

Appendix 2A**APPENDIX 2A****REVIEW OF CURRENT CONDITIONS –
DEMOGRAPHICS****1. Vision 2020, The Third Outline Perspective Plan (OPP3) and Eighth Malaysia Plan (RM-8)**

The National Vision Policy, Vision 2020, is a long-term plan aimed at developing the country into a “fully developed nation by the year 2020” in all dimensions: economically, politically, socially, spiritually, psychologically and culturally. The path to achieving this vision is through intensive and accelerated industrial development, an accelerated export-based manufacturing sector and service sector with emphasis on information technology.

Whilst Vision 2020 provides the long-term goals, OPP3 (2001-2010) is an instalment plan of Vision 2020 and provides the framework for achieving certain socio-economic targets within a ten-year period. Its central objective is national unity - to be achieved by enhancing regional balance, diversifying economic base of the less developed States into manufacturing and services in the agriculture sector, and improving urban-rural linkages.

RM-8 (2001-2005) identifies the growth strategies and directions for the next five years and confirmed the growth sectors of the economy, namely services and manufacturing. The trend of development in RM-8 is likely to reinforce concentration of industries and population in existing urbanised conurbations where the linkages and urban services and infrastructure already exist. For all areas, RM-8 has emphasised the need to enhance the quality of life and ensure that the principle of environmentally sustainable development is adhered to.

2. Implication of the National Plans on Urbanisation

Pegged on industrialisation, the three National Plans will have an immediate consequence on urbanisation and the development of urban areas, in particular the existing urban conurbations. Inevitably, the urban sector will continue to be the engine for economic growth and the dynamics for social change. To play that role effectively, the growing urban areas must be ensured of the necessary infrastructure and services, the required support administration and the appropriate policies. In the expedient pursuit of industrialisation and economic growth, there is a potential danger of making sacrifices that may become permanent detractions to Malaysian urban centres. One of these detractions could be a compounded solid (including industrial) waste problem. Therefore, it is incumbent to take steps to maintain a liveable urban environment. Proper and effective solid waste management that is in accordance with the best principles of public health, economics, engineering, conservation, aesthetics and environmental considerations must be given priority.

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3. Rancangan Fizikal Negara (RFN)

Whilst the National Plans set the strategy and targets for national development, there is, however, little discussion on geographical location or physical planning to accommodate the distribution of industrial development and future population. However, RM-8 has identified the Rancangan Fizikal Negara (RFN) as the tool to provide the necessary physical planning and management direction¹, firstly, by translating the various aspects of the national vision, strategies and targets into spatial or physical form and secondly, by anticipating the impact of the National Plans on urban development, the pattern of settlements, and the provision of infrastructure, utilities and services.

4. Planning Framework

i. Hierarchy of Urban Centres

There is a need to understand the urbanisation trend in the country to anticipate the implications of urban growth on waste generation, the spatial distribution of such generation, land required to accommodate the facilities necessary to manage solid waste, and the distribution and location of future waste management facilities. Appropriate location of waste management facilities is particularly important, firstly, to reduce or minimise the impact on water catchment areas for dams and water intakes, environmentally sensitive areas for life support system and residential areas, and secondly, to ensure optimum coverage of service areas.

The Federal Department of Town and Country Planning has a functional hierarchy of urban centres for Peninsular Malaysia (**Table 1**) designed to meet the needs for evaluating the adequacy of services and infrastructure and to provide the criteria to justify for improvement when such services and infrastructure are not in place or not adequate to the level of the centre. In the light of urban population increases and differences in the growth of urban centres over the past two decades, the urban hierarchy of 1989 was updated in 2000 taking into account only those centres with 80,000 population and above (**Table 1**). In addition to population, the updated urban hierarchy also took into account other criteria that included: the centrality of the centres within their respective regions; the capacity of these centres to provide their regions with functional services, communications, business administration, higher levels of health and educational services; an emerging suburban or conurbation forming around these centres; and the ability of these centres to stimulate economic development of their regions.

¹ Eighth Malaysia Plan, page 154

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Table 1: Updated National Functional Urban Hierarchy, 2000

Level	Functional Hierarchy	Characteristics	Urban Centre	Population (Year 2000)
1	National Centre	Metropolis	WP Kuala Lumpur	1,379,310
2	National Regional Centre	Metropolis	Johor Bahru Georgetown Kuantan	630,603 180,573 289,395
3	State Centre	State capitals	Ipoh Shah Alam Seremban Kuala Terengganu Kota Bahru Alor Star Melaka Kangar	574,041 319,612 290,999 255,109 252,714 186,524 149,518 54,390
4	State Sub-Centre	Urban (major towns)	Klang Petaling Jaya Subang Jaya Ampang Jaya (Ulu Langat) Kajang Taiping Selayang Baru Batu 9 Cheras Sungai Petani Bukit Mertajam Kluang Ampang Jaya (Gombak) Batu Pahat Kulim Sungai Ara (Pulau Pinang) Muar Butterworth Gelugor Ayer Itam (Pulau Pinang) Sekudai Pasir Gudang	631,676 438,084 423,338 348,794 207,322 199,330 187,733 177,521 174,609 165,422 134,880 126,459 123,237 117,454 112,293 102,273 99,227 98,748 95,895 90,405 89,317

Source: Table B4.3, Package B, Chapter 4, Rancangan Fizikal Negara, JPBD, 2001
(Extrapolated from the Preliminary Population Count Report for Rural and Urban Areas, Census 2000)

ii. Special Feature Towns

In addition to the existing urban centres, there are other towns that are economically significant, even though they do not have the 80,000 population cut-off point used to classify as area as “urban”. Though these towns are not listed in the Federal Town and Country Planning Department’s updated functional hierarchy of urban centres, nonetheless, they are considered in the current solid waste study due to their inherent or potential national significance and the fact that they might be future engines of economic growth to the regions where they are located. These towns include:

Appendix 2A**a) Border Towns**

Though not industrial in nature, the border towns, namely, Bukit Kayu Hitam, Padang Besar and Rantau Panjang may be the locations of future international economic projects. These towns, located at the border with Thailand - a member of the Indonesia-Malaysia-Thailand Growth Triangle – could potentially become economically significant once some of the following projects take off: the gas pipeline project linking Southern Thailand to Malaysia, the Common Border Wholesale Markets in Kedah and Perlis, the landbridge, telecommunications, tourism, hinterland development and human resource development projects.

b) Tourism Towns

Other towns like Port Dickson, Mersing, Kemaman, Kuah, Tanah Rata and Fraser's Hill are tourist-dependent and whose environmental degradation might jeopardise their special appeal.

c) Special Industry Towns

Special industry towns include Kerteh (oil industry), Cyberjaya (knowledge-based industry), and other towns currently being planned by the various State Governments, for example, Proton City (motor industry) in Selangor, though nascent in their development, will eventually grow, expand and fulfil a specific national role and objective.

d) Future Transport/Communication Nodes

Future communications and transports nodes that include Temerloh-Mentakab, Kuala Lipis and Gua Musang will attain their economic and functional importance and population size once the new transportation developments are in place.

e) Special National Interest Centres

Putrajaya and Cyberjaya form a group of potentially important urban centres that are assigned special roles in the nation's development. When fully developed, these national interest urban centres will have an increasingly crucial role and position in the future hierarchy of urban centres.

5. Regional Hierarchies

To minimise duplication of infrastructure and services as well as to ensure optimum service coverage, the Draft RFN has divided the Peninsular Malaysia into four (4) regions.

- i. Central Region comprising Selangor, Negeri Sembilan and Melaka;
- ii. Northern Region comprising Pulau Pinang, Kedah, Perlis and Perak;
- iii. Southern Region covering Johor
- iv. Eastern Region comprising Pahang, Terengganu and Kelantan.

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The population distribution in each of these regions is shown in **Figure 1** to **Figure 4** and the comparative population distribution in Peninsular Malaysia is shown in **Figure 5**. Regionalisation of basic urban services may overcome problems related to inadequacies in forward planning, poor administration and management, and lapses in pollution control currently faced by some Local Authorities in the dispensation of these services.

6 Urbanisation Trend

Urbanisation rate is a measure of the population that resides in “urban areas”² as opposed to rural areas. The urbanisation rate of the regions, States and major urban centres is shown in **Tables 2, 3** and **4** respectively.

Peninsular Malaysia experienced rapid urbanisation over the past decades whereby the proportion of people staying in urban areas increased from 28.7% in 1970 to 65% in 2000. The trend favoured urbanisation along the west coast as opposed to regions along the east coast and the northern border states. The fastest growing urban centres were those clustering around the main urban centres of WP Kuala Lumpur, Petaling Jaya-Subang Jaya-Klang, Penang and Johor Bahru. By 2000, the urban conurbation of these four major urban centres accounted for at least 64% of the Peninsular Malaysia’s urban population.

Table 2: Urbanisation Rate by Regions, 1970 – 2000

Region	Urbanisation Rate			
	1970	1980	1991	2000
Central	35.2	50.6	72.3	84.8
Southern	28.0	35.2	45.0	63.9
Northern	27.8	30.0	51.4	56.9
Eastern	19.4	31.0	35.2	40.7

Source: Department of Statistics, Preliminary Count Report for Rural and Urban Areas Census 1970, 1980, 1991, 2000

² An urban area, as defined by the Department of Statistics, is an area of 10,000 population or more or a contiguous built-up area located at the periphery of established town boundaries, where at least 60% of the related population base are engaged in non-agricultural activities and at least 30% of their housing units are equipped with modern toilet facilities.

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Table 3 : Urbanisation Rate by States, 1970 – 2000

State	Urbanisation Rate				
	1970	1980	1991	2000	AAGR% 1991-2000
WP Kuala Lumpur	100.0	100.0	100.0	100.0	1.4
Selangor	26.2	34.2	75.2	88.3	7.8
Pulau Pinang	51.0	47.5	75.0	79.5	2.2
Melaka	25.1	23.4	38.7	67.3	8.1
Johor	26.3	35.2	47.8	63.9	5.6
Perak	27.5	32.2	53.6	59.5	2.0
Negeri Sembilan	21.6	32.6	42.0	55.0	5.0
Terengganu	27.0	42.9	44.5	49.4	2.7
Pahang	19.0	26.1	30.4	42.1	5.5
Kedah	12.6	14.4	32.5	38.7	4.0
Perlis	0.0	8.9	26.6	33.8	3.5
Kelantan	15.1	28.1	33.5	33.5	1.0
Peninsular Malaysia	28.7	37.2	54.3	65.2	4.6

Source: Department of Statistics, Preliminary Count Report for Rural and Urban Areas
Census 1970, 1980, 1991, 2000

Urbanisation rate = Percentage of population living in urban areas

AAGR = Average Annual Growth Rate

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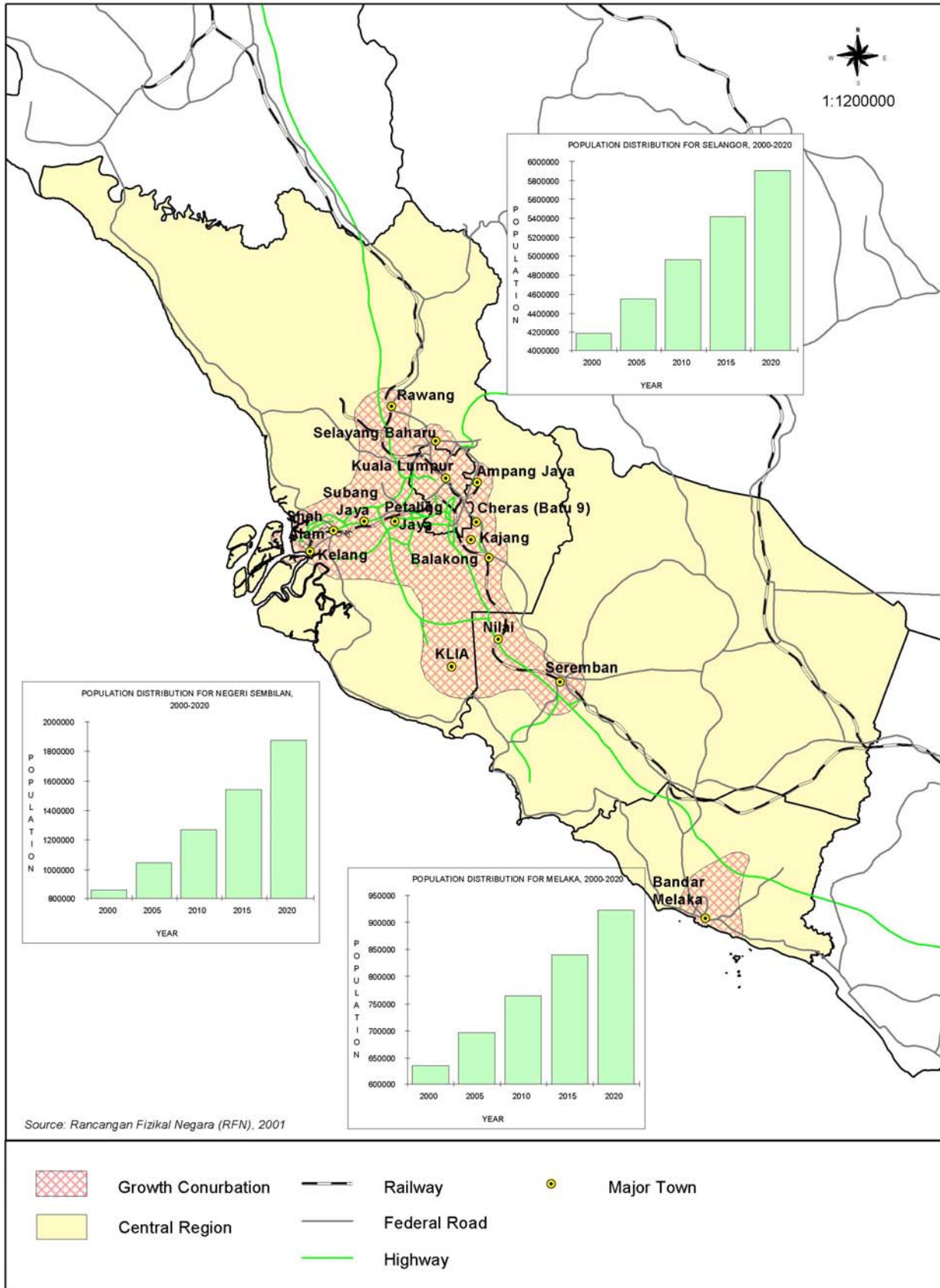
Table 4: Population of Growing Urban Centres, 1991 – 2000

Urban Centre	Population		% Growth	Ranking Most Rapid Growth
	1991	2000		
Subang Jaya	79,002	423,338	435.9	1
Sekudai	19,556	93,405	337.6	2
Batu 9 Cheras	50,952	177,521	248.0	3
Pasir Gudang	28,161	89,317	217.2	4
Kulim	52,328	117,454	124.5	5
Kajang	100,497	207,322	106.3	6
Shah Alam	158,439	319,612	103.0	7
Gelugor	54,880	98,748	80.0	8
Ampang Jaya (Ulu Langat)	195,160	348,794	78.7	9
Klang	368,379	631,676	71.5	10
Sungai Ara	68,190	112,293	64.7	11
Seremban	193,237	290,999	50.6	12
Sungai Petani	116,977	174,609	49.3	13
Batu Pahat	84,100	123,237	46.5	14
Muar	70,434	102,273	45.2	15
Kuantan	202,445	289,395	42.9	16
Johor Bahru	441,703	630,603	42.8	17
Selayang Baru	134,197	187,733	39.9	18
Kluang	98,669	134,880	36.7	19
Bukit Mertajam	121,992	165,422	35.6	20
Ampang Jaya (Gombak)	95,292	126,459	32.7	21
Melaka	113,752	149,518	31.4	22
Petaling Jaya	350,995	438,084	24.8	23
Ipoh	468,841	574,041	22.4	24
Ayer Itam	79,410	95,895	20.8	25
WP Kuala Lumpur	1,145,342	1,379,310	20.4	26
Alor Setar	164,444	186,524	13.4	27
Kuala Terengganu	228,119	255,109	11.9	28
Kangar	48,638	54,390	11.4	29
Kota Bahru	234,581	252,714	7.7	30
Butterworth	93,906	99,227	5.7	31
Taiping	200,324	199,330	-0.5	32
Pulau Pinang (Georgetown)	219,603	180,573	-17.8	33

Source: Dept of Statistics, Preliminary Count Report for Rural and Urban Areas Census 1991, 2000

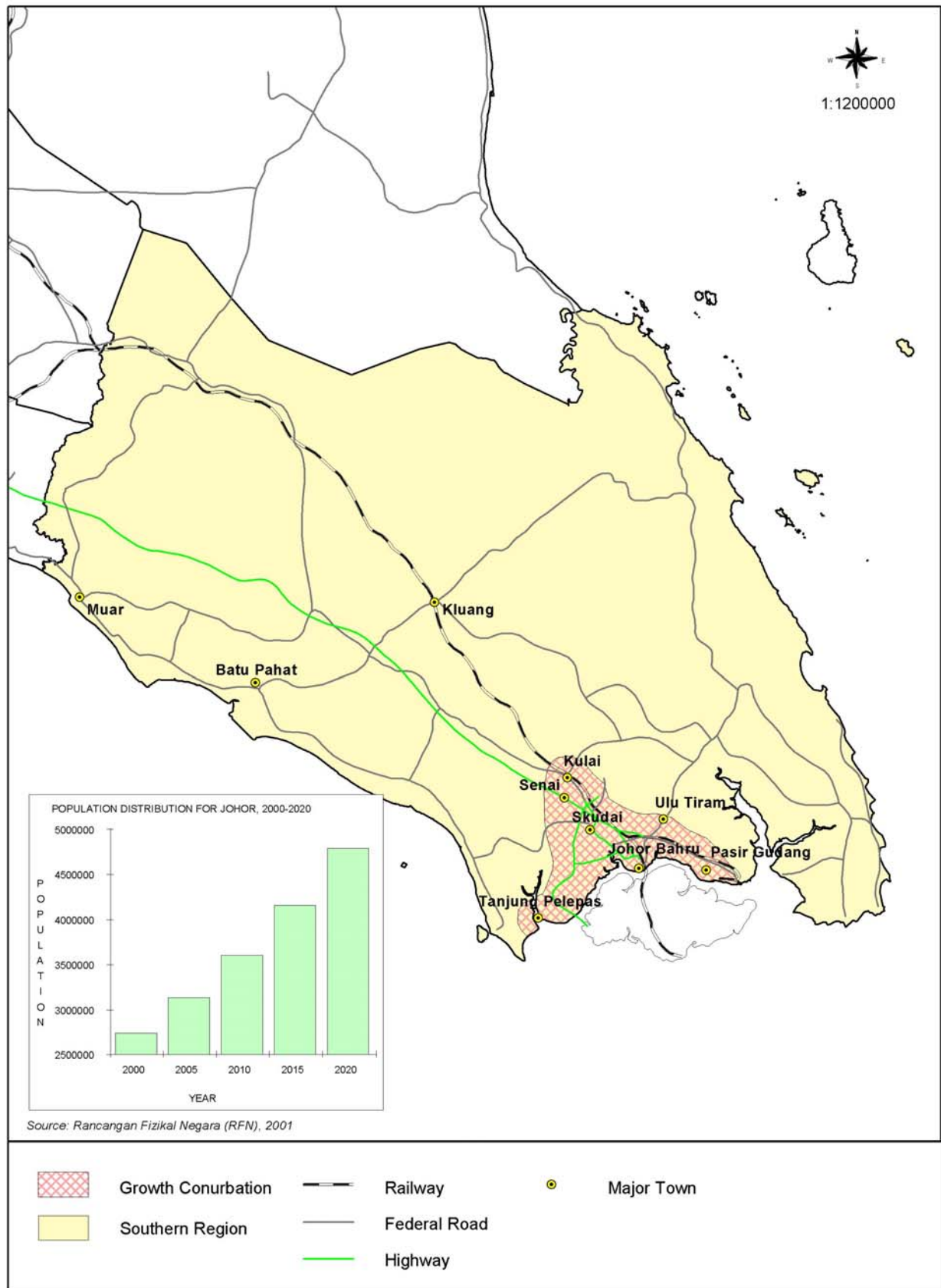
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Figure 1: Population Distribution for Central Region, 2000-2020



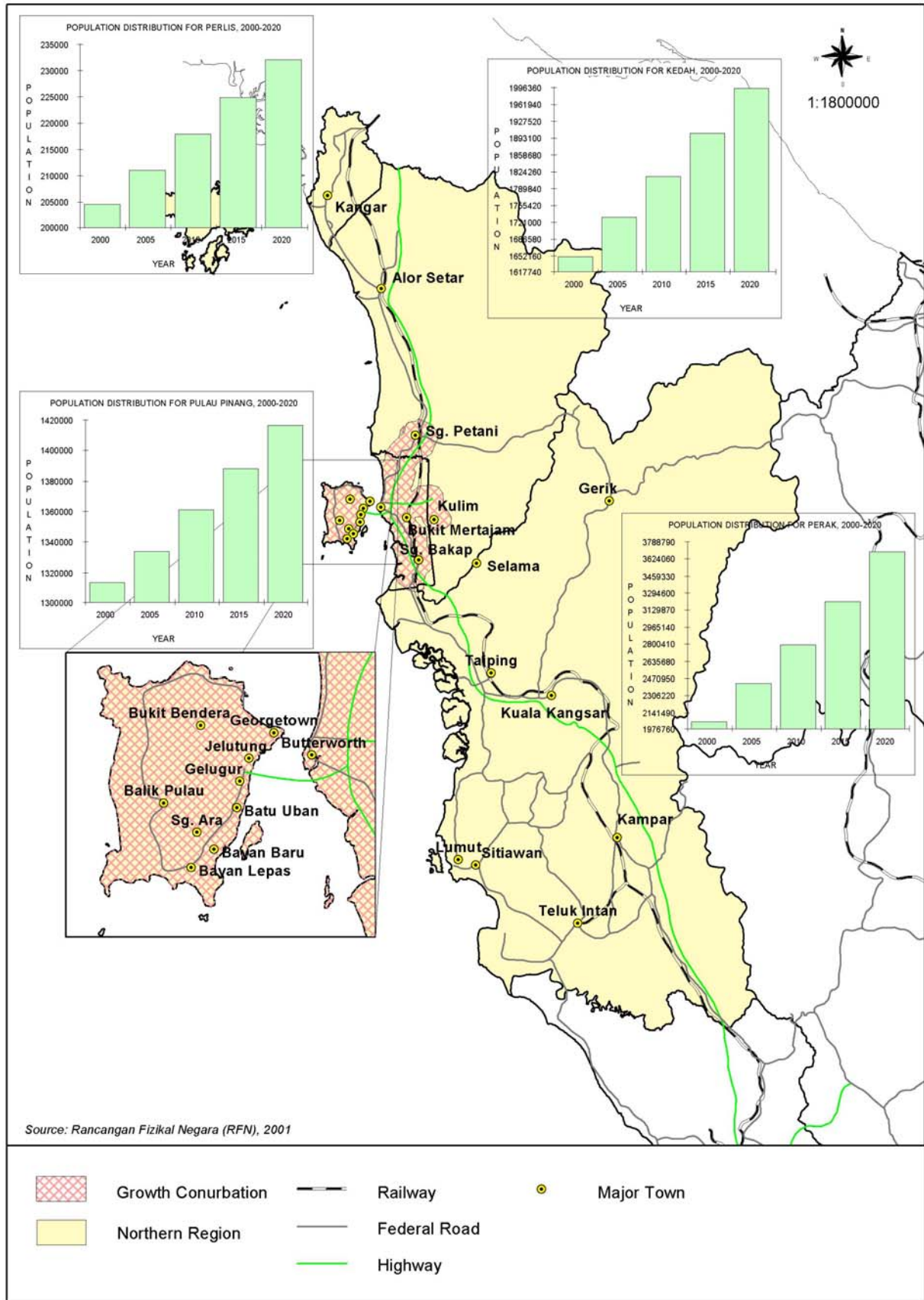
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Figure 2: Population Distribution for Southern Region, 2000-2020



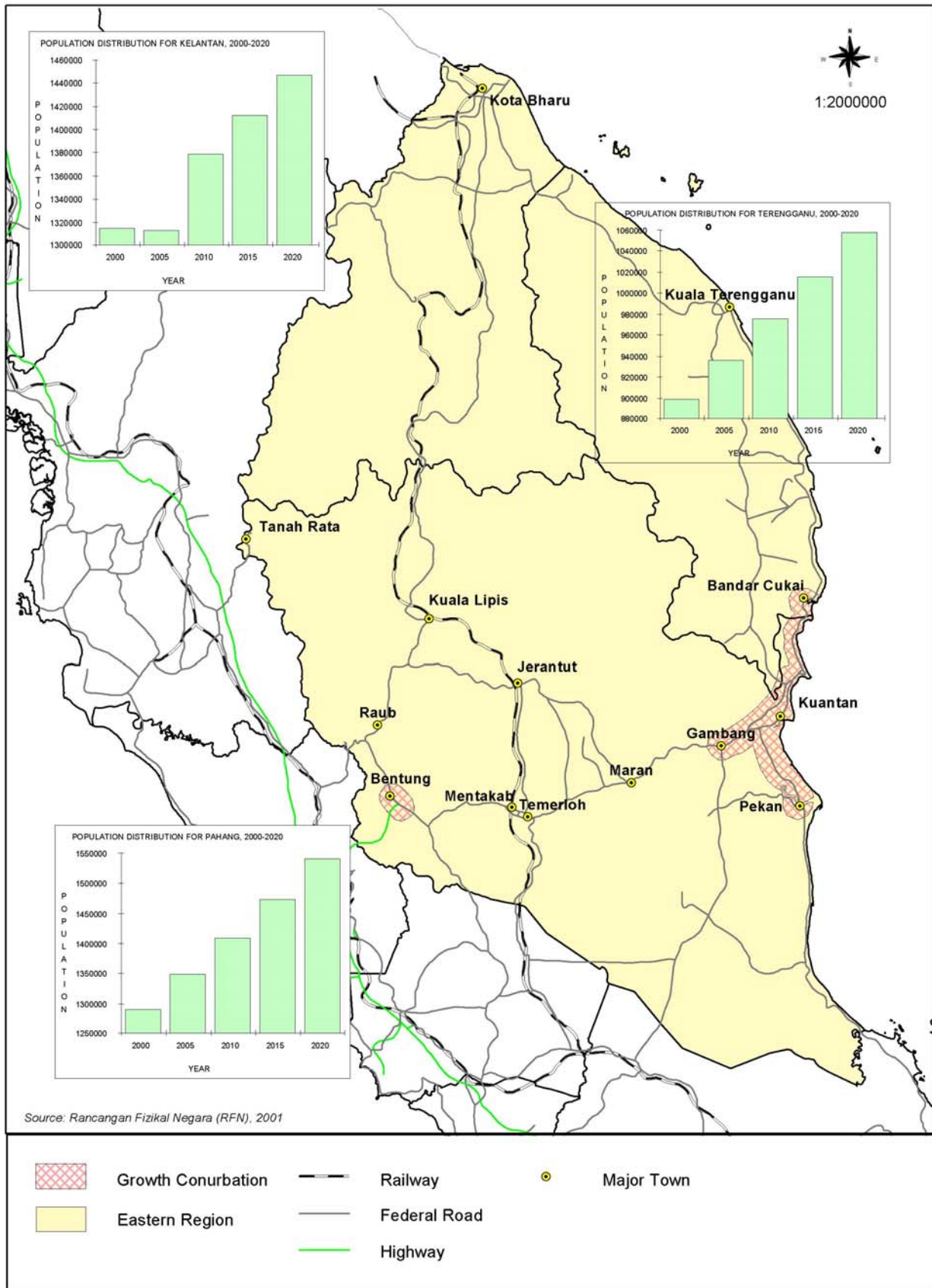
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Figure 3: Population Distribution for Northern Region, 2000-2020



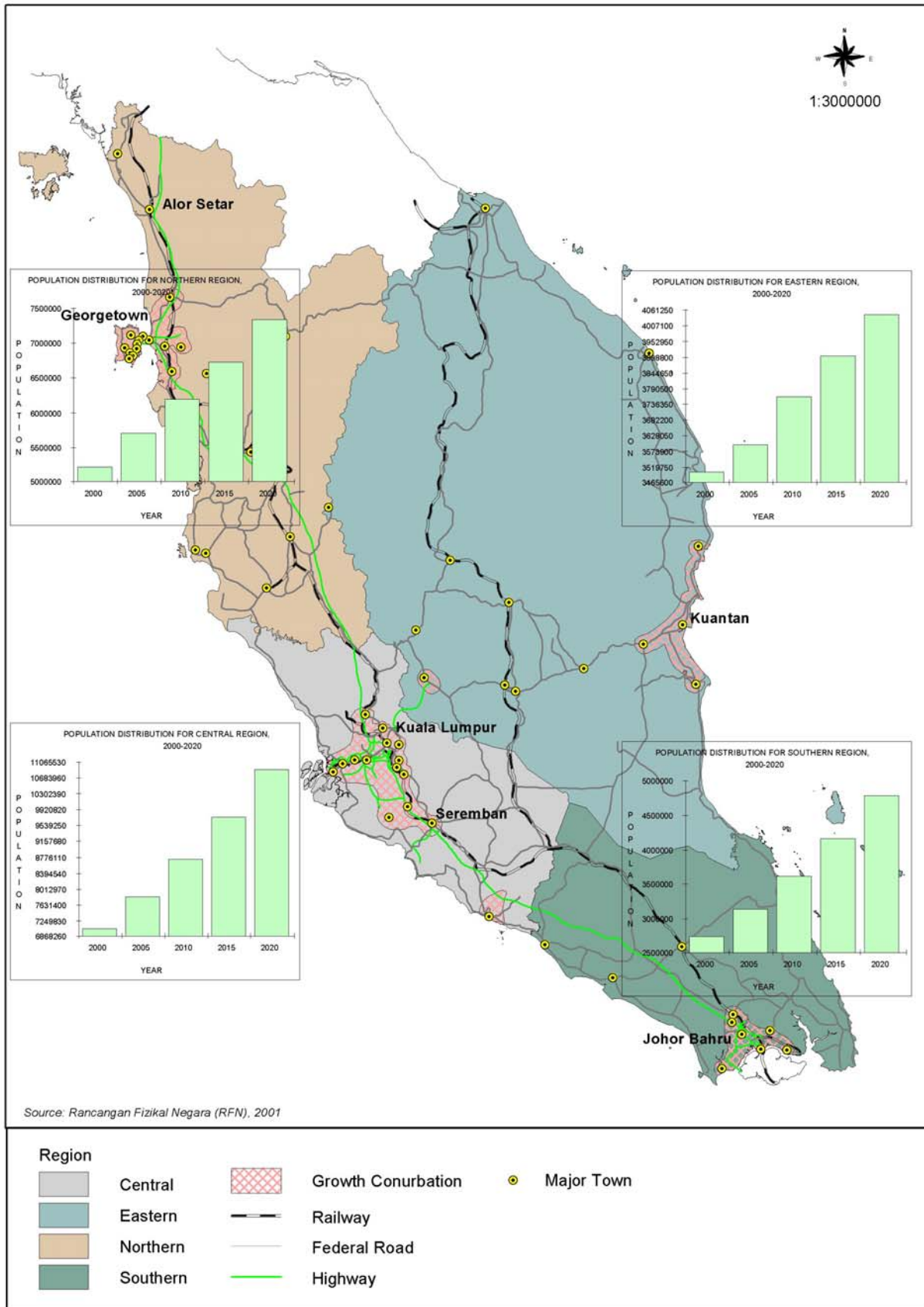
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Figure 4: Population Distribution for Eastern Region, 2000-2020



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Figure 5: Population Distribution by Regions, 2000-2020



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i. Central Region

Benchmarked with the EU countries and Japan where the urbanisation rate ranges between 80% to 95%, WP Kuala Lumpur and Selangor and the Central Region in general are deemed fully urbanised or “developed” based on the Year 2000 Census. The Central Region has an urban conurbation centred on WP Kuala Lumpur, and stretches from Rawang in the north to Port Klang in the west and Seremban in the south. Refer to **Figure 1**. Its “developed” status is attributed to the tremendous growth of Subang Jaya, Shah Alam, Klang, Kajang and Cheras from 1991 – 2000. Other smaller urban centres within the Central Region also indicated remarkable urban growth that far exceeded both the national average urban population growth rate as well as the growth rate of the major urban centres. Rawang increased its population from 24,000 in 1991 to 65,000 in 2000 (170% increase within one inter-censal period); Nilai grew from 2,000 in 1991 to 30,000 and Belakong in Ulu Langat from less than 5,000 to 50,000 within one inter-censal period.

Census 2000 indicates that the Central Region has a population of 6,694,600, of which 1,305,800 reside in WP Kuala Lumpur, 3,952,800 in Selangor and the balance in Melaka and Negeri Sembilan. According to the Draft National Spatial Plan, the WP Kuala Lumpur conurbation has an urban population of at least 4.8 million people by Year 2000, which represents about 26% of the population in Peninsular Malaysia or 40% of the total urban population. If the urban population of Melaka and the minor urban centres of Selangor and Negeri Sembilan are included in the conurbation, the estimated urban population for the Central Region for Year 2000 is close to 5.9 million.

ii. Southern Region

The Southern Region, dominated by Johor, shows an intermediate stage of urbanisation. Much of its urban growth over the past decade was contributed by tremendous growth in the Local Authority areas of Johor Bahru, Pasir Gudang, Sekudai, Muar, Batu Pahat and Kluang. Refer to **Figure 2**. Further, according to Census 2000, other “minor towns” such as Senai, Ulu Tiram and Kulai have grown significantly since 1991. During one inter-censal period Senai grew from 18,000 to 45,000 from 1991-2000, Ulu Tiram from 22,000 to 50,000 and Kulai from 30,000 to 50,000.

Total population in Johor is 2,584,900 according to Census 2000. Using base data from the Department of Statistics, the Draft National Spatial Plan in May 2002 estimated that the Johor Bahru conurbation, spanning an area from Tanjung Pelepas in the west to Kulai in the north and Pasir Gudang in the east, has an urban population of at least 1 million people. In fact, the total urban population for the Southern Region in Year 2000 could be as high as 1.65 million if the urban population of the other urban centres and towns, like Batu Pahat, Muar, Segamat and Kluang are included in the conurbation.

iii. Northern Region

Despite dramatic urban growth in Pulau Pinang over the past two decades especially in the suburbs of Georgetown, the urbanisation rate of 57% in Northern Region is clearly affected by the relative low urbanisation of Kedah and Perlis. The fact that

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both Georgetown and Butterworth, the traditional urban growth centres of the Northern Region, have exhausted their developable land and are no longer able to support or accommodate any population increase without undergoing extensive urban renewal and redevelopment.

The Northern Region has a population of 4,973,942 according to Census 2000. With Pulau Pinang (Georgetown and Butterworth) as the centre, the Northern Region urban conurbation stretches from Sg. Petani in the north to Kulim in the east and Sg. Bakap in the south. Refer to **Figure 3**. With reference to Census 2000 figures, the Draft National Spatial Plan estimates that the Northern Region urban conurbation has a population of at least 1.2 million or 23% of the region's total population. However, the total urban population can be as high as 2.9 million or 56% of the region's population if other urban centres like Alor Star, Ipoh and Taiping and minor urban centres and towns within the region are included.

iv. Eastern Region

The Eastern Region is still distinctly agricultural in nature, but with an emerging industrial base developing around Kuantan. The Kuantan conurbation stretching from Cukai in the north to Gambang in the west and Pekan in the south, has an urban population of about 350,000 or about 10% of the region's population of 3,500,215, according to the Draft National Spatial Plan. Refer to **Figure 4**. In contrast, Kota Bahru, Kuala Terengganu and other intermediate towns in the Region generally registered growth rates that were lower than the national average rate of natural increase. Unless these towns increase their economic efficiency, their population will continue to decline in favour of other Regions.

7. Existing Population Distribution and Rural-urban Split

Based on Census 2000, the population for the States within Peninsular Malaysia over the last two inter-censal periods is shown in **Table 5** and the rural-urban split shown in **Table 6**.

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Table 5: Distribution of Population (Number & Percentage) and Average Annual Growth Rate (%) by State, 1980, 1991 and 2000

State	Population Size			Percentage Distribution (%)			AAGR (%)	
	1980	1991	2000	1980	1991	2000	1980-1991	1991-2000
Johor	1,638,229	2,162,357	2,584,997	14.3	14.6	14.8	2.5	2.6
Kedah	1,116,140	1,364,504	1,571,077	9.8	9.2	8.9	1.8	2.1
Kelantan	893,753	1,207,684	1,287,367	7.8	8.2	7.1	2.8	0.9
Melaka	464,754	529,199	605,239	4.1	3.6	3.4	1.2	2.0
Negeri Sembilan	573,578	722,017	829,774	5.0	4.9	4.6	2.1	1.9
Pahang	798,782	1,081,148	1,229,104	7.0	7.3	7.0	2.8	1.9
Perak	1,805,198	1,974,893	1,973,368	15.8	13.3	11.1	0.8	0.4
Perlis	148,276	190,182	198,288	1.3	1.3	1.1	2.3	0.8
Pulau Pinang	954,638	1,116,801	1,231,209	8.4	7.5	7.1	1.4	1.8
Selangor	1,515,537	2,413,567	3,945,594	13.3	16.3	22.6	4.3	6.1
Terengganu	540,626	808,556	880,234	4.7	5.5	4.9	3.7	1.2
WP Kuala Lumpur	977,102	1,226,708	1,305,792	8.6	8.3	7.4	2.1	1.3
WP Putrajaya	-	-	7,223	-	-	-	-	-
Peninsular Malaysia	11,426,613	14,797,616	17,649,266	100.0	100.0	100.0	2.4	2.5

Source: Department of Statistics, Census 1980, 1991 and 2000

Note: Average Annual Growth Rate

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Table 6: Rural and Urban Split by States, 2000

State	Number			Percentage		
	Urban	Rural	Total	Urban	Rural	Total
Johor	1,751,260	833,737	2,584,997	67.8	32.2	100
Kedah	638,456	932,621	1,571,077	40.6	59.4	100
Kelantan	439,860	847,507	1,287,367	34.2	65.8	100
Melaka	427,887	177,352	605,239	70.7	29.3	100
Negeri Sembilan	472,958	356,816	829,774	57.0	43.0	100
Pahang	542,406	686,698	1,229,104	44.1	55.9	100
Perak	1,220,485	753,883	1,973,368	61.8	38.2	100
Perlis	69,104	129,184	198,288	34.9	65.1	100
Pulau Pinang	1,044,192	187,017	1,231,209	74.8	15.2	100
Selangor	3,707,155	238,439	3,945,594	94.0	6.0	100
Terengganu	444,020	436,214	880,234	50.4	49.6	100
WP Kuala Lumpur	1,305,792	-	1,305,792	100	-	100
WP Putrajaya	7,223	-	7,223	100	-	100
Peninsular Malaysia	12,070,798	5,578,468	17,649,266	68.4	31.6	100

Source: Department of Statistics, Census 2000

High average annual growth rates were registered for Selangor (6.1%) and Johor (2.6%), which were significantly higher than the average of 2.5% for the Peninsular Malaysia. Concomitantly these States including Melaka also showed significant average annual urban growth rates ranging from 7.8% for Selangor, 5.6% for Johor and 8.1% for Melaka, as compared to 4.6% for the Peninsular Malaysia. Much of the growth, particularly in the urban areas of Selangor, Johor and Melaka, is attributed to in-migration from the rural areas, compared to the laggard States such as Kelantan, Perlis, Perak and Terengganu, which recorded much lower average annual growth rates ranging from 0.4% to 1.2%.

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8. Population Projections

The population levels, and the scale of commercial, industrial and service sector within a defined area or catchment largely determine the nature and volume of solid waste generated, and the type and scope of facilities required to manage the waste.

There are a number of documents on current and future population projections and their distribution over the Peninsular Malaysia. Population statistics that have been documented and employed in various studies include:

- (a) Department of Statistics (DOS) Population Projections, 2000 – 2020 (based on 2000 Census);
- (b) Population projections in *Structure Plans* (SP) reports prepared for Districts and generally for Year 1995 – Year 2010/2020;
- (c) Population projections in *Local Plans* (LP) reports prepared for Local Authority areas and generally for Years 1995 – Year 2010/2020;
- (d) Population projections undertaken for the *National Water Resources Study* (NWR) prepared in 1999 for States, Districts and selected urban areas, spanning 1991 – 2050 and based on 1991 Census information.
- (e) Population projections undertaken for the study on the *Viability of Privatisation of Sewerage Services* (PSS) prepared in 2000, spanning 1999 – 2035 and based on 1991 Census information; and
- (f) Population projections prepared for the RFN in 2000, spanning 2000 – 2020 and based on 2000 Census.

The documented projections have been reviewed and compared. The projections documented by SP, LP, NWR and PSS are based on 1991 Census information, and their adoption is not recommended because:

- (a) the estimates are based on 1991 Census;
- (b) the estimates for WP Kuala Lumpur and Selangor are significantly under enumerated compared to the 2000 Census figure;
- (c) the estimates for Kelantan and Terengganu are significantly over enumerated compared to the 2000 Census figure; and
- (d) the impact and implication of special national interest centres like Putrajaya and Cyberjaya and other mega-scale committed developments might not have been factored in.

For the purpose of this study, the population projections for the period 2000 – 2020 prepared by DOS in 2002 are adopted as the basis for modelling waste generation in the various States of the Peninsular. The reasons being as follow:

- (a) the projections are current and based on 2000 Census;
- (b) the projections have incorporated areas that were previously not regarded as part of an urban area; and
- (c) the projections have factored in changes to urbanisation and migration trends and the pull factor and employment potential of existing and emerging urban centres and their immediate conurbations.

Population projections prepared for the RFN were also referred to and comparisons made with projections by DOS to take cognisance of the implication certain national interest projects, e.g. Putrajaya and Cyberjaya, may have on the migration pattern, the potential employment opportunities certain industrial projects might generate and

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the implication of the policies, strategies, objectives and growth targets of Vision 2020, OPP3 and RM-8 on future urbanisation trend.

9. Population Distribution by States

By Year 2020, the Department of Statistics (DOS) has estimated a projected population of 27.68 million. The percentage increase in population levels varies from State to State as shown in **Table 7**. Population levels in Johor, Negeri Sembilan and WP Kuala Lumpur would grow between 50% - 100% over the plan period, whilst in overall terms (both rural and urban), the east coast States of Kelantan, Terengganu, and Pahang shall be comparatively much lower, registering growth rates of less than 1% per annum.

Table 7: Population Projection by State, 2000-2020

State	Population				
	2000	2005	2010	2015	2020
Perlis	198,300	211,100	245,600	270,800	298,600
Kedah	1,571,100	1,848,100	2,044,200	2,264,600	2,503,700
Pulau Pinang	1,231,200	1,468,800	1,609,900	1,750,900	1,889,200
Perak	1,973,400	2,256,400	2,440,900	2,653,700	2,882,600
Northern Region	4,974,000	5,784,400	6,340,600	6,730,000	7,574,100
Selangor	3,952,800	4,736,100	5,287,900	5,812,800	6,311,600
WP Kuala Lumpur	1,305,800	1,556,200	1,681,600	1,776,100	1,845,800
Negeri Sembilan	829,800	948,300	1,033,000	1,126,400	1,221,300
Melaka	605,200	713,000	786,200	865,900	948,700
Central Region	6,693,600	7,311,900	8,788,700	9,736,400	10,327,400
Johor	2,584,900	3,101,200	3,459,400	3,835,800	4,223,600
Southern Region	2,584,900	3,101,200	3,459,400	4,154,700	4,223,600
Pahang	1,229,100	1,427,000	1,574,300	1,740,000	1,915,800
Terengganu	880,200	1,016,500	1,148,500	1,015,900	1,482,800
Kelantan	1,287,400	1,505,600	1,678,000	1,894,200	2,158,800
Eastern Region	3,396,700	3,949,100	4,400,800	3,902,100	5,557,400
Peninsular Malaysia	17,649,200	20,146,600	22,989,500	24,523,200	27,682,500

Source: Projections prepared by Department of Statistics, 2002

Appendix 2A

10. Projected Rural-Urban Split

The estimated rural-urban split is based on the Department of Statistics' definition of "urban area" as encompassing "contiguous built-up areas located at the periphery of established town boundaries, where at least 60% of the related population base are engaged in non-agricultural activities and at least 30% of their housing units are equipped with modern toilets facilities". The urban-based population according to Census 2000 was 12,070,798 and represents 68.4% of the total population in the Peninsular Malaysia.

Meanwhile, RM-8 has estimated that urbanisation would increase to 69.7% by the end of the Plan period (Year 2005) and the urban population to grow at a slower rate of 3.8% per annum during that period. The more developed States are expected to attract more people to the urban centres due to acceleration in economic activities, greater job opportunities and a better quality of life. Among the more developed States, Selangor is expected to record the highest urban growth at 5% per annum followed by Johor at 3.8% per annum.

Using employment-based population distribution up to 2020 prepared by the RFN in May 2002, the projected urban/rural population or split for 2020 was determined at 73.5% to 26.5%. **Table 8** tabulate the percentages of urban population every five years from years 2000 to 2020.

Table 8: Projected Level of Urbanisation, 2000 – 2020

State	2000 ^(a) (% Urban Population)	2005 ^(b) (% Urban Population)	2010 ^(c) (% Urban Population)	2015 ^(c) (% Urban Population)	2020 ^(d) (% Urban Population)
Kedah	40.6	43.3	45.2	47.3	49.6
Perak	61.8	65.3	69.6	74.6	80.0
Perlis	34.9	38.9	39.4	40.0	40.7
Pulau Pinang	74.8	83.3	85.2	87.2	89.1
Northern Region	59.7	61.9	65.6	68.6	71.7
Melaka	70.7	75.3	74.8	74.4	74.3
N.Sembilan	57.0	58.2	62.3	63.2	61.0
Selangor	93.8	92.7	93.2	93.7	94.2
WP Kuala Lumpur	100.0	100.0	100.0	100.0	100.0
Central Region	88.4	88.0	89.1	89.4	89.7
Kelantan	34.2	36.7	36.6	36.5	36.4
Pahang	44.1	44.0	42.8	41.5	40.1
Terengganu	50.4	50.1	50.3	50.6	50.9
Johor	67.8	69.1	68.8	68.6	68.3
Southern Region	67.8	69.1	68.8	68.6	68.3
Eastern Region	42.0	42.9	42.4	42.0	41.5
P. Malaysia	68.4	69.7	71.0	71.7	73.5

Notes: (a) 2000 Census, Preliminary Count Report for Urban and Rural Areas

(b) RM-8 Estimates

(c) Projections derived by Study Team, 2002.

(d) Projections prepared by Department of Statistics, 2002.