## Fact Sheet

# Redbud Trail Bridge

# (Emmett Shelton Bridge)

**Capacity -** The structure is used by more than 16,000 vehicles per day, resulting in a critical commuter link between the City of Austin, City of Westlake Hills, and City of Rollingwood.

**Critical Utility Link -** The bridge carries process wastewater lines from Ulrich Water Treatment Plant (UWTP). These lines (and by association the supporting bridge structure) are essential to the operation of the Ulrich plant; a disruption to these process lines for as little as a day could cause a shutdown of the plant, which provides drinking water to a large segment of the City.

**Flooding -** In the case of a 100 year flood event the bridge would be about 6" under water, subjecting the utilities to flood and debris damage. The bridge could stay out of service for up to 3 days, not including any time to address damage due to the flood event.

## Scope of Work

This bridge was identified by the City of Austin Public Works Department as critical infrastructure in 2016, and is a potential project candidate for an upcoming CAMPO grant application. The estimated cost to replace the existing two bridge structures, and construct a new bridge, is approximately $50 million.

## Background

Originally built in 1948, these structures are nearly 70 years old. An Interlocal Agreement (Resolution 871005-02) with Westlake Hills was executed on October 5, 1987 calling for City of Austin to set aside $4 million from a proposed 1989 bond election. The bond in 1989 never transpired, making the agreement ineffectual, and bringing condition I-D of the ILA into effect.

Later, the City of Austin passed Resolution 961219-30 allowing for a temporary exception to the 1987 ILA during construction of major improvements to the UWTP between 1996 and 1998 with an option to extend through 2002.

## Core Issues

These structures are insufficient for current traffic volumes for both vehicular and pedestrian uses, making them functionally obsolete.
Many bridges constructed in this era were only designed for the lighter truck loadings of that era and a 50 year design life. Trucks in the 1940s were about one half the weight of today's trucks. The bridges are critical to the servicing and operation of the Ullrich WTP facility due to the 1987 ILA requirements outlined in Section IV-A, restricting all UWTP traffic to Redbud Trail Road. All other routes have been well studied, considered, and ultimately rejected over the years.

## Asset Condition

A thorough and rigorous analysis and load testing by CFX Engineering in 1997 was consistent with an all-time low Sufficiency Rating (SR) of 36.4 (out of 100) and established a limited remaining useful life. The last TxDOT inspection was done in 2016, and resulted in a SR of 67.0 which is a rating of "Fair".

The interim enhancements designed by CFX that were made in 1999 were only intended to extend the usable life of the structure until replacement of the bridge, planned for 2006. TxDOT ratings have been consistently around 67 since the rehabilitation project was completed in 1999.

Despite seemingly acceptable ratings, as we approach the end of 2017, the Public Works Department is concerned that the somewhat cursory visual inspections performed are highly overrating the structural capacity of this bridge.

## Traffic Safety

The western roadway is narrow and has steep grades, sharp turns and is misaligned with the bridge creating a safety concern west of the structure. City of Austin's accident count shows 88 crashes in a 12 year period from Stratford Drive to the west bridge abutment, 81 of those in the area described above. In addition, there were another 28 crashes over a 12 year period on Red Bud Isle. This segment of road was included in the 2016 Bond Election, as a member of the top 25 Crash Location priorities, targeted for Fatality Reduction Strategies.


## Opportunities

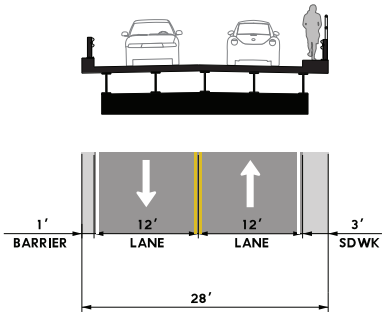
The replacement project will provide tremendous opportunities to:

- Provide a 100-year life for critical roadway, bridge, and utility infrastructure;
- Provide long-term operational access to Ulrich;
- Eliminate the dangerous western roadway geometry;
- Remove driving lanes and critical utilities from 100-year flood events;
- Reduce congestion at the Redbud Trail / Lake Austin Blvd intersection;
- Increase bicycle/pedestrian connectivity/mobility/safety;
- Increase access and dedicated parking at Redbud Isle; and
- Provide a bridge aesthetic with local contextual sensitivity.

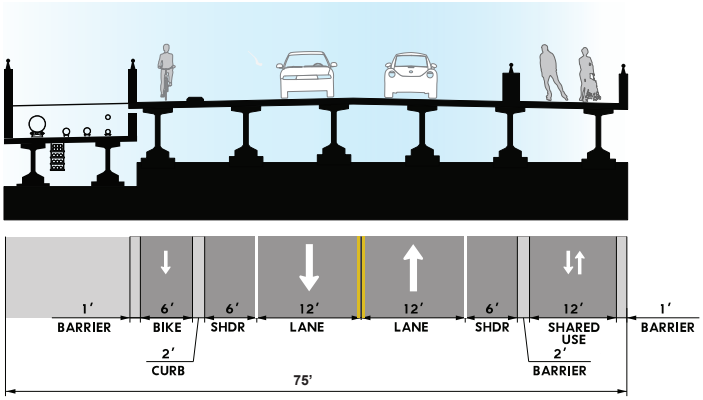
## Potential Bridge Alignment Concepts


This product is for informational purposes and may not have been prepared for or be suitable for legal, engineering, or surveying purposes. It does not represent an on-the-ground survey and represents only the approximate relative location of property boundaries. This product has been produced by the Public Works Department for the sole purpose of geographic reference. No warranty is made by the City of Austin regarding specific accuracy or completeness.

## Cross Sections: Before and After




LOOKING EAST
EXISTING BRIDGE SECTION




LOOKING EAST
PROPOSED BRIDGE SECTION