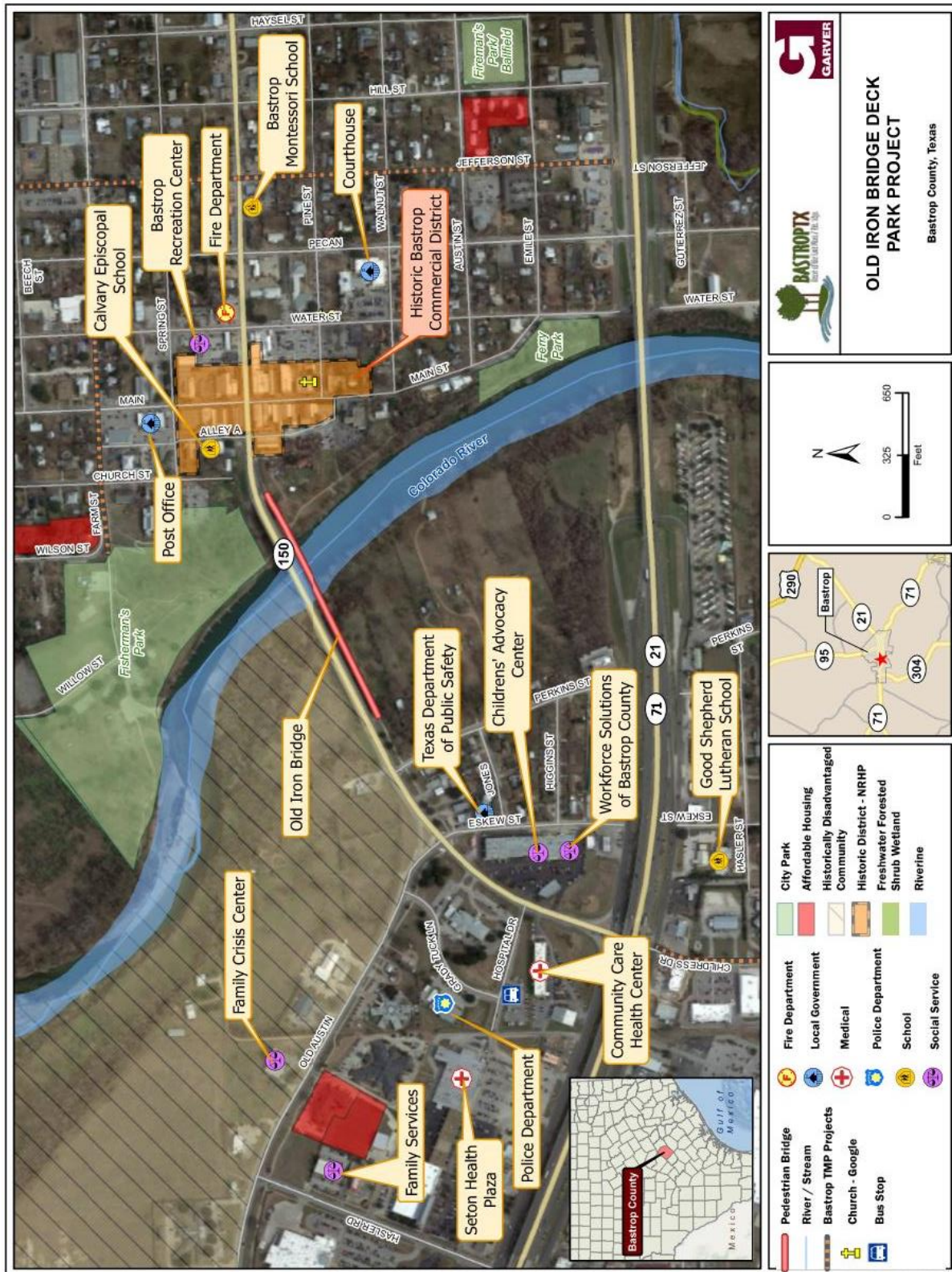


Figure 3: Old Iron Bridge Location Map

2.0 PROJECT LOCATION

The Old Iron Bridge Deck Park Project is in the City of Bastrop in Bastrop County, Texas, southeast of the Austin metropolitan area (**Figure 3**). The project is within the Bastrop Urban Cluster which had a population of 13,371 in 2010. Therefore, **this project is considered rural**.

The project is located within Census Tract 9504 in Bastrop County. According to guidance provided by the U.S. Department of Transportation, this tract does not meet the definition of an Area of Persistent Poverty or a Historically Disadvantaged Community. However, Tract 9503 is directly adjacent to the project and will be served by the project (**Figure 3**). Tract 9503 is a Historically Disadvantaged Community.

3.0 GRANT FUNDS, SOURCES AND USES OF PROJECT FUNDS

The City of Bastrop is requesting \$13.3 million in FY 2022 RAISE funds to contribute to the construction of the Project. Bastrop intends to utilize local city dollars to fund the remainder of the project cost. The future eligible cost for the project components covered in this application is \$15.3 million.

Cost estimates were developed as part of the 2019 Rehabilitation Evaluation Report for the bridge, and updated to 2022 dollars. Costs were based on detailed inspections of the existing bridge, including visual inspection, photo documentation, measurement and in-situ data collection, non-destructive testing such as sounding and scraping, and underwater diving for the pier foundations in the river channel. The existing conditions were compared to the American Association of State Highway and Transportation Officials (AASHTO) Load and Resistance Factor Rating (LRFR) criteria to determine the improvements needed. The resulting costs and the proposed sources of funds are presented in **Table 1**. Given that the costs are conceptual, a 15% contingency is included. The detailed cost estimate is included at [Bastrop Old Iron Bridge](#).

Table 1: Sources and Uses of Funding

USE OF FUNDS	SOURCES OF FUNDING (in \$1,000s)			
	City Funds	Other Federal Funds	RAISE Funds	Total Future Project Cost
Final Design	\$130	\$0	\$870	\$1,000
Construction	\$1,425	\$0	\$9,771	\$11,196
Contingency and Other	\$402	\$0	\$2,692	\$3,094
TOTAL	\$1,957	\$0	\$13,333	\$15,290
Percent	13%	0%	87%	100%

Preliminary design and environmental costs will be covered 100 percent by city funds. These funds will be expended prior to RAISE grant obligation and are not included in **Table 1**. Final design and construction funds are anticipated to be thirteen percent (13%) city funds and 87% RAISE funds.

The attached letter demonstrates the City of Bastrop’s commitment to allocate future funds to the Old Iron Bridge Project. Bastrop currently has \$457,000 set aside as construction match, and is committed to adding an additional \$2.5 million to their Capital Improvements Program, \$1.5 million of which will be committed as match for the RAISE grant. Construction on the Old Iron Bridge is currently anticipated to start in 2025 with RAISE funding. Future maintenance of the Old Iron Bridge will also be the responsibility of the City of Bastrop. These funds are not subject to any conditions or time periods. The letter of funding commitment from the city is available at [Bastrop Old Iron Bridge](#).

4.0 MERIT CRITERIA

4.1 Safety

The Old Iron Bridge Deck Park Project will provide improved safety for bicyclists and pedestrians. Currently, the only non-vehicular crossing of the Colorado River in Bastrop is a six-foot wide sidewalk adjacent to vehicle traffic on SL-150. The sidewalk is separated from traffic by a three-foot high concrete barrier (**Figure 4**) on either side. The location, width, and layout of the current sidewalk pose safety issues for pedestrians and bicyclists. SL-150 carries 18,900 vehicles per day (vpd) at speeds well over the 30 mph posted speed limit. Traffic volumes on SL-150 are anticipated to increase by 2045, likely exceeding the capacity of the two-lane roadway and causing additional congestion. Despite the existing barrier, walking or cycling next to such high volumes of traffic creates a noisy, uncomfortable environment for bicycles and pedestrians.



Figure 4: Existing Sidewalk Adjacent to SL-150

57%

*of pedestrian/cyclist collisions
on SL-150 involved injury*

Crashes involving pedestrians and cyclists tend to be more severe and more frequently result in injury or death. There have been eight collisions on SL-150 involving pedestrians or cyclists in the last ten years. Four of these (57%) involved injury.

Providing a separate bridge for these vulnerable users creates a safer solution to multi-modal transportation, and protects non-motorized travelers from safety risks. As a conservative estimate, bicycle and pedestrian related collisions are anticipated to be reduced approximately 2%, based on the percentage of these types of collisions occurring today. The bridge will provide a wider corridor with separate bicycle and pedestrian paths, increasing comfort for all users, which will encourage more use of the facility.

4.2 Environmental Sustainability

Rehabilitation of the historic Old Iron Bridge is at its core a sustainability project. The city has chosen to preserve an existing asset rather than build something new. Making use of the existing structure not only preserves its historic significance, but limits disturbance and impacts to the surrounding area, and reduces project cost. One of the primary goals for the Old Iron Bridge Deck Park Project is to support the use of lower-carbon modes of travel such as walking and cycling. With SL-150 nearing its vehicle capacity, this Project will offer viable and safe lower-carbon transportation alternative. The Project will reduce emissions and increase resiliency of at-risk infrastructure. Improving the Old Iron Bridge will protect water quality and reduce the potential for contamination of the surrounding environment. The Project has considered environmental justice in planning and seeks to provide more equitable transportation choices for all users.

4.2.1 Modal Shift to Reduce Emissions

The project will encourage the use of active transportation modes and access for the disabled. The Old Iron Bridge will restore a multimodal connection safe for both pedestrians and cyclists connecting area residents to employment, shopping, recreation, and community facilities. Without a separate facility of sufficient width, pedestrians and cyclists may feel unsafe using the existing roadways and choose to drive even when their destination is within walking or cycling distance. In addition, increasing traffic volumes and congestion on SL-150 may reduce vehicular travel times to the point a



Figure 5: Downtown Bastrop Historic District

cycling trip would be faster. Some users may elect to shift to this mode as these conditions worsen.

A continuous trail along the Old Iron Bridge will link the west side of Bastrop to the downtown Historic District (**Figure 5**), encouraging lower-carbon options to access restaurants and provide new methods to travel to work. The Project would encourage mode shift from cars to walking or bicycles which would reduce the carbon emissions, further reducing vehicle miles traveled (VMT). As stated in the [Bastrop Comprehensive Plan \(2016-2036\)](#) and supported by the B3 Code:

An increase in active transportation activity could assist in easing future traffic congestion issues for the City. Providing adequate facilities and resources for those who choose to bicycle or walk is important for the success of a truly multi-modal transportation network in Bastrop (page 6-31).

4.2.2 Resiliency

The Old Iron Bridge was built in 1923 and is in poor condition (rated 3 out of 10, or Serious). As described in **Section 4.6**, the truss structure is fracture critical, meaning failure of one element could cause complete loss of the structure. The bridge has experienced significant corrosion and material loss in the gusset plates along the lower chord. The Project will rehabilitate the condition of this deficient structure while preserving its historic character. Providing a more resilient Old Iron Bridge will protect the structure, the Colorado River, and downstream properties in the event of a severe storm event.

The Old Iron Bridge is fracture critical and in Serious condition

4.2.3 Environmental Justice

The Old Iron Bridge Deck Park Project has considered environmental justice and the effects of the project on adjacent low-income and minority communities. As shown in **Figure 6**, according to the Environmental Protection Agency (EPA)'s EJSCREEN tool, the areas around the Old Iron Bridge contain concentrations of minority and low-income populations. Minorities consist of approximately 25% of the population and 5% to 15% of the population is below the poverty level.[†] EJSCREEN also indicates a high unemployment rate in the vicinity (**Figure 6**). Improving the Old Iron Bridge will provide affordable transportation opportunities for all populations to access the downtown area of Bastrop. Additionally, affordable housing units are located west and east of the Old Iron Bridge. The Old Iron Bridge would allow residents of these housing units to access government services and businesses including grocery stores and potential employers by walking or biking in a safer capacity (see **Figure 3**).

[†] American Community Survey, 2019 5-Year Estimates

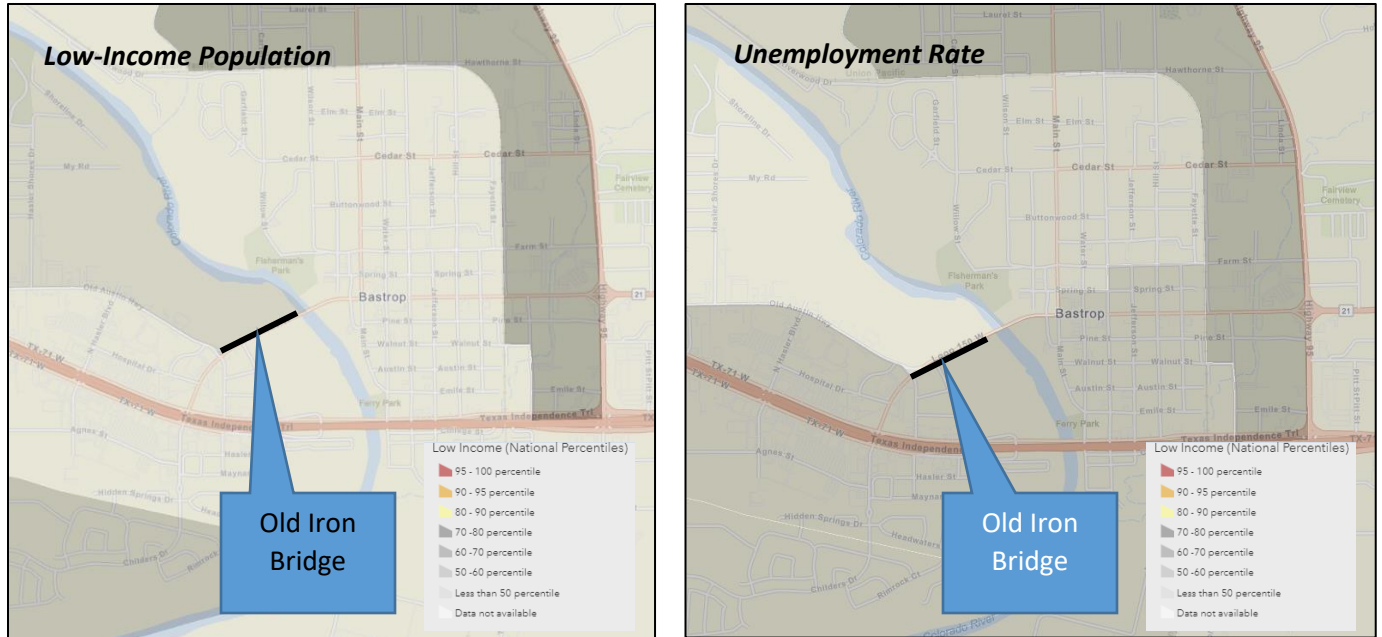


Figure 6: EPA EJSCREEN Minority Population and Unemployment Rate Maps (National Percentiles)

4.2.4 Environmental Quality

The Old Iron Bridge’s protective layer is cracked and peeling, causing severe corrosion in the bridge’s steel (Figure 7). Three of eight samples taken of the protective paint coating exceeded lead concentrations of 5,000 parts per million. The Consumer Product Safety Commission states that paint may have lead concentrations of no more than 100 parts per million. Due to the deterioration of the bridge, lead paint found in the bridge has the potential to contaminate the Colorado River, leading to issues in water quality. The Project will remove the existing lead paint with a shrouded abrasive blast process. This process will contain the toxic material and protect the surrounding environment. Ultimately the bridge will be repainted with an approved lead-free material. **Completing this work significantly decreases the risk of any releases of lead paint and increases public health and safety.**



Figure 7: Failing Lead Paint on the Old Iron Bridge

The entire project is located within the mapped regulatory floodway

of the Colorado River (**Figure 8**). Rehabilitation of the Old Iron Bridge will not affect the existing floodway or surrounding floodplains, as no work is planned within the river itself. As such, the project is consistent with the Federal Flood Risk Management Standard. Improving infrastructure resiliency for the adjacent low-income and minority neighborhoods will provide security for those that often disproportionately experience climate-change-related impacts.

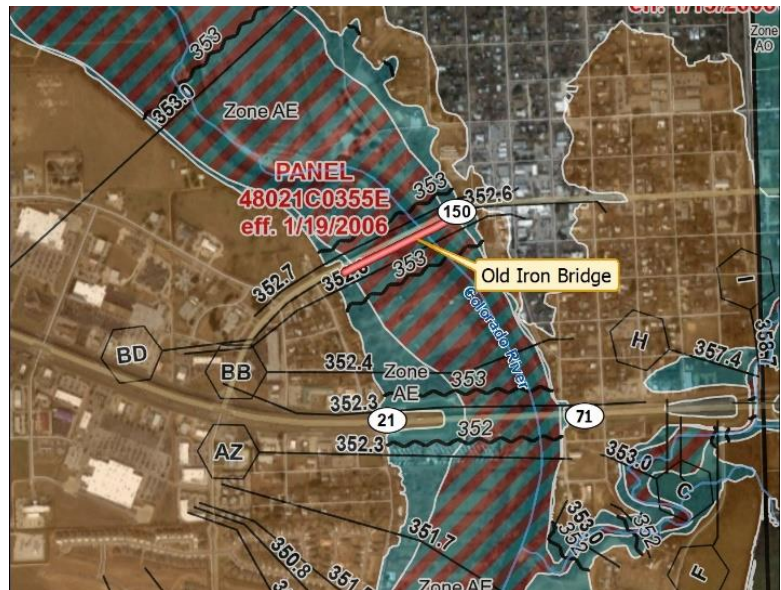


Figure 8 - FEMA Floodplain

4.3 Quality of Life

The Old Iron Bridge Deck Park Project increases affordable and accessible transportation choices for this rural community. It emphasizes increased equity and non-vehicular mobility. Enhancing pedestrian and bicycle mobility reduces transportation cost burdens and automobile dependence and increases the walkability of area neighborhoods. Providing more choices for mobility facilitates the development of Main Street and the historic downtown which is central to the City’s B3 initiative to guide responsible development that honors the past and prepares for a sustainable future. It also provides a connection from neighborhoods to the downtown area.

The Old Iron Bridge is one of a limited number of transportation crossings of the Colorado River, which is a physical barrier within the city’s transportation network and one that limits access between the historic downtown and residential areas on the east side of the river and the growing commercial areas on the west side. The project will provide additional affordable transportation options and improve system connectivity. Increased access to shopping, parks and trails, transit service, and the local library could increase cohesion and revitalize the local community.

As important as the Old Iron Bridge is to the city’s transportation network, the bridge is equally important as a historic and symbolic icon (**Figure 9**). For 100 years the bridge has been most recognizable visual element of the city. It has not only carried vehicles and people across the Colorado River during its history but has also served as a place to enjoy the river, the scene of city festivals and gatherings, a space for public art, and even as a movie set. Rehabilitating the Old Iron Bridge and encouraging the public to gather on the structure will enhance this unique community characteristic as a uniquely Bastrop symbol.



Figure 9: City of Bastrop Mid-Year Budget Workshop Presentation, 2018

As part of the effort to enhance the unique character of Bastrop and create a destination as well as a recreational and transportation opportunity, the City of Bastrop will include a deck park in the Old Iron Bridge Rehabilitation Project (**Figure 10**). The deck park will transform the bridge into a destination, allowing a space for bridge users to further enjoy the historic bridge, the Colorado River, public art, and community gatherings. Amenities such as lighting, plantings, and

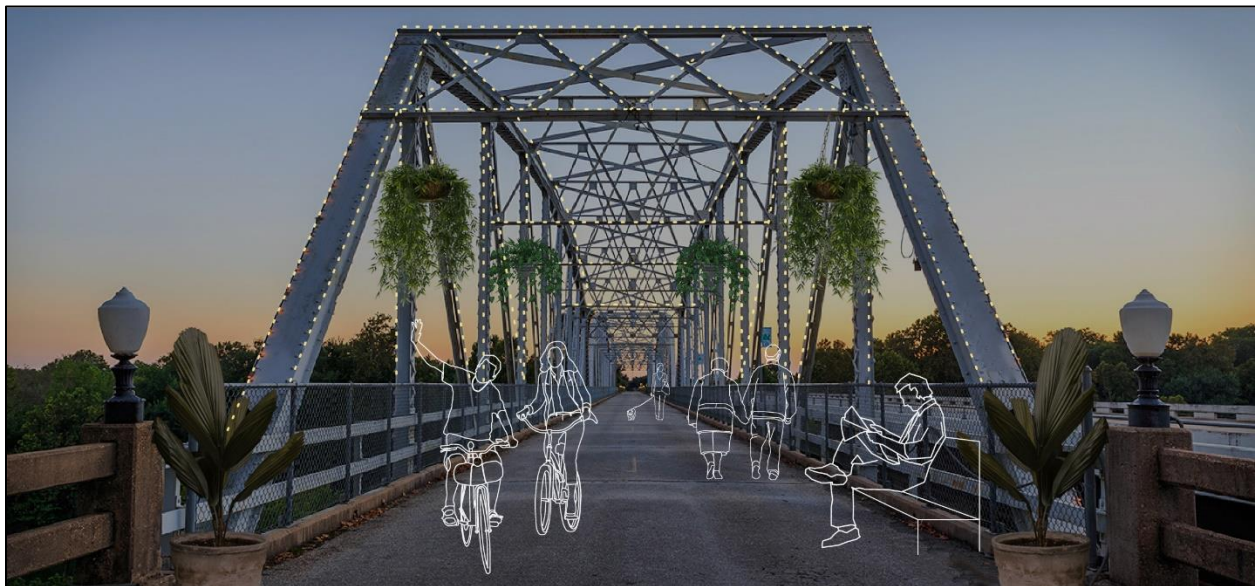


Figure 10: Rendering of Future Old Iron Bridge Deck Park

benches are planned. The city will solicit the community's input on what deck park features are most desirable as the project continues to develop.

4.4 Mobility and Community Connectivity

The Old Iron Bridge Deck Park project will increase mobility and expand connectivity for non-motorized travelers. Providing a city-wide multimodal network is one of the goals of the [B3 Code](#) and the [Bastrop Comprehensive Plan](#):

The City of Bastrop will create a framework of transit, pedestrian, and bicycle systems that provide alternatives to the automobile (Bastrop Building Block Code, page 12).

An extensive multi-use network should be planned and would significantly aid in improving connectivity and safety for pedestrians and bicyclists in Bastrop. Connecting the multi-use network to regional trails would increase regional connectivity and potentially lead to an increase in tourism and improve community image (Comprehensive Plan, page 6-31).

The Colorado River separates the City's west side and the downtown business district, and the Old Iron Bridge will provide an alternative for bicyclists and pedestrians to access jobs, schools, businesses, and recreation. Walkability and accessibility for pedestrians and bicyclists will increase, contributing to a thriving community for individuals to live, work, and play. The Old Iron Bridge connection will allow individuals across the City of Bastrop to move freely even without a car. The new pedestrian and bicycle paths will be designed to meet Americans with Disabilities Act (ADA) standards.

The Old Iron Bridge will provide an additional link in the City's trail network, increasing opportunity for recreation (see **Figure 11**). Fisherman's Park, Bastrop River Company, and the June Hill Pape Riverwalk Trail are all located on the east side of the river and have trail connections to the Old Iron Bridge (**Figure 12**). The Bastrop River Company provides canoeing, kayaking, and camping along the Colorado River. Fisherman's Park is Bastrop's most popular park and is part of the Lower Colorado River Authority (LCRA) Colorado River Trail and Texas Parks and Wildlife Department Project. The June Hill Pape Riverwalk Trail connects



Figure 11: June Hill Pape Walking Trail



Figure 12: Existing and Future Sidewalk and Trail Network in Bastrop

Fisherman’s Park south to Ferry Park, a recently upgraded park that includes a playground and access to the Colorado River. The City of Bastrop recently received a grant from the Capital Area Metropolitan Planning Association (CAMPO) to construct the Riverwalk Loop Trail that will connect the El Camino Real Trail on the west side of the Colorado River to Ferry Park via SH-71.

The Old Iron Bridge Deck Park Project is consistent with the City’s plans to expand and enhance its active transportation network. **Figure 13** shows the SL-150 corridor as a primary bicycle route. The Old Iron Bridge would provide a separate bicycle path of appropriate width to facilitate safe bicycle crossings of the Colorado River. Without the Old Iron Bridge, a safe and comfortable connection does not exist for pedestrians and cyclist on the west side of the city which includes disadvantaged communities. Several affordable housing locations are in the vicinity of the bridge, and a pedestrian bridge allows for the increased mobility of disadvantaged communities that may not have reliable transportation.

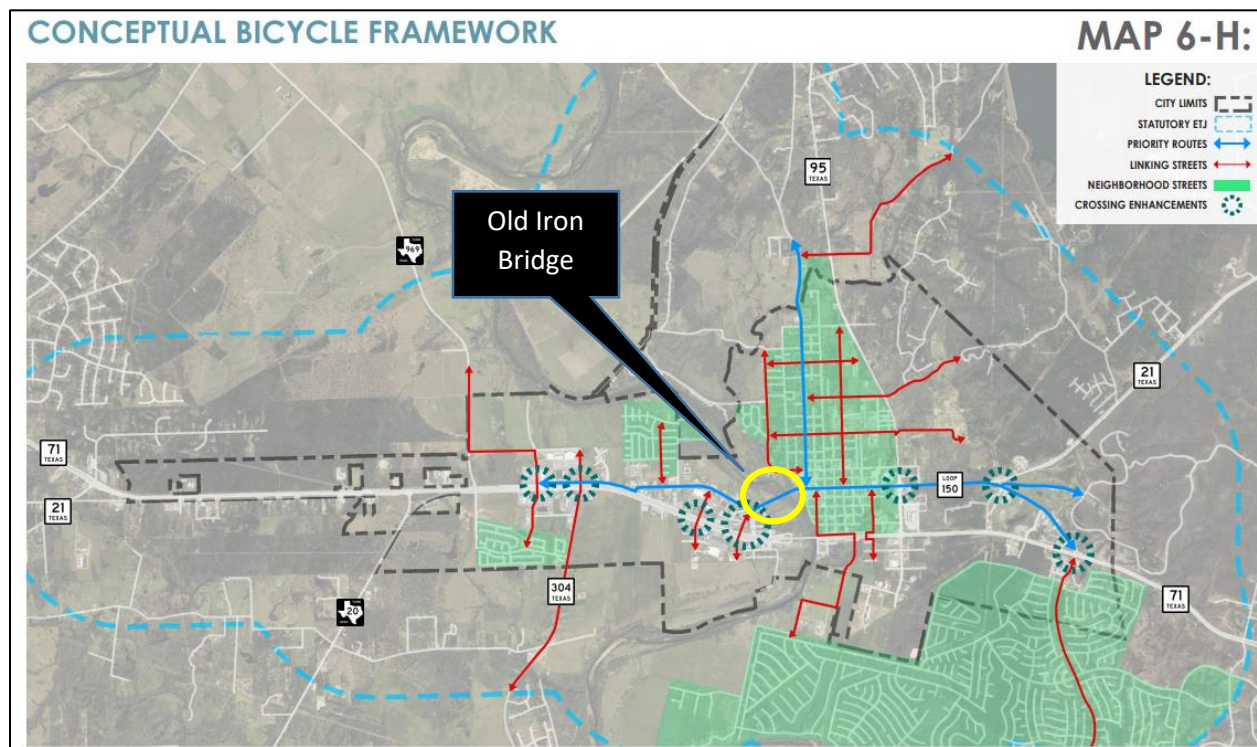


Figure 13: Conceptual Bicycle Framework, Bastrop Comprehensive Plan 2016-2036

In addition to connecting residents, the Old Iron Bridge will also provide mobility and connection options for rural county residents. The Bastrop Station is a bus stop located on the west side of the Old Iron Bridge, approximately 1/3 mile west of the bridge and is served by the Capital Area Rural Transportation System (CARTS). CARTS provides service to rural areas located outside the Austin urbanized area, including Bastrop. The Old Iron Bridge will provide additional connectivity to the bus station, increasing mobility opportunities.

4.5 Economic Competitiveness and Opportunity

The City of Bastrop, located outside of Austin is a rapidly growing community within the state and region. **Table 2** summarizes forecasted population growth trends for the city of Bastrop and Bastrop County. Both areas have grown over 30% in the last ten years. Based on projections of 2040 population, the city will more than double in the next 20 years. As population grows, demand on both the vehicular and sidewalk/trail system in Bastrop will increase. The Old Iron Bridge will help accommodate this demand.

Table 2: Population Increase

	2010	2020	2040 (projected)	% Increase 2010-2020	Anticipated Increase (2020-2040)
Bastrop	7,218	9,688	20,293 [‡]	34.2%	109%
Bastrop County	74,171	97,216	112,145 [§]	30.7%	15%

Bastrop is known for its historical significance and being known as the Most Historic Small Town in Texas with more than 130 registered sites. Due to this historical significance, a vibrant downtown, and access to recreational facilities, the city has become

Bastrop is known as “The Most Historic Small Town in Texas”

a growing tourist attraction, generating economic development for the city. Located close to Austin, Bastrop is known as a recreational destination with small town charm. The deck park element of the Old Iron Bridge will allow the bridge to serve as its own tourist destination. Reopening the bridge will allow the city to capitalize on this important symbol of Bastrop. Area festivals, firework displays, and other events utilize the bridge directly, attracting residents and tourists alike. Tourists drawn to the Old Iron Bridge will also likely patronize the shops and restaurants in downtown.

The Old Iron Bridge Project will decrease transportation costs and improve access to employment centers and job opportunities for non-vehicular users. Retail is the largest employment sector in Bastrop and downtown has the largest concentration of retail businesses in the city. Downtown also includes employment opportunities in government and service industries. The Old Iron Bridge increases access to downtown for residents on the west side of the city.

Bastrop is also home to a thriving film industry. In 2019 the city was designated as the “Film Hospitality Capital of Texas”, in part due to its appearance in over 28 movies and series, many of which featured the Old Iron Bridge. **Figure 14** shows a new movie studio and entertainment

[‡] City of Bastrop Comprehensive Plan, Figure 2.1 (Scenario 1 most closely matches current population levels)

[§] Texas Demographic Center, 2018 population projections

district planned adjacent to the Colorado River south of the Old Iron Bridge**. By reopening the bridge, the city could again market the bridge as a filming location.

4.6 State of Good Repair

Since being constructed in 1923, the Old Iron Bridge has deteriorated, affecting many of its structural components. Deterioration of the bridge's roadway and underside has led to fatigue cracks in the steel and shear cracks in the concrete (**Figure 15**).

The asphalt overlay surface of the concrete deck has widespread cracking, large, delaminated patches, and spalling along the curbs and joints. The curbs and railing are affected by moderate scaling. There is severe rust, corrosion, and widespread section loss on the vertical gusset plates connecting members to the lower chord. Six inspections from 1992 to 2018 have shown worsening conditions on the bridge and the bridge was closed to all traffic in 2018. Inspectors have determined that local failures are possible. The National Bridge Inventory (NBI) rating on a scale of 0 to 10, with 10 being excellent, is a 3, indicating Serious Condition.

The Old Iron Bridge Project will rehabilitate the bridge while maintaining its historic integrity. All work will be done according to the U.S. Department of Interior's *Standards for Rehabilitation*,



Figure 14: Proposed Movie Studio in Bastrop

The Old Iron Bridge has a current NBI rating of 3 and is closed to all traffic



Figure 15: Photos of Existing Bridge Condition

** [Renderings, timeline emerge for Bastrop 552 film studio near Austin - Austin Business Journal \(bizjournals.com\)](https://bizjournals.com/austin/news/2019/05/15/renderings-timeline-emerge-for-bastrop-552-film-studio-near-austin/)

which ensure that the project will retain the original structure's design, materials, and workmanship. According to the NRHP nomination form for the bridge (available at [Bastrop Old Iron Bridge](#)), the important elements of a Parker Truss include:

- Parker truss web configuration (verticals in compression, diagonals in tension)
- Polygonal top chord with more than five slopes
- Inclined endposts
- Through truss configuration (struts, sway bracing, and lateral bracing above roadway)
- Diagonal counters
- Portal bracing or struts

The complete list of proposed improvements to the Old Iron Bridge can be found in the Rehabilitation Evaluation Report. Improvements will repair certain elements such as joint seals and concrete spalling on piers and bents. Other elements will be strengthened, such as truss members and gusset plate panel points. Many of the elements of the superstructure will need to be replaced due to extremely poor condition, such as butt welds, cross frames, and anchor bolts. As discussed in **Section 4.2**, the existing lead paint will be completely removed and the bridge repainted.

It is important to the City of Bastrop to preserve the historic structure. The city will consult with the Texas Historical Commission regarding its rehabilitation plans, to verify that they will not adversely affect the historic significance of the bridge. See **Section 5.2** for a discussion of the environmental approvals required for the project. Rehabilitating the bridge will protect the river and downstream properties from damage. Left unimproved, the bridge threatens water quality and adjacent properties should it continue to deteriorate and eventually fail. Losing the Old Iron Bridge would have a severe negative impact on the economic growth of Bastrop, as it is so closely tied to the tourism and film industries. Perhaps most importantly, Bastrop would lose its most important symbol, one that lends character and identity to this historic city.

Once rehabilitated, the city is committed to maintaining the bridge in a state of good repair. The City has asked its engineer to provide a systematic inspection and maintenance plan and will program funds for these activities in the city's annual budget.

4.7 Partnership

The Old Iron Bridge has support from the Texas congressional delegation as well as the Bastrop County and the Bastrop County Judge. Letters from these individuals are available at [Bastrop Old Iron Bridge](#).

The public has been aware of and in support of the City's plans to rehabilitate the bridge since it was closed to traffic in 2018. The bridge has been the subject of numerous City Council meetings and media articles. As the project moves forward, the City of Bastrop intends to engage the community in the design of the Old Iron Bridge Deck Park. A beloved symbol by the entire town, it is likely the community will be highly engaged in the rehabilitation process and the project will have broad public support. The city will develop a Public Involvement Plan to identify stakeholders and outline a plan for public engagement and feedback. This plan will include

equity-focused outreach methods to specifically integrate low-income and minority groups into the process. More detailed information will be gathered on where these communities reside, and specific materials, such as Spanish language materials, will be developed if necessary.

The Old Iron Bridge Deck Park Project is consistent with and supports many other development initiatives within the City of Bastrop. The city is currently partnering with CAMPO to complete a multimodal study of SL-150 through the heart of Bastrop. Ultimately the city would like to remove SL-150 from TxDOT's system and redesign the roadway as a lower-speed, multimodal corridor with bicycle/pedestrian facilities, on-street parking, and electric vehicle support. The city currently offers free e-cabs with daily afternoon and evening service (**Figure 16**). Increasing the accessibility and walkability of SL-150 through town would enhance the connections provided by the Old Iron Bridge. Eventually, the city would like a continuous bicycle/pedestrian connection from the Colorado River to Bastrop State Park east of the city on SL-150.



Figure 16: Bastrop E-Cab

4.8 Innovation

4.8.1 Innovative Technology

The Old Iron Bridge Deck Park Project will utilize innovative technology (shrouded abrasive blast) to removing lead paint from the existing bridge. This technology captures the toxic material and protects the surrounding environment. The project would also use technology such as drone-mounted LIDAR to produce a complete 3D image of the bridge as a basis for design. Other innovative technology will also be required to perform historically consistent rehabilitation of the bridge, which will involve both existing and new steel elements.

4.8.2 Innovative Project Delivery

The Project does not involve innovative project delivery.

4.8.3 Innovative Financing

The project does not involve innovative financing.

5.0 PROJECT READINESS

5.1 Environmental Risk

As shown in **Table 3**, Bastrop is committed to completing design and construction of the Old Iron Bridge rehabilitation ahead of the RAISE grant funding obligation and expenditure deadlines. Design of the rehabilitation can be accomplished within 24 months. Environmental approvals will require National Environmental Policy Act (NEPA) authorization, including review by the Texas Historical Commission (THC) and approval under Section 4(f) of the U.S. DOT Act. However, the project is not anticipated to have an adverse effect to the historic bridge and a “de minimis” finding under Section 4(f) is expected. No right-of-way acquisition will be required. A detailed schedule can be found at [Bastrop Old Iron Bridge](#).

Table 3: Old Iron Bridge Deck Park Schedule

Task	Duration Days	Start	End
Preliminary Design	613	8/1/2022	4/5/2024
NEPA & Public Involvement	341	8/1/2022	11/20/2023
RAISE Funding Obligation		April 2024	
Final Design	503	11/21/2023	4/7/2025
Permitting	335	11/21/2023	10/21/2024
Procurement	167	4/8/2025	9/22/2025
Construction	671	9/23/2025	7/26/2027

With RAISE funding, the obligation of funds for project letting and construction will occur in April 2024, with assumed letting scheduled for April 2025. Construction is anticipated to start in September 2025 and be completed in July 2027. All these dates are well within the funding deadlines for the 2022 RAISE program. Even with a significant unanticipated delay, the RAISE funds are in little danger of expiring prior to the obligation deadline.

5.2 Required Approvals

5.2.1 Environmental Permits and Reviews

As a recipient of RAISE funding, the City of Bastrop will be required to complete documentation under the National Environmental Policy Act (NEPA). The City will begin environmental studies upon award of the RAISE grant and anticipates completion by late 2023. NEPA approval will include consultations with the U.S. Fish and Wildlife Service for any impacts to threatened and endangered species and the THC for impacts to the historic bridge. Because the City of Bastrop intends to rehabilitate the bridge without affecting its historic integrity, a “no adverse effect” finding is anticipated under Section 106 of the National Historic Preservation Act. The project is also subject to review under Section 4(f) of the Department of Transportation Act. If the project will have “no adverse effect” under Section 106, then the project is considered to have a “de minimis” use under Section 4(f) and no additional studies will be required.

Prior to rehabilitation, it will be necessary to remove the lead coating on the existing structure. This will be accomplished with a shrouded abrasive blast process (**Figure 17**) and will require an air permit from the Texas Commission on Environmental Quality (TCEQ). Caution will be taken to prevent abrasive material or any of the lead coating from



Figure 17: Example of Shrouded Lead Paint Removal Process

entering the air or water. Other TCEQ permits such as stormwater permits may be required depending on construction techniques. Bastrop will require the contractor to obtain all necessary permits prior to construction. Any environmental commitments developed as part of the NEPA process will also be included in the construction contract. No additional environmental permitting is anticipated. The project will not require work in the Colorado River so is not subject to permitting by the U.S. Army Corps of Engineers.

Public Engagement

Evidence that the Old Iron Bridge is a source of identity and pride for the citizens of Bastrop can be found throughout the city. Businesses and civic facilities use the image of the iconic bridge on signs and advertisements which is a cohesive symbol of the community (**Figure 18**). As discussed in the [Bastrop Transportation Master Plan](#), the city has heard consistent feedback from residents requesting expanded active transportation options in the city.

The City of Bastrop has engaged the public over the past six years regarding the condition of the Old Iron Bridge and the need for repair. The city added Old Iron Bridge repairs to its 2016-2021 Capital Improvement Program (CIP) concurrent with adoption of their Comprehensive Plan. During this planning process, the public had opportunities to attend public meetings, review information and provide input. Additionally, a public outreach campaign was initiated by the City to inform the public and elected officials of the current bridge condition, safety concerns, and needs for rehabilitation. The campaign included flyers as well as local television and print news reporting on the condition of the bridge and concerns regarding the impact of the bridge closure on the community.



Figure 18: Incorporation of Old Iron Bridge into Local Business Marketing

Recently, the condition of the Old Iron Bridge has been discussed as agenda items at Bastrop City Council meetings (November 2019, January 2022, and February 2022). Information on the bridge condition from the 2019 inspection report as well as efforts to fund repairs were presented and discussed by City Council.

The City of Bastrop plans to complete additional public involvement during the NEPA planning phase to gather input on the rehabilitation project and deck park options. Public involvement activities will be conducted in accordance with Federal requirements in 23 CFR 771.

5.2.2 State and Local Approvals

The Bastrop City Council has identified nine focus areas to successfully achieve the City's vision and mission:

The Vision of City of Bastrop is to be a welcoming community with a compassion for our diversity, a tapestry of people, arts, and structures, preserving our history and character while embracing progress around our unique environment.

The Old Iron Bridge Deck Park Project meets five of the nine focus areas, including Community Safety, Economic Vitality, Multimodal Mobility, Uniquely Bastrop, and Unique Environment. This project is one of the city's highest priorities and the city is committed to doing the necessary planning to make the project a reality.

City of Bastrop Capital Improvement Plan (CIP) (2016-2021): The Old Iron Bridge project is currently included in the City of Bastrop's [2016-2021 Capital Improvement Plan](#). While the CIP is fiscally unconstrained the city has set aside funding via a Certificate of Obligation Bond. The city is also planning to allocate \$2.5 million in additional funding in the FY 2023 budget to advance design and construction. The City of Bastrop will review the project design at all phases to verify

it meets local requirements for city streets, drainage, and lighting and well as Texas Historical Commission requirements for rehabilitation of an NRHP-listed site. As discussed in Section 5.2.1, the project has widespread community support.

5.2.3 Federal Transportation Requirements Affecting State and Local Planning

Because the Old Iron Bridge Deck Park Project does not currently have any programmed federal funds, it is not listed in any of the regions' federally mandated transportation plans or programs. However, the Project does align with the goals of many of these plans, as described below.

Capital Area Metropolitan Planning Organization (CAMPO) Regional Transportation Plan (RTP):

The CAMPO RTP 2045 is a multimodal approach to addressing congestion and transportation needs over the next 25 years and uses comprehensive planning to ensure the regional nature of the plan is locally driven. The Old Iron Bridge Deck Park Project aligns with CAMPO's long-range goals and objectives for the region related to safety, mobility, stewardship, economy, and equity.

CAMPO Regional Active Transportation Plan: The CAMPO Regional Active Transportation Plan is a blueprint for a safe and easy-to-use active transportation network of trails, sidewalks, bike lanes, and streets for the six-county CAMPO region and was used to inform the CAMPO RTP 2045. The CAMPO region's vision for the active transportation network is to provide safe, efficient, convenient, and comfortable walking and bicycling access to local and regional destinations for all residents and visitors. The Old Iron Bridge Deck Park Project aligns with this vision and with the regional goals related to safety, accessibility, functionality, equity, everyday use, quality of life, and regional coordination and connectivity.

CAMPO Unified Planning work Program (UPWP): The CAMPO 2022-2023 UPWP details CAMPO planning programs for a two-year time period. In February 2022, CAMPO voted to amend the current UPWP to add a Multi-modal Study of SL-150. The Old Iron Bridge Deck Park Project would complement multi-modal improvements to the SL-150 corridor that would be identified in the study.

5.3 Assessment of Project Risks and Mitigation Strategies

Potential risks and mitigation strategies to minimize the potential impact of those risks are summarized in **Table 4**. References to other sections of this application are included. Environmental and permitting related risks are minimal given the minimal impacts anticipated and the historic preservation benefits of repairing a significant historic bridge. The City of Bastrop has prioritized this project and has capacity to implement design and environmental activities as proposed according to the schedule presented. The city has also committed matching funds which will ensure construction can begin in a timely manner until grant funds are available for reimbursement.

Table 4: Project Risk and Mitigation Strategies

Project Risk (Probability of Occurrence)	Mitigation Strategies
Cost Increases (Moderate)	<ul style="list-style-type: none"> - The City of Bastrop has included the project in its Capital Improvement Program and remains committed to adjusting as needed to meet all RAISE and statutory deadlines for funding obligation and expenditure. See Section 5.1. - Construction estimates are at a conceptual level and include 15% contingency, allowing for a sufficient margin of increase.
Weather Related Construction Delays (Moderate)	<ul style="list-style-type: none"> - The City of Bastrop will work closely with contractors to renegotiate project time while still meeting project commitments.
City of Bastrop Maintenance Commitments (Low)	<ul style="list-style-type: none"> - City of Bastrop has prioritized improvements to the Old Iron Bridge and are committed to their maintenance responsibilities.
Public Opposition (Low)	<ul style="list-style-type: none"> - Multimodal improvements are a priority for the public. - The City of Bastrop has conducted public involvement and outreach during planning and programming of improvements to the bridge. Additional public involvement is planned during the NEPA phase of the project and will include methods to meaningfully engage the traditionally underserved population. - The Old Iron Bridge Deck Park project will improve the multi-modal connectivity and mobility, encourage walkability and accessibility to services and civic facilities, and which will directly benefit the local community.
Contamination of river or soil from lead paint removal (Low)	<ul style="list-style-type: none"> - The city will employ a licensed lead paint removal contractor to remove lead-based paint from the bridge and use a containment system to prevent contamination of soil/groundwater. In addition, a TCEQ air quality permit will be obtained.
Design or Environmental approval delays (moderate)	<ul style="list-style-type: none"> - Given that design and environmental have not begun, there is the potential that

	<p>unforeseen delays could impact the project schedule.</p> <ul style="list-style-type: none"> - The schedule allows two years for preliminary design and environmental approvals to account for any unforeseen delays.
<p>Inability to Secure State Historic Preservation Office approval (Low)</p>	<ul style="list-style-type: none"> - The City of Bastrop will coordinate rehabilitation plans with the SHPO/Texas Historical Commission (THC) to ensure the project will preserve the historic integrity of the structure. - Input from the THC will be solicited early in design so that if changes are needed, they can be made in the preliminary stages. - A “no adverse effect” finding is anticipated under Section 106 - A “de minimis” use finding is anticipated under Section 4(f)

6.0 BENEFIT COST ANALYSIS

6.1 Overview of Approach

A BCA has been completed for the Old Iron Bridge Deck Park Project according to the latest USDOT guidance (March 2022, revised). All values from that guidance are in 2020 dollars. All monetary values in the BCA, including costs, are expressed in constant 2020 dollars. The following general parameters and assumptions were used in the BCA:

- A real discount rate of 7 percent is applied to all costs and benefits applied.
- A project life cycle of 20 years is assumed.
- No residual value is assumed at the close of the 20 years of operation.
- With RAISE funding, the project construction is assumed to commence in 2023 and end in mid-2027, with operation commencing in 2027.
- The year 2020 was used as the base year for discounting; that is, 2020 is considered year zero for discounting.

BCA documentation including the spreadsheet and BCA Report provide additional details and data source information is included at [Bastrop Old Iron Bridge](#).

6.2 Results

The estimated capital cost of the Old Iron Bridge Deck Park Project is \$14.7 million in 2020 dollars (including contingency). Four primary categories of benefit have been captured by the BCA: reduced collisions, pedestrian/bicycle benefits, recreational benefits, and health benefits. Based on the assumptions, methodology, and other information presented above, the project yields a Benefit-Cost Ratio of 1.01 (discounted 7%). The results are summarized in **Table 5**.

Table 5: Summary of BCA Results (\$2020 millions of dollars)

Evaluation Metric	Undiscounted	Present Value at 7% Discount Rate	Present Value at 3% Discount Rate
Reduction in Accident Costs	\$4.35	\$1.54	\$2.71
Pedestrian and Bicycle Benefits	\$0.70	\$0.22	\$0.42
Recreational Benefit	\$20.31	\$5.58	\$11.36
Health Benefit	\$7.07	\$2.22	\$4.18
Agency Cost Savings	\$0.61	\$0.39	\$0.52
TOTAL BENEFITS	\$33.03	\$9.94	\$19.18
Total Capital Costs	\$14.70	\$9.88	\$12.34
Benefit-Cost Ratio	2.25	1.01	1.62

Recreational and health benefits were assumed to accrue for the Old Iron Bridge in addition to Pedestrian/Bicycle Benefits as defined in the USDOT BCA Guidance. While the BCA Guidance discusses pedestrian and bicycle benefits as primarily related to safety and comfort, the Old Iron Bridge is intended as more than a transportation facility. As discussed in other sections of the narrative above, the bridge has historically been destination for Bastrop and a place for residents to gather. Recreational use of the bridge is anticipated to be as high if not higher than transportation use. As demonstrated in [NCHRP Report 552](#), activity such as walking and cycling has been shown to reduce the occurrence of chronic diseases such as heart disease, hypertension, Type II diabetes, osteoporosis, and mental illness. NCHRP derives a monetary benefit to increased activity associated with reduced health care costs. Both recreational and health benefits have been monetized and included in the BCA.