City of Norman, OK

Municipal Building
Council Chambers
201 West Gray
Norman, OK 73069

Master

File Number: GID-1617-9

File ID:	GID-1617-9	**Type:**	Authorization for Purchase	**Status:**	Consent Item
Version:	1	**Reference:**	Item 10	**In Control:**	City Council
Department:	Public Works Department	**Cost:**	$106,760.00	**File Created:**	08/09/2016
File Name:	CNG Fueling Facility Storage Improvement Project			**Final Action:**	

Title: AUTHORIZATION FOR THE PURCHASE OF EQUIPMENT AND LABOR FROM CP INDUSTRIES IN THE AMOUNT OF $106,760 FOR INSTALLATION OF A STORAGE VESSEL FOR THE COMPRESSED NATURAL GAS (CNG) FUELING FACILITY STORAGE IMPROVEMENT PROJECT.

Notes: ACTION NEEDED: Motion to approve or reject authorization for the purchase of eqiupment and labor from CP Industries in the amount of $106,760 for installation of a storage vessel for the CNG Fueling Facility Storage Improvement Project.

ACTION TAKEN: _____

Agenda Date: 08/23/2016

Agenda Number: 10

Attachments: cng station picture, Aerial Photo, CPIndustries Quote, Alternative Fuel Grants Received, Norman Project Schedule, Alternative Fuel Program, CNG Grand Opeining Brochure, Cp Industries PR

Project Manager: Mike White, Fleet Supt

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Effective Date:

History of Legislative File

Ver-sion:	Acting Body:	Date:	Action:	Sent To:	Due Date:	Return Date:	Result:

Text of Legislative File GID-1617-9

Body

BACKGROUND: On February 17, 2009, City Council formally adopted the City's first ever Alternative Fuel Program. The program was designed to address both financial and environmental challenges facing the City at that time. Unleaded fuel prices were approaching $4.00 per gallon and the City's fuel costs were over budget by $1 million. The City envisioned a future Compressed Natural Gas (CNG) Slow Fill Facility, a CNG Fast Fill Facility with public access, and enlarging the number of CNG vehicles owned by the city. At the time of inception, the City had a fleet comprised of only seven (7) compressed natural gas (CNG) vehicles. Other alternative fuel opportunities were also identified including vehicle right sizing, flex fuel vehicles, bio-diesel, electric and where alternative fuel was not an option, purchasing vehicles identified as top three in their fuel efficiency class.

Since that time, the City of Norman has been awarded seven (7) ACOG Congestion Mitigation and Air Quality

(CMAQ) grants in the total amount of $963,980. The City also received federal/state funding from the American Recovery and Reimbursement Act (ARRA) administered by the Oklahoma Department of Commerce (ODOC) in the amount of $1,429,365. The City's CNG fleet now totals 84 vehicles/equipment including refuse trucks, street sweepers, pickup trucks, sedans, generators, and mowers along with a CNG Slow Fill Facility (for private use) and a CNG Fast Fill Facility with public access.

On January 9, 2012, the City of Norman opened its first municipal CNG Fueling Facility located at 2351 Goddard Avenue, available to the general public 24 hours a day, 7 days a week. The total cost of the station was $2,136,399 with a city share of $507,033. After the second year of service, the station was compressing 15,000gge a month, well above the estimated output. On January 10, 2012, City Council accepted additional grant funds from ARRA to expand the CNG Fueling Facility to include one (1) 72 HP natural gas driven compressor, one (1) defueling dispenser, one (1) CNG powered backup generator capable of running the station during power outages, and eight (8) additional dual hose slow fill posts.

In 2015, the CNG Fueling Facility was compressing an average of 25,000gge a month. Out of seventy (70) Public/Private CNG Fueling Facilities located in the Oklahoma Natural Gas (ONG) network, the City of Norman's CNG Fueling Facility is ranked 10th in Oklahoma for total volume throughput, according to ONG. Today the City of Norman owns and operates 84 CNG vehicles and has experienced a cost savings of $1,350,000 with total station throughput of 1,000,000gge over the past four years.

DISCUSSION: On March 8, 2016, City Council approved ACOG grant contract K-1516-119 in the amount of $100,000. This improvement project will be used to expand storage and alleviate slow pressure build up during fast fills that are frustrating customers. This project will extend the useful life of the City's CNG Station. This project will also reduce the City's electricity costs.

Current storage availability is 60,000 cubic feet (CF). The project will add another 52,500CF of storage for a total storage of 112,500CF. There will be centralized controls to manage the three compressors and allow the fueling dispensers to draw from different areas of storage as needed. This will result in better management (reduction) of compressor startups and more efficient compressor run cycles with the expectation to run primarily during Oklahoma Gas and Electric (OG&E's) "off peak" power schedule. The Natural Gas Engine drive compressor will be utilized during OG&E SmartHours to reduce peak power demands on the electric grid. Staff anticipates annual savings of electricity costs of demand charges by OG&E from 11 cents to 5 cents per KWh, translating into savings of $4,000 over the 5 month period each year.

Upon completion of the project, the City's CNG Fueling Facility production is set to increase from 25,000gge per month to 35,000gge per month without degradation of station performance characteristics.

The additional CNG storage proposed for this project consists of a stack of three (3) 37' long American Society of Mechanical Engineers (ASME) cylinders that each hold 17,500CF. The vessels are made by CP Industries of McKeesport, PA and are a proprietary product providing a much more efficient storage volume compared to the traditional ASME vessel, which only contains 10,000CF of capacity. These vessels are also much more cost effective, with a total cost of about $2.00 per CF, compared to approximately $2.80 per CF for a 24' long ASME cylinder or the 4' diameter ASME sphere. The vessels from CP Industries have been on the market for approximately three years and have been used on recent CNG installations in Goldsby, Oklahoma and Moore, Oklahoma as well as being used for a new CNG station currently under construction by the City of Tulsa. Once a purchase order is issued by the City, the lead time for these vessels is approximately 12-14 weeks.

The key component of this CNG Fueling Facility upgrade project is to install station and compressor controls that will operate the two (2) electric drive Arrow Engine compressors and the natural gas drive Arrow Engine compressor as a complete system, and not just have compressor starts tied simply to pressure levels in the storage vessels. The City's original control package has limited capabilities and requires servicing from vendors outside the Oklahoma City metro area. The proposed station control system is to be provided by JW Power of Dallas, Texas, which has a local service office in Yukon, Oklahoma. The site controller package will be an Allen-Bradley based programmable unit that will communicate directly with each of the Red Lion control units on the Arrow Engine compressor skids. It will allow the electric drive compressors to operate in a lead-lag arrangement, and have the natural gas drive compressor operate in real time during the OG&E SmartHours that occur for a five month period each year. The Allen-Bradley platform will also allow for compressor starts to

be tied to peak fueling periods at the station, and not have the compressors working from behind, but able to start in advance of typical morning and evening peak sales windows. In addition, this new site controller will provide remote monitoring capability to Fleet operations, providing real time status on station performance and notifications when the station is not operating or customers have pushed an emergency shutdown (ESD) button. JW Power has proposed a proprietary control system to address the limitations with the Arrow Engine units, incorporate the new storage system to optimize station operations, and provide remote communications to City Fleet personnel to assure desired service to the general public. Once a purchase order is issued by the City, the lead time for the site controller is 4-6 weeks.

Section 8-204(b)(2) of the Code of the City of Norman authorizes the City Council to waive competitive bidding for the purchase of supplies, materials, equipment, or contractual services which can be furnished only by a single dealer or which have a uniform price wherever bought.

In addition to these two sole source purchases of material/labor, the remainder of the CNG Station upgrade will be performed with in-house resources. The total project is anticipated to be completed by November 30, 2016.

RECOMMENDATION NO. 1: It is recommended City Council authorize the purchase and delivery of equipment for the CNG Fueling Facility Storage Improvement project, payable to CP Industries of McKeesport, PA for $106,760 to be used for storage vessel upgrade. Funds for this purchase are available in CNG Fueling Facility Upgrade ACOG Materials account 022-9381-435.63-01 TR0105 in the amount of $83,500; and CNG Fueling Facility Upgrade City Portion Materials account 050-9381-431.63-01 TR0105 in the amount of $23,760.