This document is a draft Scope of Services/Technical Specifications for a future non-competitive contract Miami-Dade County anticipates entering into. Scope of Services/Technical Specifications is subject to change without notice. This is not an advertisement.

SECTION 3
SCOPE OF WORK/TECHNICAL SPECIFICATIONS

3.1 Background

The County operates an estimated 192 buses, model year 2018, New Flyer 40 ft Compressed Natural Gas (CNG) buses with Kidde Automatic Fire Detection and Suppression System (AFSS) and Gas Leak Detection System (GDS) installed.

3.1.1 Automatic Fire Detection and Suppression System (AFSS)

The AFSS system is of a 1 Zone, 1 Shot type configuration. The fire detection system provides fire detection coverage for the engine compartment and consists of:

- One (1) Armored Linear Thermal Detector (LTD) in the engine compartment

The suppression system provides extinguisher coverage for the engine compartment and consists of:

- A single fire extinguisher
- A four (4) nozzle distribution system

The system is constantly monitored and is displayed to the driver via the protection panel. The system provides visual and audial indicators to the driver when the state of the system changes.

During normal operating conditions (appropriate system power applied and no-fault conditions present), the protection panel's system "OK" indicator is illuminated solid green.

When a fire sensor detects a fire in the engine compartment, the protection panel's "FIRE ALARM" and the "DELAY ENGINE STOP" indicators illuminate, an audio alarm sounds, and the HVAC shuts down immediately. Fifteen (15) seconds later the engine automatically shuts down and the fire extinguisher automatically discharges.

Engine shutdown and extinguisher discharge may be delayed an additional fifteen (15) seconds by manually depressing the protection panel's "DELAY ENGINE STOP" indicator/switch.

The Manual Activation Switch may be activated to immediately discharge the fire extinguisher and shut down the engine and HVAC.

3.1.2 Gas Leak Detection System (GDS)

The GDS provides gas leak detection coverage for the bus. Four (4) gas detectors are installed:

- Two (2) in the roof tank area
- One (1) in the engine compartment
- One (1) in the upper curb side compartment above the engine area where the CNG lines pass to the roof

When a gas sensor detects a trace leak at 20% or greater Lower Explosive Limit (LEL), the protection panel's "GAS LEAK" indicator illuminates (blinking). The system will reset itself and indications will clear when the gas dissipates below the trace leak threshold.

When a gas sensor detects a significant leak, greater than 50% LEL, the protection panel's "GAS LEAK" indicator illuminates (steady-on) and an audio alarm sounds. The gas leak indicator and the audible alarm warnings will stay on until the "TEST/RESET" button on the protection panel is manually pressed. The status indicator on the individual gas leak detector that detected the significant gas leak will remain illuminated solid red until the system is reset in

accordance with the manufacturer's system reset procedure.

3.2 <u>Scope of Work</u>

The Contractor/Awarded Bidder shall provide complete system inspection, testing, system reset, maintenance, repair, and certification services for AFSS and GDS.

Awarded Bidder(s) will be required to furnish all labor, material, equipment, tools and resources to perform the work, as described throughout this solicitation. The work performed shall ensure that the AFSS and GDS systems operate as intended by the Original Equipment Manufacturer (OEM).

The scope of work, shall include the following, but not be limited to:

Upon initial inspection, the Awarded Bidder shall notify DTPW if a fire suppression system/part(s) is not working. DTPW will determine if the vehicle should be placed out of service or not.

- Once vendor identifies repair need, it will be fixed and recertified simultaneously.
- Vendor to provide a list of each bottle part number in each bus and provide the date the fire suppression extinguisher will need to be recertified.

3.2.1 <u>Six Year Inspections and Services</u>

Awarded Bidder shall perform the following inspection(s) and services, as follows:

A. General Inspection

- Verify that neither the protected equipment nor the hazard has changed.
- Verify no obvious physical damage or condition exists that might prevent system operation.

B. Protection Panel

- Verify all warning indicators and the audible alarm are operational by pressing the 'TEST/RESET' button.

C. Manual Activation Switch

- Verify tamper seal is intact and access to switch is unobstructed

D. Fire Detectors

Armored Linear Thermal Detector (Armored LTD)

- Verify there is no obvious physical damage and the LTD is free of excess contamination (dirt, oil, grease, etc). If necessary, clean using water soaked non-abrasive towel.
- Verify the LTD is secured at least every 12 inches along its routing.
- Visually inspection for pinches, crimps, kinks, and chaffing points. Adjust mounting to eliminate these issues. Replace the LTD, if it is kinked or damaged.
- Verify that nowhere along the LTD is a bend's radius less than 2 inches (4 inch diameter). Adjust mounting to eliminate bends that have a radius less than 2 inches. Replace the LTD, if it has been kinked.
- Verify the LTD is at least 12 inches from all direct heat sources such as a turbo.

E. Gas Leak Detectors

- Verify status indicator on the detector is on solid green.
- Verify there is no obvious physical damage and that unit is free of excess contamination (dirt, oil, grease, etc.), if necessary, clean using water-soaked non-abrasive towel.

CAUTION: DO NOT USE CHEMICAL CLEANERS

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- Verify no silicone based materials have been used near detector.

F. Electrical Harness

- Verify electrical connectors and electrical wiring have no visible damage and all connectors are securely seated.

G. Extinguisher & Distribution System

- Verify the extinguisher is oriented correctly.
- Verify the extinguisher pressure gauge pointer is in the green arc at room temperature.
- Verify distribution piping and nozzles are intact, unobstructed, and that nozzle blow-off caps are in place.
- Visually inspect the extinguisher for damage such as pits, gouges, dents, or corrosion.

- Inspect the extinguisher and notify the County, if any of the following conditions exist:
  1. If pit or gouge, or cut exceeds a depth of 0.08 inches.
  2. If the depth of a dent exceeds 0.25 inches or one-tenth of the average diameter of the dent.
  3. If corrosion exceeds a depth of 0.05 inches or a coverage area larger than 15% of the extinguisher's outer surface.

H. Comprehensive System Test

Complete system check and testing of the AFSS and GDS systems. Perform a comprehensive fire system test according to Kidde Generic AFSS Checkout Procedure, R10027, using a Kidde Fire System Test Kit P/N 420871-1.

- Perform a comprehensive gas leak system test using the Kidde Gas Sensor Test Kit, P/N 420756.
- Heat test all thermostats and inspect all wires
- Test all functions of circuit monitor
- Test engine shut down
- Test back up battery
- Test Reset system alarm push button in the cab of the bus
- Blow air through all distribution lines
- Inspect activation and fire extinguisher agent cylinders
- Install new service tags and safety seals

- Work must be performed on-site at DTPW garages
- Inspection shall be conducted by a Kidde approved vendor or facility .

- The CONTRACTOR shall perform NFPA 17 Dry Chemical Extinguishing Systems inspections for the vehicles outlined in the NFPA guidelines in conjunction with the manufacture manual, incorporated into these Technical Specifications.Should the NFPA 17 guidelines and the manufacture manual conflict, CONTRACTOR shall follow the more stringent of the two guidelines. All service performed must be in compliance with NFPA 17 Code, and shall be in accordance with manufacture specifications, installation, operation and maintenance manual.

I. <u>Six Year Inspection and Service</u>

The fire extinguisher assembly shall be rebuilt and inspected by a qualified fire protection equipment company familiar with Kidde equipment. The date of manufacture of the extinguisher assembly is stamped (MM/YY) on the top neck of the cylinder. This is the date that should be used to determine the 6-year service interval date.

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Preventative Inspections, 6 Year Bottle Tear Down and rebuild, and other related inspections and maintenance as required shall be in accordance to NFPA 17 guidelines and manufacturer manual.

6-year bottle tear down

- Remove fire extinguisher cylinder from bus
- Discharge fire extinguisher cylinder and inspect for corrosion and any damages
- Inspect the inside of adapters and hose end fittings of the agent distribution network(s). Replace any corroded adapters and hose end fittings
- Replace linear actuators if in service for 6 years
- Rebuild valve body
- Recharge fire extinguisher cylinder and inspect for leaks
- Install fire extinguisher cylinder back on bus
- Test all functions of circuit monitoring system
- Test engine shut down
- Test back up battery
- Test push button in CAB
- Blow air through all fire extinguisher distribution lines
- Inspect activation and agent cylinders
- Install new service tags and safety seals

3.2.2 ADDITIONAL INSPECTIONS

A thorough inspection should be performed after any major engine work is done to ensure components have not been damaged or relocated.

3.3 Workdays and Time

The work shall be performed Monday through Friday, between the hours of 7:00 p.m. to 4:00 a.m. on weekdays, and anytime on Saturday and Sunday.
Awarded Bidder may be required to provide a schedule 5 days prior to performing work.

3.4 Location Listing: Shops Listing: DTPW Bus Division

Department of Transportation & Public Works Bus Operations		
Shop	**Address**	**Phone #**
Central Bus Garage	3431 NW 31st St. Miami FL 33142	305-638-7450
Northeast Bus Garage	360 NE 185th St. Miami, FL 33138	305-654-6512
Coral Way Bus Garage	2775 SW 74th Ave. Miami, FL 33155	305-263-6321
Support Services Garage	3295 NW 31st St. Miami FL 33142	305-638-7433

3.5 Access to DTPW Facilities

The Awarded Bidder(s) must abide by the Transit Administrative Policy (TAP) number: POL-SS-015, which regulates the access by Contractors/Subcontractors to DTPW property.

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