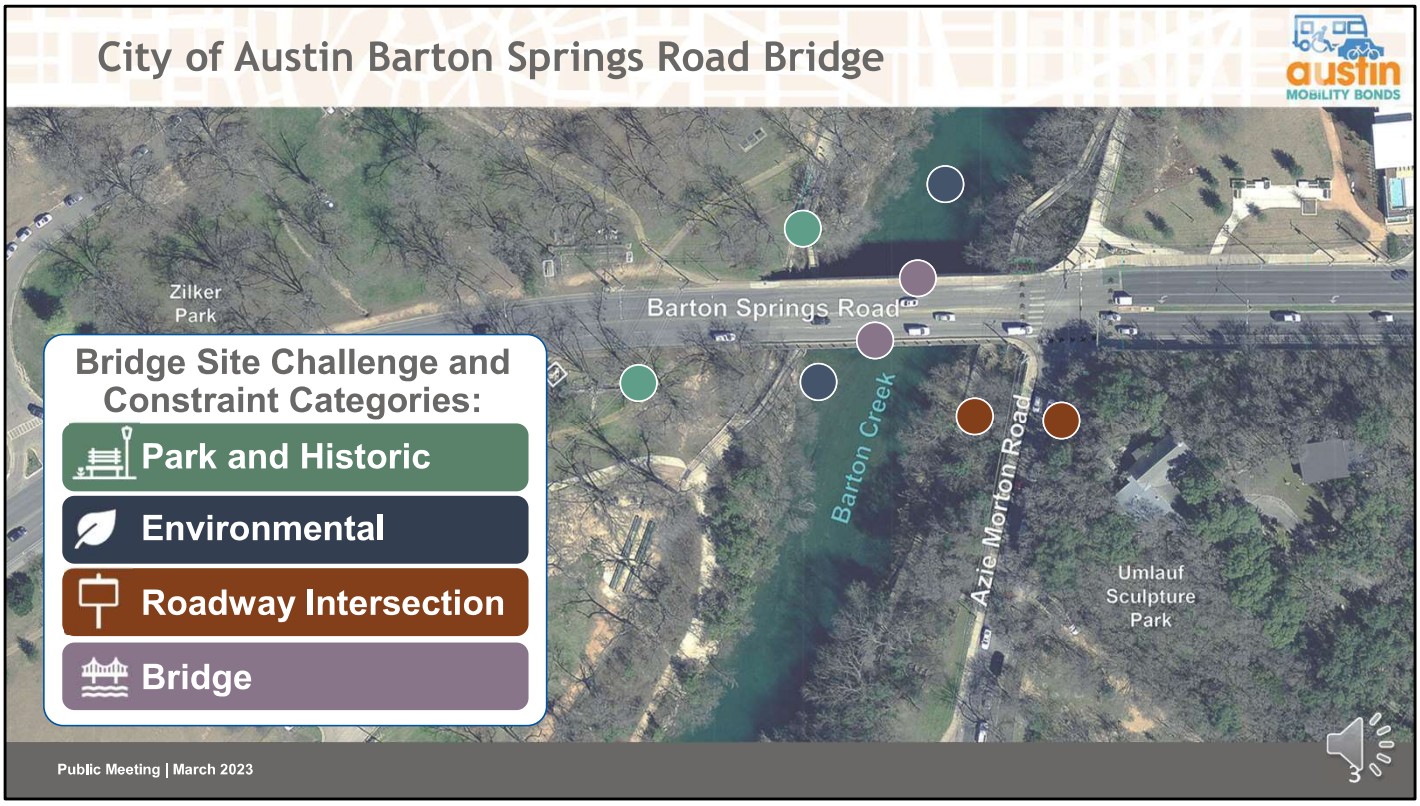
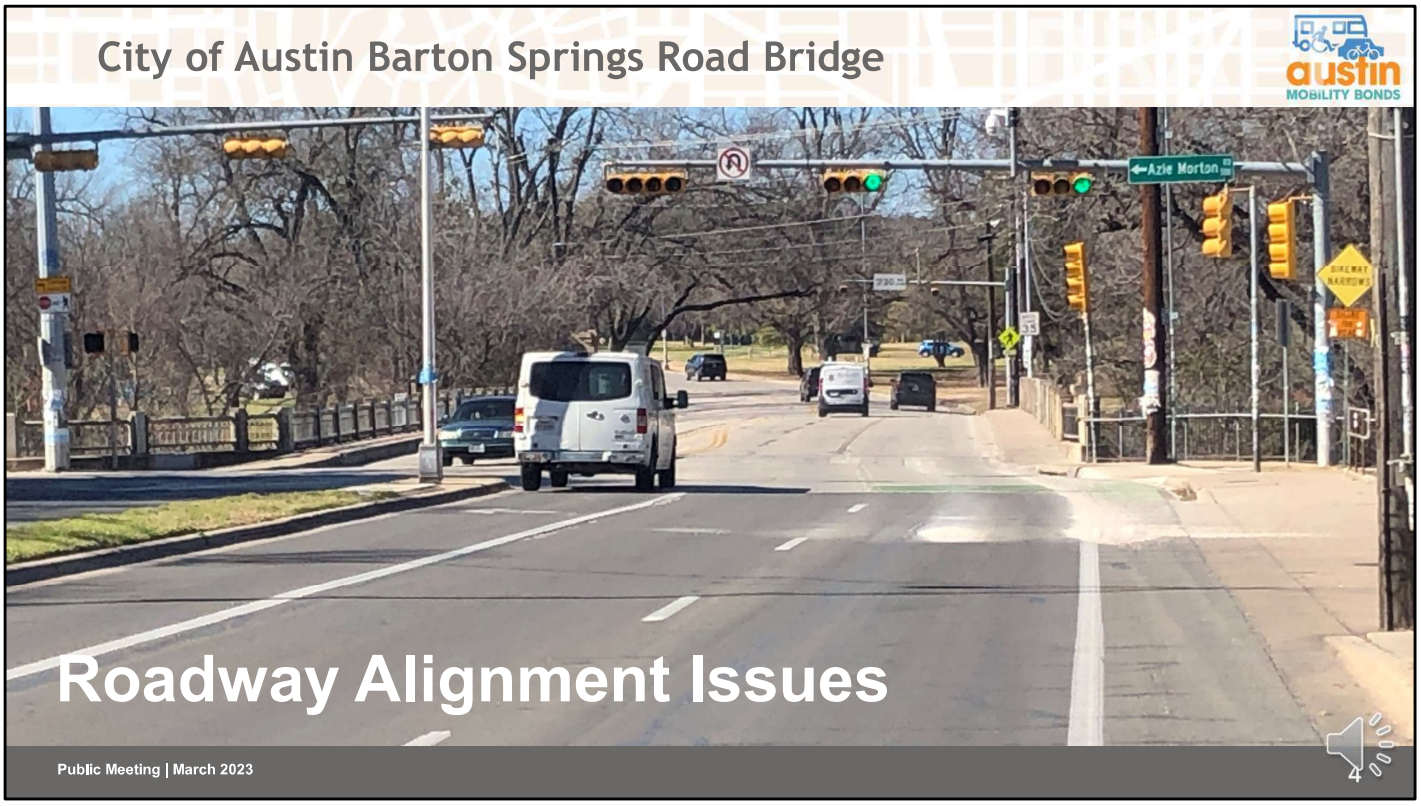
Welcome to the City of Austin's Barton Springs Road Bridge Public Meeting where you can learn about this project, ask questions about potential improvements and share your thoughts about the recommended improvement option. So let's get started.

The Barton Springs Road Bridge was built nearly 100 years ago in 1926. In 1946, it was expanded to its current width and services up to 20,000 vehicles per day. The bridge also provides a major entrance into Zilker Park, servicing not only the park but also major City events. The preliminary funding estimate for the project is $36 million. The project is currently funded for completion of engineering and design; future funding for construction will be obtained as the project continues into construction.

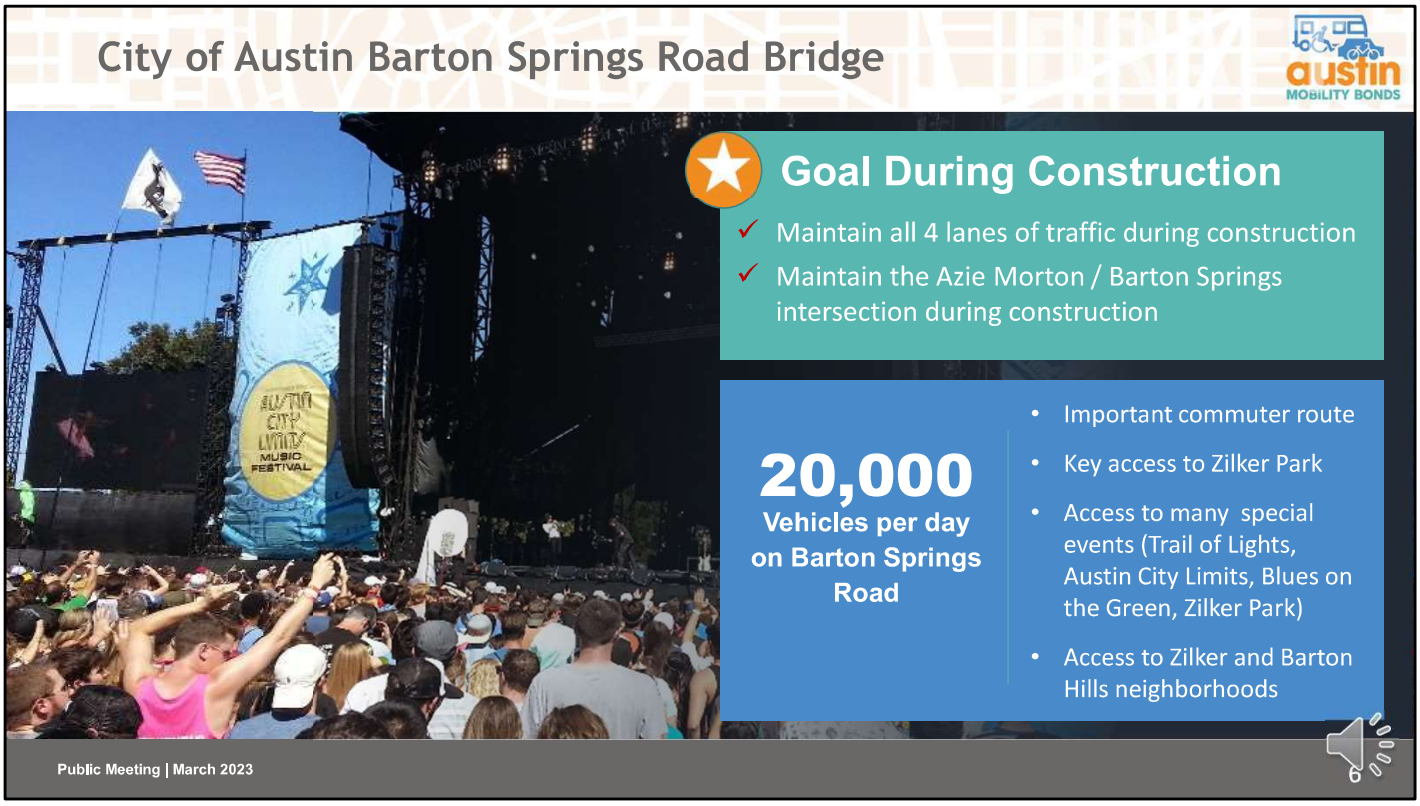


The Barton Springs Road Bridge has many site challenges and constraints, which can be grouped into four distinct categories. First is the park and its historic elements. Zilker Park, along with the many historical elements of the surrounding landscape, must be considered in developing any bridge rehabilitation and replacement alternatives. Likewise, the beautiful environment of the bridge setting must be preserved not only for drivers but also for those who use the trail system and surrounding natural landscape. The roadway intersection and its misalignment is one of the key challenges for the project, as well as the bridge structure itself. Considering the bridge's age and current condition, a great deal of work must be done to either preserve the bridge or pay homage to the bridge with a replacement concept.

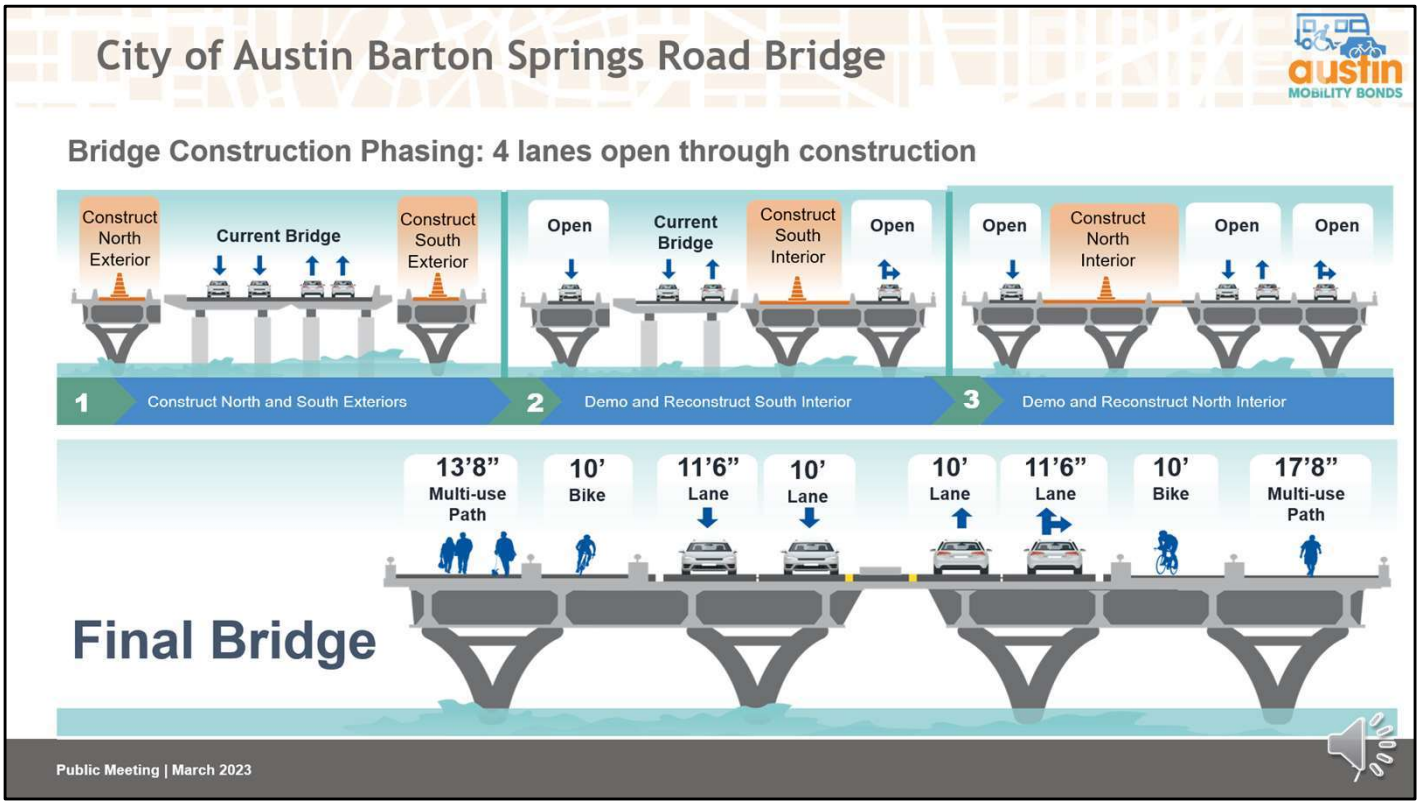


The misalignment of the existing roadway is one of several design issues that will be addressed in this project, along with the integration of bicycle and pedestrian facilities to enhance public safety.

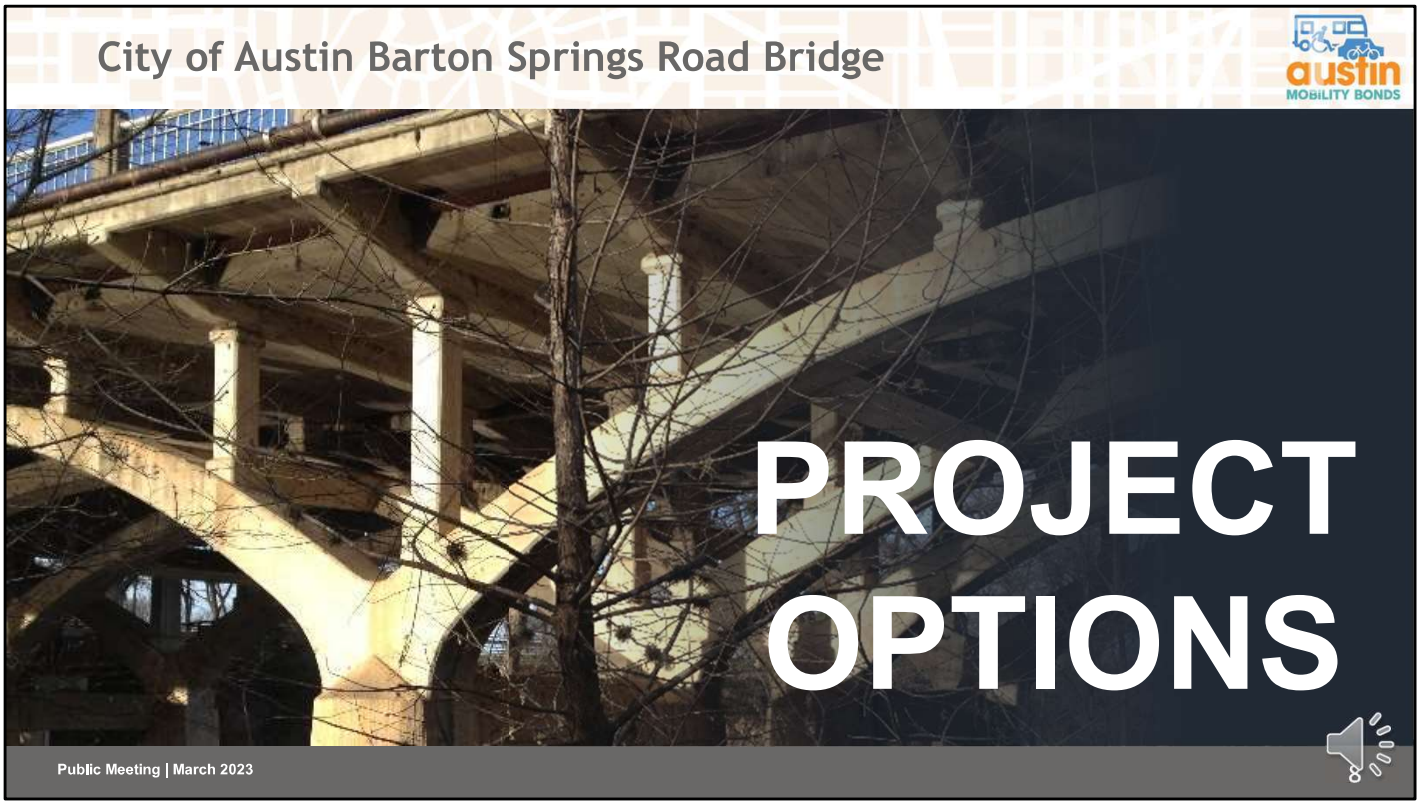
The purpose and need for the project as well as project goals and outcome include ensuring safety and addressing the age of the structure. At 100 years old, there is structural deterioration that must be attended to provide 75 years of additional bridge service life. Additional safety items to be considered include the Barton Springs roadway misalignment and the hillside instability at the Umlauf Gardens. Insufficient pathways will be addressed by providing more capacity and wider paths for bikes and pedestrians – as well as focusing on connecting these new paths with existing and/or future Zilker Park paths, trails, and amenities. Intersection congestion at Barton Springs Road and Azie Morton Road will also be addressed with the addition of a right turn lane on Azie Morton Road.



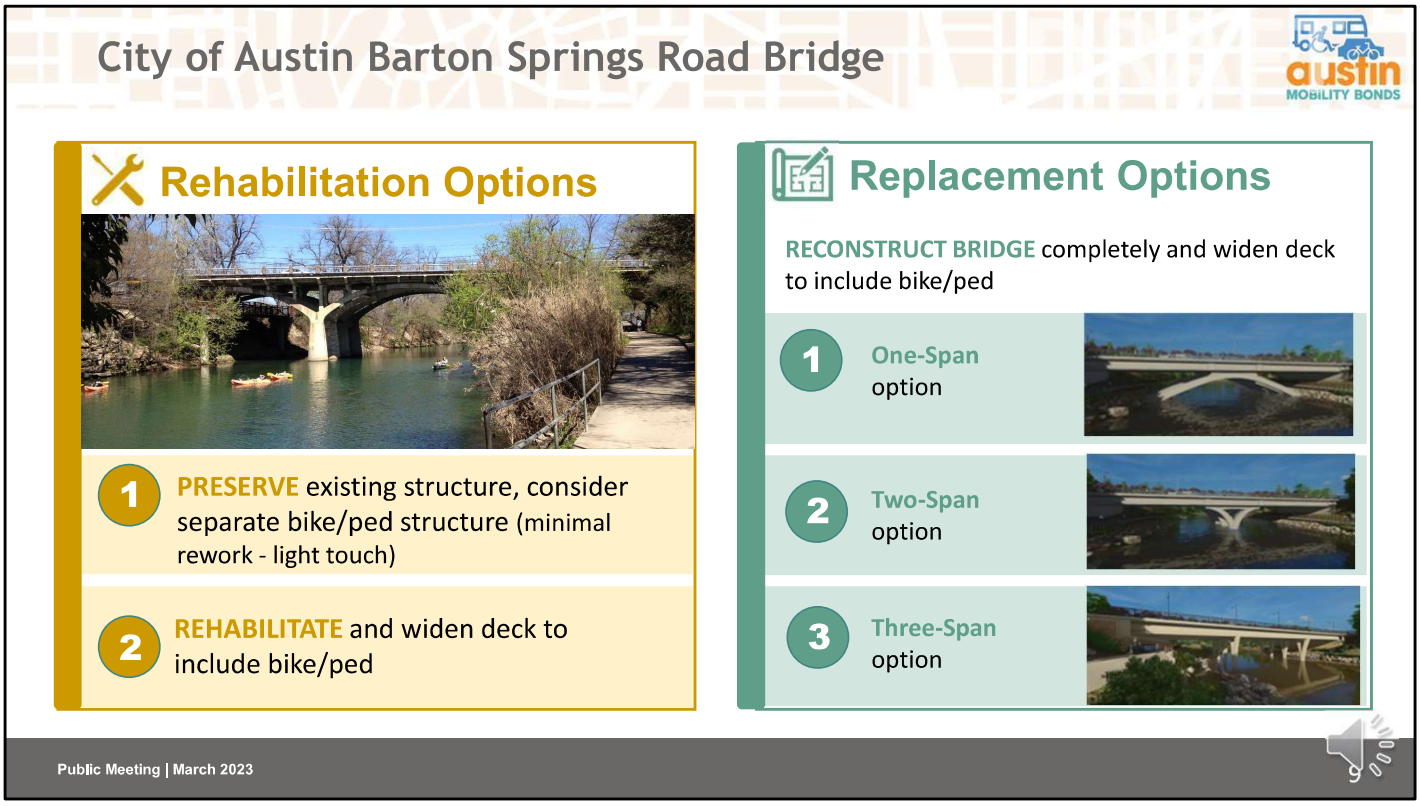
The bridge services nearly 20,000 vehicles per day. It's an important commuter route and provides key access to Zilker Park. It also provides access to many of Austin's special events throughout the year. The Barton Springs and Azie Morton intersection is also a primary access point to both the Zilker and Barton Hills neighborhoods and area businesses. Therefore, it's important that all four lanes of traffic be maintained during any construction on the bridge, as well as maintaining the functionality of the intersection between Barton Springs Road and Azie Morton Road.



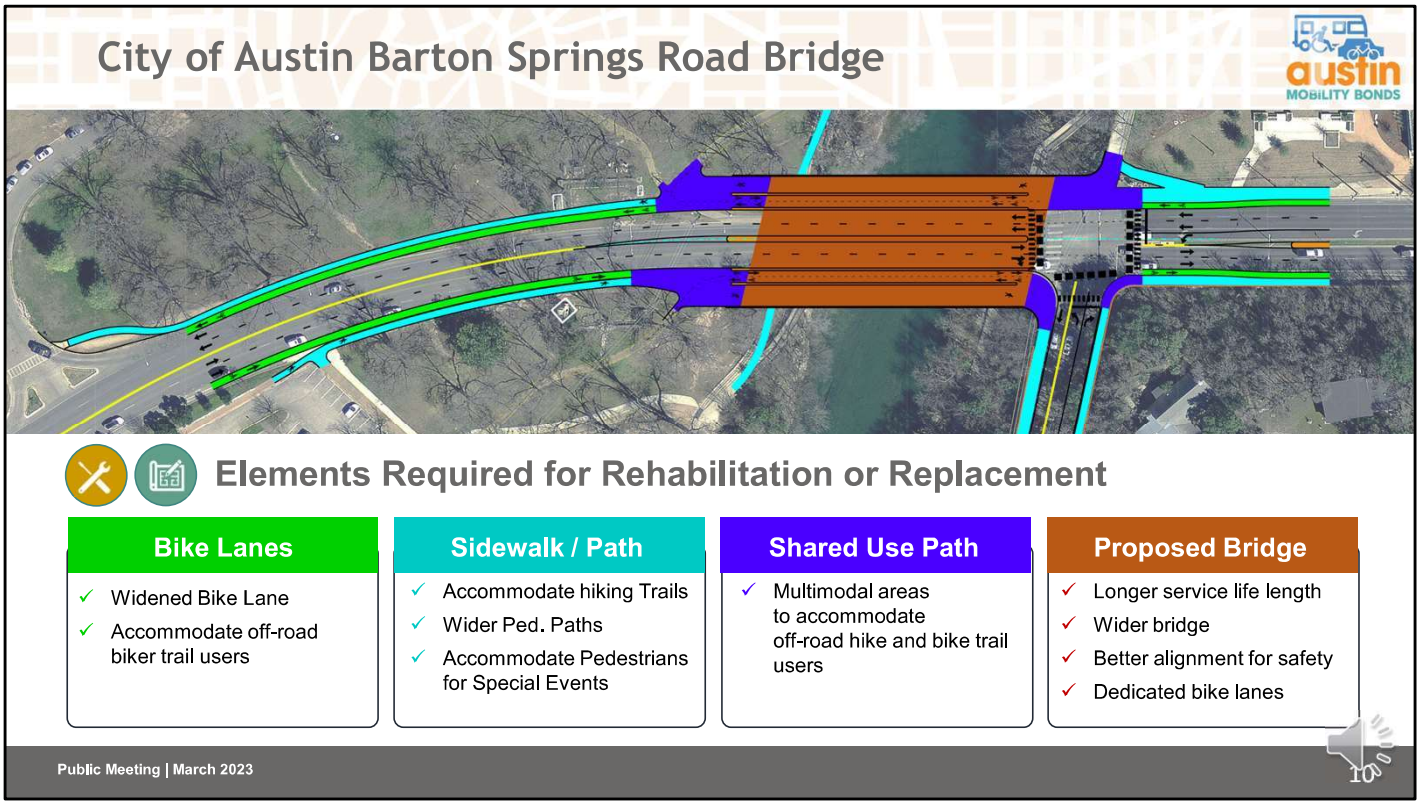
To maintain four lanes of traffic throughout construction, the project has been divided into three distinct phases. Phase I involves the construction of new structures on both the north and south sides of the existing bridge. Phase II involves the demolition of one-half of the existing bridge and construction of the second half of the new structure to the south side of the current bridge. And Phase III involves the demolition of the remainder of the existing bridge in its entirety and construction of the new north side structure. In its final configuration, the bridge will include two travel lanes in each direction separated by a median, two 10-ft bike paths, and very wide multi-use paths on either side of the bridge.



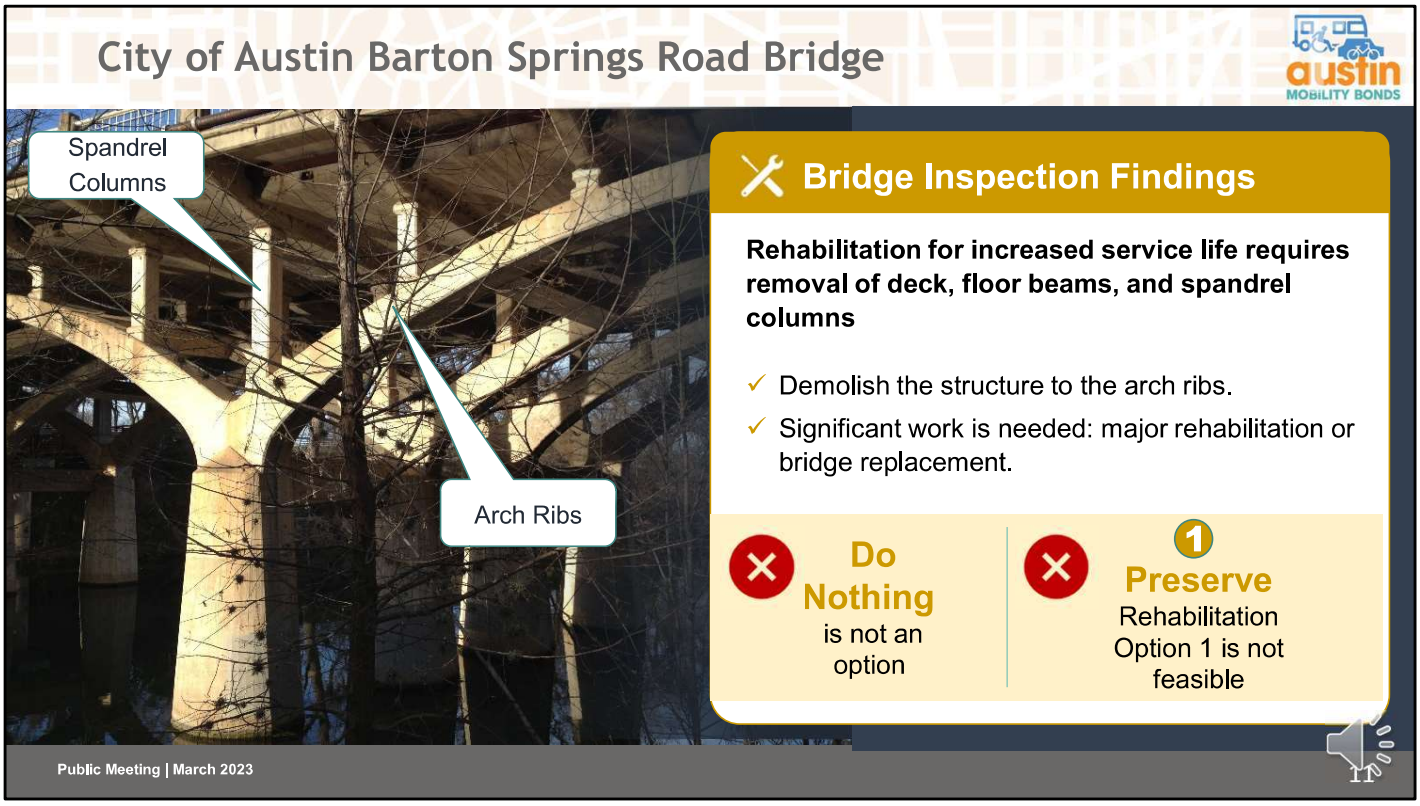
During the course of this study, a broad range of options was explored for both rehabilitation and construction of the Barton Springs Road bridge.



The rehabilitation options included a preservation option that maintained the existing structure with consideration given to a separate bicycle and pedestrian bridge. This involved minimal rework of the existing bridge and was considered a light touch option. The second rehabilitation option involved the full structural rehabilitation of the existing bridge along with the addition of columns and arches to provide a widened deck to provide the addition of bicycle and pedestrian facilities. Replacement options for the project included single-, two- and three-span options, all using the latest in design and construction methods to ensure a 75-year lifespan for the new bridge.



There are common elements for the project regardless of whether the ultimate solution is rehabilitation or replacement. Those include new bike lanes with accommodations for off-road bike trail users; sidewalk and path improvements that include wider pedestrian pathways; accommodations for pedestrians during special events; and connections with hike and bike trails. Other common elements are shared use path improvements including multi-modal areas to accommodate off-road hike and bike trail users, as well as improvements to the current bridge, including a wider deck, better alignment at the interchange for safety, and dedicated bike lanes.



During the study, a detailed bridge inspection was performed. It was determined that in order to achieve the service life requirements for the project, the existing bridge would need to have its deck removed as well as the spandrel support columns removed and then significant repair work done to the arch ribs and the remaining structural components. The significant amount of work that would be required eliminated a do-nothing option, and it also eliminated the preservation rehabilitation option, which we've described as the light touch option.

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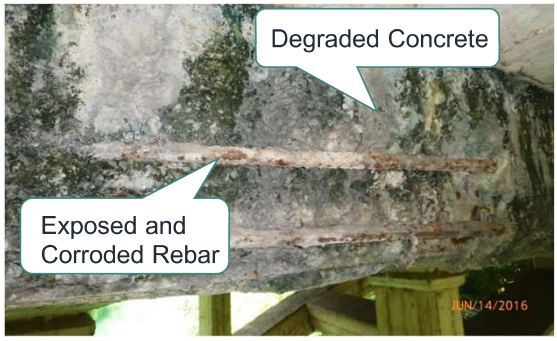
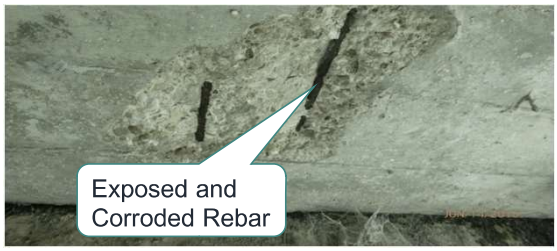
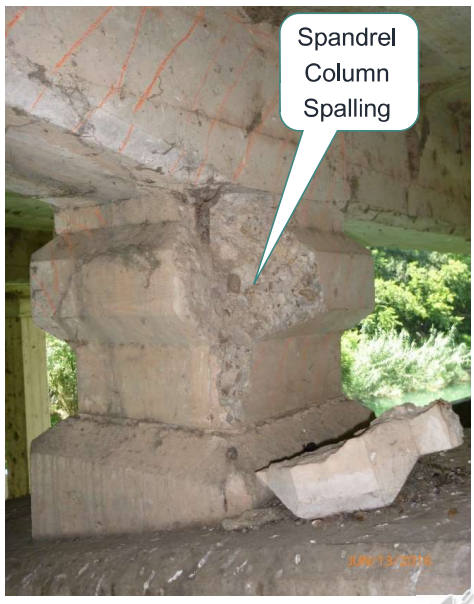
Bridge Inspection Findings

- ✓ Deck (with integral longitudinal joint), floor beams, and spandrel columns exhibited the most degradation.
- ✓ All structural components exhibited some degradation.







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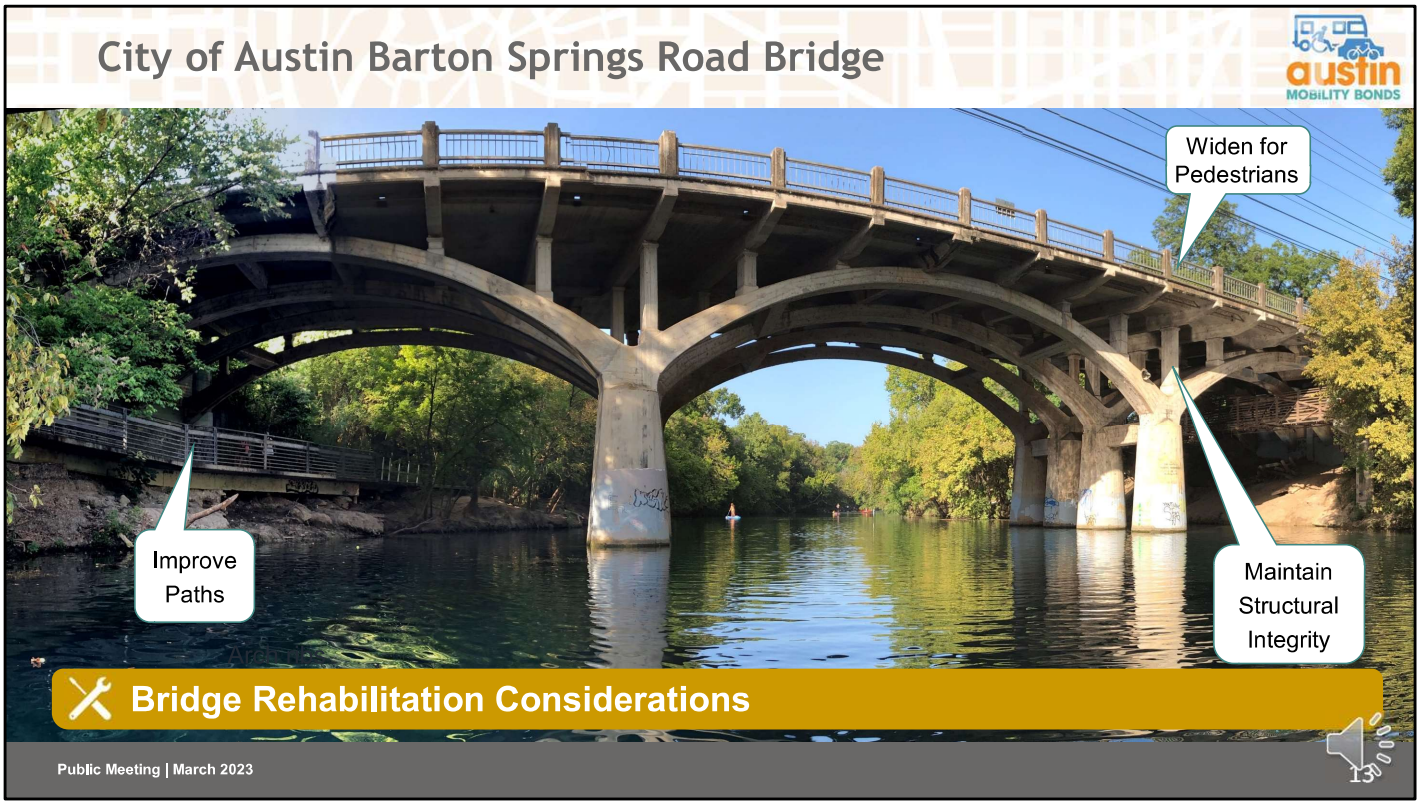
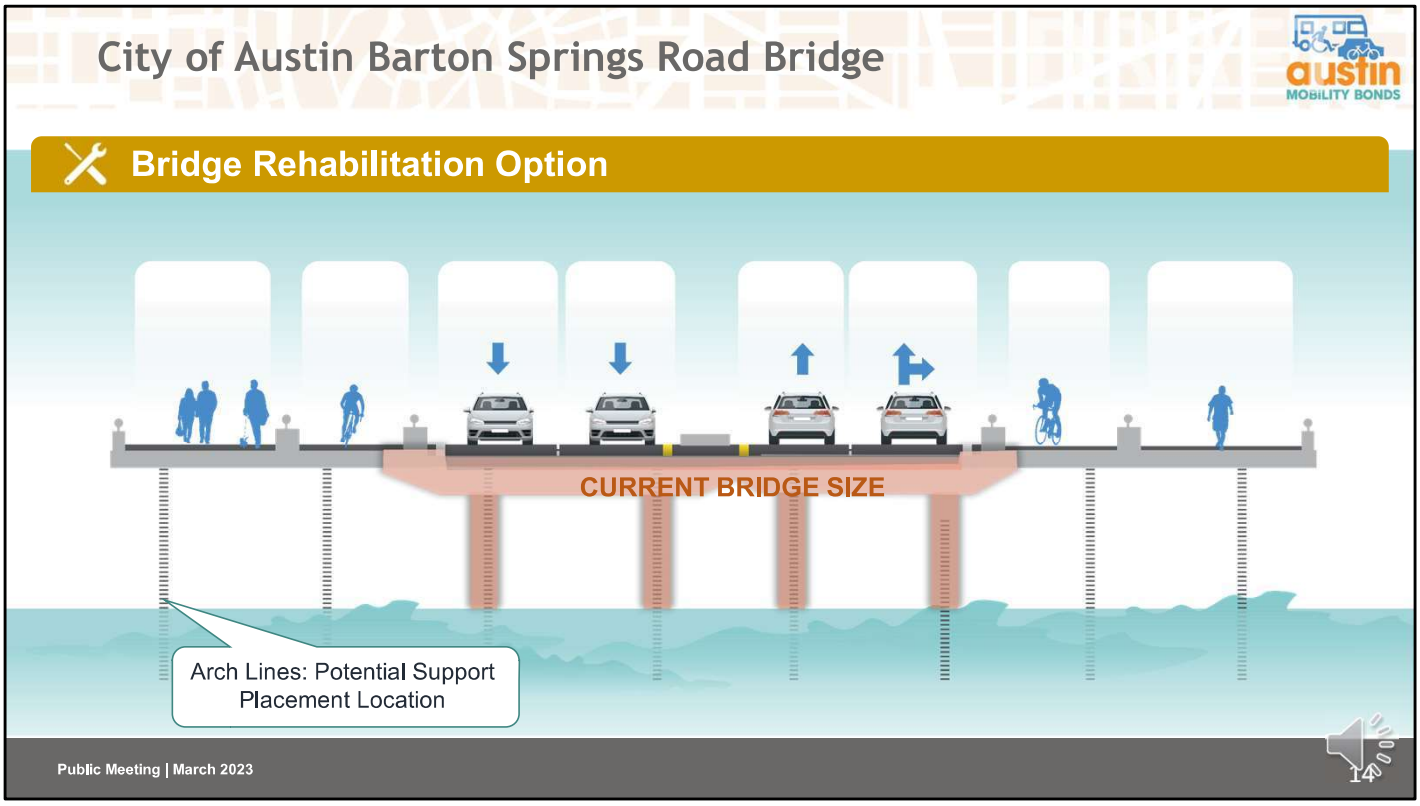
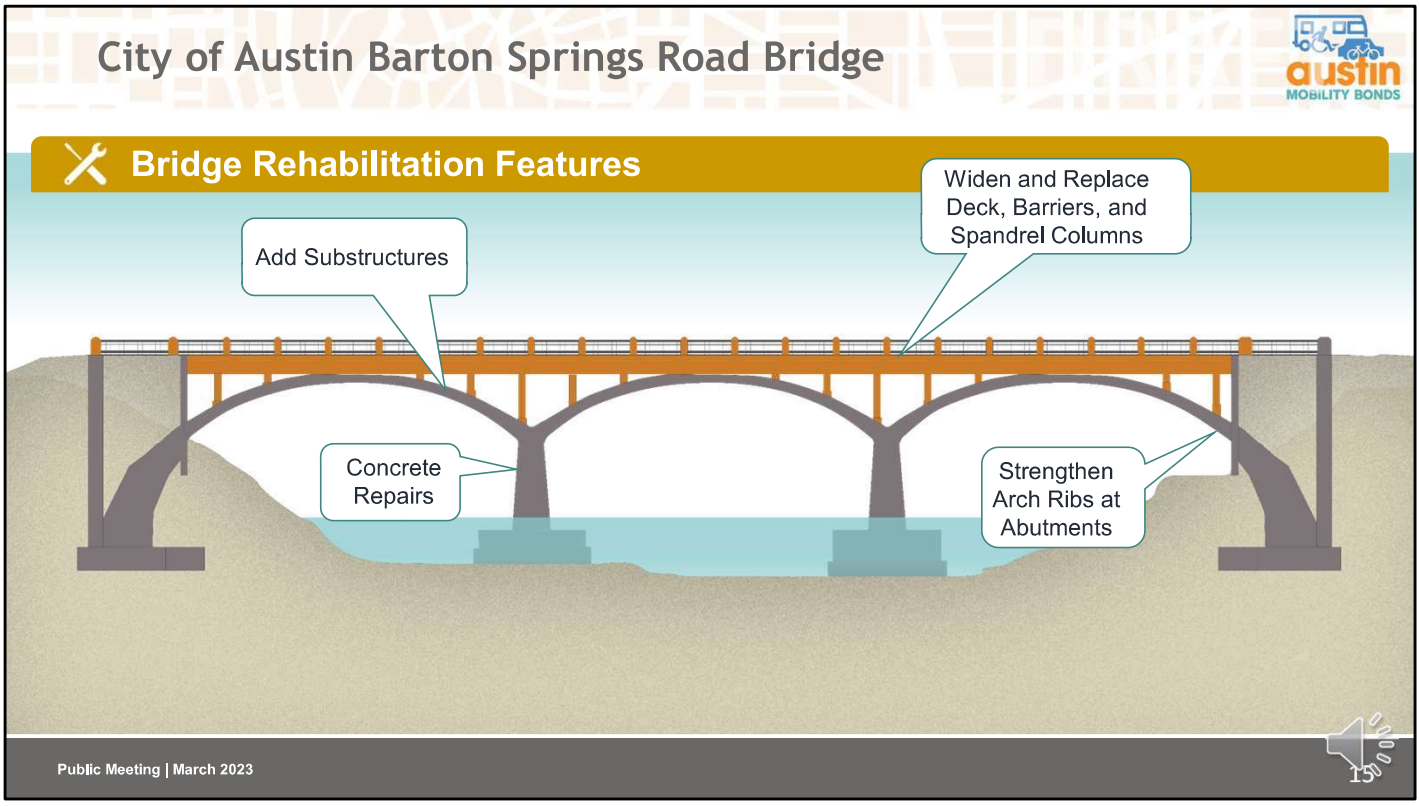
The need for significant rehabilitation of the existing bridge is illustrated in these photographs which show degraded concrete, exposed rebar, and significant concrete deterioration of the support columns.



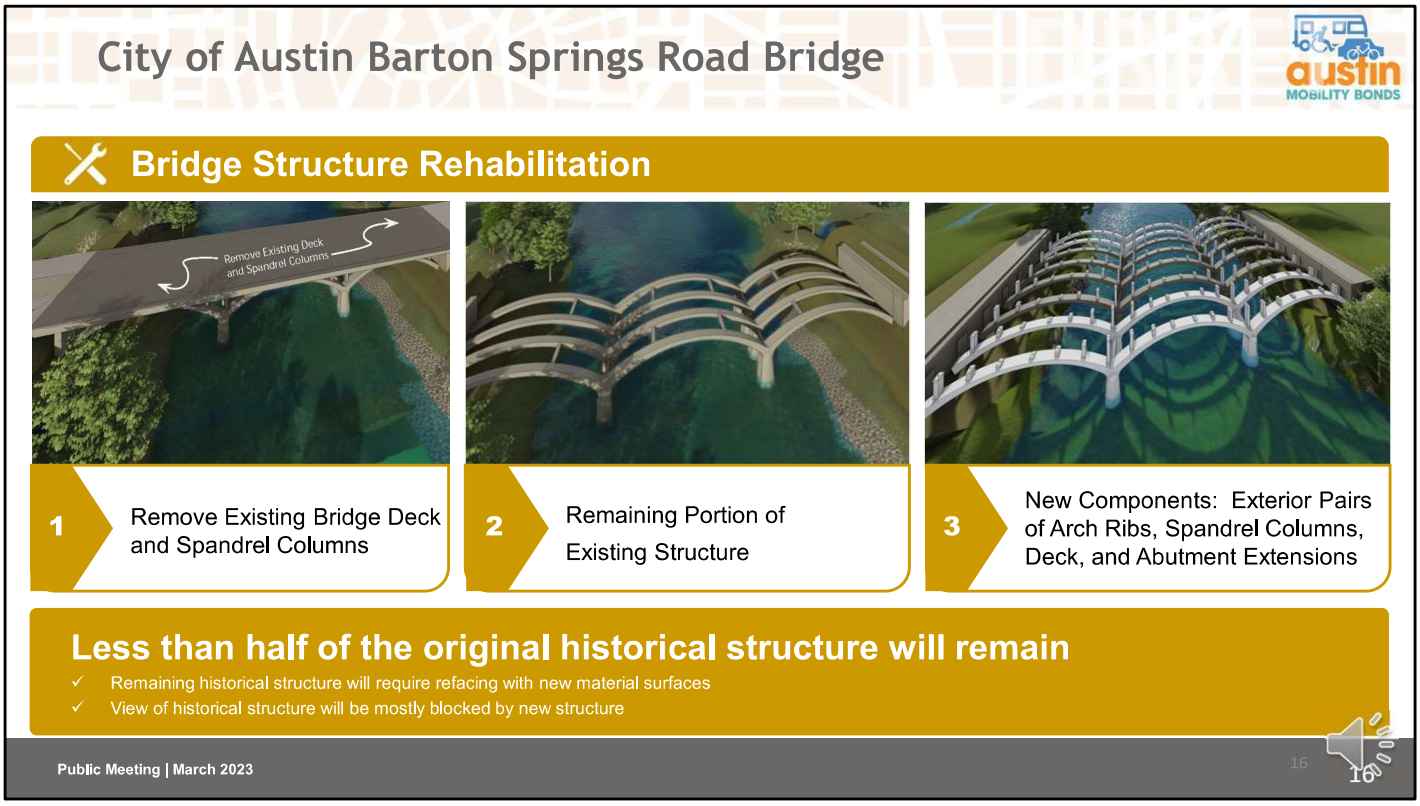
To address the structural degradation issues, a rehabilitation option must also consider maintaining the structural integrity of the remaining bridge components, improving the pathways under and around the bridge, and creating a wider deck to accommodate future needs for pedestrians and cyclists.



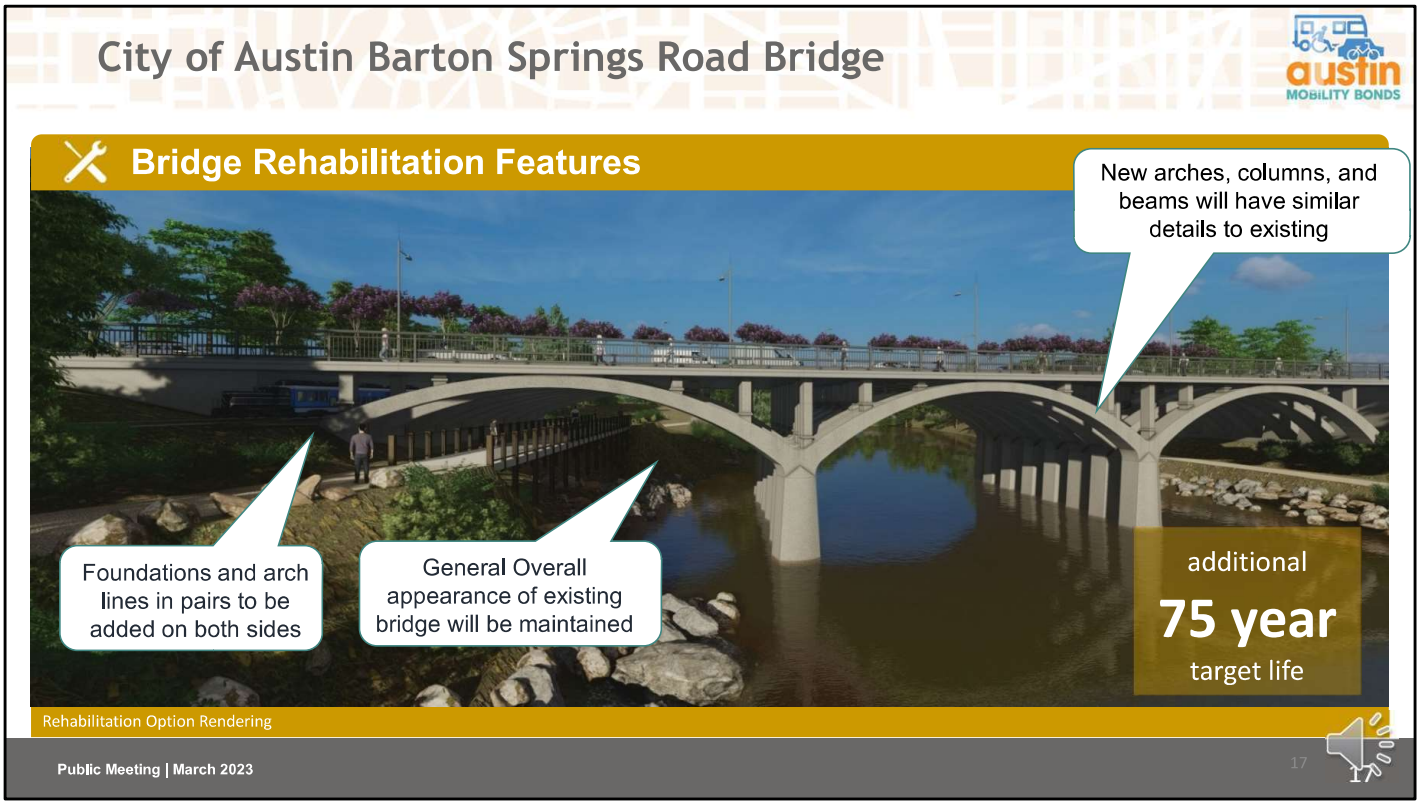
To accommodate the needs of the project, the rehabilitation option also involves a significant widening of the bridge deck. That bridge deck will be supported by the existing columns and arches and four new sets of columns and arches on either side of the existing bridge.



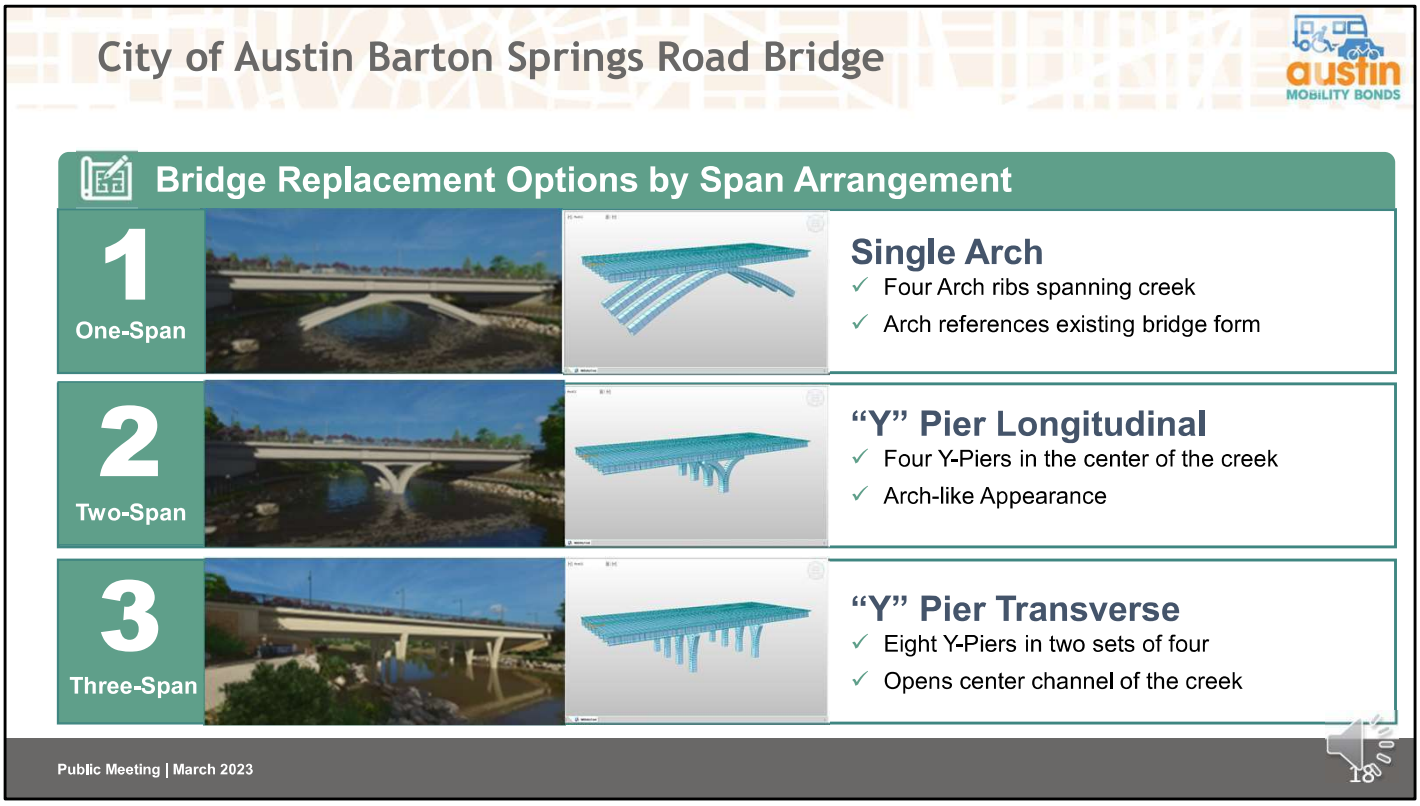
The structural rehabilitation requirements are further illustrated in this slide. Concrete repairs would need to be performed on the piers as well as strengthening of the arch ribs and abutments. New spandrel columns and a wider deck with new barriers would also be added to the existing structure.



The construction of the rehabilitation option would first involve removing the existing bridge deck and its spandrel columns which are the vertical elements above the arch rib, exposing the remaining portions of the existing structure, including the piers, the arch ribs, and the abutments. All of those elements would be reinforced and strengthened, and then the new components, including new piers, arch ribs, spandrel columns, and deck, would be added. As a result, less than half of the original historical structure would remain in place and most of the historical structure would be obscured from view by the new structural components required to rehabilitate the bridge.



With the rehabilitation option, a great deal of care would be taken to ensure that the new components are compatible with the existing bridge components, both aesthetically and structurally. These include things like alignment of the foundations, piers, and arches with the existing structure as well as maintaining the overhang distances and overall detailing that are seen within the existing bridge.



Three different options were developed for the replacement alternatives on the project, all of which include arched forms that pay homage to the overall configuration of the existing bridge while using the most up to date design and construction techniques. Option 1 is a single arch, including four arches that span the creek. Option 2 is a two-span option with Y-piers oriented in the longitudinal direction. Each of those four piers is located along the centerline of the creek. And Option 3 is a three-span bridge using Y-piers oriented in the transverse direction. Option 3 has eight Y-piers divided into two sets of four aligned along either side of the creek.

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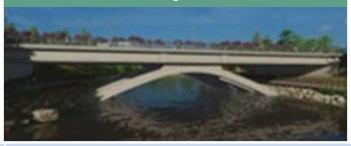
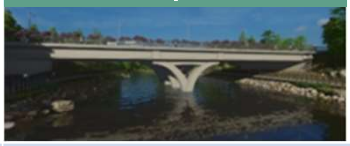
Bridge Replacement Option Comparison

	1-Span	2-Span	3-Span
			
Structural Complexity	• Complex system	• Less complex • Uses conventional foundations	• Least Complex
Visual Openness	• Obstructed visuals • Views along center line maintained • Potential scour and bank/trail complexities	• More visually open than 1-span option • View along center of creek obstructed	• Most visually open • Clear views along center line of creek
Constructability	• Most complex to build • Requires temporary piers and falsework to make the arches	• Fewest number of foundations in water • Top of bridge requires specialty construction and falsework	• Specialty construction with fewest challenges
Initial Const. Cost (Bridge Only)	• $18.1M	• $13.6M	• $10.2M

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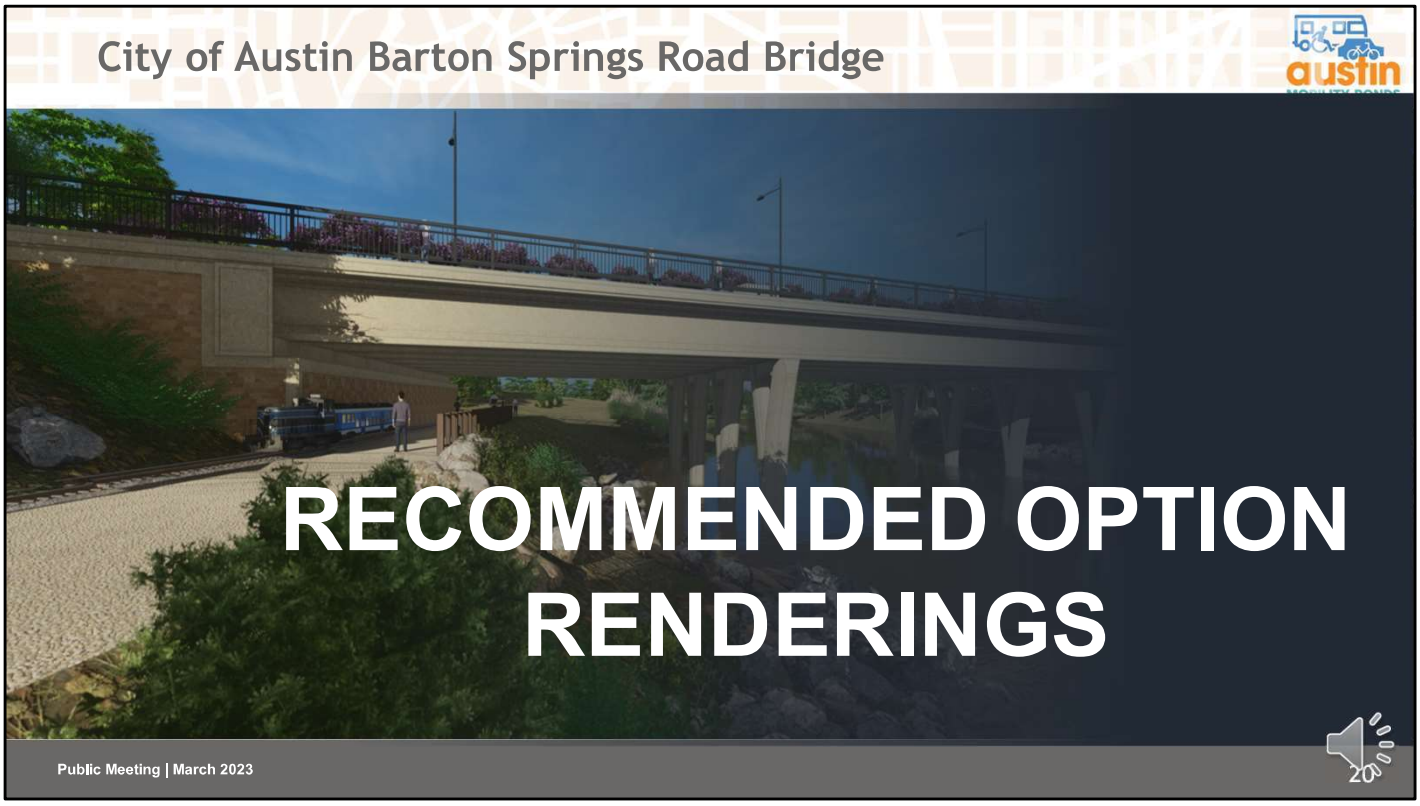
A detailed comparison of each of these options was performed, considering things like structural complexity, the visual openness of the bridge underneath, constructability, and the initial construction costs. Ultimately, the three-span option was considered the most desirable for a variety of reasons, including the fact that it is the least complex and provides the most openness when viewed from the pathways and waterways surrounding the bridge. Furthermore, it doesn't require as much specialty construction and is significantly less expensive at $10.2M versus $13.6M and $18.1M for the two-span and one-span options.

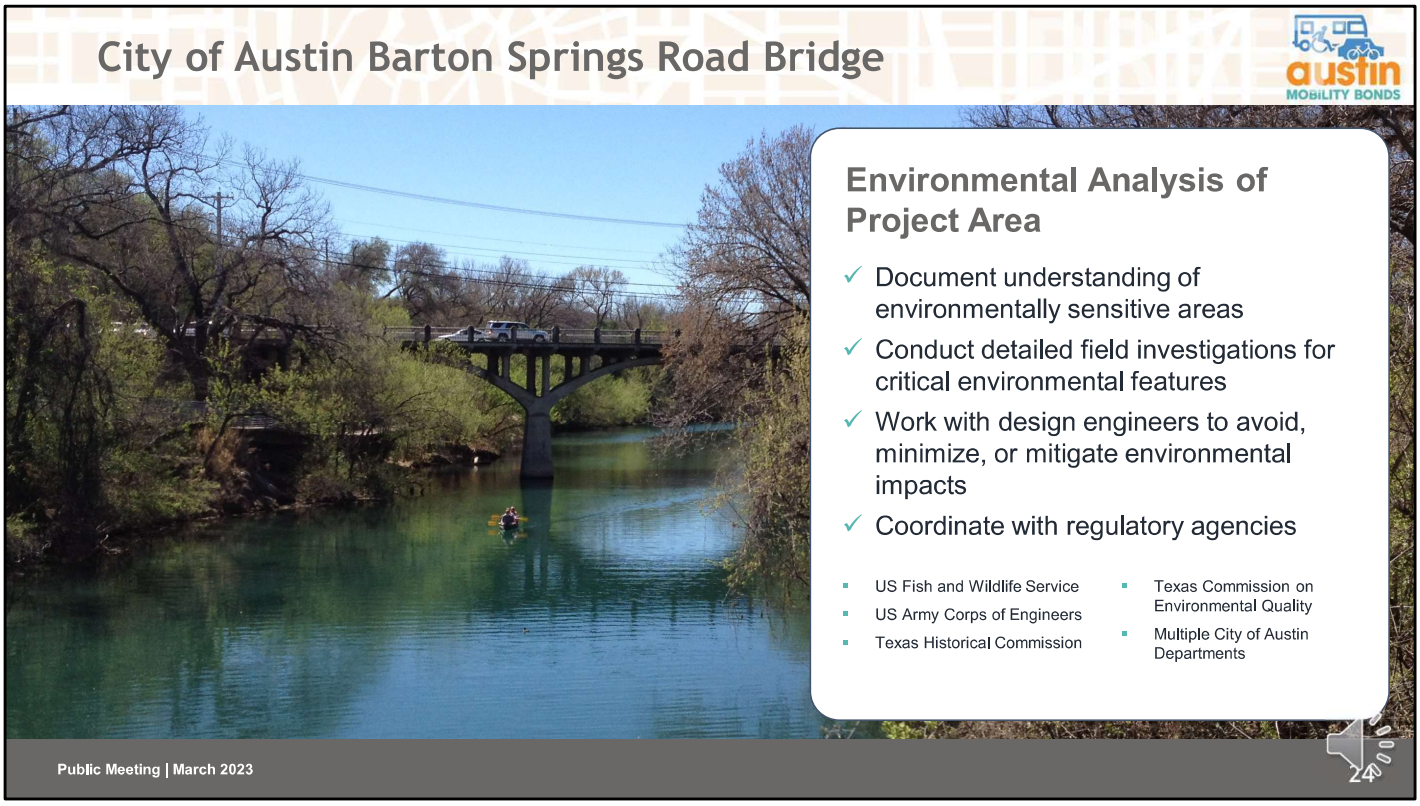


Now, let's look at the recommended option in a bit more detail.

The recommended alternative is a three-span replacement option that includes transverse Y-piers that create arched forms flanking either side of the creek below.

The three-span option has a variety of different benefits, including providing much larger spaces underneath the bridge on the west bank to accommodate trails and the Zilker Eagle. The clean lines and elegant forms of the transverse Y-piers allow viewsheds to be open underneath the bridge, creating less visual clutter and greater access to the surrounding landscape.

Once completed, the wider bridge deck will provide much greater separation between the different users on this structure. Dedicated bike lanes and generous multi-use paths on either side of the bridge will accommodate bicyclists, pedestrians, and the special event goers throughout the year.



The environmental analysis of the project and project area includes documenting and understanding the environmentally sensitive areas; conducting a detailed field investigation to identify critical environmental features; working with the designers and engineers to avoid, minimize, or mitigate any of the environmental impacts: and coordinating with the regulatory agencies.

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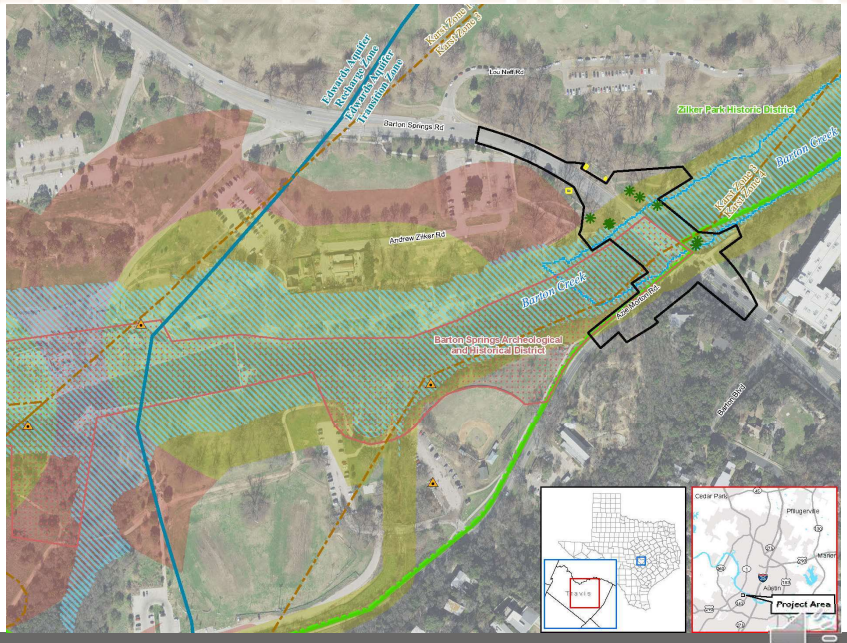
Environmental Issues / Constraints Map

- Known Heritage Tree Location
- Spring
- Regulatory Floodplain (100-Year)
- City of Austin Fully Developed 100-Year Floodplain
- Karst Zone
- Edwards Aquifer Zone
- Preliminary Limits of Construction Operations
- Entrance Monuments
- Zilker Park Historic District
- Barton Springs Archeological and Historical District
- Critical Water Quality Zone
- Water Quality Transition Zone



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A detailed environmental and constraints map has been developed for the project to inform the engineers, designers, and policymakers of the key constraints that should be considered during the development of the new project.

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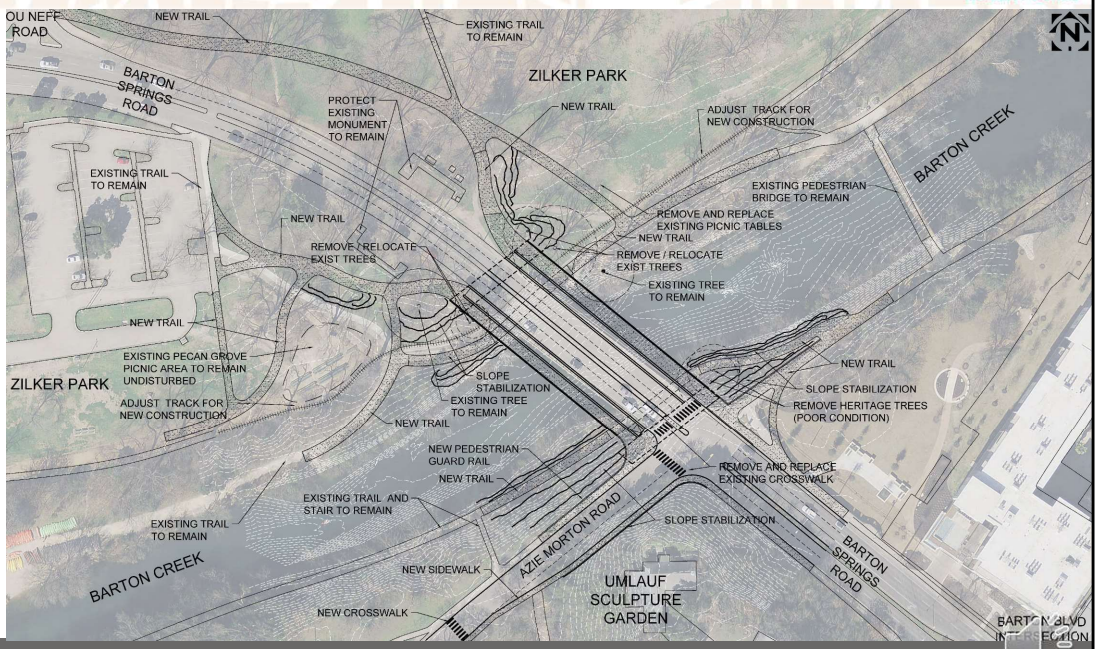
Multi-modal Connectivity with Parks

- ✓ Protect Historic Landmarks
- ✓ Protect or move Heritage Trees
- ✓ **Flexibility and Connectivity with Zilker Park Vision Plan**



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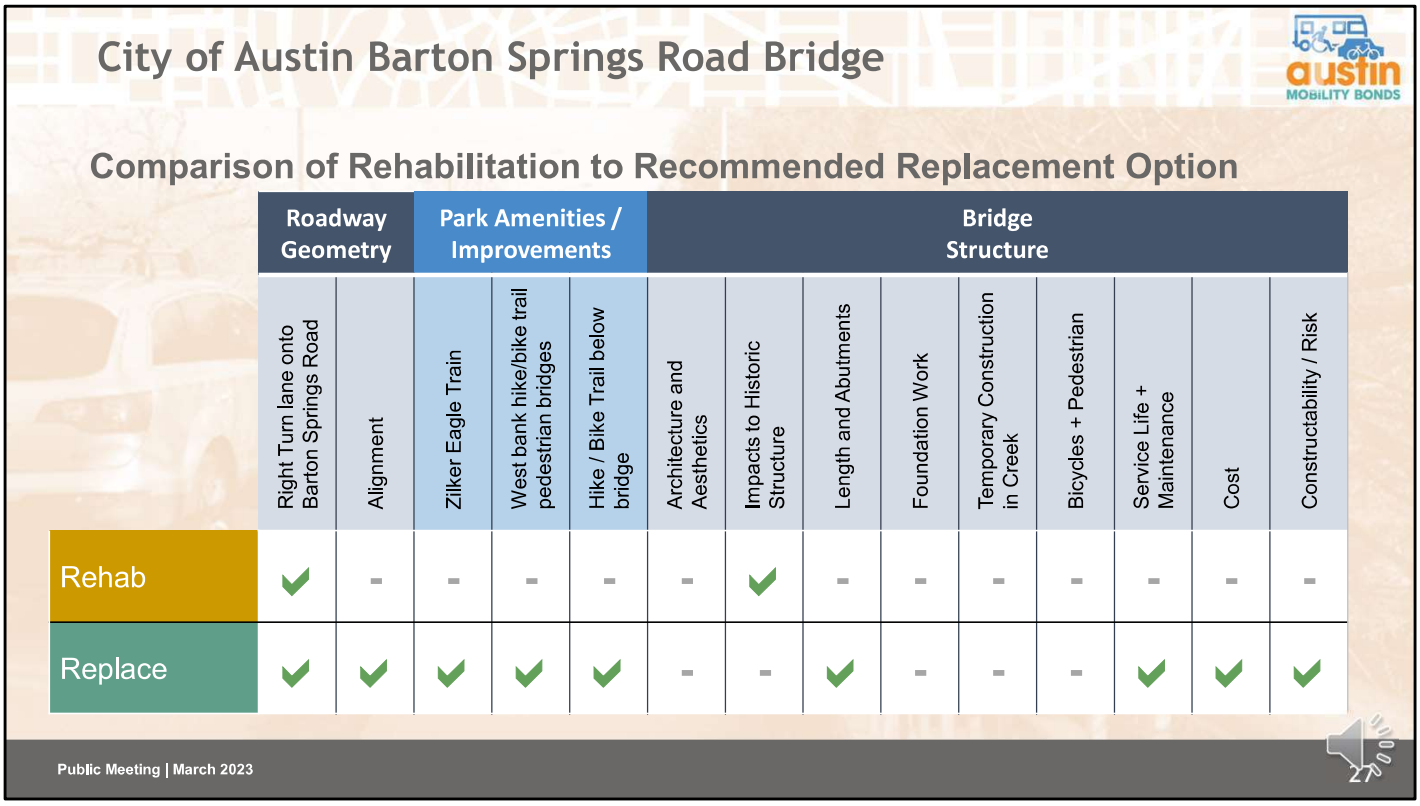
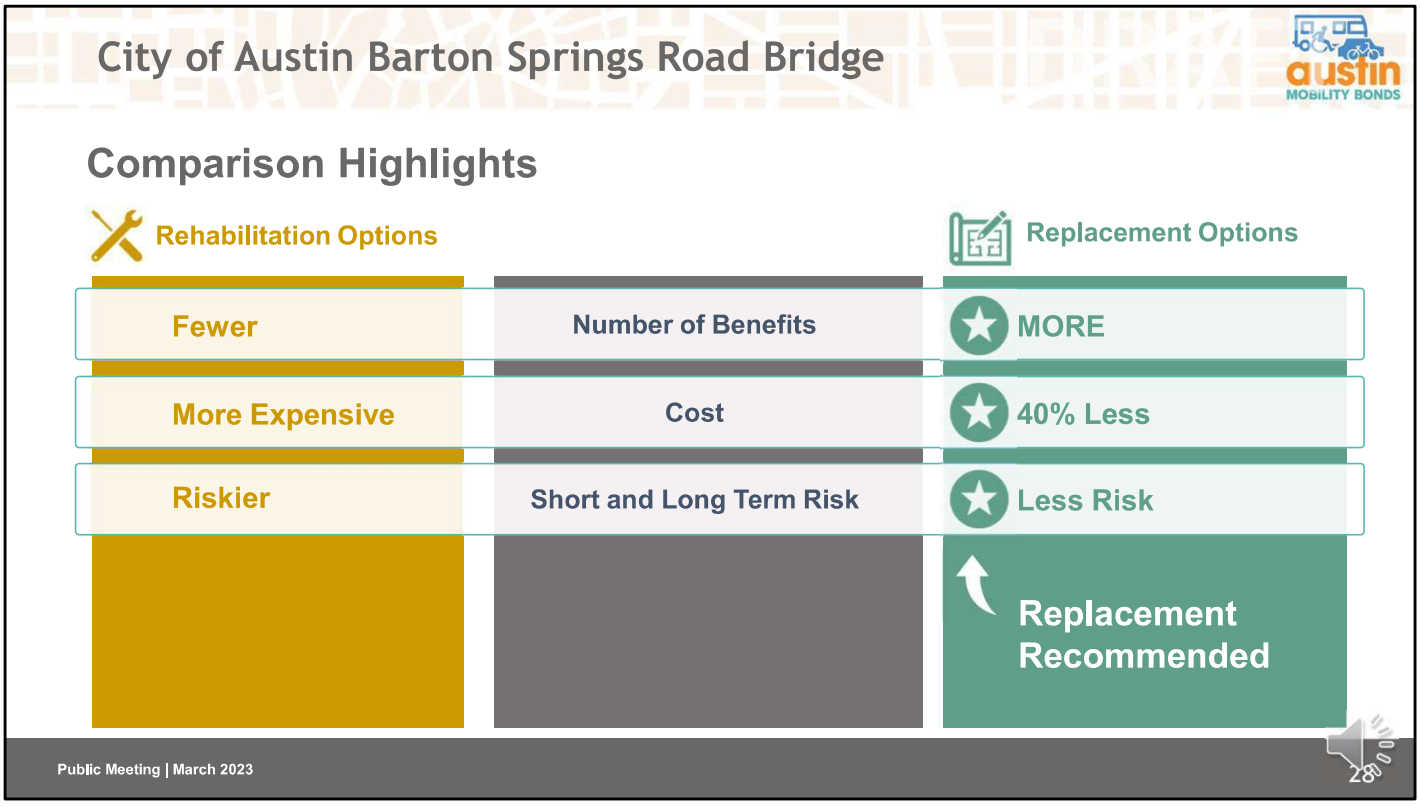
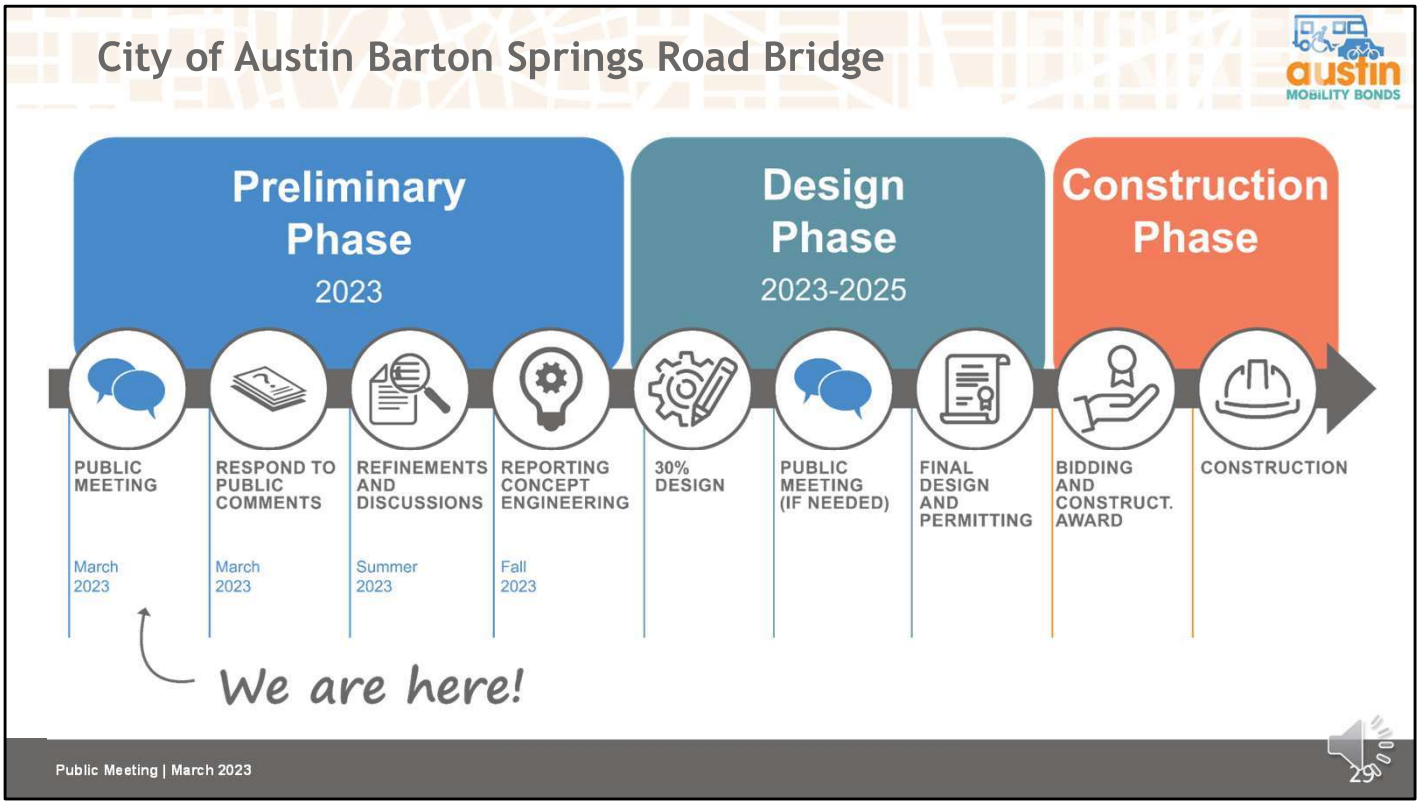
Multi-modal connectivity is a vital part of this new project, and the bridge design will help ensure that we are protecting historic landmarks, protecting or moving heritage trees, and creating flexibility with this project that is compatible with the new Zilker Park Vision Plan.



A detailed analysis was conducted to compare the rehabilitation option and the recommended replacement option. This analysis considered things such as roadway geometry, park amenities and improvements, and the overall bridge structure and life-cycle performance. In this analysis, the replacement option scored better than the rehabilitation option in all but two categories, leading to a recommendation for a replacement bridge.



Some of the highlights of the comparison between replacement and rehabilitation options include the fact that the replacement option provides a greater number of benefits, is 40% less expensive, and poses much less short-term and long-term risks to the project.



The preliminary phase for this project will continue throughout 2023, starting with this public meeting and responses to public comments, discussions with the City Council, and finally, the concept engineering report. The preliminary phase will be followed by a design phase consisting of a 30% design, another public meeting as needed, and then final design and permitting. After that, the bidding and construction award will occur followed ultimately by the final construction phase which we anticipate to last 3 to 4 years due to phasing requirements needed to maintain 4 lanes of traffic while the old bridge is demolished and the new bridge is built.