VEHICLE PREVENTIVE MAINTENANCE PROGRAM

Regardless of how your vehicle fleet is funded, it is important for all agencies providing public transportation to have a strong vehicle maintenance program since well-maintained vehicles are essential to providing a safe and secure ride for your customers. Preventive maintenance is required to ensure vehicles remain in a state of good repair based on manufacturer recommendations. Preventive maintenance also helps avoid breakdowns that may jeopardize passenger safety; helps ensure that all equipment, such as wheelchair lifts, is functioning properly; and conserves agency vehicle maintenance budgets by reducing avoidable unplanned major repairs.

PURPOSE AND COMPONENTS OF A VEHICLE MAINTENANCE PROGRAM

The purpose of a grant recipient vehicle maintenance program is to ensure that:

1. The fleet is in a state of good repair;
2. A sufficient number of agency vehicles are available to meet daily service demands;
3. Agency vehicles are safe, serviced regularly, and clean; and
4. Good vehicle maintenance is provided at a reasonable cost.

Significant components of an effective vehicle maintenance program include:

1. A comprehensive Vehicle Maintenance Plan.
2. An established vehicle service preventive maintenance schedule, based on manufacturer’s recommendations and warranty requirements.
3. A thorough and documented inspection program including daily driver pre-trip vehicle inspections and post-trip inspections. Documentation should include reporting all problems and any corrective actions taken.
4. Mileage or time-period based periodic mechanical vehicle service and inspections and corrective actions as required.
5. Required annual vehicle safety inspection schedule for each vehicle to be performed by a certified mechanic. Currently only one vendor is authorized to do the annual safety inspections.
6. A regular documented vehicle exterior and interior cleaning program.
7. A cost-effective vehicle repair function for unplanned break-downs, which may include both in-house and out-sourced repair services.
8. A policy and facility for safe and secure off-hour vehicle storage.
9. Maintenance records of all service and repairs (invoices, or in-house reports if agencies perform services) for each vehicle - These records must be kept throughout the life of the vehicle being used in transportation service, and for three years following the end of the useful life of the vehicle.
10. A copy of all maintenance (reimbursable or not) must be submitted to Ride Connection.

CAPITALIZED VEHICLE PREVENTIVE MAINTENANCE

Some federal grant programs such as FTA 5310 and 5311 allow preventive maintenance projects to be reimbursed at the capital match rate in the grant program. Capitalized preventive maintenance allowable costs include:

1. Scheduled or routine maintenance, such as changing belts, hoses, and distributor parts;
2. Oil changes and tune-ups;
3. Tire purchases and tire maintenance;
4. Wheelchair lift servicing and repairs;
5. Annual safety inspections performed by a certified mechanic; and
6. Associated maintenance labor, parts, and supplies.

Preventive maintenance in a capital grant is limited to one major component rebuild or replacement per vehicle included in the grant. Must obtain prior approval from Ride Connection.

Some expenses are specifically disallowed as capitalized maintenance. These disallowed costs include:

1. Vehicle fuel
2. Vehicle oil, lubrication, or engine fluids purchased for inventory*
3. Vehicle parts and other expendables purchased for inventory*
4. Shop supplies
5. Repairs resulting from accidents covered by insurance
6. Insurance policy deductibles, or other costs covered by insurance
7. Repairs that should be charged to warranties or service agreements

* The cost of lubrication, oil, engine fluids, and parts which are expended in the course of a specific vehicle service are allowable as capitalized preventive maintenance, as a portion of the total vehicle servicing cost.

Vehicle “re-builds,” such as full engine replacements, or transmission/drive train replacements, are not considered preventive maintenance, and are generally not accepted as an allowable capital grant expense. Agencies considering a major vehicle re-build, should complete a brief cost-benefit analysis to determine if the additional vehicle life secured by a re-build justifies the re-build cost, and whether the same funds applied towards a new vehicle would provide the agency greater value.

**Records Retention Requirement:** Individual vehicle records, including procurement, maintenance and repair records must be retained as long as the vehicle remains in public
transportation service, plus three years beyond disposition of the vehicle.

**Wheelchair Lift Maintenance:** A survey of major wheelchair lift dealers in Oregon indicates that because of widely varying lift usage rates, manufacturers recommend that preventive maintenance for powered lifts is scheduled based on lift cycles, rather than on time-based intervals. For instance, if a dial-a-ride bus is deploying the lift 30 times a day, it would require more frequent service than a limited-route van requiring 8 deployments in a day. Cycle counters have been installed on vehicle lifts in Oregon since April 2005. PTD is advised that retrofitting older lifts with cycle counters is possible with certain units, and in limited circumstances. Check with the vendor who sold the component for information.

Agencies should include a vehicle lift preventive maintenance section in the Vehicle Maintenance Plan. The lift preventive maintenance section should address the following:

1. A preventive maintenance schedule based on lift cycles, according to manufacturers’ recommendations;
2. Regularly scheduled visual lift inspections by drivers, and by mechanics during in-shop maintenance; and
3. New staff orientation and training on operation of the lift and of the cycle counter (for drivers and shop technicians).

**Vehicle Preventive Maintenance Records:** Vehicle maintenance records must be maintained for each vehicle, to show whether or not maintenance has in fact been performed according to vehicle’s established preventive maintenance schedule. The maintenance records will also show that recommended repairs are made on a timely basis.

Vehicle maintenance and repair documentation is an FTA requirement for all federally-funded assets. All vehicle maintenance records must be made available when requested by Ride Connection, Oregon Department of Transportation, TriMet or any of their representatives.

Vehicle maintenance records for each vehicle should be kept in separate files, and should include:

1. Documentation of annual safety inspections, including ADA components, performed by a certified mechanic with manufacturer-certified training for the vehicle and for specialized, on-board ADA components;
2. Completed daily pre-trip and post-trip driver checklists documenting that all safety features are functioning. The driver’s pre-trip checklist must include deploying any wheelchair lift equipment and interlock features. The post-trip checklist must include indications of service or repairs required, action taken to do the work, and whether or not the vehicle must be taken out of service until repair or service is done, based on agency maintenance policies and safe operation standards;
3. Copies of all parts or services invoices, or internal repair orders, documenting that the maintenance and repairs were performed.
VEHICLE REPAIRS AS PART OF PREVENTIVE MAINTENANCE

Vehicle repairs include planned major parts replacements (one instance per vehicle per biennium may be reimbursed in a capital preventive maintenance grant); repairs arising out of pre-trip, post-trip, or mileage/time-based inspections (including annual safety inspections); and wear and tear repairs or replacements (e.g., nicks and minor windshield chips, cracked light covers, individual seat tears, tires, planned brake jobs, lift repairs, bus washing and detailing, etc.)

Although defined as maintenance repairs, warranty/recall servicing, warranty/recall parts replacement, and repairs resulting from accidents, are not eligible expenses. Warranty work should be performed in a timely manner, and agencies should access the manufacturer’s warranty via the vendor if assistance is needed to determine what is covered. Accident repairs should be covered by insurance. Any deductibles or charges resulting from an accident that the agency must pay are also considered operating expenses that cannot be reimbursed from a capital preventive maintenance grant.

Agencies should use some form of Vehicle Repair Work Order form or sheet to record the repair activities. It should include, at a minimum, the start and end date of repairs; the reason for the repair (for example, bus wouldn’t start, check engine light came on, inspection finding, or accident); what repairs were made; labor hours; parts used; and who did the work. A Work Order should be used whenever the agency performs the repair service in-house. If work is done by a vendor, agencies should require work orders or invoices from the company performing the maintenance or repair that, at a minimum, state the issue, parts installed and separate labor charges.

Once the work is completed, the repairs should be documented in the Asset Database and the Work Order should be sent to Ride Connection to be kept in the individual vehicle maintenance file, where it becomes part of the historical record for that vehicle. These documents are also provided either as required reimbursement documents.

VEHICLE CLEANING

It is important that vehicles are regularly cleaned inside and out. Agency preventive maintenance plans should address the issues of regular vehicle cleaning.

Regular vehicle cleaning helps prevent premature vehicle aging, protects exterior paint, extends the life of protective coatings, and helps prevent rust. It also increases passenger comfort and maintains a positive agency image. Smaller vehicles may be washed at a car wash or with a portable vehicle washing unit. Washing should include periodic washing or steam-cleaning the vehicle engine and undercarriage, and application of a protective coating to the painted surfaces, if recommended, and as specified by the manufacturer.

An interior and exterior cleaning schedule must be developed, which specifies cleaning activities to be performed at specified intervals. At minimum, the cleaning standards should include the activities noted below.
ON BOARD SAFETY EQUIPMENT

When an emergency or accident occurs on board the vehicle, the need to have the proper equipment immediately available is of paramount importance. The daily pre-trip inspection by the driver must include the positive identification that the equipment is available and in proper working order. The list of on board equipment could be unlimited and must be adjusted and appropriate to the location of the system, either urban or rural, and potential high-risk conditions a system may encounter such as weather, road conditions, types of passengers, etc. This section provides a list of necessary equipment appropriate to all types and sizes of vehicles and organizations.

On board safety equipment should include at a minimum:

- Ride Connection Emergency Packet (envelope), containing:
  - 5 Courtesy Cards
  - Oregon Insurance Identification Card
  - Accident Handling Procedures
  - Collision Report
- Blood Born Pathogen Kit
- Fire Extinguisher
- First Aid Kit
- Seat Belt Cutter
- Disabled Parking Permit
- Pre and Post-trip inspection form
- 3 Emergency Triangles
- Flashlight
- Title VI Poster

VEHICLE STORAGE AND SAFETY

Every transit agency is responsible for protecting its vehicle fleet through good storage and safety practices. Safe and secure vehicle storage encompasses several aspects:

1. **A secured vehicle parking area.** This may be a parking lot with adequate lighting and security, such as security fencing, perimeter motion-detector lighting, or door/window alarms, or a covered bus parking shelter, or a bus barn, also with adequate security.

2. **Security surveillance.** In areas more prone to crime, vandalism, or gang-related activity such as graffiti tagging, some form of additional surveillance may be desirable. This can take the form of electronic surveillance (monitored security cameras), or a routine private patrol service, or both. Security camera monitoring during hours the agency is
closed can often be contracted to a commercial security company.

3. **Safety procedures.** Proper storage also incorporates safety procedures such as no-exception brake setting and transmission-in-park requirements of drivers; and setting up the parking area to maximize forward driving and avoid operating vehicles in reverse. Backing up is a frequent accident-generating activity. Entering and exiting safely at the storage facility is also important. Requiring procedures such as 10 MPH maximum driving speeds, and stop signs or markings at intersection points, will help to minimize unnecessary vehicle damage or collisions.

4. **Key Control.** Keys are a vulnerability point for all vehicles. A policy and procedure for locking vehicles, and assigned responsibilities for vehicle keys at shift-end should be established.

Authorized Signature: ________________________________

Name (print): ________________________________

Please list at least one emergency contact to reach after hours for vehicle issues.

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