CIP
EXPENSE DETAIL

CONTACT DEPARTMENT(S): Austin Water Utility

SUBJECT. Authorize negotiation and execution of an amendment to the professional services agreement with CDM Smith Inc., for engineering services related to development of a Master Plan for the Hornsby Bend Biosolids Management Plant in the amount of $400,000, for a total contract amount not to exceed $1,949,832.

CURRENT YEAR IMPACT:

Department:	**Austin Water Utility**
Project Name:	Hornsby Bend Master Plan
Fund/Department/Unit:	4480 2307 8121
Funding Source:	AWU Fund Transfer
Current Appropriation:	2,042,315.00
Unencumbered Balance:	462,000.21
Amount of This Action:	(400,000.00)
Remaining Balance:	62,000.21
Total Amount of this Action	400,000.00

ANALYSIS / ADDITIONAL INFORMATION: The Hornsby Bend Biosolids Management Plant (HBBMP) is located at the northwest corner of the confluence of FM 973 and the Colorado River. HBBMP was initially constructed in the mid-1950s by forming three large ponds to receive solids from the retired Govalle WWTP, and later started receiving solids from the Walnut Creek and the SAR WWTPs in the 1970s and 1980s, respectively. Through the early 1980s the only treatment infrastructure consisted of the ponds, with solids allowed to accumulate in the ponds and liquid discharged to the Colorado River. But by the early 1980s the ponds had filled up with solids and the facility received a no discharge permit from the Texas Commission on Environmental Quality (TCEQ). The ponds were cleaned out and most of the existing major treatment infrastructure was constructed in the late 1980s.

Today HBBMP receives all primary and secondary solids generated at the City's two main wastewater treatment plants, Walnut Creek and South Austin Regional. Products produced at HBBMP include solids, liquids and gas, each offering the potential for beneficial reuse. The current sequence of treatment at HBBMP for incoming solids consists of screening, gravity belt thickening, anaerobic digestion and belt press dewatering. Following stabilization, the resulting biosolids are either land applied on Hornsby Bend property, land applied offsite by a contractor or composted to produce Dillo Dirt. Liquid sidestreams generated from the biosolids treatment process are routed to an on-site treatment plant and the treated sidestream flows are ultimately discharged into Pond 1 East of a four pond system. Water from the pond system is used for irrigation on the Hornsby Bend property. The gas produced in the digestion process is either used as fuel in boilers to heat the digester contents, to fuel an on-site 850 KW electrical generator or flared. Most of HBBMP's main infrastructure was originally constructed between 1985 and 1989, with various improvements and modifications occurring over the years since.

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The initial City Council authorization in the amount of $1,500,000 was to provide engineering services related to development of a Master Plan for the HBBMP treatment facility. Conducted services have included a complete and comprehensive assessment of the Plant's assets, processes, systems and infrastructure to determine and recommend the least life-cycle cost-based, most environmentally sound and neighborhood friendly approach to meet the short- and long-term Utility biosolids processing needs of the Plant. Resulting recommendations will optimize existing or change treatment processes to ensure HBBMP continues to treat and dispose of the biosolids, liquid and gas in a reliable, efficient and sustainable manner. Process recommendations will focus on optimizing the beneficial reuse of products, such as maximizing biogas development and use, while diversifying disposal options. Primary considerations for process enhancements and changes will include optimizing energy efficiencies, climate protection considerations, and current and projected future requirements for regulatory compliance.

Integral to these Master Plan services in order to provide long-term treatment recommendations, a groundwater assessment and monitoring plan was completed within these services and submitted to TCEQ in compliance with requirements of the facility's TPDES permit renewal issued on October 31, 2012. This required groundwater plan and additional scope to complete the plan was unanticipated in the original scope development for these services. This plan was approved by TCEQ on August 27, 2013 and requires the installation of ten additional groundwater monitoring wells and requires a good faith effort by the City to identify off-site wells north of the facility for potential sampling in an attempt to confirm baseline groundwater quality before it is impacted by onsite activities. Once the assessment and monitoring phase is complete, a report to TCEQ is required to document groundwater conditions and trends. This final report will be completed outside of these services. Services requested by this amendment include the installation of groundwater monitoring wells, and identification of offsite wells and outreach efforts for additional well sampling opportunities as required by the TCEQ-approved groundwater plan.

Further services requested by this amendment include those required to refine and finalize the evaluations of the liquid, solid and biogas treatment processes and beneficial reuse options in order to complete short- and long-term Master Plan recommendations. One of the key needs for short- and long-term liquid management at Hornsby Bend is to reduce the volume of liquids currently within the pond system. The identified lowest cost alternative to meet this need is to convey treated liquid from the ponds to the SAR WWTP for further treatment and disposal. Services within this amendment will evaluate the potential impacts on the SAR WWTP to confirm the feasibility of this alternative.

In the area of biogas and biosolids management several potential benefits of adding food scraps, fats, oils and grease (FOG) into the anaerobic digestion treatment process have been identified. Benefits would include support to the City's zero waste initiative and a dramatic increase in biogas production. The increased biogas production would potentially provide a revenue source or treatment costs reduction and it adds the potential for sludge drying, which would provide multiple reuse disposal options for solids.

This item is pending review by the City's Change Control Committee.

CDM Smith Inc. is located in Austin, Texas.