

# City of Columbia

701 East Broadway, Columbia, Missouri 65201



**Agenda Item Number:** R 128-15

**Department Source:** Public Works

**To:** City Council

**From:** City Manager & Staff

**Council Meeting Date:** 8/03/2015

**Re:** Authorize Bus Evaluation Program Agreements with BYD Coach and Bus & Transferring Funds

## Documents Included With This Agenda Item

Council memo, Resolution/Ordinance, Exhibits to Resolution/Ordinance

**Supporting documentation includes:** Bus Fleet Fuel & Maintenance Expenses Graph

## Executive Summary

Authorizing the City Manager to execute Bus Evaluation Program Agreements with BYD Coach and Bus, for one (1) 40-foot electric bus and three (3) 30-foot electric buses. The term of the agreements is for one year from the time of delivery, estimated at September 1, 2015 for the 40-foot bus, and December 1, 2015 for the 30-foot buses. The monthly lease price of \$4,750 for the 40-foot bus would be transferred from existing capital funds, previously designated for bus replacement, for the balance of fiscal year 2015. An additional transfer will be required in FY 2016 for the remaining lease payments for both agreements.

## Discussion

The Public Works Transit division performed a brief demo of a BYD electric bus for several weeks this past spring. The 2015 model K9 electric bus performed well during this initial demo and a more extensive evaluation was requested. The proposed Bus Evaluation Program Agreements were presented as the next step for a more extensive assessment. This one year program will allow Transit Division staff to extensively test the electric buses on all routes, as well as in adverse weather conditions and driving situations.

Transit's current fleet of 33 heavy duty buses operate diesel engines. Fifteen of these buses are 2001 and 2000 model year, and have exceeded the FTA determined "Useful Life" standards. While still functional and safe to operate, these buses will continue to see high dollar maintenance costs due to age, such as engine and transmission replacements. Engine replacements for these vehicles can range from \$17,000 to \$20,000 each. Fourteen diesel buses in the fleet are 2010 model year or newer. These buses are also showing very high, and unanticipated, maintenance costs due to filtration systems required by new 2010 emissions standards.

In February of 2015, Transit purchased two (2) CNG heavy-duty buses which have been in operation since April; however, there is not yet enough comparative data on the associated costs and potential savings for these vehicles. While there are leasing options available for CNG buses, it would be 18 months from the time a contract is signed until delivery, due to protracted production schedules.

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In the initial demo of the electric bus, staff were impressed with the projected savings in fuel/energy costs and maintenance. At current prices, a typical daily fuel fill expense on a diesel bus is between \$65 and \$70. In initial tests, to charge the electric bus for the same equivalent daily usage, expense would be between \$10 and \$15. Additionally, the electric bus requires no engine or powertrain fluids, filters and associated maintenance. There are no emission filtration systems and the regenerative braking system is projected to have double the life of current brake systems. The batteries on the BYD electric buses are fully warranted for 12 years. See attached spreadsheet for reference of projected operating expense savings.

The agreement with BYD Motors, Inc provides limited risk to the City for this evaluation. If the City is unsatisfied with the performance of the vehicles at the end of the one year period, the vehicles may be returned. If any vehicle is out of service for 30 days or more, the agreement can be terminated.

Funds for the lease payment would come from transportation sales tax revenue set aside annually for capital matching funds for bus replacement. As with all transit agencies nationwide, the City has not received an adequate grant for bus replacement since 2012. At this time there are no prospective grants available for heavy-duty bus replacement in the foreseeable future.

## Fiscal Impact

**Short-Term Impact:** 40 Foot Bus: \$4,750 per month would be transferred from previously appropriated funds designated for capital bus replacement. Over the year of the agreement, the total amount of lease payments would be \$57,000

30 Foot Buses (3) : \$4,391 per month would be transferred from previously appropriated funds designated for capital bus replacement. Over the year of the agreement, the total amount of lease payments would be \$158,076.

**Long-Term Impact:** There will only be a long-term impact if the City agrees to continue the lease or purchase the vehicle at the end of the one year term of the Evaluation Agreement.

## Vision, Strategic & Comprehensive Plan Impact

Vision Impact: Community Pride and Human Relations, Environment, Transportation

Strategic Plan Impact: Customer Focused Government, Financial Health, Growth Management, Infrastructure

Comprehensive Plan Impact: Environmental Management, Infrastructure, Mobility, Connectivity, and Accessibility, Livable & Sustainable Communities

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## Suggested Council Action

Authorize the City Manager to execute the Bus Evaluation Program Agreements with BYD Motors, Inc., and transfer funds.

## Legislative History

None

  
\_\_\_\_\_  
Department Approved

  
\_\_\_\_\_  
City Manager Approved

Introduced by \_\_\_\_\_ Council Bill No. R 128-15

### **A RESOLUTION**

authorizing battery bus evaluation program agreements with BYD Coach and Bus Inc. relating to the lease of one (1) 40-foot electric bus and three (3) 30-foot electric buses; transferring funds.

BE IT RESOLVED BY THE COUNCIL OF THE CITY OF COLUMBIA, MISSOURI, AS FOLLOWS:

SECTION 1. The City Manager is hereby authorized to execute a battery bus evaluation program agreement with BYD Coach and Bus Inc. relating to the lease of one (1) 40-foot K9 low floor BYD electric bus for the period of September 1, 2015 through August 31, 2027. The form and content of the agreement shall be substantially as set forth in "Exhibit A" attached hereto and made a part hereof.

SECTION 2. The City Manager is hereby authorized to execute a battery bus evaluation program agreement with BYD Coach and Bus Inc. relating to the lease of three (3) 30-foot K7 low floor BYD electric buses for the period of December 1, 2015 through November 31, 2027. The form and content of the agreement shall be substantially as set forth in "Exhibit B" attached hereto and made a part hereof.

SECTION 3. At the request of the City Manager, the City Council hereby transfers \$4,750.00 from Account No. 553-6188-881.49-90, C47050 in the following amounts to the following accounts:

\$4,262.19	Account No. 553-6110-710.76-82
\$487.81	Account No. 553-6110-720.75-54

ADOPTED this \_\_\_\_\_ day of \_\_\_\_\_, 2015.

ATTEST:

\_\_\_\_\_  
City Clerk

\_\_\_\_\_  
Mayor and Presiding Officer

APPROVED AS TO FORM:

\_\_\_\_\_  
City Counselor



## **BYD Coach and Bus**

### **Battery Bus Evaluation Program Agreement**

This Evaluation Program Agreement (herein after "Agreement") is made between **BYD Coach and Bus** hereinafter referred to as "**BYD**" with the authority to transact business in the State of Missouri and **The City of Columbia Missouri** hereinafter referred to as "**The City of Columbia**" with principal offices at: 701 East Broadway, Columbia 65205-6015, as the approved partnering entity on this the \_\_\_\_ day of \_\_\_\_\_, 2015.

**In consideration of the mutual promises, covenants, and agreements herein contained, the sufficiency of which is hereby agreed to by the BYD and The City of Columbia, the parties hereto agree as follows:**

This program is for the following BYD Model: **40 foot K9 low floor, BYD Electric Bus\***

1. STIPULATIONS OF THIS AGREEMENT: By signing this Agreement, **THE CITY OF COLUMBIA** agrees to adhere to these guidelines strictly during the period of the evaluation program and agrees that any breach will result in the immediate termination of test program and removal of the eBuses (without return of Service and Support Fees):
  - a. **THE CITY OF COLUMBIA** agrees that the BYD Bus and charging station will be used for evaluation testing only.
  - b. **THE CITY OF COLUMBIA** agrees that only third party testing preapproved in writing by BYD will be conducted on the BYD Bus or charging station.
  
2. TERM OF AGREEMENT: This Test Program Agreement will cover the period from September 1<sup>st</sup> 2015 to August 31, 2027 and includes a buy-out option for **\$648,000 minus lease payments made to the date THE CITY OF COLUMBIA initiates buy-out of the lease.** Should The City of Columbia retain the bus for the entire term of the lease, upon final lease payment, BYD Coach and Bus, shall provide title to bus to The City of Columbia and all lease payments shall be considered payment in full for the bus and the charging station/power interface. All obligations of the THE CITY OF COLUMBIA under this Agreement which require the expenditure of funds are conditional upon the availability of funds budgeted and appropriated for that purpose.
  
3. PROGRAM SUPPORT COST: By signing this Agreement, **THE CITY OF COLUMBIA** agrees to lease the bus for: **\$4,750 per month.** BYD will invoice the first month lease payment which will be due and payable upon delivery of the bus. Each subsequent payment will be due by the 5<sup>th</sup> day of each month.
  - a. The following services and support are included with this lease;
    - i. **1 Power Interfaces, EVA080KS/01 480VAC, 3Ø (THE CITY OF COLUMBIA** is responsible for installation and making the facility available for the connection with **480VAC, 3Ø** )
    - ii. BYD warranty and maintenance service for the BYD Bus (BYD will support a 48 hour response time).
      1. If the BYD Bus remains out of service for 20 calendar days, only a payment of the daily pro-rate (\$4,750/ 30) x days-in-service) will be invoiced.
      2. If the BYD Bus remains out of service for 30 calendar days, THE CITY OF COLUMBIA may terminate this agreement with written notice to BYD.
    - iii. BYD training of drivers and technicians for first month.
  - b. The following is not included in the Service and Support Fee (**THE CITY OF COLUMBIA** must



## **BYD Coach and Bus**

### **Battery Bus Evaluation Program Agreement**

provide the following):

- i. **THE CITY OF COLUMBIA** will pay any fee regarding the inspection, registration or any items on the bus from any local, state or federal authority during the evaluation period.
  - ii. All insurance costs during the period of the test program will be covered under **THE CITY OF COLUMBIA's** standard bus insurance policy and name **BYD Coach and Bus** as 'ASSIGNEE'
  - iii. **THE CITY OF COLUMBIA** will provide rent-free facility to service buses while they are in in The City of Columbia for evaluation.
  - iv. Any "basic" maintenance costs for operation of the bus (i.e. windshield wipers and/or flat-repairs.)
4. MAINTENANCE STATEMENT: The cost of following Service/Warranty maintenance over the evaluation period is included in Service and Support Fee:
- |                           |   |
|---------------------------|---|
| a. BASIC WARRANTY:        | <b><u>3 yrs, 150,000 miles</u></b> (except normal wear parts)               |
| b. BODY/CHASSIS WARRANTY: | <b><u>8 yrs, 300,000 miles</u></b> (Body, structure, frame, doors, bumpers) |
| c. POWER-TRAIN WARRANTY:  | <b><u>5 yrs, 300,000 miles</u></b> (in-wheel motors)                        |
| d. BATTERY WARRANTY:      | <b><u>12 yrs, 500,000 miles</u></b> (capacity residual > 65%)               |
5. This Agreement shall be governed by, interpreted and enforced in accordance with the laws of the State of Missouri and/or the laws of the United States, as applicable.
- The venue for all litigation arising out of, or relating to this Agreement, shall be Boone County, Missouri or the United States Western District of Missouri. The parties hereto irrevocably agree to submit to the exclusive jurisdiction of such courts in the State of Missouri and waive any defense of forum non conveniens..
6. In no event shall the language of this Agreement constitute or be construed as a waiver or limitation for either party's rights or defenses with regard to each party's applicable sovereign, governmental, or official immunities and protections as provided by federal and state constitution or law.
7. TERMINATION AND EVALUATION PERIOD: THE CITY OF COLUMBIA will have an evaluation period of one year for the date of this agreement. During this evaluation period THE CITY OF COLUMBIA may terminate this agreement at any time by giving written notice to BYD. Termination at the end of any subsequent year anniversaries of the agreement shall give at least 90 days written notice in advance of termination, Upon Termination BYD will pick up the bus and the charging station/power interface within 90days. After 90 days the City may charge a reasonable storage rental rate.
8. Notices: Notice under this lease shall be given in writing and may be hand delivered, sent by U.S. mail:



# **BYD Coach and Bus**

## **Battery Bus Evaluation Program Agreement**

**If delivered to CITY OF COLUMBIA:**

City Manager  
701 East Broadway  
P.O. Box 6015  
Columbia, MO 65205-6015

**If delivered to BYD:**

BYD Coach and Bus  
Att: Macy Neshati  
1800 South Figueroa Street  
Los Angeles, CA 90015

IN WITNESS WHEREOF, the Parties hereto have caused this Agreement to be signed by their duly authorized representatives, effective as of the date first set forth above.

**BYD Coach and Bus**

SIGNED: \_\_\_\_\_

TITLE: Vice President, Sales

PRINTED NAME: Macy Neshati

FOR THE CITY OF COLUMBIA, MISSOURI

By: \_\_\_\_\_

Mike Matthes, City Manager

ATTEST:

\_\_\_\_\_  
Sheela Amin, City Clerk

\_\_\_\_\_  
Date

APPROVED AS TO FORM:

\_\_\_\_\_

-- 7/27/2015



# **BYD Coach and Bus**

## **Battery Bus Evaluation Program Agreement**

Nancy Thompson, City Counselor

I hereby certify that this Contract is within the purpose of the appropriation to which it is to be charged, that is, account 553-6110-710.7483 and that there is an unencumbered balance to the credit of such account sufficient to pay therefore.

---

John Blattel, Director of Finance



# **BYD Coach and Bus**

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**In consideration of the mutual promises, covenants, and agreements herein contained, the sufficiency of which is hereby agreed to by the BYD and The City of Columbia, the parties hereto agree as follows:**

This program is for the following BYD Model: **Three – K7, 30 foot, low floor, BYD Electric Buses\***

1. STIPULATIONS OF THIS AGREEMENT: By signing this Agreement, **THE CITY OF COLUMBIA** agrees to adhere to these guidelines strictly during the period of the evaluation program and agrees that any breach will result in the immediate termination of test program and removal of the eBuses (without return of Service and Support Fees):
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  - b. **THE CITY OF COLUMBIA** agrees that only third party testing preapproved in writing by BYD will be conducted on the BYD Bus or charging station.
  
2. TERM OF AGREEMENT: This Test Program Agreement will cover the period from December 1<sup>st</sup> 2015 to November 30, 2027 and includes a buy-out option for **\$450,000 minus lease payments made to the date THE CITY OF COLUMBIA initiates buy-out of the lease.** Should The City of Columbia retain the bus for the entire term of the lease, upon final lease payment, BYD Coach and Bus, shall provide title to bus to The City of Columbia and all lease payments shall be considered payment in full for the bus and the charging station/power interface. All obligations of the THE CITY OF COLUMBIA under this Agreement which require the expenditure of funds are conditional upon the availability of funds budgeted and appropriated for that purpose.
  
3. PROGRAM SUPPORT COST: By signing this Agreement, **THE CITY OF COLUMBIA** agrees to lease the bus for: **\$4,391 per month.** BYD will invoice the first month lease payment which will be due and payable upon delivery of the bus. Each subsequent payment will be due by the 5<sup>th</sup> day of each month.
  - a. The following services and support are included with this lease;
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  - d. BATTERY WARRANTY: **12 yrs, 500,000 miles** (capacity residual > 65%)
5. This Agreement shall be governed by, interpreted and enforced in accordance with the laws of the State of Missouri and/or the laws of the United States, as applicable.

The venue for all litigation arising out of, or relating to this Agreement, shall be Boone County, Missouri or the United States Western District of Missouri. The parties hereto irrevocably agree to submit to the exclusive jurisdiction of such courts in the State of Missouri and waive any defense of forum non conveniens..
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Date

APPROVED AS TO FORM:

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-- 7/27/2015



# **BYD Coach and Bus**

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Nancy Thompson, City Counselor

I hereby certify that this Contract is within the purpose of the appropriation to which it is to be charged, that is, account 553-6110-710-76-83 and that there is an unencumbered balance to the credit of such account sufficient to pay therefore.

---

John Blattell, Director of Finance



## SUPPORTING DOCUMENTS INCLUDED WITH THIS AGENDA ITEM ARE AS FOLLOWS:

Bus Fleet Fuel & Maintenance Expenses Graph

## Bus Fleet Fuel and Maintenance Expenses - Four Highest Expense

Identification Information					FY 2015 First 6 Months Fleet Charges (Oct 2014 - March 2015)						
Vehicle ID	Vehicle Year	Vehicle Make	Vehicle Size		Commercial Labor	Commercial Parts	Internal Labor	Internal Lubricants	Internal Parts	All Maintenance Charges	Fuel
1	1301	2012	Gillig	35 ft	\$4,054	\$11,481	\$7,994	\$686	\$14,427	\$38,642	\$14,527
2	1665	2010	Gillig	40 ft	\$4,409	\$11,347	\$7,734	\$391	\$12,562	\$36,443	\$14,653
3	1810	2011	Gillig	35 ft	\$4,536	\$3,749	\$7,809	\$312	\$14,590	\$30,996	\$10,904
4	1663	2010	Gillig	40 ft	\$4,117	\$5,395	\$8,655	\$425	\$10,789	\$29,381	\$10,429
Totals					\$17,117	\$31,973	\$32,191	\$1,814	\$52,369	\$135,463	\$50,513

All Current Diesel Vehicles			BYD Electric Vehicles	
Operations Costs	6 Month Total	Monthly Avg.	Monthly Savings	Monthly Avg Per Vehicle
Fuel / Energy	\$50,513	\$8,419	\$8,115	\$304
Maintenance	\$135,463	\$22,577	\$22,016	\$561
<b>Total Fleet Charges</b>	<b>\$185,976</b>	<b>\$30,996</b>	<b>\$30,131</b>	<b>\$865</b>

Annual Estimated Operating Savings      \$361,572