

Maintenance and Operational Plan

Blueprint for Iskandar Malaysia



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Public Version

Maintenance and Operation Plan Blueprint for Iskandar Malaysia

Series of Public Version Blueprint

Urban Planning

- Planning & Design Guidelines for Housing, Neighbourhood and Facilities for Iskandar Malaysia
- Area Character Statement Blueprint for Iskandar Malaysia
- Integrated Land Use Blueprint for Iskandar Malaysia
- Housing Management Blueprint for Iskandar Malaysia
- Maintenance and Operational Plan Blueprint for Iskandar Malaysia

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- Investment and Marketing Strategic Roadmap for Iskandar Malaysia
- Human Capital Blueprint for Iskandar Malaysia
- Tanjung Puteri – Tourism Development Strategy Framework for Iskandar Malaysia

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List of agencies/ departments involved in developing MOP blueprint

Federal

Ministry of Housing and Local Government (KPKT)
Department of Works (JKR)
Department of Town and Country Planning (JPBD)
Department of National Solid Waste Management (JPSPN)

State

Chief Minister Office (Pejabat Menteri Besar)
State Economic Planning Unit (UPEN Johor)
Johor Bahru Land Office
Kulaijaya Land Office
Pontian Land Office
Johor Bahru City Council (MBJB)
Central JB Municipal Council (MPJBT)
Kulai Municipal Council (MPKu)
Pasir Gudang Municipal Council (MPPG)
Pontian District Council (MDP)
Local community

Others

UEM Land Holdings Berhad
Damansara Assets Sdn Bhd

Foreword

Iskandar Malaysia is a National Project to develop a vibrant new region at the southern gateway of Peninsular Malaysia. A regional authority body Iskandar Regional Development Authority (IRDA) was formed with specific roles to plan, promote and facilitate in which to coordinate the economic, environmental and social planning, development and management of Iskandar Malaysia. IRDA refers to The Comprehensive Development Plan (CDP) as the guiding document in developing Iskandar Malaysia, and subsequent to that, blueprints are prepared as a subset and supplementary document to CDP, which outlines detail findings, strategies, implementation and action plans.

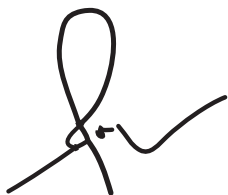
The Maintenance and Operational Plan (MOP) blueprint is developed to address the issues on maintenance and operations of public asset for five local authorities within Iskandar Malaysia region. It focuses on the following: Laws and Regulations; Responsible parties; Issues on Maintenance & Operational plans and the Causes.

Methodology used in developing the blueprint can be divided into three (3) phases namely user requirement analysis, conceptual design and development of asset management information system and asset database development.

The key outcomes to be achieved from undertaking maintenance and operational plans are: The functional and operational needs are realized; the physical condition of assets is kept up to a standard statutory and technical requirements met health, safety, security and reliability of IM development.

This blueprint has incorporated a set of twenty-eight Maintenance and Operational Plan Improvement Programmes that can mapped out to each strategy and to each of the pathways. In fact, each improvement plans addresses a specific Maintenance and Operational Plan to cater and fulfil international good practice, and outlines ways ahead for Iskandar Malaysia.

To facilitate the implementation, the blueprint outlines a set of new coordinating structure to manage new partnerships expected come from public agencies and private organisations working together on more complex programmes of Maintenance and Operational enhancement and sustainability in Iskandar Malaysia. Consequently, the region will be establishing well maintained buildings and infrastructure toward becoming a place to invest, live, work and play under a Metropolis operational plan of an International Standard.



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Ismail bin Ibrahim
Chief Executive

Background of IM and IRDA

Launched by the Government in November 2006, Iskandar Malaysia is envisaged to become a “Strong and Sustainable Metropolis of International Standing” set to spur economic developments that actuate Malaysia’s global potential.

Iskandar Malaysia is centrally located within South East Asia’s new economic zone and a short eight-hour flight radius from Asia’s burgeoning growth centres such as Bangalore, Hong Kong, Seoul, Shanghai, Singapore, Taipei and Tokyo.

Besides the strategic location and space for business expansion and quality living, Iskandar Malaysia has a package of good fundamentals and strengths such as existing infrastructure, cultural familiarity, friendly policies and an ease-of-doing business environment based on global best practices.

Driven by nine economic clusters – Electrical and Electronics, Petro and Oleo-chemicals, Food and Agro Processing, Logistics, Tourism, Health Services, Education Services, Financial Services and Creative Industries; Iskandar Malaysia aims to develop a strong, diversified, dynamic and global economy based on the foundations of nation-building; growth and value creation, as well as equitable and fair distribution amongst stakeholders.

There are five key economic zones within Iskandar Malaysia : Zone A – JB City Centre, Zone B – Green-field of Nusajaya, Zone C – Western Gate Development, Zone D – Eastern Gate Development, and Zone E – Senai-Skudai. In Zone A, the development activities will be focused on : New Financial District, Danga Bay Integrated Waterfront City, Upgrading of Central Business District, Tebrau Plentong mixed development and enhancement of causeway infrastructure connecting Johor Bahru and Singapore. In Zone B, development is centred on the Johor New Administration Centre (JSNAC) at Kota Iskandar, University Park in Edu-city, International Destination resort comprised of outdoor and indoor theme parks, and clean and green factories & warehouses at the Southern Industrial Logistics Clusters area. While in Zone C, the development is focused on the development of Free Trade Zone at Port of Tanjung Pelepas, Petrochemical and Maritime Industrial hub at Tanjung Bin, and Tanjung Bin Power Plants. Zone C also has the three Ramsar sites (Pulau Kukup, Tanjung Piai and Sungai Pulai). With Tanjung Piai being the conservation of RAMSAR called as the Southern-most tip of mainland of Asia, and the good land linkages through Second Link Access to Singapore. Zone D there is a mixed development with City of knowledge in Seri Alam, a Regional Distribution Centre in Kim-Kim, Pasir Gudang Industrial park, Tanjung Langsat Industrial Park, Pasir Gudang Port and Tanjung Langsat Port. The most northern part is Zone E – which included Universiti Teknologi Malaysia at Skudai, Senai International Airport, Senai Cargo Hub and Senai High Technology park and Senai Industrial Parks. Upon completion, the region will boast state-of-the-art facilities, infrastructure that is comprehensive, and toward becoming a one-stop business centre where living, entertainment, environment, and business will converge within a sustainable metropolis of international standing.

Iskandar Malaysia is already attracting an influx of foreign and high level corporate investments without forgetting the domestic investments, through its strategic location and accessibility by land, sea and air. In fact, the Ninth Malaysia Plan (2006- 2010), the Federal government has allocated RM 6.83 billion for infrastructural development for the key success of the vision. The funding has been channelled to develop 30 projects comprising 8 road packages, 12 drainage packages, 6 river cleaning packages, and 4 public housing packages.

The government commissioned a feasibility study on the development of Iskandar Malaysia in July 2005. Then on 30 June 2006 the economic corridor, Iskandar Malaysia (formerly known as South Johor Economic Region – SJER) was established. And a year after the establishment, the Iskandar Regional Development Authority (IRDA) was formed as a statutory Federal government body to execute the Comprehensive Development Plan (CDP) for Iskandar Malaysia, the regional development blueprint.

Iskandar Regional Development Authority (IRDA) is the single authority or single point of reference for coordinating the implementation and approval of development programmes within Iskandar Malaysia. Established by Federal Act of Parliament – IRDA Act 2007 (Act 664), it is a Federal statutory body empowered to plan, promote and facilitate the development implementation of Iskandar Malaysia benchmarking against world standards. IRDA shall put emphasize on the planning for sustainable development, through conservation and equitable distribution of growth while promoting the region to become the preferred place to live, invest, work, and play. IRDA is empowered to :

- Establish national policy directions and strategies that have a direct impact on the development with Iskandar Malaysia.
- Coordinate the performance of development activities carried out by government departments and agencies in Iskandar Malaysia.
- Plan, promote, and facilitate to stimulate and undertake the development in Iskandar Malaysia.
- Act as the principal coordinating agent on behalf of government agencies in relation to receiving, processing and expediting the required approvals.

Three development principles have been the foundation of Iskandar Malaysia : nation building, growth and value creation, and fair distribution among its stakeholders. These principles will blend nicely with IRDA's main role – Planning, Promotion and Facilitation.

Planning

- To integrate and recommend policies of Federal Government, State Government of Johor and relevant Local Authorities to enhance the well-being of Iskandar Malaysia.
- To identify and develop strategies to enhance infrastructure, skills, science and technology research in the development of Iskandar Malaysia.
- To develop blueprints in order to enhance the current Comprehensive Development Plan (CDP).

Promotion

- To undertake broad based promotion of Iskandar Malaysia to the general public and potential investors – both local and overseas.
- To drive, coordinate and monitor development of economic sectors, required enablers and social infrastructure.
- To use blueprints as points reference for policies, guidelines, legislations and design instructions for promotional tools.

Facilitation

- To provide consultation and information on investing in Iskandar Malaysia.
- To act as the principal coordinating agents on behalf of relevant government agencies in relation to receiving, processing and expediting the requisite approvals for investors in Iskandar Malaysia.
- To implement compliance of blueprints in order to fulfil investors' needs and requirement.

IRDA refers to The Comprehensive Development Plan (CDP) as the guiding document in developing Iskandar Malaysia, and subsequent to that, blueprints are prepared as a subset and supplementary document to CDP, which outlines detail findings, strategies, implementation and action plans. IRDA has formulated blueprints to both guide and benchmark the implementation of policies, guidelines, legislations and design instructions as well as strategies on specific subjects such as land use, safety & security, environment and infrastructure to develop Iskandar Malaysia into a strong and sustainable metropolis of international standing.

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1. INTRODUCTION

1.1. Project Background

Maintenance and operation (M&O) of public asset is one of the main concerns of the Local Authorities (LAs) and other Government agencies in delivering services to the public. As the LAs plays an important role in urban management of the township or city, the utilization, operability, effectiveness and efficiency of the public assets become more crucial in providing high standard of living in Iskandar Malaysia (IM).

The launching of Government Asset Management Policy (DPAK) and Government Total Asset Management Manual (MPAM) were for asset and facilities management in Malaysia. Public assets are classified into four main category viz.

1. Immovable assets
2. Movable assets
3. Life asset
4. Intellectual property.

The focus of this report is mainly on immovable public assets. The aim of this report is to present the framework for developing the M&O blueprint of Iskandar Malaysia.

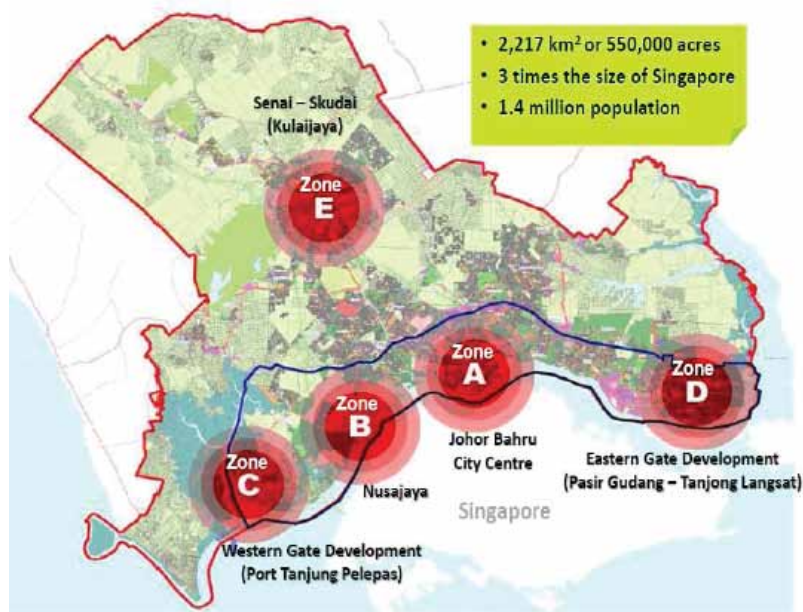


Figure 1.1: Area Covered by Iskandar Malaysia

1.2. Project Objectives

The objectives of the report are as follows:

1. To present the issues in current M&O practices, policies and guidelines of the five local authorities included in IM.
2. To describe current policies of M&O practices in selected agencies and private companies in Malaysia.
3. To describe current M&O practices in selected foreign country.
4. To present the benchmarked M&O practices.
5. To propose the framework for developing the M&O blueprint for IM includes standard operating procedures and business model.
6. To develop M&O blueprint for IM.

1.3. Blueprint Structure

The structures of the blueprint are as follows:

1. Background.
2. Iskandar Malaysia Maintenance and Operation (M&O) Policy.
3. Data Collection and Analysis.
4. Maintenance and Operation (M&O) Framework Overview.
5. Key Issues on Maintenance and Operation (M&O).
6. Local Institutional and Regulatory Framework Review.
7. Local and International Current Maintenance and Operation (M&O) Practices Review.
8. Benchmarking, Selected Best Practices and Recommendations.
9. Standard Operating Procedures (SOP) for Maintenance and Operation in Iskandar Malaysia.
10. Geographic Information System (GIS).
11. Business Model and Initiatives for Iskandar Malaysia's Asset.

2. POLICY

2.1 Maintenance and Operation (M&O) Policy Objectives

The maintenance of Local Authorities assets and facilities should:

1. Meet departmental service delivery expectations.
2. Focus on the impact of the condition of an asset on service delivery and risk.
3. Minimize whole-of-life costs of assets.
4. Make the best use of maintenance resources.
5. Facilitate maintaining relevant and up-to-date asset information at departmental and whole of government levels.
6. The key outcomes to be achieved from undertaking maintenance are:
 - i. The functional and operational needs are realized.
 - ii. The physical condition of assets is kept up to a standard.
 - iii. Statutory and technical requirements met health, safety, security and reliability.

2.2. Responsibilities

Operation and maintenance of asset conducted in accordance with legal provisions, regulations and directives governing of the government.

2.3. The Process

Local authorities should ensure that the M&O is the nature of repair and prevention. The elements of process in M&O include identifying the asset, implementation of Total Asset Management (TAM), developing Government Asset Management (GAM), measuring the level of performance of asset services and reporting the asset management status.

3. MAINTENANCE AND OPERATION (M&O) FRAMEWORK

3.1. Asset Management

The assets of the Local Authorities (LAs) have to be managed through the process of planning, procurement, operation and disposal as spelt-out by the Manual for Total Management of Assets (Manual Pengurusan Aset Menyeluruh, 2009). This management process is applied throughout the life-cycle of assets as shown in Figure 3.1 below.



Figure 3.1: Asset Life Cycle

The M&O to be developed will consider the each different group of them to meet the requirements and of the public and business communities. The management of the assets will follow the best practice are shown in Figure 3.2 which are developed by the Government of Australia.

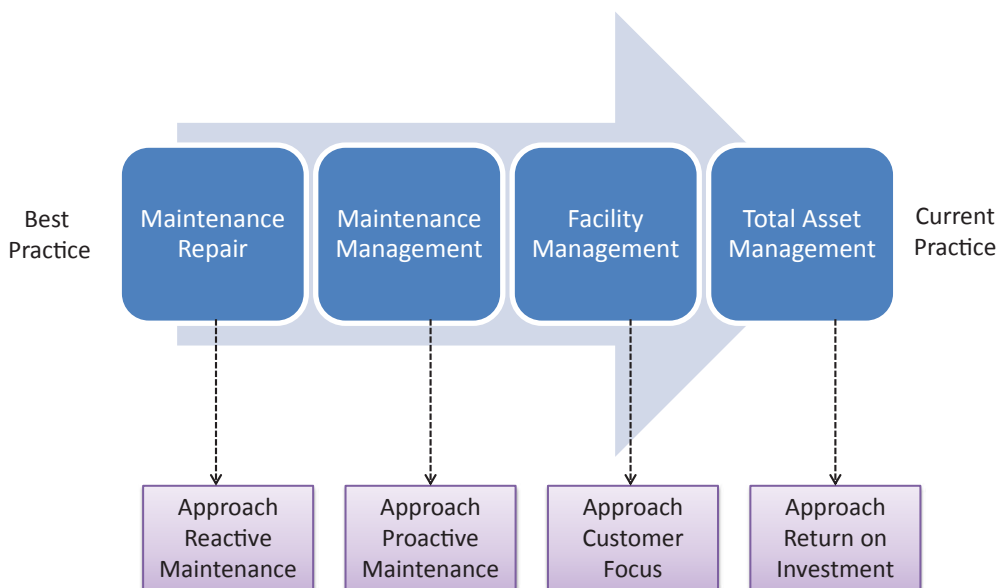


Figure 3.2: Total Asset Management Manual (2007)

3.2 Asset Management Concepts and Practices

There are three distinct family of common current use of the asset management term which are the financial, the equipment maintainers and software vendors and also infrastructure or plant owners and operators are shown in Figure 3.3.

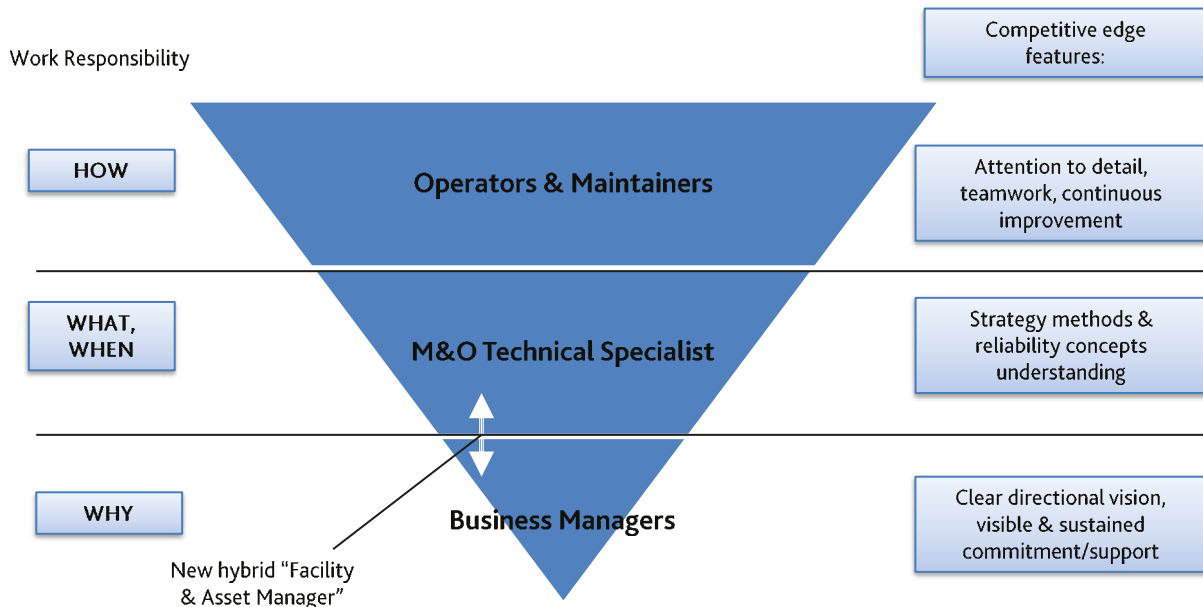


Figure 3.3: Inverting the pyramid and harnessing all the contribution

4. DATA COLLECTION AND ANALYSIS

4.1. Data Collection Approach and Data Sources

There are four data collection approaches consisted of site visit, interview, workshop and web search.

Site visit and interview are conducted to determine M&O practices by selected Public Agency and Private Company.

A workshop used to gather expert opinions and a group consensus in any issues relating to M&O practices.

Web search involving data collected on M&O across the municipal of the selected countries.

4.2. Data Analysis Method

Content analysis used for this survey is to determine the presence of certain words or concepts within texts or sets of text of M&O issues within the benchmarks.

Researchers quantify and analyze the M&O issues by the presence, meanings and relationships of such words and concepts, then make inferences about the messages within the texts, the writer(s), the audience, and even the culture and time of which these are a part.

within the texts, the writer(s), the audience, and even the culture and time of which these are a part.

Two general categories of content analysis:

1. Conceptual Analysis: establishing the existence and frequency of concepts in a text.
2. Relational Analysis: builds on conceptual analysis by examining the relationships among concepts in a text.

5. KEY ISSUES ON MAINTENANCE AND OPERATION (M&O)

5.1 Introduction

This section presents the issues on maintenance and operations of public asset for five local authorities within Iskandar Malaysia region. It focuses on the following:

- Laws and Regulations.
- Responsible parties.
- Issues on M&O.
- Causes.

In this chapter, eight major issues highlighted which are:

- 1) Regulatory framework
 - i) The available regulations are not in detail
 - ii) Unclear M&O implementation
 - iii) Ambiguous in nature
 - iv) Lack of provisions on enforcement
- 2) Budget constraint
 - i) Limited budget
 - ii) Budget preparation
- 3) Lack of manpower
 - i) Lack of number
 - ii) Lack of skills
- 4) SOP implementation
 - i) Partially
 - ii) Too rigid
- 5) Lack of awareness
- 6) Institutional Structure and Management Problems
- 7) Asset Design Faults
- 8) Spare Parts and Tools

These issues were classified based on asset classifications which are Buildings, Civil and Infrastructure (C&I) and Landscape.

Case Study 1:
Community Hall Taman Universiti, Skudai



Leaking roof at community hall

Case Study 14:
Location Wisma SBBU,
Bandar Baru Uda



Bad cracks and holes on road

Case Study 24:
Jalan Mahmoodiah, Johor Bahru



Trees blocking the view and the
bus stop

5.1.1 Building

Buildings categorization in this report include community hall, public market, public transport terminal, food premises, toilet, parking, mechanical and electrical and plumbing and sanitary fittings.

5.1.2 Civil and Infrastructure

Civil and infrastructure (C&I) in this report includes road, sewerage and drainage and pedestrian.

5.1.3 Landscape

Landscaping can be categorized into two types namely hard landscaping and soft landscaping. Soft landscaping elements may include flowers, grass, etc. while hard landscaping elements consist of playground equipment set, water features, benches, signage and huts.

6: INSTITUTIONAL AND REGULATORY FRAMEWORK

6.1. Goals in Maintenance and Operation (M&O): National Strategic Planning Policies

Ninth Malaysian Plan (9MP): prepared to allocate the national budget from the year 2006 to 2010 to all economic sectors in Malaysia. The plan has clarified certain information regarding maintenance and operation of assets.

Manual of Total Asset Management (MPAM): Agencies shall ensure that the process of maintenance and operation of assets are complied with, as shown in Figure 6.1.

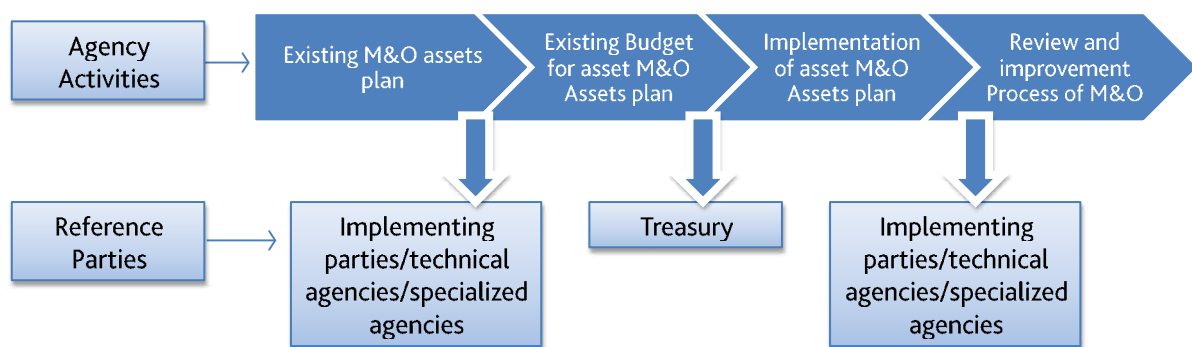


Figure 6.1: The process of operation and maintenance of assets

Ministry of Housing and Local Government (KPKT) Plan and Policies: functions are to plan, coordinating and implementing excellent human settlement through comprehensive housing programs, uniformed development control with integral infrastructure facilities, social and recreational services. National plans and policies are developed to enhance the government sector service deliveries. The national plan and policies are:

- National Physical Plan: to enhance the National Planning through spatial dimension in the country economic policy including coordinating of government agencies by introduction of the spatial policies.
- National Urbanization Policy: coordinating and guiding the planning and development of urban areas.

Iskandar Malaysia Comprehensive Development Plan (CDP): prepared to the study, and contains Khazanah Nasional Berhad recommendations and proposals to address socio-economic development in a holistic and sustainable manner.

Stormwater Management Manual: provides guidance of the various agencies federal and state levels to meet the governance requirements of city development to eradicate the source of the problem (control at-source). This will result in environmental protection to the community in the city, enhance the aesthetic value and increase the value of property in an area.

6.2. Laws & Regulations

Federal level: made by legislators (members of Parliament and senators) and apply nationwide. Federal laws are known as Acts (of Parliament). Federal laws consist of:

- Iskandar Regional Development Authority Act 2007 (Act 664).
- Local Government Act 1976 (Act 171).
- Town and Country Planning Act 1976 (Act 172).
- Building and Common Property (Maintenance Management) Act 2007 (Act 663).
- Solid Waste and Public Cleansing Management Act 2007 (Act 672).
- Street, Drainage and Building Act 1974 (Act 133).
- Road Transportation Act 1987 (Act 133).
- Electricity Supply Act 1990 (Act 447).
- Sewerage Services Act 1993 (Act 508).

State level: made by assemblymen (Dewan Undangan Negeri) and only apply in the particular states. State laws often referred to as enactments or ordinances. State laws consist of:

- Local Government Act 1976 (Act 171).
- Town and Country Planning Act 1976 (Act 172).

Local level: empowered to enact legislation (Bylaws and Regulations) including those relating to the maintenance and operation of assets within their jurisdiction. Local laws consist of:

- Local Government Act 1976 (Act 171).

6.3. Roles and Responsibilities for Maintenance and Operation (M&O) of Assets Management

The roles and responsibilities for the maintenance and operation (M&O) of asset and facilities management are at three levels, which are federal, state and local levels.

At federal level, the agencies involved are:

- Public Works Department (JKR).
- Department of Irrigation and Drainage (JPS).

At state level, the agency involved is:

- State Public Works Department (JKR).

At local level, the agencies involved are:

- Johor Bahru City Council (MBJB).
- Johor Bahru Tengah Municipal Council (MPJBT).
- Pasir Gudang Municipal Council (MPPG).
- Kulajaya Municipal Council (MPKu).
- Pontian District Council (MDP).

7. LOCAL AND INTERNATIONAL CURRENT MAINTENANCE AND OPERATION (M&O) PRACTICES REVIEW

7.1. Introduction

This section describe the policies, maintenance and operation(M&O) approaches, resourcing strategies and Standard of Procedures (SOP) by the five local authorities within Iskandar Malaysia, other government and private companies in Malaysia as well as other five selected countries (Australia, Canada, Singapore, United Kingdom and United States). The review is carried out in respect of the three asset groups determined i.e. buildings, civil and infrastructure (C&I) and landscape.

7.2. Local Authorities in Iskandar Malaysia

7.2.1. Building

The local authorities involved are the Majlis Bandaraya Johor Bahru (MBJB), Majlis Perbandaran Johor Bahru Tengah (MPJBT), Majlis Perbandaran Pasir Gudang (MPPG), Majlis Perbandaran Kulai (MPKu), and Majlis Daerah Pontian (MDP).

Most of local authorities used reactive maintenance based on complaints by the public as for SOP. It begins with the local authorities receiving complaints, inspect and record the complaint or request, identify the defects including carrying out site inspection, identify the type of maintenance required, identify the suitable resourcing strategy, carry out repair or maintenance work and finally verify upon completion (Figure 7.1).



Figure 7.1: Standard Operating Procedure (SOP) for Buildings

7.2.2. Civil and Infrastructure

There are five authorities under the Iskandar Malaysia areas. They are MBJB, MPJBT, MPPG, MPKu and MDP.

Each local authority employs certain policy for civil and infrastructure. This is to ensure that the Civil and Infrastructure is well managed and maintained.

The Standard Operating Procedure (SOP) for most local authorities is:

- 1) Receive complaints
- 2) Record the complaints
- 3) Identify the damages
- 4) Appoint the contractor
- 5) Monitor the maintenance process
- 6) Document the completed works.

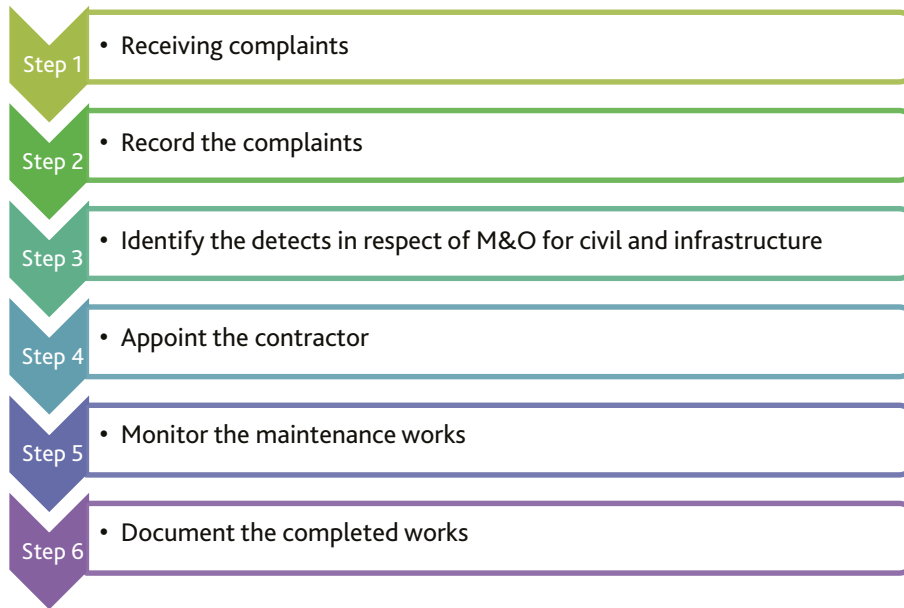


Figure 7.2: Standard Operating Procedure (SOP) for Civil and Infrastructure

7.2.3. Landscape

Local authorities under Iskandar Regional Development Authority (IRDA) consist of MBBJ, MPJBT, MPPG, MPKu and MDP.

The SOP process for landscape maintenance consists of:

- 1) Prepare landscape plan or children playground budget estimation
- 2) Deliver the plan to related department
- 3) Supervise landscape work or children playground.

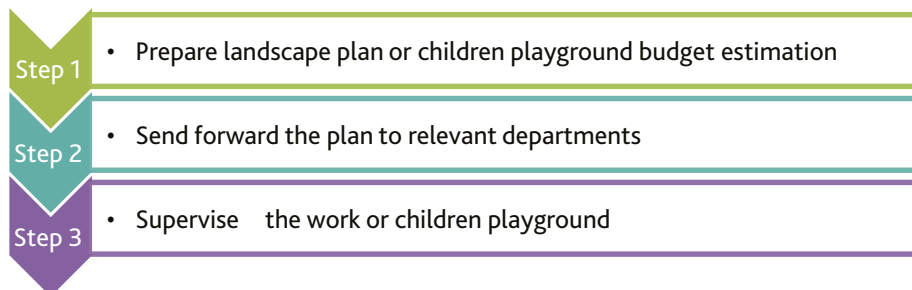


Figure 7.3: Standard Operating Procedure (SOP) for Landscape

7.3. Public Agencies and Private Companies

7.3.1. Building

Standard operating procedures (SOP) for all four local authorities are based on complaints and the working processes are as follows; 1) Received complaints, 2) Record the complaints, 3) Investigate the validity of the complaints at the site, 4) Report the damage with estimated cost, 5) Check and approve the work, 6) Appoint the term contractor, 7) Supervise the maintenance work, and 8) Validate the complete work.

7.3.2. Civil and Infrastructure

The Standard Operating Procedure (SOP) for most of the local authorities consists of; 1) receive complaints, 2) deliver the complaints, 3) document the complaints, 4) check and approve the maintenance work, 5) site inspection, and 6) monitoring.

7.3.3. Landscape

All of the local authorities have their own policy in managing their landscape areas. MPSJ, MBSA, DBKL, PPJ and JKR similarly use the Park By-Laws 1987. This policy is a guideline for them in managing landscape under their area of governance.

The DBKL has different strategy in maintaining each type of trees and plants. The JKR's Standard Operating Procedure (SOP) on the other hand involves, 1) identifying the installation, 2) providing list of installation, 3) providing the annual preventive maintenance schedule, 4) Checking and confirming the schedule, 5) Studying for resource, 6) Consenting the technician, 7) Implementing based on JKR's procedure, 8) Documenting the work activities.

7.4. Review of Selected International Practices

The review on public assets maintenance practices in five selected countries focused on maintenance which include institutional and regulatory framework, organizational structure, M&O approaches, resourcing strategies and guidelines/standard operating procedure. This is to identify best practices for the purpose benchmarking and evaluation against the current practices in Malaysia. The five countries selected for the purpose of benchmarking are:

1. Australia.
2. Canada.
3. Singapore.
4. United Kingdom (UK).
5. United States of America (US).

8: BENCHMARKING, SELECTED BEST PRACTICES AND RECOMMENDATIONS

8.1 Benchmarking Partners

The benchmarking partners are:

- i. Local Authorities in Iskandar Malaysia:
 1. Majlis Bandaraya Johor Bahru (MBJB).
 2. Majlis Perbandaran Johor Bahru Tengah (MPJBT).
 3. Majlis Perbandaran Pasir Gudang (MPPG).
 4. Majlis Perbandaran Kulaijaya (MPKu).
 5. Majlis Daerah Pontian (MDP).

- ii. Local Public Agencies and Private Companies:
 1. UDA Daya Urus (UDU).
 2. Perbadanan Putrajaya (PPJ).
 3. Majlis Bandaraya Subang Jaya (MPSJ).
 4. Majlis Bandaraya Shah Alam (MBSA).
 5. Jabatan Kerja Raya (JKR).
 6. Dewan Bandaraya Kuala Lumpur (DBKL).

- iii. Other Countries:
 1. Australia.
 2. Canada.
 3. Singapore.
 4. United Kingdom.
 5. United States.

8.2 Benchmarking Components

The benchmarking components include:

1. Policy, Plan and Strategy.
2. Laws and Regulations.
3. Responsibility.
4. Organizational Structure.
5. M&O Approaches.
6. Sourcing Strategies.
7. Issues of Local Authorities Assets in Iskandar Malaysia.

8.3 The Benchmarking, Selected Best Practices and Recommendations

Table 8.1 shows the Issues, Causes, Selected Best Practices and Recommendations for Policy, Plan and Strategy benchmarking.

Table 8.1: Issues, Causes, Selected Best Practices and Recommendations for Policy, Plan and Strategy

ISSUES	CAUSES	SELECTED BEST PRACTICES	RECOMMENDATIONS
Policy, Plan & Strategy <ul style="list-style-type: none"> National policy available is on Assets Management and M&O Policy is stated briefly 	<ul style="list-style-type: none"> Lack of Maintenance culture. New policy not fully implement 	United Kingdom <ul style="list-style-type: none"> There are detailed policies, plans and guidelines for different type of assets. e.g. highway, building, street lighting, transport etc. 	Develop maintenance culture. <ul style="list-style-type: none"> Implement the Government Asset Management Policy Awareness campaign on M&O of public assets Establish Customer Relationship Management (CRM) programs Promote Corporate Social Responsibility (CSR) in maintaining public asset Develop M&O culture with rewards and penalties mechanism for all stakeholders

9: STANDARD OPERATING PROCEDURES (SOP) FOR MAINTENANCE AND OPERATION IN ISKANDAR MALAYSIA

9.1 Introduction

There are thirteen SOPs for three type of assets namely building; civil and infrastructure (C&I); and landscape. The SOP will describe all types of maintenance activities. Thus, the maintenance activities will emphasize on a proper practices and usage procedures for public assets.

The SOP for maintenance and operation covers:

- a) Building
 - Service Building.
 - Food Premises.
 - Halls.
 - Public Market.
 - Toilet.

- b) Civil and Infrastructure (C&I)
 - Bridge Crossing and Bus Stop.
 - Drainage.
 - Parking Area.
 - Road.
 - Street, Traffic and Decorative Lights.
 - Sewerage.
 - Signage.

- c) Landscape
 - Landscape (Soft and Hard).

10. GEOGRAPHIC INFORMATION SYSTEM

10.1 INTRODUCTION

Information system is an association of people, machines, data, and procedures working together to collect, manage, and distribute information of importance to individuals or organizations. Geographic information system (GIS) is a computer based information system that enables capture, modeling, storage, retrieval, sharing, manipulation and presentation of geographically referenced data. Examples of GIS applications are:



Figure 10.1: Examples of GIS applications

10.2 Objective

To design and develop a GIS Geodatabase for Asset Maintenance and Operation Blueprint.

10.3 Methodology

Methodology used can be divided into three (3) phases namely user requirement analysis, conceptual design and development of asset management information system and asset database development.

10.3.1 User Requirement Analysis

User requirement Analysis used to find out the needs of the user. The methods used to identify user requirement by interview and questionnaire method.

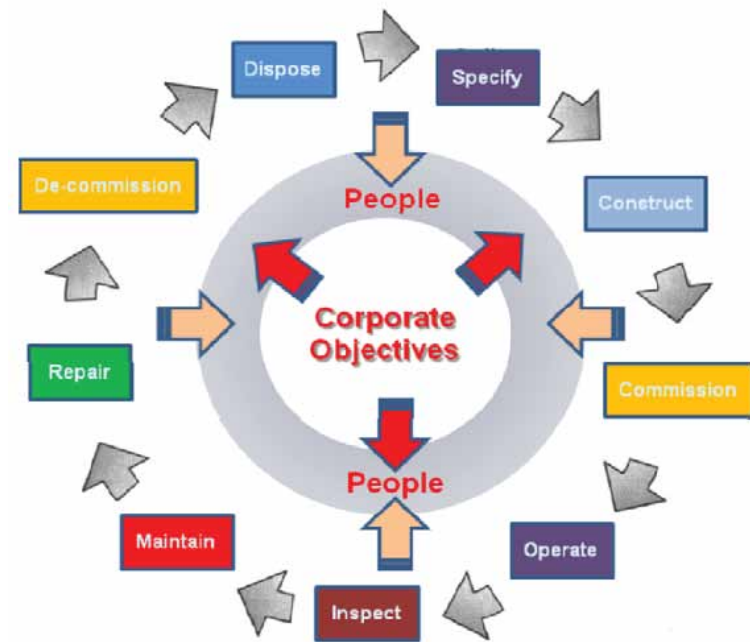


Figure 10.2: Example of asset maintenance and operation in asset life cycle

10.3.2 Conceptual Design and Development of Asset Management Information System

The design of any system for asset management usually made based on cycle, types of spatial data, attribute database, inventory system and should be made according to the benefit of the designed system as Figure 10.3 illustrates the related questions.

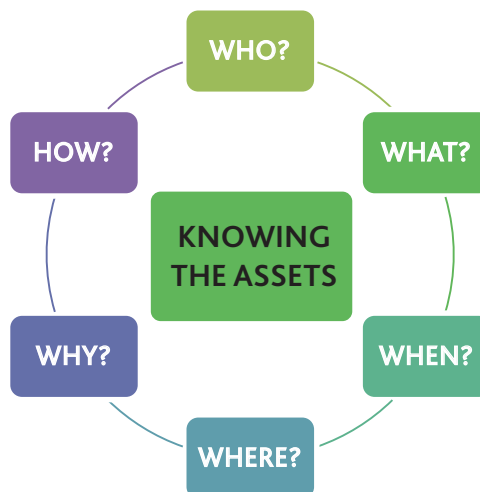


Figure 10.3: Overall concepts and questions asked in the early stage of Asset Management System development for asset maintenance and operation

10.3.3 Database Development

Database Development can be divided into three stages known as conceptual design, logical design and physical design. Figure 10.4 illustrates some of the functions provided by asset database using GIS techniques.

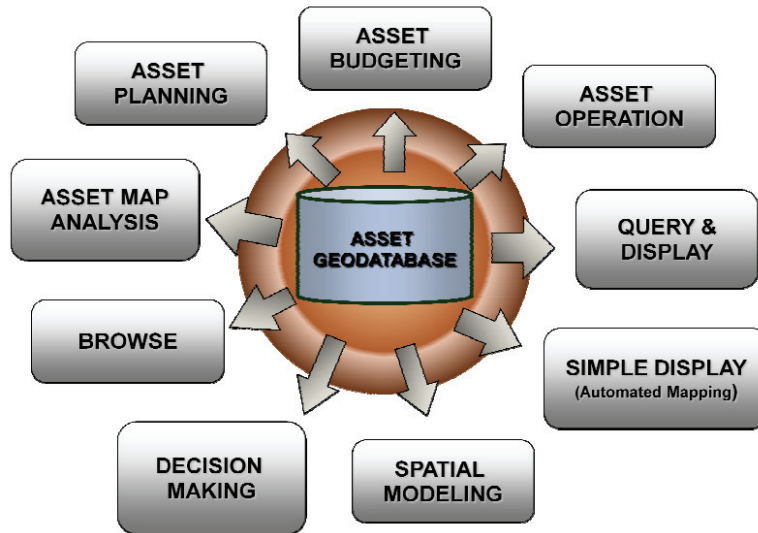


Figure 10.4: Some of the functions in asset database using GIS techniques

10.3.4 Asset Geodatabase Development

Figure 10.5 illustrates the process of the development of Asset Geodatabase. The process starts with data compilation from Iskandar Regional Development Authority (IRDA), MBBJ, MPJBT, MPKu, MPPG, MDP and other government organizations. Both spatial and attribute data were compiled in digital and hardcopy forms. The data then transformed, manipulated and processed according to the database design and development made in the earlier phase.

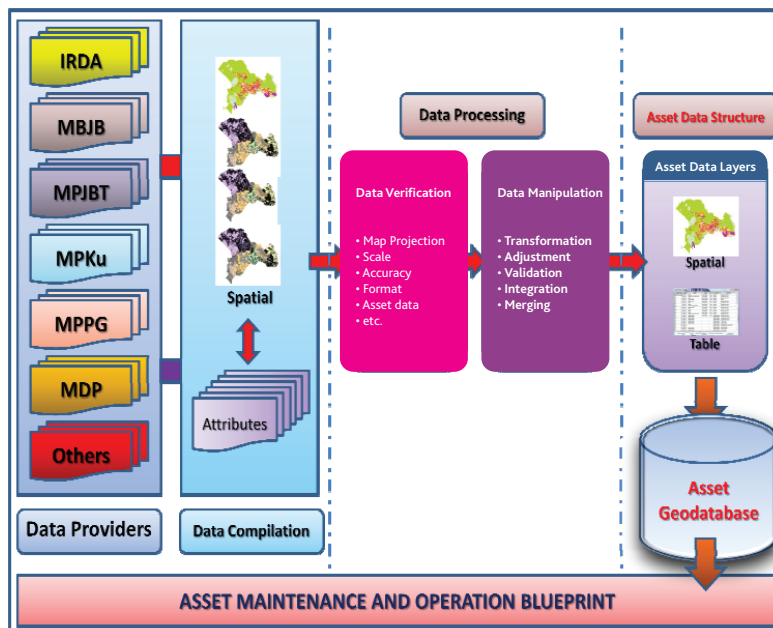


Figure 10.5: The process of the development of Asset Geodatabase

11. BUSINESS MODEL AND INITIATIVES

11.1 BUSINESS MODEL AND INITIATIVES

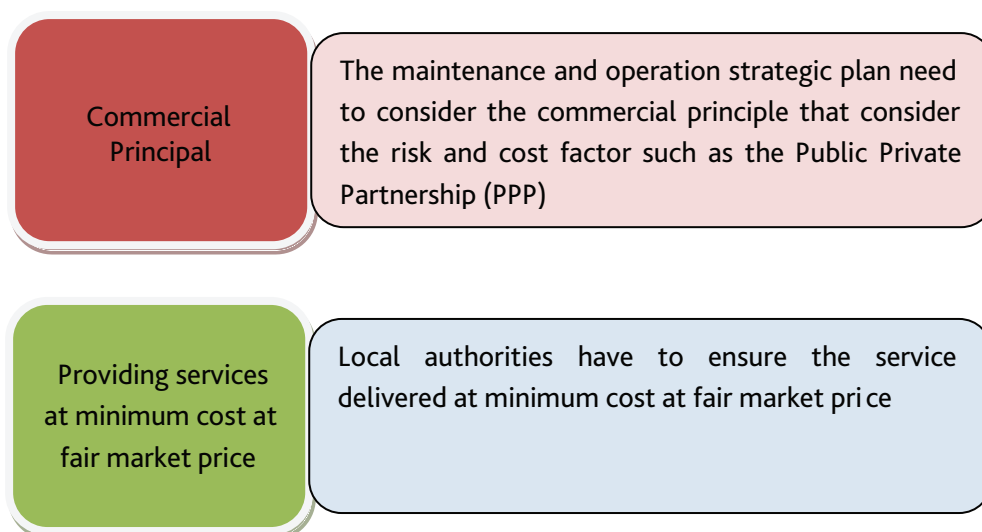
Maintenance and operation (M&O) business model or the implementation plan must align with six criteria as described in the Figure 11.1.



Figure 11.1: The Approach for M&O Business Model

11.2 The Aims

The establishment of reliable and sustainable business model should satisfy the aims of M&O in Iskandar Malaysia.





11.3 Resourcing Strategy

For the M&O business plan, there are five resourcing strategies.

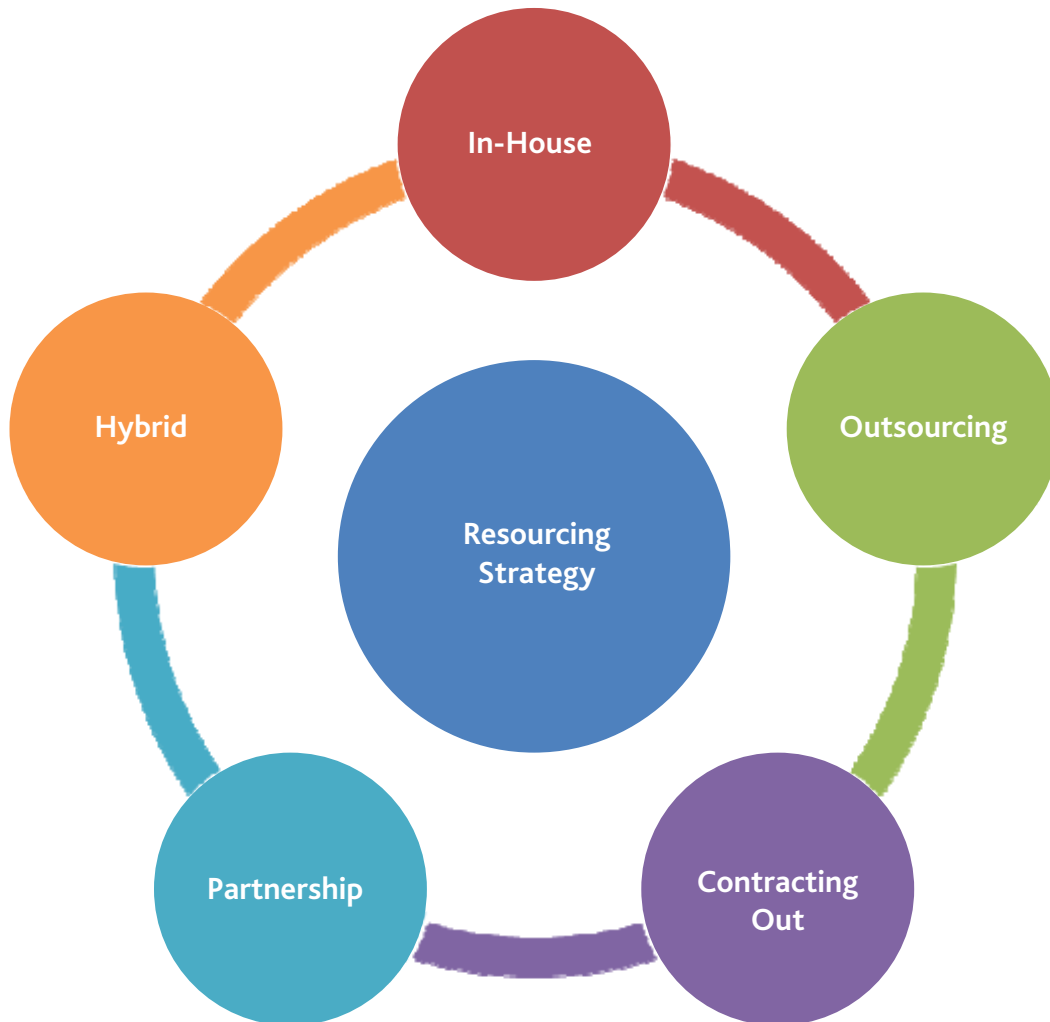


Figure 11.3: Types of resourcing strategy

11.4 Maintenance and Operation (M&O) Contract Framework

A contract framework is a general term for agreements with service providers which set out terms and conditions precisely. Agreement places an obligation, in writing, to procure goods, M&O works or services for pecuniary interest.

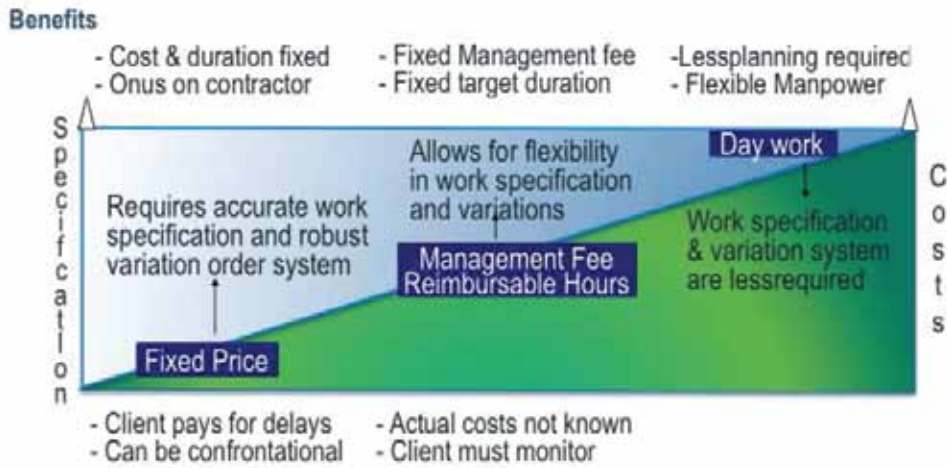


Figure 11.4: M&O Contract Framework

11.5 Maintenance and Operation (M&O) Contract Size

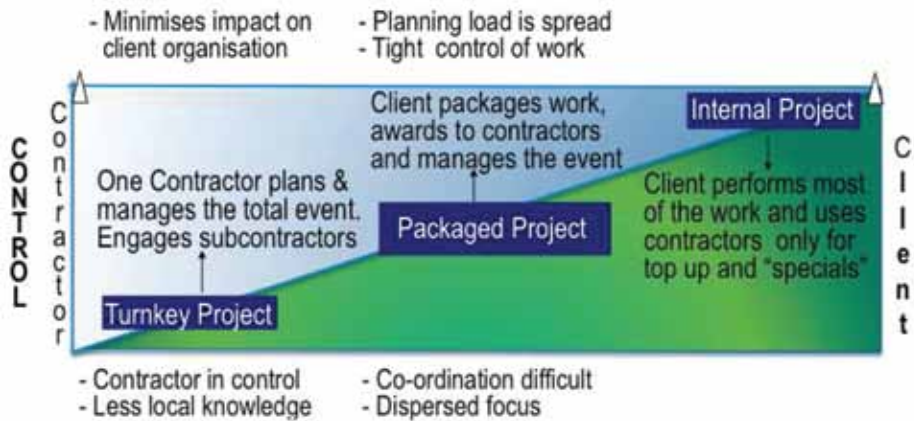


Figure 11.5: M&O Contract Size

11.6. Business Model for Iskandar Malaysia Assets

The list of thirteen business models of respective M&O of assets are:

1. Building Services
2. Halls
3. Food Premises
4. Public Market
5. Toilet
6. Crossing Bridge and Bus Stop
7. Signage
8. Parking Lot
9. Road
10. Lighting (Street, Traffic and Decorative Lights)
11. Drainage
12. Sewerage
13. Landscape

11.7 The Initiatives

Table 11.7 shows the summary for Initiatives of Strategic Maintenance and Operation (M&O) Planning for the year of 2010.

Table 11.7: Summary of Initiatives

Year	Priority	Nos	Initiatives Category	Parameters	Initiatives
2010	High	1	Planning	Maintenance and Operation Policy	Establishment of M&O Policy in Iskandar Malaysia.
		2	Planning	Maintenance and Operation Policy	Awareness campaign on M&O of public assets.
		3	Planning	Maintenance Culture	Customer Relationship Management (CRM) programs.
		4	Planning	Maintenance Culture	Corporate Social Responsibility (CSR)-maintaining public asset.
		5	Planning	Maintenance Culture	Enforcement for M&O culture with rewards and penalties mechanism for all stakeholders.
		6	Planning	Maintenance Review	Establishment of M&O committee (Steering (Federal / State) & Technical (LAs)).
		7	Implementation	Maintenance Works Program	Standardizing of Standard Operating Procedure (SOP).
		8	Implementation	Maintenance Works Program	Compliance of procurement of M&O services with the M&O Policy established from Initiative 1.
		9	Implementation	Capacity Building of Human Capital	Establish competency for M&O worker through relevant trainings.
		10	Implementation	Capacity Building of Human Capital	Sharing knowledge and experience of the experts in Asset and Facility Management private.
		11	Monitoring	Monitoring and reviewing maintenance	Undertaking maintenance program management.