



Legislation Text

File #: 19-1296, **Version:** 1

STRATEGIC PRIORITY: Mobility Solutions, Infrastructure, and Sustainability

AGENDA DATE: October 23, 2019

COUNCIL DISTRICT(S): All, Outside City Limits

DEPARTMENT: Water Utilities Department

EXECUTIVE: Majed Al-Ghafry

SUBJECT

Authorize (1) a professional services contract with Freese and Nichols, Inc. for the Floodplain Program Management Assistance Contract No. 2 and the White Rock Lake Dredging Feasibility Study; ~~and~~ (2) the establishment of appropriations in an amount not to exceed \$99,300.00 in the White Rock Lake Beautification Fund; (3) the acceptance of a grant from the Federal Emergency Management Agency through the State of Texas Commission on Environmental Quality (TCEQ) for the High Hazard Potential Dams Rehabilitation Grant (Grant No. EMW-2019-GR-00011, CFDA No. 97.041) in the amount of \$176,345.00 to complete a Spillway Capacity Analysis, Breach Analysis, and Potential Failure Mode Analysis for White Rock Dam within an estimated 12 months of the execution of a grant agreement with TCEQ; (4) the establishment of appropriations in an amount not to exceed \$176,345.00 in the FY20 High Hazard Potential Dams Rehabilitation Grant Fund; (5) the receipt and deposit of funds in an amount not to exceed \$176,345.00 in the FY20 High Hazard Potential Dams Rehabilitation Grant Fund; (6) a required local match in the amount of \$94,955.00 from the Water Construction Fund; and (7) the execution of the grant agreement with TCEQ and all terms, conditions, and documents required by the agreement - Not to exceed \$1,236,400.00 - Financing: Storm Drainage Management Capital Construction Fund (\$450,000.00), Water Construction Fund (~~\$476,300.00~~ \$299,955.00), Park and Recreation Facilities (B) Funds (\$210,800.00), FY20 High Hazard Potential Dams Rehabilitation Grant Fund (\$176,345.00), and White Rock Lake Beautification Fund (\$99,300.00)

BACKGROUND

This action will authorize a professional services contract with Freese and Nichols, Inc. for engineering services involving eleven significant and high hazard dams owned by the City of Dallas. The City of Dallas (Dallas Water Utilities and Park and Recreation Department) owns numerous dams and levees, which impound water for flood control, water supply, and recreation purposes. The Texas Commission on Environmental Quality (TCEQ), the National Dam Safety Act, and the Federal Emergency Management Agency (FEMA) have requirements and recommendations for dam and levee safety inspections, operations and maintenance programs, and Emergency Action Plans (EAPs).

Twenty-four dams owned by the City of Dallas have been identified as subject to at least a part of these requirements and eleven of those dams are classified as significant and high hazard dams by TCEQ.

Dams classified as significant and high hazard by TCEQ are required to develop and maintain EAPs. In 2015, the City of Dallas began standardizing and updating EAPs for the City's significant and high hazard dams. Dam breach inundation mapping updates were not part of the 2015 contract scope and were originally developed in 2010. The 2010 dam breach analyses were conducted using a simplified one-dimensional method that produced inundation maps accurate for the time. With the recent releases of the United States Army Corps of Engineers Hydrologic Engineering Center's River Analysis System software, more advanced two-dimensional dam breach inundation modeling can be performed at a similar cost to one-dimensional modeling. The two-dimensional modeling will provide more accurate flood inundation mapping and can produce other products such as flood depth grids and evacuation timing estimates.

This action will authorize a professional services contract with Freese and Nichols, Inc., one of two firms selected for the Floodplain Program Management Assistance contracts, to provide dam safety engineering services and floodplain management engineering support services. Major tasks include hydrologic assessments, dam breach analyses, EAP updates, dam inspection training for staff to implement periodic and annual inspections, dam instrumentation reviews, a regulatory required table top exercise for the Tawakoni Balancing Reservoir, and public outreach services.

In addition to the services described above, this contract will include several distinct engineering efforts at White Rock Lake. Those services include an evaluation of alternatives for increasing spillway capacity to meet updated TCEQ design flood requirements, a Potential Failure Mode Analysis (PFMA) as recommended by dam safety inspections, and a Dredging Feasibility Study. The spillway capacity analysis and PFMA will help ensure regulatory compliance and safety of the White Rock Lake dam and help guide future capital improvements, inspections, and operation and maintenance activities. The Dredging Feasibility Study will analyze siltation build-up, dredging approaches, regulatory requirements, costs, and potential funding sources. A technical memorandum will be prepared at the completion of the six to nine-month study that summarizes stakeholder and public input, comparison of dredging scenarios, and recommendations. The dredging study will be funded by lease revenues from the White Rock Lake Boat House and Filter Building in the Recreation Program Fund. [The City has received a High Hazard Potential Dams Rehabilitation Grant award from FEMA, passed through TCEQ to fund 65% of the costs associated with the spillway capacity analysis, breach analysis, and PFMA at White Rock Dam. A local match of 35% is required and will be funded by Dallas Water Utilities. This grant program supports technical, planning, design, and construction on dams that have been classified as "high hazard potential" by the State's dam safety agency TCEQ.](#)

The consulting firm was selected following a qualifications-based selection process in accordance with the City of Dallas Administrative Directive 4-5 procurement guidelines.

ESTIMATED SCHEDULE OF PROJECT

Begin Services	November 2019
Complete Services	November 2022

PRIOR ACTION/REVIEW (COUNCIL, BOARDS, COMMISSIONS)

On August 15, 2019, the Park and Recreation Board authorized the Recreation Program Fund to be utilized for the dredging feasibility study for White Rock Lake.

FISCAL INFORMATION

Storm Drainage Management Capital Construction Fund - \$450,000.00

Water Construction Fund - ~~\$476,300.00~~ [\\$299,955.00](#)

Park and Recreation Facilities (B) Funds - \$210,800.00

[FY20 High Hazard Potential Dams Rehabilitation Grant Fund - \\$176,345.00](#)

White Rock Lake Beautification Fund - \$99,300.00

Estimated Future Cost - Construction - \$817,162.50

<u>Council District</u>	<u>Amount</u>
Citywide	\$1,087,600.00
Outside City Limits	<u>\$ 148,800.00</u>
Total	\$1,236,400.00

M/WBE INFORMATION

In accordance with the City's Business Inclusion and Development Plan adopted on October 22, 2008, by Resolution No. 08-2826, as amended, the M/WBE participation on this contract is as follows:

Contract Amount	Category	M/WBE Goal	M/WBE %	M/WBE \$
\$1,236,400.00	Architectural & Engineering	25.66%	25.66%	\$317,200.00
• This contract meets the M/WBE goal.				

OWNER

Freese and Nichols, Inc.

Brian Coltharp, P.E., President and Chief Executive Officer

MAP

Attached