Legislation Details (With Text)

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Title:	AUTHORIZATION FOR THE PURCHASE OF A NATURAL GAS ENGINE AND LABOR TO REPOWER AN EXISTING COMPRESSED NATURAL GAS (CNG) COMPRESSOR UNIT FROM JW POWER IN THE AMOUNT OF $149,575.50 FOR THE DELIVERY AND SET UP TO ACCOMMODATE FAST FILL AND SLOW FILL NEEDS.		
Sponsors:			
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Attachments:	1. City Council Staff Report, 2. Quote- Gas Drive 12-13-19R2.pdf, 3. Photo CNG Storage Vessel, 4. TRANSIT CNG EXHIBIT - FY20 ACOG.pdf		

Date	Ver.	Action By	Action	Result
1/14/2020	1	City Council		

AUTHORIZATION FOR THE PURCHASE OF A NATURAL GAS ENGINE AND LABOR TO REPOWER AN EXISTING COMPRESSED NATURAL GAS (CNG) COMPRESSOR UNIT FROM JW POWER IN THE AMOUNT OF $149,575.50 FOR THE DELIVERY AND SET UP TO ACCOMMODATE FAST FILL AND SLOW FILL NEEDS.

BACKGROUND: On August 28, 2018, University of Oklahoma ("OU" or "University") officials advised City staff of their desire to transfer non-campus bus services in Norman to another operator by the end of fiscal year 2019. On July 30, 2019, Council approved Contract K-1920-30 with EMBARK to provide transportation services for the City of Norman from August 3, 2019, through June 30, 2020, and a facility lease agreement with the University of Oklahoma for a portion of the current OU Transportation Center to operate the fixed routes, paratransit routes and fleet maintenance operation of the Norman public transportation system until December 30, 2019. On December 10, 2019, Amendment No. One to Contract K-1920-32 was approved by City Council extending the lease agreement with the University of Oklahoma until June 30, 2020.

On August 13, 2019, Council approved Contract K-1617-114 with PDG, LLC, to provide design services for the City Parks/Transit/Public Safety Maintenance Facility. The timeline for the facility design was fast-tracked in order to meet the expectations of each stakeholder group. The Bus Transit Facility will receive high priority due to the urgent need for the City to move out of the OU Fleet Facility; however, the Park Maintenance Facility and the Emergency Vehicle Maintenance Facility are equally as important, and timelines are critical.

On August 5, 2019, the Public Works Fleet Division started performing night shift fueling, minor maintenance and cleaning service of thirteen (13) City of Norman transit vehicles that the University of Oklahoma formerly maintained. On October 1, 2019, the Public Works Fleet Division began the same services to an additional fifteen (15) transit vehicles, bringing the City of Norman transit vehicle total inventory count to twenty-eight (28) units. Fourteen (14) of the transit vehicles are dedicated

CNG vehicles and are expected to consume 7,500 gallons each month. The City of Norman's CNG Fueling Facility already has monthly usage of approximately 33,000 gallons that is consumed by the public and internally by the City. In order to handle the growing load on this facility, it is critical to expand on-hand CNG storage and replace the underperforming, unreliable natural gas engine on the natural gas compressor package. The CNG Fueling Facility has two (2) electric drive 125 hp compressors each and one (1) 72 hp natural gas engine powered compressor. The natural gas engine-powered compressor is relied upon during power outages and overnight slow-fill for approximately 35 vehicles located at the North Base Facility. The current on-hand CNG storage is 900 gallons at a maximum pressure of 4200 pounds per square inch (PSI). As PDG, LLC works to develop a master plan for maintenance facilities, it is equally important to expand and upgrade our CNG Fueling Facility to handle the increased load needed with the additional transit vehicles and guarantee the reliability of fuel to our public and private customers. It is recommended to add another 400 gallons of CNG storage capacity and have a new 145 hp natural gas drive engine that produces comparable output to the present electric drive compressors.

With this background in mind, Public Works staff has consulted with the original CNG Fueling Facility design and engineering firm, Small Arrow Engineering, LLC, of Joplin, MO. Small Arrow has nine years of Alternative Fuels experience with the City of Norman, including grant writing/administration services, CNG Fueling Facility improvements and performance enhancements. Small Arrow Engineering has provided the following scope of work, to include:

- Design upgrades to the present CNG station to increase CNG storage capacity (an additional 52,500 cubic feet (CF) at 4200 psi. This additional capacity will complete full station buildout, which has space previously allotted for these additional American Society of Mechanical Engineers (ASME) rated vessels.

- Installation of a new natural gas powered engine to increase the capacity and output of the present Arrow Engine based compressor package. This upgrade will then allow for full use of the natural gas drive compressor package during OG&E "SmartHours" and reduce electric charges to the City during the 2:00 to 7:00 p.m. timeframe for 5 months out of the year. In addition, the upgraded natural gas drive compressor will have the capacity to serve and fuel the entire CNG fleet (including the new Transit vehicles) that may require CNG during electrical outages.

- Design of station controls and slow-fill CNG systems for expansion to serve the transit vehicles based at the new City Parks/Transit/Public Safety Maintenance complex along the south side of Da Vinci Street. If approved, ten (10) additional dual-hose slow-fill dispensers will be installed to allow twenty (20) CNG based transit vehicles to refuel and five (5) dual-hose slow-fill dispensers will be installed to allow ten (10) CNG based Park Maintenance vehicles to refuel, as well. Fast-fill only allows a tank to be at no more than approximately 75% full. Allowing the tanks to fill overnight provides up to 90% fill on the tank; this ensures the mileage range is more each day, allowing the transit vehicles to fill at night during off-peak hours when electricity rates are lower. By utilizing the slow fill dispensers at night, the technicians will not need to fill the buses, which can be as much as fifteen minutes per bus saved each day, translating into at least three (3) hours of daily staff time that will no longer be spent waiting for the fast-fill to be completed at the CNG Fueling Facility.

On October 8, 2019, Council approved Contract K-1920-52 with Small Arrow Engineering, LLC, for design upgrade and expansion to the CNG Fueling Facility to accommodate transit fast fill and slow

fill requirements.

On December 15, 2019, Small Arrow Engineering, LLC, on behalf of the City of Norman, applied for a fiscal year 2019-2020 Round 1 ACOG Clean Air Grant for the additional alternative fuel vehicle slow fill refueling equipment to serve the Transit and Parks & Recreation Divisions. This is a proposed 50/50 split of costs for this improvement project, which is estimated to have a total cost of $340,000, with $170,000 to be reimbursed to the City by ACOG upon the completion of work in August of 2021. The award notification for the grant will be announced by ACOG on January 31, 2020.

DISCUSSION: On August 23, 2016, City Council approved the purchase of equipment and labor for the CNG Fueling Facility Storage Improvement project, payable to JW Power of Dallas, TX for $40,961 to be used towards a site controller panel upgrade and programing. The City's original compressor controls had also become obsolete. JW's upgraded control system is a proprietary controller that runs and manages the performance of all three (3) CNG compressors. JW was founded in 1960 and is still a leader in CNG equipment with a local service office in Yukon, Oklahoma. The CNG Fueling Facility has three CNG compressors, two 125hp electric driven compressors and one 72hp gas driven compressor. The 72hp gas drive compressor is unreliable and is underpowered to supply the new demand for the upcoming transit facility. JW is the only vendor that can provide a solution to repower an existing CNG compressor that will be reliable and sufficiently powered that will work seamlessly with the proprietary controller they installed without a redesign and reengineer of the current controls, which qualifies them as a sole source provider. If approved, JW will transport the old compressor package to their factory in Longview TX for the disassembly and retrofit of a new Caterpillar 145hp engine assembly, along with crane service for loading and unloading the transport truck. This new unit will be tested, programed to run in conjunction with the current controller, delivered back to Norman and properly reinstalled by June 2020.

RECOMMENDATION: It is recommended that City Council authorize a purchase from JW Power, of Dallas TX, in the amount of $149,575.50 for the delivery and set up of a new natural gas drive compressor and labor to repower a compressor package to accommodate fast fill and slow fill needs. Funds for this purchase are available in the Public Transit Fund, CNG Gas Drive Replacement and Storage (account Org 27590078, Object 4610; project BG0080).