

## **TECHNICAL SPECIFICATIONS CONVERTED WINDOW VAN WITH WHEELCHAIR LIFT**

### **1. GENERAL INFORMATION**

This **converted window van with wheelchair lift** shall have a high roof for standing adults with a low doorstep, and a high quality interior trim and seating package. The converted window van should be on a Ford E-350, or approved equal, chassis and shall be available with all possible options which make the van suited to stop-start duty cycles. **Vendor shall provide a complete Floor Plan and mechanical description of vehicle, its construction and equipment including model year, model and manufacturer of vehicle being bid. The bid shall be submitted in a binder form with each section properly labeled with the required information attached to each section.**

**Vendor shall provide pricing for vehicles with 8 ambulatory passengers and one (1) wheelchair position behind driver seat.**

Quantity: 0-45 vehicles to be purchased. In addition, KPTA/RTEC has the right to assign a portion of the contract awarded, to allow other transit agencies to purchase any remaining options.

### **2. GENERAL DIMENSIONS**

Length Overall	222" Minimum
Interior Headroom	67" Minimum
Interior Width	65" Minimum
Interior Length	134" Minimum
Width of Aisle	10" Minimum
Gross Vehicle Weight (GVW)	9,500 lbs. Minimum
Wheel Base, minimum	138"
Seating, minimum	8 ambulatory passengers plus one (1) wheelchair position

### **3. APPLICABLE SPECIFICATIONS AND STANDARDS**

- 3.1 Federal - EPA Standards.
- 3.2 Federal - Motor Vehicles Safety Standards U.S. Department of Transportation.
- 3.3 Federal - U.S. Department of Transportation's Americans with Disabilities Requirements under 49 CFR Part 38.

### **4. REQUIREMENTS**

- 4.1 **Components, Materials, Workmanship, and Completeness:** These specifications reflect the Transit Agency's preference as to dimensions, materials, and major components. However, the vendor shall not omit any part or detail which goes to make the vehicle complete and ready for service, even though such part or detail is not mentioned in these specifications.
- 4.2 All units and parts shall be vendor's best quality and shall conform in material, design and workmanship to the best practice known in the automotive industry. All parts shall be new and in no case shall used, reconditioned or obsolete parts be accepted. The parts on all vehicles provided by the same vendor shall be interchangeable.
- 4.3 The price quoted in any proposal submitted shall include all items of labor, material, tools, equipment, and other costs necessary to fully complete the manufacture and delivery of the van pursuant to these specifications. It is the intent of these specifications to provide and require a

complete vehicle of the type prescribed ready for operation. The vendor shall assume sole responsibility for the entire vehicle as to warranty and after sales parts and service.

- 4.4 The warranty must become effective on the first day, after the date of final acceptance, of each vehicle.
- 4.5 The exterior vehicle paint shall be bright white and blue vinyl stripes unless the agency notifies the vendor at time of award to omit stripping.

**5. ENGINE**

- 5.1 V-8 Engine displacement of at least 330 cubic inches (5.4 liter), Gasoline, electronic fuel injector system. Vendor shall submit description, warranty information and literature information of product with bid.
- 5.2 Air Cleaner - Paper type.
- 5.3 Oil Filter - Replaceable type.
- 5.4 High Idle System- A high idle system, intended to maintain battery charging under heavy demand when the vehicle is stationary and the emergency brake is applied shall be provided. The fast idle switch will automatically disengage when the vehicle is placed in forward or reverse gear. Vendor shall submit description, warranty information and literature information of product with bid.

**6. COOLING SYSTEM**

Radiator surge or overflow tank shall be provided. Vehicle shall be equipped with radiator and fan of the maximum capacity available.

**7. FUEL SYSTEM**

- 7.1 Fuel tank shall be a minimum 30 U.S. gallon capacity.
- 7.2 An engine mounted fuel filter is required with replaceable type elements.

**8. EXHAUST SYSTEM**

The vehicle shall be equipped with an exhaust system which meets U.S. Government noise level and exhaust emissions requirements. The vehicle shall be equipped with an exhaust system, which directs emissions towards the street side of the vehicle.

**9. TRANSMISSION**

- 9.1 Transmission shall be fully automatic, power shift, hydraulic drive type. The transmission shall be installed such that removal as a unit without disturbing engine or final drive is possible with a minimum of 4 forward speeds. Vendor shall submit description, warranty information and literature information of product with bid.
- 9.2 Transmission shift lever shall be interlocked with starting motor to prevent engagement of starter in any gear other than neutral or park.
- 9.3 Backup buzzer: A backup buzzer shall be provided that is audible outside the vehicle when transmission is in reverse.

- 9.4 Drive shaft shall be equipped with a guard to prevent it from striking the floor or ground when broken.

**10. FRONT SUSPENSION**

- 10.1 Axle capacity shall be a minimum of 4,200 lbs. **Vendor shall submit description, warranty information and literature information of product with bid.**
- 10.2 Capacity of each spring shall be 1,915-lbs. minimum at ground. The heaviest available gas filled shock absorbers shall be provided - 1 3/8 inch diameter minimum. Shock absorbers and suspension shall be matched to the vehicle's gross weight.

**11. REAR AXLE AND FINAL DRIVE**

- 11.1 Axle capacity shall be a minimum of 6,300 lbs.
- 11.2 Capacity of each spring shall be 2,750-lbs. minimum at ground. The heaviest available gas filled shock absorbers shall be provided - 1 3/8 inch diameter minimum. Shock absorbers and suspension shall be matched to the vehicle's gross weight.

**12. STEERING, TILT WHEEL & CRUISE**

Power steering with tilt wheel and automatic cruise is required.

**13. BRAKES**

- 13.1 All Wheel Anti Lock Brakes (ABS type) power disk brakes minimum.
- 13.2 Parking brake shall be capable of stopping vehicle at a deceleration rate equivalent to a stop within 50 feet from a speed of 20 m.p.h., on dry pavement with a fully seated load. Brakes shall be capable of holding a fully loaded bus on a 20 percent grade.

**14. WHEELS**

Vehicles shall be equipped with the heaviest duty available ventilated pressed steel wheels, single front and rear. All wheels shall be interchangeable. Extra heavy duty wheel bearings shall be required. Wheels shall be matched to the vehicle's gross weight including spare.

**15. TIRES**

- 15.1 Vehicles shall be equipped with five (four regular and one full size spare) steel belted radial tires, load range E (Equal to 10 ply rating). Tires shall be supplied with the vehicle from the factory. Tire treads shall be all weather type. Tires shall be matched to the vehicle's gross weight and be adequately inflated prior to delivery. Vendor shall submit description, warranty information and literature information of product with bid.
- 15.2 Full size spare wheel and tire shall be under carriage mounted.

**16. ELECTRICAL SYSTEM**

- 16.1 An alternator of at least 130 Ampere minimum or highest OEM ampere rating. Vendor shall submit description, warranty information and literature information of product with bid.
- 16.3 The supplemental wiring harnesses, junctions, fuses and circuit breakers shall be coded and grouped together and accessible from a lockable access box mounted near the driver's seat.

- 16.4 The electrical system shall have dual batteries with a total capacity of at least 650 CCA each. Battery shall be installed in an easily accessible location under the vehicle hood and one on the body frame.
- 16.5 A dual heavy duty, 12 volt horn shall be provided. Installation of horn shall be such as to afford protection from wheel wash.
- 16.6 Backing horn/alarm shall be provided and automatically activated when vehicle is put in reverse.
- 16.7 The electrical system shall incorporate a warning light and audible buzzer, to indicate a door not fully closed.

**17. INSTRUMENTS AND CONTROLS**

17.1 The following instruments shall be provided:

- AM/FM digital CD/radio with clock –
- Speedometer with recording odometer
- Ammeter or voltammeter gauge
- Low-charge warning light
- Oil pressure gauge
- Fuel tank level gauge(s)
- Engine temperature gauge
- Headlight on indication and headlight high beam indicator
- Directional signal and flasher action light

17.2 The following controls, in addition to the normal steering, braking, and transmission functions, shall be provided:

- Master exterior light switch, and auxiliary switches for any clearance or marker lights.
- Separate switches and temperature controls for rear passenger compartment heater air conditioner.
- Separate switch and temperature controls for driver's heater, defroster and air conditioner.
- Two speed wiper control.
- Passenger compartment lights.
- Intermittent Wipers

17.3 All controls shall be within the driver's arm reach when his seat belt is fastened.

**18. BODY STRUCTURE RAISED ROOF**

18.1 The body structure shall be a fully integrated structural unit, constructed at all points and corners where stress concentration may occur, to adequately carry required loads and stand road shock. Vendor shall submit description, warranty information and literature information of product with bid. Water Testing Report shall be submitted with procedures and details.

The roof modification shall include a FMVSS-220 Certified Roll Cage. All joints must be welded. Roof and Liner shall be one piece fiberglass components reinforced by roll cage, and insulated against weather and sound by R-8 fiberglass (minimum).

18.2 Before assembling, all metal parts shall be given a thorough anti-corrosion treatment. Interior surfaces of body panels and posts which are covered by trim materials shall also be given protection against corrosion.

- 18.3 All nuts, bolts, clips, washers, clamps and like fasteners shall be zinc or cadmium plated or phosphate coated to prevent corrosion. All exterior panels shall be riveted in place or otherwise securely fastened.
- 18.4 A lowered ambulatory passenger entry step shall be installed at the right front entrance door stepwell. This step will consist of a non-skid tread with contrasting edge markers and be no higher than twelve (12) inches above ground.
- 18.5 Stepwells shall be of either formed aluminum, or corrosion resistant steel, with coved corners and adequate reinforcement to prevent deflection. Stepwell shall be the full width of the door opening. The leading edge of each step shall be marked with **bright yellow** nosing with abrasive strip insert not less than one (1) inch wide.
- 18.6 Individual risers shall not exceed nine (9) inches in height, and in the case of more than one riser, all shall be the same height.
- 18.7 The wheelhouse shall be of sturdy construction of galvanized or treated corrosion resistant steel providing ample clearance of front and rear tires, under load and under all positions of the front wheel while steering.
- 18.8 Splashguards shall be provided on each vehicle and be made of not less than ¼ inch fiber reinforced rubber and shall be mounted at the rear of each wheel housing.
- 18.9 The vehicle shall be fully warranted against corrosion for 5 years and delivered with each vehicle.

**19. DOORS and STEP**

- 19.1 The vehicle shall be equipped with an electric operated, single leaf door located opposite the driver. All controls to door shall be mounted on the console or dash for easy access to driver. Vendor shall submit description, warranty information and literature information of product with bid.
- 19.2 The door shall have a clear opening width of 25" (minimum) and the full height of 72" (minimum) clear "walking" headroom as measured from the top of the front step to the entrance header. The entire entrance door frame shall be stainless steel or aluminum construction only.
- 19.3 Vehicle shall be equipped with dual rear opening emergency doors, with a standard 3-point safety latch with appropriate operating instructions affixed and Emergency Exit decal, denoting exit, affixed.
- 19.4 A driver side steel step shall be mounted for driver access into vehicle.

**20. WINDOWS**

- 20.1 Glass shall be safety glass with privacy tint, with all latch mechanisms recessed
- 20.2 Windshield shall be fixed type, glazed with safety laminated glass, tinted above eye level (Gradutint).
- 20.3 Passenger windows shall be OEM's and approximately 40" x 30" in size.
- 20.4 Dual (2) rain drip moldings to be provided for the full length of body.

**21. HEATING AND VENTILATION**

The heating and ventilating system shall consist of one (1) fresh-air high output chassis heater and rear under seat auxiliary heater that when combined provide a minimum of 55,000 BTU's. The heating and

ventilating system with loaded bus in motion shall provide one complete change of air per minute. Heating system shall include a multiple fan speed forced-air ventilation system. **Vendor shall submit description, warranty information and literature information of product with bid.**

**22. INTERIOR LIGHTING**

22.1 Interior shall be illuminated so as to provide a minimum of twelve (12)' candles of illumination measured at thirty-six (36) inches above the floor over each two-passenger cross seat. Lights shall operate with or without engine running. Front door hooded stepwell light shall be mounted and wired to light when the front door is open so stairwell and immediate outside area is illuminated.

22.2 A wheelchair lift light which illuminates the lift device and the area outside the vehicle, in front and to the side of the lift shall be provided and shall operate automatically when the side doors are opened.

**23. EXTERIOR LIGHTING**

All exterior lights shall meet State and United States Department of Transportation requirements. Headlights shall be daytime running.

**24. INTERIOR**

**Vendor shall submit description, warranty information and literature information of product with bid.**

24.1 All flooring shall be Altro Transit Flooring or Approved Equal. **Floor covering to be gray marble** and shall contrast with blue seat cover colors. Entrance area shall be covered with three-sixteenth (3/16) inch ribbed floor covering. All step edges to be marked in yellow and accordance with FTA/ADA requirements.

24.3 All interior panels shall be of ABS plastic, fiberglass or vinyl-type material, to cover major surface areas and jointed area between raised roof and body. Interior panels, materials and treatments shall be flame retardant and treated to be easily cleaned. Colors of covering shall harmonize with exterior vehicle colors. Inside walls and ceiling shall be adequately insulated to prevent condensation, preferably with three (3) inch fiberglass blankets or urethane foam sheets 3/4 inch thickness and 1.5 density. **Vendor shall submit description, warranty information and literature information of product with bid.**

24.4 Passenger assists shall be constructed of corrosion-resistant tubular stock having an outside diameter of 1.25 inches. The diameter or width of the padded gripping surface of assists and stanchions shall be 1.25 inches to 1.50 inches. Padded stanchions and padded grab rails shall be provided in the entry area, within reach from the ground, to assist passengers in both boarding and exiting. Stanchions and grab rails shall be padded and shall be positioned at both the left and right side of the stepwell entry area.

24.5 All sharp edges, protruding fasteners, brackets, etc., that can cause injury to the passenger or catch on clothing shall be eliminated.

**25. SEATING**

**Vendor shall submit description, warranty information and literature information of product with bid. Proposed seating configurations are to be supplied with bid submittal.**

25.1 Passenger seats shall be all forward facing. All seats shall be covered with commercial grade blue vinyl, and heavy duty, fully padded construction. Minimum seat cushion depth sixteen (16) inches, width eighteen (18) inches per passenger. Seat cushions shall have a minimum of five (5) inch padding and springs on seat with two and one-half (2½) inches on back support. The back of the seat shall be a minimum of eighteen (18) inches, maximum of twenty-two (22) inches high, measured from the top of the seat cushion. Passenger seats, excluding the rearmost and any flip-up seats shall have padded horizontal grab rails across the top of each seat, with a minimum of one and one-half (1½) inches between the grab rail and the seat top. Seats shall be a maximum of seventeen (17) inches from the floor to the front edge of the seat cushion. At least twenty six (26) inches of hip to knee room shall be provided.

All seats shall be equipped with under-seat retractable seat belts.

Each vehicle shall be equipped with one (1) seat belt extender.

25.2 Driver's seat shall be an OEM or Body Chassis Manufacturer high back bucket type with standard seat belt. Seat shall be adjustable forward and backward. A fold up armrest will be provided on the right side of the seat. Vendor shall submit description, warranty information and literature information of product with bid. The power seat can be body chassis manufacturer.

## 26. EMERGENCY/SAFETY EQUIPMENT

26.1 First Aid Kit - First-Aid Kit shall comply with Federal Motor Vehicle Carrier Safety Regulations with a minimum of 15 units. First-aid kits shall be mounted so as to provide for easy access in the event of an accident, away from foot traffic.

26.2 Fire Extinguisher - A 5 lb. dry chemical fire extinguisher with a minimum of a 20-A: 180-B:C rating shall be provided in vehicle and shall be mounted in an access compartment with a hinged door or on a vehicular-type quick access bracket away from foot traffic.

26.3 Reflectors - Three bi-directional emergency reflective triangles conforming to requirements of FMVSS shall be secured in the rear of the vehicle.

26.4 Bloodborne Pathogen Protection Kit - A 10 unit (minimum) kit housed in a metal box and mounted.

26.6 Wheel Jack & Lug Wrench secured in a location approved by the Division of Public Transit.

26.7 Seat Belt Cutter shall be secured in the storage compartment of the vehicle.

26.8 Rear window van eyes shall be provided.

26.9 INTELLIGENT AUDIBLE ALARM

An audible warning signal that alerts the driver to the presence of an obstacle in the monitored zone. Echovision or approved equal. **Vendor shall submit description, warranty information and literature information of product with bid.**

## 27. MIRRORS

27.1 Interior One rearview at least 5" X 9" which affords driver view of all passengers.

27.2 Exterior Two rearview, one right and one left break away type with convex 7" x 13".

**28. AIR CONDITIONING Vendor shall submit description, warranty information and literature information of product with bid.**

The OEM chassis supplier's heaviest duty air conditioning system shall be supplied plus such other components as necessary to ensure effective, uniform cooling throughout the vehicle. At a minimum, the system shall consist of:

- a) The OEM's 12,000 BTU minimum dash mounted evaporator system;
- b) The OEM's engine driven compressor with a minimum displacement of 9 cubic inches;
- c) A 2 fan skirt mounted condenser, Carrier CM 2 or approved equal;
- d) A ceiling mounted evaporator at the rear of the passenger compartment with a minimum capacity of 32,000 BTU's, Carrier or approved equal;
- e) The Quick Click Hose System or approved equal shall be used.

**29. WHEELCHAIR SECUREMENT SYSTEM - Vendor shall submit description, warranty information and literature information of product with bid.**

Wheelchair securement areas and systems shall fully comply with all applicable U.S. Department of Transportation's Americans With Disabilities Requirements.

- 30.1 Vehicle shall be equipped with one (1) wheelchair positions. At each required wheelchair position a wheelchair securement system shall be provided to securely hold the wheelchair in the wheelchair position.
- 30.2 Provisions shall be made, in the wheelchair position area, to stow the straps and buckles off the floor when they are not in use. The stored straps shall not interfere with passenger movement or sitting space. **Vendor shall submit description and location of product with bid.**
- 30.3 The vendor shall provide with each vehicle upon delivery a pamphlet, brochure or similar literature describing and instructing the use of the wheelchair securement system and shall **demonstrate** to the recipient the proper method of using the system. Demonstration of the securement system **must** be performed to insure correct use of the system.
- 30.4 A Freedman Seating 3 Step Forward Facing Fold Down Double Seat, or approved equal, shall be used in every wheelchair position for use by non-disabled persons when the securement system is not needed. When folded up, the seat shall not interfere with the use of the wheelchair positions by passengers in wheelchairs. An under-seat retractable seat belt shall be provided for each seated position.
- 30.5 Each wheelchair station shall have a securement system fully complying with ADA requirements and capable of securing most common wheelchairs and other mobility aid devices. Each wheelchair space shall have at least 3-5" in between each space for easy access of driver.

**31. WHEELCHAIR OCCUPANT RESTRAINT SYSTEM**

A restraint system shall be provided for the occupant of the wheelchair at each wheelchair position. The restraint system shall be a seat belt assembly permanently attached to the floor or side of the vehicle or to the wheelchair lock supports. The restraint system shall be capable of securing a passenger in all types of wheelchairs or Scooters, while the chairs are locked in position. The seat belt shall be at least eighty (80) inches long and shall be easily fastened and unfastened by the wheelchair occupant. Each seat belt shall be equipped with a retractor or other device, which keeps the seat belt webbing or strap off the floor when the seat belt is not in use. **Vendor shall submit description, warranty information and literature information of product with bid.**

A complete retractable wheelchair and occupant restraint system with S-Hooks shall be installed at each wheelchair location. The system will have automatic belt retractors; tensioning knobs; and easy to use

tension release mechanisms. The system shall be a Kinedyne Sure-Lok FF6612S; or approved equal. **L-Track System to be used. Vendor shall submit description, warranty information and literature information of product with bid.**

**32. LIFT:** The lift shall meet or exceed all the U.S. Department of Transportation's minimum Americans With Disabilities Act (ADA) requirements.

32.1 Vehicle shall be equipped with one (1) fully automatic wheelchair lift, Braun Lift, or approved equal, mounted on the right side of the vehicle. Heavy duty suspension is required.

The wheelchair door shall be located on the right (curb) side of the vehicle, behind the front entrance door and in front of the rear wheels.

The wheelchair door shall provide 64" (minimum) of walk-in-headroom as measured when lift is in full raised usable position. The lift door shall have 42" (minimum) clear opening width.

Lift door shall be equipped with a metal safety device to hold door securely in full open position when lift is in operation.

Lift door shall be equipped with a locking door handle and each vehicle shall be provided with at least two (2) sets of door keys.

Lift door shall also be equipped with a Back-up door locking mechanism in case the primary door handle fails while the vehicle is in motion.

32.2 The lift shall have a self-cleaning, see-through, non-skid platform which can be folded and unfolded by one person. The controls shall be placed adjacent to the lift in such a position to enable the attendant or the disabled person, once the person is on the platform, to operate the lift.

In the fully lowered position the platform shall measure at least thirty three (33) inches wide and have an effective length of at least forty eight (48) inches. A safety barrier shall be the full length of the curb side edge of the platform and shall be a moveable hinged surface to provide a barrier to prevent the wheelchair from rolling off the lift during operation. A two (2) inch high barrier shall also be provided on each side of the platform to prevent wheelchairs from rolling over the edge. Two (2) automatic fold handrails shall be provided one on each side of the platform.

32.3 Power unit shall be twelve (12) volt electro-hydraulic operated. Power unit shall be readily accessible for service. A manual hand crank shall be installed for lift operation in the event of power failure.

32.4 Lift shall be capable of being used from curb level or ground. The lift should be capable of safely lifting a minimum static load of eight hundred (800) pounds. The lift platform should be capable of being raised or lowered with a load in no more than twelve (12) seconds. All power units, operating joints, linkage, and mounting points to the body shall be certified by the manufacturer as being adequate for the loading. The operation of the unit shall provide a smooth, jerk-free ride in both up and down directions.

32.5 Systems control valve shall be solenoid controlled and shall be externally mounted for easy maintenance.

32.6 All sliding surfaces and load bearing pivot points shall be free of exposed grease and constructed with ball and roller bearings. All electrical and hydraulic lines and units, all control mechanisms and cables shall be securely fastened and placed so as not to interfere with passenger ingress and egress, or with any moving parts. All moving parts shall be shielded from contact with passengers and operator.

- 32.7 Platform shall fold into door area for storing while not in use. Platform in stored position shall not intrude into vehicle body more than 14 inches. Lift shall be adequately restrained in stored position to prevent lift from coming adrift while vehicle is in motion. The lift in its stored position shall not rattle.
- 32.8 Lift control switch shall be completely weather proof and labeled as to function.
- 32.9 It is the vendor's responsibility to provide instructions on the use of securement system to meet the specified performance standards, and on the safe operation, maintenance and service of the lift, as well as warranty information. **An instructional video explaining the lift operations and lift maintenance shall be provided with each vehicle.**
- 32.10 Lift controls shall be interlocked with the vehicle brakes and transmission and door, or other approved means, to ensure that the vehicle cannot be moved when the lift is not stowed and so the lift cannot be deployed unless the interlock mechanism(s) are engaged. The lift must not be able to be deployed without engaging the interlock system and the interlock must prevent the vehicle from being moved until the lift is stowed. Any interlock which can be disengaged prior to lift stowage will cause the vehicle not to be accepted.

**33. MANUALS**

The vendor shall furnish each vehicle with complete driver, parts and maintenance manuals, including wiring schematics of auxiliary circuits, air line diagrams and all other necessary prints for the maintenance of the wheelchair lift, auxiliary air conditioning unit and any other optional items added by the vendor during conversion.

**34. STROBE LIGHT (Optional)**

A protected or guarded strobe light shall be installed on the top of the vehicle to the rear. **Vendor shall submit description, warranty information and literature information of product with bid.**

**OPTIONS**

<b>Vehicle Bid Price</b>		\$	
<b>OPTION B – Add Strobe light</b>	+	\$	
<b>OPTION C –Flip –up Passenger Seat Armrest</b>	+	\$	