

## **SAMPLE PLAN**

# **XYZ 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 Preventative Maintenance Program**

The emphasis of XYZ 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. XYZ Transit System uses a graduated preventative 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 XYZ 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.

XYZ 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.

XYZ 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. XYZ Transit provides service throughout XYZ 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 – XYZ 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 – XYZ County rarely experiences inclement weather. However, the average rainfall is approx 156 inches per year.
- Local Policies
  - The XYZ 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 Preventative/Preservation Maintenance. The identified vehicles are removed from service and scheduled for work.

The work is then assigned to a Preventative 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 follow those instructions to completion. Very minor repairs such as light bulbs and the securing of fasteners etc. are done during the PM process.

XYZ 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**

XYZ Transit uses a system of manual and computerized forms and reports to schedule and perform preventative/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 to 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**

XYZ Transit contracts with a private operator for its dial a ride service. This includes maintenance of vehicles owned by XYZ Transit. The contractor is required to maintain the vehicles in accordance with our plan. To ensure compliance XYZ Transit requires the contractor to submit all work orders for preventative 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**

XYZ 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. XYZ Transit retains copy of the warranty claim form for tracking purposes.

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

When a unit is received at XYZ 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**

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