

An-Najah National University
Faculty of Graduation Studies

Maintenance Management Model
For Local Municipal Services

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DEDICATION

Thanks to all those who supported me to achieve my work successfully.

I dedicate this humble work in particular to:

*My father who supported me.

Maintenance Management Model

*My beloved mother who inspired me to accomplish

For Local Municipal Services

my work successfully.

*My brothers and sisters, may Allah bless them all.

*My dear wife (Nojood) whose help, support,

By

encouragement and constant assistance accompanied me all through my

Saed Ismael Abuzanet

way to bring this work to light.

*Everyone who helped and supported me.

To you all I dedicate my love and gratitude and the outcome of my work.

This thesis was defended successfully on 25/5/2011 and approved by

Defense Committee Members

Signature

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Dr. Ayham Ja' roun (Internal Examiner)

III

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Thanks to all those who supported me to achieve my work successfully.

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*My father who supported me

*My beloved mother whose prayers and blessing spurred me to accomplish my work successfully.

*My brothers and sisters, may Allah bless them all.

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Saed Abuzant

إقرار

أنا الموقع أدناه مقدم الرسالة التي تحمل العنوان:

Maintenance Management Model For Local Municipal Services

أقر بأن ما اشتملت عليه هذه الرسالة إنما هي نتاج جهدي الخاص، باستثناء ما تم بالإشارة إليه حيثما ورد، وإن هذه الرسالة ككل، أو أي جزء منها لم يقدم من قبل لنيل درجة أولقب علمي أو بحثي لدى أية مؤسسة تعليمية أو بحثية أخرى.

DECLARATION

The work provided in this thesis, unless otherwise referenced, is the researcher's own work, and has not been submitted elsewhere for any other degree or qualification.

Student's name:

اسم الطالب:

Signature:

التوقيع:

Date:

التاريخ:

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ABBREVIATIONS

Palestinian National Authority	(PNA)
West Bank & Gaza Strip	(WBGS)
Ministry Of Local Government	(MOLG)
Municipal Development & Lending Fund	(MDLF)
Maintenance Management Model	(MMM)
Reliability Centered Maintenance	(RCM).
Operation and Maintenance	(O&M)
Information Technology	(IT)
Environmental Protection Agency	(EPA)
Combined Sewer Overflow	(CSO)
Combined Sewer Systems	(CSSs)
Department of Water Affairs & Forestry	(DWAF)
Department of Housing and Local Government	(DH&LG)
Facility Maintenance	(FM)

**Maintenance Management Modal
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Abstract

In Palestine, municipalities are responsible for providing public services to local communities; these services include but not limited to water, waste water, electricity, road network and solid waste collection and disposal. Also, Palestinian municipalities are responsible to lead local planning and development.

Since maintenance plays major role in controlling quality of services provided to the public, the researcher in this research spots light on this issue by diagnosing service-maintenance current practices in Palestinian municipalities and, accordingly, proposing proper maintenance management model supported with procedures and tools to be adopted by local municipalities.

The researcher has adopted a practical methodology summarized in reviewing related literature, having a look on regional/international best practices, diagnosing current practices in local municipalities and consulting with related bodies and officials, an exploratory sample of municipalities was selected for structured interviews; the selection criteria took in consideration type of municipality, size of locality, type of service provided to the public, and the geographic location.

As a result of the diagnostic research, it is found that almost all Palestinian municipalities practice corrective maintenance rather than adopting proper maintenance management systems to maintain service delivery to the public; this of course affects negatively the quality and cost of service. Most municipalities don't have proper maintenance-related documentation systems. Also, most municipalities don't have clear figure about their annual cost of maintenance; this is basically due to the unclear relation between maintenance activities and spare parts consumption. Moreover, Palestinian municipalities don't have separate Maintenance Department to manage all maintenance activities related to the different services provided by the municipality; instead each service department has a maintenance unit/team to maintain its services.

It was clear to the researcher that the current maintenance management practices in Palestinian municipalities lead to less quality and more costly municipal services; therefore it is worthwhile to develop a proper maintenance management model MMM that suites the conditions of local municipalities. Actually, this Research proposes such a model to institutionalize service-maintenance operations for better quality and less cost, the proposed MMM covers both corrective and preventive maintenance, the model is also supported with the necessary procedures and tools to facilitate its implementation in local municipalities, the proposed model has no implications on municipal organizational structures and can be easily implemented by current related staff, the validity of the

model was checked through direct consultation with relevant key staff at Nablus municipality. Furthermore, a proposed Structure to Computerize the MMM is presented in this Research. Computerizing the MMM will make it easier to document and retrieve maintenance-related information; this of course will strongly support the maintenance-management decision making process.

Chapter 1

Introduction & Background of the Research

This chapter presents and discusses an introduction about the research, namely; its problem, objectives, significance, questions and justification for carrying it out.

1.1 Introduction

Generally speaking, Municipalities have the overall responsibility of services provision and development within their areas; Municipalities are key players in the control of major risks. They have in-depth knowledge of the realities in their territories; they serve as an interface with the inhabitants and play a role in development and in the regulation of activities. They are responsible for local planning and development, and take an active part in crisis management before, during, and after major events. (1.1)

There is no doubt that the quality and efficiency of services affect the quality of life, the health of the social system and the continuity of economic and business activities. Deterioration or failure of these services may occur because of aging, overuse, and/or mismanagement.

In Palestine, municipalities are mainly responsible for the joining and urban planning and providing public services to citizens.

Municipal and village councils have existed in Palestine since the Ottoman Empire. In June 1967, the Israeli occupation authorities limited the powers of Palestinian municipalities and limited their control over policies and

budgets; the Arab Jerusalem Municipality Council was completely dissolved. In Gaza, the last municipal elections were held in 1946, in the West Bank in 1976, and in Jerusalem in 1965. Since the arrival of the Palestinian National Authority (PNA), the municipal and village councils took over administrative responsibilities (including; water, electricity, waste disposal, schools, planning and building control, road construction and maintenance, control of public markets). Currently, there are 132 municipalities (121 in the WB and 11 in Gaza). In addition, there are 390 local councils throughout the WBGs. (1.2)

Most of big cities in the west bank like Nablus, Ramallah, and Hebron etc, have an active municipality that provides people with different public service like electricity, water and sanitation, opening and paving internal roads, zoning and urban planning, control of building, etc.

Municipalities in Palestine are divided into four levels (appendix (A) shows the name and number of municipalities), the following table shows these levels and its number:

**Table 1.1 classification of
Palestinian Municipalities**

Municipality Type	Number
A	14
B	32
C	56
D	30

These classifications depend on the number of the population of that city/ town, number of services provide and the budget of the municipality.

More than one factor affect the quality of service provided by Palestinian municipalities, one of the important factors is maintenance of services which is necessary to prevent faults or treat faults that may happen during provision of the service. Therefore, to get highest quality and effective reliability of public services, an appropriate maintenance management model with efficient documented procedures must be developed and adopted by Palestinian municipalities.

Next chapters will show different types of needed maintenance, and how will an appropriate maintenance management system will lead to a better quality and reliability.

1.2 Hypothesis of the Research

Till now, almost all Palestinian municipalities practice corrective maintenance rather than adopting proper maintenance management systems to maintain service delivery to the public; the thing which is expected to result in less quality and more costly municipal services.

1.3 Objectives of the Research

The Research aims at developing a proper management model to institutionalize the maintenance services in Palestinian municipalities for better quality and less cost. Among other objectives are:

- Diagnose current service-maintenance practice in Palestinian municipalities

- Raise awareness of Palestinian municipalities towards the importance of better management of public service maintenance.
- Provide Palestinian municipalities with proper procedures and tools to improve their service maintenance practice.

1.4 Significance of the Research

This Research is the first of its kind about maintenance management of public service in Palestinian municipalities; it's expected to help Palestinian municipalities to institutionalize the maintenance process of their services for better quality and less cost.

Also, the research provides related parties – namely the Ministry Of Local Government (MOLG) and the Municipal Development & Lending Fund (MDLF) - with a tool that they may use to monitor the performance of municipalities in delivering affordable and reliable services to the public. Moreover, the research is expected to provide the municipalities with a proper maintenance management system that organize all services-maintenance operations, the system is equipped with the necessary procedures and forms; this of course supports in providing services with better quality. This research will also be a reference to scholars, researchers and students.

1.5 Questions of the Research

The purpose of the research is to develop to create a maintenance management model that organizes maintenance of service in Palestinian municipalities; to do so, the following questions of the research need first to be answered:

- 1- What is the existing situation of service-maintenance practice adopted by Palestinian municipalities?
- 2- Do maintenance activities have clear procedures within the work operations of Palestinian municipalities?
- 3- What type of maintenance (corrective/preventive) do Palestinian municipalities practice?
- 4- Do municipalities detect its services maintenance cost?
- 5- Are the maintenance activities documented and operationalized using special forms?
- 6- What type of procedures that municipality's follow to control the cost of maintenance activities?
- 7- Do municipalities have an appropriate way to restrict the repetitive activities of maintenance? Do municipalities having tools for strategic decisions related to maintain or replace.
- 8- What is the level of collaboration between stores department and other municipality's department in regards to maintenance activities?

- 9- What is the amount of budget available for maintenance purposes as part of total municipality budget? And what percent of that budget is being expended ?

1.6 Justification for Carrying out this Research.

According to the type and quality of service-maintenance service activates practiced in Palestine municipalities, it is worthwhile to develop a proper Maintenance Management Model (MMM) that suites the conditions of local municipalities and institutionalizes the service-maintenance operations for better quality and less cost. The proposed MMM has to be supported with the necessary procedures and tools to facilitate its implementation in local municipalities.

Chapter 2

Literature Review

This chapter covers a wide variety of items that present and discuss management ,management level, maintenance, type of maintenance, maintenance objectives, outsourcing maintenance, reliability, municipalities definitions , Palestinian municipalities and its classifications, maintenance planning management and previous studies related to maintenance management topics.

2.1 Management

Several definition of management can found in different sites and different books, once can defined the management as " all the activities and tasks undertaken by one or more persons for the purpose of planning and controlling the activities of others in order to achieve an objective or complete an activity that could not be achieved by the others acting independently " (2.1), also management can defined as "the art and science of getting things done through others" (2.2). several pioneers define the management in different terms , Harold Koontz define management as “an art of getting things done through and with the people in formally organized groups.(2.3) ,where F.W. Taylor define the management as" an art of knowing what to do, when to do and see that it is done in the best and cheapest way" (2.3).

When looking to the first definition, one can see that the management has four major functions which are:

- Planning
- Staffing Organizing
- Directing (Leading)
- Controlling

Each functions of the above have it's role to facilitate applying the overall management, the following table summarizes these functions:

Table 2.1 "Major management functions"

Activity	Definition or Explanation
Planning	Predetermining a course of action for accomplishing organizational objectives
Organizing	Arranging the relationships among work units for accomplishment of objectives and the granting of responsibility and authority to obtain those objectives
Staffing	Selecting and training people for positions in the organization
Directing	Creating an atmosphere that will assist and motivate people to achieve desired end results
Controlling	Establishing, measuring, and evaluating performance of activities toward planned objectives

2.2 Management levels.

When looking to any organization what never it's type (service or manufacturing) , management will divided inside this organization into three main levels , which are ; Top level management (strategic level),middle level management(managerial level)and executive management level(operational level) , the following figure shows these levels :



Figure 2.1 : Management levels

For the top level management, this level is characterized by high responsibility, for making strategic decisions and wide relations with other companies such as external communications , and contracts signing , while the middle management consider the link between top and executive management . It is responsible for coordination , reporting to the top management level after review and transmitting top's decisions to executive level for implementation .The executive level management responsible for implementing and controlling the execution of operations and assuring that

planned goals are being met , the employee in this level having more technical and practical skills compare to managerial ones (2.4)

2.3 Maintenance

Maintenance is considered to be one of the key factors that secure the sustainability of any organization; combining maintenance with good operational practices will reduce the need for emergency maintenance and prevent the whole system from sudden breakdown, today, maintenance is not treated as a strategic business function. Over the last decade, however, it has been clearly shown that maintenance has tremendous impact on a company's profitability(2.5). Maintenance can define as "a combination of any actions carried out to retain an item in, or restore it to an acceptable condition" (2.6).

In other words one can say that the maintenance is major function that assures all facility (manufacturing/service) and equipment in adequately operation to avoid or to minimize time, energy and data losses, or to avoid accidents and customer dissatisfaction.

There is a strong relation between maintenance and management through a new approach that called maintenance management which is "orderly and systematic approach to planning, organizing, monitoring and evaluating maintenance activities and their costs" (2.7). A good maintenance management system coupled with knowledgeable and capable maintenance staff can prevent health and safety problems and environmental damage; yield longer asset life with fewer breakdowns; and result in lower operating

costs and a higher quality of life , this is of course need a lot of hard works which is required to set up a successful maintenance management system.

To manage maintenance properly "all maintenance must be performed so that equipment and systems operate efficiently and effectively. Improper maintenance and repairs can lead to unsafe conditions and reduced system performance" (2.8)

Today's competitive environment requires that industries and services try to sustain full production capabilities, while minimizing capital investment.

From the maintenance perspective, this involves maximizing system reliability which including prolonging the system's life (2.9), so quality of maintenance and service is needed for the customers, so customers need to feel that there is someone who cares and listens to their concerns.

2.3.1 Types of Maintenance

There are four main types of maintenance; these are corrective, preventive, predictive, and Reliability Centered Maintenance (RCM). Corrective maintenance repairs or replaces any malfunctioning in the system while Preventive maintenance ensures that the site will function properly by periodically inspecting the system .The following subsections give more details about corrective, preventive and other types of maintenance.

2.3.1.1 Corrective Maintenance

This type of maintenance need to trigger through direct observation, several definition for Corrective maintenance found, one of these definitions about this type of maintenance is "a form of system maintenance which is performed after a fault or problem emerges in a system" (2.10), with the goal of restoring operability to the system of maintenance is done when the " machine or service breaks down or stops, no actions or efforts are taken to maintain the equipment or service as requested by the designers to ensure the intended life. (2.11), another opinion said that "Corrective maintenance is performed after a problem is detected in the system" (2.12).

Some items of equipment located in the plant may have corrective maintenance performed by the operator or unskilled workmen at the plant site. To quantify the labor resource impact of work done on corrective maintenance tasks, trending corrective maintenance hours can provide feedback to evaluate the effectiveness of proactive activities, the corrective maintenance hours can define as "the percentage of maintenance labor that is used to restore equipment to a functional state after fault recognition"(2.13) .

This type of maintenance we are really spending more money than we would have under a different maintenance approach. We may incur cost upon failure of a primary device/system associated with the failure of a secondary device/system. This is an increased cost we would not have experienced if our maintenance program was more proactive. Also our labor cost associated with repair will probably be higher than normal

because the failure will most likely require more extensive repairs than would have been required if the equipment/system had not been run to failure. We will have to pay maintenance overtime cost. Since we expect to run equipment/system to failure, we will require a large material inventory of repair parts/systems. This is a cost we could minimize under a different maintenance strategy.

Applying the corrective maintenance needs skillful technicians and clear technical steps, below, the general technical steps which can be following in order to apply the corrective maintenance:

- Observation of break down
- Diagnosis of failure
- Analysis of failure
- Selection of solution
- Repair the failure
- Test and learn
- Documentation and lessons learned.

The advantage for this type of maintenance is less staff, while the disadvantages are:

- Increased cost due to unplanned downtime of equipment.
- Increased labor cost, especially if overtime is needed.
- Cost involved with repair or replacement of equipment.
- Possible secondary equipment or process damage from equipment failure.
- Inefficient use of staff resources.

2.3.1.2 Preventive Maintenance

The second type of maintenance is the preventive maintenance, this type of maintenance is consider one of the testing and checking steps to examine the operational conditions of the machine (or parts of it) by maintenance craftspeople and equipment operators, this steps are presented in a list, this list can be presented in electronic format or in a paper format and includes such activities as lubrication and inspections. Preventive maintenance defined as actions performed on a regular schedule to detect, prevent, or mitigate deterioration of a component or system in order to sustain or extend its useful life.

According to Industrial Accident Prevention Association, the definition of the preventive maintenance is "predetermined work performed to a schedule with the aim of preventing the wear and tear or sudden failure of equipment components"(2.14) , Miguel Bagajewicz define this type of maintenance as " maintenance actions that help reduce the number of failures of specific equipment "(2.15) .

According to the previous definition of this preventive maintenance, the main goal of this type is to prevent the equipment from failure and before the breakdown actually occurs.

It is designed to enhance equipment/system reliability by replacing worn components before they actually fail. Preventive maintenance activities include equipment/system checks, partial or complete overhauls at specified periods. In addition, workers can record equipment/system

deterioration so they know to replace or repair worn parts components before they cause system failure. (2.16)

All the above definition of preventive maintenance shows that the purpose of preventive maintenance is to minimize breakdowns and excessive depreciation.

According to the reliability center .Inc, there are several reasons why to apply this type of maintenance, one of this reasons are:

- Longer equipment life
- Minimize energy consumption
- Need for a more organized, planned (2.17)

The advantages of this type of maintenance can be identifying in the following points:

- Cost effective in many capital intensive processes.
- Flexibility allows for the adjustment of maintenance periodicity.
- Increased component life cycle.
- Energy savings.
- Reduced equipment or process failure.
- Estimated 12% to 18% cost savings over reactive maintenance program.

On the other hand preventive maintenance may not effective because the following:

- Catastrophic failures still likely to occur.
- Labor intensive.
- Includes performance of unneeded maintenance.

- Potential for incidental damage to components in conducting unneeded maintenance.

2.3.1.3 Predictive Maintenance

This type of maintenance deals with the maintenance activity needed to examine whether the system or part of it will continue working, and according to o this system will fix or replace or other wise, this type of maintenance is consider more suitable for factories, this type of maintenance is defined as follows " compares the trend of measured physical parameters against known engineering limits for the purpose of detecting, analyzing, and correcting problems before failure occurs" (2.18).

According to the Vesta partners in it's articles "An Integral Component of a Maintenance Strategy "define the predictive maintenance as "tools are designed to monitor the health of equipment and system ", another definition for the predictive maintenance is measurements that detect the onset of a degradation mechanism, thereby allowing causal stressors to be eliminated or controlled prior to any significant deterioration in the component/system physical state. Results indicate current and future functional capability, where Flow Solutions Division define the predictive maintenance as "the maintenance that monitors each asset's condition to determine its fitness for continued operation and initiates repairs only when the machine itself starts crying for help"(2.19)

The advantages of this type of maintenance are:

- Increased component/system operational life/availability.

- Allows for preemptive corrective actions.
- Decrease process downtime.
- Decrease in costs for parts and labor.
- Better product/service quality.
- Improved worker and environmental safety.
- Improved worker moral.
- Energy savings.

While the disadvantages are:

- Increased investment in diagnostic equipment.
- Increased investment in staff training.
- Savings potential not readily seen by management.

2.3.1.4 Reliability Centered Maintenance (RCM)

The new type of maintenance that the organization towards to use is Reliability Centered Maintenance (RCM) which is a process used to determine the maintenance requirements of any physical asset in its operating context. (2.19)

This type of maintenance deals with different issues that the previous types of maintenance deals , the philosophy of this type of maintenance says that equipment design and operation differs and that different equipment will have a higher probability to undergo failures from different degradation mechanisms than others. It also approaches the structuring of a maintenance program recognizing that a facility does not have unlimited

financial and personnel resources and that the use of both need to be prioritized and optimized.

Any organization wants to road this path of maintenance must follow these approach to pickoff the advantages of this type of maintenance:

1. Develop a Master equipment list identifying the equipment in your facility.
2. Prioritize the listed components based on importance to process.
3. Assign components into logical groupings.
4. Determine the type and number of maintenance activities required and periodicity using:
 - a. Manufacturer technical manuals
 - b. Machinery history
 - c. Root cause analysis findings - Why did it fail?
 - d. Good engineering judgment
5. Assess the size of maintenance staff.
6. Identify tasks that may be performed by operations maintenance personnel.
7. Analyze equipment failure modes and effects.
8. Identify effective maintenance tasks or mitigation strategies.

The advantages and disadvantages of this type of maintenance are:

Advantages

- Can be the most efficient maintenance program.
- Lower costs by eliminating unnecessary maintenance or overhauls.

- Minimize frequency of overhauls.
- Reduced probability of sudden equipment failures.
- Able to focus maintenance activities on critical components.
- Increased component reliability.
- Incorporates root cause analysis.

Disadvantages

- Can have significant startup cost, training, equipment, etc.
- Savings potential not readily seen by management

2.4 Why Maintenance?

The maintenance consider critical to the organization regardless of it's size or nature of business , the aim of maintenance is to increase the equipment/system uptime at least cost, to achieve this; the following two objectives must be met:

- (1) Determine the maintenance requirements,
- (2) Ensure that they are met as cheaply as possible.

Maintenance contributes to the profitability of the process mainly by keeping the system functioning and capable of fulfilling production/service needs for longer periods of time. (2.20)

The objective of maintenance will summarize in the following points:

- Maximizing production or increasing facilities, since the maintenance is critical for productivity because less time waste, less

material waste and less energy will lead to less cost and increase the productivity.

- Availability at the lowest cost and at the highest quality and safety standards.
- Reducing breakdowns and emergency shutdowns.
- Optimizing resources utilization.
- Reducing downtime.
- Improving spares stock control.
- Improving equipment efficiency and reducing scrap rate.
- Minimizing energy usage.
- Optimizing the useful life of equipment.
- Providing reliable cost and budgetary control.
- Identifying and implementing cost reductions.(2.21)

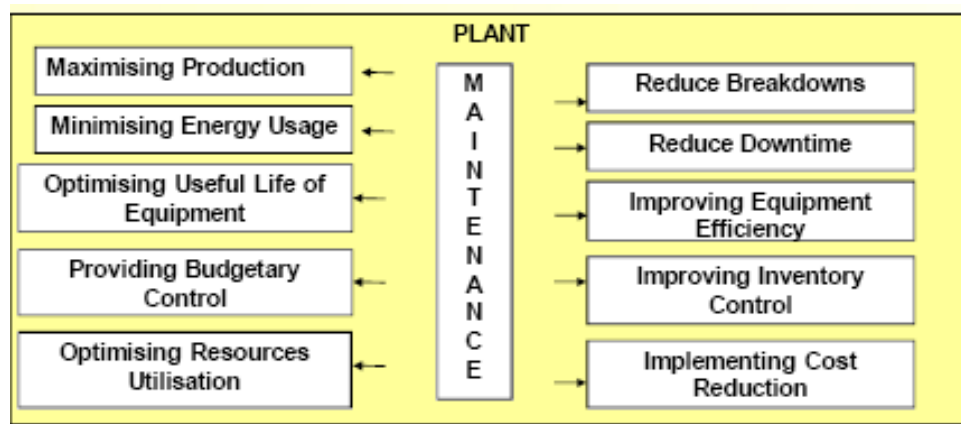


Figure 2.2: Maintenance objectives

Furthermore, well maintained assets/systems normally show an appealing appearance, which in turn, instills and promotes a sense of pride leading to

the owner to take even better care of this asset. Maintenance objectives should be consistent with and subordinate to production goals. The relation between maintenance objectives and production (service/manufacturing) goals is reflected in the action of keeping system and facilities in the best possible condition (2.22), on the other hand, if one does not embrace this philosophy, distress will become evident soon enough through neglect.

As for municipalities, delivery of quality services is one of its primary mandates. However, scarce resources, especially financial resources, more often than not, result in scaling down the operation and maintenance aspect of infrastructure expenditure.

It is necessary that municipalities acknowledge the strategic value of Operation and Maintenance (O&M) to ensure the optimum use of current assets and available resources that will result in sustained Service delivery. Delivery of services doesn't end with commissioning of infrastructure. Once the infrastructure has been commissioned, the activities necessary to ensure that it continues to perform effectively are very often not carried out; such as the necessary staff are not appointed or the necessary budgets are not approved. (2.23)

In today's economic and regulatory climate, municipalities are under intense pressure to manage assets and services with the greatest possible efficiency. Each department within a large municipality generally manages its own budget and its own diversity of assets; facilities such as parks, schools, or water/wastewater treatment plants; and linear assets like electrical, road and sewer systems. Each department must also manage

relationships with a wide range of third-party service providers in areas as dissimilar as road maintenance and Information Technology (IT) support. In a smaller municipality there may be fewer departmental and budgetary divisions, but the level of complexity is much the same.

Municipalities that are ready to adopt a new approach can leverage today's superior technology to unify asset and service management helping them to optimize asset life and deliver services more efficiently (2.24)

Prior to developing an operation and maintenance program, the municipality should undertake an operational review of its system to inventory and assess existing facilities, operating conditions and maintenance practices. (2.24)

2.5 Outsourcing maintenance

Outsourcing defines as "a process whereby an organization employs a separate company or supplier to perform a function that had previously been carried out "(2.25). The better you manage the workload of your own resources, the less need you will have for contract maintenance , the only thing a contractor can do differently than you is that they can implement a more efficient work system. They can often do this quickly, or at least they can promise to do it quickly, there are many question asked before contract the maintenance to out sourcing contractor, the first question asked is about the maintenance philosophy for the outsourcing contractor (if they have one), then , what reliability and maintenance process they will implement, and how they will measure results, how they would decide

whether to prevent—or not prevent—component failures, how planning will be done and how scheduling will be done. Today, many organization steers to outsourcing maintenance, this is because, outsourcing maintenance is generally made for the purpose of improving maintenance performance in order to maximize the output of the plant, reducing costs in performing and managing what are considered low-priority operations and improving efficiency.

Within the public sector the search for increased efficiency driven by best practice has been a major stimulus to outsourcing (2.26)

2.6 Reliability

Reliability is a term associated with the performance of any product or machine to work without failure, it is defined as "Reliability is defined as the probability that a device will perform its required function under stated conditions for a specific period of time " (2.27), for example the reliability for 0.9, this means that there is 90%chance that the part will perform its function without failure.

2.7 Municipalities

Several definitions for municipalities can be found when looking for the letterer meaning of municipalities, one popular definition is:

"Elected local government body having corporate status and limited self-governance rights, and serving a specific political unit such as a town or city" (2.28) according to the encarat dictionary ,the definition of municipality

is "relating to a town, city, or region that has its own local government" (2.29) , where according to the word IQ , they define the municipality as "an administrative local area generally composed of a clearly defined territory and commonly referring to a city, town, or village government" (2.30), where according to the staelawyers website ,they define the municipality as " city, town or local government unit, formed by municipal charter from the state as a municipal corporation" (2.31). Its purpose is to govern local affairs such as zoning, the delivery of services such as water and police protection, and the administration of local departments like the school system.

2.8 Municipalities in Palestine

In Palestine, The Palestinian ministry of local governments consider the governmental body who manage and supervise the Palestinian municipalities , MOLG organize the municipalities operations through two laws that are directly related to the local government functioning , the first law is the one articulated for “elections for local Authorities Law of 1996”, second local government law was approved in 1997, which sets out the formation, financing and responsibilities of elected local councils and mayors . The responsibilities included creation and maintenance of roads, water and electricity supplies, building permits, providing health and environment service. The Palestinian local government sector including municipality councils and village councils offer services to local residents as stated by the related laws municipality. (2.32), the details MOLG law is given in appendix (B) (3.33)

Municipalities are divided into four levels depending on their number of population and type of service they provide to the public. (2.34)

2.8.1 Municipality's sector and divisions

According to the Palestinian ministry of local governance, municipalities divided in to 4 levels; these are:

2.8.1.1 Municipality A

This type of municipalities deals with the center of governorates, there are 14 level (A) municipalities, their municipal councils consist of 15 members . (2.34)

2.8.1.2 Municipality B

Municipalities that have population over 15,000 are classified as level (B). There are 32 level (B) municipalities. Their municipal councils consist of 13 members. (2.34)

2.8.1.3 Municipality C

Municipalities that have population 5000-15,000, there is 56 C-level municipalities. (2.34)

2.8.1.4 Municipality D

Municipalities have population less than 5,000; there are 30 D-level municipalities. (2.34)

2.9 Maintenance Management Planning.

Presenting a good maintenance management may help in performing the maintenance activities, especially preventive maintenance type, any preventive maintenance program must consist from the following:

- 1- Maintenance activity; includes all the activities which will be done and planned to perform.
- 2- The predictive executing time; includes at what time the preventive maintenance activities will be performed.
- 3- Frequency period; includes the repetitive period that will determined to achieve the maintenance on.
- 4- The needed resource in order to execute the maintenance effectively.
- 5- Whether the maintenance will be done internally or externally.
- 6- Finally, Maintenance procedure number must be added in the program to be useful for historical data purposes .

2.10 Previous Studies

This section considers the previous studies that are most related to municipal service maintenance.

2.10.1 Environmental Protection Agency (EPA) (1994) "Combined Sewer Over flow Operation & Maintenance (O&M) Fact Sheet" Proper Operation and Maintenance.

In this research, the researcher focuses on combined Sewer system since the sanitary wastewaters and storm waters can overflow the conveyance

system and discharge directly to surface water bodies, this is called a Combined Sewer Overflow (CSO).

The Environmental protection policy (EPA) issued the CSO Control Policy on April 19, 1994. This policy states that permittees with Combined Sewer Systems (CSSs) that have CSOs should be able to provide, at a minimum, primary treatment and disinfection, when necessary, the policy also includes nine minimum control requirements for inclusion in the CSO discharge permit. One of these minimum controls is proper operation and regular maintenance (O&M) programs for the sewer systems with CSOs; one of the controls of the requirement is the O&M programs which include the following components:

- Scheduling routine inspections, maintenance and cleaning of the CSS, regulators and outfalls, and this is through the operational review which empower the municipality to undertake an operational review of its system to inventory and assess existing facilities, operating conditions and maintenance practices, it is also the system may conduct a modeling of the integrated system (sewers, regulators, and treatment plant) to analyze operational improvements.
- Developing O&M reporting and record keeping systems with maintenance procedures and inspection reports, and this O&M program should include a record keeping component. The record keeping system should document maintenance procedures through inspection reports, and this report should include information about when the system was inspected, and, if applicable, what maintenance

action was taken, including the equipment used and the personnel involved.

- Providing training for O&M personnel., since the O&M program should have established training goals , procedures, and schedules
- Reviewing the O&M program periodically to up-date and revise procedures as necessary.

After the description of the basic components of the O&M program, the researcher in this Research talked about the routine maintenance activities such as tide gate maintenance, pump station maintenance, catch basin and grit maintenance, and sewer line maintenance. At the end of this research, the researcher indicate that the determination of cost in this cases is difficult because it is a function of many different factors, including the age of the system, the type(s) of overflow structure(s), the size of the system (both in linear footage and in the diameter of combined sewer), and the drainage areas, nevertheless the researcher provide the reader with list of maintenance cost that appear during the research.

2.10.2 O&M News by Ms Nomtu Maropong at Frances Baard District Municipality and Ms Viera Larsson from SIPU International. (2005)

"Operation and Maintenance – one key to sustainable service delivery for Municipalities".

This Research summarizes the experience gained through implementation a project on developing Operation & Maintenance (O&M) for municipal services.

The project's ultimate aim was to help municipalities deliver good quality service through improved operation and maintenance sensitive to the needs of the people in their province, to raise the quality of service delivered, increase reliability, dependability, economy, enjoyment and comfort.

In this paper the researchers consider the quality of service delivered to customer one of the primary mandates of municipalities.

A set of objectives for this project aimed to achieve, one of the primary objectives of this Research is the completion and final printing of operation and Maintenance manuals for the following topics:

- O&M of water supply services
- O&M of sanitation services
- O&M of roads and storm water services
- Legal and environmental frameworks for the services and O&M
- Management of services and O&M.

Another crucial element and set of objectives are those related to training, Training will also be organized on how to use the manuals and how to organize on-the-job training in the municipalities.

The researcher noted that lack of skilled people, inadequate maintenance budgeting, lack of organized systems and procedures to perform and manage the maintenance function and sometimes also poor attitudes

towards the work it self , all of the previous are the reasons why are municipal sanitation systems in the Northern Cape deteriorating and even failing at an alarming rate? .

To solve the previous problem of the maintenance in Northern Cape, the motivation from an efficient maintenance manager whose responsibility to motivate and explain to his or her staff members why they are doing what they are doing and the staff members must buy into the system. If this is not attained, any implemented system is bound to fail.

At the end of this Research, the researcher put an eight component for the O&M project to be successful in its implementation these components are

1. Project Management and management of Steering Committee, Reference Group (Mayors and Municipal Managers), Project Group, Editorial Groups and Task Teams.

2. Development, testing, revision and production of five O&M handbooks or manuals, which are:

- O&M of water supply services
- O&M of sanitation services
- O&M of roads and storm water services
- Legal and environmental frameworks for the services and O&M
- Management of services and O&M.

3. Baseline Research on municipal infrastructure, O&M practices, and development of proposals for where to establish and capacitate O&M Support Units. How is water care works registered with Department of

Water Affairs & Forestry (DWAF) Depending on the needs for services, how should municipalities staff their O&M section, especially in the view of being supported by an O&M Support Unit.

4. Testing of a pilot O&M Support Unit in Frances Baard District Municipality. How should a unit like this support municipalities? And how should it be staffed, equipped and organized?

5. Baseline Research on human resources in the sector, the needs for staff development, and organizing O&M training for politicians, managers and technical staff, consultants and contractors.

6. Development of provincial O&M management systems. How should Department of Housing and Local Government (DH&LG) support and guide the municipalities on O&M issues?

7. Co-operation and exchange of experiences with Swedish municipalities.

8. Project evaluation and other aspects of evaluation

2.10.3 Norwegian Institute of Technology and Science Department of Architectural Design and Management, 2004 "THE Maintenance Planning Process in Trondheim Municipality".

In this paper a focus on how the maintenance planning process has been developed and implemented in the organization. An analysis of the actual figures for planned and unplanned maintenance activities in the municipality in 2004 is presented.

The paper has shown “a success story”, where the Facility Maintenance (FM) organization expended great effort to establish a solid strategy for the

maintenance planning in the municipality. They were able to gain acceptance for the strategy both from the city manager and the city council.

The strategy stated that a major increase in budget was needed to fulfill the strategy, and the FM organization got the increase in budget needed.

The tools that used to conduct the purpose of the research is the interview, an interviews made with four informants which have been working in the FM organization for the whole period of time , these four informants are: The former executive director, the former information officer, the deputy director for maintenance and a maintenance planner.

In general there is great agreement among the informants about most of the questions addressed in the interview. All the informants confirmed that there has been a radical change from unplanned to planned maintenance; the general budget has increased significantly, the only point with a tendency toward minor disagreements among the informants concerns the capability for the maintenance planner to adapt to the new situation.

At the end of this research, it was conclude that, the FM organization expended great effort to establish a solid strategy for the maintenance planning in the municipality, it was able to gain acceptance for the strategy both from the city manager and the city council, this strategy stated that a major increase in budget was needed to fulfill the strategy, and the FM organization got the increase in budget needed .

Chapter 3

Methodology

This chapter presents and discusses the research approach, Population of the research, sample of the research, research tool and the steps that followed to carry out this research.

3.1 The Research Approach.

The researcher used the interview as an approach supported with check list that consists of questions to facilitate diagnosing the existing situation of maintenance management in Palestinian municipalities, the researcher conducted two structured interviews with two different persons from different department in different municipalities taking into consideration locations and levels of municipalities.

3.2 Population of the Research

The population of the research consists of all Palestinian municipalities located in the West Bank.

3.3 Sample of the Research.

An exploratory sample was selected; this sample was selected in away to cover different locations, levels of municipalities, resident number, and type of services provided to the public.

Based on this, seven different municipalities were selected to be interviewed; these are: Al-Bireh municipality, Nablus municipality

,Tulkarem municipality , Salfeet Municipality , Beita municipality , Tubas municipality and Hebron municipality .

The selected municipalities provide citizens with main services, such as water sanitation, electricity, roads maintenance ... etc, the following brief description about the services provided by the selected municipalities:

- Nablus Municipality : the municipality provide citizens with the following services: water supply and sanitation, roads construction, retaining walls, public buildings and establishing schools , maintaining and improving health and environmental conditions (3.1)
- Al-Bireh Municipality : the municipality provide citizens with the following services : water supply, and sanitation, monitoring maintaining and improving health and environmental conditions (3.2)
- Tubas Municipality: the municipality provides citizens with different services, such as: water, electricity, waste, maintenance and paving streets, and restoration of the building of schools, the organization of construction, and licensing trades and industries (3.3).
- Tulkarem Municipality: the municipality provides the citizens with main services such as : water supply, and sanitation, roads construction, retaining walls, public buildings and establishing schools , maintaining and improving health and environmental conditions (3.4)
- Hebron municipality: Hebron Municipality provides people with electricity, water, roads, sanitation, the environment, and construction. In addition, the municipality provides services to the industrial and

agricultural sectors, as well as cultural and sports services to all sectors of society. (3.5)

- Salfet Municipality: Salfet municipality provide citizens with different services such as: electricity, water, solid waste, sewage (3.6).
- Beita Municipality : the municipality provide citizens with services including water, electricity, roads pavement

In each municipality, the researcher interviewed the person in charge in the water & sanitation department, and also the in charged person in the engineering department; actually, the researcher focused on these two departments because these departments are responsible for providing the main services to the public.

3.4 Research tool

This section discusses the tool used to collect the relevant information through semi structured interview with in charged persons; the tool basically is a structured checklist which consists of the following dimensions:

- 1- Current institutional position of maintenance management within the municipality structure , this dimension includes three questions these are :
 - Has the municipality a separate department that performs all service- maintenance activities?

- If the answer of the previous question is No, does this mean that each department has its own maintenance unit to provide maintenance for the services delivered by that department?
- Is there any coordination between the different maintenance units in the different departments? If the answer is yes, what type of coordination is that?

2- Type of maintenance practiced in municipalities, this dimension includes the following questions:

- What are the main maintenance activities performed by different departments in municipalities?
- Does municipality practice preventive maintenance, or corrective maintenance, or both.
- Which maintenance activities are classified as corrective maintenance, and which are classified as preventive maintenance?
- What sequence (procedure) followed to perform different types of maintenance (corrective/ preventive) activities?

3- Level of maintenance management documentation in Palestinian municipalities. This dimension includes two questions :

- Are maintenance management activities (corrective/preventive) documented in special forms and /or records?
- Do departments prepare any kind of main reports that include relevant information such as who do the job, what is done, and what are the tools that were used? , if yes, see samples of these reports.

- Does municipality have any kind of data base that keeps relevant maintenance management data and information for future useful decisions and recommendation?

4- Cost of maintenance in Palestinian municipalities.

- Is there annual estimation for the cost of maintenance (preventive / corrective) in the municipality, what were the estimates for last three years?
- Were the estimates sufficient to carryout the maintenance activities efficiently?
- Is there any control over the maintenance cost in terms of time and spare parts? If yes, how?
- In the municipality, are the resources needed to execute the maintenance activities (human resources, tools....etc), sufficient?

5- Relation between maintenance and the inventory spare parts in Palestinian municipalities.

- Is there a store in the municipality that has sufficient different types and quantities of spare parts?
- What type of institutionalized coordination exists between departments and store in regards of maintenance activities?

6- Relation between municipalities and private maintenance service providers.

- Does the municipality sign agreements with private contractors to provide maintenance services? If yes, what is the percentage of

maintenance outsourcing cost compared to total maintenance cost?

3.5 Steps to carryout the Research.

The following summarizes the main steps followed to carryout this research: Reviewing related literature.

1. Preparing proper check list for structural interviews
2. Choosing proper criteria to select sample municipalities, the criteria covers different locations, types of municipalities, resident number, and type of services provided to the public.
3. Selecting sample of seven Palestinian municipalities to be interviewed , these are : Al-Bireh municipality ,Nablus municipality ,Tulkarem municipality , Salfet Municipality , Beita municipality , Tubas municipality and Hebron municipality .
4. Analyzing collected information related to maintenance management ; after the researcher conduct the interviews with the in charged persons from different departments in different municipalities , the researcher start to analysis the dimensions of the check list (the same dimension for the different surveyed municipalities),then , the obtained results from analyzing the dimension wrote and sorted .
5. Visiting the MOLG and revising the budget for the selected sample municipalities.
6. Developing proper maintenance management model (MMM) that suites Palestinian municipalities

7. Developing the necessary operational procedures and forms.
8. Proposing a preliminary structure for software to computerized the developed MMM.

Chapter 4

Analysis

This chapter presents the situation analysis of current maintenance management practices in the selected municipalities.

4.1 preface

For Municipalities to provide customers with high reliable services, they should practice maintenance management properly including both corrective and preventive maintenance, of course this will assure the continuity of providing services with high quality, and reduce the breakdowns and problems that may happen during time .

4.2 Analysis

To diagnose the current maintenance management practice in the Palestinian municipalities, the researcher visited the selected sample and interviewed relevant persons from water and sanitation department, and engineering department; based on these field visits and interviews, the following results were concluded:

- Almost all Palestinian municipalities don't have separate maintenance department to manage the maintenance activities for the different services provided by the municipality. Instead, almost each service-department has its own maintenance team composed of skilled technicians/workers who are directed by the head of that department. For example, water department has its own maintenance

team to solve the problems related to water services provided to the public; this situation is common in most municipalities including Nablus municipality and Tulkarem municipality. An exception was found in Al-Bireh municipality which has special maintenance department to execute all the maintenance activities for all departments of the municipality, this department actually includes a maintenance plan for preventive maintenance with its needed forms and procedures, this plan well explained and organized to facilitate its implementation, appendix B shows the preventive maintenance plan for Al-Bireh Municipality, also, this department prepares a performance indicators report for the performed maintenance activities within a period of time control the maintenance activities which was done (appendix C show the performance indicators report), so one can say that, this maintenance department practices maintenance management properly.

- Regarding maintenance management procedures, it's found that few municipalities use simple forms to facilitate corrective maintenance activities in a certain related departments, these forms are basically sort of maintenance summary report that includes information about date, locations, brief description of performed maintenance and name of persons who did the maintenance. For example, a report that summarizes the activities is prepared daily in AL-Bireh Municipality. However these reports are basically used for documentation only; and no further analysis is being performed on

these reports for future planning and decision making. Another example is Tulkarem municipality; namely water & sanitation department, and the Engineering department, what exist are simple forms used to facilitate related maintenance practices.

However, these forms are not well documented, not clear, and not sufficient in terms of type of information and level of details documented. The situation is a bit different in Nablus Municipality, the engineering department uses simple form which is a kind of internal memo by which the department directs the maintenance teams to perform certain maintenance tasks, in other words, this form acts as a simple maintenance order. On the other hand, the water and sanitation department at Nablus municipality has an effective computerized maintenance documentation system used to document information such as date and location of performed maintenance, and spare parts used. The system can be used to inquiry about certain information such as the list of spare parts used during a period of time to maintain for a certain location.

It's worth noting that regardless of the way municipalities document the maintenance information, these information is not and can't be used for the purpose of planning and/or related decision making.

- In most Palestinian municipalities, the concept of preventive maintenance is not clear enough, just few municipalities like Nablus Municipality practice sort of scheduled preventive maintenance such

as the yearly manholes cleaning , and this is also the case in Al-Bireh Municipality with some limitations .

- Regarding to obstacles facing the development of maintenance management practices; the interviewees indicates that the most noticeable obstacles are lack of skilled technicians, improper tools and facilities.
- Most of the maintenance activities related to road and engineering department are carried out through outsource contractor by signing a contract with external maintenance teams to execute the maintenance activities that the internal maintenance teams can't perform , for example in Nablus municipality 90% of the roads maintenance and pavement carried out through external contractor , where as the water and sanitation department in the same municipality execute 20% of it's maintenance activities by signing a contract with external contractor . In Tulkarem Municipality 80 % of roads and engineering maintenance activities performed through outsourcing contractor, where the percentage will be smaller in Salfet municipality compared to Nablus & Tulkarem municipality, 10% of engineering maintenance activities executed by external contractor.
- Regarding to the cost of maintenance, almost all municipalities don't have clear figure about the total cost of their annual, this is basically because there is no clear relation between maintenance activities and the consumption of spare parts used for maintenance purposes, and

also because of the absence of a proper mechanism to estimate direct labor cost.

- After visiting the MOLG (budgeting department) , and after revising the annual budget for the surveyed municipalities (the estimated budget for year 2011 ,and actual budget for yaer2010) , the cost items related directly to water & sanitation ,and also the one related to public service (road network services) were captured , it's clear from the table (4.1) below that the cost of maintenance for water & sanitation department ranging between 4% in Nablus municipality to 34% in Tulkarem municipality , where as in table (4.2) , the cost of maintenance for public services (roads network) ranging between 7% in Nablus municipality to 86% in Beita & Tubas Municipality .

The following tables; table (4.1) & table (4.2) show more details about the percentage of maintenance cost to the total cost of the related department, and percentage of maintenance cost to the operating cost.

Table 4.1 "comparison between maintenance cost and Total cost for water & sanitation department ,and operating cost "

Municipality	Year	Water Department (total expenses)	Water Department (operational expenses)	Maintenance Cost	percentage of (Maintenance cost for total expenses)	percentage (Maintenance cost for operating expenses)
Nablus	2011	26,801,000	13,928,000	1,158,000	4%	8%
	2010	14,982,000	6,054,000	540,610	4%	9%
Tulkarem	2011	5,756,001	4,743,000	1,605,914	28%	34%
	2010	7,224,000	3,560,000	710,424	10%	20%
Hebron	2011	*	*	*	*	*
	2010	29,744,000	19,501,000	4,014,948	13%	21%
Al-Berih	2011	2,577,000	2,227,000	440,000	17%	20%
	2010	1,770,000	1,439,000	410,000	23%	28%
Beita	2011	1,295,000	1,104,000	52,000	4%	5%
	2010	947,000	890,000	16,565	2%	2%
Tubas	2011	2,050,000	1,485,000	200,000	10%	13%
	2010	1,459,000	1,178,000	125,744.00	9%	11%
Salfeet	2011	2,177,000	2,039,000	172,000	8%	8%
	2010	1,946,000	1,749,000	171,774	9%	10%

Table 4.2 "comparison between maintenance cost and Total cost for engineering department ,and operational cost "

Municipality	Year	Roads & Engineering department (total expenses)	Roads & Engineering department (operational expenses)	Maintenance Cost	Percentage of (Maintenance cost for total expenses)	Percentage of (Maintenance cost for operating expenses)
Nablus	2011	33,111,000	15,628,000	5,026,800.00	15%	32%
	2010	19,847,000	7,373,000	1,440,000	7%	20%
Tulkarem	2011	18,000,000	13,161,000	9,111,515.30	51%	69%
	2010	10,088,000	5,794,000	3,321,653.07	33%	57%
Hebron	2011	*	*	*	*	*
	2010	30,998,000	15,817,000	11,250,000	36%	71%
Al-Berih	2011	8,652,000	5,828,000	2,485,000	29%	43%
	2010	5,305,000	3,409,000	1,745,062	33%	51%
Beita	2011	1,023,000	659,000	569,000	56%	86%
	2010	380,000	245,000	136,429	36%	56%
Tubas	2011	1,774,000	1,069,000	430,000	24%	40%
	2010	893,000	496,000	249,061	28%	50%
Salfeet	2011	1,336,000	828,000	715,000	54%	86%
	2010	1,114,000	696,000	587,000	53%	84%

- it was clear after revising the budget above that , the financial figure doesn't show the percentage of activities maintenance cost carried out by out sourcing to the maintenance cost of activities done through the internal maintenance team .

Chapter 5

The Maintenance Management Model (MMM)

This chapter presents the proposed Maintenance Management Model (MMM) to be used by Palestinian municipalities. Also, it presents the guidelines (procedures) and forms needed to facilitate the implementation of the MMM.

5.1 The Maintenance Management Model MMM

Based on the diagnostic study and situation analysis of current maintenance management practices, the researcher proposes the following MMM to be adopted by Palestinian municipalities; the model is designed in a way that it can be adopted by different services departments. Although this model may be adopted by any municipality regardless of its level, the researcher recommends starting the implementation of the MMM in A&B municipalities as they have a capable institutional structure.

Figure (5.1) explains the proposed MMM which covers both corrective and preventive maintenance management. Also, the model takes into consideration the possibility of outsourcing maintenance services, and explains the role of different management levels in executing it.

The MMM will organize the relations between the different departments in the municipalities such as purchasing, Stores and Information Technology departments. The MMM considers the necessity of documenting maintenance activities, locations, cost, etc., for the purpose of analysis and decision making.

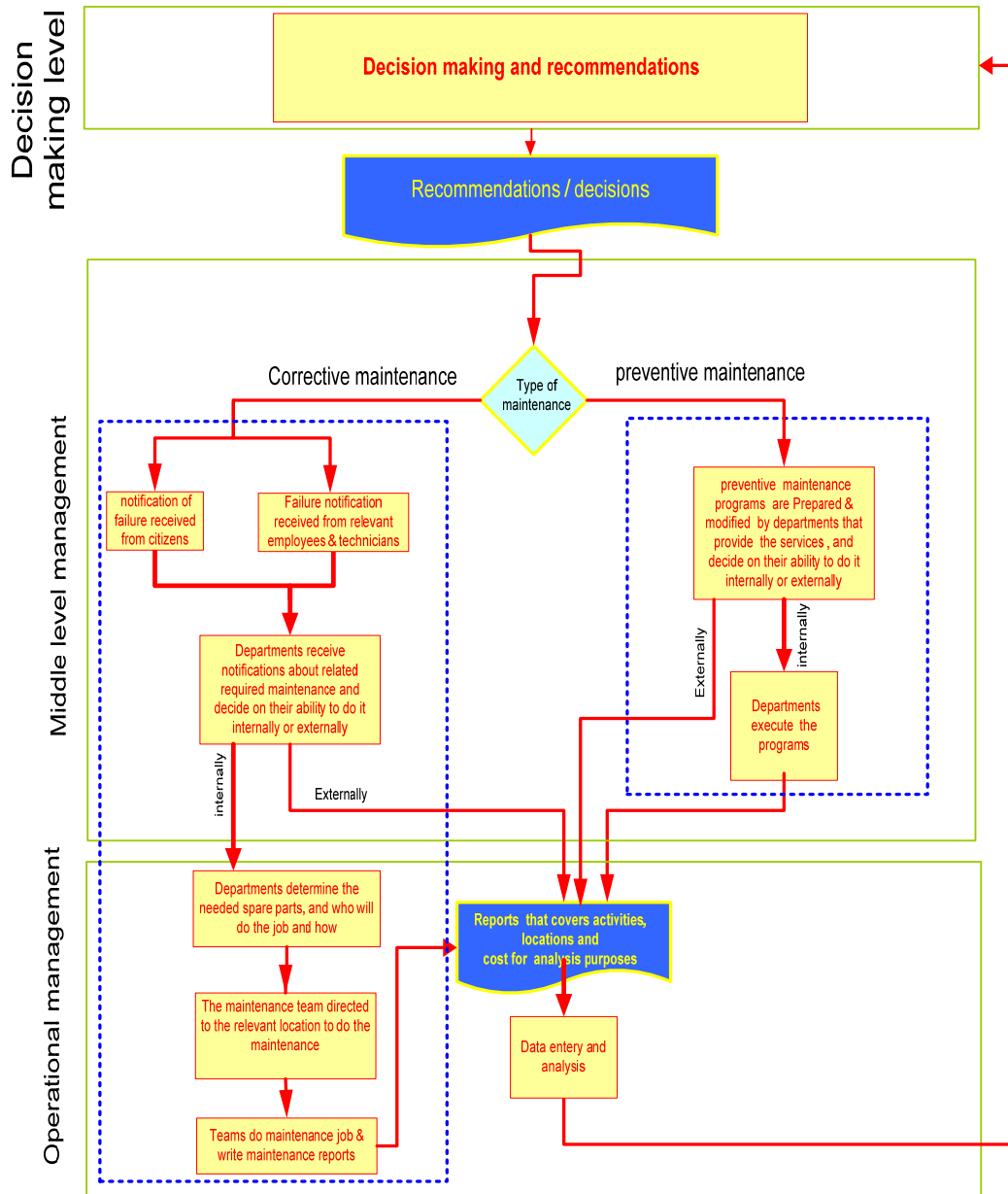


Figure (5.1) The proposed Maintenance Management Model (MMM)

5.2 The MMM details

The following figure (5.2) is a process diagram that explains the details of the MMM.

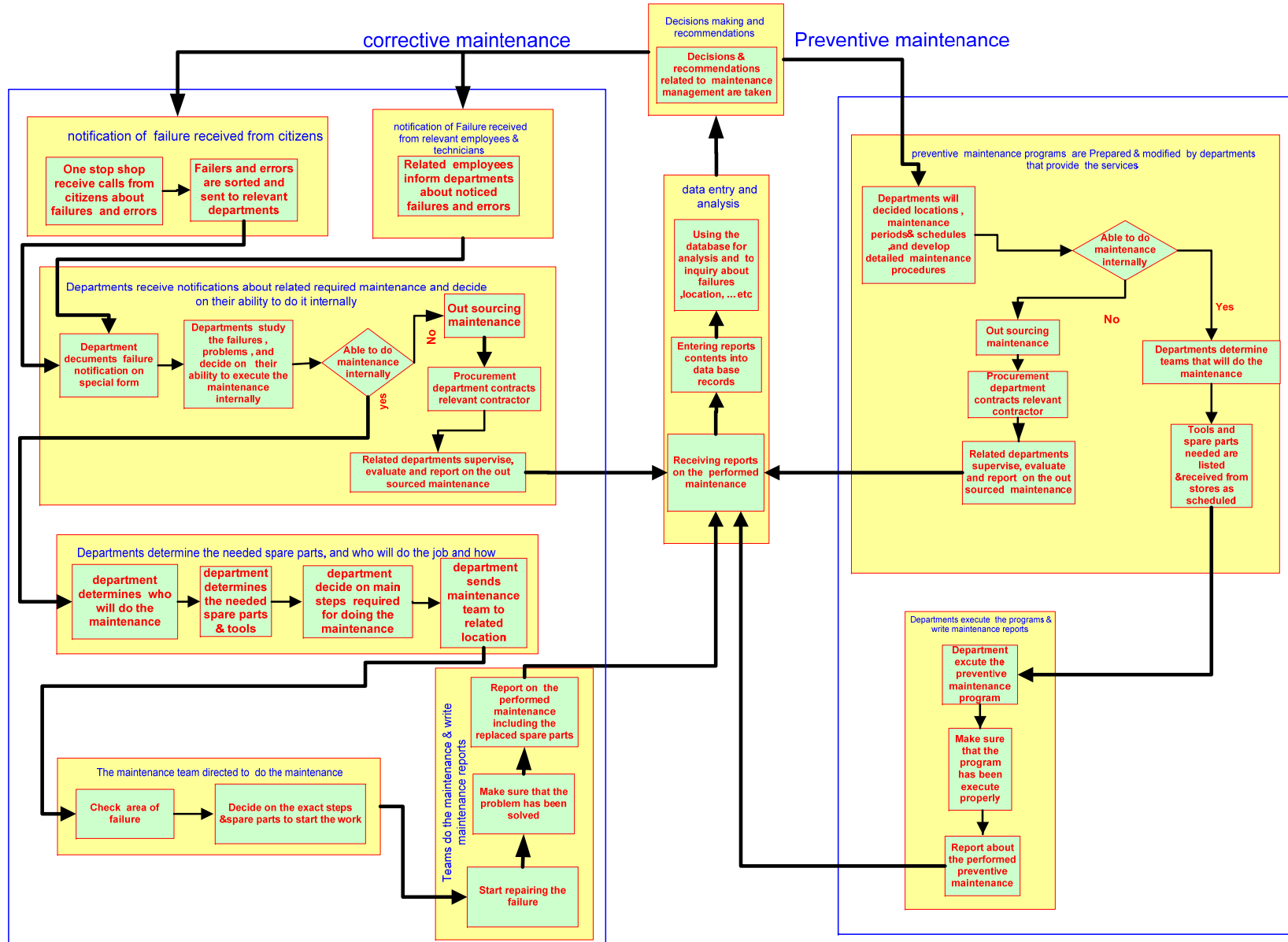


Figure (5.2) Details of the MMM process diagram

5.3 The MMM guide.

The following is guide on how to apply the Maintenance Management Model (MMM), the guide covers both corrective, and preventive maintenance management activities.

5.3.1 The guide for Corrective maintenance management activities.

The following figure shows the part of the process diagram corresponding to corrective maintenance management activities

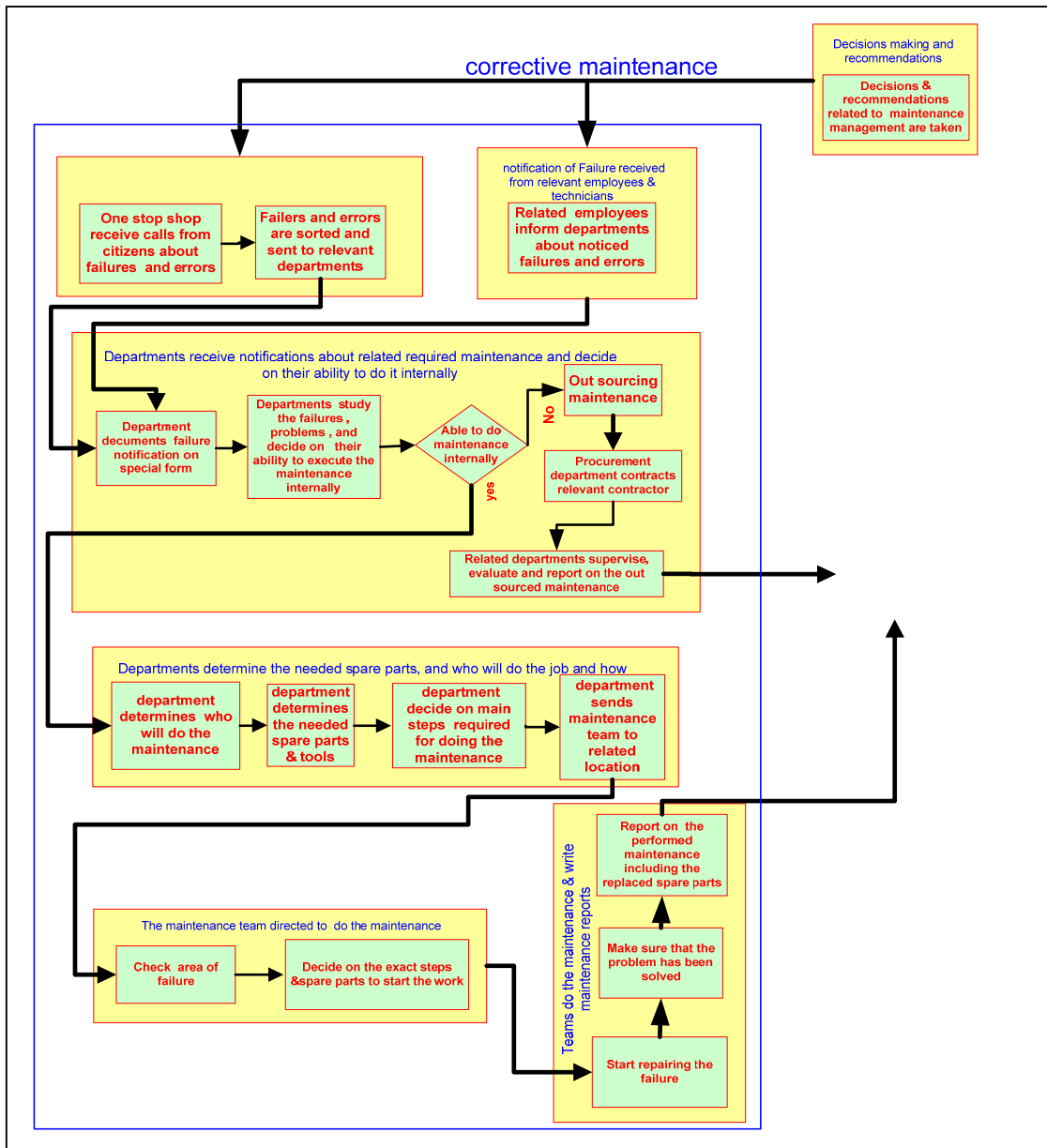


Figure (5.3) corrective maintenance process diagram

The sections below present the details that explain how each process within the process diagram is executed.

5.3.1.1 Process of "Decisions making and recommendations"

Table 5.1 below shows how decision making and Recommendations process is executed. This process is part of both corrective and preventive maintenance.

Table 5.1 "Decision making and Recommendations process" guidelines

Process Name : Decision making and Recommendations	
Objective	The objective of this processes is to facilitate and clarify how decisions and recommendations are to be taken by the maintenance committee which consists of the heads of the departments and a number of municipality council members
Activities of the processes	Decisions & recommendations related to maintenance management are taken
Activity's detailed description	Based on the related feedback, the maintenance committees takes the necessary decisions and make proper recommendations, these recommendations and decisions are then transformed into practical corrective or preventive maintenance steps by relevant departments .
Responsibilities	The maintenance committee that includes heads of departments, the heads of departments will next delegate responsibilities to department's employees.
Partners	No partner participate in applying this process
Related forms	No special forms are needed in this process. However decisions and recommendations may document by usual minutes of meeting to be then sent to relevant departments.

5.3.1.2 Process of "Notification of failures received from citizens"

Table 5.2 below shows how notification of failures received from citizens process is.

Table 5.2" notification of failures received from citizens process" guidelines

Process Name : notification of failures received from citizens	
Objective	The objective of this process is to show how the notification of failure will be received, sorted and sent to related departments.
Activities of the processes	The activities of this process are : 1- One stop shop receives calls or written complaints from citizens about failures & errors. 2- Failures are sorted and sent to relevant departments.
Activity's detailed description	The One stop shop employee who is dedicated to receive the complaint fills the form (M/FN-01) with related information , in case of emergency failures , the one stop shop employee calls the related department and inform them about the failure and simultaneously , fills the complaint form (M/FN-01) In the municipalities that don't have a one stop shop, the complaint unit employee receives complaints and documents them using the complaint form(M/FN-01)
Responsibilities	The one stop shop employee who is dedicated to receive complaints
Partners	No partners participate in applying this process
Related forms	(M/FN-01)

5.3.1.3 Process of "Failure notification received from related employees & technicians".

Table 5.3 below shows how failure notification received from related employees & technicians.

Table 5.3" Failure notifications received from related employees & technicians process" guidelines

Process Name : Failure notification received from related employees & technicians	
Objective	This process will facilitate capturing errors and failures through related employees & technicians.
Activities of the processes	1- In this process the Related employees & technicians inform departments about noticed failures and errors.
Activity's details description	Related employee informs the related department about noticed failure.
Responsibilities	Related employees& technicians.
Partners	No partners participate in applying this process
Related forms	(M/FN-02)

5.3.1.4 Process of "Departments receive notification about related required maintenance and decide on their ability to do it internally".

Table 5.4 below shows how departments receive notification about related required maintenance and decide on their ability to do it internally

Table 5.4 "Departments receive notification about related required maintenance and decide on their ability to do it internally process" guidelines

Process Name : Departments receive notification about related required maintenance and decide on their ability to do it internally	
Objective	To guide departments on how to transact with the problems and decide on their ability to do the maintenance internally or externally
Activities of the processes	<p>1- Department documents failure notification on form M/FN-02.</p> <p>2- Department studies the failures , problems , and decide on their ability to execute the maintenance internally</p> <p>3-In case able to do maintenance internally, the department determines the needed spare parts, and who will do the job and how.</p> <p>4- In case of Out sourcing maintenance; then</p> <p>4.1 Procurement department contracts relevant contractor adopting its own standard internal procedures.</p> <p>4.2 Related departments supervise, evaluate and report the out sourced maintenance</p>
Activity's detailed description	<p>Related department receives the notification about problems or failures and documents about these failures using form (M/FN-02)</p> <p>. Then the department decides whether it can do the maintenance thorough it's maintenance teams or not , if not , then the department needs to contract out sourcing contractors, and this has to be done in coordination with the purchasing /procurement department , the role of the related department is then to supervise , evaluate and report on the outsourced the maintenance . The report is then sent to the information technology (IT) department for data entry and analysis.</p>
Responsibilities	The head of the related department, who will next delegate responsibilities to other department's employees
Partners	Private sector contractors
Related forms	(M/FN-02) , (M/FN-03)

5.3.1.5 Process of " Departments determine the needed spare parts, and who will do the job and how".

Table 5.5 below shows how departments determine the needed spare parts, and who will do the job and how.

Table 5.5 "Departments determine the needed spare parts, and who will do the job and how" guidelines

Process Name : Departments determine the needed spare parts, and who will do the job and how	
Objective	To show how the internally maintenance process will performed.
Activities of the processes	1- Department determines who will do the maintenance. 2- Department determines the needed spare parts &tools 3- Department decide on main steps required for doing the maintenance 4- Department sends maintenance team to related location
Activity's detailed description	Once related department decides on doing the maintenance internally utilizing its own resources, the preparations for doing the maintenance start by using form M/FN-02; first the department determines the maintenance team who will do the maintenance, then the needed spare parts and tools for solving the problem are identified and listed, the spare parts are prepared in coordination with the stores , then the steps on how to perform the maintenance may be determined by referring to relevant technical maintenance procedures if available , after that the maintenance team moves to the site to do the maintenance .
Responsibilities	The head of the related department, who will next delegate responsibilities to other department's employees
Partners	The stores department
Related forms	(M/FN-02)

5.3.1.6 Process of "Teams do the maintenance & write maintenance reports".

Table 5.6 below shows how teams do the maintenance & write maintenance reports.

Table 5.6 "Teams do the maintenance & write maintenance reports process explanation "guidelines

Process Name : Teams do the maintenance & write maintenance reports	
Objective	To show how the maintenance team performs the maintenance and writes proper maintenance report.
Activities of the processes	1-Repairing the failure 2-Make sure that the problem has been solved properly 3-Report on the performed maintenance including the replaced spare parts
Activity's detailed description	The maintenance team repairs the failure by replacing the parts that causing the problem, fixing the new ones, and do what ever necessary (including tests) to bring the system back to its normal working condition. After completing the maintenance, the team's supervisor fills a maintenance report using form (M/FN-06).
Responsibilities	The maintenance engineer and the maintenance team supervisor.
Partners	No partner participate in applying this process
Related forms	(M/FN-04)

5.3.2 Guide for Preventive maintenance management activities.

The following figure shows the part of the process diagram corresponding to preventive maintenance management activities.

5.3.2.1 Process of " preventive maintenance programs are Prepared & modified by departments that provide services "

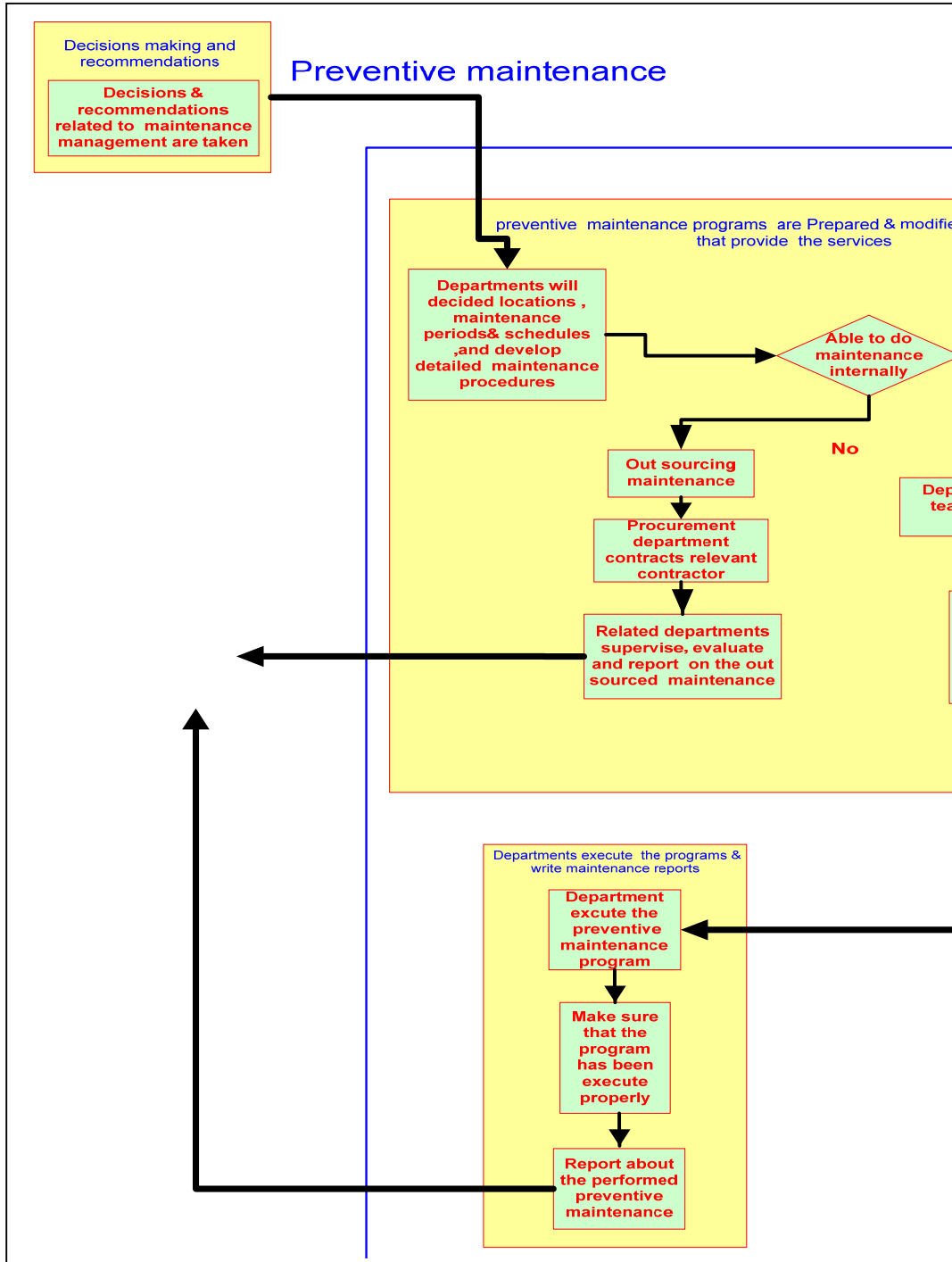


Table 5.5 below shows how preventive maintenance programs are Prepared & modified by departments that provide services.

Table 5.7 preventive maintenance programs are Prepared & modified by departments that provide services guidelines

Process Name : preventive maintenance programs are Prepared & modified by departments that provide services	
Objective	To show how the preventive maintenance programs are prepared.
Activities of the processes	<p>1-Departments will decide locations, maintenance periods& schedules, and developed detailed maintenance planes & procedures.</p> <p>2- in case of out sourcing maintenance ; then :</p> <p> 2.1Procurement department contracts relevant contractor</p> <p> 2.2Related departments supervise, evaluate and report the out sourced maintenance</p> <p>3- in case Able to do maintenance internally then :</p> <p> 3.1Departments determine teams that will do the maintenance.</p> <p> 3.2 Tools and spare parts needed are listed &received from stores</p>
Activities detailed description	<p>To do preventive maintenance, a preventive maintenance program/ plane has to be prepared using form M/FN-05.</p> <p>While developing the preventive maintenance program/plane, the related department determines whether to do the maintenance internally utilizing it's own resources, or to do it with the help of an external contractor.</p> <p>In the case of out sourcing contractor , the procurement department will contract external maintenance contractor according to its internal regulations , the role of the related service department is to supervise, evaluate, and report on the outsourced maintenance , then reports are sent to IT department .</p> <p>In the case of internal maintenance, the spare parts are listed and received from stores.</p>
Responsibilities	The head of the related department, who will next delegate responsibilities to other department's employees.
Partners	The procurement department
Related forms	(M/FN-05)

5.3.2.2 Process of "Departments execute the programs & write maintenance reports".

Table 5.6 below shows how Departments execute the programs & write maintenance reports.

Table 5.8 "Departments execute the programs & write maintenance reports" guide lines.

Process Name : Departments execute the programs & write maintenance reports	
Objective	To show the steps that facilitates implementing the preventive maintenance program.
Activities of the processes	1-Department execute the preventive maintenance program 2-Make sure that the program has been executed properly 3- Report about the performed preventive maintenance
Activities detailed description	The related department execute the preventive maintenance program as it's planned, repair the expected failure before it may happen and replace the necessary parts . The assigned maintenance team makes sure that they execute the maintenance program properly , then the team reports about the performed preventive maintenance ,these reports are then sent to the IT department .
Responsibilities	The maintenance engineer and the maintenance team supervisor.
Partners	No partner participate in applying this process
Related forms	(M/FN-04)

5.3.3 Data entry and Analysis.

The out put data and in formation that yield from the processes of corrective and preventive maintenance are sent to Information Technology department (IT) where the analysis process is done. The following figure shows the part of the process diagram corresponding to the data entry and analysis.

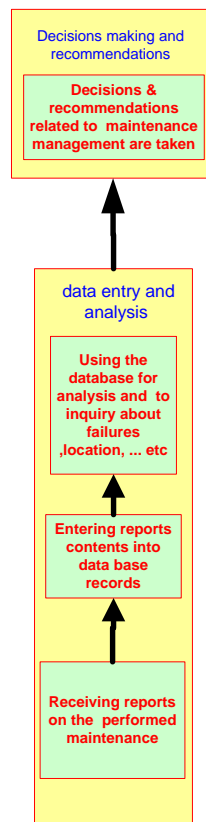


Figure 5.5 Data entry and analysis process diagram

To facilitate the process of data entry and analysis, a guide for that process is shown below,

Table 5.9 "data entry and analysis" guidelines

Process Name : data entry and analysis	
Objective	To show how maintenance related data and information process documented in the data base, and how related departments may get the benefit from these data and information.
Activities of the processes	1-Receiving reports on the performed maintenance 2-Entering reports contents into data base records 3-Using the database for analysis and to inquiry about failures details such as ,location, zone, operators ,number of preventive maintenance activities for related zoon..... etc
Activity's detailed description	The data entry and analysis employee receives maintenance reports from related departments, after that these information entered to special software, this software has to contain fields to facilitate the analysis process.
Responsibilities	Data entry operator
Partners	IT department
Related forms	No special form needed, forms from related department are sent to IT department to be entered to special software

Chapter 6

Proposed Structure to Computerize the MMM

This chapter presents and discusses the proposed preliminary structure to computerize the MMM, it mainly presents the required inputs and expected outputs of the computerized MMM.

6.1 Introduction

To benefit properly from the proposed MMM, it has to be computerized, this will make it easier to document maintenance-related information, and retrieve these information easily, this will also strongly support maintenance-related management decision making process.

The following two sections present respectively the required inputs and expected outputs of the computerized MMM.

6.2 Software inputs.

The required inputs cover both corrective and preventive maintenance activities, performed by different municipal departments; either utilizing their own resources or through external contractors. The required inputs are basically obtained from the maintenance reports (M/FN-04) prepared by different departments, and then submitted to IT unit.

Figure 6.1 shows the required inputs needed to be fed into the data base system specially designed for this purpose.

As one can see in figure 6.1, the required data and information are:

- Department which execute the maintenance
- Type of maintenance, whether it's corrective or preventive.
- Date and time of performing the maintenance
- Zoon number, this refers to the zoon where the maintenance job performed.
- Who has done the maintenance; this includes the name of maintenance team and name of team supervisor in case of internally maintenance job, in case of out sourcing maintenance, the name of contractor and the amount of contract will be also fed to the data base.
- Location of failure.
- Spare parts used in performing the maintenance
- Tools used in performing the maintenance.

6.3 Expected outputs.

Figure 6.1 shows wide range of output information that can be obtained; these are:

- Name of employee who performed the maintenance: the user can inquire about name of any person participated in performing a certain maintenance.
- Date and time of performing maintenance
- Maintenance performed by a certain department.
- Maintenance performed in a certain zoon.

- Number of maintenance operations that done for certain zoon or location.
- Number of corrective/preventive maintenance activities done for certain zoon or location.
- List & number of spare parts used in achieving the maintenance during a period of time.
- Number of maintenance activities executed during a certain period of time.

Also, the computerized system is expected to be able to provide the user with interrelated information between the different expected outputs; such as the performed maintenance by a certain department in a certain zoon during a certain period of time

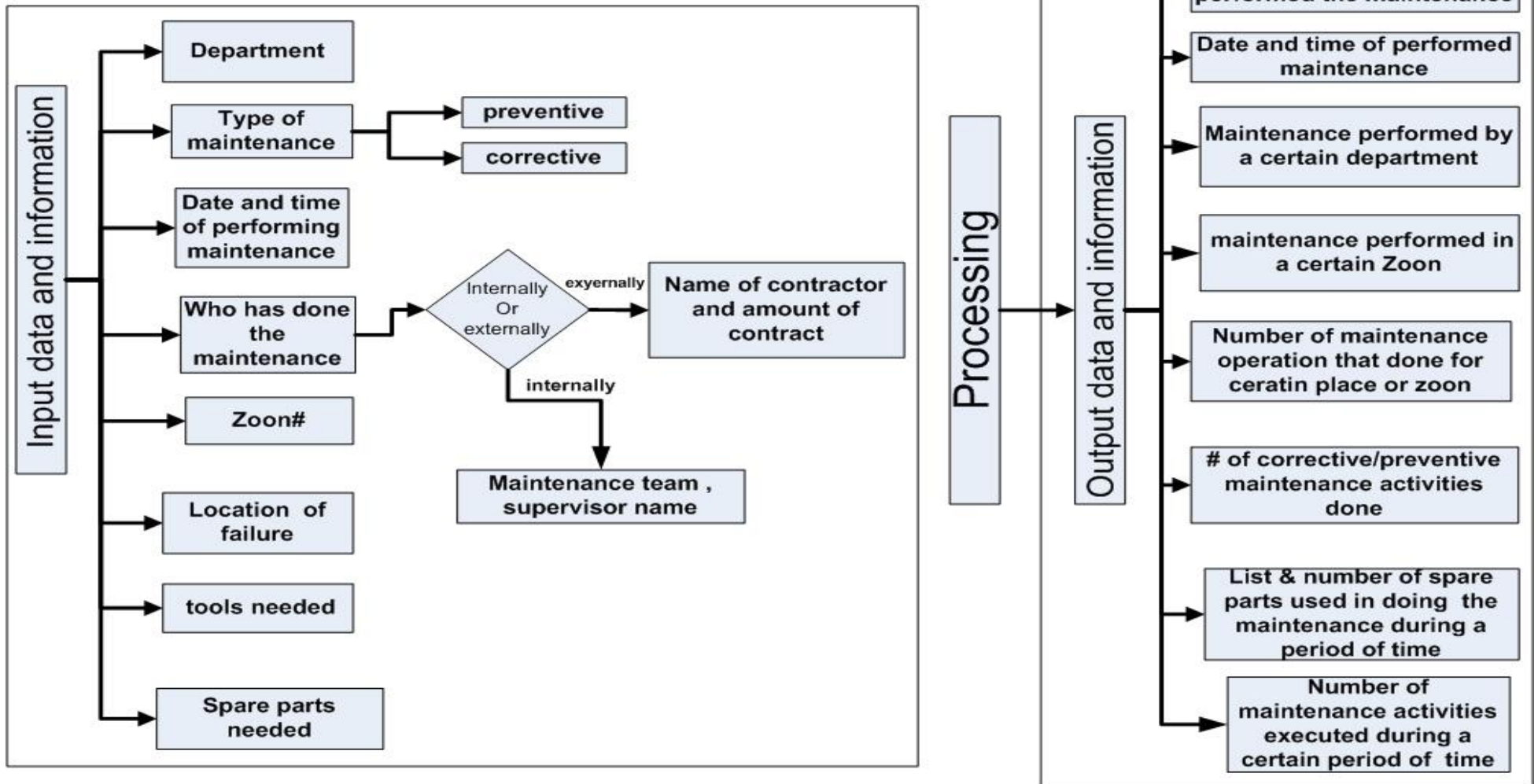


Figure 6.1 proposed structure to computerize the MMM flow chart

Chapter 7

Conclusions & Recommendations

This chapter presents main conclusions and recommendations of the Research.

7.1 Conclusions

Based on the obtained results, the researcher concludes the following:

- Currently, almost all Palestinian municipalities practice corrective maintenance rather than adopting proper maintenance management systems to maintain service delivery to the public; this of course affects negatively the quality and cost of service.
- Most municipalities don't have proper maintenance-related documentation systems.
- All municipalities don't have clear figure about their annual cost of maintenance; this is basically due to the unclear relation between maintenance activities and spare parts consumption.
- Palestinian municipalities don't have separate Maintenance Department to manage all maintenance activities related to the different services provided by the municipality; instead each service department has a maintenance unit/team to maintain its services.
- Very few Palestinian municipalities use simple forms to facilitate implementing corrective maintenance activities.

- There are several obstacles facing the development of maintenance management practices; among which are: lack of skilled technicians, low maintenance budget, improper tools and facilities.

7.2 Recommendations.

The following are the main recommendations of the Research:

- The researcher strongly recommends to start implementing the proposed Maintenance Management Model (MMM) in Palestinian municipalities to help in improving " quality " and in reducing cost of services provided to the public; this is because the proposed MMM has the following added value:
 - It provides municipalities with tools and forms that facilitate both corrective and preventive maintenance management. Also, the MMM explains the role of the different management levels in executing it.
 - The data and information documented through the different forms are very useful for future analysis (including cost) and decision making.
 - The MMM covers both corrective and preventive maintenance, it is also supported with the necessary procedures and tools to facilitate its implementation in local municipalities.

- The MMM has no implications on municipal organizational structures and can be easily implemented by current related staff.
 - The MMM provides municipalities with certain performance indicators ,such as the time needed to complete the maintenance ,number of maintenance jobs completed by a certain team or workers; such as indicators help the municipality to evaluate its maintenance-related performance
 - The proposed MMM is considered as a first generation of Maintenance Management Model suitable for local municipalities, and the researcher believes that the MMM can be improved by testing it in a group of municipalities to get feedback for future modifications.
-
- To operate the MMM effectively, the municipalities are asked to divide their respective cities or towns into zones; this will help in future inquiring about maintenance-related information and support maintenance-related decision making.
 - Training must be given to related municipal staff who will participate in implementing the proposed MMM; the training has to focus on how to implement the maintenance procedures and use their corresponding forms.
 - To ultimate the benefits of the MMM, future work may make use of the structure proposed to computerize the model and it's supporting

tools; such a computerized system can link all service-maintenance activities in a municipality, help in controlling and regulate the utilizing of spare parts, and sit maintenance-related performance indicators.

- Although the proposed MMM is applicable for all Palestinian municipalities, however it's recommend to start applying it in type A&B municipalities.

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Appendices

Appendix (A) Municipalities classification

جدول تصنيف البلديات
المجموع الكلي : 132

بلديات د	بلديات ج	بلديات ب	بلديات أ
الزبايده	العبيدية	كفر راعي	جنين
باقا الشرقية	الدوحة	السيه الحارثيه	طولكرم
زيتا	الخضر	ميتلون	قلقيليه
كفر اللبد	زعترة	برقين	نابلس
جيوس	تقوع	سيلة الظهر	البيرة
كفر ثلاث	بيت فجار	جبع	رام الله
سبسطية	صويرف	طمون	أريحا
دير استيا	بيت امر	عقابه	بيت لحم
قراوة بني حسان	خاراس	قفين	الخليل
كفل حارس	بيت أولا	علاز	جباليا
الزاوية	الشيوخ	بيت ليد	غزه
بروقين	ترقوميا	دير الغصون	دير البلح
كفر الديك	بيت عوا	بلعا	خانيونس
دير بلوط	تفوح	عتيل	رفح
صوين	الزوايده	عزون	بيت جالا
ترمسعيا	عيسان الصغيره	حبله	بيت ساحور
المزرعة الشرقية	خزاعه	عصيرة الشمالية	السموع
الطيبة	الفخاري	بيت فوريك	سعير
عطارة	النصر (البيوك)	حوارة	حلحول
العوجا	الشوكه (شوكة الصوفة)	بيتا	إذنا
النويمة والديوك الفوقا		جماعين	بني نعيم
بيت عنان		قبلان	دورا
بيت سوريك		عقربا	يطا
جناة		بديا	الظاهرية
أم النصر (القرية البدوية - المسلخ)		سنجل	بيت لاهيا
المغراقه (أبو مدين)		الاتحاد	بيت حانون
الزهراء		الزيتونة	النصيرات
وادي غزه (جحر الديك) المصدر		نعلين	البريج
واد السلقا		بيت لقيا	المغازي
		بني زيد الشرقية	القراره
		بئر نبالا	بني سهيلا
		بدو	عيسان الكبيره
		السواحة الشرقية	
		عناتا	
		ابو ديس	
		قطنة	
30	56	32	14

Appendix B: local Government law

قانون رقم (١) لسنة ١٩٩٧ بشأن الهيئات المحلية الفلسطينية

رئيس اللجنة التنفيذية لمنظمة التحرير الفلسطينية
رئيس السلطة الوطنية الفلسطينية
بعد الإطلاع على قانون البلديات رقم ٢٩ لسنة ١٩٥٥ الساري المفعول في محافظات الضفة الغربية،
وعلى قانون البلديات رقم ١ لسنة ١٩٣٤ الساري المفعول في محافظات قطاع غزة،
وعلى قانون إدارة القرى رقم ٥ لسنة ١٩٥٤ المعمول به في محافظات الضفة الغربية،
وعلى قانون إدارة القرى رقم ٢٣ لسنة ١٩٤٤ المعمول به في محافظات قطاع غزة،
وعلى مشروع القانون المقدم من مجلس الوزراء،
وبعد اعتماد المجلس التشريعي لمشروع القانون،
أصدرنا القانون الآتي:

المادة (١) تعريف

يكون للألفاظ والعبارات التالية الواردة في هذا القانون المعاني المخصصة لها أدناه ما لم تدل القرينة على غير ذلك.
الوزارة: وزارة الحكم المحلي.
الوزير: وزير الحكم المحلي.
الهيئة المحلية: وحدة الحكم المحلي في نطاق جغرافي وإداري معين.
المجلس: مجلس الهيئة المحلية ويشتمل مجلس البلدية أو المجلس المحلي أو المجلس القروي أو اللجنة الإدارية أو لجنة التطوير أو أي مجلس آخر يشكل وفقاً لأحكام هذا القانون ويتألف من الرئيس والأعضاء المنتخبين.
الرئيس: رئيس مجلس الهيئة المحلية المنتخب
العضو: هو عضو مجلس الهيئة المحلية المنتخب
المقيم: المواطن الفلسطيني المقيم ضمن منطقة هيئة محلية ويكون له سكن أو عمل دائم فيها
المكلف: أي شخص استحق عليه مبلغ للهيئة المحلية بمقتضى هذا القانون أو أي تشريع آخر
قانون الانتخابات: قانون انتخاب مجالس الهيئات المحلية الفلسطينية لسنة ١٩٩٦.

المادة (٢) علاقة الوزارة بالهيئات المحلية

وفقاً لأحكام القانون تقوم الوزارة بما يلي:
١- رسم السياسة العامة المقررة لأعمال مجالس الهيئات المحلية الفلسطينية والإشراف على وظائف واختصاصات هذه المجالس وشؤون تنظيم المشاريع العامة وأعمال الميزانيات والرقابة المالية والإدارية والقانونية والإجراءات الخاصة بتشكيل هذه المجالس.
٢- القيام بالأعمال الفنية والإدارية المتعلقة بأعمال التنظيم والتخطيط الإقليمي في فلسطين.
٣- وضع أية أنظمة أو لوائح لازمة من أجل تنفيذ واجباتها المنصوص عليها في البنود السابقة أو بمقتضى أحكام القانون.

المادة (٣) الهيئة المحلية

- ١- تعتبر الهيئة المحلية شخصية اعتبارية ذات استقلال مالي تحدد وظائفها وسلطاتها بمقتضى أحكام القانون.
- ٢- يتولى إدارة الهيئة المحلية مجلس يحدد عدد أعضاؤه وفقاً لنظام يصدر عن الوزير ويصادق عليه مجلس الوزراء وينتخب رئيسه وأعضاؤه انتخاباً حراً ومباشراً وفقاً لأحكام قانون الانتخابات.

المادة (٤) إحداث الهيئات المحلية وإلغاؤها

- ١- وفقاً لأحكام هذا القانون تنظم هيكلية الهيئات المحلية الفلسطينية وتحدد تشكيلاتها وحدودها لائحة تصدر عن مجلس الوزراء بناءً على تنسيب من الوزارة.
- ٢- بما لا يتعارض مع أحكام هذا القانون أو المصلحة العامة يكون إحداث أو إلغاء أو ضم أو فصل أية هيئة محلية أو جمعيات سكانية أو أجزاء منها أو تشكيل هيئة محلية لها بقرار من مجلس الوزراء بناءً على تنسيب من الوزير.
- ٣- يتم توسيع حدود منطقة الهيئة المحلية أو تغييرها بتوصية من المجلس وبقرار من الوزير.

المادة (٥) انتخاب الرئيس

- ١- يتم انتخاب رئيس الهيئة المحلية في انتخابات حرة ومباشرة تجري وفقاً لأحكام قانون الانتخابات.
- ٢- يشترط فيمن ينتخب رئيساً للمجلس التفرغ التام ولا يجوز الجمع بين رئاسة المجلس وأية وظيفة أو مهنة أخرى.
- ٣- إذا كانت لدى رئيس المجلس وظيفة أو مهنة أخرى وجب عليه تقديم استقالته منها أو تركها خلال مدة أقصاها شهر من تاريخ تسلمه لمهام رئاسة المجلس وإلا اعتبر مقالا حكماً بانقضاء مدة الشهر المذكور.

المادة (٦) انتخاب نائب الرئيس

- ١- ينتخب أعضاء المجلس بالاقتراع السري من بينهم نائباً للرئيس ويتم الانتخاب بالحصول على الأغلبية العادية من الأصوات. ويتم إشعار الوزارة بذلك.
- ٢- عند قيام نائب الرئيس بمهام رئاسة المجلس حال غياب الرئيس أو مرضه مدة تزيد على الأسبوع أو شغور مركز الرئيس. يدفع له مكافأة بقرار من المجلس بناءً على ما تقرره اللائحة التنفيذية لهذا القانون.

المادة (٧) تسليم المجلس الجديد مهامه

- ١- يتسلم رئيس وأعضاء المجلس المنتخبون مراكزهم ويباشرون مهامهم اعتباراً من اليوم التالي

للإعلان عن نتائج الانتخابات وفق أحكام قانون الانتخابات.
٢ - يباشر العضو الجديد الذي يحل محل عضو شغره مركزه مهام عضويته خلال أسبوعين من تاريخ الشغور بناء على إشعار بذلك من الوزير لرئيس مجلس الهيئة المحلية المعني.

المادة (٨) جلسات المجلس

- ١ - يعقد المجلس في مقر الهيئة المحلية جلسة عادية واحدة على الأقل كل أسبوع يعين موعدها بقرار منه.
- ٢ - يجوز للرئيس أو لعدد من الأعضاء لا يقل عن الثلث دعوة المجلس إلى عقد جلسات غير عادية.
- ٣ - يبلغ الأعضاء بموعد كل جلسة وجدول أعمالها قبل عقدها بيوم واحد على الأقل ولا يجوز بحث أي موضوع خارج جدول الأعمال إلا إذا كان حاضراً في الجلسة ثلثي أعضاء المجلس ووافقوا بالإجماع على طرح أي موضوع طارئ للبحث.
- ٤ - في حالة تغيب الرئيس ونائبه يرأس الجلسة أكبر الأعضاء سناً.
- ٥ - يجوز للمجلس أن يسمح لأي شخص حضور أي جلسة من جلساته إذا قرر ذلك أكثرية أعضائه الحاضرين للمشاركة في مناقشة الموضوع وتصدر قرارات المجلس بحضور الأعضاء فقط.
- ٦ - تدون قرارات المجلس ووقائع الجلسات في سجل خاص مثبت الأوراق ويوقع عليه الرئيس والأعضاء الحاضرين.
- ٧ - يتكون النصاب القانوني للجلسة من أكثرية أعضاء المجلس فإذا لم يتوفر هذا النصاب في جلستين متتاليتين تعتبر الجلسة الثالثة قانونية بمن حضر من الأعضاء.
- ٨ - تتخذ قرارات المجلس بالإجماع أو بأكثرية أصوات الأعضاء وعند تساوي الأصوات يرجح الجانب الذي منه رئيس الجلسة ويكون التصويت علنياً.
- ٩ - يجوز للمجلس تشكيل لجان من بين أعضائه لأية غاية أو لمعالجة أي أمر من الأمور المعروضة عليه ولا تكون توصيات هذه اللجان سارية المفعول ما لم يقرها المجلس.

المادة (٩) دورة المجلس

مدة دورة المجلس أربع سنوات تبدأ اعتباراً من تسلمه مهامه ولا يجوز انتخاب رئيس المجلس لأكثر من دورتين متتاليتين.

المادة (١٠) الاستقالة

- ١ - يجوز لرئيس المجلس تقديم استقالته بكتاب مسبب للمجلس ولا تعتبر الاستقالة نهائية إلا بعد موافقة المجلس ومصادقة الوزير على ذلك خلال أسبوع من تاريخ قرار المجلس.
- ٢ - يجوز استقالة العضو من عضوية المجلس بكتاب يقدمه للمجلس ولا تعتبر الاستقالة نهائية إلا بعد موافقة المجلس عليها وإبلاغ الوزير بذلك خلال أسبوع من تاريخ قرار المجلس.
- ٣ - يجوز استقالة أكثرية أعضاء المجلس (نصف + ١) دفعة واحدة بكتاب مسبب يقدم إلى الرئيس ولا تعتبر الاستقالة نافذة إلا بعد مصادقة الوزير خلال أسبوع من تاريخ تقديمها.
- ٤ - (أ) في الحالات المشار إليها أعلاه يعقد المجلس جلسة طارئة خلال يومين من تاريخ تقديم الاستقالة للنظر فيها ولا اتخاذ المقتضى وفقاً لأحكام هذا القانون.
- (ب) تعتبر الاستقالة مقبولة حكماً إذا لم يرد الوزير عليها خلال المدد المقررة في الفقرات المذكورة أعلاه.

المادة (١١)

شغور مركز الرئيس

- ١- (أ) يعد مركز الرئيس شاغراً إذا فقد أهليته القانونية أو أصبح عاجزاً عن القيام بواجبات وظيفته بمقتضى حكم قضائي قطعي صادر عن محكمة فلسطينية مختصة. (ب) الاستقالة أو الوفاة.
- ٢- إذا شغور مركز الرئيس وفقاً للفقرة (١) أعلاه تطبيق أحكام مادة (٥٥) من قانون الانتخابات شريطة ألا تقل المدة المتبقية لدورة المجلس عن ستة أشهر.
- ٣- في حالة تطبيق أحكام الفقرة السابقة تكون مدة الرئيس هي المدة المتبقية لدورة المجلس.

المادة (١٢)

شغور مركز العضو

- ١- يعد مركز العضو شاغراً إذا استقال أو توفي أو فقد أهليته القانونية أو أصبح عاجزاً عن القيام بواجباته بمقتضى حكم قضائي قطعي صادر عن محكمة فلسطينية مختصة.
- ٢- إذا شغور مركز العضو وفقاً للفقرة (١) أعلاه تطبيق أحكام المادة (٥٦) من قانون الانتخابات.
- ٣- (أ) في حال شغور مراكز أكثر من نصف الأعضاء دفعة واحدة تجري انتخابات جديدة في مدة أقصاها شهر من إعلان الشغور لاختيار أعضاء جدد لكامل المجلس وفقاً لأحكام الفقرة الخامسة من المادة (٥٦) من قانون الانتخابات شريطة ألا تقل المدة المتبقية لدورة المجلس عن سنة.
- (ب) إذا كانت المدة المتبقية أقل من سنة يتم ملء الشواغر وفقاً لأحكام الفقرة الثالثة من المادة (٥٦) من قانون الانتخابات.
- (ج) وفي جميع الأحوال تكون مدة عضوية الأعضاء هي المدة المتبقية لدورة المجلس.

المادة (١٣)

فقدان العضوية واستردادها

- ١- يفقد الرئيس أو العضو عضويته في المجلس حكماً ويعتبر مركز أي منها شاغراً في أي من الحالات التالية:-
 - أ- إذا تغيب عن حضور ثلاث جلسات متتالية بدون عذر مشروع يقبله المجلس.
 - ب- إذا عمل في قضية ضد المجلس بصفته محامياً أو خبيراً أو وكيلاً أو تملك حقاً من المجلس مستغلاً بذلك عضويته لمنفعته أو بالواسطة.
 - ج- إذا عقد اتفاقاً مع المجلس أو أصبح ذا منفعة هو أو من ينوب عنه من أقاربه من الدرجة الأولى في أي اتفاق تم مع المجلس ويستثنى من ذلك العقود والفوائد الناجمة عن كونه عضواً في شركة مساهمة عمومية بشرط أن لا يكون مديراً لها أو عضواً في مجلس إدارتها أو موظفاً فيها أو وكيلاً عنها.
 - د- إذا فقد أياً من المؤهلات التي يجب توافرها بمقتضى أحكام هذا القانون وأحكام قانون الانتخابات والأنظمة الصادرة بمقتضى تلك الأحكام.
 هـ- إذا قام بأي عمل أو ترك خلافاً للصلاحيات أو المسؤوليات والواجبات المنصوص عليها في هذا القانون.
- ٢- يجب على المجلس تبليغ الوزير بفقدان الرئيس أو العضو مركزه في المجلس خلال أسبوع من تاريخ وقوعه.
- ٣- للعضو الذي فقد عضويته بمقتضى أحكام الفقرة (١) من هذه المادة أن يقدم إلى الوزير خلال خمسة عشر يوماً من تاريخ فقد مركزه في المجلس طلباً معللاً لإيقانه في ذلك المركز ويكون قرار الوزير في الطلب قطعياً ويعلن عن فقدان العضوية في الصحف المحلية.

المادة (١٤)

بما لا يتعارض مع أحكام القانون تعتبر الإجراءات التي اتخذها المجلس قبل إعلان عضوية العضو أو الأعضاء قانونية ما دامت قد اتخذت في حدود الصلاحيات المخولة له قانوناً.

المادة (١٥)

وظائف وصلاحيات وسلطات المجلس

أ- مع مراعاة أحكام هذا القانون وأي قانون أو تشريع آخر تناط بمجلس الهيئة المحلية الوظائف والصلاحيات والسلطات المبينة في البنود التالية ضمن حدود منطقة الهيئة المحلية ويحق له أن يمارسها مباشرة بواسطة موظفيه ومستخدميه أو أن يعهد بها أو ببعضها إلى متعهدين أو ملتزمين أو مقاولين أو أن يعطي بها أو ببعضها امتيازات لأشخاص أو لشركات لمدة أقصاها ثلاث سنوات.

كما يجوز للمجلس أن يعطي بها أو ببعضها امتيازات لأشخاص أو لشركات مدة تزيد عن ثلاث سنوات شريطة موافقة الوزير.

ويجوز للمجلس إصدار الأنظمة أو اللوائح التنفيذية اللازمة لتنظيم أعمال الهيئة المحلية وتأمين مصالحها وحاجياتها.

١ - تخطيط البلدة والشوارع

تخطيط البلدة وفتح الشوارع وإلغاؤها وتعديلها وتعيين عرضها واستقامتها وتعبيدها وإنشاء أرصفتها وصيانتها وتنظيفها وإنارتها وتسميتها أو ترقيمها وترقيم بناياتها وتجميلها وتشجيرها ومنع التجاوز عليها ومراقبة ما يقع على الشوارع من الأراضي المكشوفة وتكليف أصحابها بإقامة الأسوار حولها.

٢ - المباني ورخص البناء

مراقبة إنشاء الأبنية وهدمها وترميمها وتغيير أشكالها وتركيب المصاعد الكهربائية وإنشاء الملاجئ وإعطاء رخص لإجراء هذه الأعمال وتحديد موقع البناية وشكلها ونسبة مساحتها إلى مساحة الأرض المنوي إنشاؤها عليها وضمان توفر الشروط الصحية فيها.

٣ - المياه

تزويد السكان بالمياه الصالحة للشرب أو لأية استعمالات أخرى وتعيين مواصفات لوازمها كالعدادات والمواسير وتنظيم توزيعها وتحديد أسعارها وبدل الاشتراك فيها ومنع تلويث الينابيع والأقنية والأحواض والآبار.

٤ - الكهرباء

تزويد السكان بالكهرباء وتحديد أسعار الاستهلاك وبدلات الاشتراك بما لا يتجاوز الحد الأعلى المحدد من الوزارة.

٥ - المجاري

إنشاء المجاري والمراحيض العامة وإدارتها ومراقبتها.

٦ - الأسواق العامة

تنظيم الأسواق العامة وإنشاؤها وتعيين أنواع البضائع التي تباع في كل منها وحظر بيعها خارجها.

٧ - الحرف والصناعات

تنظيم الحرف والصناعات وتعيين أماكن خاصة لكل صنف منها ومراقبة المحلات والأعمال المقلقة للراحة أو المضرة بالصحة العامة.

٨ - النظافة

- جمع النفايات والفضلات من الشوارع والمنازل والمحلات العامة ونقلها وإتلافها وتنظيم ذلك.
- ٩ - الصحة العامة والرقابة عليها
- أ. اتخاذ جميع الاحتياطات والإجراءات اللازمة للمحافظة على الصحة العامة ومنع تفشي الأوبئة بين الناس.
- ب. مراقبة المساكن والمحلات الأخرى للتثبت من تصريف نفاياتها بصورة منتظمة ومن نظافة الأدوات الصحية في المحال العامة واتخاذ التدابير لإبادة البعوض والحشرات الأخرى ومكافحة الفئران والجردان والزواحف الضارة.
- ج. إنشاء المسالخ وتنظيمها وفحص الحيوانات والدواجن المعدة للذبح واتخاذ الاحتياطات لمنع إصابتها بالأمراض وتعيين مواقع لبيعها ومراقبة ذبحها وتصريف بقاياها.
- د. مراقبة الخبز واللحوم والأسماك والفواكه والخضراوات وغيرها من المواد الغذائية واتخاذ الإجراءات لمنع الغش فيها وإتلاف الفاسد منها وتحديد أسعارها ومكافحة الغلاء بالتنسيق مع الجهات الحكومية المختصة.
- هـ - إنشاء مراكز للإسعاف ومصحات ومستشفيات وغير ذلك من المؤسسات الصحية ومراقبتها بالتنسيق مع الجهات الحكومية المختصة.
- ١٠ - المحلات العامة
- تنظيم ومراقبة المطاعم والمقاهي والنوادي والملاعب ودور التمثيل والسينما والملاهي العامة الأخرى وتحديد مواعيد فتحها وإغلاقها واستيفاء رسوم بيع تذاكرها.
- ١١ - المتنزهات
- إنشاء الساحات والحدائق والمنتزهات والحمامات ومحلات السباحة في البرك والبحيرات وعلى الساحل ومراقبتها وتنظيمها.
- ١٢ - الاحتياطات للسيول والفيضانات والحرائق والكوارث الطبيعية وغيرها
- اتخاذ الاحتياطات لمواجهة أخطار السيول والفيضانات ومنع الحرائق ومراقبة الوقود والمواد المشتعلة واتخاذ الاحتياطات لمواجهة الكوارث الطبيعية وإغاثة المنكوبين.
- ١٣ - المؤسسات الثقافية والرياضية
- إنشاء المتاحف والمكتبات العامة والمدارس والنوادي الثقافية والرياضية والاجتماعية والموسيقية ومراقبتها بالتنسيق مع الجهات الحكومية المختصة.
- ١٤ - وسائل النقل البري والبحري
- إنشاء وتعيين وتنظيم مواقف مركبات النقل ضمن حدود الهيئة المحلية ومراقبتها ومراقبة القوارب والسفن والبواخر التي تعمل في المياه التابعة لمنطقة الهيئة المحلية بالتنسيق مع الجهات الحكومية المختصة.
- ١٥ - الباعة المتجولون والبسطات والمظلات
- مراقبة وتنظيم الباعة المتجولين والحمالين والبسطات والمظلات
- ١٦ - الأوزان والقياس
- مراقبة الأوزان والمكاييل والمقاييس ودمغها ووزن ما يباع بالجملة في الأسواق العامة.
- ١٧ - الإعلانات
- مراقبة اللوحات والإعلانات وتنظيمها.
- ١٨ - هدم الأبنية
- هدم الأبنية التي يخشى خطر سقوطها أو المضرة أو التي تنبعث منها روائح كريهة مؤذية وذلك بعد إنذار صاحبها أو شاغلها أو المسؤول عنها.
- ١٩ - فضلات الطرق
- بيع فضلات الطرق ما استملك للمشاريع العامة أو استغلالها
- ٢٠ - التسول
- منع التسول وإنشاء الملاجئ للمحتاجين ومراقبة جمع التبرعات في الأماكن العامة.
- ٢١ - المقابر
- إنشاء المقابر وإلغاؤها وتعيين مواقعها ومواصفاتها ونقل الموتى ودفنهم وتنظيم الجنازات والحفاظة على حرمة المقابر وذلك بالتنسيق مع الجهات الحكومية المختصة.

- ٢٢ - الفنادق
مراقبة الفنادق والنزل العمومية وتنظيمها.
- ٢٣ - الدواب
مراقبة الدواب المستخدمة في النقل والجر وتنظيم أسواق بيع الحيوانات والمواشي وحظر بيعها خارج هذه الأسواق.
- ٢٤ - الكلاب
مراقبة الكلاب وتنظيم اقتنائها وترخيصها والوقاية من أخطارها والتخلص من الضالة أو العقورة منها.
- ٢٥ - الموازنة وملاك الموظفين
إقرار مشروع الموازنة السنوية والحساب الختامي وملاك الموظفين قبل إرسالها إلى الوزارة للتصديق عليها.
- ٢٦ - إدارة أموال وممتلكات الهيئة المحلية
إدارة أملاك الهيئة المحلية وأموالها وإقامة الأبنية اللازمة فيها وتأجيرها ورهنها لمدة لا تزيد على ثلاث سنوات وقبول الهبات والوصايا والتبرعات.
- ٢٧ - الوظائف الأخرى
القيام بأي عمل آخر يقتضي عليه القيام به بمقتضى أحكام هذا القانون أو أي تشريع أو قانون آخر.
- ب) تخويل المجلس صلاحية وضع أنظمة:-
- ١ - يحق للمجلس وبموافقة الوزير أن يضع أنظمة لتمكينه من القيام بأية وظيفة من الوظائف أو ممارسة أية صلاحية من الصلاحيات المذكورة في هذا القانون وأن يضمن تلك الأنظمة أية ضرائب أو رسوم أو عوائد أو غرامات أو نفقات أو مخالفات.
 - ٢ - إذا تولت إحدى الجهات الحكومية الأخرى أي عمل من الأعمال المذكورة في الفقرة (أ) من هذه المادة كجزء من أعمالها وجب عليها التنسيق مع الوزارة التي تقوم باستطلاع رأي مجلس الهيئة المحلية في جميع التشريعات والنظم والترتيبات التي تضعها لتنظيم أو مراقبة ذلك العمل.
- ج) مجلس الخدمات المشترك :-
١. بموافقة الهيئات المحلية المعنية يجوز للوزير إنشاء مجلس خدمات مشترك لمجموعة متقاربة من الهيئات المحلية.
 ٢. وفقا لأحكام هذا القانون وبالتنسيق مع الهيئات المحلية المعنية يصدر الوزير الأنظمة اللازمة لإنشاء مجالس الخدمات المشتركة وذلك فيما يتعلق بالأمور التالية:-
 - ١ - تحديد وظائف مجلس الخدمات المشترك وصلاحياته في إدارة وتشغيل المشاريع المشتركة.
 - ٢ - تحديد عدد الأعضاء الممثلين الذين تسميهم مجالس الهيئات المحلية وطريقة تعيين رئيس مجلس الخدمات المشترك.
 - ٣ - جمع الضرائب والرسوم والعوائد والأجور على المشاريع المشتركة التي يقوم بها المجلس وتحديد طريقة خصيلها وتوزيعها على أن لا تتعدى الضرائب والرسوم المعمول بها.
 - ٤ - شؤون الموظفين والمستخدمين واللوازم.
 - ٥ - النسب التي تساهم بها الهيئات المحلية المعنية في تمويل مجلس الخدمات المشترك وإعداد ميزانيته وإقرارها.
 - ٦ - تصفية أعمال مجلس الخدمات المشترك وحقوقه والتزاماته عند حله.

المادة (١٦)

صلاحيات الرئيس ومسؤولياته

- تناط بالرئيس الصلاحيات والمسؤوليات التالية:
- أ. دعوة المجلس إلى الانعقاد في المواعيد المحددة وإعداد جداول الأعمال وتبليغها إلى الأعضاء وترأس جلسات المجلس ويتولى إدارتها والحفاظة على النظام فيها.
 - ب. تمثيل المجلس في توقيع عقود الرهن والإيجار والاقتراض والصلح والعطاءات والتعهدات

- والمقاولات والالتزامات والبيع والشراء وفقاً للقوانين والأنظمة السارية المفعول.
- ج. تمثيل الهيئة المحلية في الاجتماعات والمؤتمرات ولدى الجهات الرسمية.
- د. القيام بالحفاظة على حقوق الهيئة المحلية والدفاع عن مصالحها بالطرق القانونية.
- هـ. الرئيس التنفيذي للهيئة المحلية ومرجعية دوائرها وله بهذه الصفة الإشراف على شؤون العاملين.
- و. لالتزام بقرارات المجلس والعمل على تنفيذها.
- ز. الإشراف على إيرادات ونفقات الهيئة المحلية ومتابعتها والقيام بأية مهام أو صلاحيات أخرى بمقتضى أحكام القانون.
- ح. للرئيس أن يفوض نائبه أو أي عضو آخر بجزء من صلاحياته.

المادة (١٧)

صلاحيات نائب الرئيس

يُمارس مسؤوليات وصلاحيات الرئيس في حال غيابه أو في حال شغور مركز الرئيس حسب أحكام هذا القانون.

المادة (١٨)

مدير الهيئة المحلية

يجوز تعيين مدير تنفيذي للهيئة المحلية بقرار من المجلس وفقاً للأنظمة المتعلقة بموظفي الهيئات المحلية.

المادة (١٩)

ملاك الوظائف

- ١- يجري تعيين موظفي الهيئة المحلية وإحداث الوظائف وإلغاؤها وزيادة أو إنقاص مخصصاتها بإثبات ذلك في الموازنة السنوية.
- ٢- أنظمة الموظفين: مع مراعاة أحكام قانون الخدمة المدنية الفلسطيني ولوائحه التنفيذية يصدر الوزير أنظمة لموظفي الهيئات المحلية ومستخدميها ينص فيها على واجباتهم ودرجاتهم وكيفية تعيينهم وترقيتهم وعزلهم وإجازاتهم واتخاذ الإجراءات التأديبية بحقهم والعناية الطبية بهم والتأمين عليهم وتخصيص رواتب تقاعد أو مكافآت لهم وإعطائهم علاوات ونفقات سفيرية وإيفادهم في بعثات دراسية للتخصص وغير ذلك من الشؤون التي تتعلق بهم.

الشؤون المالية

المادة (٢٠)

التصرف بالأموال

تسجل أملاك الهيئة المحلية غير المنقولة باسم الهيئة المحلية ولا تباع هذه الأملاك ولا تستبدل ولا توهب ولا ترهن ولا تؤجر مدة تزيد على ثلاث سنوات إلا بقرار من المجلس يصادق عليه الوزير.

المادة (٢١) القروض

يجوز لمجلس الهيئة المحلية أن يقترض أموالاً من أية جهة بعد موافقة الوزير فإذا استلزمته معاملة الاقتراض كفالة السلطة التنفيذية وجب أخذ موافقة مجلس الوزراء على ذلك.

المادة (٢٢) الإيرادات

تتكون إيرادات الهيئة المحلية من:-
أ. الضرائب والرسوم والأموال المفروضة أو المتأتية بمقتضى أحكام القانون أو أي نظام صادر بالاستناد إليه أو أي قانون أو نظام آخر نص فيه على استيفاء ضرائب أو رسوم أو مخالفات للهيئات المحلية.
ب. التبرعات والهبات والمساعدات التي يوافق عليها المجلس.
ج. الحصة التي تخصصها السلطة التنفيذية للهيئة المحلية.

المادة (٢٣) ضريبة الأبنية والأراضي

تستوفى هذه الضريبة وفقاً لأحكام قانون ضريبة الأبنية والأراضي داخل مناطق الهيئات المحلية من حيث التخمين والمراجعة والتحصيل والإعفاءات والغرامات بموجب القوانين والأنظمة المعمول بها.

المادة (٢٤) رسم الدلالة

١- تستوفى الهيئة المحلية من مشتري الأموال المنقولة التي تباع في المزاد العلني ضمن منطقة الهيئة المحلية رسماً بنسبة ثلاث بالمائة من قيمة المبيع.
٢- يجري جميع بيوع المزاد العلني بواسطة دالين يعينهم المجلس وتلزم الهيئة المحلية رسوم الدلالة في مطلع كل سنة مالية بالمزاد العلني.

المادة (٢٥) رسوم وغرامات النقل على الطرق

يخصص للهيئات المحلية خمسون بالمائة من الرسوم والغرامات التي تستوفى بمقتضى قانون النقل على الطرق في نطاق حدود الهيئة المحلية وتتكون من رخص اقتناء المركبات ومن غرامات المخالفات وغيرها.

المادة (٢٦)

توزيع إيرادات الهيئات المحلية التي تجبى بواسطة السلطة التنفيذية

- ١ - تقيد الإيرادات التي تجبر عن طريق السلطة التنفيذية لصالح الهيئات المحلية أمانة للهيئات المحلية لدى وزارة المالية وفقاً لأحكام القانون.
- ٢ - توزع حصيلة هذه الإيرادات بنسبة لا تقل عن ٥٠ ٪ على الهيئات المحلية التي جبيت منها ويوزع الباقي بالنسب التي يقرها مجلس الوزراء بناء على تنسيب الوزير في ضوء الاعتبارات التالية عند تعيين حصة كل هيئة محلية.
 - أ. عدد سكانها.
 - ب. نسبة مساهمتها في جلب الإيراد.
 - ج. ما إذا كان لها مركز ذو أهمية خاصة.
 - د. ما إذا كانت تترتب عليها مسؤوليات ليس لها طابع محلي.
 - هـ. احتياجاتها الأساسية وفق خططها التطويرية المصادق عليها من الوزارة.
- ٣ - يجوز لمجلس الوزراء بناء على تنسيب الوزير أن يخصص قسماً من حصيلة هذه الإيرادات كمساعدات مالية للمجالس ومجالس الخدمات المشتركة لتمكينها من القيام بمشاريع ذات أهمية تستلزم المساعدة.

المادة (٢٧)

حماية أموال الهيئة المحلية

- ١ - يعتبر الشخص مكلفاً بالضريبة أو الرسم اعتباراً من بدء السنة المالية التي تلي تملكه أو تصرفه في العقار إن كان مالكا أو متصرفاً فيه أو أشغاله إياه إن كان مستأجراً.
- ٢ - إذا استحق مبلغ للهيئة المحلية بمقتضى أحكام القانون ولم يدفع خلال خمسة عشر يوماً من تاريخ استحقاقه يبلغ الرئيس المكلف إنذاراً تحريماً يبين فيه نوع المبلغ ومقداره والمدة التي استحق عنها ووجوب دفعه خلال خمسة عشر يوماً من تاريخ التبليغ.
- ٣ - يبلغ المكلف الإنذار بتسليمه إياه بالذات فإذا لم يعثر عليه أو رفض التبليغ يعتبر التبليغ واقعاً إذا بلغ الإنذار إلى مكان إقامته الأخير المعروف أو أرسل بالبريد المسجل إلى عنوانه الأخير المعروف.
- ٤ - يحق لكل مكلف يعترض على صحة التكاليف أن يرفع بذلك دعوى لدى المحكمة المختصة خلال المدة المعينة في الفقرة (٢) من هذه المادة شريطة أن يدفع المبلغ المطلوب منه أو يقدم تأمينات بشأنه ترضى عنها المحكمة ريثما يفصل في دعواه إلا إذا كانت قد أجلت رسوم المحكمة بسبب فقره.
- ٥ - حجز الأموال المنقولة وبيعها: إذا لم يدفع المبلغ خلال المدة المحددة في الفقرة (٢) من هذه المادة يقرر الرئيس حجز وبيع ما يكفي لتسديد المبلغ من أموال المكلف المنقولة ويصدر إلى أحد جباة الهيئة المحلية مذكرة موقعة منه ومختومة بختم الهيئة المحلية يأمره فيها بتنفيذ ذلك.
- ٦ - أ - على الجابي عند استلامه المذكرة المبينة في الفقرة السابقة أن يستصحب أحد أفراد الشرطة إذا رأى لزوماً لهذا ويدخل محل عمل المكلف أو أرضه ويحجز من أمواله المنقولة ما يراه كافياً لتسديد المبلغ المطلوب مع نفقات الحجز.
- ب - يحتفظ المجلس بالأموال المحجوزة مدة عشرة أيام وعند انتهاء هذه المدة تباع الأموال بالمزاد العلني إلا إذا دفع المكلف المبلغ والنفقات المذكورة.
- ٧ - الامتثال
 - أ. يجوز للرئيس بناء على سبب معقول أبدي إليه أن يمدد الاحتفاظ بالأموال المحجوزة.
 - ب. يجوز بيع المال المحجوز أو بعضه قبل انقضاء المدة المذكورة في البند (أ) إذا كان مما يرجح تلفه أو هبوط قيمته إما برضاء المكلف أو بأمر الرئيس.
 - ٨ - تستثنى الأموال التالية من الحجز أو المصادرة أو البيع:-
 - أ. الألبسة والأبيرة والفرش الضرورية للمكلف وأسرته.

- ب. أواني الطبخ الضرورية للمكلف ولأسرته.
- ج. الكتب والأدوات والآلات والأوعية والأمتعة اللازمة لمهنة المكلف أو حرفته أو لتجارته على ألا يتجاوز مجموع قيمتها خمسة أضعاف قيمة الدين.
- د. المؤونة اللازمة للمكلف ولأسرته مدة ثلاثة أشهر، ومقدار البذور الذي يكفي لبذر الأرض التي اعتاد زراعتها، إذا كان مزارعاً.
- هـ. حيوانان اثنان من الحيوانات التالية يختارهما المكلف إذا كان مزارعاً جمالاً أو أبقاراً أو بغالاً أو حميراً أو خيلاً أو أغناماً أو ماعز.
- و. علف للحيوانين المستثنيين من الحجز يكفيهما مدة ثلاثة أشهر.
- ز. اللباس الرسمي لموظفي الحكومة.
- ح. الأتواب والحلل والأدوات والآلات الكنسية التي تستعمل خلال إقامة الصلاة.
- ط. الحصة المستحقة للحكومة من الحاصلات سواء أكانت محصودة أو مقطوفة أم لم تكن.
- ي. حق المطالبة بالتعويضات.
- ث. حق الخدمة الشخصية.
- ل. حق النفقة في المستقبل.
- م. أموال الحكومة المنقولة وغير المنقولة.
- ن. البوالص والشيكات وسندات الأمر، إلا إذا كانت قد أجري عليها الأخطار بسبب عدم تأديتها أو أعلن إفلاس حاملها، أو أصبحت في أي حال غير قابلة للانتقال فيمكن حجزها.
- س. الأبنية العائدة للبلديات والهيئات المحلية والأوقاف المخصصة لأداء أعمالها وكذلك الأبنية العائدة للمستشفيات المنشأة للمنافع العامة.
- ٩- إذا وقع الحجز على أية أشياء بموجب هذه المادة يجوز لأي شخص لحقه حيف من جراء ذلك أن يرفع دعوى على المجلس يطالب بها برد الأشياء المحجوزة أو قيمتها أو فك الحجز عنها مع المطالبة بالعطل أو الضرر أو بدون ذلك.
- ١٠- التحصيل عن طريق دائرة الإجراء: يجوز للرئيس تحصيل الأموال المستحقة للهيئة المحلية بواسطة دائرة الإجراء بالطريقة التي يحصل بها الديون العادية المحكوم بها نهائياً بدلاً من تحصيلها بمقتضى هذه المادة إذا رأى ذلك أضمن لمصلحة الهيئة المحلية.
- ١١- حجز الرواتب: إذا كان المكلف موظفاً أو مستخدماً له راتب أو أجر ثابت يمكن استيفاء المبلغ المستحق عليه ربع راتب ذلك الموظف أو الأجر فيجب على الرئيس أن يعمل على استيفاء المبلغ بهذه الطريقة قبل الإقدام على الإجراءات المنصوص عليها في الفقرات الرابعة والخامسة من هذه المادة.
- ١٢- استيفاء ما تجب عليه السلطة التنفيذية: لا تطبق أحكام هذه المادة على الضرائب أو الرسوم التي نص عليها هذا القانون أو أي قانون أو تشريع آخر التي تتولى السلطة التنفيذية استيفائها أو جبايتها لمنفعة الهيئات المحلية.
- ١٣- يجري تحصيل الإيرادات من قبل مجلس الهيئة المحلية أو من قبل السلطة التنفيذية أو بواسطة متعهدين أو ملتزمين أو مقاولين تبعاً لأحكام القانون.

المادة (٢٨) التخفيضات

- أ- يجوز لمجلس الهيئة المحلية بمصادقة الوزير أن يخفض مقدار العوائد أو الرسوم المفروضة على أي شخص أو أن تشطب بسبب فقره إذا تبين له أن ذلك أقرب إلى تحقيق العدالة والإنصاف.
- ب- يجوز لمجلس الهيئة المحلية وبمصادقة الوزير وضع حوافز أو غرامات للمكلفين.

المادة (٢٩) تسجيل الأموال غير المنقولة

جميع معاملات تسجيل التصرف بالأموال غير المنقولة يجب أن تكون مشروطة بإبراز شهادة

تثبت دفع ضرائب الهيئة المحلية.

المادة (٣٠) الصندوق

يتكون صندوق الهيئة المحلية من مجموعة الأموال التي يستوفيها أو تستوفي بالنيابة عنها أو تؤول إليها بمقتضى أحكام هذا القانون أو أي تشريع آخر وتدفع من الصندوق النفقات والمصروفات التي يقرر المجلس إنفاقها، ولا يدفع أي مبلغ من صندوق الهيئة المحلية إلا إذا كان مقررًا في موازنة السنة الجارية أو إذا قرر المجلس صرفه بصورة خاصة بموافقة الوزير.

المادة (٣١) الموازنة

- ١- توضع للهيئة المحلية موازنة سنوية يعمل بها بعد إقرارها من قبل المجلس وتصديقها من قبل الوزير ويجوز وضع ملاحق للموازنة بالطريق نفسه.
- ٢- يجب تقديم الموازنة السنوية خلال الأربعة أشهر الأخيرة وقبل شهرين من بداية السنة المالية الجديدة ولا يجوز أن تتجاوز النفقات ما خصص لها في ميزانية السنة السابقة إلى أن يتم تصديق الموازنة الجديدة.
- ٣- يجوز نقل مخصصات من فصل إلى آخر أو من مادة إلى أخرى بقرار من المجلس ومصادقة الوزير.

المادة (٣٢) الحساب الختامي

يقدم الرئيس حساباً ختامياً عن السنة المنتهية خلال شهرين على أكثر من انتهائها ويرسله إلى الوزير للتصديق عليه بعد إقراره من قبل المجلس.

المادة (٣٣) النظام المالي

بما لا يتعارض مع أحكام القانون تنظم الإجراءات اللازمة لإدارة صندوق الهيئة المحلية والحفاظة عليه وكيفية القبض والصرف ومسك الدفاتر وقيود الحسابات ووضع الموازنة السنوية والحساب الختامي وغير ذلك من الأمور المتعلقة به بنظام مالي يصدره الوزير.

المادة (٣٤) اللوازم والعطاءات والمقاولات

وفقاً لأحكام هذا القانون يصدر الوزير نظاماً للهيئات المحلية بشأن اللوازم والعطاءات والمقاولات ينص فيه على كيفية ابتياع اللوازم وقيدها وحفظها والتصرف بها وعلى كيفية إجراء المناقصات والمزايدات والمقاولات والأمور الأخرى المتعلقة بأشغال الهيئة المحلية.

المادة (٣٥) الرقابة

فحص حسابات الهيئة المحلية ومراجعة جميع معاملاتها المالية والإدارية والقانونية وجرّد موجداتها يكون من قبل فاحصين مختصين تكلفهم الوزارة أو هيئة الرقابة العامة.

المادة (٣٦) التقرير السنوي

يضع الرئيس تقريراً سنوياً عن الأعمال التي تمت في هيئته المحلية وترسل نسخة من هذا التقرير إلى الوزير مع ملاحظات المجلس.

أحكام انتقالية وعامة

المادة (٣٧)

تبقى الهيئات المحلية المحدثة قبل تاريخ نفاذ هذا القانون قائمة وتعتبر مستوفية لشروط إحداثها.

المادة (٣٨)

تبقى الضرائب والرسوم المستحقة بمقتضى القوانين والأنظمة المعمول بها قبل نفاذ هذا القانون واجبة التحصيل كما لو كانت مستحقة بمقتضاه.

المادة (٣٩)

يلغى كل حكم يخالف أحكام هذا القانون.

المادة (٤٠)

على جميع الجهات المختصة كل فيما يخصه تنفيذ هذا القانون ويعمل به من تاريخ نشره في الجريدة الرسمية.

بموجب الصلاحيات المخولة لي أصادق على إصدار هذا القانون بتاريخ ١٠/جمادى الآخر/١٤١٨ هجرية الموافق ١٩٩٧/١٠/١٢ ميلادية

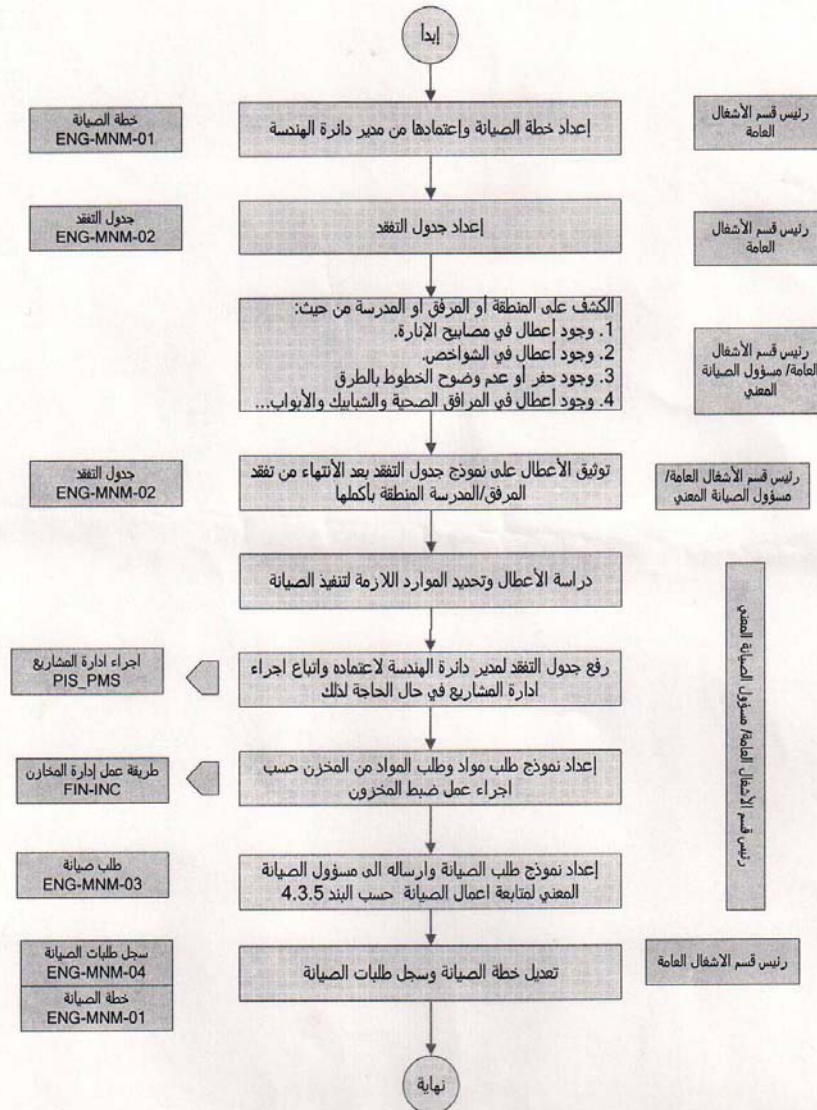
ياسر عرفات

رئيس اللجنة التنفيذية لمنظمة التحرير الفلسطينية
رئيس السلطة الوطنية الفلسطينية

Appendix C: Preventive Maintenance plan for Al-Bireh Municipality.

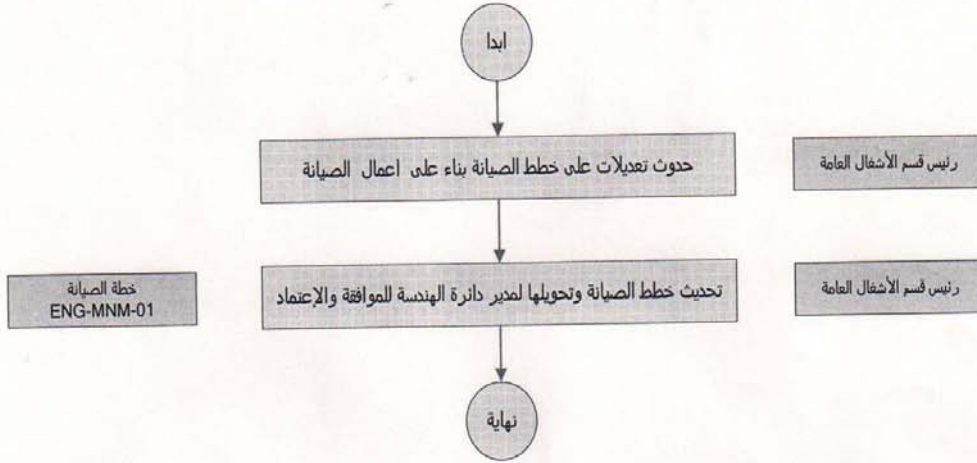
اسم طريقة العمل: نظام الصيانة والأشغال العامة رقم طريقة العمل: ENG-MNM		بلدية البيرة تاريخ الإصدار: / /
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(1) الصيانة الدورية



اسم طريقة العمل: نظام الصيانة والأشغال العامة		بلدية البيرة
رقم طريقة العمل: ENG-MNM		تاريخ الإصدار: / /

(2) تعديل خطة الصيانة



4.3 التعامل مع طلبات الصيانة والصيانة الطارئة

- 4.3.1 يقوم رئيس قسم الأشغال العامة بتعميم نموذج طلب الصيانة (ENG-MNM-03) على الدوائر والأقسام في البلدية والمدارس لاستخدامه في حال وجود أعطال بحاجة الى صيانة
- 4.3.2 يتسلم رئيس قسم الأشغال العامة بالبلدية طلبات الصيانة (ENG-MNM-03) من أقسام البلدية المختلفة ومن خلال مركز خدمات الجمهور (المواطنين)، ومدراء المدارس في المحافظة، والمواطنين .
- 4.3.3 يقوم رئيس قسم الأشغال العامة بالبلدية بدراسة طلبات الصيانة، من حيث الاحتياجات المادية والبشرية والإمكانات المتاحة لتنفيذ عملية الصيانة المراد تنفيذها ضمن الطواقم المتوفرة وضمن الإمكانيات.
- 4.3.4 في حال كان هناك امكانية لتنفيذ الصيانة داخليا يقوم رئيس قسم الأشغال العامة بمتابعة توفير المواد من المخازن حسب اجراء المخازن وتحويل طلب الصيانة إلى مسؤول الصيانة المعني (كهرباء، عامة،...) لمتابعة تنفيذ أعمال الصيانة.
- 4.3.5 يقوم مسؤول الصيانة المعني بتحديد العمال والفنيين الذين سوف يقومون بعملية الصيانة والمواد التي تم استخدامها في عملية الصيانة وتوثيق ذلك في طلب الصيانة ومن ثم رفعه إلى رئيس قسم الأشغال العامة
- 4.3.6 يقوم رئيس قسم الأشغال العامة بدراسة نتائج عملية تنفيذ الصيانة (تناسب عدد العمال مع العمل المنجز، تناسب المواد مع العمل المنجز، الفترة الزمنية لانجاز الأعمال..) ومن ثم

Appendix E: Complaint Form

Complaint Form

One stop shop Center

Municipality Name:

Date:

Day:

<i>No.</i>	<i>Failure Type</i>	<i>Description of Failure</i>	<i>Place of Failure</i>	<i>Responsible department</i>	<i>Name of resident who informed about the failure</i>	<i>Time of receiving the related information</i>	<i>Time of informing related department about the failure</i>	<i>Person in related department who received the information</i>

Name of employee:

Signature:

Appendix F: Preparation for maintenance form**Preparation for maintenance form**

Municipality Name:

Department Name:

Date :

<i>failure Type</i>	<i>Zoon</i>	<i>Place of failure</i>	<i>Source of information</i>	<i>Time of receiving information about the failure</i>
<i>Details about failure</i>				

Name of employee : _____

Signature : _____

Doing Maintenance

Internally

Externally

(you need to use form M/FN-03)

In Case doing maintenance Internally

Name of team supervisor	Names of team members
Date and time of releasing the maintenance order : Date :	
	Time:
Spare parts needed	Main tools needed

Department head / maintenance engineer name: _____

Supervisor name: _____

Signature: _____

Signature: _____

(M/FN-02)

Appendix G: External maintenance request form

External maintenance request form

Municipality name:

Date :

From :

To head of procurement department Mr./MS:

<u>Type of maintenance needed</u>		<u>details Of needed maintenance</u>
<i>Corrective maintenance</i>		
<i>Preventive maintenance</i>		

Bid Technical Specification :

Attach

Not Attach

Notes:

Signature:

(M/FN-03)

Appendix H: Maintenance report form

Maintenance report form

Municipality Name:

Department Name:

Date :

Type of Maintenance		corrective		preventive			
Zoon		Place of problem					
Problem details							
Steps of completed maintenance							
Time needed to repair the failure							
Date and time start			Date and time finish				
#	Spare parts used	Qty	Old replaced parts	Qty	handed to stores		Date of handing
					Yes	No	
Name of Team members			Name of supervisor		Signature of supervisor		

Appendix I: Maintenance report form

Preventive maintenance program

Municipality name :

Department :

Maintenance activity	Predictive executing time												Frequency period	Needed resources	Responsibility			Maintenance procedure no.
	1	2	3	4	5	6	7	8	9	10	11	12			Internally		Externally	
															Name of teams members	Name of supervisor		

Appendix J: List of interviewed persons

Interviewed person	Position	Date of interview
Eng .Musa Jwaied	City Engineer Al-Bireh Municipality	March - 2010
Eng. Emad Almasri	Head of water and sanitation department Nablus Municipality	March - 2010
Eng. Yusuf Nasrallah	Head of engineering Department Nablus Municipality	March - 2010
Eng. Maha Mujahed	Engineering department Tubas Municipality	May-2010
Eng. Nabel Hamdan	Engineering Department Beita Municipality	May-2010
Eng. Ahmad Shaheen	water and sanitation department- Salfet Municipality	June – 2010
Mr. Ahmad Abeed	Engineering Department Salfet Municipality	June – 2010
Eng . Alaa' Eteer	Roads and transportation department Tulkarem Municipality	June – 2010
Rayeq Hamad	Head of water and sanitation department Tulkarem Municipality	June-2010
Eng. Suliman aldeifi	House Of Palestinian Experts Nablus	November-2010
Eng . Hussein Abuzant	GM. Al'etiman investment company Nablus	December-2010
Jihad Mashaqi	Head of the structural department MOLG, Ramallah	May -2011
Ghasan Dragmah	GM-budget Department MOLG, Ramallah	May -2011
Eng. Saleh Affaneh	City Engineer Salfet Municipality	May 2011
Jamal Marayteh	Accountant Salfet Municipality	May 2011
Eng. Rashed shtayeh	GIS technician Salfet Municipality	May 2011

Appendix K: Interview checklist

اسم البلدية:

القسم :

1- هل هناك قسم داخل البلدية مهمته إدارة وتنفيذ عمليات الصيانة للبنى التحتية المختلفة ؟
 نعم
 لا

2- إذا كانت الإجابة لا ، فذلك يعني أن هناك داخل كل دائرة من دوائر البلدية التي تقدم خدمات البنى التحتية ، قسم صيانة خاص بها يقوم بعمليات الصيانة اللازمة لتلك الخدمة التي يحتاجها ذلك القسم ، (مثال: دائرة المياه تحتوي على قسم صيانة يعمل على إجراء عمليات الصيانة المختلفة لأي نشاط يتبع لدائرة المياه) .

3- هل هناك تعاون مشترك بين أقسام الصيانة المختلفة ؟ وما طبيعة هذا التعاون

4- ما هي طبيعة الأعمال (أنشطة الصيانة) التي تقوم بها دائرتكم ؟ .

5- ما مفهوم الصيانة الوقائية والعلاجية لدى قسمكم (مياه/طرق) ..

6-مما ذكر اعلاه (بند 4) ، أي الأنشطة التي تقومون بها تصنفونها على أنها أنشطة صيانة وقائية وأيها أنشطة صيانة علاجية .

7- كيف يتم تسلسل إجراء عمليات الصيانة الوقائية أو /و العلاجية

8- هل يتم توثيق نشاطات الصيانة(الوقائية/العلاجية) ضمن نماذج محددة تختلف من قسم لآخر أم هي طريقة موحدة تقوم جميع الأقسام باعتمادها للقيام بعمليات الصيانة المختلفة . (إذا كان الجواب نعم فيرجى تزويدنا بالنماذج المستخدمة) .

9- عند قيام القسم بعمليات صيانة سواء وقائية وعلاجية، هل يتم توثيق عملية الصيانة و هل يتم تقديم تقرير بأنشطة الصيانة المختلفة. (من قام بالعمل وماذا تم فعله، وما هي الأدوات التي تم استخدامها) . (هل يوجد نماذج للتوثيق)

10- هل يوجد تقديرات دقيقة لتكاليف الصيانة الفعلية (علاجية او وقائية) (موازنة) وما هي قيمتها لثلاث سنوات سابقة

11- باعتقادكم هل الموازنة كافية لانجاز أعمال الصيانة الوقائية والعلاجية بكفاءة ؟

12- هل هناك ضبط لمقدار التكلفة لأعمال الصيانة الفعلية (وقائية/علاجية) وكم قيمتها لثلاث سنوات .

13- هل يوجد كافية من الموارد المختلفة (البشرية ، الأدوات والمعدات) اللازمة للقيام بعمليات الصيانة لدى قسمكم . مع ذكر تفاصيل عن التوقعات والمؤهلات للكوادر الموجودة .

14- هل يوجد مستودع يحتوي على مخزون كاف من قطع الغيار التي يحتاجها القسم/الدائرة لتنفيذ عمليات الصيانة الخاصة به ؟

15- هل تتم عمليات تحديث المخزون من قطع الغيار في هذا المستودع لضمان توفرها على مدار العام . (هل يوجد نماذج خاصة) وكيف يتم ذلك ؟

16- هل يتم التنسيق مع الدوائر والهيئات المختصة والمكملة لعمل البلدية كالاتصالات والأشغال العامة عند القيام بعمليات صيانة تخصص الطرق وتمديدات المياه والاتصالات. ؟

17- هل يوجد إحالة لإعمال الصيانة التي لا تستطيع فرق الصيانة الداخلية القيام بها على شركات متخصصة ؟ وكم نسبة تكلفة هذه الإحالات سنويا .

هل لديكم أية ملاحظات تودون إضافتها :

جامعة النجاح الوطنية

كلية الدراسات العليا

نموذج لإدارة صيانة الخدمات في البلديات الفلسطينية

إعداد

سعد إسماعيل ابوزنط

إشراف

د. احمد الرمحي

قدمت هذه الأطروحة استكمالاً لمتطلبات درجة الماجستير في الإدارة الهندسية بكلية الدراسات العليا، جامعة النجاح الوطنية في نابلس ، فلسطين

2011

ب

نموذج لإدارة صيانة الخدمات في البلديات الفلسطينية

إعداد

م. سعد أبوزنط

إشراف

د. احمد الرمحي

الملخص

في فلسطين، تعتبر البلديات مسؤولة عن توفير الخدمات العامة للمجتمعات المحلية، وتشمل هذه الخدمات خدمات المياه والصرف الصحي والكهرباء وشبكة الطرق وجمع النفايات الصلبة والتخلص منها، كما تساهم هذه البلديات في عمليات التخطيط والتنمية المحلية .

تقوم هذه البلديات بعدة أنشطة، حيث تعتبر الصيانة من أهمها لكونها تلعب دورا رئيسا في ضبط جودة ونوعية الخدمات المقدمة للجمهور ، ولأهمية موضوع الصيانة في البلديات ، قام الباحث بتسليط الضوء على هذه القضية من خلال تشخيص ودراسة الممارسات الحالية لأنشطة الصيانة في البلديات الفلسطينية، وتبعاً لذلك، فقد قام الباحث بتطوير واقتراح نموذج مناسب لإدارة صيانة الخدمات المقدمة ، مُدعماً هذا النموذج بالإجراءات والنماذج والأدوات الضرورية والتي تساهم في إدارة عمليات الصيانة للخدمات المقدمة للجمهور .

اعتمد الباحث منهجية عملية تتلخص في مراجعة الدراسات والأبحاث السابقة ذات العلاقة والتي تحدثت عن موضوع إدارة عمليات الصيانة في البلديات المحلية والإقليمية والعالمية ، وبعدها تم تشخيص الممارسات الحالية في البلديات المحلية و التشاور مع الجهات ذات الصلة ، بعدها قام الباحث باختيار عينة استكشافية تم خلالها اختيار عدة بلديات بناء على نوع البلدية، وحجمها، ونوع الخدمات المقدمة للجمهور، وعدد السكان وموقعها الجغرافي .