

# ADVANCED TRANSIT VEHICLE CONSORTIUM

Los Angeles County Metropolitan Transportation Authority  
470 Bauchet Street, MS 30-2-1  
Los Angeles, CA 90012

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**Richard Hunt**  
General Manager  
Los Angeles Metro

## Executive Vice President:

**John Drayton**  
Director, Vehicle Technology  
Los Angeles Metro

## Chief Financial Officer:

**Josie Nicasio**  
Controller  
Los Angeles Metro

DECEMBER 4, 2014

**SUBJECT: SIX (6) HYBRID BUSES CONVERSIONS TO SUPER LOW EMISSION (SLEB) TRANSIT BUSES**

**ACTION: APPROVE CONTRACT AWARD RECOMMENDATION FOR SLEB TRANSIT BUSES CONVERSIONS TO BYD MOTORS, INC.**

## **RECOMMENDATIONS**

1. Award Contract No. OP33203278, to BYD Motors, Inc. (BYD), Los Angeles, CA, for the conversion of six (6) Metro hybrid buses to SLEB/ZEB standards for a firm fixed price contract value of \$3,909,772.51, including tax and delivery.
2. Authorize ATVC staff to negotiate and execute with BYD future Contract Modifications to Contract No. OP33203278 for an amount not to exceed \$391,000 (10%) of the total contract value.
3. Authorize Contract Modification Authority (CMA) from \$25,000 to \$100,000 per change order.

## **ISSUE:**

In June 2013, the Metro Board directed ATVC staff to initiate a new RFP for the conversion of six existing Metro gasoline electric hybrid buses to Super Low Emission Bus standards.

ATVC's award approval of RFP OP33203278 will allow staff to authorize BYD to proceed with the Work to modify the vehicle fuel and propulsion systems and other key sub-systems for six (6) Metro hybrid buses and to lower NOx emission levels by 75% - 90% in the retrofitted configuration.

## **DISCUSSION**

ATVC purchased six gasoline electric hybrid buses in 2008 supplied by NABI, Inc. These buses used a gasoline electric hybrid propulsion system provided by the former ISE Inc., of Poway, CA. ISE went bankrupt and discontinued all operations in 2010, and ATVC and Metro have been unable to support daily operation of these hybrid vehicles since that time.

ATVC staff considered various potential technologies currently in the market that may be available and applicable for this conversion which include hybrid electric propulsion systems, CNG micro turbines, fuel cell and battery electric subsystems, and other low emission propulsion system components.

There are firms that currently have the specialized capabilities in bus system integration, and who also have the specialized expertise needed to return these buses to a fully operational condition. Converting these buses to an upgraded "Super Low Emission" (SLEB) configuration was consistent with the intent of the original direction from Metro's Board, but the proposals for SLEB configuration proved to be more costly than converting these buses to a Zero Emission (ZE) configuration.

BYD's proposed engineering/technological approach for the conversion will utilize components and subsystems that have already been proven in heavy duty bus operations. The proposed major components have been built in mass production quantities and used in buses that are currently in transit service and have accumulated over 30 million passenger miles.

### **DETERMINATION OF SAFETY IMPACT**

There is no anticipated safety impact for converting the six (6) hybrid vehicles to Zero Emissions Bus (ZEB) electric buses technology. In general, BYD's conversion approach will utilize components and sub systems that have been proven in heavy duty applications and have been mass produced and used in buses currently in transit service.

Zero emission buses are expected to use high voltage electrical systems. While these systems are isolated from operators and passenger compartments, maintenance personnel will need additional specialized training to ensure that they are prepared to maintain these higher voltage propulsion systems.

### **FINANCIAL IMPACT**

Total LOP funding of \$30 million is included in the Vehicle Technology Cost Center (3320) in project 201071. For FY 16, there is \$3.5 million in funding programmed to cover expenses for conversion of these six hybrid buses. Because this is a multi-year contract, the ATVC President and the Cost Center Manager will be responsible for ensuring that future year funding is programmed.

#### **Impact to Budget**

A. Source of funds: Prop C 40%; TDA Article 4; Measure R 35% (bus capital); SLPP Prop 1B; Prop 1B PTMISEA; CMAQ; State of Good Repair (Refer to Attachment B, Funding Plan).

## **ALTERNATIVES CONSIDERED**

Staff considered continuing to not operate these hybrid vehicles in their original configuration. This is not recommended; in the two years of active operation, these buses proved to be unreliable and unsuitable for daily revenue service. Staff considered converting some of these six buses into a Super Low Emission (SLEB) configuration using micro-turbines. The two SLEB approaches were considered but not recommended because it was determined that these options had higher costs and carried more technical risk than BYD's zero emission (ZE) proposal.

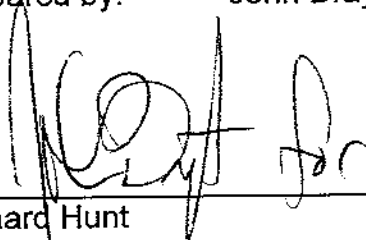
## **NEXT STEPS**

If the Metro Board ratifies the ATVC's award of Contract OP33203278 for the conversion of the six (6) inoperable gasoline hybrid buses, ATVC staff will execute the Contract and issue a notice to proceed.

## **ATTACHMENTS**

Attachment A: Procurement Summary  
Attachment B: Proposed LOP Budget  
Attachment C: June 2013 Board Motion

Prepared by: John Drayton, Executive Vice President, ATVC



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Richard Hunt  
President  
Advanced Transit Vehicle Consortium

Cc: Art T. Leahy, CEO  
Lindy Lee, Deputy CEO  
Bill Foster, Interim COO

PROCUREMENT SUMMARY

SIX GASOLINE ELECTRIC HYBRID BUS CONVERSIONS/OP33203278

1.	<b>Contract Number:</b> OP33203278	
2.	<b>Recommended Vendor:</b> BYD Motors, Inc.	
3.	<b>Type of Procurement (check one):</b> <input type="checkbox"/> IFB <input checked="" type="checkbox"/> RFP <input type="checkbox"/> RFP-A&E <input type="checkbox"/> Non-Competitive <input type="checkbox"/> Modification <input type="checkbox"/> Task Order	
4.	<b>Procurement Dates:</b>	
	A. <b>Issued:</b> April 15, 2014	
	B. <b>Advertised/Publicized:</b> April 16, 2014	
	C. <b>Pre-proposal/Pre-Bid Conference:</b> April 30, 2014	
	D. <b>Proposals/Bids Due:</b> June 26, 2014	
	E. <b>Pre-Qualification Completed:</b> October 23, 2014	
	F. <b>Conflict of Interest Form Submitted to Ethics:</b> October 18, 2014	
	G. <b>Protest Period End Date:</b> (15 Calendar Days after Notification of Intent to Award) December 16, 2014	
5.	<b>Solicitations Picked up/Downloaded:</b> 40	<b>Bids/Proposals Received:</b> 3
6.	<b>Contract Administrator:</b> Elizabeth Hernandez	<b>Telephone Number:</b> (213) 922-7334
7.	<b>Project Manager:</b> Phil Rabottini	<b>Telephone Number:</b> (213) 922-5871

**A. Procurement Background**

This Board Action is for a "Best Value" Request for Proposal (RFP) solicitation issued for a Contractor to convert six existing Metro gasoline electric hybrid buses to Super Low Emission Bus standards. The RFP was issued on April 2014 in accordance with Metro's Acquisition Policy, and the contract type is Firm Fixed Price.

Twelve amendments were issued during the solicitation phase of this RFP.

- Amendment Nos. 1, 2 and 3 issued on April 21, 23, and 28, 2014, respectively, provided responses to questions raised by prospective proposers.
- Amendment No.4 issued on May 1, 2014, provided documents relating to the Pre-Proposal Conference.
- Amendment No.5 issued on May 2, 2014, provided information regarding the schedule for availability of the hybrid buses for inspection to the proposers.
- Amendment No.6 issued on May 6, 2014, provided further responses asked by the proposers after the hybrid bus inspections.

- Amendment No.7 issued on May 8, 2014, provided 1) Answers to questions raised by potential proposers; 2) Revised Attachment 1 – Pricing Forms and 3) Service data and information for the buses for informational purposes only.
- Amendment No. 8 dated May 28, 2014, extended the submittal due date from June 3, 2014 to June 12, 2014.
- Amendment No. 9, dated June 3, 2014, revised Submittal Requirements with regard to Proposer's Anti-Drug and Alcohol Abuse Program, and the Revised Submittal Checklist.
- Amendment No 10, dated June 6, 2014, provided an Excel version of the Pricing forms at the request of prospective proposers.
- Amendment No. 11, dated June 12, 2014, extended the due date to June 26, 2014.
- Amendment No. 12, dated September 16, 2014 was issued to Proposers after receipt of proposals, to provide Proposers within the competitive range with the amended Volume 1 of II of the RFP to include SBE goal participation requirements.

A total of three proposals were received on the proposal due date of June 26, 2014.

## **B. Evaluation of Proposals/Bids**

A Source Selection Committee (SSC) consisting of staff from Vehicle Technology was convened and conducted a comprehensive technical evaluation of the proposals received. The SSC also held direct interviews with each of the three responsive and responsible Proposers and performed manufacturing and engineering site surveys to fully assess the Proposers' capabilities, capacities, strengths and weaknesses.

### **Minimum Qualifications (Pass/Fail)**

To be considered, a proposal must evidence compliance ("Pass") with the following minimum qualifications. Proposals that do not evidence compliance ("Fail") may not be considered beyond the preliminary review.

1. Proposers' firm and/or key personnel shall demonstrate past relevant experience manufacturing and/or modifying propulsion systems on medium duty or heavy duty transit vehicles (or other similar equipment) within the past four (4) years (since 2010).
2. Proposers shall demonstrate that they have access to secure and suitable facilities, tools and equipment necessary to perform the Work.

Firms that met the Minimum Qualifications were then evaluated based on the RFP Evaluation Criteria which consisted of the following Main Factors:

- Price 40%
- Technical Compliance 30%
- Past Experience and Project Management. 30%

The SSC conducted interviews and performed manufacturing site visits. The firms' project managers and key proposed team members had an opportunity to present qualifications and respond to the evaluation committee's questions. In general, each team's presentation addressed the requirements of the RFP, experience with all aspects of the required tasks, and stressed each firm's commitment to the success of the project. Also highlighted were staffing plans, manufacturing plans, schedules and perceived project issues. Each team was asked questions relative to each firm's proposed engineering/technological approach and prior experience implementing this approach, staff experience and qualifications, manufacturing capabilities and capacity, facility development, and work plan.

All of the three proposals received met the Minimum Qualifications criteria, and were evaluated and determined to be within the competitive range. The three responsive, responsible proposers deemed to be within the competitive range are listed below.

1. BYD Motors, Inc. (BYD)
2. Ebus, Inc. (Ebus); and
3. Transportation Power, Inc. (Transpower)

#### **Qualifications Summary of Firms within the Competitive Range:**

##### **BYD Motors, Inc.**

BYD was founded in 1995 and has its offices in Los Angeles, California and a manufacturing facility in Lancaster. BYD has been manufacturing its proprietary propulsion systems since 2010 and the systems include BYD Li+Fe battery, BYD in wheel traction motor rear axle, battery management system and CAN Bus. BYD proposed to provide not only parts and labor to integrate the proposed conversion package but also the engineering resources to model and qualify the entire system into the existing NABI 42 BRT buses that are being converted. BYD's head of engineering in the US, who authored BYD's proposed conversion plan, was on the team that originally designed and qualified the 42' BRT NABI buses.

BYD's electric bus uses BYD's proprietary iron phosphate batteries and propulsion systems. Since January 2011, BYD reports its electric buses have travelled over 16.8 million miles in passenger service worldwide.

## **Ebus, Inc.**

Ebus was founded in 1998 in Downey, CA. Ebus has many years of experience in electric bus engineering and systems integration. Ebus' primary experience has been the manufacture of complete 22-foot 22-seat electric drive buses and trolleys.

In 2002, Ebus manufactured and delivered ten 22-foot electric buses (shuttles) to Santa Barbara MTD. In 2003, Ebus delivered ten 22-foot electric buses (shuttles) to City of Anaheim which operated for 7 years and were later sold to Santa Barbara MTD. In 2004, Ebus delivered five 22-foot electric buses to Indianapolis transit system. Ebus delivered five low floor 22-foot electric drive trolleys to Coral Gables, Florida. Ebus also delivered one 22-foot fuel cell bus to University of Texas, Austin and one 22-foot fuel cell bus to New Haven, CT Transit District.

Ebus proposed a Capstone Turbine Company micro-turbine C-65 for this SLEB conversion. The C65 operates on compressed natural gas, and produces 65 kW of electricity, more than enough to keep the batteries of the electric bus evenly charged when operating in typical transit service.

Ebus maintains a 60,000 foot factory building in Downey. Spare parts are distributed from Downey facility, and is their focal point for warranty and field service activities.

## **Transpower, Inc.**

Transportation Power, Inc. (TransPower) is a California corporation located in Poway, California, and is a vehicle original equipment manufacturer registered with the U.S. Department of Transportation and licensed with the State of California. Founded in 2010 and located in Poway, California, TransPower has developed electric propulsion, battery energy storage, system integration, and vehicle control technologies. TransPower proposes to utilize the strengths of their current product line, and the perspectives and lessons learned by its employees during the conversion of dozens of different vehicle models to EV and HEV propulsion, dating back to 1996.

TransPower's approach for the conversion project is to achieve a super-low emission bus (SLEB) and 300-mile operating range utilizing a modified version of TransPower's most powerful battery-electric drive system, augmented with a Capstone microturbine that will run on compressed natural gas. The components and integration methods proposed by Transpower have not been utilized in heavy-duty transit vehicles.

The SSC's recommendation for the top ranked firm and the table for the scores are as follows:

1	FIRM	Average Score	Factor Weight	Weighted Average Score	Rank
2	<b>BYD MOTORS, INC.</b>				
3	Price	100.00	40.00%	40.00	
4	Technical Compliance	79.17	30.00%	23.75	
5	Past Performance and Project Management Experience	70.83	30.00%	21.25	
7	<b>Total</b>		<b>100.00%</b>	<b>85.00</b>	<b>1</b>
8	<b>EBUS, INC.</b>				
9	Price	74.38	40.00%	29.75	
10	Technical Compliance	66.39	30.00%	19.92	
11	Past Performance and Project Management Experience	60.56	30.00%	18.17	
12	<b>Total</b>		<b>100.00%</b>	<b>67.84</b>	<b>2</b>
13	<b>TRANSPower, INC.</b>				
14	Price	42.89	40.00%	17.16	
15	Technical Compliance	68.33	30.00%	20.50	
16	Past Performance and Project Management Experience	56.11	30.00%	16.83	
17	<b>Total</b>		<b>100.00%</b>	<b>54.49</b>	<b>3</b>

**C. Price Analysis**

The recommended price has been determined to be fair and reasonable based upon adequate price competition, and award to the lowest proposed price offer. Metro also performed fact finding, technical evaluation, independent cost estimate and analysis. The price is 9% higher than the Independent Cost Estimate (ICE) because the ICE did not account for the NRE and product support included in the proposed price.

The recommended awardees' price for the conversion of six hybrid vehicles is \$3.9 million or 32% lower than the next lowest offer.

<u>FIRM</u>	<u>TOTAL PRICE</u>	<u>DIFFERENCE</u>
1. BYD Motors, Inc.	\$3,909,772	—
2. Ebus	\$5,166,240	32%
3. Transpower Inc.	\$8,002,361	105%



The proposed price offers included pricing for the six (6) hybrid vehicle conversions, spares, special tools, test equipment, training, manuals, delivery and taxes and operational/technical support for base years 1 through 3 and three one-year options.

**D. Background on Recommended Contractor**

The recommended firm, BYD Motors, Inc. is headquartered in Los Angeles, CA. BYD also has a facility in Lancaster, California. BYD has been in business for 18 years and is a world leader in the field of battery technology and electric bus vehicles. BYD is the largest supplier of rechargeable batteries in the world, and has the largest market share for Nickel-cadmium batteries, handset Li-ion batteries, cell-phone chargers and keypads worldwide. BYD's current project includes the operation of over 200 electric buses in Shenzhen, China.

BYD's most recent bus clients include Antelope Valley Transit Authority and Stanford University.

BYD's Program Manager has extensive bus experience in the U.S. and China. He has over ten years of experience with BYD, which include being a lead design engineer and BYD America's, New Business Development Manager. He is currently BYD America's Vice President for Operations.

**E. Small Business Participation**

The Diversity and Economic Opportunity Department (DEOD) established a 5% Small Business Enterprise (SBE) goal for trucking opportunities in this solicitation. BYD Motors, Inc. did not make an SBE Commitment. BYD Motors, Inc. explained that the zero emission propulsion and energy storage systems are designed and manufactured by BYD Motors, and that the installation, modification, and engineering of the conversion must be completed by BYD Motors, Inc.

To meet the established SBE goal, Contractors are strongly encouraged to subcontract with small businesses; this message is also communicated in the solicitation document and is reiterated by DEOD representatives during pre-bid/proposal conferences. For outreach assistance, DEOD prepares and includes in the solicitation, a listings of available SBE subcontractors identified by North American Industry Classification Standards (NAICS) codes, for available subcontract opportunities. Contractors are directed to contact DEOD representatives for assistance with identifying small businesses interested in pursuing contracting opportunities. Metro's SBE program is race neutral. Therefore, meeting the SBE goal is neither a condition of award nor an issue of responsiveness.

**F. All Subcontractors Included with Recommended Contractor's Proposal**

	<b>Subcontractor</b>	<b>Services Provided</b>
1.	None	N/A

**ATTACHMENT B**

**ZERO EMISSIONS BUS CONTRACT FUNDING/EXPENDITURE PLAN**

In Thousands	FY14	FY15	FY16 +	Total	% of Total
<b>Uses of Funds</b>					
Acquisition	6,000,000	6,000,000	8,739,250	<b>20,739,250</b>	69.1%
Professional Services <sup>1</sup>	250,000	250,000	3,500,000	<b>4,000,000</b>	13.3%
Labor	300,000	300,000	300,000	<b>900,000</b>	3.0%
Travel	150,000	150,000	100,000	<b>400,000</b>	1.3%
Spare Parts <sup>2</sup>	250,000	250,000	1,386,825	<b>1,886,825</b>	6.3%
Contingency			2,073,925	<b>2,073,925</b>	6.9%
<b>Total Project Cost</b>	<b>6,950,000</b>	<b>6,950,000</b>	<b>16,100,000</b>	<b>\$30,000,000</b>	<b>100%</b>
<b>In Thousands</b>	<b>FY14</b>	<b>FY15</b>	<b>FY16 +</b>	<b>Total</b>	<b>% of Total</b>
<b>Sources of Funds</b>					
Measure R 35%	<b>6,950,000</b>	<b>6,950,000</b>	<b>16,100,000</b>	<b>\$30,000,000</b>	<b>100%</b>
<b>Total Project Funding</b>	<b>6,950,000</b>	<b>6,950,000</b>	<b>16,100,000</b>	<b>\$30,000,000</b>	<b>100%</b>

1. Includes \$3.5 million in funding to cover estimated expenses for converting six existing gasoline hybrid buses to *super low emission configuration*.
2. Includes \$1.2 million in funding to cover estimated expenses for acquiring high voltage "Fast Charging" equipment.
3. Initial source of funds plans for Measure R 35%. Staff will apply other local, state or federal sources as they become available/ applicable to project uses.

**Metro**Los Angeles County  
Metropolitan Transportation AuthorityOne Gateway Plaza  
Los Angeles, CA 90012-2952213.922.2000 Tel  
metro.net**SYSTEM SAFETY AND OPERATIONS COMMITTEE  
JUNE 20, 2013****SUBJECT: ZERO EMISSION BUSES****ACTION: RATIFY ATVC RECOMMENDATION TO AWARD CONTRACT****RECOMMENDATION**

- A. Ratify the Advanced Transit Vehicle Consortium's award of Contract No. OP33202790 to BYD Company Ltd (BYD), Los Angeles, CA, for the manufacturing and delivery of up to twenty-five Zero Emission Buses for a not-to-exceed total contract value of \$20,739,250, including tax and delivery.
- B. Establish a Life-of-Project (LOP) budget for this ATVC project in the amount of \$30,000,000 for Zero Emission Buses in CP201071 – 30 Zero Emission Buses/SLEB Buy.
- C. Approve and amend the FY14 Budget to include the addition of two dedicated FTE's to support ATVC's Zero Emission Bus project, including one electric bus engineer and one electric bus instructor.
- D. Authorize ATVC staff to initiate a new RFP for the conversion of six existing Metro gasoline electric hybrid buses to Super Low Emission Bus standards.

**ISSUE**

In March 2011, the Metro Board directed staff to initiate a new procurement for up to 30 "Super low emission or zero emission buses." In June 2011, the Metro Board directed that the Advanced Transit Vehicle Consortium (ATVC) take responsibility for overseeing this project, and that it would follow an RFIQ process to determine the current state of these technologies, followed by a Best Value RFP for up to 30 buses.

Metro Board ratification of the ATVC's award approval of RFP OP33202790 will allow staff to authorize BYD to proceed with an initial build and delivery of five buses for testing and evaluation purposes. Based on successful testing and evaluation of the five Zero Emission Buses, staff may then proceed with up to twenty additional buses from BYD.

## **DISCUSSION**

Zero Emission technologies, and particularly energy storage technologies, are evolving very rapidly. It is anticipated that vehicles available even within the next 1-3 years are likely to have significantly enhanced operating characteristics, such as extended range, better integrated subsystems, and lighter weight construction. Staff anticipates reporting back to the ATVC and Metro Boards on a regular basis, and may recommend initiating new procurements for additional "Next Generation" Zero Emission and Super Low Emission Buses based on technology developments anticipated within the next 12-36 months.

ATVC purchased six gasoline electric hybrid buses in 2008. These buses use a hybrid propulsion system provided by the former ISE Inc., of Poway, CA. ISE went bankrupt and discontinued all operations in 2010, and Metro Operations has not been able to support operation of these vehicles since that time.

There are several firms that have the specialized capabilities in bus system integration, and who also have the specialized expertise needed to return these buses to a fully operational condition. Converting these buses to an upgraded "Super Low Emission" (SLEB) configuration is consistent with the intent of the original direction from Metro's Board. Staff will use a performance contract that includes incentives for firms that provides the technical and maintenance support necessary to keep this equipment in a reliable operating condition.

As part of this project, staff recommends adding two positions in the FY14 budget. The first position would be an electric bus engineer who would specialize in high voltage electrical systems and components. A second position would be an electric bus instructor. Both of these positions would be dedicated to this project, and would support both the delivery of this equipment and its release into revenue service. Once these buses are put into service, these positions would be responsible for providing training and technical support for Metro's all electric buses, as well as providing support for future all-electric bus projects that may follow this project.

The contract award to BYD is \$20,739,250. The LOP budget is \$30,000,000. The remaining \$9,260,750 will be used for the conversion of the gasoline electric hybrid buses, as well as procurement of the necessary peripheral systems and components. Staff will bring these items to the board for separate approval.

## **DETERMINATION OF SAFETY IMPACT**

There is no anticipated safety impact for procuring and operating new all-electric buses. In general, safety provisions found on new buses is superior in design, quality and functionality compared to the safety systems of old buses that have reached the end of their life and are being taken out of service.

Zero emission buses are expected to use high voltage electrical systems. While these systems are isolated from operators and passenger compartments, maintenance personnel will need additional training to ensure that they are prepared to maintain these high voltage systems.

## **FINANCIAL IMPACT**

The LOP requested for this report is \$30,000,000. LOP funding of \$6,092,919 is included in the FY14 Budget in Cost Center 3320 – Vehicle Technology, Project 201071 – 30 Zero Emission Bus/SLEB Buy. Since this is a multi-year project, the cost center manager, project manager, and General Manager will ensure that costs will be budgeted in future fiscal years.

### **Impact to Budget**

The source of funds is Measure R 35%. Staff will reassess funding sources and apply other applicable fund sources as they become available.

## **ALTERNATIVES CONSIDERED**

Staff considered awarding a contract for Super Low Emission Buses (SLEB), but this is not recommended. ATVC currently has six inoperable gasoline hybrid buses that can be repowered in a SLEB configuration, and it is a better use of ATVC/Metro funding to have these existing buses converted to an SLEB configuration.

## **NEXT STEPS**

If the Metro Board ratifies the ATVC's award of Contract OP33202790 for up to 25 ZEB vehicles, ATVC staff will execute the Contract and issue a notice to proceed. Staff will also take steps to issue a new RFP for conversion of the six gasoline electric hybrid buses to an upgraded SLEB configuration.

## **ATTACHMENTS**

Attachment A: Procurement Summary

Attachment B: Proposed LOP Budget

Attachment C: June 2011 Super Low / Zero Emission Bus Program Board Report

Prepared by: John Drayton, Executive Vice President, ATVC

Questions: Michelle Stewart, Assistant Administrative Analyst, Operations  
(213) 922-7270

*Michelle Lopes Caldwell*

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Michelle Lopes Caldwell  
Chief Administrative Services Officer



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Frank Alejandro  
Chief Operations Officer

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Arthur T. Leahy  
Chief Executive Officer

**PROCUREMENT SUMMARY  
UP TO THIRTY ZERO EMISSIONS BUSES**

1.	Contract Number: OP33202790	
2.	Recommended Vendor:	
3.	Type of Procurement (check one): <input type="checkbox"/> IFB <input checked="" type="checkbox"/> RFP <input type="checkbox"/> RFP-A&E <input type="checkbox"/> Non-Competitive <input type="checkbox"/> Modification <input type="checkbox"/> Task Order	
4.	Procurement Dates:	
	A. Issued: February 9, 2012	
	B. Advertised/Publicized: February 18, 2012	
	C. Pre-proposal/Pre-Bid Conference: February 23, 2012	
	D. Proposals/Bids Due: June 22, 2013	
	E. Pre-Qualification Completed: 5/23/12	
	F. Conflict of Interest Form Submitted to Ethics: May 21, 2013	
	G. Protest Period End Date: June 19, 2013	
5.	Solicitations Picked up/Downloaded: 108	Bids/Proposals Received: 7
6.	Contract Administrator: Susan Dove	Telephone Number: (213) 922-7451
7.	Project Manager: John Drayton	Telephone Number: (213) 922-5882

**A. Procurement Background**

This Board action is for a "Best Value" Request for Proposal (RFP) solicitation issued to procure up to 30 new 40' low floor Zero Emission transit buses. The RFP was issued February 2012 in accordance with Metro's Acquisition Policy, and the contract type is Unit Rate, Firm Fixed Price. Twelve amendments were issued during the solicitation phase of this RFP. Three amendments were issued to proposers in the competitive range after receipt of proposals.

- Amendments No. 1 issued March 2, 2012 provided commercial terms modifications and clarifications to solicitation documents.
- Amendment No.2 issued March 14, 2012 provided commercial terms modifications to the solicitation documents, including labor values and provided answers to questions posed by interested parties.
- Amendment No.3 issued March 29, 2012 provided answers to questions posed by interested parties, and modified RFP technical specification requirements and commercial terms.



- Amendment No.4 issued April 20, 2012 provided commercial terms modifications to solicitation documents including a revision to the proposal due date.
- Amendment No.5 issued April 27, 2012 provided answers to questions posed by interested parties, and modified RFP technical specification requirements and commercial terms.
- Amendment No. 6 dated May 11, 2012 provided modifications to the RFP pricing forms.
- Amendment No. 7, dated May 18, 2012, provided clarifications and answers to questions and provided changes in RFP key procurement dates.
- Amendment No 8, dated May 29, 2012, revised the proposal due date.
- Amendment No. 9, dated June 12, 2012, provided a sample invoice form.
- Amendment No. 10, dated June 13, 2012 provided modifications to RFP key dates, and commercial terms.
- Amendment No. 11, dated January 30, 2013 provided modifications to RFP key dates, and a modified RFP technical specification requirements and commercial terms.
- Amendment No. 12, dated February 5, 2013 provided modifications to RFP key dates, and commercial terms.
- Amendment No. 13, dated April 30, 2013 invited proposers in the competitive range to submit best and final offers.
- Amendment No. 14 dated May 2, 2013 provided clarifications to Proposers in regards to the pricing sheet.
- Amendment No. 15, dated May 3, 2013, provided clarifications to proposers.

A total of seven proposals were received on June 22, 2012. Five proposals were received in response to the Zero Emissions Bus technical specification. One proposal was received in response to the Super Low Emissions Bus technical specification. An alternate proposal was also received, but it was not evaluated as part of this procurement.

### **B. Evaluation of Proposals/Bids**

Three firms did not meet the minimum qualifications of the solicitation and were not considered for further evaluation. One firm did not provide the required documentation to thoroughly evaluate the proposal; therefore its proposal was deemed non-responsive. A total of three proposers were evaluated and determined to be in the competitive range. A Source Selection Committee (SSC) consisting of staff from Vehicle Technology, Bus Operations Maintenance, Service Planning was convened and conducted a comprehensive technical evaluation of the proposals received. The SSC also consisted of experts in the area of advanced transit technologies and project management. The SSC also held direct interviews with each responsive and responsible Proposer and performed manufacturing and engineering site surveys to fully assess the Proposers' capabilities, capacities, strengths and weaknesses.

The proposals were evaluated based on the following evaluation criteria and weights:

<b>Evaluation Criteria</b>	<b>Weight</b>
Life Cycle Costs	30%
Technical Compliance	25%
Local Jobs	20%
Project Management Experience	15%
Experience and Past Performance	10%

The evaluation criteria are appropriate and consistent with criteria developed for similar bus procurements. Several factors were considered when developing these weights, giving the greatest importance to Life Cycle Costs and Technical Compliance to ensure that the proposed vehicle meets all of the functional and performance requirements described in the technical specification, while providing the best overall value to Metro. Since this project is state and locally funded, it was determined that including an evaluation criterion for Local Jobs Employment was appropriate.

The SSC conducted interviews and performed manufacturing site visits. The firms' project managers and key proposed team members had an opportunity to present qualifications and respond to the evaluation committee's questions. In general, each team's presentation addressed the requirements of the RFP, experience with all aspects of the required tasks, and stressed each firm's commitment to the success of the project. Also highlighted were staffing plans, manufacturing plans, schedules and perceived project issues. Each team was asked questions relative to each firm's proposed staff, capability, manufacturing capacity, facility development, new job training, job creation and previous experience implementing its proposed manufacturing plan. The three responsive, responsible proposers deemed to be within the competitive range are listed below.

### **Qualifications Summary of Firms within the Competitive Range**

#### **BYD**

BYD was founded in 1995. BYD is the largest supplier of rechargeable batteries in the world and has the largest market share for Nickel-cadmium batteries, handset Li-ion batteries, cell-phone chargers and keypads worldwide. It is the largest supplier of rechargeable batteries, and it also has the second largest market share for cell-phone shells in the world. BYD's most recent transit bus clients include Hertz USA, Long Beach Transit and Stanford University.

BYD was the highest rated Best Value Proposer. BYD's proposal strengths include: lowest capital price, and the highest rating in technical capability, past performance, project management and local job commitment.

**DesignLine**

DesignLine Corporation is headquartered in Charlotte, North Carolina. DesignLine is a manufacturer of coach, electric and range-extended electric (hybrid) buses. Design Line was founded in 1985 and began producing hybrid city buses in the late 1990s. Design Line currently operates its electric vehicles in Denver, Colorado and Charlotte International Airport.

**Proterra**

Proterra, headquartered in Greenville, South Carolina, was founded in 2004. Proterra has delivered full-size transit vehicles that meet California’s Zero Emissions Bus Rules as recognized by the California Air Resources Board (CARB). Proterra’s electric vehicles are currently operated in San Antonio, Texas and Denver, Colorado and Pomona, California.

<b>1</b>	<b>FIRM</b>	<b>Average Score</b>	<b>Factor Weight</b>	<b>Weighted Average Score</b>	<b>Rank</b>
<b>2</b>	<b>BYD</b>				
<b>3</b>	Life Cycle Cost	84.68	30.00%	25.40	
<b>4</b>	Technical Compliance	71.61	25.00%	17.90	
<b>5</b>	Local Jobs Plan	100.00	20.00%	20.00	
<b>6</b>	Project Management Experience	73.46	15.00%	11.02	
<b>7</b>	Experience and Past Performance	72.60	10.00%	7.26	
<b>8</b>	<b>Total</b>		<b>100.00%</b>	<b>81.58</b>	<b>1</b>
<b>9</b>					
<b>8</b>	<b>Design Line</b>				
<b>9</b>	Life Cycle Cost	100.00	30.00%	30.00	
<b>10</b>	Technical Compliance	69.61	25.00%	17.40	
<b>11</b>	Local Jobs Plan	82.87	20.00%	16.57	
<b>12</b>	Project Management Experience	57.53	15.00%	8.63	
<b>13</b>	Experience and Past Performance	53.95	10.00%	5.40	
<b>14</b>	<b>Total</b>		<b>100.00%</b>	<b>78.00</b>	<b>2</b>

15	Firm	Avg. Score	Factor Weight	Weighted Average Score	Rank
16	Proterra				
17	Life Cycle Cost	62.03	30.00%	18.61	
18	Technical Compliance	63.69	25.00%	15.92	
19	Local Jobs Plan	88.09	20.00%	17.62	
20	Project Management Experience	57.97	15.00%	8.70	
21	Experience and Past Performance	56.40	10.00%	5.64	
22	Total		100.00%	66.49	3

### C. Price Analysis

The recommended price has been determined to be fair and reasonable based upon adequate price competition, and award to the lowest proposed price offeror. Metro also performed fact finding, technical evaluation, independent cost estimate and discussions. The price is 14% lower than the Independent Cost Estimate (ICE). The recommended awardees' price for 30 vehicles is \$2.4 million or 9.3% lower than the next lowest offer.

	Bidder/Proposer Name	Initial Proposal for 30 Buses	Negotiated BAFO for 30 Buses
1.	BYD	\$27,105,370	\$25,336,686
2.	Design Line	\$34,241,611	\$27,699,847
3.	Proterra	\$33,324,577	\$32,424,548

Note: Award recommendation is for only 25 buses. The life cycle cost for 30 buses was used for proposal evaluation purposes.

### Life Cycle Cost

Metro calculated all identified life cycle cost impacts against a baseline of a standard Metro 40' CNG bus. Price scoring for evaluation purposes was based on the ratio of the operating cost for a standard CNG bus divided by the estimated life cycle cost per seat mile for each proposed vehicle.

Specific costs defined in the life cycle costs calculation included:

- Range between fueling/charging
- Seating Capacity
- Fueling/Energy Costs
- Weight
- Replacement Component Costs
- Speed
- Other factors (anticipated maintenance costs and other factors)
- Purchase price
- Maintenance Costs (Scheduled and Unscheduled)
- Infrastructure costs
- Energy Storage costs
- Fuel Costs

The seat per mile for each proposed bus is listed below:

<u>Proposer</u>	<u>Cost per Seat Mile</u>
BYD	13.7 cents per seat mile
Design Line	11.8 cents per seat mile
Proterra	18.7 cents per seat mile

**D. Background on Recommended Contractor**

The recommended firm, BYD North America is headquartered in Los Angeles, CA. BYD North America also has a facility in Lancaster, California. BYD has been in business for 18 years and is a leader in the field of battery technology and electric bus vehicles. BYD is the largest supplier of rechargeable batteries in the world, and has the largest market share for nickel-cadmium batteries, handset li-ion batteries, cell-phone chargers and keypads worldwide BYD's most recent clients include Long Beach Transit and Stanford University.

BYD's Project Manager has extensive bus experience in the U.S. and China. He has over nine years' experience including his position as a lead design engineer. He is currently BYD America's, New Business Development Manager overseeing BYD's U.S. Market Division.

**E. Small Business Participation**

Metro's Small Business Enterprise (SBE) requirement established for this procurement requires proposers to develop and submit an SBE Plan, which must include an established overall SBE goal. The recommended awardee, BYD established an overall SBE goal of 5% and identified subcontracting opportunities, as described in its SBE Plan. BYD's efforts to meet the overall goal will be monitored throughout the life of the contract.

**ATTACHMENT B**

**ZERO EMISSIONS BUS CONTRACT FUNDING/EXPENDITURE PLAN**

In Thousands	FY14	FY15	FY16 +	Total	% of Total
<b>Uses of Funds</b>					
Acquisition	6,000,000	6,000,000	8,739,250	<b>20,739,250</b>	69.1%
Professional Services <sup>1</sup>	250,000	250,000	3,500,000	<b>4,000,000</b>	13.3%
Labor	300,000	300,000	300,000	<b>900,000</b>	3.0%
Travel	150,000	150,000	100,000	<b>400,000</b>	1.3%
Spare Parts <sup>2</sup>	250,000	250,000	1,386,825	<b>1,886,825</b>	6.3%
Contingency			2,073,925	<b>2,073,925</b>	6.9%
<b>Total Project Cost</b>	<b>6,950,000</b>	<b>6,950,000</b>	<b>16,100,000</b>	<b>\$30,000,000</b>	<b>100%</b>
<b>In Thousands</b>	<b>FY14</b>	<b>FY15</b>	<b>FY16 +</b>	<b>Total</b>	<b>% of Total</b>
<b>Sources of Funds</b>					
Measure R 35%	<b>6,950,000</b>	6,950,000	16,100,000	<b>\$30,000,000</b>	100%
<b>Total Project Funding</b>	<b>6,950,000</b>	<b>6,950,000</b>	<b>16,100,000</b>	<b>\$30,000,000</b>	<b>100%</b>

1. Includes \$3.5 million in funding to cover estimated expenses for converting six existing gasoline hybrid buses to *super low emission configuration*.
2. Includes \$1.2 million in funding to cover estimated expenses for acquiring high voltage "Fast Charging" equipment.
3. Initial source of funds plans for Measure R 35%. Staff will apply other local, state or federal sources as they become available/ applicable to project uses.



**Metro**

Los Angeles County  
Metropolitan Transportation Authority

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Los Angeles, CA 90012-2952

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metro.net

**ATTACHMENT C**

**OP4**

**OPERATIONS COMMITTEE  
June 16, 2011**

**SUBJECT: SUPER LOW / ZERO EMISSION BUS PROGRAM**

**ACTION: AUTHORIZE SOLICITATION FOR ADVANCED 40' BUSES**

**RECOMMENDATION**

- A. Authorize the Chief Executive Officer and the Advanced Transit Vehicle Consortium (ATVC) to solicit a Best Value Request for Proposal (RFP) for award of one or more contracts to purchase up to 30 Super Low/Zero Emission Buses as a competitive negotiation pursuant to PCC § 20217 and MTA's Procurement Policies and Procedures.
- B. As part of this RFP for Super Low/Zero Emission Buses, authorize staff to include RFP terms and conditions evaluation criteria and proposal submittal requirements designed to create employment opportunities in Los Angeles County.

**ISSUE**

By June 2012, the California Air Resources Board (CARB) is scheduled to issue renewed guidance requiring the procurement of zero emission buses (ZEB) for public transit operators. At this time, many ZEB technologies are immature, prohibitively expensive and/or unreliable and unsuitable for daily transit service. This procurement is intended to help foster new developmental ZEB technologies, and to increase MTA operation's exposure to these advanced technologies. Several advanced technology propulsion systems are expected to be considered as part of this procurement, potentially including vehicles using fuel cells, batteries, or other advanced electric-hybrid systems. It is likely that two or more different technical approaches will be demonstrated as part of this procurement.



At the March Board Meeting, staff was directed by the Board to "Develop a recommended strategy and timeline, subject to future review and approval by the MTA Board, for transitioning to super low/zero emission buses." In response to this direction, last month the Advanced Transit Vehicle Consortium (ATVC) adopted a resolution to initiate an RFP for up to 30 super low emissions/zero emission buses, and the ATVC Board asked that these procurement plans be brought back to the MTA Board for concurrence.

## **DISCUSSION**

The ATVC action authorizes the initiation of a new competitive solicitation for 40' transit buses as described in PCC §20217. Between FY12-FY15, MTA and ATVC have been directed by the Board to procure ZEB/SLEB buses to replace buses that will reach the end of their useful life during this period. Part of ATVC's action included direction to potentially consider multiple awards, and to return to the ATVC and MTA Board with alternative procurement scenarios if appropriate (i.e. such as larger quantities of vehicles if required to reach economies of scale).

The use of a "Best Value" competitive negotiation process will provide for consideration of such factors as;

- Broadest possible range of competing technologies, products and materials available
- New Technology Propulsion Systems with Significant Emissions Reduction/Benefits
- Fitness of purpose
- Performance reliability
- Manufacturer's warranty
- Support logistics
- Other similar factors in addition to price in the award of these contracts.

Utilization of this process for this procurement will also permit discussions with the proposers to evaluate the performance and reliability of the proposed components, warranty factors, cost data and delivery time tables to determine the bus most suited for MTA's needs.

Staff does not recommend using a conventional low-bid procurement approach. Using a "Low Bid" procurement approach would not be suitable for considering design, engineering, and advancements in technology and manufacturing requirements associated with producing advanced lightweight vehicles.

As part of this solicitation, staff intends to quantify the value of advanced technology ZEB and SLEB vehicles. The intent of this procurement is to provide MTA with vehicles that exceed all current emission requirements. It is expected that proposers may submit

vehicles powered by hydrogen fuel cells, battery electric propulsion systems, as well as advanced ICE.

If this item is approved, staff plans to initiate a solicitation within 60 days. The procurement process is expected to be conducted during this summer/fall, and an award recommendation would be expected shortly after the end of this calendar year. It is expected that aside from the propulsion systems, this procurement would be for conventional 40' buses. At this time it is unknown how quickly vehicles would be produced under this contract, but it is expected that vehicles would be delivered and put into service between FY12-FY15.

Routine replacement of bus fleet rolling stock is a normal part of MTA's operation. Use of a negotiated procurement approach for these acquisitions helps ensure that vehicles procured are best suited for MTA's operational requirements. These buses are also expected to serve as a demonstration for new technologies that can provide future emission benefits for our fleet.

The use of a Local Jobs Program in the RFP submittal requirements and evaluation criteria would allow staff to create incentives for revenue vehicle manufacturers to consider developing design, manufacture and assembly jobs in Los Angeles County. A recent determination by the Federal Transportation Agency (FTA) prohibits the use of local preference incentives in a federally funded program.

## **FINANCIAL IMPACT**

Funds required to issue this procurement are included in the FY12 budget cost center 3320 Vehicle Technology in project 306002, Operations Maintenance. Once this solicitation is completed, staff will return to the Board to authorize the contract award and establish a life-of-project budget for these buses.

### **Impact to Budget**

The source of funds for the buses will be identified at time of contract award. Most likely they will be funds eligible for bus and rail operations and capital. Preliminary funding plans for this contract(s) include a combination of local funds, including MR35 Clean Fuel and TDA4 funding during FY13, FY14, and FY15 at approximately \$10 million each year.

The final decision and commitment to buy buses will be made after the solicitation is complete and the total cost of the buses is known. If this action is approved, funding for this procurement would then be identified and committed as part of the annual update of the FY12-FY15 Capital Program and Ten Year Forecast. The Chief Operating Office and the Project Manager will be responsible for budgeting future year costs for the life of the project.

## **ALTERNATIVES CONSIDERED**

Staff considered not proceeding with the purchase of these buses at this time. This alternative is not recommended as deferring the purchase of these new vehicles would delay the transition to ZEB requested by the Board and continue operation of conventional CNG bus technologies. It is expected that this action will help foster accelerated develop of low emission technologies that may be used for the MTA bus fleet in the future.

A second alternative considered by staff was to use a "low-bid" procurement approach rather than procuring these vehicles using a negotiated procurement. A low-bid procurement approach is not recommended due to the technically sophisticated nature of these vehicles.

A third alternative considered was to use Federal funding sources for this contract. By electing to use local funding sources, staff has the option of including local preferences as a consideration in any contract award(s).

Staff also considered purchasing larger 45' or 60' buses. At this time, staff has determined that MTA's bus fleet has enough articulated 60' and 45' composite buses to effectively cover MTA's highest ridership lines that require larger vehicles.

## **NEXT STEPS**

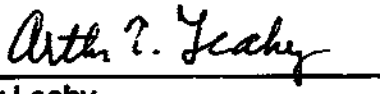
If this action is approved, staff would proceed with a new Best Value solicitation for 40' buses.

## **ATTACHMENTS**

- A: Motion by Directors Villaraigosa, Knabe, Antonvich
- B: ATVC Board Action Approving RFP for 30 Buses

Prepared by: John Drayton  
Manager of Vehicle Technology, Los Angeles Metro  
Executive Vice President, Advanced Transit Vehicle Consortium

*For*   
Lonnie Mitchell  
Chief Operations Officer

  
Arthur Leahy  
Chief Executive Officer

FINANCE AND BUDGET COMMITTEE  
MARCH 16, 2011  
OPERATIONS COMMITTEE  
MARCH 17, 2011

**F&B5**

**MOTION BY DIRECTORS VILLARAIGOSA, KNABE AND  
ANTONOVICH**

**Super Low/Zero Emission Bus Program**

The Los Angeles County Metropolitan Transportation Authority (MTA) was a pioneer in moving its bus fleet to cleaner alternative fuels and continues to be a national leader, with the largest fleet of compressed natural gas (CNG) buses in the U.S. and a 100% CNG fleet.

This transition from diesel to CNG buses was not made for economic or business reasons.

It was known and it is the case that the transition would cost MTA more than continuing with a diesel fleet through higher vehicle costs and new fueling infrastructure.

Instead, the MTA Board made this transition for public policy reasons, namely to reduce emissions (particulate matter, nitrous oxides, and sulfur oxides) and improve public health.

The MTA Board decided to make an investment in cleaner air for the residents, workers, and visitors of Los Angeles County and the South Coast air basin.

Since MTA started buying CNG buses there has been a growing focus on reducing greenhouse gases (GHG) as well.

Today, emerging technologies offer the hope of super low or zero emissions, including electric, fuel cell, and hybrid buses.

However, buses featuring these technologies have a number of challenges for operating agencies like MTA, including limited in-service experience, relative higher vehicle acquisition costs, and potential additional infrastructure costs.

On the other hand, these newer buses may reduce operating and maintenance costs and lower life cycle costs than our current fleet.

As a matter of public policy, MTA should continue to be on the forefront of deploying lower emission buses, but we should do so in a fiscally and operationally prudent manner.

**I THEREFORE MOVE that the MTA Board direct the CEO to develop a recommended strategy and timeline, subject to future review and approval by the MTA Board, for transitioning to super low/zero emission buses.**

**###**

**ADVANCED TRANSIT VEHICLE CONSORTIUM**

Los Angeles County Metropolitan Transportation Authority  
800 Lyon Street, MS 30-2-1  
Los Angeles, CA 90012

**2**

Board of Directors:

Michael B. Antroovich  
Metro Board Member and  
Supervisor, 15th District  
Los Angeles County and  
County Board  
S.C.A.G.M.O

Dr. William Burke  
Capt., Exam Capt. Air Quality  
Management District

John Pannan  
Metro Board Member and  
County Member City of Downey

Arturo Villalobos  
Metro Board Member and  
Mayor City of Los Angeles

Zoe Yarnesky  
Metro Board Member and  
Supervisor, 13th District  
Los Angeles County

Alternates:

Er. Chung Lin  
Deputy Executive Officer  
South Coast Air Quality  
Management District

Michael Cline  
Deputy  
Police Director  
Los Angeles County

John De La Vega  
Deputy Mayor  
City of Los Angeles

Walter Resasco  
Deputy  
Third District  
Los Angeles County

President:

Richard Hettl  
General Manager, Labor and  
Employee Relations  
Los Angeles Metro

Executive Vice President:

John Grayson  
Manager, Light Rail Technology  
Los Angeles Metro

Chief Financial Officer:

Joelle Kinsale  
Controller  
Los Angeles Metro

April 20, 2011

TO: ATVC BOARD OF DIRECTORS

FROM: For JOHN DRAYTON 

SUBJECT: PROCUREMENT OF ZERO EMISSION BUSES

At the March 2011 Operations Committee meeting, the Metro Board of Directors recommended a separate RFP that would be released simultaneously to this Best value RFP to obtain up to 30 zero emission revenue vehicles that can be assessed as a pilot prototype program

RECOMMENDATION:

A. The ATVC Board finds that the procurement of forty-foot (40') Zero Emission Transit Buses under Public Utilities Code § 130232 does not constitute a procurement method adequate for MTA's needs. The Board hereby authorizes procurement of these 40' advanced transit buses pursuant to Public Contracts Code (PCC) §20217 for procurement by competitive negotiation.

Requires Two-Thirds Vote

B. Authorize the Chief Executive Officer (CEO) to solicit a Best Value Request for Proposal (RFP) for a contract to purchase up to 10 advanced transit buses, with Options for up to an additional 20 buses, as a competitive negotiation pursuant to PCC § 20217 and MTA's Procurement Policies and Procedures.

C. Authorize staff to include RFP terms and conditions, evaluation criteria and proposal requirements designed to create employment opportunities in Los Angeles County if permitted by the project funding source.

## **ISSUE**

This action authorizes the initiation of a new competitive solicitation for forty-foot (40') zero emission transit buses as described in PCC §20217. Between FY12-FY14, MTA will procure a base order of 10 zero emission buses to replace buses that will reach the end of their useful life during this period. The 20 option vehicles in this order would provide to purchase additional replacement vehicle if required.

The use of a "Best Value" competitive negotiation process will provide for consideration of such factors as:

- The use of innovative new technologies
- The use of competing products and materials
- Fitness of purpose
- Manufacturer's warranty
- Vendor financing
- Performance reliability
- Standardization Life cycle costs
- Delivery timetables
- Support logistics
- Other similar factors in addition to price in the award of these contracts.

Utilization of this process for this procurement will also permit discussions with the proposers to evaluate the performance and reliability of the proposed components, warranty factors, cost data and delivery time tables to determine the bus most suited for MTA's needs.

Staff does not recommend using a conventional low-bid procurement approach. Using a "Low Bid" procurement approach would not be suitable for considering design, engineering, advancements in technology and manufacturing requirements associated with producing advanced lightweight vehicles.

As part of this solicitation, staff intends to quantify various approaches to achieving a Zero Emission Bus for transit operations. The California Air Resources Board (CARB) has identified three different approaches for reaching a ZEB standard: fuel cells, battery-electric, and electric trolley-bus. This solicitation will consider any of these approaches, and will identify the approach that offers the most cost effective ZEB in terms of vehicle cost, life cycle operating cost, and facility costs. This procurement will also consider technical approaches that qualify as "Super Low Emission" vehicles, compared to current emission standards.

## **ALTERNATIVES CONSIDERED**

Staff considered using a "low-bid" procurement approach rather than procuring these vehicles using a negotiated procurement. A low-bid procurement approach is not recommended due to the technically sophisticated nature of these vehicles.

## **FINANCIAL IMPACT**

Funds required to issue this procurement are included in the FY12 budget in projects 201080 and 308002, Cost Center 3320 Vehicle Technology. Once this solicitation is completed, Staff will return to the Board to authorize the contract award and to establish a life-of-project budget for these buses.

### **Impacts to Bus and Rail Enterprise Fund Operating and Capital Budgets**

The source of funds for the buses will be identified at the time of contract award. Most likely they will be funds eligible for bus and rail operations and capital.

Funding for these buses is included in MTA's adopted Long Range Plan and Ten-Year Financial Forecasts. The final decision and commitment to buy buses will be made after the solicitation is complete and the total cost of the buses is known. If this action is approved, funding for this procurement would then be identified and committed as part of the annual update of the FY12-FY14 Capital Program and Ten-Year Forecast. The Chief Operating Officer and the Project Manager will be responsible for budgeting future year costs for the life of the project.

## **NEXT STEPS**

If this action is approved, this recommendation will be forwarded to the MTA Board of Directors for their review and concurrence. If the MTA Board concurs with this action, staff will proceed with a new Best Value solicitation for 40' zero emission buses.

Attachment - Villaragrosa/Knabe/Antonovich Motion

Copies:     Art Leahy  
              Paul Taylor  
              Lorris Mitchell  
              Richard Hunt  
              Alex DiNuzzo  
              Mike Stange  
              John Roberts