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Volume 6, Chapter 15

Fleet Maintenance Plan

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Table of Contents

1.0 PURPOSE

A fleet is a collection of motorized vehicles owned or procured by the Entity and provided to its employees or agents by the Entity for their use as part of their duties.

The purpose of this document is to provide the Entity with the means by which to establish its own Fleet Maintenance Plans based on the description of the component parts of a Plan described herein. Efficient, high-quality Fleet Maintenance Plans are critical for the safe operation of facilities and for the comfort and safety of fleet users (i.e. operational staff and passengers).

Guidance contained within this document is based on relevant standards and best-practice regarding Fleet Maintenance. In addition to the guidance contained herein to generate Entity-specific Fleet Maintenance Plans, the Entity shall also consider its own policies, and Original Equipment Manufacturers' (OEM) instructions.

2.0 SCOPE

The Fleet Maintenance Plan describes maintenance services which are critical to enable the safe operation of the facility's vehicles and assets associated with Fleet Maintenance. Key components of the Fleet Maintenance Plan include:

- Responsibilities concerning Fleet Maintenance Plans, with particular focus on the role of the Fleet Maintenance Manager
- Hazard identification, and fleet-related risk mitigation measures such as insurance provision, back-up plan for damaged vehicles, and asset replacement
- Fleet Maintenance strategies (against different scenarios)
- Training requirements for Fleet Service Personnel
- Housekeeping
- Incident management and reporting
- Health and Safety inspections
- Post incident/accident inspections

Fleet Maintenance Plans considered herein focus solely on the automotive components of vehicles. Therefore, planning of maintenance associated with specialist equipment, such as medical equipment found in ambulances, is outside the scope of this document.

3.0 DEFINITIONS

Term	Definition
Fleet	A collection of motorized vehicles owned or procured by the Entity and provided to its employees or agents by the Entity for their use as part of their duties.
Service Interval	Refers to the distance travelled by a vehicle between major repairs, or services. The manufacturer of the vehicle typically specifies the service interval. Most vehicles have three, six, and twelve-month intervals
Toolbox Talks	Informal group discussion that focuses on a particular issue concerning safety, health, compliance, quality, security, environment, or a combination thereof.
Wheel Alignment	Sometimes also referred to as tracking that consists of adjusting the angles of the tires or wheels of the vehicle to the vehicle manufacturer's specifications. These adjustments are intended to reduce the wear on tires and to ensure that the vehicle travels in a straight line when the steering wheel is in the neutral position
Acronyms	
CSR	Corporate Social Responsibility
EV	Electric Vehicle
GPS	Global Positioning System, also referred to as Satellite Navigation (SATNAV)

Term	Definition
HSE	Health and Safety Executive (United Kingdom)
ID	Identity
ISO	International Organization for Standardization
OEM	Original Equipment Manufacturer
OSHA	Occupational Safety and Health Administration
PPE	Personal Protective Equipment
SATNAV	Satellite Navigation
SEEC	Saudi Energy Efficiency Center
SUV	Sport Utility Vehicle
VSMS	Vehicle Safety Management System

Table 1: Definitions

4.0 REFERENCES

- Government of Dubai, Green Fleet Management, Implementation Guidebook for Organizations in the UAE, February 2018.
- Health and Safety Authority, Vehicle Maintenance, Ireland
- Health and Safety Executive (HSE) Health and Safety in Motor Vehicle Repair and Associated Industries, United Kingdom
- ISO Occupational Health and Safety ISO 45001:2018
- ISO Quality System Standard, ISO 9001:2015
- National Manual of Assets and Facilities Management EOM-EM0-TP-000002 – Risk Register Template
- National Manual of Assets and Facilities Management EOM-KSS-PR-000021 – Vehicle Safety Management System (VSMS) Procedure
- National Manual of Assets and Facilities Management EOM-KSS-TP-000003 – Night Works Assessment Template
- National Manual of Assets and Facilities Management EOM-ZW0-TP-000002 – Maintenance Procedure Template
- National Manual of Assets and Facilities Management EPM-KSS-PR-000023 – Project Vehicle Safety Management Procedure
- Personal Protective Equipment (PPE) OSHA 3151-12R 2004
- Saudi Energy Efficiency Center – Saudi Energy Efficiency Program (SEEP) (www.seec.gov.sa)

5.0 RESPONSIBILITIES

Role	Description
Facility Director	The individual accountable for hard and soft services delivered within the facility including, but not limited to cleaning, operations, maintenance, landscaping, repairs, construction, renovations, logistics, security, parking, and fleet maintenance
Fleet Maintenance Manager	The individual responsible for ensuring that the fleet meets the requirements of the Entity and that Fleet Maintenance Service Personnel are competent to perform tasks assigned to them. The Fleet Maintenance Manager coordinates, schedules, and audits vehicle maintenance repairs. Purview covers preventative, scheduled, and unscheduled work. The Fleet Maintenance Manager shall also prioritize and assign fleet work, monitor quality of maintenance works, and ensure effective running costs of the fleet.
Fleet Maintenance Service Personnel	Fleet Maintenance requirements shall be met or exceeded by Fleet Maintenance Service Personnel who shall be, as a minimum: • Suitably trained regarding Fleet Maintenance activities such as fuel management, calibration, and balancing and Entity-specific requirements such as vehicle availability and scheduling. • Capable of performing tasks assigned to them • Capable of maintaining a safe vehicle fleet
Service Providers	Provides the Entity with expert services which may include but which are not limited to advisory services, management consulting, engineering, cleaning, and maintenance, servicing. Service providers hold a contract with the Entity and are remunerated based on time, materials, performance, deliverables, or a combination thereof

Table 2: Responsibilities

6.0 PROCESS

Preparation of Fleet Maintenance Plans shall follow the process described in Figure 1 (below).

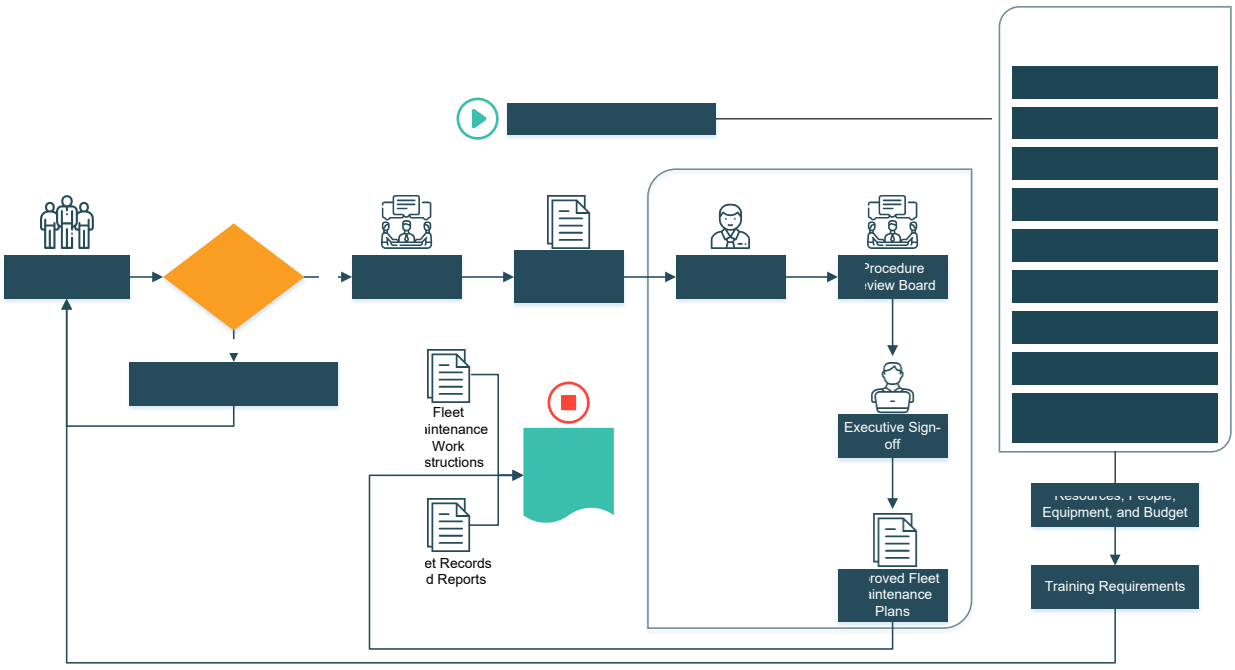

Figure 1: Fleet Maintenance Process

6.1 Preparation

The Entity's fleet is critical to the provision of essential government services across all sectors within the Kingdom of Saudi Arabia. Given the reliance on the fleet for the successful delivery of services, efficient fleet operations can significantly reduce costs associated with fleet operations.

Vehicles used for work purposes shall be maintained in good working condition to meet the Entity's fleet availability requirements, safe to use, fit for purpose, and roadworthy. Fleet Maintenance Plans play a crucial role in helping the fleet to meet these requirements.

A well-designed Fleet Maintenance Plan shall address:

- Types of maintenance to be undertaken
- Duration of each maintenance activity
- Skillsets required to undertake specific maintenance procedures
- Materials, parts, consumables, and spares required in undertaking Fleet Maintenance
- Tools and Personal Protective Equipment (PPE) required

The Fleet Maintenance Plan should guide maintenance personnel in identifying the root cause of problems arising through vehicle operations. For example: A worn tire requires replacement, but the root cause of the worn tire may be that steering alignment is beyond tolerance limits, meaning that wheel balancing and steering checks shall also be carried out, along with the tire change.

The Entity's fleet can be complex dependent on the sector in which the Entity operates and the services which it offers. Below are sector-specific examples from within the Kingdom:

- **Healthcare entities** – Support the provision of several essential Healthcare services such as ambulance services and transport associated with out-patient care, organ transplants, medical equipment, and laboratories
- **Schools** – Use the fleet to safely transfer children from pick-up locations to school and back home safely at the end of the day
- **Parks and Recreation Facilities** – Employ heavy vehicles for grounds maintenance and haulage of goods and equipment
- **Municipalities** – Deploy garbage disposal trucks to collect Municipal Solid Waste
- **Housing entities** – Operate buses to ferry residents and workers from one location to another
- **Office buildings** – Are leased or owned by entities which offer cars (with drivers) for employees. These cars operate between residences, airports, and places of work

In general, the fleet varies from entity-to-entity and from sector-to-sector, comprising different types of specialized vehicles which shall be subject to the highest standards of maintenance. Fleet Maintenance Plans shall therefore:

- Use simple, clear, and concise language
- Highlight features which differentiate maintenance requirements based on vehicle type
- Identify and outline actions to improve efficiency of the fleet
- Highlight the importance of reducing vehicle downtime

6.2 Creating a Fleet Maintenance Plan

The key objective for Maintenance Plans is to support reduction of fleet operating costs. In reducing risk of vehicle breakdown, the Entity can avoid the costs of vehicle recovery, emergency repairs, and unnecessary parts replacements.

Regularly scheduled servicing and maintenance also contributes to the fleets' fuel efficiency, helping to reduce the overall fleet fuel costs. Tire pressure, for example, according to the Saudi Energy Efficiency Center (SEEC), being maintained at its optimum as prescribed by the tire manufacturer can enhance fuel consumption by up to 6%.

6.2.1 Targets and Strategies

The Entity shall establish a Sustainable Fleet Policy and set targets which align with the policy. The policy should specifically focus on the reduction of environmental impacts associated with the fleet and shall make reference to transport-related issues such as:

- Increasing the percentage of electric vehicles in the fleet
- Fuel-efficient driving
- Traffic reduction measures

Establishing a Sustainable Fleet Policy holds several benefits for the Entity, including:

- Reduce operational costs
- Reduce the environmental impact of fleet operation
- Improves the safety and wellbeing of employees

A Sustainable Fleet Management Strategy should be established by the Entity and used to meet the Sustainable Fleet Policy. A Sustainable Fleet Management Strategy shall cover the following key areas:

- **Transport Demand Management** – Strategically deploying vehicles such that the total number of kilometers driven by non-electric vehicles is minimized. Delivering this component of the strategy requires that Entities:
  - Identify whether trips are necessary
  - Prioritize trips which are operation-critical
  - Minimize single (point-to-point) trips by establishing an optimized travel route and deployment schedule covering multiple geographical locations.
  - Use video conferencing as an alternative to face-to-face meetings, as far as is reasonably practicable
  - Maximize the use of public transport as far as possible
- **Clean Fuels and Technologies** – Deploying vehicles which emit the lowest possible greenhouse gas emissions. Delivering this component of the strategy requires that Entities:
  - Install Global Positioning System (GPS) on all vehicles such that they can be tracked by the Entity and data used to continuously improve the deployment schedule
  - Install speed-limiting devices on all vehicles such that vehicle operators cannot exceed speed limits (according to SEEC, increasing speed from 100km/h to 140km/h, for example, increases fuel consumption by 25-30%)
  - Minimize the use of diesel and petrol vehicles
  - Identify and explore new, low-emission technologies which can be built into the fleet, such as electric vehicles and biofuels
- **Efficient Vehicle Use** – Ensuring that vehicles within the fleet are being deployed and operated as efficiently as possible. Delivering this component of the strategy requires that Entities:
  - Monitor and target vehicle operator performance
  - Deploy vehicles of appropriate size for the task at hand

Refer to Volume 17, Chapter 2 of the National Manual for Assets and Facilities Management (NMA&FM) – Sustainability (EOM-ZN0-PR-000002) for more guidance on Sustainability.

6.2.1.1 Saudi Energy Efficiency Center

The Saudi Energy Efficiency Centre is tasked with unifying and consolidating efforts between governmental and non-governmental organizations to rationalize energy use and improve energy efficiency. The SEEC was established as a result of common challenges faced across KSA in reducing energy consumption, such as:

- Low energy prices
- Low consumer awareness of the importance of energy efficiency
- Absence of energy efficiency Standards and Specifications
- Poor inter-Entity collaboration regarding energy efficiency

According to SEEC, there are three Sectors which consume more than 90% of the energy in KSA and in which SEEC focuses its efforts. Based on 2012 figures, these Sectors and their corresponding energy consumption are as follows:

- Buildings Sector: 29%
- Land Transport Sector: 21% (specifically associated with vehicle energy use)
- Industry Sector: 41 - 44%

In 2012, SEEC launched the Saudi Energy Efficiency Program (SEEP) to deliver its commitments. Through the Program, SEEC has implemented initiatives to rationalize energy consumption in these Sectors. An Executive Committee manages implementation and enforcement of the SEEP, including national reporting.

SEEC has carried out a review of the KSA Land Transport Sector and summarized the challenges faced by the sector in becoming more sustainable. These challenges include:

- Low cost of fuel – offering no incentive to reduce fuel consumption
- Overall low efficiency of vehicles currently on the road within KSA relative to higher-performing nations
- Consumer desire for vehicles with relatively large engines regardless of the need, and regardless of their higher levels of fuel consumption levels as compared with smaller engine vehicles
- Unavailability of a comfortable, high quality, and well-planned public transport system

Through Land Transport Sector-related components of the Program, SEEC:

- Defines requirements for the sale of new vehicles (including the obligation for vehicle suppliers to provide information regarding the vehicle's fuel consumption)
- Mandates that governmental organizations buy fuel efficient vehicles
- Is establishing plans to accelerate the replacement of inefficient vehicles beyond a certain age, with new, more efficient vehicles
- Issues technical specifications for vehicles in line with vehicle performance standards

6.2.2 Implementation Plan

The following are items considered essential to the successful implementation of a Fleet Maintenance Plan:

- An Automotive Service Center where inspections, maintenance, and repairs of the fleet are undertaken (see Attachment 1 – EOM-ZM0-TP-000052 – Subcontractor Pre-Mobilization Inspection Template)
- An Inspection Procedure to aid vehicle operator inspections (see Attachment 2 – EOM-ZM0-TP-000053 – Vehicle Operator Checklist Template)
- Checklists covering all predictive maintenance activities to be performed on the fleet (see Attachment 3 – EOM-ZM0-TP-000093 – Vehicle Predictive Maintenance Inspection Template)
- Checklists covering all preventative maintenance activities to be performed on the fleet (see Attachment 4 – EOM-ZM0-TP-000094 – Vehicle Preventative Maintenance Inspection Template). The Entity shall tailor checklists to each class of vehicle within its fleet.
- Service interval at which the preventative maintenance shall be carried out on the vehicle
- A procedure covering vehicle operator complaints, for example, when the vehicle breaks down or is showing symptoms that could indicate a problem, such as an engine flashing warning light on the dashboard
- Fleet Maintenance Service Personnel qualified to perform inspections, maintenance activities, and repairs
- A method of keeping records associated with fleet operations and maintenance (O&M) aligned to International Organization for Standardization (ISO) Quality System Standard, ISO 9001:2015
- A procedure for ordering parts and maintaining a spare parts inventory

Prior to establishing Fleet Maintenance Plans, the Entity shall establish an understanding of existing fleet conditions. If up-to-date information is not already available for each vehicle in the fleet, the Entity shall:

- Conduct a complete inspection
- Establish a maintenance history (including breakdowns, replaced parts, and emergency repairs).

- Formulate an inspection and service record noting all relevant parameters such as tire tread depth, tire pressure, and working fluid levels.
- Establish a logbook featuring travel dates, locations, reason for travel, and mileage

6.2.3 Resources

Fleet Maintenance planning involves several interfaces associated with people and assets. The Entity shall therefore ensure that it holds available resources to effectively manage the fleet, placing safety at the forefront of Fleet Maintenance Plans, while ensuring minimal vehicle downtime.

Personnel responsible for establishing and delivering the Fleet Maintenance Plan (i.e. Fleet Maintenance Service Personnel and the Fleet Maintenance Manager) shall possess the following qualities:

- Customer service
- Problem solving
- Professional work ethic
- Problem-solving
- Breadth and depth of knowledge
- Resourcefulness
- Experience

Personal Protective Equipment (PPE) shall be worn only as an outcome of risk assessment and shall conform with the requirements of PPE Occupational Safety and Health Administration (OSHA) 3151-12R 2004.

6.2.4 Training Requirements

The Entity shall place training and certification as a priority associated with the fleet, such that risks to people, assets, and the Entity's reputation as a result of unsafe practice are suitably mitigated. The Entity shall establish a Fleet Training Program applicable to all vehicle operators and Fleet Maintenance Service Personnel. To become eligible for the Program, each candidate shall:

- Hold a full, clean, valid KSA driver's license
- Hold valid vehicle insurance
- Be prepared to undergo random drug and alcohol testing
- Receive off road training, if this is required to enable the vehicle user to execute their duties.

Training delivered through the program shall include:

- Sustainable Fleet Policy and Fleet Management Strategy
- Safe and economical driving
- Maintenance tools
- Testing and inspection
- On-board systems and diagnostic techniques
- GPS (including system architecture, applications, navigations, and vehicle tracking)
- Basic First Aid

The Fleet Training Program shall deliver training through online courses, workshops, presentations, and toolbox talks. From time-to-time, the Entity shall invite external service providers to deliver training. For example, OEMs provide a wide range of training programs which should be undertaken by the Entity.

The Fleet Training Program shall offer the Entity the opportunity to test the effectiveness of Fleet Maintenance Plans and the competence of Fleet Maintenance Service Personnel in delivering the Plans. A continuous improvement model shall be implemented such that Plans can be updated based on results and feedback from training simulations.

6.2.5 Work Instruction

Each Entity shall establish and continuously improve a comprehensive Work Instruction system featuring all work request information associated with the fleet. Primary maintenance types associated with Fleet Maintenance include:

- Planned Maintenance: Preventive and Predictive (PM, PdM)
- Unplanned Maintenance: Corrective and Emergency (CM, EM)

This document focuses primarily on Planned Maintenance, other maintenance types are described within NMA & FM, Volume 6 Chapter 3 – Descriptions and Definitions (EOM-ZM0-PR-000002).

- **Unplanned Maintenance** – the process of addressing unexpected vehicle breakdowns or malfunctions

- **Planned Maintenance** – **Preventative** the method of planned (scheduled) vehicle inspection, which includes servicing and repairs carried out at specific intervals – usually 3, 6 or 12 months but can also occur at certain milestones, such as 10,000km, 20,000km, 30,000km according to OEM specified timelines (see Attachment 4 – EOM-ZM0-TP-000094 – Vehicle Preventative Maintenance Inspection Template). The emphasis of a preventative maintenance program is to prevent mechanical and electrical failures on the vehicle and extend the useful life of the vehicle. It requires systematic inspection, detection, diagnostics, and correction of failures either before they occur or before they develop into major failures and defects.

- **Planned Maintenance – Predictive** Instead of carrying out maintenance activities and servicing in line with a set schedule, predictive maintenance activities are completed in response to regular condition assessments of the vehicle, which in turn form the basis of Predictive Maintenance (see Attachment 3 – EOM-ZM0-TP-000093 – Vehicle Predictive Maintenance Inspection Template). This process requires systematic inspection, detection, diagnostics, and rectification of failures and problems before they occur.

Work Instructions shall feature, as a minimum, the following information:

- Work Instruction number
- Source of request (planned, reactive, inspection, and breakdown)
- Priority allocated
- Location of work
- Date and time received
- Date and time allocated
- Technician(s) allocated
- Description of work requested
- Description of work being carried out
- Estimated and actual time of completion
- Parts and materials used to complete the work
- Service delivery or invoicing information (as applicable)

6.2.6 Incident Management and Reporting

This section offers guidance regarding activities which should be undertaken during normal vehicle operations. It also outlines incident reporting requirements should there be an incident involving a member of the Entity's staff operating an Entity vehicle.

6.2.6.1 Lowering the Risk of an Incident

Each vehicle operator shall take the following precautions to mitigate the risk of incidents involving a vehicle in the Entity's fleet:

- Do not operate a vehicle unless licensed to do so.
- Carry out regular vehicle checks including tires, lights, and indicators before operating a vehicle (see Attachment 2 – EOM-ZM0-TP-000053 – Vehicle Operator Checklist Template).
- Both drivers and passengers of a vehicle (including back-seat passengers) shall always wear a seatbelt
- Never operate a mobile telephone if seated in the driver's seat of an Entity's vehicle.
- Always obey speed restrictions and road rules.

- Drive according to road conditions, taking into account breaking and stopping distance. For example, a vehicle should maintain a minimum buffer distance equivalent to the length of one vehicle between itself and the vehicle in front of it, during normal driving conditions (training shall be provided by the Entity in this regard)

Each Entity vehicle shall come equipped with an Accident Kit containing the following:

- Emergency contact numbers and Emergency Reporting Procedure
- A standard Accident Report Form outlining “who”, “what”, “how” and “why” questions which will help the Entity’s internal investigation and Emergency Support Services
- Blank paper to obtain witness information if necessary
- First Aid Kit

6.2.6.2 Effective Accident Reporting

Despite taking the aforementioned precautions, vehicle operators may become involved in road traffic accidents. Should Entity personnel experience or witness a road traffic accident involving Entity personnel, or Entity vehicles, they then should take the following steps:

Report the Incident
If anyone is hurt or seriously injured in the road traffic accident, then call Emergency Support Services (Saudi Red Crescent 997, Police 999):

- Follow the Dispatcher’s instructions and answer questions calmly and clearly. Information provided to the Dispatcher should include:
  - That there has been a road traffic accident
  - The number and condition of casualties
  - The location of the road traffic accident (indicating street name and landmarks as accurately as possible)
- Stay on the line with the Dispatcher until Emergency Support Services arrive at the scene
- Follow the Dispatcher’s instructions at all times
- Apply First Aid as required and only if competent to do so

If nobody has been hurt, or if Emergency Support Services are already engaged, then contact Najm using the toll-free number 920000560. In the Kingdom of Saudi Arabia, Najm has been established to independently manage insurance-related aspects of road traffic accidents. Share the following information with the Customer Service Center:

- Name of Caller
- ID
- Iqama Number
- Mobile Number
- Car Plate Number
- Make of Car
- Insurance Policy Number
- Insurance Company Name
- Location of Accident

Exchange Details
Exchange with the other Driver:

- Name
- Telephone Number
- Address
- Driver’s License
- Identity (ID)
- Make/Model/Year of other vehicle involved in the accident
- Vehicle Plate Number

Gather and Record Information
Note the following details of the accident:

- Date

- Time
- Location
- Road/Weather conditions
- Injuries to anyone involved
- Damage to vehicles involved (take picture with mobile phone camera, if possible)
- Name of Police Officer, badge number, and telephone Number
- Accident report number, if possible
- Copy of accident report, if possible

7.0 ATTACHMENTS

1. Attachment 1 – EOM-ZM0-TP-000052 – Subcontractor Pre-Mobilization Checklist Template
2. Attachment 2 – EOM-ZM0-TP-000053 – Vehicle Operator Checklist Template
3. Attachment 3 – EOM-ZM0-TP-000093 – Vehicle Predictive Maintenance Inspection Template
4. Attachment 4 – EOM-ZM0-TP-000094 – Vehicle Preventative Maintenance Inspection Template

Attachment 1 – EOM-ZM0-TP-000052 – Subcontractor Pre-Mobilization Inspection Template

Location		**Make & Model:**	
VIN #:		**Registration #:**	
EOM:		**Registration Exp:**	
Vehicle Last Serviced KM:		**Vehicle Next Service Due KM:**	

Remarks include any damage (interior & exterior) and any additional accessories:
<Insert vehicle schematics here>

Kindly circle either Yes (Y) or (N):

Seat Belts	Y/N	**Glass/Windshield**	Y/N	**Reg. Plates**	Y/N
Fuel	Y/N	**Lights/All**	Y/N	**Electric/All**	Y/N
Spare tire	Y/N	**Keys**	Y/N	**Body Damage**	Y/N
Jack	Y/N	**First Aid**	Y/N	**Fire Extinguisher**	Y/N
Insurance Policy	Y/N	**Photo**	Y/N	**OEM Manual in English**	Y/N

Entity Representative:		**Subcontractor Representative:**	
Signature:		**Signature:**	
Name:		**Name:**	
Date:		**Date:**	

Attachment 2 – EOM-ZM0-TP-000053 – Vehicle Operator Checklist Template

Vehicle Operator Checklist

(checks to be conducted before vehicle use)

Vehicle Registration No: _____
Odometer Reading: _____
Vehicle Make/Model: _____
Operator: _____
Date: ____/_____/_____

EXTERNAL VEHICLE CONDITION

Item √ = satisfactory/available OR X = defective/missing OR N/A = not applicable

Condition of vehicle bodywork, windscreen, windows, lights
Condition of windscreen wiper blades
Cleanness of windscreen, windows, mirrors, lights, number plate
Security of load, trailer, roof rack
Condition of tires, tire pressure, tire wear
Availability of spare wheel and jack

FLUIDS

Item √ = satisfactory/available OR X = defective/missing OR N/A = not applicable

Windscreen wash level
Condition of battery
Oil leaks

VEHICLE INTERIOR AND EQUIPMENT

Item √ = satisfactory/available OR X = defective/missing OR N/A = not applicable

Condition and function of seat belts
Head restraint adjustment
Mirror adjustment
First aid kit
Fire extinguisher
Torch
Warning triangle
Vehicle documents: Logbook, valid Istimara, and insurance details

FUNCTION CHECKS BEFORE STARTING THE JOURNEY

Item √ = satisfactory/available OR X = defective/missing OR N/A = not applicable

Warning light
All lights
Horn
Washers and wipers
Brake
Fuel
Is the vehicle due for service?

Any defects and omissions have been reported.

Driver's Signature: _____

Date: _____/_____/_____

Attachment 3 – EOM-ZM0-TP-000093 – Vehicle Predictive Maintenance Inspection Template

Vehicle Predictive Maintenance Inspection Checklist		
Vehicle Type: Vehicle Plate Number: Vehicle Operator/Driver: Date:		
Item	**Checks**	**Remarks**
General	Check instruments, warning lights are all working. Seat is secure. Mirrors, windscreen, wipers, windscreen wash, horn, doors, locks, tools, jack	
Brakes	Check function, foot pedal, hand brake, handlebar lever, adjustment, noisy operation	
Steering	Check operation, play at wheel, wander, pull, position of handlebars, power steering fluid	
Lights	Check operation of headlamps (dip/main), tail, brake, number plate, indicators, condition of reflectors	
Engine	Check oil/coolant/brake/clutch fluid levels. Screen Washer Reservoir. Leaks under vehicle. Battery connections. Exhaust smoke color. Unusual noise	
Transmission	Check clutch and gear change function. Noise, engagement. Handlebar lever. Chain adjustment and lubrication	
Wheels	Check security of all wheel nuts/damage. Hubs. Lubrication of Hubs	
Tires	Check condition, tread/damage/spare	
Body	Check any visible damage, all nuts and bolts tight	
Fuel	Check fuel level, filler cap, damage, leaks	
Suspension	Check spring condition, vehicle attitude, shock absorber leaks	
Statutory	Vehicle documents: Logbook, valid Istimara, and insurance details	
Safety	Check seat belts/safety helmet condition, other safety equipment.	

Attachment 4 – EOM-ZM0-TP-000094 – Vehicle Preventative Maintenance Inspection Template

4-Wheel-Drive Vehicles – TYPE A SERVICE – Every 10,000KM
1. Change engine oil and oil filter element
2. Clean oil filter cap and crank case breather
3. Clean air cleaner element and renew air cleaner oil
4. Clean fuel sediment bowl
5. Clean and reset contact breaker points (petrol engine)
6. Clean and reset spark plugs (petrol engine)
7. Lubricate all grease points
8. Check oil levels in: a. Gearbox, hub reductions and differentials b. Steering swivel joints c. Steering box d. Fuel injection pump
9. Check fluid levels in: a. Brake and clutch master cylinders b. Windscreen washer bottle(s)
10. Lubricate with oil-can or grease: a. Throttle and accelerator linkages b. Door locks and hinges c. Bonnet and boot fastenings and locks
11. Check and rectify if necessary: a. Battery terminals cleanliness b. Battery clamps for tightness c. Fan belt tension (DO NOT OVERTIGHTEN) d. Engine idling speed e. Water and oil leaks f. Clutch and brake pedal clearances g. Body and spring U-bolts h. Tire pressures and wear i. Wheel nuts for tightness j. Prop-shaft bolts k. Wheel alignment and balancing
Notes: • Do not overfill oil levels • Remove oil drips and spills after topping up and lubricating • Wipe away surplus grease and fingermarks from paintwork and interior

4-Wheel-Drive Vehicles – TYPE B SERVICE – Every 20,000KM
Type “A” plus:
1. Replace fuel filters
2. Replace air cleaner element (instead of cleaning)
3. Replace contact breaker points (instead of cleaning and resetting)
4. Lubricate distributor
5. Replace spark plugs (instead of cleaning and resetting)
6. Check fluid levels in: a. Battery b. Radiator c. Check and rectify if necessary d. Suspension bushes e. Wheel bearing adjustment f. Engine and gearbox mounting g. Brake, clutch and fuel pipes h. Exhaust fittings for tightness

i. Reset valve clearances
7. Check brake linings and drums, clean and report if worn

4-Wheel-Drive Vehicles – TYPE C SERVICE – Every 40,000KM
Type “B” plus:
1. Clean fuel tank
2. Replace distributor condenser
3. Drain and renew oil in hub reduction gears
4. Drain and renew oil in gearboxes
5. Drain and renew oil in differentials
6. Clean and repack front wheel bearings
7. Tires and tubes rotation

4-Wheel-Drive Vehicles – TYPE D SERVICE – Every 60,000KM
Type “B” plus:
1. Drain and flush engine coolant and renew
2. Renew power steering fluid
3. Drain and renew brake fluid
4. Drain and renew clutch fluid
5. Check condition of tires and tubes – report if worn
6. Check condition of shock absorbers – report if worn
7. Check condition of wheel bearings – report if worn

4-Wheel-Drive Vehicles – TYPE E SERVICE – Every 100,000KM
Type “B” plus:
1. Change fuel injector nozzle
2. Clean axle breathers
3. Replace timing belt