Special Mobility Services

AGENCY Vehicle Maintenance Program

**Policy:**

It is SMS policy to maintain vehicles and equipment in order to provide safe, comfortable, and reliable transportation to our passengers, and effective and efficient service to the community.

**Goals and Objectives:**

The goals and objectives of the vehicle maintenance program are:

*1. Maintain vehicles to promote the safety and comfort of passengers, operators, and protect the public.*

* Conduct regular pre-trip inspections in order to identify vehicle and equipment problems and assure vehicles are in good operating condition.
* Conduct basic Preventive Maintenance service routines in a timely manner to identify vehicle problems and keep vehicle systems in good repair.
* Conduct vehicle repairs in a timely manner and in accordance with industry best practices.
* Maintain a clean appearance for vehicles through regular interior and exterior cleaning.

*2. Manage Preventive Maintenance and repair activities to promote the reliability of the service by minimizing service interruptions due to vehicle or equipment failure.*

* Regularly inspect vehicles in order to identify and correct problems in to prevent service interruptions.
* Schedule repairs promptly in order to minimize service interruptions.
* Utilize subcontractors as needed to perform specialized services and to supplement SMS maintenance staff efforts.
* Schedule SMS PM activities to maximize fleet availability during service peaks.
* Analyze repair, road call and tow data to identify trouble-prone components or systems for pro-active attention.

*3. Maintain vehicles and equipment to promote cost-efficiency of operations.*

* Maintain and repair vehicles to ensure their operation at peak efficiency, including fuel efficiency, emissions systems, etc.
* Analyze fleet fuel usage and repair data; identify vehicles which may need remedial work or may need to be made inactive.
* Maintain vehicles and related equipment to fulfill manufacturer’s warranty requirements and pursue warranty repairs where applicable; research and follow up on any applicable recalls or service bulletins.
* Maintain vehicles to maximize the useful vehicle life, including the life of key components such as tires, brakes, batteries, etc.
* Manage the maintenance program to be cost effective in terms of staff time, service vendors and parts and supplies costs.

*4. Conduct vehicle operations, repairs, and cleaning in compliance with applicable local, state and federation regulations.*

* Ensure that shop equipment and maintenance procedures comply with applicable OSHA laws and regulations protecting the health and welfare of workers.
* Handle and dispose of fuels, lubricants, solvents, tires and related materials in a safe and environmentally responsible manner.
* Maintain vehicles to comply with relevant emission standards and other applicable regulations.
* Conduct vehicle cleaning to comply with applicable wastewater and other relevant regulations.
* Conduct maintenance and repairs in compliance with environmental standards and other relevant regulations.

**Program Elements:**

***Pre-trip inspections.*** Each vehicle will be inspected at the start of each shift by a driver trained in the procedure. A walk-around will be performed with a vehicle pre-trip checklist and any irregularities reported to the Mechanic before the vehicle leaves the lot. Please see Attachments for Pre-Trip Inspection checklist.

***Basic Service Routines.*** Per the recommendations of the chassis, bus body, and wheelchair lift manufacturers, and the additional recommendations of the SMS Mechanic, a thorough preventive maintenance schedule will be established and followed for each vehicle. At or before the recommended mileage intervals, the SMS mechanic will perform all the elements of maintenance due at that mileage. Please see Attachments for Preventive Maintenance Schedules and Standard Operating Procedures.

***Vehicle Cleaning*.** Interior cleaning and sweeping of each in-service vehicle will be performed at the end of each shift by Special Mobility Services' driving staff. Vehicle exteriors will be washed on a weekly basis or more frequently, as needed.

***Vehicle Repairs*.** The need for a vehicle repair may be discovered during a pre-trip inspection, preventive maintenance inspection, or breakdown. The Mechanic will determine warranty coverage for the system requiring attention, and if appropriate, pursue warranty repairs with the vendor, bus or chassis manufacturer, or authorized warranty outlet. The SMS Mechanic will determine whether the repair can be accomplished in-house, or because of the need for special diagnostic expertise or equipment, will be assigned to a subcontractor.

***Documentation and Analysis***. Vehicle condition will be regularly documented through pre-trip inspections and problems discovered on the road will be documented on a Vehicle Condition Report by the driver. In addition, all vehicle maintenance and repair activity and costs will be documented. Vehicle data will be organized for summary and analysis.

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### MANUFACTURER RECOMMENDED

### SCHEDULED MAINTENANCE INTERVALS

FORD E-350

|  |  |
| --- | --- |
| Interval | Associated service |
| 3,000 | Standard vehicle inspection 1 |
|  | Engine oil and filter service |
| 6,000 | Extended vehicle inspection 2 |
| 30,000 | Transmission fluid and filter service |
| 36,000 | Fuel filter service |
| 100,000 | Tune up |
|  | Spark plug service |
|  | Cooling system service |
|  |  |

Ford Transit Connect

|  |  |
| --- | --- |
| Interval | Associated service |
| 7,500 | Standard vehicle inspection 1 |
| 10,000 | Extended vehicle inspection 2 |
|  | Engine oil and filter service  |
| 25,000 | Fuel filter service |
| 50,000 | Transaxle fluid and filter service |
| 100,000 | Tune up |
|  | Spark plug service |
| 150,000 | Cooling system service |
|  |  |

Braun Entervan

|  |  |
| --- | --- |
| Interval | Associated service |
| 5,000 | Standard vehicle inspection 1 |
| 10,000 | Extended vehicle inspection 2 |
|  | Engine oil and filter change |
|  | Fuel filter service |
| 30,000 | Transmission fluid and filter service |
| 100,000 | Cooling system service/ replace water temperature regulator |
|  | Inspect and adjust valve lash as necessary |
|  |  |

**ACTIVE FLEET: ALL VEHICLES**

DAILY PRE-TRIP INSPECTION: (OPERATOR)

Check exterior:

* Vehicle head, tail, and clearance lights
* Turn signal operation
* Hazard flasher operation
* Brake light operation
* Backup light operation
* Tire condition (check for inflation, tread depth, sidewall damage, objects in tread)
* Wheel condition (check appearance of lug nuts, check for seal leaks)
* Undercarriage leaks
* Body, glass, mirrors (check for damage, mirrors well-secured)
* Wheelchair lift operation (unlock doors, cycle lift once before service)
* Exterior cleanliness

Check vehicle interior:

* Mirror position
* Horn operation.
* Windshield wiper operation
* Passenger door operation
* Interior lights
* Vehicle gauges
* Fuel level (fuel cards and fuel log present)
* Emergency exits (check that exits are not blocked and rear exit door is unlocked)
* Radio/ mobile data operation (pre-trip radio check with dispatcher)
* Seat belts (present and available to passengers)
* Wheelchair securements (all sets present and stowed correctly)
* Safety equipment (fire extinguisher present and fully-charged, emergency triangles present, first aid kit present and sealed or fully-stocked, bio-hazard kit present and sealed or fully-stocked, seat belt cutter present)
* Seat condition (well-secured, check for upholstery damage)
* Seat belt condition (present, not damaged)
* Stanchions (well-secured)
* Interior cleanliness

DAILY END-OF-SHIFT MAINTENANCE: (OPERATOR)

* Stow wheelchair securements
* Sweep the coach interior and inspect for damage
* Power off all switches
* Lock vehicle doors

**ACTIVE FLEET: ALL VEHICLES**

AS NEEDED MAINTENANCE: (OPERATOR)

* Fuel as needed
* Wash vehicle exterior as needed (minimum weekly)
* Monitor performance of the climate control systems.
* Clean interior window glass, wipe seats, mop floor

WEEKLY MAINTENANCE: (OPERATOR)

Daily pre-trip inspection, plus:

* Check engine oil level
* Add oil as needed, log
* Check engine coolant level
* Check condition of belts and hoses
* Fill out weekly vehicle inspection form

DAILY MAINTENANCE: (MECHANIC)

* Review operator defect reports and repair, schedule for repair, or take vehicle out of service as appropriate

STANDARD VEHICLE INSPECTION 1

Service procedures:

* Lube lift pivot points
* Engine oil change, oil filter change
* Safety Inspection

Items to be inspected:

Vehicle history

* Review preventive maintenance history
* Review vehicle repair history
* Review any pending work orders

Pre-trip inspection

* Gauges
* Switches and controls
* Driver area condition
* Passenger area condition

Drive test

* Starting
* Steering
* Acceleration
* Braking
* Transmission
* Check operation of heating and air conditioning

Under hood

* Listen for and investigate any unusual noises
* Check transmission fluid level and condition
* Check cooling system, coolant level and condition
* Check brake fluid level
* Check power steering fluid level and condition
* Check windshield washer fluid level and condition
* Check fuel lines and connections for leaks
* Inspect and adjust drive belts as needed
* Check coolant hoses for leaks and wear
* Check exposed wiring and vacuum hoses for wear

Under-carriage

* Check tire condition and inflation
* Check wheel condition and lug nut torque
* Check steering linkage for wear
* Check front suspension for looseness or wear
* Check rear suspension for looseness or wear
* Check wheel bearings and seals, front and rear, for play, leakage
* Check brake caliper and rotor condition
* Check brake pad condition
* Check parking brake unit condition
* Check differential for leaks
* Check driveline and U-joint condition
* Check transmission for leakage
* Check exhaust system for leaks or damage

Wheelchair lift

* Cycle lift, inspect and listen for noises

If any defects are found, document and as appropriate, schedule for repair.

EXTENDED VEHICLE INSPECTION 2

Service procedures:

* Brake and wheel bearing service as needed.
* Lube lift pivot points

*Ford, Chevrolet only:*

* Engine oil change, oil filter change
* Lube chassis and suspension

*Freightliner only:*

* Engine oil change, oil filter change
* Lube suspension, steering linkage, and driveline
* Replace fuel filters
* Obtain engine oil sample for testing
* Obtain coolant sample for testing

Standard inspection **plus**:

Items to be inspected:

Vehicle history

* Incorporate any currently due preventive maintenance items into the current service

Under hood

* Check charging system output
* Check battery and battery cable condition

Under-carriage

* Inspect brakes and wheels

Wheelchair lift

* Check hydraulic hoses and connectors for leaks
* Check bushings for play

If any defects are found, document and as appropriate, schedule for repair.

**CONTINGENCY FLEET: ALL VEHICLES**

QUARTERLY MAINTENANCE : 0MECHANIC)

Items to be inspected:

* Check engine fluids
* Check tires for inflation and wear
* Check for fluid leaks under the vehicle
* Start and warm the vehicle to operating temperature
* Run heaters and air conditioners
* Drive the vehicle through the lot, using both forward and reverse
* Check transmission fluid level

If any defects are found, document and as appropriate, schedule for repair.

***Accessible Services Fleet***

LTD, thru a contract with SMS Services, maintains a total of **34** accessible services vehicles otherwise known as “Ride Source.” The following page represents a breakdown of the various manufacturers and sub fleet information.

Bus No. YR. Manu Model VIN

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 22 | 1997 | Ford / WorldTrans | Diplomat Small Bus | **1FDLE40S6VHBXXXX** |
| 25 | 1995 | Ford / WorldTrans | Diplomat Small Bus | **1FDKE30G3SHBXXXX** |
| 27 | 2001 | Chev Activan | ElDorado Nat'l Activan | **1GNDX03E31D29XXX** |
| 31 | 1998 | Ford | WorldTrans Diplomat Small Bus | **1FDXE40S5WHB0XXX** |
| 36 | 2001 | Chev Activan | ElDorado Nat'l Activan | **1GNDX03E61D2XXXX** |
| 37 | 2001 | Ford E-450 Chassis | ElDorado Nat'l AeroTech 240 | **1FDXE45S11HBxxxxx** |
| 38 | 2000 | Ford E-450 Chassis | ElDorado Nat'l AeroTech 240 | **1FDXE45S31HBxxxxxx** |
| 39 | 2000 | Ford E-450 Chassis | ElDorado Nat'l AeroTech 240 | **1FDXE45S71HBxxxxx** |
| 61 | 2000 | Ford | Starcraft Allstar Bus | **1FDXE45S8YHBxxxxx** |
| 62 | 2000 | Ford | Starcraft Allstar Bus | **1FDXE45SXYHBxxxxx** |
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**PREVENTIVE MAINTENANCE MANAGEMENT:**

**STANDARD OPERATING PROCEDURES**

These procedures apply to the fleet maintenance program at AGENCY:

1. At the start of each driving shift, each driver performs a pre-trip inspection to ensure safety and accessibility items are operational, and that any defects are reported to the maintenance staff.
2. Each driver records beginning and ending mileage for the route on that day’s manifest.
3. Each day, dispatch staff record vehicle miles driven for that day to the operations database, and once a week record ending odometer reading for each vehicle.
4. Each week, maintenance staff print a fleet maintenance status report from the operations database, and use projected service due dates from the report to schedule services for each vehicle on or before the service due mileage. Work is scheduled in-house or out-sourced as needed to meet the maintenance deadlines.
5. Specific components of each vehicle are scheduled for inspection, lubrication, cleaning or replacement at regular intervals. The intervals are determined by published information from the vehicle and component manufacturers. In addition, such inspections may include other items or incorporate shorter intervals as recommended by maintenance staff or management.
6. At each service, maintenance staff record service date, odometer reading, service items, parts used, parts cost, and labor hours to the service checklist, then before end of shift, to the operations database.
7. For out-sourced preventive maintenance, vendors are supplied with a maintenance checklist. At each service, maintenance staff obtain copies of the completed checklist and vendor invoice, then enter the service detail to the operations database, identifying the vendor.
8. At regular intervals, management staff audit the data collection process and verify the completeness and timeliness of the database records. Management also works with maintenance staff to revise maintenance policy and checklists as needed, and to upgrade database capabilities.
9. Monthly, management staff review preventive maintenance detail to ensure timely performance of preventive maintenance services for the prior month, and consult with maintenance staff to ensure adequate resources are available for the workload.

**MAINTENANCE REMEDIATION PLAN**

The remediation plan calls for the following to be completed by October 31, 2005:

1. Management review of the most recent preventive maintenance procedures for each vehicle in the fleet and identification of any vehicles due for service.
2. Consultation with the mechanic to ensure he has the time and resources to ensure any maintenance procedures thus identified are completed in a timely manner.
3. Centralization of the vehicle records for both the Eugene and Oakridge operations to the Eugene facility.
4. Centralization of preventive maintenance scheduling for both program to Eugene.
5. Management review of the vehicle maintenance files and database records for completeness and timeliness.
6. Modifications in data and reports from the fleet management database system to improve preventive maintenance scheduling.
7. Management review of the preventive maintenance workload, with adjustments made as necessary to ensure the program continues to be adequately staffed and supplied.

**SAMPLE VEHICLE INSPECTION FORMS**

|  |  |  |
| --- | --- | --- |
| Vehicle # |  |  Employee |
|  |  |  |
|  Odometer |  |  Date |

|  |  |  |  |
| --- | --- | --- | --- |
|  |  | **Pre-inspection** |  |
|  |   |  Print, review, and attach a copy of service detail |   |
|  |   |  Review any current write-ups for this vehicle |   |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **Odometer** |  | **Date** |  | **Most recent** |
|  |  |  |  |  | Oil change |

|  |  |  |  |
| --- | --- | --- | --- |
| Inspect | Repair |  |  |
| OK | Needed |  | Comments |

|  |  |  |  |
| --- | --- | --- | --- |
|  |  | **Pre-trip inspection** |  |
|   |   |  Gauges |   |
|  |  |  Switches and controls |  |
|  |  |  Driver area condition |  |
|  |  |  Passenger area condition |  |

|  |  |  |  |
| --- | --- | --- | --- |
|  |  | **Road test** |  |
|   |   |  Starting |   |
|  |  |  Steering |  |
|  |  |  Acceleration |  |
|  |  |  Braking |  |
|  |  |  Transmission |  |
|  |  |  Heating and air conditioning |  |

|  |  |  |  |
| --- | --- | --- | --- |
|  |  | **Engine compartment: engine running** |  |
|  |  |  Listen for and investigate any unusual noises |  |
|   |   |  Transmission fluid level and condition |   |

|  |  |  |  |
| --- | --- | --- | --- |
|  |  | **Engine compartment: engine off** |  |
|   |   |  Cooling system, coolant level and condition |   |
|  |  |  Brake fluid level |  |
|   |   |  Power steering fluid level and condition |   |
|   |   |  Windshield washer fluid level and condition |   |
|   |   |  Fuel lines and connections |   |
|   |   |  Inspect and adjust drive belts as needed |   |
|   |   |  Coolant hoses for leaks and wear |   |
|   |   |  Exposed wiring and vacuum hoses for wear |   |
|  |  |  **Freightliner only:** |  |
|  |  |  Clean engine crankcase breather |  |
|  |  |  Clean and test after-cooler core as needed |  |
|  |  |  Clean radiator as needed |  |

|  |  |  |  |
| --- | --- | --- | --- |
|  |  | **Undercarriage** |  |
|  |  |  Tire condition and inflation |  |
|  |  |  Wheel condition and lug nut torque |  |
|  |  |  Steering linkage for wear |  |
|   |   |  Front suspension for looseness or wear |   |
|   |   |  Rear suspension for looseness or wear |   |
|   |   |  Wheel bearings and seals, front and rear |   |
|  |  |  Brake caliper and rotor condition |  |
|  |  |  Brake pad condition |  |
|   |   |  Parking brake unit condition |   |
|   |   |  Differential for leaks |   |
|   |   |  Driveline and U-joint condition |   |
|   |   |  Transmission for leakage |   |
|   |   |  Exhaust system for leaks or damage |   |
|  |  |  **Ford only:** |  |
|  |  |  Change engine oil and oil filter |  |
|  |  |  **Freightliner only:** |  |
|  |  |  Lube suspension, steering, and driveline |  |

|  |  |  |  |
| --- | --- | --- | --- |
|  |  | **Wheelchair lift** |  |
|  |  |  Cycle lift, inspect, and listen for noises |  |
|  |  |  Lubricate lift pivot points |  |

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| --- | --- | --- | --- |
|  |  | **Other scheduled maintenance** |  |
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|  |  | **Other unscheduled maintenance** |  |
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| --- | --- | --- |
| Vehicle # |  |  Employee |
|  |  |  |
|  Odometer |  |  Date |

|  |  |  |  |
| --- | --- | --- | --- |
|  |  | **Pre-inspection** |  |
|  |   |  Print, review, and attach a copy of service detail |   |
|  |   |  Review any current write-ups for this vehicle |   |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **Odometer** |  | **Date** |  | **Most recent** |
|  |  |  |  |  | Oil change |
|  |  |  |  |  | Transmission service |
|  |  |  |  |  | Fuel filter service |
|  |  |  |  |  | Brake service |
|  |  |  |  |  | Tune up/ spark plug service |
|  |  |  |  |  | Coolant system service |

|  |  |  |  |
| --- | --- | --- | --- |
| Inspect | Repair |  |  |
| OK | Needed |  | Comments |

|  |  |  |  |
| --- | --- | --- | --- |
|  |  | **Pre-trip inspection** |  |
|   |   |  Gauges |   |
|  |  |  Switches and controls |  |
|  |  |  Driver area condition |  |
|  |  |  Passenger area condition |  |

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|  |  | **Road test** |  |
|   |   |  Starting |   |
|  |  |  Steering |  |
|  |  |  Acceleration |  |
|  |  |  Braking |  |
|  |  |  Transmission |  |
|  |  |  Heating and air conditioning |  |

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| --- | --- | --- | --- |
|  |  | **Engine compartment: engine running** |  |
|  |  |  Listen for and investigate any unusual noises |  |
|   |   |  Transmission fluid level and condition |   |
|  |  |  Charging system output |  |

|  |  |  |  |
| --- | --- | --- | --- |
|  |  | **Engine compartment: engine off** |  |
|   |   |  Cooling system, coolant level and condition |   |
|  |  |  Brake fluid level |  |
|   |   |  Power steering fluid level and condition |   |
|   |   |  Windshield washer fluid level and condition |   |
|   |   |  Fuel lines and connections |   |
|   |   |  Inspect and adjust drive belts as needed |   |
|   |   |  Coolant hoses for leaks and wear |   |
|   |   |  Exposed wiring and vacuum hoses for wear |   |
|  |  |  Battery and battery cable condition |  |
|  |  |  **Freightliner only:** |  |
|  |  |  Replace fuel filters |  |
|  |  |  Clean engine crankcase breather |  |
|  |  |  Clean and test after-cooler core as needed |  |
|  |  |  Clean radiator as needed |  |

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| --- | --- | --- | --- |
|  |  | **Undercarriage** |  |
|  |  |  Tire condition and inflation |  |
|  |  |  Wheel condition and lug nut torque |  |
|  |  |  Steering linkage for wear |  |
|   |   |  Front suspension for looseness or wear |   |
|   |   |  Rear suspension for looseness or wear |   |
|   |   |  Wheel bearings and seals, front and rear |   |
|  |  |  Brake caliper and rotor condition |  |
|  |  |  Brake pad condition |  |
|   |   |  Parking brake unit condition |   |
|   |   |  Differential for leaks |   |
|   |   |  Driveline and U-joint condition |   |
|   |   |  Transmission for leakage |   |
|   |   |  Exhaust system for leaks or damage |   |
|  |  |  **Ford, Chevrolet only:** |  |
|  |  |  Change engine oil and oil filter |  |
|  |  |  Lube suspension and chassis |  |
|  |  |  Service brakes and wheel bearings per inspection |  |
|  |  |  **Freightliner only:** |  |
|  |  |  Change engine oil and oil filter |  |
|  |  |  Lube suspension, steering linkage, and driveline |  |
|  |  |  Service brakes and wheel bearings per inspection |  |
|  |  |  Obtain engine oil sample for testing |  |
|  |  |  Obtain coolant sample for testing |  |

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| --- | --- | --- | --- |
|  |  | **Wheelchair lift** |  |
|   |   |  Cycle lift, inspect and listen for noises |   |
|  |  |  Lubricate pivot points |  |
|  |  |  Hydraulic hoses and connectors for leaks |  |
|  |  |  Bushings for play |  |

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|  |  | **Other scheduled maintenance** |  |
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|  |  | **Other unscheduled maintenance** |  |
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