USD 261 Transportation

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Chris Long

Director of Transportation

Memo:

TO: Haysville Board of Education

FR: Chris Long, Director of Transportation

DA: December 4, 2019

RE: Request to seek bids for two 72 passenger school buses.

History/Relevance: The transportation department has 2 aging school buses that are sent out on routes and on activity trips. We purchased these 2 buses on 7/1/1996. The buses will be out of commission on 7/1/2021. We have received a grant that will pay a portion of a new school buses.

What: We are asking for approval to seek bids for two new 72 passenger school buses.

Why: We are needing to seek bids now so we can meet the deadline for the grant.

Where: Transportation Department

When: We would like to send out bid information on December 17th and have bids back for the board meeting in January.

Who: The development of this project included the Assistant Superintendent for Business and Finance, Executive Director of Operations as well as the Director of Transportation.

How Much: The cost for seeking bids is zero dollars. We anticipate the cost of the project to be around $115,000 per bus.

If you have any questions, please do not hesitate to contact me.

Chris Long

Specifications for a 2021 Blue Bird
Forward Engine School Bus Body/Chassis

1. Vehicle shall be new, 2021 year model transit design, built to current FMVSS joint strength standards.
2. CHASSIS AND BODY ARE TO BE DESIGNED, ENGINEERED, AND BUILT IN U.S.A. BY ONE MANUFACTURER AS ONE COMPLETE AND INTEGRATED VEHICLE.
3. Vehicle capacity to be 72 passenger minimum.
4. Wheelbase will be 211 inches maximum.
5. Turning radius at curb not to exceed 31 feet.
6. Minimum body length to be 37 feet.

CHASSIS REQUIREMENTS

1. AIR CLEANER (Combustion)

Must be dry type with an appropriate restriction indicator monitoring air flow from the cleaner to the engine intake is required.

2. AIR INTAKE (Combustion)

The combustion air source for the engine must be located at front above coach floor level and protected from direct road spray for cleanest possible air.

3. ALTERNATOR

Must be 240 Amp Leece Neville, High-Output. **NO EXCEPTIONS.**

4. AXLES / SUSPENSION

Front

Must be Hendrickson steer axle w/fabricated box beam assembly, 14,600 lbs. capacity, Rated at 14,600 Lbs. Oil lubed wheel bearings. Hubcaps with window seal included. Must have 40-degree wheel turn angle – **NO EXCEPTIONS.**

Rear

Must be Meritor, 21,000 lbs. capacity single speed with 5.29 to 1 ratio. Synthetic oil lubed wheel bearings.

SHOCK ABSORBERS

Front and Rear

Heavy duty dual acting shocks (1 per side)

SPRINGS

Front

Must be 4" x 60", two-leaf parabolic taper springs. Maintenance free rubber bushings each end of spring & at shackle bracket. Softek, 14,600# at ground. One-inch spacer block between the front spring and the axle.

Rear

Must be 3"wide, 2-stage, variable rate, flat leaf springs (2), with total rated capacity of 21,000 lbs at the ground. Maintenance free, rubber bushed radius leaf to permit axle adjustment for dog tracking.

5. BATTERIES

Three group 31,12V batteries, 2100 CCA (combined). 2/0 gauge battery cables are included.

6. BRAKING SYSTEM

Service

Both front and rear systems must have 15” diameter x 1.438” thick rotor “Meritor Quadraulic” hydraulic disc, ABS anti-lock brakes. Dual 70MM diameter, 4 pistons per caliper, self-adjusting design. Dustshields front and rear.

Emergency/Parking

Internal expanding, transmission mounted, 9” diameter x 3” wide. Foot operated control to the driver’s LH side.

7. BUMPERS

a. Smooth front bumper must be one-piece 1/4" thick steel plate. Front bumper must include step holes for cleaning windshield.
b. Rear bumper to be 12” after forming and have 14" wraparound at corners with double "A" frame bracing for greater rear impact resistance. Rear bumper must be one piece 3/16" thick smooth steel plate which includes die formed 90 degree top and bottom flanges.
c. Front and rear bumpers must be die-formed, 12" high, after forming, with 90° flanges, top and bottom.

8. CONTROLS

a. Electronic fast idle
b. Key type starter
c. Column mounted headlight dimmer
d. Hazard switch on steering wheel
e. Self canceling turn signal with indicator lights
f. Rheostat dimmer for driver instrument illumination
g. Dash mounted transmission shifter
h. Backlit rocker switches for all accessories must be mounted for easy access at driver’s left below window.

9. COOLING SYSTEM

a. Charge air and down-flow radiator mounted in tandem at vehicle front.
b. A 25" dia. nylon cooling fan with nine blades equipped with a "Fully-On" or "Fully-Off" electromagnetic fan clutch driven by polyvee fan belt with spring loaded tensioner; fan controlled by Engine ECM.
c. Black rubber coolant hose with constant torque clamps to hold seals in place.
d. Transmission fluid cooled by 2100 BTU/Min. heat exchanger mounted external to radiator
e. Cummins Fleetguard Fleetcool EX Ethylene Gylcol 50/50 premix.

10. DRIVE LINE

Must be SPL 70 Series with protective guard around shaft with lubed for life components.

11. ENGINE

Cummins B series 220 HP; 520 Ft. Lbs. Must include a 750W, minimum, internal engine block heater. Must include 15-gallon DEF tank mounted on the RH side between the wheels.

12. EXHAUST

4" O.D. 2-Ply stainless steel with catalytic converter, bellow flex style piping from engine turbo-charge to in line muffler. Stainless steel muffler. 5" O.D. 16 gauge aluminized steel tailpipe, exits ahead of rear axle, road side. Wide band exhaust clamps used at all joints.

13. FLOOR, DRIVER AREA

Must be raised 2", minimum, above floor, with .62" plywood with .19" ribbed rubber floor cover.

14. FRAME

Main Frame - Dual "C" channels, 9.63" high with 3" flanges made of .25 thick, 50,000 PSI steel, section Modulus = 10.1 in. cu.

Sub-Frame - Dual "C" channels, 9" high with 2 3/8" flanges made of .25 thick, 50,000 PSI steel, Section Modulus = 8.4 in. cu.

All permanent fixtures on frame are to be attached with hi-tensile strength "Huck-Spin" fasteners with swaged lock nuts. – **NO EXCEPTIONS**

Tapered rails are **not** acceptable **– any deviation from this specification will result in the rejection of your bid.**

15. FUEL SYSTEM

Must be 100 gallon capacity, minimum, aluminized steel, safety tank mounted between frame rails. Includes a sender inspection plate and right hand fill opening with spring loaded, locking door.

Primary fuel filter/water separator must be Racor 490R30, rated @ 90 GPH, 30 Micron filter.

Fuel pump must be mounted on engine.

16. HORN

Electrical dual with non-glare horn button emblem.

17. INSTRUMENTS

a. Electronic speedometer/odometer with seven digits, with trip odometer
b. Fuel level gauge
c. Voltmeter
d. Oil Pressure gauge
e. Low coolant warning light
f. Tachometer with built in hour meter
g. Dash mounted digital clock
h. Coolant temperature gauge
i. Cruise Control
j. High temp./low oil pressure engine warning buzzer.
k. Ammeter

18. STEERING

Must be TRW THP-60 with gear driven hydraulic pump.

Tilt telescoping steering column with 18" diameter, two-spoke, padded steering wheel.

19. TIRES

Michelin tubeless radial tires 275/80R – 22.5 highway tread front and mud/snow rear.

20. TOW HOOKS

Two front and two rear, tow hooks must be frame mounted.

21. TRANSMISSION

Allison PTS 2500 Series transmission, 6 Forward speeds, and 1 reverse. Transmission fluid must be synthetic. Transmission must be programmed for "performance"

22. WHEELS

Hub-piloted steel 10 stud disc wheels, single front, dual rear, 22.5 x 8.25 rims.

BODY REQUIREMENTS

1. ACCESS PANELS

Interior

Hinged access door on engine hood for access for routine daily engine inspection & service.

Exterior

Electrical Terminal: 27" x 16" hinged door located exterior below driver's windows for access to body electrical junction, terminals and circuit breakers. Door must have retainer to hold in open position. Front Grill: Hinged downward for service access to fill and sight glass

Right Front: 19" x 15 1/2" hinged door to permit access to heater air intake screen, air restriction indicator, windshield washer reservoir and wiper motor.

Left Front: 19" x 15 1/2" hinged door to permit access to power steering reservoir and wiper motor. All access panels must include keyed, locked latches.

2. AIR INTAKE

Heater intake must be on right front below the windshield level is electrically controlled. Driver fresh air must be located on the left side by the driver's feet.

3. COMPARTMENTS

Battery

Enclosed sliding tray 231/2" x 15 1/2" with locking hinged door.

Glove Box

An 11" x 6 1/2" door above windshield on right side with door and latch must be provided for driver storage.

4. CONSTRUCTION

a. ALL RIVETED BODY CONSTRUCTION. THIS UNIT MUST MEET 2003 FMVSS JOINT STRENGTH REQUIREMENTS.

b. Rubber isolators to be located between body and chassis in front cowl area and rear body tie-down area – **any deviation from this specification will result in the rejection of your bid.**

c. Body sheet metal must be fastened with buck rivets on exterior and pull rivets on interior side and ceiling panels. Roof sheets must also be riveted to each and every roof bow. Roof sheets riveted only where seamed are not acceptable to our district. SHEET METAL SCREWS NOT ACCEPTABLE – **any deviation from this specification will result in the rejection of your bid.**

d. Roof sheets must lay vertical (window top to window top) and be one-piece, double lapped and secured with two rows of rivets for maximum strength. Formed rain visors,

embossed in roof panels are REQUIRED by the district – **any deviation from this specification will result in the rejection of your bid.**

e. One-piece, 14 gauge hat-shaped roof bows, without welds, from floor overhead to floor on other side must be used. Bows must not extend past floor on either side of bus – **any deviation from this specification will result in rejection of your bid.**
f. A minimum of (4) protective 16-gauge steel rub rails, including snow rail on bottom must be used. These rails must be RIVETED to structural bows and side panels with buck rivets. **Sheet metal screws NOT acceptable**.
g. Zinc coated body panels (roof, inner sides, headlining)
h. All body parts must be thoroughly rust-proofed after fabrication and before assembly.
i. Body must be fully undercoated before mounting to the chassis
j. Outside side panels must be constructed of 20 gauge fluted steel. Side panels must extend from below the side windows to a distance of 19 3/4" below the floor.
k. A removable 18-gauge steel front upper inner panel must be installed to allow access to the front roof cap area. A removable 20-gauge steel rear upper inner panel must be installed to allow access to the rear roof cap area. Removable composite wire moldings, right and left must be installed to allow access to body wiring harnesses. Textured aluminized fully hemmed steel inside side panels.
l. A steel kick panel must also be installed in driver's area side walls.

5. DEFROSTER

Sufficient defroster warm air outlets/snorkels must be provided to keep windshield and driver's window, free of fog, snow, and ice.

6. DOORS

Emergency

Rear center emergency door with 37.7" wide x 52.5" high opening. Latching mechanism includes a single-point bar lock. Door includes upper and lower tempered green tinted safety glass.

A 5" fire-block upholstered header pad is to be included along with a telescopic prop support attached to the top inside of the emergency door to hold it open at approx. 95°.

A Slide-bolt security latch with an audible alarm must also be included to warn the driver if the lock is activated after the engine is running.

Entrance

Entrance door must be ball bearing suspended, outward opening, two-panel door and seal against outside edge of lower step when door is shut. Door must be electronically controlled. Door must be laminated green tinted glass and include a manual lock, locking mechanism built into the forward outward opening door assembly. Vandal lock must be included. A 4" fire-block upholstered header pad over the interior of the entrance door along with a stainless steel assist rail at the rear of the stepwell.

7. ELECTRICAL

Power Socket Accessory with Cap must be provided. This socket must provide 12-volt power for connecting electrical accessories such as cellular phones, CB radios, etc.

8. FENDERS

Front and Rear fenders, black rubber

9. FLOOR

a. 3/16" thick ribbed **tan** rubber in aisles and at entrance aisle area. Aluminum aisle trim over joint in floor covering, full length of body
b. 1/8" Smooth **tan** rubber. Cove molding at wall is to be galvanized steel.

c. Front and rear molded black smooth rubber wheelhousing. Galvanized steel wheelhouse trim.
d. 5/8" treated plywood sub floor, attached with screws.

10. HEADROOM

Full 77", over floor covering and 5/8" plywood sub floor, measured at center aisle.

11. HEATER/DEFROSTER

a. 90K BTU front system with continuous defroster duct under windshield and driver window.
b. 6” fan mounted to wire molding, located in the upper left, above driver’s window.
   6” fan mounted to windshield header, center of body.
c. 12K BTU driver heater at left under driver seat, single speed fan
d. 80K BTU, underseat, mid-ship minimum**.** Dual fans with separate 2-speed motors (must have washable filters)
e. 80K BTU, rear underseat minimum. Dual fans with separate 2-speed motors (must have washable filters)
f. Heater water booster pump must also be installed
g. Dual ball type heater cut-off valves must be provided to isolate heater system from engine / radiator.
h. Manual ball type water flow control valve on heater next to driver must be provided, for temperature control.
i. Goodyear Hi-Miler heater hose with constant torque clamps at all joints. Includes all heater hoses and hose clamps within the body heater system.
j. Electrically controlled water regulating valve.

12. INSULATION

The roof front and rear (including corners & roof bows) are to be insulated with 1 1/2" thick fiberglass providing an "R" Value of 5.75.

Sound deadening and vibration reducing material must be sprayed on unexposed surface of interior and exterior roof panels.

Perforated acoustic headlining panels spanning the entire length of the bus.
Polyester insulation in the roof, fiberglass in the bow cavities.

13. LETTERING

a. School district side lettering as furnished by our district (5 inches).
   HAYSVILLE UNIFIED SCHOOL DISTRICT 261
b. Bus number to be applied as furnished by our district. _____
   Locations: Both sides, LH rear and front of bus

14. LIGHTS

a. Warning System - **LED** 8 light non-sequential system with dual hoods. – **No deviation from hooded.**
b. Headlights – single high/low beam headlight.
c. Daytime Running - Head lamps, tail, license plate, clearance & marker lights
d. **LED** dome - Two rows equally spaced at center over aisle, two switches, left and right with a separate switch for the rearmost 2 lights. Driver’s dome light to be activated with separate switch.
e. **LED** Stop and Tail - Two combination lights, 4” right and left rear license panel in combination with 7" stop and tail lights with clear red lens activated when engine is running.

f. **LED** Directional - two 7" front amber and two 7" amber mounted on rear. Side Directional – Amber sealed shock mounted, side directional mounted at front belt line area.
g. **LED** Back-Up - two 4" clear right and left rear.
h. **LED** stepwell light to operate with ID lights when entrance door is open.
i. **LED** exterior landing light by entrance door.
j. **LED** Clearance - two amber front and two red rear single, with shields.
k. **LED** Side Marker - Amber right and left intermediate side marker lights with shields.
l. **LED** Cluster - three amber front and three red rear with shields.
m. White flashing roof strobe mounted approx. 4' from rear. (required)
n. 100 amp solenoid to control body electrical circuits.

15. MIRRORS

Exterior

All exterior mirrors are to be remote control and heated. Heat to be controlled by an on/off switch.

Crossview

Rosco “Eye-Max LP” Crossview mirror system to allow a seated driver to view pedestrians while the bus is stopped. The Crossview mirror is must be asymmetric shaped, LH & RH sides with tunnel/tube mount. Mirror arms must be painted black steel – **any deviation from this specification will result in the rejection of your bid.**

Rearview

The Rosco Open View, Split System. The RH rearview mirrors are located so as to be visible through the wiped area of the windshield. The LH rearview mirrors are located so as to be visible through the driver's window. The Split System is comprised of two (2) independent mirror assemblies with one (1) flat mirror glass assembly a minimum of 7 3/8” x 10” and one (1) convex mirror glass assembly a minimum of 7 3/8” x 5”– **any deviations from these specifications will result in the rejection of your bid.**

Interior

6" x 30” with clear safety glass with integrated back up camera monitor/screen.

16. MUD FLAPS

Required front and rear mud flaps

17. PAINT

Exterior

National school bus yellow with black trim and black bumpers. OEM, heat cured, polyurethane. Roof to be painted white.

Interior

Astro White, hot sprayed-on baked enamel, except aluminized inner side panels.

18. RADIO

AM/FM/PA/CD with 8 deluxe speaker system.

19. REFLECTORS

a. Two 3" red mounted on side of body near rear installed with screws.
b. Two 3" red, mounted on rear of body installed with screws.
c. Two 3" amber right and left intermediate side reflectors installed with screws**.**
d. Two 3" amber mounted on side of body near front installed with screws.

20. REFLECTIVE TAPE

a. 3M Diamond Grade tape one-inch minimum width strip must surround each emergency exit, 1 3/4” wide rear structure, and 2” wide strip on each side of unit at approximately floor level.
b. 3M Diamond Grade tape front and rear roof cap, with black 8” “SCHOOL BUS” lettering.

21. SAFETY EQUIPMENT

a. Fire extinguisher – 5lb. Dry with hose
b. 24 unit standard first aid kit
c. Triangular warning devices – floor mounted
d. Body fluid clean up kit
e. Reverse activated back up alarm
f. Roof vent/hatches, two (2), must be installed in body roof, with buzzer to driver’s area. Transpec “Triple Value”.

22. SEATS

a. Driver's

National NS 2000 air-ride driver’s seat with dedicated compressor. This seat has 7.5” height adjustment, 7” fore and aft seat slides, recline angle infinitely adjustable, two position front cushion, mechanical lumbar adjustment.

b. Upholstery

All Passenger seats and barriers must have burgundy fire-block upholstery.

c. Passenger seats

First seat on the RH and LH side must be a C.E. White Child Restraint seat. All remaining passenger seats frames must be deluxe, fully padded safety back school bus seats, Department of Education approved. Protective barriers must also be installed forward of the front seats. All seats/barriers to be installed with bolts – **No deviation from bolted seats.**

23. STEPWELL

Stainless steel step treads with white abrasive stripe inserted and bonded into a recessed area. 3” white rubber wear plate is located at the floor level step of the entrance door. Stepwell design must be designed to National standards 1990.

24. STOP ARM

Specialty Solid State electric operated high intensity reflective octagonal stop arm, red with 6" high lettering on both sides. Includes red **LED STROBE** lights over and under the word "STOP" on both sides.

25. SUN VISOR

Transparent dark green tint 6.5" x 30" smooth edge plastic, located in front of driver.

26. SWITCH PANEL

Mounted on left of driver with rocker-type, illuminated switches for electrical equipment. Brightness of illumination must be controlled by an additional rheostat switch.

27. VENTILATION

Static non-closing type in front roof.

28. WINDOWS

Driver's

Double sliding aluminum sash with security fastener for locking both sashes, tempered, tinted safety glass.

Side

12" split sash, tempered-tinted glass in aluminum frame, provides 12" opening when lowered. Push out windows each side, 2RH/2LH, with buzzer to driver's area.

Rear Vision

Tempered - tinted.

29. WINDSHIELD

Two-piece curved tinted and shaded safety plate glass. Grip handles mounted on both sides, right and left cowls, to facilitate cleaning of the windshield.

30. WINDSHIELD/WIPERS

Electric, intermittent single switch, wet arm wipers. Bottom mounted with non-glare arms and blades. Electric windshield washer with hard plastic 6-quart capacity reservoir located behind RH access door, washer outlets mounted on wiper arms.

31. WIRING

Colored and continuously number coded in composite molding on top of side windows for access to harness without removing window. Body wiring protected by automatic resetting circuit breakers.

32. LUGGAGE

Luggage compartments built into body sidewalls with locking doors, minimum capacity to be 61.4 cu. ft.

33. TRAINING

Successful bidder must provide mechanical training/service school pertaining to the bus being Quoted within 30 miles of the district. Service school must be offered biannually at a minimum, and consist of approximately 14 hours of classroom instruction.

34. WARRANTY

Base warranty for the unit being bid must be for 3 years/unlimited mileage, and cover all body/chassis components, workmanship, and materials.

35. AUXILARY HEATER

Install Espar E-Guardian D-12 45,000 BTU auxiliary heater.

36. BACK UP CAMERA

Back up camera to be included and monitor to be integrated into rear view mirror.

PLEASE NOTE: These specifications represent the minimum specifications acceptable to the district. Any deviation here to must be specifically identified and described on an attached sheet. Failure to do so will result in the rejection of your bid and/or your product for reason of non-compliance with our invitation.

IMPORTANT: Bidder must include with his bid a list of fifteen (15) Kansas School districts that have taken delivery of the same model of bus as bidder is now offering to the distict. SAME MODEL is defined as bus whose chassis

manufacturer and body manufacturer have remained constant and unchanged during the delivery period of the fifteen (15) units listed by the bidder. FAILURE TO PROVIDE THIS LIST WILL RESULT IN THE REJECTION OF YOUR BID!!