



400 South Federal Hwy
Hallandale Beach, FL 33009

City of Hallandale Beach City Commission Agenda Cover Memo

| Meeting Date: | | Item Type: | 1 st Reading | 2 nd Reading |
|---|--|---|--|--|
| 2/16/2022 File No.: 22-007 | | <input checked="" type="checkbox"/> Resolution <input type="checkbox"/> Ordinance <input type="checkbox"/> Other | Ordinance Reading | N/A |
| | | | Public Hearing | <input type="checkbox"/> |
| | | | Advertising Required | <input type="checkbox"/> |
| | | | Quasi Judicial: | <input type="checkbox"/> |
| Fiscal Impact (\$): | | Account Balance (\$): | Funding Source: | Project Number: |
| 5,082,837 | | \$543,033 \$3,504,831 \$2,500,000 | 160-4130-564010-D1935 130-5910-534010 150-4881-564010-D1935 | D1935 |
| Contract/P.O. Required | | RFP/RFQ/Bid Number: | Sponsor Name: | Department: |
| <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | | N/A | Vanessa Leroy | Community Enhancement & Sustainable Development |
| Strategic Plan Focus Areas: | | | | |
| <input checked="" type="checkbox"/> Finance & Budget | | <input type="checkbox"/> Organizational Capacity | | <input checked="" type="checkbox"/> Infrastructure/Projects |
| Implementation Timeline: | | | | |
| Estimated Start Date: 2/16/2022 Estimated End Date: 6/30/2022 | | | | |

SHORT TITLE:

A RESOLUTION OF THE MAYOR AND CITY COMMISSION OF THE CITY OF HALLANDALE BEACH, FLORIDA, AUTHORIZING UTILIZATION OF STATE OF GEORGIA CONTRACT WITH BYD MOTORS LLC FOR THE PURCHASE OF AN ELECTRIC BUS FLEET AND RELATED CHARGING EQUIPMENT FOR A TOTAL REVISED AMOUNT NOT TO EXCEED FIVE MILLION EIGHTY-TWO THOUSAND AND EIGHT HUNDRED THIRTY-SEVEN DOLLARS (\$5,082,837); AUTHORIZING CITY MANAGER TO EXECUTE RELATED DOCUMENTS; AND PROVIDING AN EFFECTIVE DATE.

STAFF SUMMARY:

Summary:

Staff seeks authorization to purchase nine (9) electric buses and related equipment as part of a Service Development Grant Award from the Florida Department of Transportation (FDOT)

through State of Georgia Contract No. 99999-001-SPD0000138-0008, and to execute any and all related documents.

Background:

The City of Hallandale Beach was awarded a State of Florida Department of Transportation (FDOT) grant in the amount of \$2.5 million to acquire nine electric buses and related equipment, including charging stations, with a City match in the amount of \$2.5 million for a total of \$5 million (Exhibit 2).

On June 3, 2020, the City Commission adopted Resolution No. 2020-036 (Exhibit 3) approving the FDOT grant agreement with a local match of \$2.5 million.

On March 17, 2021, the City Commission adopted Resolution No. 2021-025 approving the utilization of the State of Georgia contract awarded through RFP 99999-001-SPD0000152 with BYD Motors LLC previously known as BYD Motors Inc. for a total amount not to exceed five million dollars (\$5,000,000) for the purchase of nine (9) electric buses and related equipment and authorize the City Manager to execute any and all related documents (Exhibit 4).

The BYD K7M 30' Heavy Duty Low Floor Transit buses originally offered, included a proprietary AC Battery Charging System free of charge. BYD K7M AC Charger comes with a BYD proprietary Charging Connector that does not allow any battery universal charger to charge the K7M Transit Bus.

In November 2021, the State of Georgia added a DC battery charging solution, namely Heliox Flex 180 kW Depot Vehicle Charger (CCS1), into Contract No. 99999-001-SPD0000138-0008 BYD/Heliox Flex 180 kW Depot Charger, State of Georgia Contract, November 2011, charger case study, specification sheet, pricing, and certification document is attached (Exhibit 5).

This DC charging solution is a universal charging technology, more commonly utilized in the Nation for transit vehicles, and is approved by FTA. The Standard Warranty for the Heliox 180 DC Charger will be for the first 2 years of operation as stated in the excel table: 2017 Georgia Supplemental Mass Transit Pricing Sheet (Electric); Contract#: 999999-001-SPD0000138; "ADDITIONAL OPTIONS", OTHER AVAILABLE OPTIONS (SUPPLEMENTAL), Item # 7, Option Category: Other-Included, Option Description: Standard Warranty, (Exhibit 6).

The City conducted additional bus demonstrations with the K7M BYD 30' bus in October 2021, and the Proterra ZX5 Catalyst, 35' transit bus in November 2021. It was found that maneuvering in the 35' is more challenging and not recommended for our local roads, as the bus is too long for the routes. The BYD bus demonstration with a 197-kWh battery pack can drive more cycles than the current routes schedule includes.

Staff is now proposing to purchase nine (9) BYD K7M 30' Heavy Duty Low Floor Transit buses with DC charging universal connector and three (3) BYD/Heliox Flex 180 kW Depot Vehicle Charger. Each charger includes three (3) charging dispensers for a total of nine (9) dispensers.

Current Situation:

BYD Motors LLC, State of Georgia Contract 99999-001-SPD0000138-0008, dated June 28, 2018, was renewed until June 30, 2022 (Exhibit 7).

On December 2, 2021, BYD submitted a new cost proposal for the purchase of nine (9) K7M 30', electric buses from the Georgia Statewide Contract 99999-001-SPD0000138-0008 – BYD Motors

LLC, with the BYD/Heliox Flex 180kW charging solution for a total amount of \$5,082,836.67 (Exhibit 8).

The City Commission's approval of the recommended purchase of the BYD K7M 30' Battery Electric Heavy Duty Low Floor Transit Bus and the DC Charging solution allows us the ability to confidently provide the Facility Engineering Design Team with the complete set of technical data from EV Buses and Charging Stations required for the design of the facility for parking, battery charging, and maintenance.

Funding

The proposed Resolution addresses the purchase of the buses and charging equipment. Site Engineering Design will later be addressed via an RFP for the design and construction of the park facility at Chaves Lake Park.

The following table indicates the funding availability for FY21-23, noting additional funds will be budgeted for future years' expenses:

| Funding Source | Account | Budget FY22 | Required Budget FY23 |
|--------------------------------|-----------------------|--------------------|----------------------|
| Community Redevelopment Agency | 130-5910-534010 | \$1,937,128 | \$ 0 |
| City Transportation Fund | 160-4130-564010-D1935 | \$532,044 | \$113,665 |
| City and CRA Match Totals: | | \$2,469,172 | \$113,665 |
| Grants | 150-4881-564010-D1935 | \$2,500,000 | |
| Totals | | \$5,082,837 | |

The City is receiving \$2,500,000 from the FDOT grant award for the purchase of the EV fleet and related equipment including charging stations. FDOT will reimburse the City for allowable costs incurred during the term of this project; therefore, FDOT funds may be spread out between FY22 and FY23. The City will provide additional funds for a total of \$82,837 to honor the total amount of the **\$5,082,836.67** quoted by BYD for the nine (9) K7M 30' Battery Electric Heavy Duty Low Floor Transit Bus Fleet and the DC Charging Solution (Exhibit 8).

The CRA has set aside \$1,937,128 in funding for the project, and the City has set aside \$532,044 in FY22 and will budget \$113,665 in FY23, for a total budgeted amount of \$2,582,837. Payment for the buses will be required upon delivery of the purchased items. Manufacturing and delivery are expected to take 15-months, approximate deliveries of the buses are expected between August and September 2023. The City and the CRA will enter into an Interlocal Agreement for funding the Project (Exhibit 9).

Operation and Maintenance of the Community Shuttle minibus services will continue to be funded by the Broward County Transportation Surtax revenues.

Analysis

The Cost of the Standard K7M 30' Heavy-Duty Transit EV Bus provided to Georgia Statewide eRFP was \$498,000.00 plus the Delivery charge of \$13,280.96, not including the required DC Battery Charger. The total cost of each bus with the options listed below is \$523,284.59.

| Items | BYD Option Description Georgia eRFP | Cost |
|---|---|-----------------------|
| BYD 30 ft., Heavy Duty Low Floor Transit Bus with BYD AC Charger | Standard Equipment Georgia eRFP | \$498,000.00 |
| Delivery Charge | Georgia eRFP | \$13,280.96 |
| Bike Rack Option 12 | Sportworks Apex 3 Stainless Steel Georgia eRFP Option | \$1,861.00 |
| Video Surveillance Option 2 | Apollo RoadRunner DVR 2TB 8 Camera System w/Audio eRFP Option | \$9,352.00 |
| Communication Radio Option 64 | Motorola CM200 and CM300, 45W, 439 - 470- MHZ | \$790.63 |
| Cost of each BYD 30 ft., Heavy Duty Low Floor Transit Bus Total Cost with Options | | \$523,284.59 |
| Cost of a Fleet of nine (9) BYD 30 ft., Heavy Duty Low Floor Transit Bus Total Cost with Options | | \$4,709,561.31 |

The above components have been approved under Resolution 2021-025 (Exhibit 4).

The cost of the BYD/Heliox Flex 180kW Depot battery charging with charging dispensers' solution SAE DC J1772 and J3105-1, universal charging standards was listed as a BYD additional cost option of the Georgia Statewide eRFP Contract (Exhibit 5). The components to be purchased are as follows:

| BYD DEPOT DC CHARGING COMPONENTS | | | | |
|---------------------------------------|---|-----|-------------|---------------------|
| Items | BYD Option Description Georgia eRFP | Qty | Unit Cost | Total Cost |
| Heliox DC Fast Charger | Heliox Flex 180kW Cabinet with 1 x Charge Column | 3 | \$91,774.80 | \$275,324.40 |
| Option 4 | Column to Charger ratio (1:3): Dynamic Charging = 1 Depot Charger Column | 3 | \$28,238.40 | \$84,715.20 |
| Option 6 | Onsite Commissioning: (US site: 1 deployment; xx man-hours at site total) | 3 | \$1,411.92 | \$4,235.76 |
| Option 8 | Freight is Not Included in Pricing | 3 | \$3,000.00 | \$9,000.00 |
| BYD DEPOT DC CHARGING SUBTOTAL | | | | \$373,275.36 |

The following table is the total estimated project cost for the purchase of the buses, including the BYD/Heliox DC Charging Solution. This brings the total cost to \$5,082,836.67.

| BYD EV Fleet and DC Charging Option Description as Per Georgia eRFP | Cost |
|---|-----------------------|
| Cost of a Fleet of nine (9) BYD 30 ft., Heavy Duty Low Floor Transit Bus Total Cost with Options | \$4,709,561.31 |
| Cost of BYD DC Depot Charging Solution: Heliox Flex 180kW Cabinet with 1 x Charge Column; Column to Charger ratio (1:3): Dynamic Charging = 1 Depot Charger Column; Onsite Commissioning; and freight | \$373,275.36 |
| Total Cost for nine (9) K7M fleet and the BYD/Heliox DC180kW charging components | \$5,082,836.67 |

To maintain the current level of service, the EV buses require to have some optional equipment installed: Bike Rack, Automatic Vehicle Locator (AVL), Global Positioning System (GPS), and Communication Radio. As an option, it is also recommended to install a Video Surveillance System and an onboard free Wi-Fi network for passengers.

The K7M Transit Bus and equipment warranty provisions are provided in Exhibit 10 and summarized below. The City does not anticipate deposit fees for the purchase of the buses as, under a government contract, BYD only requires a purchase order from the government entity to fulfill an order and does not require an initial deposit. Full payment will be made on delivery.

Bus Purchase Warranty

BYD provided a Warranty Provisions document that contains multiple warranty terms and conditions that may vary depending on the part or system covered. A warranty for specific parts or systems is governed by the coverage set forth in the warranty section, as well as in other provisions within the Warranty Provisions. The Warranty Provisions include the Basic Warranty Provisions, Propulsion System and Components Warranty, DC Charging System, and the Battery Warranty (Exhibit 10).

The Propulsion System/Drive components are covered for a period of 5 years or 300,000 miles, the High Voltage Component/Control System for a period of 5 years or 250,000 miles, whichever occurs first. Chassis Structure (Integrity and Corrosion) are covered for a period of 12 years or 500,000 miles. BYD warrants its Battery Storage System for twelve (12) years after the date of acceptance of each bus ("Warranty Period"), to be free of defects in design, material, and workmanship (the "Warranty"). In addition, the string Intelligent Battery Management System (IBMS) controllers and Power Distribution Unit (PDU) are warranted for proper operation up through year 12, when the Battery Storage System is maintained in the manner described in the BYD Service. Battery capacity fade is warranted to 30% of Beginning of Life (BOL) or Battery Capacity of 70% total energy capacity at year 12 when capacity measurements are taken from a balanced Battery Storage System, and Battery Storage System is maintained in the manner described in BYD's Service Manual.

The Standard Limited Warranty & Extended Coverage Period included the following components for 3 years coverage or 150,000 miles: Brake system (friction material excluded), Destination signs, Defroster System (BYD), Air Conditioning System. Door System vapor, Air Compressor, and Dryer, Wheelchair Lift & Ramp System, Fire Suppression System, Hydraulic System, Propulsion Cooling System, Multiplex System, Video Security System, and Steering Box. The DC Heliox Charging System Warranty period: After expiration of a period of twenty-six (26) months

as of the date of delivery of the Charger Systems in accordance with the Sales Agreement or twenty-four (24) months following the site acceptance test of the Charger as agreed upon in the Sales Agreement, or any earlier on the date that the DC has performed 3,000 charging sessions.

Site Improvements - Parking and Charging Facility & Other Costs

Chaves Lake Park site is identified as the permanent location for the EV bus charging and maintenance. These improvements are not expected to be completed until approximately a year after the buses are delivered. In the interim, the Public Works compound located on NW 2nd Avenue will be temporarily reorganized to accommodate the buses.

Additional costs associated with the operation of the electric buses will include vehicle technologies, such as GPS-tracking and Wi-Fi equipment, vehicle maintenance operational costs, liability insurance, which will be covered under the operation and maintenance expenses funded by Broward Transportation Surtax revenues through the Interlocal Agreement.

The City will continue to seek grant funding opportunities to complete the additional costs for site improvement for the completion of the overall project.

Why Action is Necessary:

Pursuant to Chapter 23, Section 23-8 Exception to Bid Requirements, (6) Bids and Contracts from Other entities, and Section 23-9 Cooperative Purchasing, the City Manager is authorized to procure all supplies, materials, equipment, and services from other governmental units, when the best interests of the City would be served subject to the requirement that any purchase in excess of \$50,000 requires City Commission approval.

Resolution 2021-025 approved the utilization of the State of Georgia Contract 99999-001-SPD0000138-0008 with BYD for a total not to exceed five million (\$5,000,000) for the purchase of nine (9) electric buses and related equipment; however, the total contract amount exceeds this threshold by \$82,836.67. Therefore, City Commission approval of the additional costs is necessary.

Cost Benefit:

Additional energy savings were discovered following the most recent bus demonstration. The energy cost per mile for the K7M electric bus calculated by Sage Consulting are as follows:

| Financial Modeling | | |
|--|-------------|--------|
| Particulars | EV | Diesel |
| Estimated fuel per mile cost (\$/mi) | \$0.17 | \$0.59 |
| Maintenance Cost (\$/mi) | \$0.55 | \$1.53 |
| Total operation cost (\$/mi) | \$0.72 | \$2.12 |
| Cost Savings Calculation | | |
| Operational savings between Electric vs Diesel bus (\$/mi) | \$1.40 | |
| Mileage for FY2019 per bus (miles/yr) | 35,344 | |
| Mileage for FY2019 for 9 buses (miles/yr) | 318,096 | |
| Operational savings for the 9 bus EV fleet | \$445,145 | |
| Operational cost savings for the 9 bus fleet over 10 year period | \$4,451,447 | |

The Per Year Mileage for FY 2019 per minibus vehicle in COHB is 35,344 miles. A nine (9) vehicle fleet yearly mileage will be 318,096 miles, and the total savings for the operation of an electric vehicle fleet will be \$445,145 per year. Under the mentioned operational conditions, a nine (9)

electric transit bus fleet will save the City of Hallandale Beach \$4,451,447 in energy and maintenance costs over a 10-year period.

PROPOSED ACTION:

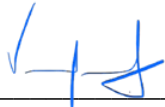
Staff recommends the City Commission consider and approve the attached Resolution approving the purchase of the electric buses and associated equipment.

ATTACHMENT(S):

Exhibit 1 – Proposed Resolution
Exhibit 2 – State of Florida Department of Transportation (FDOT) Grant Agreement
Exhibit 3 – Resolution No. 2020-036
Exhibit 4 – Resolution No. 2021-025
Exhibit 5 – State of Georgia eRFP BYD Heliox 180 kWh Approval and Pricing
Exhibit 6 – BYD Heliox 180 kWh Specification Submitted to State of Georgia
Exhibit 7 – BYD Motors LLC, State Of Georgia Contract Amendment #3, Renewal #2
Exhibit 8 – BYD Quote
Exhibit 9 - ILA between City and the Hallandale Beach Community Redevelopment Agency
Exhibit 10 – BYD Motors Warranty Program K7M December 2021



Prepared By: _____
Igor Colmenares
Mobility & Transportation Planner



Reviewed By: _____
Vanessa Leroy
Director

Reviewed By: Noemy Sandoval
Noemy Sandoval
Assistant City Manager

Approved By: Jeremy Earle
Dr. Jeremy Earle
City Manager