

TRA22-01 - Supply and Delivery of School Buses - Quote Form - Bus Unit Price: Type D Electric

Please Note This Bus should Not be Ordered for Cold Climates		Dynamic Specialty Vehicles
Submission 1		
Line Item	Bus Description	Unit Price
	Type D (80+ Passenger or Maximum Capacity). All units and components must meet Federal and Provincial regulations and requirements and current D250.	\$ 455,120.0000

TRA22-01 Base Bus Specifications: Body - Type D Electric

		Dynamic Specialty Vehicles	
		Submission 1	
Line Item	Body Specifications	Yes/No	Additional Information
1	Full power steering - minimum 18" diameter steering wheel Tilt steering column telescopic	Yes	
	Aluminized Interior Steel Walls Head Room - 77" Subfloor - 5/8" plywood Rubber covered light	Yes	
2	coloured ribbed in aisle Floor materials to be covered to sidewalls		
	Wheel housings to be molded type and fully covered All joints to be silicone sealed - including	Yes	
3	sidewalls and perimeter		
	Mud flaps Installed on front and on rear wheels rubber fenderettes on all four (4) wheel wells	Yes	
4			
	Exterior paint to meet national school bus yellow standard black rub rails light colour interior	Yes	
5			
	Exterior Lettering 6" - (Purchaser name) both sides at belt line 4" - Bus # two front corners and	Yes	
6	opposite license plate rear		
	Exterior Lettering con't 2" - Capacity GVW (Purchaser name) on side panel back of entrance door	Yes	
7	and side panel below driver		
8	Internal signs over windshield - No Smoking - No Standeess	Yes	
	Body fully undercoated for noise and enhanced rust protection. Please describe what is included and optional levels of protection available including costs	Yes	Asphalt emulsion undercoating included.
			Options: Premium Undercoat Sulfonate Enhanced DTM Modified Wax coating. Replaces the standard asphalt emulsion. Provides approx twice the performance in highly corrosive environments where de-icing chemicals are prevalent.
			Premium Fuel Tank Undercoat-Wax based undercoat over std black powdercoat for the fuel tank. Provides increased corrosion resistance. Salt spray hours increase from 240 to 2000 hrs with this coating.
9			
10	Crossing arm deactivation switch	Yes	
	Tinted windshield wipers dual electric with intermittent control Windshield washers with wet	Yes	
11	arm windshield washer tank 2 litres minimum		
12	Split sash side windows tinted	Yes	
13	All emergency exits to be vandal lock equipped	Yes	
14	Two (2) roof emergency escape hatches	Yes	
	Entrance door to be air or electric operated with an emergency release valve mounted outside.	Yes	
	Both doors heavy duty split type windows in upper and lower sections to open outward		
15			
16	Entrance steps covered white trimmed with assist rails right and left side	Yes	
	Body insulation including walls ceiling and roof bows - to be fibreglass or equivalent Dust	Yes	
17	intrusion package on underside of bus up to floor joint		
18	Power to accessory side of ignition	Yes	
19	Circuit breakers	Yes	
	Instruments: Dash mounted hr meter Battery Monitor speedometer in kmh c/w odometer in km	Yes	Speedometer Efficiency Gauge Message
	Range (2) air pressure gauges if air equipped. Please describe Instrumentation and dash cluster provided		Display Center State of Charge (SOC) Motor Temperature Battery Temperature Front Air Gauge Rear Air Gauge Left Warning Area Right Warning Area Message Display Center Control Panel Center Warning Bank
20			
	Instrument panel shall be illuminated and include text light indicators monitoring both the amber	Yes	Cruise control not available on Electric
21	and red light warning activations; lcruise control activation cruise control		Bus.
22	12 volt power point in switch panel	Yes	
23	Back-up alarm	Yes	
24	Two (2) LED strobing stop arms - mounted front and rear driver's side with wind guards.	Yes	
25	Driver alert system installed on battery door	Yes	
	Front headlights HD all exterior lights to be LED cluster lights: front and rear - six (6) in total	Yes	
26	LED 8 light system non-sequential with master switch and visors		
27	Two (2) rows of interior lights front and rear half on separate dimmer switches	Yes	
28	One (1) driver's light on separate switch	Yes	
	Interior rear view mirror and sun shield. Minimum 6" to maximum 10" x 30" with no obstruction	Yes	
29	of windshield		
	Right and left side primary and convex mirrors; remote adjustable Exterior convex crossovers self	Yes	
30	defrosting mounted on right and left sides		
	Two (2) heavy duty auxiliary windshield defroster fans switched separately one for each	Yes	
	windshield. To cover full width of windshield and drivers left side window. Heavy duty defroster		
31	motors.		
32	Defroster approximately 90 000 BTU capable of clearing front windows	Yes	
	School buses must be equipped with heating units and be able to sustain 15.5 degrees C (plus or minus 2 degrees) inside the vehicle when the outside temperature is 0 degrees C ambient.	No	Type D Electric Bus does not include webasto diesel fired heater. Ideal for lower mainland.
	Heaters should not decrease vehicle range by more than one percent. Please describe achievable in vehicle temperature when outside temperature is -30C and provide the expected impact of heating the interior cabin temperate on vehicle range especially when outside temperature		
33	conditions are very cold.		

Vendors should describe their proposed heating systems including fuel source and flexibility to accommodate different fuel types as requested by local school district. " The use of electric heaters to pre-heat the vehicle cabin is not preferred; however using electric heat to keep the batteries warm is acceptable. Vendors should also describe their proposed system for pre-heating vehicle cabins.	No	Bus is equipped with electric heaters and passenger area can heated while charging during pre-check.
34 One (1) heater unit for driver's control area (transit type) - 10 000 BTU min.	Yes	
36 First Aid kit fire extinguisher flare kit all mounted in overhead compartment.	Yes	
Driver's seat to be deluxe high back air seat fully adjustable - 6-way with lumbar support and fold down arm rests. Air foam rubber filled with heavy duty covering cloth fabric.	Yes	
37 Passenger seats to be seat belt ready 3x3 seating on both sides. Seats to be wall mounted on one side All seat coverings to be HD fire resistant gray vinyl.	Yes	
39 Pre-wired power and ground thru noise suppression circuit for 2-way radio AM/FM/PA radio and CD player	Yes	
40	Yes	AM/FM MP3 USB SD MMC BT with PA and Driver Remote Mic included.
41 PA system with six (6) interior and one (1) exterior speakers separately controlled	Yes	
Each unit shall be equipped with a Sound Generator that complies with FMVSS and CMVSS 141	Yes	
42		

TRA22-01 -Base Bus Specifications: Chassis - Type D Electric

Dynamic Specialty Vehicles		
Submission 1		
Line Item	Chassis Specifications	<div> <div>Yes/No</div> <div>Additional Information</div> </div>
1	Chassis and Body Year Propulsion system - vehicle performance include: A sustained speed of 70 kph on a 2.5% grade; and 20 kph on a 20% grade. An ability to accelerate to 20 kilometers per hour (kph) in four seconds; to 40 kph in 10 seconds; 50 kph in 20 seconds and 70 kph in 35 seconds. Expectations are that the school bus shall be cable of a minimum of 200 kilometer range on a single battery charge on route measured with 50% city miles and 50% highway miles. Vehicles should be capable of operating at minus 30 degrees Celsius (-30C) to 35C with limited loss of range (no more than 10% reduction of documented range) in these variable conditions. This range rating must be tested with all normal accessories running in the conditions described including terrain encountered in BC. Describe vehicle performance while fully loaded in terms of maximum operating speed grade-ability and acceleration. Please provide documentation of for verifying submitted vehicle performance claims to meet above performance specifications.	<div> <div>Yes</div> <div>Blue Bird 2023</div> </div> <div> <div>Yes</div> <div> A sustained speed of 70 kph on a 2.5% grade: YES A sustained speed of 20 kph on a 20% grade: YES An ability to accelerate to 20 kilometers per hour (kph) in four seconds: YES An ability to accelerate to 40 kph in 10 seconds: YES An ability to accelerate to 50 kph in 20 seconds: YES An ability to accelerate to 70 kph in 35 seconds: YES Webasto heater not included- not suitable for -30C In ideal conditions the system is capable of 1.3 kWh/mile which provides a range of ~ 120 miles (193 km). Typical users experience a range of ~ 80 - 100 miles (128km-160km). Driving habits duty cycle vehicle weight and accessory load conditions can affect this number. The bus has not been tested with all normal accessories running in the conditions described including terrain. </div> </div>
2	Vehicles should have the ability to change the powertrain deferential ratio to maximize range performance in mountain routes city routes highway routes or a combination of mountain city and highway routes. Please describe your process for achieving this?	<div> <div>Yes</div> <div> Blue Bird has chosen to use the 5.29 single rear axle ratio as a great compromise for the typical school bus stop and go route whether that is in mountain routes city routes highway routes or any combination of the regional operations. Since Blue Bird School Buses do not use a transmission or a two-speed rear axle we not only keep the overall weight of the school bus lower we do not encounter the additional losses of efficiency that the vehicle would have with the added weight of a transmission. If a transmission and two speed rear axle were to be used it would contribute to a greater loss of efficiency. </div> </div>
3	Air Brakes - Rear drum: 16½" x 8"; Front drum: 16½" x 6" with dust shields. Auto slack adjusters long stroke S cam type brakes. ABS included. Auxiliary Equipment tank right hand remote drain	<div> <div>Yes</div> <div></div> </div>
4	High capacity dry type air cleaner c/w air restriction gauge to be mounted on dash or air intake	<div> <div>Yes</div> <div></div> </div>
5	Regenerative braking to charge batteries must meet all Canadian Motor Vehicle Safety Standards in regards to braking systems	<div> <div>Yes</div> <div>Bluebirds regenerative braking system to charge batteries meets all Canadian Motor Vehicle Safety Standards in regards to braking system.</div> </div>
6		

<p>BATTERY - Vendors should describe their proposed energy storage/battery system including the number of battery packs and battery chemistry. " Battery efficiency (kilometers per kWh) " Time (in minutes) to charge batteries from 20% to 100% state of charge on a level 2 charger. " Time (in minutes) to charge batteries from 20% to 80% state of charge on a level 2 charger. " Battery capacity (amps per hour per cell) " Battery storage capacity (kWh) " Total usable battery energy storage capacity (kWh) " Total battery pack C-rate. " Total battery pack E-rate " Battery Cycle Life in number of charge-discharge cycles at a specific depth of discharge (DOD) " Battery thermal management type (describe battery maintenance and operational requirements when vehicle is in use and not in use</p>	Yes	<p>Number of packs: 7 batteries in two packs for a total of 14 batteries Chemistry: Li-NMC-G batteries which is Lithium-Nickel Manganese Cobalt-Graphite Battery efficiency: Will dependent on several factors including driving habits terrain and use of a/c and heaters. Time to charge Level 2 (20%-100%): 330-360 minutes Time to charge Level 2 (20%-80%): 250-280 minutes Battery capacity: 126 Ah Battery storage: 155 kWh Total usable battery storage: 124 kWh C-rate: The charge rate is 1C and the discharge rate is 2C E-rate: This is proprietary and will not be disclosed Battery life cycle: 3000 cycles at 70% depth of charge Battery thermal management type: Blue Birds battery thermal management type is a system of heaters chillers a radiator and fluid pumps design to maintain the optimal operating temperature of the batteries and the main propulsion motor by regulating the temperature of the</p>
<p>7 Battery Management System. Must be described</p>	Yes	<p>Blue Birds Battery Management System (BMS) facilitates smart charging by monitoring battery State of Charge (SOC) and other parameters associated with State of Health (SOH) and communicates to the system controller (SCM). The SCM will then determine how much charge should be provided to the battery based on the current state of the battery and control the on-board chargers appropriately. The SCM also communicates the desired charge rate through the CCS1 connector to the off-board charger to ensure proper charge rates are delivered. The BMS monitors SOC and SOH and reports it to SCM. This data is recorded every 10 milliseconds.</p>
<p>8 Front axle - 14 000 lb taper leaf set back. Rear axle - 23 000 lb - performance chart must be supplied Rear axle ratio - Please specify options available Specify turning radius.</p>	Yes	
<p>10 Air suspension rear c/w levelling valve(s). Heavy duty shock absorbers.</p>	Yes	
<p>11 Tires - Two (2) -11R22.5 Michelin XZE 2 on front preferred Four (4) -11R 22.5Michelin XDN2 on rear preferred disc wheels 10 stud hub pilot. Please specify your OEM equivalent if different</p>	Yes	<p>Cooper equivalent supplied. Micheline XZE & XDN2 available as an option.</p>
<p>On-Board Charging Systems Vendors should describe their preferred charging/discharging systems including EVSE noting that the expectation is that vehicles will be fitted with on board AC (19.2 kW) bidirectional charging/discharging systems that conform to the most recent SAE J1772 standards and/or other relevant standards for V2B bi-directional power flow. The vehicles should also be fitted with DC Level II charge/discharge coupler capable of a sustained maximum of 90kW of power transfer at a maximum of 200 AMPs. The coupler should conform to all current SAE standards. All charging system components shall have CSA certification or provide acceptable documentation. Charging systems shall be capable of operating from -30C to 40C with no more than 10% degradation in performance</p>	Yes	<p>Blue Bird offers a standard CCS1 connector that allows for either Level 2 AC charging or Level 3 DC Fast Charging. For maximum 19.2kW charge rate each Level 2 EVSE must be supplied with single phase 240v 80 amp ac current with a 100 amp fuse. Our bus will fully charge with AC charging from 0-100% in about 8 hours. There are several Level 2 EVSE's available on the market today that meet these charging requirements including the Nuvve PowerPort. For maximum 60kW charge rate each Level 3 DCFC station must be supplied with three phase 480VAC 80 amp. A bus will fully charge with DC Fast Charging from 0-100% in about 3 hours. There are several Level 3 EVSE's available on the market today that meet these charging requirements including the Nuvve RES-HD60-V2G. Blue Bird has decided to include bidirectional charging functionality with DC charging at this time due to V2G interconnection requirements of most utilities across North America. AC charging will be unidirectional only. The Nuvve RES-HD60-V2G is the required charging</p>
<p>13 Tow hooks front and rear heavy duty bumper.</p>	Yes	
<p>14 Battery solenoid switch to be connected to ignition switch for isolation of all of the switch panel circuitry.</p>	Yes	
<p>15 Data collection for performance and analytical comparisons must be available on a regular basis for both ASTSBC and the purchaser. Training must be provided</p>	Yes	<p>Training will be provided by Dynamic Specialty Vehicle's qualified personnel.</p>
<p>16 Engine and body diagnostics software or licensing. Diagnostic Training must be provided to each purchaser</p>	Yes	<p>Training to be provided by Dynamic Specialty Vehicle's qualified personnel.</p>
<p>17 Supply Driver Training and Orientation to ASTSBC Trainers to supply training for drivers upon bus delivery.</p>	Yes	<p>Training to be provided by Dynamic Specialty Vehicle's qualified personnel.</p>
<p>18 Service Manual for engine and chassis</p>	Yes	<p>Manuals available on-line.</p>

Battery location and weight - please describe	Yes The high voltage batteries are located under the chassis frame rails between the front and rear axle. Approximate weight is 1406 kg.
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TRA22-01 - Supply and Delivery of School Buses - Quote Form - Option Pricing: Type D Electric

		Dynamic Specialty Vehicles	
		Submission 1	
Line Item	Optional Pricing	Charge Type	Unit Price Additional Information
1	One (1) additional spare tire mounted.	Additional	\$ 980.0000 Shipped loose
2	Air horn roof mounted.	Additional	\$ 195.0000 Option for floor mounted available at additional charge.
3	Current Gatekeeper digital video system supplied and installed with 2 cameras.	Additional	\$ 2,100.0000 SD Card Recorder with 2 interior cameras.
4	Current Seon digital video system supplied and installed with 2 cameras.	Additional	\$ 2,270.0000 4 Camera DVR with hard drive with 2 interior cameras.
5	Driver's storage compartment overhead left side.	Additional	\$ 220.0000
	Installed Zonar current Fleet GPS Tracking and Vehicle Diagnostics System with EVIR hand held device and all accessories. Include pricing for each hand held device.	Additional	\$ 820.0000 Samsung tablet or Connect Kit extra if required.
			Does not include device activation from Zonar.
			Includes Zonar hardware surcharge.
6	Zonar current Fleet GPS Tracking and Vehicle Diagnostics System installed.	Additional	\$ 615.0000 Does not include device activation from Zonar.
			Includes Zonar hardware surcharge.
7			
8	Drivers Clipboard Storage accessible from drivers seat.	Additional	\$ 30.0000
9	Traction control through ABS.	No Charge	
10	Driver controlled differential lock.	Not Available	
11	Limited slip rear axle.	Not Available	
12	Automatic greasers minimum of 12 grease points.	Additional	\$ 3,625.0000
13	Acoustic ceiling panels throughout.	Additional	\$ 820.0000
	Stop Arm Camera System	Additional	\$ 1,000.0000 Stop arm camera prices are based on recorder able to accommodate extra cameras. DVR may need to be upgraded as more camera inputs maybe are required.
			Price reflects License Plate Recognition cameras or 2 camera Stop Arm system.
14			
15	Interior mirror - 10" x 30" mirror adjustable no windshield obstruction.	Additional	\$ 35.0000
	Recommended Level 2 charging system for your bus	Additional	\$ 2,799.0000 Blue Bird EV compatible with Level 2 & Level 3 Charging stations. Price is subject to change and does not include software for reporting.
			Upon award Dynamic will provide consultation for charging solutions best suited for the School District.
			SCH100 EV Charger made by Clipper Creek. Price is hardware only. Installation and electrical infrastructure extra.
			Option: Juice Bar Siemens ABB and NUVVE Smart Charger
			For more information please see file: BC_RFSO-EV2022.pdf
16			
17	Emergency roof hatch vent with exhaust fan.	Additional	\$ 610.0000
	Wheelchair lift specify OEM. Supply and install wheelchair lift with one chair position across from	Additional	\$ 9,060.0000
18	lift inclusive of tie down system.		
19	Track seating per wheelchair space.	Additional	\$ 1,395.0000
20	Tinted windows throughout.	No Charge	Standard on Blue Bird Bus
21	Power and Range upgrade -Price for additional incremental ranges increased and decreased Pedestrian Detection System	Not Available	
		Additional	\$ 2,450.0000 Mobileye Collision Avoidance System. Please see file: Mobileye.pdf
22			
23	Integrated child seats/per seat. Attach information details.	Additional	\$ 755.0000 See file: Type C Blue Bird Vision Brochure.pdf
24	Telescopic steering.	No Charge	Standard on Blue Bird Bus
25	Hydraulic brake school bus with air seat and air suspension.	Not Available	
26	Hydraulic brake school bus (no air components).	Not Available	
27	Adjustable Foot Pedals	Additional	\$ 1,340.0000
28	Underbody full thru luggage compartments	Not Available	
	In-service training for chassis and body maintenance procedures at Purchaser's facility	No Charge	
29			
	Laptop & connectors with applicable programming & software or licensing including training for each style of bus supplied. ABS software	Additional	\$ 3,000.0000 Vantage software and ABS software included.
			Ford/Roush software included at no charge for Gas & Propane buses.
			Cummins software additional charge (annual subscription)
			Training included.

exterior entry door handle	No Charge	Included in the base bus price. Option: Ruggedized exterior entry door handle with lock available
31		
32 Extended Stop Arm	Additional	\$ 5,880.0000
33 35- Air operated disc brakes	Additional	\$ 3,050.0000