

Legislation Text

File #: BILL NO. 18-197, **Version:** 1

An Ordinance authorizing the execution of Modification No. 2 to agreement dated July 14, 2017 (RFQ NO. 44112-D) for professional engineering services for Langsford Road Bridge Rehabilitation by and between the City of Lee's Summit, Missouri, and Bartlett & West, Inc., for a net increase of \$22,215.00 with a revised contract amount not to exceed \$386,530.50 and containing an emergency clause.

Issue/Request:

Approval of an ordinance authorizing the execution of Modification No. 2 to agreement dated July 14, 2017 (RFQ NO. 44112-D) for professional Engineering Services for Langsford Road Bridge Rehabilitation by and between the City of Lee's Summit, Missouri, and Bartlett & West, Inc., for a net increase of \$22,215.00 with a revised contract amount not to exceed \$386,530.50 and containing an emergency clause.

Key Issues:

The rehabilitation work of the Langsford Road Corrugated Metal Pipe (CMP) is underway. City Council awarded the construction contract to LEXECO in September 2018, and work began on October 16th. The Langsford Road CMP is composed of two pipes, setting side by side, running under Langsford Rd at the intersection of SE Ridgeview Dr for a distance of approximately 500 feet.

Shortly after work began, the Contractor notified City staff of a compromised segment of the eastern pipe, approximately 75 feet from the outlet. The top portion has pushed down approximately 6 inches, and the pipe joint has separated. Dirt can enter the pipe through the opening, and this could lead to a collapse. A collapse would lead to additional infrastructure damage and could cause upstream flooding by debris blocking the flow of storm water.

The damage sustained by the pipe cannot be repaired. The pipe will be removed from the damaged location to the outlet, a distance of approximately 75 feet. The excavation and removing of the eastern pipe will undermine the stability of the western pipe, so while it showed no damage it will also be replaced.

City staff and the engineer reviewed replacing the pipes with either a new CMP or building a new reinforced concrete box. The reinforced concrete box was chosen for its long term durability, and it will be designed to tie into the existing pipes while conveying the required volume of storm water.

This modification will allow the engineer to design the reinforced concrete box and review shop drawings. Staff intends to request a cost estimate for the reinforced concrete box with the Contractor currently under contract to repair the Langsford Road CMP.

The project is included in the current Capital Improvement Plan and is funded by the Capital Improvements Sales Tax and is incorporated into the FY 2017-2018 budget.

Proposed City Council Motion:

First Motion: I move for a second reading of an ordinance authorizing the execution of Modification No. 2 to agreement dated July 14, 2017 (RFQ NO. 44112-D) for professional Engineering Services for Langsford Road Bridge Rehabilitation by and between the City of Lee's Summit, Missouri, and Bartlett & West, Inc., for a net increase of \$22,215.00 with a revised contract amount not to exceed \$386,530.50 and containing an emergency clause.

Second Motion: I move for adoption of an ordinance authorizing the execution of Modification No. 2 to agreement dated July 14, 2017 (RFQ NO. 44112-D) for professional Engineering Services for Langsford Road Bridge Rehabilitation by and between the City of Lee's Summit, Missouri, and Bartlett & West, Inc., for a net increase of \$22,215.00 with a revised contract amount not to exceed \$386,530.50 and containing an emergency clause.

Background:

The initial agreement was executed in 2012 and included three major elements:

- 1) The design of a replacement culvert under SW Murray Road, south of the 3rd Street intersection. The Murray Road culvert replacement project was successfully completed in the summer of 2016.
- 2) Evaluation of the Chipman Road Bridge over the Union Pacific Railroad. The Engineer has submitted an evaluation of this bridge, and City staff used this information to develop design plans for repairs to this bridge. The contract to repair this bridge is awarded, and the repairs should be completed over the summer.
- 3) Evaluation of three CMP sites, two on Ward Road and the Langsford Road Bridge.

The Langsford Road Bridge report concluded the flow lines of the CMP have rusted and in some areas there are holes in the flow line of the CMP. The term "bridge" is used because of its open span length of both pipes is greater than 20 feet when combined, even though it is an underground culvert. The structural integrity of the CMP was not considered compromised, but the report recommended preventive and corrective maintenance be undertaken in order to mitigate additional deterioration that would likely jeopardize the structural integrity of the bridge. A failure in the bridge would cause Langsford Road to be closed and incur a significantly higher cost to repair.

A corrective action matrix was submitted with the report. The matrix included estimated costs and estimated life expectancy for two types of repairs and full replacement of the CMP with a reinforced concrete box. The full replacement option is the costliest option but gives the longest life expectancy. One repair option that was studied is a complete lining of the CMP with a special concrete mixture. This technology is relatively new so the life expectancy has not been validated, and the cost is nearing that of the full replacement option.

The other repair option is building a concrete flow line within the CMP, which is the basis for the scope of services in this contract. The concrete flow line is time tested, about one-tenth the cost of the other options, and has a life expectancy of 10 to 20 years.

The special concrete mixture option was eliminated because it is a newer technology for which the life expectancy has not been validated, and the estimated cost is extremely high. The full replacement is not an option to pursue at this time because the pipe is still structurally sound. However, it may need to be considered in the future. The concrete flow line was chosen as the most cost effective solution that could give the CMP an extra ten years of life, and perhaps longer depending on the performance of the concrete flow line. The concrete flow line repair can also be undertaken without any disruptions to traffic.

Impact/Analysis:

Without this modification the stability and performance of the damaged pipe cannot be predicted.

..Presenter

Dena Mezger, Director of Public Works

Staff recommends approval of an ordinance authorizing the execution of Modification No. 2 to agreement dated July 14, 2017 (RFQ NO. 44112-D) for professional Engineering Services for Langsford Road Bridge Rehabilitation by and between the City of Lee's Summit, Missouri, and Bartlett & West, Inc., for a net increase of \$22,215.00 with a revised contract amount not to exceed \$386,530.50 and recommends this as an emergency measure.