

# ABC TRANSIT ASSET MANAGEMENT PLAN

## **Mission Statement**

The Maintenance Department's mission is to effectively and efficiently provide safe, clean, reliable, and comfortable vehicles for use by its customers and operators.

## **Graduated Preventive Maintenance Program**

The emphasis of ABC Transit System's maintenance program is preventive rather than reactive maintenance. A strong preventive maintenance program effectively reduces overall maintenance costs by decreasing the number of road calls and the high cost of unpredictable repairs caused by reactive maintenance. ABC Transit System uses a graduated preventive maintenance program (PM) that is based on the manufacturer's recommendations and modified based on our experience and the local conditions we deal with in ABC County. Solid PM practices maximize useful life, are cost efficient over the life of the vehicle, and ensures that our vehicles remain in safe operating condition.

ABC Transit has an aggressive preventive maintenance program that schedules bus inspections based on a variety of categories. A PM schedule is developed for each type or group of vehicles we operate. The PM schedule established is based upon usage and vehicle type. The schedule is progressive. Each successive PM includes a higher level of maintenance inspection activity. Vehicles are inspected based on mileage and time. In addition, each vehicle receives an annual comprehensive inspection.

ABC Transit staff continually review our maintenance practices to identify potential improvements to the program. This assures optimum benefits from the scheduled inspections. Engine oil analysis is an integral part of the inspection program. Oil analysis occurs differently for different fleet types. Some are based on mileage or hours operated. The purpose is for early identification of unusual engine wear thereby, acting to prevent catastrophic engine failures.

### ***On-time inspection variance***

The allowable variance with all preventive maintenance inspections is a minus 500 miles to a plus 500 miles. Any inspection completed within this parameter is considered on time.

Each sub-fleet has its own specific PM schedule. Samples inspection sheets used for a 30-foot Gillig coach are attached.

## Local Conditions

Local conditions have a direct impact on the level of PM needed. ABC Transit provides service throughout ABC County. The following conditions are considered when developing a PM program for a vehicle or group of vehicles:

- Service Design
  - Urban Service – Fixed route and complimentary paratransit service. Due to the frequency of the stops and traffic congestion in the urban area, vehicles used for this service require a higher level of PM
  - Rural Area – Route deviated service. Infrequent stops in a long distance corridor
- Topography – ABC County is located along the pacific coast. The terrain is fairly flat. However, sand and salt may cause premature ware on certain of the vehicles. Those parts are inspected more frequently than the manufacturer recommends.
- Weather – ABC County rarely experiences inclement weather. However, the average rainfall is approx 156 inches per year.
- Local Policies
  - The ABC Transit Board requires that all vehicles be equipped with cloth seats for the passengers. This type of seat is more difficult to clean and therefore is more costly to maintain.
  - Cleanliness – All vehicles must be cleaned daily
  - Graffiti – All graffiti must be removed within 24 hours

### **Authorize, Direct, and Control Maintenance Activities and Costs**

The Maintenance Manager is responsible for developing the PM schedule for each vehicle fleet and ensuring that all PM activities are completed in a timely manner and consistent with the manufacturer's recommendations.

Throughout the PM and repair process the tasks performed by maintenance staff are under constant review by the Maintenance Department management and staff. This constant review is designed to ensure that review and decisions are made at the proper level of management.

Each day the Maintenance Manager prints and reviews the PM Tracking report to identify which vehicles are due or coming due for preventive/Preservation Maintenance. The identified vehicles are removed from service and scheduled for work.

The work is then assigned to a preventive Maintenance Technician who performs the PM and completes the appropriate PM inspection form. The technician is provided with complete instructions on how to perform the PM and is required to follows those instructions to completion. Very minor repairs such as light bulbs and the securing of fasteners etc. are done during the PM process.

ABC Transit maintains separate PM inspection process for specific component systems such as wheelchair lifts, HVAC systems, and

fare collection systems. These component systems each have their own PM schedules, forms, and tracking reports. A maintenance supervisor is charged with the task to review the tracking reports and generates the work orders to perform the tasks.

Other needed repairs may be identified during the PM inspection. These are referred to as “PM write ups”. In addition, drivers may report vehicle problems. The Supervisor and/or the Lead person review the PM write-ups and driver reports. The repairs are then scheduled into the repair shop, assigned to a mechanic and completed before the bus returns to service. A separate work order is issued for this type of repair.

### **Identify, Track, and Record Maintenance Activities and Costs**

ABC Transit uses a system of manual and computerized forms and reports to schedule and perform preventive/preservation maintenance (PM) and repairs to its fleet of vehicles. These documents include:

- Work orders
- Service orders
- Purchase orders
- Parts requests
- PM Tracking report
- PM Inspection forms (these vary based on type of vehicle and level of PM to be performed)

After the Maintenance Manager identifies which vehicles are due for PM, a work order is prepared that describes the work to be done, the account codes to be charged, and instructions as to which level of PM is to be performed. All the PM labor and costs are captured under the PM code on the work order. When there is a PM write-up, a new work order or multiple work orders are then generated listing those repairs. All repair labor and parts are charged to the work orders under the specific coding applicable to the individual repairs.

The required parts and supplies are assembled by the inventory department and charged to the work order. The PM work order is checked and completed by the inventory department. The inventory department then updates the PM Tracking Report to show when the PM was completed.

If a repair is determined be covered under the warranty, the appropriate coding will be identified on the work order. Any warranty parts removed from the vehicle(s) are tagged with the repair information and sent to the inventory department for storage until requested by the manufacturer/vendor. The Inventory Department submits a warranty claim to the applicable manufacturer/vendor. The inventory department tracks warranty claims via the open warranty tracking report. (See warranty Recovery Program section of this plan for more details).

### **Process to oversee work done by contractors**

ABC Transit contracts with a private operator for its dial a ride service. This includes maintenance of vehicles owned by ABC Transit. The contractor is

required to maintain the vehicles in accordance with our plan. To ensure compliance ABC Transit requires the contractor to submit all work orders for preventive maintenance and repairs to our Maintenance Manager. In addition, Maintenance Department staff conduct an annual physical inspection of all Transit agency vehicles maintained by the contractor.

### **Warranty Recovery System**

ABC Transit operates a warranty recovery program to ensure that cost of parts and repairs on warranty-covered items are recovered.

#### **Failed Components**

Parts and components that may have failed prematurely are returned to the Inventory Department. The Inventory Division researches the original installation date, miles of usage on the failed component, and the vendor it was originally purchased from. If the part or component is covered by a warranty, it is returned to the vendor.

#### **Return to manufacturer/vendor**

Authorization for warranty return and labor claims, if applicable, are obtained from the manufacturer or vendor. Information is supplied to the vendor on the circumstances of the failure, if known. The item is then returned to the vendor warranty department for repair or replacement. ABC Transit retains copy of the warranty claim form for tracking purposes.

#### **Receipt from manufacturer/vendor**

When a unit is received at ABC Transit, it is entered into the inventory system via an Inventory Adjustment form that is coded as a warranty replacement. A Journal Voucher form is completed and forwarded to the Accounting Department to make the necessary accounting adjustments. Labor credit if received is applied to the appropriate cost center via a credit entry applied to the work order used when the defective part was removed.

### **Cost Analysis Tool**

YXZ Transit's Maintenance Department uses a life cycle cost analysis tool as part of its decision-making process when establishing and making changes to preventive maintenance intervals. This enables our agency to analyze the cost effects of alternative practices over the life of the equipment.

## **Facility and Equipment Management Plan**

### **Purpose**

The purpose of ABC's Facility Maintenance Plan is to develop a consistent, on-going system of maintenance procedures and guidelines to use as a basis and

reference to ensure the highest quality and the most cost effective facility maintenance program.

In addition to the maintenance of the vehicle fleet, the Facility Maintenance Plan shall include scheduled inspections of the facility, both interior and exterior, and all related equipment and elements of the facility. Maintenance staff will conduct such scheduled maintenance with the necessary frequency to ensure a safe work environment, maximize the useful life of the facility in the most cost effective and safe manner.

Facilities Maintenance includes overall environmental regulatory record keeping and oversight; hazardous waste disposal and manifests; timely and reliable maintenance, preventive maintenance, inspections, repair and servicing of administration buildings, maintenance facilities and equipments, transit centers, bus stops and bus passenger shelters.

## **Facility and Equipment Maintenance Schedule**

<b>Scheduled Inspection Tasks</b>	<b>Frequency</b>
<b>ADA Accessibility</b>	
✓ Insure FULL ADA Compliance in terms of access and use	Daily
✓ ADA Ramp and Entry	Daily
<b>Building Interior</b>	
✓ Window and Door (Entrance and Exit)	Daily
✓ Wall repair as needed	Monthly –
✓ Paint repair as needed	Monthly –
✓ Floor coverings, mats repair as needed	Monthly –
✓ Lighting replace as needed	Monthly –
✓ Elevator repair as needed	Monthly –
✓ Plumbing	Quarterly
<b>Building Exterior</b>	
✓ Roof inspection replace as needed	Inspect and
✓ Gutters repair as needed	Inspect and
✓ Rain Drains repair as needed	Inspect and

✓ Painting or as needed	Every 10 years
✓ Building Cleaning	Weekly
✓ Walk Way	Weekly
✓ Parking Areas and Re-Surface	Fix Cracks, Patch
✓ Driveway and Curbing needed	Inspect and repair as
✓ Signage needed	Weekly – repair as
✓ Lighting repair as needed	Weekly –
✓ Lawn Care and Grounds needed	Every 2 weeks or as
✓ Snow Plowing (contract service)	As needed
✓ Maintain Sanitary Sewer Connections required	Service as
<b>Electrical, HVAC, Fire Alarm, and Security System</b>	
✓ Electrical System repair as needed	Monthly –
✓ Inspect and Service Generator	Quarterly
✓ Backup Battery	Monthly
✓ HVAC System	Bi- annually
✓ Fire Alarm System (Contractor)	Bi- annually –
✓ Fire and Alarm System Check	Bi- annually
✓ Emergency lighting and exit lights	Monthly
✓ Fire Extinguishers	Annually
✓ Fire Sprinkler System	Bi- annually
✓ Security Alarm System (Contractor)	Bi- annually–
✓ Inspect and Service Heating System	Bi- annually
✓ Shop Heating- overhead blowers and radiant units	Bi- annually
✓ Exhaust fans	Quarterly
<b>Maintenance Facility and Equipments</b>	
✓ Inspect and Service Bus Lifts Jacks and Jack stands recommendations	Manufactures
✓ Air compressors needed	Monthly or as
✓ Overhead Doors repair as needed	Quarterly –
✓ Floor coverings, mats (slip, trip hazards)	Weekly
✓ Hot water tanks and circulating pumps	Monthly
✓ Hazardous Materials storage	Weekly
✓ Waste Oil Tank	Weekly

✓ Gas power Equipments i.e. sweeper, lawn mowers, recommendations line trimmers, fork lift, salt spreader, snow blower	Manufactures
✓ Welding equipment	Monthly
✓ Bus Wash	Weekly
✓ Paint Booth	Monthly
✓ Fuel pump, nozzle, and tank	Monthly
✓ Tools	Daily
✓ Revenue counting equipment	Monthly
<b>Transit Center and Bus Stops</b>	
✓ Transit Center as needed	Daily– Clean
✓ Bus stops and Bus Shelters as needed	Daily– Clean

**Public Transportation Management System  
Owned Equipment Inventory**

Agency/organization: \_\_\_\_\_

Date: \_\_\_\_\_

		Equipment Code and Description	Condition (points)	Age (years)	Remaining Useful Life (years)	Replacement Cost (\$)	Comments <i>(If more than two lines, please attach a separate comment page)</i>
1.	05	(EXAMPLE) Bus Washer	100	4	21	\$150,000	
2.							
3.							
4.							
5.							
6.							
7.							
8.							
9.							
10.							
11.							
12.							
13.							
14.							
15.							
16.							

Public Transportation Management System  
 Owned Facility Inventory

Agency/organization: \_\_\_\_\_

Date: \_\_\_\_\_

		Facility Code and Description	Condition (points)	Age (years)	Remaining Useful Life (years)	Replacement Cost (\$)	Comments <i>(If more than two lines, please attach a separate comment page)</i>
1.	10	(EXAMPLE) Administration Bldg.	70	30	20	\$3,000,000	
2.							
3.							
4.							
5.							
6.							
7.							
8.							
9.							
10.							
11.							
12.							
13.							
14.							
15.							
16.							