

MEMORANDUM

TO: Donna Barron, City Manager

FROM: David Salmon, P.E., City Engineer

VIA: Eric Ferris, Deputy City Manager

DATE: April 1, 2019

SUBJECT: **Approval of a Professional Services Agreement with Halff Associates, Inc. Relating to Design of Timber Creek Streambank Stabilization – Phase 2, Supplemental Services Amendment No. 3 in the Amount of \$137,690; and Authorization for the City Manager or her designee to Execute the Agreement.**

BACKGROUND

Halff Associates conducted an erosion study on Timber Creek between Valley Parkway and Edmonds Lane in 2008 in which active erosion sites were identified and ranked in order of urgency. The most critical site was behind the homes on Regency Drive due to existing erosion resulting in property damage and potential for structural damage to homes. Staff hired Halff Associates to design streambank protection for Timber Creek behind the homes on Regency Drive and that project has been completed.

On December 4, 2017, City Council approved the Professional Services Agreement for the design phase services up to and including 90% construction documents for Phase 2 of the Timber Creek Streambank Protection project extending the previous erosion protection an additional 700 feet downstream. On December 17, 2018, City Council approved Professional Services Amendment #2 to provide final design and construction services for the extension.

Since Amendment #2 was approved, staff has identified two other areas which require repair to existing erosion protection. Being the same type of projects as Timber Creek and having small scopes, staff thought it would provide cost benefit to bid the two repair projects with the Timber Creek project.

Valley Vista Outfall

The existing storm drain outfall for Valley Vista Estates is an open grass lined channel extending from Corporate Drive to Timber Creek. When the Regency Drive portion of Timber Creek Erosion Protect was constructed, the erosion protection was extended about 100 feet up the Valley Vista outfall channel. The erosion protection in the Valley Vista outfall channel has started to fail and slide down the bank. Failure of the Erosion protection in the outfall channel, could affect future stability of the more major improvements in Timber Creek.

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Fish Hatchery Road Bridge

The existing Fish Hatchery Road bridge was funded in 2004 through the “Off State System Federal-Aid Bridge Replacement and Rehabilitation Program” and constructed between 2011 - 2013 by TXDOT with a 10% City funding match. The bridge replaced an older structure owned by the City that was determined unsafe and was closed to traffic with permanent barriers. The new bridge was turned over to the City of Lewisville in 2013 for operation and maintenance once completed. On Memorial Day weekend in 2015, Lake Lewisville began flowing over the emergency spillway eventually reaching an elevation of 537 feet and allowing 5 feet of water to pour over the spillway into McWhorter Creek upstream of the Fish Hatchery Road Bridge. Flood water did not overtop the bridge but rose to the base of the bridge deck.

In 2016 the Corps of Engineers (COE) contacted City of Lewisville staff because they noticed some cracking at the approach slabs on both the north and south ends of the bridge, severe scouring of the rip-rap near the south abutment, and a downstream shift of several inches on the south end of the bridge. City staff consulted with Texas Department of Transportation (TXDOT) regarding the bridge condition and met at the site on two occasions with both TXDOT and COE personnel. The COE, based on reviewing the bridge design and observation, determined the damage was most likely contained to the rip-rap and approach slabs and that there was no structural damage. Additional detailed analysis would be required to make definite conclusions. The COE recommended repairing the scoured rip-rap in the short term.

City staff has since been contacted by the Corps of Engineers regarding the bridge conditions as Fish Hatchery Road will be the primary access for contractors involved in the Lewisville Lake Dam repair. The dam repair project is expected to begin in spring 2019 and continue for up to 7 years. The COE’s concern is the bridge’s long-term stability and plans to repair the bridge.

ANALYSIS

Valley Vista Outfall

The cost associated with the Valley Vista portion of this Professional Services Agreement amendment is \$75,610. This includes surveying and geotechnical engineering services, U.S. Army Corps of Engineers (USACE) permitting services, preparation of plans, specifications and estimates for construction and construction administration services. The repair will also include construction of an energy dissipation structure immediately downstream of Corporate Drive to significantly reduce the chances of future failure of the erosion control.

The negotiated fee is well within the customary fee for a project of this scope and size based on an estimated construction cost of \$487,500 for the repairs. Funding for professional services is available in the Timber Creek Design Project. The design timeline for completion of this portion

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of the design is 145 calendar days from notice to proceed exclusive of time for City staff reviews. The final design should be completed by September 2019 with construction completed in early 2020.

Fish Hatchery Road Bridge

The cost associated with the Fish Hatchery Road Bridge Erosion Repairs portion of this Professional Services Agreement with Halff Associates, Inc. is \$62,080. This includes preliminary and final design engineering and construction phase services for repairs to existing gabion baskets under and along the southern bridge abutment on Fish Hatchery Road. Design will take 120 calendar days. The negotiated fee is well within the customary fee for a project of this scope and size based on an estimated construction cost of \$225,000. The project will bid in September 2019 and construction is estimated to be completed in early 2020.

The total, maximum fee for all services for this PSA will increase by \$137,690, from \$206,595 to \$344,285. Halff Associates has previously completed designs for Lewisville infrastructure including the erosion control behind Regency Drive and are familiar with the City standards and processes, completing them successfully and on time. Funding for the subject professional services is available in the Timber Creek Erosion capital project.

RECOMMENDATION

It is City staff's recommendation that the City Council approve the Professional Services Agreement with Halff Associates, Inc. as set forth in the caption above; and authorize the City Manager or her designee to execute the agreement.