



**Metro**

Los Angeles County  
Metropolitan Transportation Authority

One Gateway Plaza  
Los Angeles, CA 90012-2952

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**OPERATIONS COMMITTEE  
JUNE 18, 2009**

**SUBJECT: ELECTRIFICATION CONVERSION OF CNG FUELING FACILITIES WITH  
STIMULUS FUNDING**

**ACTION: AWARD CONTRACT MODIFICATION TO ELECTRIFY CNG FUELING  
FACILITIES AT DIVISIONS 1, 5 & 7, PROVIDE UTILITY UPGRADES AT  
BUS DIVISIONS AND INCREASE CONTRACT EXPENDITURE  
AUTHORITY**

**RECOMMENDATION**

- A. Establish a life-of-project budget for the Electrification of Compressed Natural Gas (CNG) Fueling Facilities, including project contingency in the amount of \$28,000,000 with capital funds made available through the American Recovery and Reinvestment Act of 2009 (ARRA).
- B. Authorize the Chief Executive Officer to negotiate and execute contract agreements with City of Los Angeles Department of Water and Power for electrical utility upgrades at Divisions 1, 2, 5, 8, 10 and 15 in an amount not to exceed \$1,200,000.
- C. Approve Contract Modification Authority for Contract OP33900626 with Trillium USA, LLC:
  - 1. For increased fuel compression and modifications to CNG fueling facilities at Divisions 1, 5, & 7 for \$1,850,000 increasing Total Contract Value from \$34,983,440 to \$36,833,440; and
  - 2. To perform a Change Order to electrify CNG fueling facilities at Divisions 1, 5 & 7 for the firm fixed price of \$6,977,968 including 10% contingency, contingent upon funding becoming available, as approved in February 2009 by Board action Item 44, American Recovery and Reinvestment Act programming action, bringing the Total Contract Value from \$36,833,440 to \$43,811,408.

**RATIONALE**

This action establishes the authority necessary to proceed with the electrification of CNG fueling facilities at three bus divisions under the American Recovery and Reinvestment Act

(ARRA) of 2009. Funding for these new projects will be provided by a special federal grant from the US Department of Transportation.

At the February 26, 2009 Board Meeting, priorities and policies were established for distributing stimulus funding, and the allocation of funding to these projects will follow the Board's adopted priorities and policies. The electrification of all Metro CNG fueling facilities was adopted as a "Tier 1" project and is expected to receive funding in the first allocation of stimulus funds.

We operate natural gas compression facilities throughout the county. Most of our compression equipment uses natural gas fired engines nearing ten years in age and ranging in size from 530 to over 1,000 horsepower. In February 2008, the South Coast Air Quality Management District (AQMD) amended rule 1110.2 *Emissions from Gaseous and Liquid fueled Engines*. The new rule has increased operational costs due to significant changes in testing requirements, maintenance patterns, documentation, reporting, and equipment modifications. The rule's emission limits will be reduced further in 2010 and beyond.

The project, contingent upon ARRA funding, includes modifications at various CNG fueling facilities to fully electrify compression of natural gas for our bus fleet by replacing gas burning engines with electric motors. While the electrification conversion project is intended to be performed at multiple bus divisions with gas fired engines, this first phase of the project involves three divisions. The project includes design, equipment purchases, utility installation, construction, cutover by compression skid, training and acceptance testing. AQMD jurisdiction is eliminated as engines are replaced with motors. This project reduces our emissions level.

With project approval, each bus division's switchgear must be upgraded in order to support the additional electrical demand that the electrified fueling facilities will require. Electrical service upgrades may only be performed by the local utility that has jurisdiction. Initial discussions with the Los Angeles Department of Water and Power (DWP) suggest that the average cost for those upgrades will be roughly \$200,000 per division.

The increase of \$1,850,000 for fuel compression and fueling modifications are necessary due to the vehicle mix and increased size of our CNG fleet from contract inception. When the original contract was implemented in 1999, there were only 655 CNG buses in an active fleet of 2,194. Today, there are 2,470 CNG buses in the active fleet. As CNG fleet size has increased at each division, modifications have been made to facilitate fueling more buses overall as well as to add fuel dispensers for the articulated buses in our fleet. The partnership maintenance agreements stipulate Metro pay maintenance costs based upon the amount of natural gas compressed. This additional authority represents an increase of 5% over the 1999 authority granted by the board.

### **IMPACTS TO OTHER CONTRACTS**

There are no impacts to other contracts.

## **FINANCIAL IMPACT**

The funding of \$13.4 million will be included in the FY10 budget for expenditures in cost center 3340 Facilities-Maintenance and capital project 202302 Electrify Compression of Natural Gas at CNG Fueling Stations. See attached uses and sources of funds for the life-of-project budget of \$28 million. Since this is a multi-year project, the cost center manager and Chief Operations Officer will be accountable for budgeting the cost in future years.

Funding for increased fuel compression of up to \$1,850,000 is included in the proposed FY10 budget and out years in cost center 3342 Property Maintenance under bus operations project numbers 303011, 304011 and 305011. Since this is a multi-year contract, the cost center manager and Chief Operations Officer will be accountable for budgeting the cost in future years.

### **Impact to Enterprise Fund Bus and Rail Operating Budget**

The source of funds for the electrification of natural gas compression engines and utility upgrades will be provided by a grant from U.S. Department of Transportation using American Recovery and Reinvestment Act funds. These stimulus funds have been previously programmed by the Board for specific projects, primarily capital investments. The source of funds for the increased fuel compression requirements are bus operating revenues such as fares, Prop A40%, and TDA4. These increases to the Enterprise Fund are required due to the increased fleet size since the contract was first implemented. This cost increase was anticipated in the ten-year forecast.


## **ALTERNATIVES CONSIDERED**

Staff considered not purchasing electric motors for compression of natural gas. Deferring this procurement is not recommended due to the increased costs associated with the AQMD regulatory requirements for natural gas fired engines and future anticipated restrictions on emissions. Natural gas fired engines require costly modifications to: maintenance patterns and practices, monitoring equipment, periodic emissions testing and documentation. Non-compliance will result in penalties and/or engine shut down. Electrification of the drives for the compressors will eliminate AQMD's jurisdiction over the stations and result in emissions-free compression.

## **ATTACHMENTS**

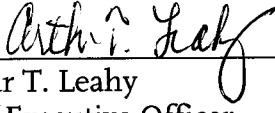
- A. Procurement Summary
- A-1 Procurement History
- A-2 List of Subcontractors
- B. Funding Matrix

Prepared by: Denise Longley, Deputy Executive Officer, Facilities-Operations  
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Carolyn Flowers  
Chief Operations Officer



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Arthur T. Leahy  
Chief Executive Officer

**BOARD REPORT ATTACHMENT A  
PROCUREMENT SUMMARY**

**ELECTRIFICATION CONVERSION OF CNG FUELING FACILITIES WITH STIMULUS  
FUNDING**

1.	Contract Number: OP33900626		
	Recommended Vendor: Trillium USA, LLC		
3.	Cost/Price Analysis Information:		
	A. Proposed Price: \$6,856,995	Recommended Price: \$6,977,968 (\$6,343,607 Firm Fixed, plus \$634,361, 10% Contingency)	
	B. Details of Significant Variances are in Attachment: NA		
4.	Contract Type: Fixed Price		
5.	Procurement Dates:		
	A. Issued: N/A		
	B. Advertised: NA		
	C. Pre-proposal Conference: NA		
	D. Proposals Due: NA		
	E. Pre-Qualification Completed: NA		
	F. Conflict of Interest Form Submitted to Ethics: April 10, 2009		
6.	Small Business Participation:		
	A. Bid/Proposal Goal:  0% , Goal Waived	Date Small Business Evaluation Completed: Not applicable	
7.	Invitation for Bid/Request for Proposal Data:		
	Notifications Sent: NA	Bids/Proposals Picked up: NA	Bids/Proposals Received: NA
8.	Evaluation Information:		
	A. Bidders/Proposers Names:  NA	<u>Bid/Proposal Amount:</u> NA	<u>Best and Final Offer Amount:</u> NA
	B. Evaluation Methodology: Describe Methodology Details that are in Attachment A-1		
9.	Protest Information:		
	A. Protest Period End Date: NA		
	B. Protest Receipt Date: NA		
	C. Disposition of Protest Date: NA		
10.	Contract Administration Mgr: Victor Ramirez	Telephone Number: 922-1059	
11.	Project Manager: Rudy Rey	Telephone Number: 922-4712	

**BOARD REPORT ATTACHMENT A-1  
PROCUREMENT HISTORY**

**ELECTRIFICATION CONVERSION OF CNG FUELING FACILITIES WITH STIMULUS  
FUNDING**

**A. Background on Contractor**

Trillium is a leading provider of Compressed Natural Gas (CNG) fuel infrastructure and fueling services, headquartered in Salt Lake City, Utah. Since 1994, they have provided CNG fueling services to customers around the country and specialized in serving the transit market. Trillium facilities fuel more than 1,900 transit buses per day, displacing more than 30 million gallons of diesel every year, including Metro. Trillium is performing satisfactory work for Metro on two existing Contracts, OP33900626 and OP33900641A. In addition to those two contracts, Trillium has contracts with United Parcel Service (UPS); Los Angeles Unified School District, City of Scottsdale, Arizona, New York City Transit and Orange County Transportation Authority.

**B. Procurement Background**

Metro Awarded Contract OP33900626 in May 1999 for Divisions 5 and 7, and modified the Contract in March 2000 for Division 1. The Contract was awarded as a Public Private Partnership for the design, finance, build, maintenance and operation of Metro fueling facilities. The existing Contract is scheduled to expire March 30, 2010 for Divisions 5 and 7 and on June 1, 2011 for Division 1. This Change Order intends to convert Metro's Compressed Natural Gas (CNG) fueling facility from a gas engine compression system to an electric drive motor system. Since Trillium is the financier, owner, designer and builder of the existing facility, and maintains full responsibility for the day to day operation of each facility under penalty of liquidated damages; any modifications to those fueling facilities must be performed by Trillium. In over 9 years of operation and maintenance, Trillium has had no reportable failures of fueling operation and has not been assessed any liquidated damages. The Contract is a hybrid that includes a firm fixed price, plus interest for the capital improvements, and a fixed unit rate for the dispensing of CNG fuel into Metro's revenue vehicles. This Change Order only affects the capital portions of the Contract, although prior to the completion of the facilities, Metro and Trillium must agree to a new unit rate for the compression of CNG for the remainder of the Contract. The Change Order schedule of 75 weeks from notice to proceed will only pertain to the completion of the modified facilities.

The Diversity & Economic Opportunity Department did not recommend a Disadvantaged Business Enterprise (DBE) participation goal for the Contract. Although limited subcontracting opportunities exist, the Contractor has agreed to provide maximum opportunity for DBE firms to compete for any subcontract work that may become available under the Change Order.

**C. Evaluation of Proposals**

Not applicable.

**D. Cost/Price Analysis Explanation of Variances**

Metro performed an audit of the proposed Change Order and also conducted a technical evaluation and cost analysis of all proposed elements. Based on the audit, cost analysis and fact finding, Metro has determined that the negotiated price is fair and reasonable. The negotiated price represents a 7.5% yield against the Change Order proposal.

**BOARD REPORT ATTACHMENT A-2  
LIST OF SUBCONTRACTORS**

**ELECTRIFICATION CONVERSION OF CNG FUELING FACILITIES WITH STIMULUS  
FUNDING**

**PRIME CONTRACTOR:** TRILLIUM USA LLC

Small Business Commitment

Other Subcontractors

NA

N/A

Total Commitment      0%



**Electrify CNG Fueling Stations CP 202302 (FY10)**

<b>Uses of funds</b>	<b>FY10</b>	<b>FY11</b>	<b>FY12</b>	<b>Total</b>
Acquisition				
Pro Services				
Labor				
Acq. Structures & Equipment	\$12,950,000	\$11,350,000	\$2,550,000	\$26,850,000
Contingency	\$475,000	\$475,000	\$200,000	\$1,150,000
<b>Total</b>	<b>\$13,425,000</b>	<b>\$11,825,000</b>	<b>\$2,750,000</b>	<b>\$28,000,000</b>

<b>Sources of funds</b>	<b>FY10</b>	<b>FY11</b>	<b>FY12</b>	<b>Total</b>
CMAQ				
Clean Fuel 5309				
PC 40%				
TDA4				
FTA (ARRA) Grant	\$13,425,000	\$11,825,000	\$2,750,000	\$28,000,000
<b>Total</b>	<b>\$13,425,000</b>	<b>\$11,825,000</b>	<b>\$2,750,000</b>	<b>\$28,000,000</b>

