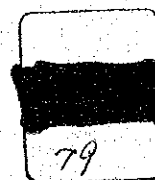


**SEWERAGE AND DRAINAGE SYSTEM PROJECT**  
**IN**  
**ALOR SETAR AND ITS URBAN ENVIRONS**  
**MALAYSIA**

**VOLUME III**  
**INTERIM REPORT**  
**ON**  
**INSTITUTIONAL STUDY**

**OCTOBER 1979**

**JAPAN INTERNATIONAL COOPERATION AGENCY**





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# INSTITUTIONAL AND MANAGEMENT STUDIES

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## List of Abbreviations

### Organizations

EPU	-	The Economic Planning Unit, either Federal Government or Kedah State Government
EHU	-	The Environmental Health and Engineering Unit in the Ministry of Health
DUD	-	The Drainage and Irrigation Department in the Ministry of Agriculture and Fisheries
MLG	-	The Ministry of Local Government
DE	-	Department of Environment, Ministry of Science, Technology and Environment
JKR (PWD)	-	The Public Works Department in the Ministry of Works and Utilities
SEPU	-	The State Economic Planning Unit
SHD	-	The State Health Department
TCP	-	State Town and Country Planning
DID	-	State Drainage and Irrigation Department
SEDC	-	State Economic Development Corporation
MPKS (MCKS)	-	Mailis Perbandaran Kota Setar (Municipal Council Kota Setar)



## INSTITUTIONAL AND MANAGEMENT STUDIES

### CHAPTER 1

#### SUMMARY AND INTRODUCTION

##### 1.1 Summary

1. The studies on institutional and management arrangement for the proposed sewerage system have been undertaken with aims to create a sound and viable local institution in the Project Area which shall deal with sewerage system management and operation in the immediate and long term period up to the year 2000.
2. Taking the current situation in Project Area into consideration, following four alternatives were suggested and the advantage and disadvantages of such alternative arrangements were analyzed:
  - 1) Creation of a new sewerage autonomous statutory body by the State Government.
  - 2) Addition to PWD Water Supply Division with sewerage management.
  - 3) Expansion of the existing function of MPKS, by adding sewerage management.
  - 4) Creation of Joint Committee with representative from PWD, DID, Health Department and MPKS.

From the analysis, Alternative 3 was recommended as a most appropriate among other alternatives, and within MPKS, Engineering Division was suggested to be expanded for inclusion of sewerage works.

3. In order to implement sewerage programme, new functional units were recommended to be prepared within Engineering Division. Such units are:
  - 1) Operation and maintenance
  - 2) Design
  - 3) Construction
  - 4) Laboratory
4. The estimation of staff required for the proposed sewerage programme from 1981 up to the year 2000 was made as guideline in determining the



number of staff and labours to carry out the required function. Total numbers of personnel required at the end of every five year are as follows.

<u>1981</u>	<u>1985</u>	<u>1990</u>	<u>1995</u>	<u>2000</u>
16	36	41	46	51

5. Following regulations pertinent to sewerage services were reviewed in terms of their executive and financial power;

- 1) Local Government Act, 1976.
- 2) The Street, Drainage and Building Act, 133, 1974.
- 3) Town and Country Planning Act, 1976.
- 4) The Environmental Quality Act, 1974.
- 5) Kota Setar Municipal Council Anti-Litter By-Laws 1979,

Reviews disclosed that no additional legislation would be needed to expand the powers of sewerage service beyond those provided in the Street, Drainage and Building Act.

## 1.2 Introduction

The studies on institutional and management arrangement for the proposed sewerage system at Alor Setar and its environs, Kedah State, are presented in this Chapter. The Studies, undertaken in accordance with the Scope of Work and the Terms of Reference agreed upon both by the Governments of Malaysia and Japan, aimed at the creation of a sound and viable local institution in the Project Area to deal with sewerage system management and operation in the immediate and long term period up to the year 2000. Considering the importance of institutional arrangement based on the local capabilities situation at the Project site has been taken into account through field observation and discussions with officials from various agencies concerned.

The Studies contain recommended institutional arrangements together with the organizational structure for a new proposed institution in broad terms with the required staffing schedule, together with reviews on existing legal provisions which will provide supporting basis for implementation of sewerage administration.



## CHAPTER 2

### INSTITUTIONAL ARRANGEMENT

#### 2.1 Background and Present Situation

Alor Setar is the capital of the State of Kedah, serving as the institutional, commercial and transportation center in the State. The Study Area covers approximately 3,300 ha. In 1979, there are 136,600 people inhabited in the city. Recently development of both commercial and residential sectors in the city has been influencing the area with rapid urbanization, accompanied by corresponding increase of population.

There is no organized modern sewerage system in the Project Area presently except for rudimentary disposal system as septic tanks, night soil bucket collection and surface drain, which are operated and maintained by the Municipal Council Kota Setar. As to the drainage system, the city has been provided, although there is room for improvement, with trunk (mostly natural streams) and secondary drains constructed and operated by DID (MPKS also looks after some part of drainage facilities). Recently a drainage master plan was prepared by DID with its own funds and forces. The government institutions which are directly involved in the existing sewerage and drainage activities in Project Area are, i) the Municipal Council Kota Setar with its Engineering and Health Divisions, and ii) State Drainage and Irrigation Department. When overall sewerage and drainage system in the Project Area is establish, an administrative organization sufficient to manage operation and maintenance of the system becomes necessary.





## 2.2 Review of Existing Institutions

### THE FEDERAL GOVERNMENT

At the Federal level, several Ministries are involved in the provisions of public services, utilities and environmental control that have a direct bearing in sewerage and drainage in the country. The Ministries have, under them, Departments that specialise in their respective field of services. Most of these Departments have regulatory powers which relate directly to their field of operations. They have branches operating in the respective States. Administrative-wise, these branches are under their respective Ministry in the Federal Government, but are responsible to the State Governments in cooperating and participating in various programmes of utilities in the States.

Major administrative bodies in Federal level which are closely related to this Project are:

- 1) The Economic Planning Unit, under Prime Minister's Office,
- 2) The Environmental Health and Engineering Unit, under the Ministry of Health,
- 3) The Drainage and Irrigation Department, under the Ministry of Agriculture and Fisheries,
- 4) The Ministry of Local Government,
- 5) The Department of Environment, Ministry of Science, Technology and Environment, and
- 6) The Public Works Department, under the Ministry of Works and Utilities.

The Economic Planning Unit (EPU) is a central planning agency for planning socio-economic development programme in the country, including the Third Malaysian Plan (1976 - 1980) now under implementation. The EPU in its Urban/Regional Development and Infrastructure Division is in charge of development of sewerage and drainage scheme for States together with other infrastructural facilities, inclusive of the provisions of necessary budget allocation. The EPU not only plays a major role in the coordination of studies of large project but also undertakes negotiations for foreign technical and capital assistance for these projects in conjunction with the Treasury.



At state level, the EPU advises the State Government on development plans in the state. The State EPU formulates plans for economic development, especially that of industrial development and urban housing development.

The Environmental Health and Engineering Unit (EHEU) is one of the divisions in the Ministry of Health, and is responsible for sewerage and rural sanitation aspects. EHEU was established in 1969 and is mainly concerned with the public health engineering aspect of environmental control, namely in rural environmental sanitation, urban sewerage, solid waste disposal environmental quality control and radiation protection service. EHEU is also responsible for planning, technical and logistic support and supervision of the Rural Environmental Sanitation Programme for Peninsular Malaysia and for the development of rural water supplies.

The Drainage and Irrigation Department is one of the Departments in the Ministry of Agriculture and Fisheries, and is in charge of matters relating to irrigation and drainage. Recently the new unit has been added to the Department as Urban Drainage Unit. It is responsible for development, maintenance and improvement of basic drainage and infrastructural facilities in the States that may be required from time to time. For the purpose of effective implementation of the responsibilities assigned State EPU is established in each State.

The Ministry of Local Government is in charge of local government affairs in the various States being responsible for administrative guidance for and coordination of local government authorities. The Ministry functions as a coordinating centre and as a liaison body between the local authorities and the Economic Planning Unit of the Prime Minister's Office. It processes applications for loans and schemes of proposed projects and forwards them to the EPU together with its recommendations.

The Department of Environment, Ministry of Science, Technology and Environment is involved in sewerage scheme directly or indirectly in



terms of reservation of public water bodies such as seas, river, ponds and streams. The Department was established in 1975 as a sole agency responsible for conservation of the environment quality in accordance with the provision of the Environmental Act prepared in 1974. The Department is, in coordination with the Environmental Health and Engineering Unit, Ministry of Health, concerned with pollution control programme in the national parks and public water bodies and is responsible for preparing legal provisions necessary for implementing the programme.

The Public Works Department, Ministry of Works and Utilities serves as a coordinating, advisory and information centre to the State PWDs. The Federal PWD renders general assistance to the State PWDs in the form of coordination, information, advice, design of works and the provision of standard drawings. The Water Supply branch of the Federal PWD is the consulting, designing and coordinating agency for the Federal Government and provides advisory services to the State PWDs on all matters relating to water supplies.

#### THE STATE GOVERNMENT OF KEDAH

The State Economic Planning Unit (SEPU) is in charge of planning socio-economic development in the State, by keeping close relationship with Federal EPU. The State EPU is keeping close contact with other related agencies on economic matters such as the State Department Office, which is in charge of implementation of all projects in the States, and the State Economic Development Corporation, which is a corporation formed by the State Government, and is in charge of socio-economic development with the main objective of expediting Bumiputra Participation. It is finalizing economic development in the State through such coordination, and for submitting State programme for inclusion into Malaysian Plan of the Federal EPU,

The State Health Department is the State agency in charge of public health programme including environmental sanitation matters in the State of Kedah, together with its medical facilities. It offers advice and assistance for the municipal councils improvement of the



healty of the people and also undertakes sanitary activities in the rural areas on behalf of the local district councils.

The State Town and Country Planning is in charge of city planning. As the urban areas in the State of Kedah including Alor Setar are in the way of rapid urbanization influenced by commercial and residential sector developments, the State TCP is heavily involved in activities relating to urban planning, perticularly by clearing plans presently submitted by private developers. The State TCP is responsible to develop and plan for future town scheme by coordinating and consulting with other Government agencies concerned, which will serve as a criteria for immediate and both future find development of the city by public and local sources.

State Public Works Department (JKR) is in charge planning construction and supervision of general civil works such as construction of roads, roadside drains, bridges and water supply facilities in the State under the coordination with the Federal JKR which is, in general terms, the advisory and information centre to the State JKR.

The State Drainage and Irrigation Department is in charge of construction and maintenance of both irrigation channels and drains for agriculture and drainage systems for urban cities. For urban drainage system, the state DID is responsible for construction and operation of the major trunk drains covering the catchment areas of more than 100 acres, as agreed among the agencies concerned, while the small drains will be the responsibility of the local government.

The State Economic Development Corporation (SEDC) is the implementation body of the EPU, and is in charge of implementing industrial developments in urban areas within the Kedah State. The development of Mergong Industrial Estate now going on in Alor Setar is under the SEDC Control and direction. SEDC is also implementing industrial developments for other 5 cities such as Sungai Petani, Kuala Kedah, Pikam Batu, Baling, and Kulim.





There are two other agencies in the Kedah State which have an indirect relation with the sewerage project. These are the Survey Department and the Muda Agriculture Development Authority, which are also reviewed for reference purpose.

The Survey Department Kulim, Kedah, is the branch office of the Federal Government, and is responsible for drawing maps for both State of Kedah and Perlis.

The Muda Agriculture Development Authority (MADA), is an integrated organization established in 1970 by Parliament Regulations of the Ministry of Agriculture for the Muda River utilization project in the State. MADA's first agricultural project started in 1966 with the source of fund, of which 40 per cent was furnished by IBRD loan and 60 per cent from the Federal Government, and completed in 1970, MADA has been implementing the country's largest irrigation project providing irrigation facilities for a net area of 960 km<sup>2</sup> (237,000 areas), and by double cropping it supplies, about half of Peninsular Malaysia's demand for rice.

#### THE LOCAL GOVERNMENT

Majlis Perbandaran Kota Setar (MPKS) was, by the Local Government Act (Act of Parliament 171), upgraded in February 1978 to administer the whole district of Alor Setar, 256.56 sq mile from former status of the District Council of Kota Setar. Before 1958, the area was administered by the Sanitary Board under the State Government. The Board controlled sanitation and health matters. In 1958, Town Board was formed as a financially autonomous body, by the Town Board Enactment.

In 1963, Town Council was formed in accordance with enforcement of local councilors' election. Town Council was restructured by the Act of Local Government, 24, amalgamating 10 other councils, and in 1976 the District Council of Kota Setar was formed under the Act of Local Government.



The annual budge of MPKS is M\$4 million, the major source of revenue being deribed from the house assessment tax, rental and licensing fee. MPKS has been provided with the grants from the Federal and State govern-ments, but the amount is negligible. As to the organization, there are five divisions, namely, Health, Engineering, Legal, Finance, Admini-stration and Personnel. There are presently 630 staff in total. The Health Division of MPKS is in charge of sanitary control in the area, collecting and disposing of night soil and septic tank deposits, En-gineering Division undertakes infrastructural projects through its two sections:1) Planning and Development, Section, and 2) Building Section. Planning and Development Section deals with 1) project plan-ning, 2) Project implementation, 3) maintenance services to all the municipal building and engineering structures, 4) traffic system opera-tion and maintenance and 5) town beautification. Building Section deals with 1) development of housing scheme for industry and 2) improvements of existing housing.



## 2.3 Recommended Institutional Arrangement

### 2.3.1 General

Alor Setar has undergone rapid developments for the past few years and more developments are expected in the immediate future. Various activities, both commercial and industrial, have increased sharply, which will achieve the aim of making Alor Setar as a regional centre. The need for sewerage system for the city is evident and when it is constructed, reasonably efficient set-up has to be there for operation.

### 2.3.2 Evaluation of Alternative Organization Arrangements

Considering the current situation in Project Area, basic organizational requirements and other factors, the following four alternatives are suggested and the advantage and disadvantages of the various possible alternative organizational arrangements are outlined below.

1. Creation of a new sewerage autonomous statutory body by the State Government.
2. Addition to PWD Water Supply Division with the sewerage management. This means the expansion of the Water Supply Division of JKR to include the sewerage function.
3. Expansion of the existing function of MPKS, by adding sewerage management.
4. Creation of Joint Committee with Representatives from PWD, DID, Health Department, and MPKS.

Table 1 shows the comparison of the proposed alternatives in terms of 4 criteria for evaluation. Under alternative 1, the Sewerage Authority is an autonomous statutory body created by the State Government and should be capable of achieving the desired objective as stated earlier. The independence of the Authority from the other agencies as a body solely responsible for the sewerage system should produce strong capability and centralized enforcement for overall performance and direct control. The serious disadvantages of this approach are that a tremendous initial effort is required and also that the legislative and administrative procedures required are time-consuming, and establishment of such organization



Table 1 Comparison of Proposed Alternative Organization

	<u>A1</u>	<u>A2</u>	<u>A3</u>	<u>A4</u>
1. Possibility of minimizing:				
a) initial effort needed to create new organization	No	Yes	Yes	Yes
b) initial funds needed to create new organization	No	Yes	Yes	Yes
c) initial recruitment of personnel	No	Yes	Yes	Yes
2. Possibility of retaining ability for revenue collection	Yes	Yes	Yes	No
3. Possibility of economizing operation and administration expenditures by coordination of other administrative department	No	Yes	Yes	Yes
4. Possibility of existing regulations providing sufficient legal basis	No	No	*Yes	Yes

Note: A1 : Alternative 1 - Creation of a new sewerage autonomous statutory body created by the state government

A2 : Alternative 2 - Addition to PWD Water Supply Division with sewerage management

A3 : Alternative 3 - Expansion of existing function of MPKS

A4 : Alternative 4 - Creation of Joint Committee with representatives from PWD, DID, Health Department, MPKS

\* : Street, Drainage and Building Act





may not be justified when no other municipalities in the State of Kedah except Alor Setar will have sewerage facilities in the foreseeable future.

Alternative 2 proposes amalgamation of the new organization into PWD's Water Supply Division. Presently, the Water Supply Division of PWD handles the water supply business including billings and collections in the Study Area. It seems much easier and time-saving if the sewerage administration be done together with that of the water supply. Less initial effort and funds are required to expand the Water Supply Division in the PWD to include the sewerage functions. Only additional staff are required. However, legislative factors seem to be the main obstacle which will prevent the PWD from incorporating a new sewerage function.

Alternative 3 is, based on the legislation of Local Government Act, 1976<sup>\*</sup> to let MPKS undertake the sewerage system operation by expanding its existing functions. It can be significant to save initial effort required to put a new organization. This alternative, however, requires a special accounting arrangement so that the revenue and expenditure for this project can be treated separately.

Alternative 4 proposes a Joint Committee comprising of representatives from the JKR, DID, Health Department and MPKS. This approach has the advantage that less initial effort is needed to create such organization and also invaluable experience of the various representatives from the different departmental agencies are available. However, the Committee, by its own nature, will never have administrative capability similar to either one of the above referred alternatives, which makes this proposal to be not realistic and practical for implementation.

- 
- \* (1) Construction and operation of sewerage system in under the responsibility of Local Government.
- (2) Local Government is also responsible for maintaining sanitation which has much to do with sewerage system.



Detail analysis and discussions with the agencies concerned disclosed that alternative 3 is the most feasible one. The major reasons are summarized as follows:

1. At present, all the sanitary facilities are serviced and maintained by the Health Division of the MPKS which is also responsible for review of plans in connection with the approval of sanitation facilities for housing development schemes in Alor Setar. Taking over such function from the Health Division to the MPKS will not entail any major drastic organizational changes as are required in the other alternatives.
2. It is inappropriate at this stage to propose the creation of an entirely new regional organization in the Project Area because of the difficulties to proceed on adequate legal basis and to obtain adequate funds as well as qualified personnel. Such approach can be considered at a later date when sewerage system is developed to cover all of the city boundary and the size of the work for operation and maintenance, fee collection and other administrative matters warrants creation of such organization. For the immediate consideration, the expansion of the existing function of MPKS is the most realistic plan to pursue.

From the above analysis, Alternative 3 is considered most appropriate among other alternatives, and this is recommended for a new organization for the proposed sewerage system.

#### 2.4 Organization Structure of New Proposed Organization

Although existing sanitation works such as disposal of septic tanks and nightsoil bucket collection are under the Health Division, the present practice is faded one, because sewerage system will replace the present system in the near future.



It is recommended that operation of sewerage works be added as a new function to the existing Engineering Division of MPKS. The purpose, objectives, functions and area of jurisdiction of this newly expanded division should be clearly stated in an organization chart or manual.

The new organizational unit proposed in the Engineering Division of MPKS is shown in Figure 1.

Additional staff are to be recruited to fulfil the posts that will arise. For such posts, adequate description of the job functions and the area of responsibility are to be prepared. In driving such recruitment plan, it is important to have man specifications to ensure that only eligible and suitably qualified personnel be employed. Arrangement should be made for employee training and training programmes of either inside or outside of MPKS are to be initiated and carried out for the staff, especially these for newly joined.

The newly expanded Engineering Division should coordinate closely with the Finance and Health Division. It is suggested that a separate accounting system exclusively for sewerage system operation be arranged in Finance Division to perform financial function properly for sewerage activities separated from others.

Preferably the new Division should take over the sanitary functions from the Health Division by stages over a period of say, 2 years. This gradual take-over will not pose a sudden burden on the Engineering Division and will make the task easier.

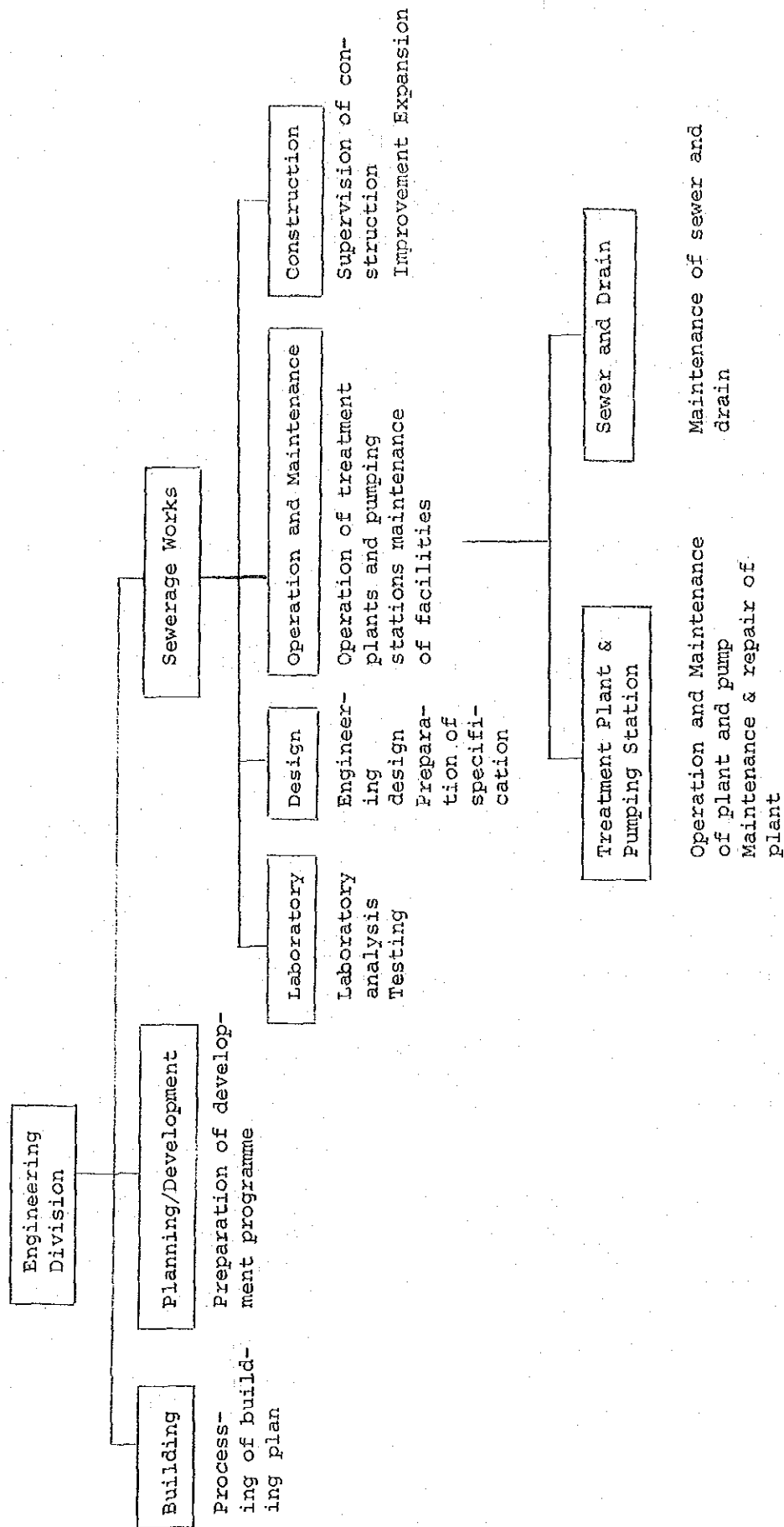
## 2.5 Functions, Staff Requirements and Training

### (a) New Functional Units, Staff Requirements and Training.

The sewerage works in Engineering Division should be divided into functional units. The functional units recommended are:



Figure 1 Proposed Expansion of Engineering Division







### 1. Operation and Maintenance Section

This section should be responsible for operation of the treatment plants, pumping stations and the sewers.

The former will be responsible for proper operation and maintenance of treatment plants and pump stations to achieve desired quality of sewage effluent and proper disposal of plant effluent as well as uninterrupted conveyance of sewage. This unit will also be responsible for the maintenance and repair of the treatment plant works and equipments to keep them in good working condition including pumps, structures and plant premises.

Sewer Unit will be responsible for proper maintenance of the public sewers by conducting routine inspection for physical damage and obstruction in the sewers including control of the illegal discharge from industries and septic tanks into main sewers.

### 2. Design Section

This section will be responsible for preparation of engineering design and specification of all sewerage projects, and also responsible for check and approval of sewerage design plans submitted by developers. This section will also undertake to accept tenders for the construction of sewerage and smaller system including service connection with cost estimation, drawings and reproduction of engineering plans and the issuance of permits for new service connections requested by the owners of building.

### 3. Construction Section

This section will be responsible for management and supervision services of all new construction works with field inspection to assure compliance with required specification and standards.

This section will also be responsible for supervision of construction of house connection including plumbing done by house-owners.



In case of insufficient capability of the staff in Design Section and Construction Section, engineering consultants may be retained to undertake detailed design and preparation of tender documents and subsequent supervision of construction.

#### 4. Laboratory Section

This section will be required to conduct monitoring and surveillance on water quality of industrial wastes, sewage and stabilization pond effluents.

Further, the section will monitor the followings:

- 1) Operation of stabilization pond systems, the data from which will be applied for the improvement of their operation and/or system themselves.
- 2) Water quality of drains and streams and the receiving waters of pond effluents, the data from which will be used to assess the effects and influences of the established sewerage system on the environmental water quality.
- 3) Monitoring and controlling waste effluents discharged from Mergong industrial estate.

The incorporation of a new sewerage management will not only involve the Engineering Division but also other Divisions in MPKS need to extend their functions and responsibilities to assist the new Engineering Division.

#### 1. Administration and Personnel Division

This Division should be responsible for the selection and recruitment of the new staff especially in preparing job specification, vacancy notice selection and appointment procedure.

#### 2. Finance Division

This Division is presently undertaking financial control under a single system for all activities in the MPKS. However, a separate



accounting and financial system for the Sewerage including budgeting, billing and collections by the cooperation of JKR Water Supply Division in case sewerage fee will be collected on water rate surcharge and the maintenance of accounting records should be maintained. An important function to be included is the handling of a loan administration since the sewerage work may have received Federal and external loans for initial construction. The Division should be responsible for the systematic and efficient control of the cash flow for the sewerage programme.

### 3. Health Division

Until the proposed sewerage system replaces the night soil collection and spetic tank systems with completion of the Project, there will be a need for continuation by this Division coordinating with the new sewerage organization.

### 4. Legal Division

This Division may be required to expand its functions necessary for proper administration of legal aspects of the new systems.

In addition to the above Divisions of MPKS, the following existing department of Kedah State Government is proposed to collaborate with MPKS.

#### (a) Water Supply Division, JKR

It is recommended that sewerage charge be calculated on the bases of water rate surcharge which will be made in accordance with the volume of water used. Therefore, JKR now handling water supply is required to share the cooperation with MPKS' for building and collection of sewerage charge. In this connection, agreement be made between the two agencies on system procedures of transferring the amount of collected charges and its administration fees etc.



(b) Staff Requirement

The estimation of staff required for the proposed sewerage programme from 1981 up to the year 2000 is presented in Table 2 as guidelines in determining the number of staff and labours to carry out the required functions.

The staffing estimates show a total of 16 in the initial year of 1981, 38 in 1990 and 51 in 2000. The staffing plan showing minimum level of requirement, and this should be considered as the basis for recruitment of personnel by MPKS.

(c) Training Programme

INTAN (The National Institute for Public Administration) is, under Prime Minister's Office, a sole agency responsible for providing training programmes for public servants in whole States of Malaysia, with objectives of improving managerial standards of civil service in Federal, State and Local Government levels. While it provides different kinds of seminars on administrative and managerial field for middle and top managements in organization, the Agency also presents training courses covering wide range of field in public service for personnel newly employed. The Agency sends applications to all government institutions in Malaysia, inviting candidates to participate in the programmes. According to the information obtained at INTAN headquarters in Kuala Lumpur, the Agency has been providing programmes on development projects on infrastructural sector and other training programmes related to sewerage project. It has been also confirmed that INTAN is now considering to provide operator training and executive development programmes on sewerage and sanitation control in the near future.

It is recommended that INTAN be advised to plan for adequate training programme for professional and sub-professional personnel engaged in sewerage work and prepare for maximum attendance from MPKS for such programme.





Table 2 Schedule of Estimated Staff Requirement

Job Title	Number of Staff Required at the end of year				
	1981	1985	1990	1995	2000
<u>ENGINEERING DIVISION</u>					
Chief Engineer	1	1	1	1	1
Assistant Chief Engineer	1	1	1	1	1
Secretary-Typist	1	1	1	1	1
Clerk	1	1	1	1	1
Sub-total	4	4	4	4	4
<u>Sewerage Works Dept.</u>					
Dept. Head	-	1	1	1	1
<u>Design Section</u>					
Section Head	1	1	1	1	1
Design Engineer	1	1	1	1	1
Draftsmen	2	3	3	3	3
<u>Operation &amp; Maintenance Section</u>					
Section Head	1	1	1	1	1
Assistant Engineer (Mechanical)	-	1	1	1	1
Assistant Engineer (Electrical)	-	1	1	1	1
Labourer	-	10	10	15	20
<u>Construction Section</u>					
Section Head	-	1	1	1	1
Inspector (Clerk of works)	-	2	2	2	2
<u>Laboratory</u>					
Chief/Chemist	-	1	1	1	1
Laboratory Assistant	-	1	2	2	2
Sub-total	5	24	25	30	35



Schedule of Estimated Staff Requirement (continued)

Job Title	Number of Staff Required at the end of year				
	1981	1985	1990	1995	2000
Administrative Supporting Staff needed in existing organization units of sewerage programme					
<u>ADMINISTRATION DIVISION</u>					
Personnel Officer	1	1	1	1	1
Purchasing Officer	1	2	2	2	2
Sub-total	2	3	3	3	3
<u>FINANCE DIVISION</u>					
Budget Officer	2	2	4	4	4
Accounting Officer	2	2	4	4	4
Cash Clerk	1	1	1	1	1
Sub-total	5	5	9	9	9
Total Number Required	16	36	41	46	51



It is also recommended that sewerage treatment operators be sent for training in treatment plants for the agreed period of time in Kuala Lumpur, or Penang, where technical know-how and accumulated experience on sewerage operation and management have been gained.

#### 2.6 Coordinating Committee

MPKS is recommended to establish a Coordinating Committee consisted of representatives directly involved in sewerage programme in Project Area in, (1) MPKS, (2) DID, (3) PWD, (4) EPU, and (5) TCP in order to maintain inter-agency coordination and collaboration on the matter of sewerage work implementation, and to meet with their representatives periodically.

#### 2.7 Future Modification

The foregoing recommendation for institutional arrangement is considered best suited for implementation in the foreseeable future, under the present situation with which the present study has been conducted. However this recommendation should be considered flexible to any modification, as in case of any other long range projection, which may be considered necessary according to the changes of the situation up to the year 2,000. MPKS and State Government should be prepared to give due consideration on the need of new organizational set-up according to the changing requirement.



## CHAPTER 3

### LAWS AND REGULATIONS

#### 3.1 Introduction

It is important that an explicit set of published regulations should be available for efficient control and operation of the sanitary sewerage and drainage system, and the Municipal Council Kota Setar be given authority to issue and enforce regulations for effective control, operation and maintenance on the basis of national and state legislations. This may be done by Legal Division in the existing organization for the proposed sewerage and drainage systems.

Therefore, the existing regulations and by-laws pertinent to proposed sewerage services are reviewed herewith, and on the basis of such review, considerations including brief suggestions are presented in the following.

#### 3.2 Review of Existing Laws and Regulations

The existing laws and regulations pertinent to the proposed project are reviewed in this section. These regulations shall be the basis of governing the sewerage and drainage services. The municipal council Kota Setar is to be the responsible authority to issue and enforce regulations for effective operation and maintenance of the sanitary sewerage system that is to be newly constructed and also of the drainage system that exist at present. The Municipal Council Kota Setar is now administering the area extending its legislative power mainly derived from (1) Local Government Act, 1976 and (2) The Street, Drainage and Building Act 133, 1974. Therefore these two Acts were reviewed in terms of its executive and financial power particularly focussing on the undertaking of sewerage and drainage activities. However, as Town and Country Planning Act, 197- is significantly affecting to the urban development, although it is not adopted and gazetted yet by the State Government, the review of the Act was made. The Environmental Quality Act, 1974 was reviewed, since the Act is an integral part in way of controlling and eliminating polluted waste from industries. In addition, Kota Setar





Municipal Council Anti-Litter By-Laws 1979 enacted in February 1979, was also reviewed, because this By-Laws will have considerable effect on the preservation of environment during interim period until the completion of sewerage system in Alor Setar.

(a) The Local Government Act, 1976

The Local Government Bill, 1975, has become the Local Government Act, 1976 (AG 171), by Royal Assent and Gazette in March, 1976 and is recently enacted and enforced to supplement and renew the former provisions of old Municipal Ordinance, (1) Town Boards Enactment of F.M.S., Johore, Trengganu, (2) Municipal Enactment of Kelantan (3) Municipal Ordinance of Strait Settlements, (4) Local Councils Ordinance 1952, and (5) Local Government Act, 1973. This Act is applicable only to West Malaysia.

As stipulated in Section 9, the State Authority has a power to issue directions of a general character on the policy to be followed in the exercise of the powers conferred and the duties imposed on the local authority. Likewise, the various provisions of the Act point to the State Authority as the Creator and permanent monitor of all local authorities within State boundaries.

The State Authority, by notification in the Gazette, declares an area in the State to be a Local Authority, and gives it a name, defines boundaries and a status which can be either that of a Municipal Council or that of a District Council.

The local authority consists of the Mayor or President and not less than eight and not more than 24 other Councillors in the case of Municipal Council and not less than eight and not more than twelve other councillors in the case of a District Council, to be appointed by the State Authority.

The approval of the State Authority is needed for staffing matters, establishment of funds and contribution of moneys. All moneys received and property owned constitute the Local Authority Fund.

Such related provisions are presented below.



(1) Financial Power

Section 127, 128, 129, 130, 131 and 132: The local authority is empowered to impose the annual rate or rates for the purpose to perform the duty of the local authority not exceeding 35 percent of the annual rental value of all rated properties. In addition to the above rate or rates, a sewerage improvement rate within 5 percent of the annual value can be imposed on beneficiaries served by sewerage system to meet the whole or part of the cost of the sewerage system and maintenance, and drainage rate within 5 percent of the annual value can be imposed to meet the cost of the construction of any drainage system. Such rate or rates can be imposed on the whole area or areas divided into two or more parts and further differential rating can be imposed within such part or parts.

Section 39: The revenue of the local authority shall consist of rates, taxes rents, licence fees, charge payable to authority, charges or profits arising from any service or undertaking carried on by the local authority, interest and income arising from the investment or property, other revenue as grants, contributions and endowments from the Federal or State Government.

Section 41: The local authority is empowered to borrow money subject to the approval of State Authority for the acquisition of land, the erection of any building and the execution of any permanent work, the provision of renewal of any plant. The amount of loan shall not exceed five times the annual value of the local authority.

Section 46: In addition to powers of borrowing as stipulated in section 41, the local authority may borrow money from any persons for the purpose of carrying out any developments for residential, commercial and industrial undertakings with the approval of State Authority.



Section 46: In addition to powers of borrowing as stipulated in section 41, the local authority may borrow money from any persons for the purpose of carrying out any developments for residential, commercial and industrial undertakings with the approval of State Authority.

Section 47: Federal or State Government may grant loans to any local authority at such rates of interest and on such terms and conditions as it shall think fit, out of its revenue or other moneys as may be set aside or appropriated for the purpose.

(2) Executive Power

Section 72: The local authority is empowered to establish, maintain and carry out sanitary services for the removal and destruction, or otherwise dealing with among others, night soil and all kinds of refuse and effluent.

(3) Required Use of Public Sewers

There is no specific provision to enforce the use of public sewer except for such provisions of Sections 69 and 70 which prohibit the disposal of individual waste water or sewage into any stream implying eventual use of public sewers for the disposals mentioned above.

The provisions related to private sewage disposal systems, plumbing regulation on discharge into public sewers are not stipulated in the Act.

(b) The Street, Drainage and Building Act, 1974

The street, Drainage and Building Act, 1974 (ACT 133) was enacted in June 1974. The Act applicable only to West Malaysia, includes the provisions required for sewerage and drainage works with adequate improvement and consolidation of provisions set forth in Municipal Ordinance and Local Government Act.



This Act does not compel the local authority to construct sewerage facilities. As is stipulated in Section 49, it states that the local authority may cause to be made constructed and maintained sewerage works. Section 50 also states that the local authority may cause to be made, constructed and maintained surface and storm water drains, culverts, gutters and watercourses.

The legal powers and their applications particularly relevant to sewerage management in the proposed project are presented as follows:

(1) Executive Power

Section 49 and 50: The power is given to local authority for which definition is made to include Municipal Council, to undertake the construction and maintenance of sewerage and drainage works.

Section 52: The Act contains prohibition against building unless provision made for drains, etc. and compliance with any notice or order.

Section 53: The Act provides that the local authority shall maintain and keep in repair and, as it sees fit, enlarge, alter, arch over or otherwise improve all or any of the sewers, and surface and stormwater drains. Close up or destroy as it deems useless or unnecessary.

Section 54: The Act also provides that the local authority shall be responsible for the cleansing and emptying of sewers so as not to be a nuisance or injurious to health and penalties for making unauthorized drains into public sewers.

(2) Financial Power

It is of vital importance that legal supports for financial operations are given to sewerage authorities especially if financially autonomous authority is required. The provisions for this purpose are significantly improved as against Municipal Ordinance.





Section 51: Local Authority is given power to recover the capital cost of the sewage and drainage works including cost of land acquisition by means of frontage charge.

It is also authorized to recover the cost from developers in such a manner that they may be claimed by way of deposit before developers proceed to develop any area.

Section 64: Local Authority is given the powers to levy fees or charges as may be prescribed to be paid by the sewer users.

This section implies that the local authority may recover the cost for sewerage operation and maintenance by settling fees in an appropriate manner.

There is no particular reference to rate or tax as indicated by Section 59 or Municipal Ordinance. If the rate or tax is regarded as necessary to be included in rate structure of proposed sewage works, section 59 of Municipal Ordinance should be applied.

Section 132: The power is given to local authority to establish "Improvement Service Fund". This fund can be administered by local authority at its absolute discretion. This suggests that the completely separate account can be maintained for the capital investments and financing for sewerage operation. This section, therefore, deemed to be appropriately applied to the financially autonomous management of proposed organization.

### (3) Required Use of Public Sewers

Section 58 (2) and (7): The power is given to require the owner(s) of any house or building installment of water closets, urinals, sinks, and bathrooms to be connected to public sewer if it is available within 100 ft of the boundary of the premises.



The above section stipulates the mandatory use of public sewers. However, it may be necessary to provide the stipulation requiring such connections to be made at the expense of the owner(s).

#### (4) Private Sewage Disposal Systems

Section 58 (3) and (14): Private disposal system as septic tank, and cesspool are allowed to be provided under the direction of local authority where there is no sewer and such systems are required to be kept in proper order.

Section 62: Local authority may in its discretion decide to take over the control, supervision, maintenance and repair of private septic tanks or other sewage purification plants to such extent that fees or charges may be levied.

There is no specific provision for such septic tank and cesspool to be abandoned at such time a public sewer becomes available.

The mandatory use of public sewer as stipulated in Section 58 (2) should also be effectuated by provisions enforcing direct connection to public sewer when it becomes available.

#### (5) Plumbing

No specific provisions are found in this Act for the control of the connection of building disposal facilities to public sewer. The Building By-Laws 1950 includes the provisions in its Article III - Works and Fittings.

#### (6) Regulations on Discharge into Public Sewers

Section 55: The prior written permission is required to make any drain into any of the public sewers. No night soil, excrementitious matter and trade effluent can be discharged into sewers without prior written permission of local authority.



(7) Other Provisions

The local authority is empowered to enter into any private property or premises to execute the works as altering, enlarging, repairing or cleaning the sewer and drains as stipulated in Section 52 and 53.

Section 97 reads in part "Any local authority may, for purposes of this Act, enter into and upon any building or land as well for the purposes making any survey or inspection as for the purpose of executing any work authorized by this Act .....". Sections 133, 123, 124, 125, 126 provide legal procedures as court trial, prosecution, conviction, arrest for any person guilty of an offence under this Act or any by laws made thereunder.

(c) Town and Country Planning Act, 1976

This Act is enacted through Parliament Assembly pursuant to the Federal Constitution for the uniformed control of town and country planning in each local authority in whole Malaysia. This Act applicable to the State of Kedah has not been adopted and gazetted yet by the state government.

Under the assumption that this Act will be adopted in due course, the provisions relevant to the Project are as follows.

In this Act no person shall use any land or building without permission of local planning authority to be established in Municipal Council and such permission shall be given in conformity with local development plan. Any authority established by law, is, however, authorized to undertake any development including provision and improvement of sewer pipes and drains without such permission. A development charge is levied on the local developer who undertakes any development works which are expected to enhance the value of land. Such legal provisions construed that developers are required to contribute a part of



their profit accrued from the land development by paying the charge or alternatively providing the utility systems as required by local planning authority. The local planning authority has a power to refuse any development plan proposed by an applicant on the ground that the land proposed to be developed is intended for public use even before such land is officially declared as development area. Any land owners who are aggrieved by the fact that their land is refused to be developed and such land is not capable of beneficial use are qualified to require the local planning authority to purchase such land at a reasonable price.

The local authority is empowered to declare a certain area or areas to be development area or areas at any time after a local plan has been adopted. The local authority is, however, required to purchase the area in such development area at fair market value. In this Act, the local authority is empowered to borrow sums of money as are necessary for financing the development of a development area declared.

(d) The Environmental Quality Act, 1974

Under this Act, the Minister of Environment is appointed to be charged with environmental protection of whole Malaysia.

Under the Minister, Director General of Environmental Quality is appointed to execute all activities required to environmental pollution control. The Environmental Quality Council is also established as an advisory council consisted of the members representing various authorities and institutions concerned.

The provisions which have direct or indirect bearings on sewage works are Section 21, 24 and 25 regulating discharge of waste into soil, land and inland waters, Section 26, 27 and 29 on oil discharge into Malaysian waters, and Section 31 enforcing the provision of adequate equipment to control and eliminate polluted waste from industries.





(e) Kota Setar Municipal Council Anti-litter By-laws 1979

In February 1979, the Municipal Council enforced the Anti-litter By-laws 1979 in exercise of the powers conferred by Section 73 and Section 102 of the Local Government Act 1976.

The By-laws intends to keep the cleanliness and beauty in the locality of Kota Setar Municipal Council and for the harmony of all the residents.

The By-laws prohibits any citizens to throw, place or left behind any litter at any building, ground or public place which includes roads and lanes, market or other places. The By-laws also regulate that the owner or occupier of any building, shop, house or other erection, is responsible if there is any rubbish and other litter in front, at the rear, around or at any section of the said premises.

Litter includes any dust, dirt, sand, earth, laterite, gravel, clay, stone, ashes, carcase, refuse, leaves, and branches, grass straw, boxes, barrels, bales, shavings, hairs, feathers, saw dust, garden refuse, stable refuse, trade refuse, manure, garbage, bottles, glass, can, food container, food wrapper, particles of food or other things or articles.

The By-laws stipulates that any person found guilty for committing an offence under the said By-laws shall be liable to a fine not exceeding \$2,000 or imprisonment not exceeding one year or to both such fine and imprisonment and in the case of a continuing offence, a sum not exceeding \$200 for each day during which such offence is continued.

### 3.3 Considerations on Existing Laws and Regulations

It was found that, through review of existing legislations in preceding section, the provisions of existing laws and regulations related to sewerage and drainage now available in Malaysia can cover necessary judicial actions required to control sewerage and drainage undertakings.



Among other laws mentioned above, the Street, Drainage and Building Act, 1974, contains considerable provisions relating to the powers of sewerage services. It appears, therefore, that no additional legislation will be needed to expand the powers of sewerage services beyond those provided in the Street, Drainage and Building Act, until such time when sewerage works are provided in considerable number of cities in the country.

In view of the provision of sewerage system in Alor Setar, it is recommended that MPKS be responsible for sewerage business activities including raising revenue by billing and collection from sewer users according to the quantity of water delivered. In addition to the existing legislations, it is recommended to provide or amend necessary regulations as follows:

- (1) Some legislative amendments be made in the State Waters Enactment, and agreement be made between Water Supply Division of the State Public Works Department and MPKS. The State JKR would send bills for sewerage services based on the written instructions of MPKS.
- (2) A Co-ordinating Committee should be created as an advisory organ for agreeing common approaches and reaching for agreements where necessary, as recommended in Section 2.6.
- (3) By-laws concerning sewerage and sanitary installation should be prepared, so that MPKS will be vested legislative powers for sewerage and sanitary facilities installation.





