

VOLUME 3 – SECTOR II

***REGIONAL DEVELOPMENT FRAMEWORK
AND LAND USE***

**THE STUDY ON INTEGRATED URBAN DRAINAGE IMPROVEMENT
FOR MELAKA AND SUNGAI PETANI
IN MALAYSIA**

FINAL REPORT

VOLUME 3: SUPPORTING REPORT ON DRAINAGE STRUCTURE PLAN

SECTOR II: REGIONAL DEVELOPMENT FRAMEWORK AND LAND USE

TABLE OF CONTENTS

1. NATIONAL GOALS AND OBJECTIVES	II-1
2. ECONOMIC GROWTH AND SECTORAL PERFORMANCES	II-2
2.1 State Level	II-2
2.2 Study Area	II-4
3. REGIONAL DEVELOPMENT STRATEGIES	II-8
3.1 State Level	II-8
3.2 Study Area	II-10
4. POPULATION GROWTH	II-12
4.1 Sungai Petani	II-12
4.2 Melaka	II-13
5. EMPLOYMENT GROWTH	II-15
5.1 Sungai Petani	II-15
5.2 Melaka	II-16
6. PRESENT LAND USE	II-17
6.1 Data Collection and Constraints	II-17
6.2 Land Use Classification	II-18
6.3 Present Land Use in Sungai Petani	II-18
6.4 Present Land Use in Melaka	II-21
1.7 PROJECTED LAND USE	II-23

LIST OF TABLES

Table II-1	Population Projection for Sungai Petani	II-T-1
Table II-2	Population Projection for Melaka	II-T-2
Table II-3	Employment Projections for Sungai Petani	II-T-3
Table II-4	Employment Projections for Melaka	II-T-4
Table II-5	Present Land Use (Sungai Petani)	II-T-5
Table II-6	Present Land Use (Melaka).....	II-T-6
Table II-7	Projected Land Use in the Year of 2020 (Sungai Petani).....	II-T-7
Table II-8	Projected Land Use in the Year of 2020 (Melaka).....	II-T-8

LIST OF FIGURES

Fig. II-1	Location of Major Industrial Areas in Sungai Petani	II-F-1
Fig. II-2	Location of Major Industrial Areas in Melaka	II-F-2
Fig. II-3	Structure Plan for Melaka	II-F-3
Fig. II-4	Development Concept for 2010 in Sungai Petani.....	II-F-4
Fig. II-5	Herarchy of Urban Center in Sungai Petani	II-F-5
Fig. II-6	Herarchy of Urban Center in Melaka	II-F-6
Fig. II-7	Present Land Use Map (Sg. Petani).....	II-F-7
Fig. II-8	Present Land Use Map (Melaka)	II-F-8
Fig. II-9	Proposed Land Use (in 2010 for Sg. Petani).....	II-F-9
Fig. II-10	Proposed Land Use (in 2015 for Melaka).....	II-F-10

SECTOR II

REGIONAL DEVELOPMENT FRAMEWORK AND LAND USE

1. NATIONAL GOALS AND OBJECTIVES

With the launching of the Seventh Malaysia Plan, 1996-2000, the Malaysia economy entered the second phase of the Second Outline Perspective Plan (OPP2), 1991-2000. The main thrusts of development under the Seventh Plan emphasized sustaining economic progress in order to achieve the status of a fully developed nation as envisaged under Vision 2020 as well as other aspects of development such as social justice, quality of life and political stability with positive social and spiritual values. National goals and objectives under the Seventh Plan are summarized as:

- (a) Transforming the economy from an investment driven output growth towards one that is productivity and quality driven through enhancement of labor and capital efficiency;
- (b) Accelerating the shift towards higher value added activities that are labor saving and possess greater capital and technology intensive production processes;
- (c) Developing a modern, dynamic and outward oriented services sector to enable it to become not only as major catalyst for growth but also a potential for export of services in international trade;
- (d) Strengthening science and technology, enhancing research and development and advancing information technology to harness the nation's technological capabilities;
- (e) Ensuring sustainable development and emphasizing environmental integration with social and economic development process;
- (f) Placing greater efforts towards balanced growth and development;
- (g) Focus on human resource development as a fundamental requirement for achieving the objective of growth and distribution.

2. ECONOMIC GROWTH AND SECTORAL PERFORMANCES

2.1 State Level

At the start of the Seventh Malaysia Plan period, the Malaysian economy in general continued to show impressive performance, growing at 8.7 percent per annum. A total of seven states recorded GDP growth rates that were higher than the national average including the states of Kedah and Melaka as listed below. The strong growth performance at the state level was reflected in improvements in per capita GDP and states with high economic growth, including Kedah Melaka also recorded high per capita GDP growth.

Description	GDP and Per Capita GDP (RM million)			Annual Average Growth Rate 1995-2000
	1990	1995	2000	
Malaysia				
GDP	79,329	120,316	176,635	8.0%
Per Capita GDP	4,426	5,815	7,593	5.5%
Kedah				
GDP	3,511	5,618	8,705	9.2%
Per Capita GDP	2,612	3,791	5,423	7.4%
Melaka				
GDP	1,960	3,106	4,751	8.9%
Per Capita GDP	3,723	5,439	7,933	7.8%

Source: Seventh Malaysia Plan, pg.142

In terms of GDP growth by economic activity, the manufacturing, construction and services sectors provided the main impetus for growth in all the states. The manufacturing sector grew at 13.3 percent per annum. Likewise, the construction sector registered double digit growth rates stimulated by the construction of infrastructure projects as well as residential and non-residential properties. The services sector grew in tandem with the manufacturing and construction sectors. The agricultural sector grew modestly with its share of national GDP declining to 13.6 percent in 1995.

At the second half of the Seventh Plan period however, Malaysia's real GDP growth fell as a result of the collapse of regional financial markets resulting in a drastic economic slowdown in the second period of the Seventh Plan. Output growth of consumption goods, especially durable goods also slowed down and domestic demand expanded at a slower pace. All sectors fell especially the construction and agricultural sectors.

Economic growth at State level was spearheaded by significant increases in investments particularly in the manufacturing sector as listed below. In the 1986-1990 period, Kedah's share was 8.5 percent of total Malaysia investment and 7.6 percent in the 1991-95 period.

Melaka had 4.1 percent and this increased to 7.8 percent respectively over the two study periods.

(RM million) 1978 prices

	1986-1990	1991-1995
Malaysia	58,550.1	116,151.8
Kedah	4,985.2	8,859.1
Melaka	2418.8	9,101.9

Source: Seventh Malaysia Plan, pg.147

The particularities of economic growth and sectoral performances in the States of Kedah and Melaka are as enumerated hereinafter:

(1) State of Kedah

In the Seventh Malaysia Plan period, Kedah's economic structure is undergoing significant transformation with less dependence on the primary sector and a shift towards secondary and tertiary sectors. In fact, Kedah's economy continued to generally perform well in 1995, with GDP growth estimated at 9.9 percent due to increased investments from foreign and local capital markets into industrial sectors. The rapid growth of the manufacturing sector in Kedah was concentrated in the Sungai Petani and Kulim industrial areas largely due to spillover of manufacturing activities from Pulau Pinang.

The contribution of Kedah's secondary and tertiary sectors to total state value added increased from 68.1 percent in 1990 to 79.9 percent in 1995. In 1997, the economy continued to perform well as a result of increase in job opportunities due to economic activities such as services, construction and manufacturing in the districts of Kota Star, Kuala Muda and Kulim (Property Market Report 1998).

Several new growth centres were identified including a New Town in Bedong, Aman Jaya New Town (Phase 1) in Sungai Petani and a new town near Kelang Lama (Kulim). The construction of the East-West Highway linking Butterworth-Lunas and Kulim Hi-Tech Park to Penang commenced in May 1995. This improved and stimulated developments along the Kedah-Pulau Pinang border.

(2) State of Melaka

In 1995, the state economy of Melaka performed strongly with GDP growth of 9.2 percent. Spearheading the economy was the manufacturing sector which recorded double digit growth rates comparable to that achieved by more industrialized states

such as Selangor, Pulau Pinang, Johor and Negeri Sembilan, i.e. between 11.8 percent and 16.2 percent per annum. The main industrial sub-sectors that were predominant in Melaka included labour intensive industries such as electrical & electronics and the textile & apparel industries.

Other sectors such as wholesale, retail, hotel and restaurant sectors also grew in tandem with the manufacturing sector. Among the significant events was the launching of several recreational tourism projects on reclaimed land, the setting up of a heavy commercial vehicle plant by HICOM in the Simpang Empat area and the construction of the road linking Batu Berendam to Cheng spurring developments along the corridor.

By 1997 the tourism sector, taking advantage of the weaker ringgit continued to provide the state with a development potential including the Melaka waterfront in Kuala Linggi and the Expo Melaka in Ayer Keroh.

2.2 Study Area

The economic growth and sectoral performances for the study areas of Sungai Petani and Melaka are as described hereinafter:

(1) Sungai Petani

Sungai Petani town is located in the development corridor of the Northern region and functions as the sub-regional growth center, supporting and receiving development spread effects from Georgetown (Penang Island), the regional growth center. The study area also has a close distance proximity to the North-South Highway and Federal Route 1, which provides convenient accessibility to other major growth centers such as Kulim, Seberang Perai, Gurun and administration center in Alor Setar.

Due to the favorable location as described above, the area is the focus of industrial development within the administrative area of Municipal Council of Sungai Petani. There are two major established industrial estates developed by the SEDC, in this study area, namely the Sungai Petani Industrial Estate and Bakar Arang Industrial Estate located in the study area (refer to Figure II-1). The types of industries located in these industrial areas are mixed and all of the land have been sold out as they were established earlier than all the other industrial areas in the District of Kuala Muda. The size of these two industrial estates are as listed below:

Industrial Estate	Developed Area (ha)	Saleable Area (ha)	Number of Workers	Type of Industries
Sg. Petani IE.	251.84	222.67	6,028	Mixed
Bakar Arang IE.	225.93	174.85	10,855	Mixed
Total	477.77	397.52	16,883	

Source: SEDC Kedah, 1998 / Labour Dept. Sungai Petani (1998)

There are several other planned industrial areas developed by the private sector agencies such as at Kempas, the MIEL Light Industrial Project as Sungai Tukang and at Taman Ria and Taman Arked. A major development in this study area is the integrated development of the township of Aman Jaya where a sizeable area has been earmarked for industries.

The area is also a major center for commercial activities such as finance, retail and services. The Local Plan 1996-2010 for Sungai Petani has identified Sungai Petani Town's role as the major hub for trade to be strengthened by upgrading its image. Hence, new development for trade areas is encouraged particularly in the town center. The mushrooming of residential areas in Bandar Aman Jaya and Bandar Utama have also significantly increased the demand for commercial floor space in Sungai Petani Town.

The number of establishments located in Sungai Petani comprises an average of 70% of the total commercial establishments within the District. There is a significant increase of commercial establishments from 978 in 1994 to 3,172 in 1998, with the number of establishments growing steadily over the years.

Good demand for commercial property has led to the prices of commercial property rising for all types of commercial units as shown below.

Year	Price of Shop-houses				
	Prewar	1 & 1 ½ story	2 & 2 ½ story	3 & 3 ½ story	4 story
1994	400,000	60,000	150,000	300,000	500,000
1998	460,000	130,000	230,000	350,000	n.a.

Source: Property Market Report 1994 and 1998

As a consequence of the economic downturn, supply of commercial units exceeded demand. For example in 1998, the total stock of retail space shot up by 16.4% against an increased demand for only 7,840 sq.m. worsening the already vacancy situation at 26.9% in 1997 to 34.1% in 1998. This led to a further fall in rental rates as well as a further weakening of prices (1998 property Report).

(2) Melaka

The study area has a well developed industrial base. In line with the policy to make Melaka an industrial state by 2010, there is a high concentration of industrial activities in the study area and new industrial projects such as the Composite Technology Industry which will focus on the manufacture and repair of light aircraft has been identified at Bt. Berendam.

Industrial estates are developed by the State Economic Development Corporation and the private sector (refer to Figure II-2). Out of the total area of 1,800 ha developed as industrial estates, 30.8% were developed by SEDC and the remaining by private developers.

Industrial Estate in Melaka Tengah

(Unit: ha)

Designated Industrial Estates	Developed Area	Saleable Area	Area Sold	Vacant Land
1) SEDC Industrial Estates	554.25	410.74	408.10	2.64
2) Prive Industrial Estates	1246.40	1139.15	645.85	493.30
Total	1800.65	1549.89	1053.95	495.94

Source: State Economic Development Corporation (SEDC) Melaka, 31.3.1999

There is a strong preference for industrial estates developed by SEDC because of the better facilities available. In 1999, not all the land zoned for industrial development have been taken up by industrialists. There are approximately 496 ha yet to be taken up mainly in the private industrial estates.

Melaka Tengah remains the most popular location for investors and prices of industrial land in Melaka Tengah has steadily increased due to better road infrastructure and industrial facilities to encourage higher influx of investment to Melaka. The economic slowdown has caused prices in some of the Estates to drop quite sharply.

Most of the industrial activities in these industrial estates are wood-based, furniture, and metal products. The Batu Berendam Free Trade Zone however has been able to attract a number of labor-intensive industrial activities such as electronic and textile industries due to early head-start in obtaining cheaper labor in the region, an input which is fast becoming scarce in the region. The followings table summarizes the type of industry in the Study Area, where 47% of the industries are in three major categories, including wood based (27%), metal based (13%) followed by rubber based (11%).

Type of Industry	Share
(1) Wood Based	27%
(2) Metal Based	13%
(3) Rubber Based	11%
(4) Machinery	9%
(5) Food	5%
(6) Textile	4%
(7) Others	31%

Source : Property Market Report 1998

The study area is also the main commercial center in the state having 68% of the total commercial establishments in the District of Melaka Tengah. The commercial sector especially wholesale and retail trade in the study area traditionally have played a supportive role to the government's policy of promoting industries and tourism. The level of development and modernization in this sector has however, lagged behind national and global developments as described below:

- (a) Although this sector contributed a high proportion of the state GDP in the 1970s and 1990s, its share has declined especially the wholesale, retail and restaurant sub-sector. Consequently the commercial sector has a high potential to be modernized and to become more dynamic in line with the development thrusts given especially to the industrial sector.
- (b) The commercial sector in the study area is also complex and diverse ranging from the highly organized and structured businesses to the highly unorganized petty trading and small-scale enterprises.
- (c) In terms of employment however, a distinctive feature is that the commercial sector in the study area is highly labor intensive. However many are employed in small businesses, in the informal sector as well as petty trading.

The total area used for commercial activities is very small in the study area making up only 1.3% of the total land use. Most of the commercial establishment (90 percent) are found in Melaka town. However there has been new commercial stock added especially in small local townships spread in the outskirts of the historic town center.

One of the important targets in the Local Plan is to enhance the role of Ayer Keroh from a tourism center to administration and commercial center. As a result, Ayer Keroh is gradually emerging into a new growth center for commerce in the study area. Other growth centers are at Paya Rumput and Sungai Udang.

Demand for commercial property, especially in 1995 and 1996 has been good. According to the Property Market Report (1996), retail properties to a certain extent

were mostly purchased by investors from outside Melaka State as prices were lower compared to similar units in Kuala Lumpur and Johore Bahru.

3. REGIONAL DEVELOPMENT STRATEGIES

3.1 State Level

According to the Seventh Malaysia Plan, the overall objective of regional development is to ensure a more balanced development in terms of better distribution of the benefits of development across and within states in Malaysia. Generally, states located along the western corridor of Peninsular Malaysia grew faster than the national average due to strong growth of the secondary and tertiary sectors in these states. The other states whose economies continued to rely on primary based activities showed moderate rates of economic growth.

(1) Kedah

Recent developments in terms of infrastructure, industrialization, tourism and the establishment of the Northern Growth Triangle (IMT-GT) opened new vistas for Kedah's economic development. These developments are likely to influence the economic trend and growth prospects of the state in the future. The main factors which increase the potential development of Kedah are summarized as follows:-

- (a) The North-South Expressway which stretches from north to south links the state's major industrial centres including Sungai Petani, Alor Star, Gurun and Bukit Kayu Hitam. It provides an alternative linkage (to Federal Route 1) joining Sungai Petani to Penang and down to Kuala Lumpur in the Central Region to Johore Bahru in the south and to Singapore.
- (b) Another Highway which helps to open Kedah's interior areas is the East-West Highway which links Penang to the East Coast of Malaysia and cuts across the state at Lunas, Kulim and joins Baling at Kuala Pegang) to Jeli and Kota Bahru in Kelantan.
- (c) The establishment of the Kulim Hi-Tech Park spearheads the development of a global high technology, highly advanced industrial environment.
- (d) The Petronas gas pipeline passes through Kedah to Southern Thailand provides opportunities for large scale industrialization in the state.

- (e) The establishment of IMT-GT provides opportunities for regional co-operation, with a market of 20 million people. The potential sectors of collaboration are tourism, industry, agriculture and telecommunications

According to the Kedah Action Plan (UNDP), regional development strategies would take into account the above and the need to realign regional development which has traditionally been concentrated in Southern Kedah. The main framework for spatial planning was the strategy of “*concentrated deconcentration*” that is, selecting a few locations spread over various parts of State with a high degree of concentration of population and economic activities with real growth potential e.g. Alor Setar, Kulim, Sungai Petani and Kuah.

(2) Melaka

Melaka’s strategic location in the central region of Peninsular Malaysia should enable it to take advantage of spillover development effects from the neighboring states of Negri Sembilan, Selangor and Johor. Towards this end it aims to become a developed industrialized state by 2010. According to the state’s vision, the whole state would be fully industrialized and urbanized by 2010 when it hopes to achieve “City State” status.

The Structure Plan for Majlis Perbandaran Melaka Bandaraya Bersejarah identified the following three main development corridors in Melaka Tengah District for potential development (refer to Figure II-3):

- (a) The Town Center - Ayer Keroh Corridor
- (b) Town Center Tanjung Kling Corridor
- (c) Town Center-Semabok/Alai Corridor

These three corridors were planned to divert development pressures away from the town center. The first two development corridors will be given priority during the first phase, between 1995-2000 whereas development in the third corridor is targeted for the period 2000-2010. Tourism and industrial projects have been earmarked for the first corridor whilst development of the second corridor will emphasize industrial projects. The third corridor is earmarked for the development of small and medium scale industries.

Industrial development is mainly focused in the district of Melaka Tengah because of its strategic location, availability of skilled labor and excellent infrastructure facilities.

Besides Melaka Tengah, Alor Gajah District has also been ear-marked to be developed into an industrial area.

The existing development scenario shows that the Melaka-Ayer Keroh corridor is developing according to the Structure Plan. Rapid on site development however has led to new corridors for development which follow the trend of industrial development along (i) Ayer Keroh - Gapam and (ii) Cheng to Sungai Udang corridors.

3.2 Study Area

The development strategies for the study areas are as described hereinafter.

(1) Sungai Petani Study Area

The Study area is located within MPSP (Majlis Perbandaran Sunagi Petani) area and is part of the town of Sungai Petani. It is strategically located in an area which is the focus of growth in the state. The MPSP area has excellent road network and is served by three major arteries, namely Federal Road 1, North-South Highway and the railway. It also enjoys close proximity to port services at Butterworth and freight services at Alor Setar and Penang Island.

The effect of development in Penang in particular has tremendous spillover effects to MPSP. This is not only due to its well connected transportation system and infrastructure but also due to the rapid expansion of industrial activities in Penang Island as well as Seberang Perai. The southern Kedah areas such as MPSP generally offer lower land cost and labour wages as compared to Penang Island and are thus competitive and able to attract foreign investments (Property market Report, 1997).

It is expected that the spatial expansion of industrialization would stabilize in 20 years time forming an industrial growth corridor that stretches from Penang Island to Sungai Petani and Alor Star. The study area is located well inside the urban development corridor which has been identified in the Kuala Muda Structure Plan to be concentrated in a conurbation comprising Gurun-Padang Lembu-Bedong-Sungai Lalang-Semeling-Sungai Petani-Bukit Selambau-Pinang Tunggal -Tikam Batu (refer to Figure II-4).

Within this conurbation. Sungai Petani town has been identified to play a major role in economic development and functions as a major industrial, commercial, financial, administrative and regional recreational center in the state. Sungai Petani is expected

to experience accelerated growth with industrial, housing and trade activities concentrated within its satellite towns of Bandar Amanjaya, Tikam Batu and Pinang Tunggal.

The Sungai Petani Local Plan (1996-2010) enhances the role and function of Sungai Petani as a Sub Regional Center as can be seen in the following list and illustrated in Figure II-5.

Hierarchy	Settlement/Center	Function
State sub regional	Sungai Petani	Commercial sub-center, residential, industrial with supporting industries, social services center
Major growth centers	Sungai Lalang Gurun Bedong Tikam Batu	Commercial sub-center, residential center, industrial center with supporting industries, social services center
Minor growth centers	Tanjung Dawai Semeling Jeniang Bukit Selambau Padang Lembu Kota Kuala Muda Pinang Tunggal Merbok Kampung Bujang	Local commercial center, agriculture based, small scale and cottage industrial area, social services center
Rural Centers	Kampung Bukit Tukang Jusuh	Residential center, minor commercial center, basic social services

Source: Majlis Perbandaran Sungai Petani Structure Plan, 1991-2010

(2) Melaka Study Area

The study area is located in Melaka Tengah which is the focus of development in the state. Serving as the major trade and commercial center as well as being the administrative seat of the state government, Bandar Melaka has been identified within the hierarchy as a Regional Center Level II (refer to Figure II-6).

It is flanked by satellite towns such as Ayer Keroh, Semabok/Alai and Tanjung Kling. The major growth centers within the Study Area are at Paya Rumput, Sg. Udang. Tanjung Keling and Air Keroh.

Hierarchy	Center	Function
Regional Center Level II	Melaka Town	Administration, trade and services for State level, provides high order goods and services
Sub-Regional Center in Melaka	Alor Gajah Jasin	Trade and services for district level
Major Growth Center within Study Area	Paya Rumput, Tanjung Kling, Sungai Udang, Ayer Keroh	Offices, business complexes, retail, arcades/bazaar, shop-houses/office with a maximum of five stories height, central parking, public transport main terminal
Minor Growth Center within Study Area	Batu Berendam, Malim Jaya, Cheng, Bukit Rambai Krubong, Tanjung Minyak	Business complexes, shop-houses/office with a maximum of three stories height, arcades, site for market

Source : Melaka Structure Plan (1991-2010) and MPMBB Local Plan (1996-2015)