



CITY OF HOUSTON - CITY COUNCIL

Meeting Date:

ALL

Item Creation Date: 5/10/2021

HPW – 20MP73 Amendment / University of Houston

Agenda Item#:

Background:

SUBJECT: First Amendment to Professional Services Agreement between the City and University of Houston for services associated with cooperative research addressing the effectiveness of polymer in stabilizing high plasticity pavement subgrade cohesive soils.

RECOMMENDATION: Approve First Amendment to the Professional Services Agreement with University of Houston.

PROJECT NOTICE/JUSTIFICATION: This project addresses the suitability of a polymer as a stabilizing agent as compared to the traditional stabilizing agent (lime) on cohesive subgrade soils in Houston.

Pavement subgrades in Houston generally consist of high plasticity cohesive soils that have the potential for undergoing large amount of heave and shrinkage due to seasonal moisture changes. Heave and shrinkage can lead to buckling and cracking of the roadways that can result in poor long-term performance and high maintenance cost.

To avoid excessive damage to the City of Houston roadways, the subgrade cohesive soils are generally stabilized with lime during construction. However, numerous roadways with lime stabilized subgrade have shown heave and shrinkage related distresses due to inadequate lime stabilization with depth (as deeper lime stabilization with depths are not economically feasible) and there is a possibility of leaching of lime from the subgrade and also formation of ettringite in the soils over a period of time. Furthermore, lime stabilization subgrade needs a longer curing time to harden even for construction traffic to operate on it. Dust during lime application is also a nuisance.

This research project in cooperation with University of Houston will evaluate a single polymer product and will conduct a systematic and extensive series of engineering property tests to obtain comparable data on the performance of polymer modified cohesive soils typically encountered in the City of Houston. This research could lead to improved performance and longer life of our future roadways.

DESCRIPTION/SCOPE: This project consists of investigative study, analyses, and providing findings, conclusions, and recommendation in a report. The investigative study includes a review of industry stabilization standards and evaluation of design/construction of project and recommendations for additional options to pavement subgrade stabilization standards for the City's Infrastructure Design Manual.

LOCATION: The projects are located throughout the City of Houston.

PREVIOUS HISTORY AND SCOPE: City Council approved the original Agreement on September 30, 2015 under Ordinance No. 2015-0917. The scope of services under the original Agreement consisted of performing professional services that included investigative study, analyses, and provided findings, conclusions, and recommendation in a report. The investigative study included a review of industry stabilization standards and evaluation of design/construction of project and recommendations for changes to pavement subgrade stabilization standards for the City's Infrastructure Design Manual.

On January 8, 2020 by Ordinance No. 2020-0035, City Council approved an Amendment to the original Ordinance to change the project location to Shepherd and Durham Paving and Drainage from Washington to Dickson.

SCOPE OF THIS AMENDMENT AND FEE: Under the scope of the First Amendment, the Consultant will provide services associated with cooperative research addressing the effectiveness of polymer in stabilizing high plasticity pavement subgrade cohesive soils for various locations.

This Amendment will also include the extension of an additional two (2) years after the original contract expires October 9, 2021. This Agreement is effective on the Countersignature Date and remains in effect for Seven years, unless sooner terminated under this Agreement. The City may renew this Agreement for an additional one-year term on the same terms and conditions.

FISCAL NOTE: No significant Fiscal Operating impact is anticipated as a result of this project.

DocuSigned by:
 6/8/2021
A93C410B72B3453
Carol Ellinger Haddock, P.E., Director
Houston Public Works

Prior Council Action:

Ordinance No. 2015-0917, dated 09-30-2015
Ordinance No. 2020-0035, dated 01-08-2020

Contact Information:

Juan Chavira, PE, PMP, CEM, ENV SP
Assistant Director, Capital Projects
Phone: (832) 395-2441

ATTACHMENTS:

Description

MAPS
Prior Council Action
Agreement

Type

Backup Material
Backup Material
Backup Material