

BARTON SPRINGS RD. BRIDGE

Project Overview and Update

COUNCIL WORK SESSION
DECEMBER 12, 2023



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“Effectively and Efficiently Deliver Quality Projects with the Concept of Speed”

Barton Springs Rd. Bridge



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Nearly
100
years old
built in 1926

20,000
Vehicles per day

1946
Bridge Expansion

**Key
Entrance**
to Zilker Park and
for Major City Events

\$37 million
Preliminary Funding Estimate
(Construction + Soft Costs)

FUNDING SOURCE:

- Preliminary Design: 2012, 2018 and 2020 Bonds
- Design: 2020 Bonds
- Construction: TBD

Project Development Process



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PRELIMINARY PHASE

2015 - 2023



**PUBLIC
MEETING**

April
2023



**RESPOND TO
COMMENTS**

Summer
2023



**REFINE
REPORT**

Fall
2023



**COUNCIL
ACTION**

December
2023

WE ARE HERE

DESIGN PHASE

2024 - 2026



**30%
DESIGN**



**PUBLIC
MEETINGS
+
BOARDS AND
COMMISSIONS**



**FINAL
DESIGN AND
PERMITTING**

CONSTRUCTION PHASE

2026 - 2029



**BID AND
AWARD
+ COUNCIL
ACTION**



CONSTRUCTION

Current Condition



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**Spalling
Concrete in
Bridge
Structure**



**Delamination
of Beams**



**Cracking in
Deck**



**Curb And
Railing Do
Not Meet
Current
ADA
Standards**



Load Restricted As Of November 2023 – Heavy Vehicles Moving Eastbound Must Use Outer Lanes

Project Steps Completed



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1 Coordinated with City Departments: TPW, CDS, WPD, PARD, AW

2 Worked with Consultants: AECOM (Prime) Amatterra, CDP, MWM, Balcones Geotechnical, Rods SUE

3 Regulatory Agencies Consulted: US Army Corps (USACE), Texas Department of Transportation (TxDOT), and Texas Historic Commission (THC)

4 Developed Technical Reports:

2016 Historic Section 106 Evaluation
2017 Bridge Inspection Report
2018 Traffic Memo
2018 Initial Geometry Report
2018 Rehabilitation Feasibility Report
2018 Preliminary Renderings
2022 Design Charette

2022 Bridge Status Memo
2022 Rehab v. Replacement Memo
2023 Geotechnical Data Report
2022 Texas Historic Commission Coordination
2022 US Army Corps of Engineers Coordination
2023 Texas Historic Commission Review of Section 106 Evaluation

Community Engagement



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MEETINGS HELD:

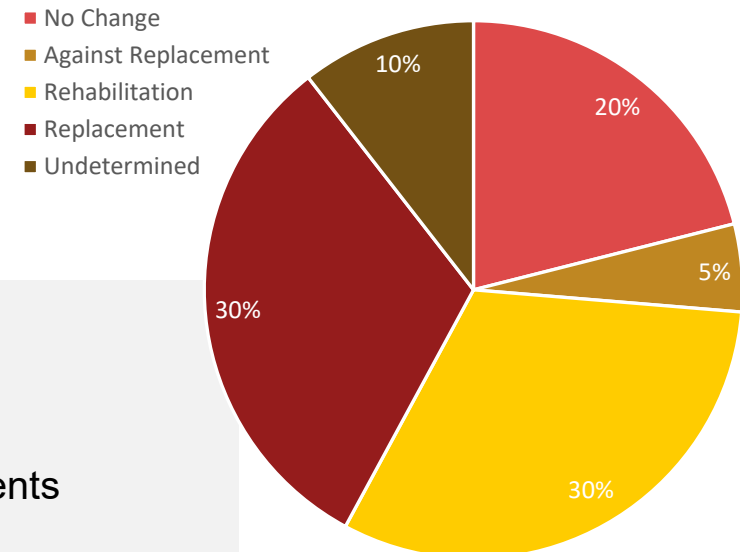
In Person engagement meeting on April 4, 2023

Virtual open house from March 2 to April 18, 2023

SUMMARY OF COMMENTS RECEIVED:

In Person Meeting received 11 comments

Virtual Meeting received 1677 views and 176 comments



Bridge Analysis: Four options were developed and analyzed

1. Do nothing
2. 'Light touch' rehabilitation
3. Full rehabilitation
4. Replacement

Structural and Mobility Analysis:

- External Structure - Spalling Concrete
- Internal Structure – Deteriorating Steel
- Geotechnical Data –Replacement Design
- Cost/Benefit Analysis – extended life vs. cost
- ADA compliance – Pedestrian Circulation
- Pedestrian and Bicycle Mobility – no improvement to existing condition

Historic Analysis:

- Coordinated with US Army Corps (USACE) and Texas Historic Commission (THC)
- Confirmed the bridge is a contributing feature to the Zilker Park Historic Landmark designation
- Confirmed the full replacement of the bridge **is possible**, upon further design, the project will be reviewed and approved by USACE and THC.

Engineering Determination:

- The **existing structure, as restricted, is safe for public use at this time**, however if no action is taken there is potential to eliminate bus and heavy truck traffic on the bridge.
- The deterioration of the existing bridge has reached a stage that **cannot be ignored** and the level of repair that is required eliminates the possibility of a "light-touch" restoration.

1

Do nothing

2

'Light touch' rehabilitation

3

Full Rehabilitation

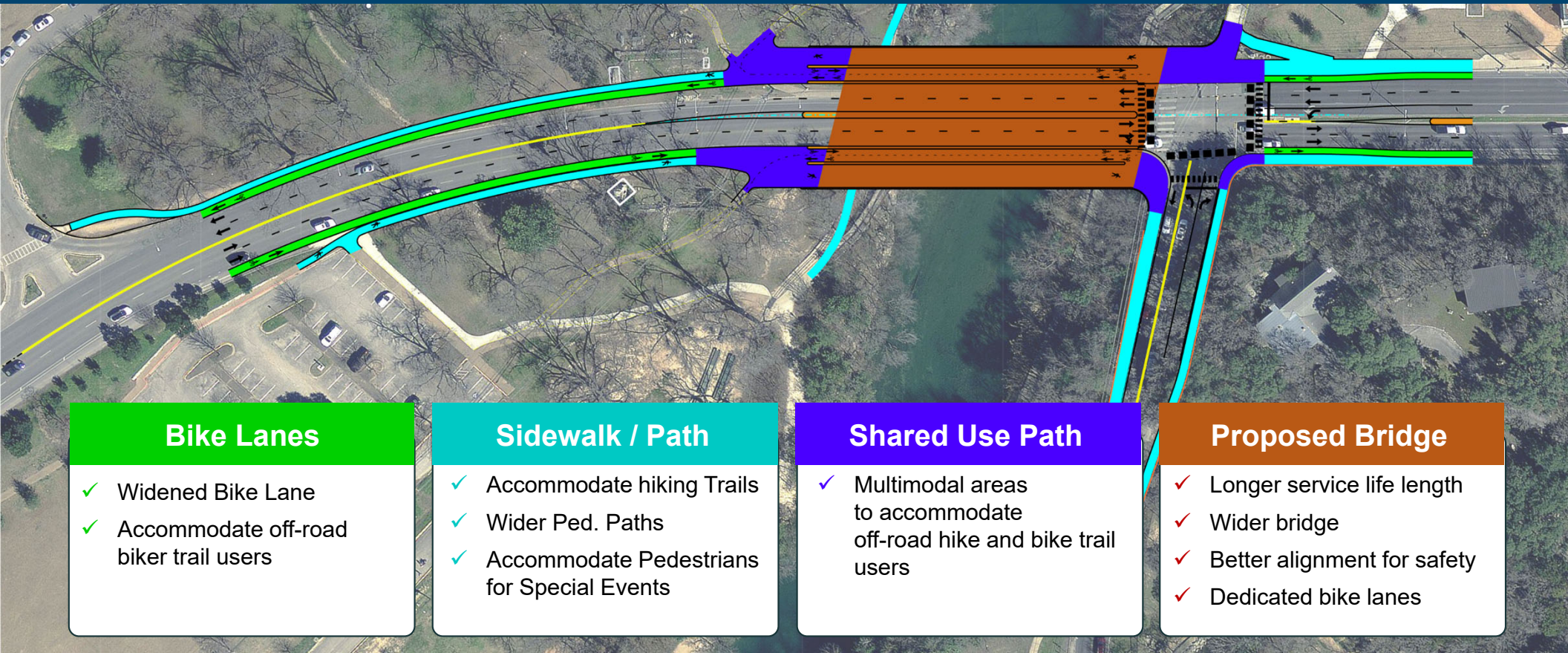
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Replacement

Bridge Features



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Bike Lanes

- ✓ Widened Bike Lane
- ✓ Accommodate off-road biker trail users

Sidewalk / Path

- ✓ Accommodate hiking Trails
- ✓ Wider Ped. Paths
- ✓ Accommodate Pedestrians for Special Events

Shared Use Path

- ✓ Multimodal areas to accommodate off-road hike and bike trail users

Proposed Bridge

- ✓ Longer service life length
- ✓ Wider bridge
- ✓ Better alignment for safety
- ✓ Dedicated bike lanes

Bridge Rehabilitation Option



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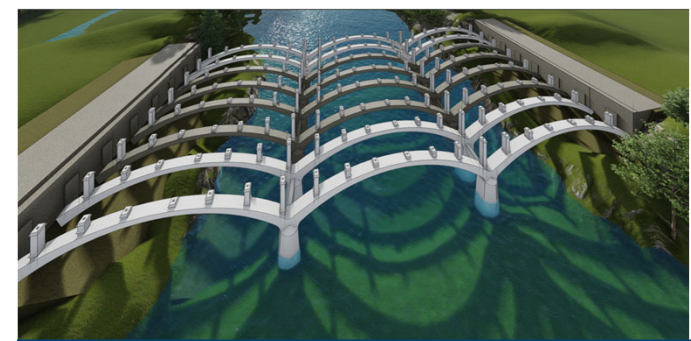
1

Remove Existing Bridge Deck and Spandrel Columns



2

Remaining Portion of Existing Structure



3

New Components: Exterior Pairs of Arch Ribs, Spandrel Columns, Deck, and Abutment Extensions

Less than half of the original structure will remain

- Remaining historical structure will require refacing with new material surfaces
- View of historical structure will be mostly blocked by new structure

Expected useful life less than full replacement (50 years vs. 75+ years)

Bridge Replacement Options



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1

Single-Span

Project Cost: \$43.4M
Useful Life: 75+ years
Most Structurally Complex
Most difficult to construct
Most expensive



2

Double-Span

Project Cost: \$39.0M
Useful Life: 75+ years
Obstructed View Along Creek



3

Triple-Span

Project Cost: \$36.7M
Useful Life: 75+ years
Least Structurally Complex
Visually Open Along Creek



All replacement options will require careful environmental mitigation strategies to minimize construction impacts.

Option Evaluation Summary



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“Light Touch” Rehabilitation and “Do Nothing” are not recommended

Option	Pros	Cons	Cost	Useful Life
Structural Rehabilitation	Some of the existing structure remains	Most of the existing structure removed, higher cost to extend service for shorter useful life compared to replacement Require careful environmental mitigation	\$38M	50 Yrs
Replacement Option One: Single Span	Improved bike and pedestrian circulation, longest useful life, no temporary foundations in creek for construction	Most complex construction Requires environmental mitigation	\$43M	75+ Yrs
Replacement Option Two: Double Span	Improved bike and pedestrian circulation, longest useful life, no temporary foundations in creek for construction	Somewhat complex construction Requires environmental mitigation	\$39M	75+ Yrs
Replacement Option Three: Triple Span	Lowest cost to extend service, improved bike and pedestrian circulation, longest useful life, least complex construction, provides improved access for the Zilker Eagle and hike and bike trail, no temporary foundations in creek for construction	Requires careful environmental mitigation	\$37M	75+ Yrs

Staff Recommendation



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Recommendation Method: Replacement

Replacement Option is the most effective and cost-efficient method to address the structural challenges, mobility needs, environmental sensitivity while recognizing the importance of this corridor to the community.

Recommended Replacement Option: Triple-Span

- Structure: Least Complex
- Visual Openness: Most
- Constructability: Best
- Cost: Lowest

Replacement Option Three: Triple Span	Lowest cost to extend service, improved bike and pedestrian circulation, longest useful life, least complex construction, provides improved access for the Zilker Eagle and hike and bike trail, no temporary foundations in creek for construction	\$37M	75+ Yrs
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Recommended Option



Next Steps



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- **As the project transitions to the design phase, all jurisdictional agencies and departments will review accordingly:**
 - Texas Historic Commission
 - US Army Corps
 - City of Austin Development Services
 - Boards & Commissions (Environmental, Mobility, Parks, etc.)
 - Community Outreach
- **Staff will continue to develop options to fund construction.**



Questions and Answers



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