



Introduction

1 Introduction

1.1 Project Title

The project for which this Environmental Impact Assessment (EIA) (Second Schedule) report is prepared is entitled the “**Environmental Impact Assessment (Second Schedule) for the Proposed Land Reclamation and Dredging of Kuantan Waterfront Resort City (KWRC), Kuantan, Pahang**” (hereafter referred to as “**the Project**” or “**KWRC**”).

1.2 Project Proponent

The address and contact information of the Project Proponent are as follows:

Ideal Heights Development Sdn. Bhd.

No, 1 & 2, Jalan Bukit Idaman 8/1,
Bukit Idaman, P.O. Box 20,
68100 Batu Caves,
Selangor Darul Ehsan.

Contact person : Mr. Heap Wei Guan, *Managing Director*
Telephone : +603 - 6138 6102
Facsimile : +603 - 6138 7890

The list of consultants involved in the Project are listed in *Table 1.1*.

Table 1.1 ► Project Consultants

Consultant	Company	Address	Tel. No.	Fax No.
Town Planner	SS Planning & Consult	No. 4-3, Jalan Pekaka 8/4, Seksyen 8, Kota Damansara, 47810 Petaling Jaya, Selangor Darul Ehsan	03-6140 1925	03-6140 1887
Architect	DC David Architect	B-2-18 Block B. Merchant Square 1 Jalan Tropicana Selatan 1 PJU 3 , 47410 Petaling Jaya, Selangor Darul Ehsan	03-7883 0652 / 03- 7883 0653	03-7883 0650
Civil & Structural Consultant	Megaconsult Sdn. Bhd.	No. 35C-1-3, Jalan Wangsa Delima 5, Kuala Lumpur Suburban Centre (KLSC), Section 5, Pusat Bandar Wangsa Maju, 53300, Kuala Lumpur	03-4142 6600	03-4148 1010
Mechanical & Electrical Consultant	Jurupintar Consulting Engineers	No. 3, Jalan Taman Seputeh, Taman Seputeh, 58000 Kuala Lumpur	012-221 8865	03-2276 1428
Traffic Consultant	Nilaimas Services	27-2, Jalan Putra Permai 1A, Bandar Baru Putra Permai, 43300 Seri Kembangan, Selangor Darul Ehsan	03-8940 9959	03-8940 9958
Surveyor	Juruukur Makmur	10-2, Tingkat 2, Lorong 6E/91, Taman Shamelin Perkasa, 56100 Kuala Lumpur	03-9286 2511	03-9286 2505

1.3 EIA Study Team Members

The Project Proponent has appointed Dr. Nik & Associates Sdn. Bhd. to carry out the EIA study. The contact details are as follows:

Dr. Nik & Associates Sdn. Bhd.

No. 22 & 24, Jalan Wangsa Delima 6,
Kuala Lumpur Suburban Centre (KLSC),
Section 5, Pusat Bandar Wangsa Maju,
53300 Kuala Lumpur.

Contact Person : Rosniza Ramli, Study Team Leader (EIA Study)
Ir. Iwan Tan Sofian Tan (Hydraulic Study)
Telephone : +603 - 4145 8888
Facsimile : +603 - 4145 8877

The team members involved in this EIA study are as listed in *Tables 1.2 and 1.3*.

Table 1.2 ► List of EIA Study Consultants


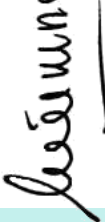


Name		Qualification	Registration with DOE			Area(s) of Study	Signature
			Category	Area/Field	ID No.	Valid Date	
A. EIA Study Team Leader:							
1.	Rosniza Ramli	B.Sc. (Marine Science)	EIA Consultant	<ul style="list-style-type: none">Ecological StudiesWater QualityBenthologyGeneral Environmental Management	C0164	31 st March 2019	
B. EIA Study Team Member:							
2.	Dato' Ir. Dr. Nik Mohd. Kamel Nik Hassan	O.N.D. (Civil Eng.), B.Sc. (Civil Eng.), M.Sc. (Civil Eng.), PhD. (Hydraulics Eng.)	EIA Consultant & Subject Specialist	<ul style="list-style-type: none">Dredging and Reclamation Impact AssessmentCoastal and Maritime EngineeringWater Resources and Flood Mitigation	CS0437	31 st March 2019 / 31 st March 2021	
3.	Ir. Iwan Tan Sofian Tan	B.Eng (Civil)	EIA Consultant	<ul style="list-style-type: none">Coastal EngineeringHydraulics Numerical ModellingCoastal GeomorphologyGeneral Environmental Management	C0150	31 st March 2019	
4.	Ir. Dr. Wong Wai Sam	B.Eng. (Civil), M.Eng. Sc. (Hydrology & Hydraulics), PhD. (Hydrology, Hydraulic & Hydrogeology)	Subject Consultant	<ul style="list-style-type: none">HydrologyWater Resources ManagementErosion and Sediment Control Plan (ESCP)	SS0907 (CPESC Reg. No: 4154)	31 st March 2021	

Table 1.2 (cont'd) ► List of EIA Study Consultants



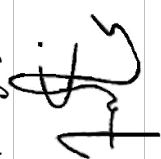



Name	Qualification	Registration with DOE			Area(s) of Study	Signature
		Category	Area/Field	ID No.		
B. EIA Study Team Member:						
5. Ir. Mohd. Taha Abd. Wahab	B. Sc. (Civil), M. Eng. (Sc)	Subject Consultant	Geotechnical Studies	SS0902	31 st Dec 2017	
6. Prof. Dr. Maimon Abdullah	B.Sc. (Biology), M.Sc. (Biology), PhD. (Biology)	EIA Consultant	<ul style="list-style-type: none">EcologyEnvironmental Physiology	C0244	31 st March 2019	
7. Dr. Wan Juliana Wan Ahmad	B.Sc. (Botany), PhD. (Plant & Soil Science)	Subject Consultant	<ul style="list-style-type: none">Plant DiversityMangrove Forests SpeciesWetland Ecosystem	SS0649	13 th May 2018	
8. Prof. Dr. Norhayati Ahmad	B.Sc. (Biology), M.Sc. (Conservation Biology), PhD (Zoology)	Subject Consultant	Ecological Studies	SS0270	30 th April 2020	
9. Datin Dr. Asmah Ahmad	B.A (Hons.) Geography, M. Soc. Sc. (Geography), PhD. (Geography)	Subject Consultant	Social Impact Assessment	SS0516	9 th April 2018	
10. Dr. Zaini Sakawi	B.A. (Geography), M.Sc. (Environmental Science)	Subject Consultant	Social Impact Assessment	SS0324	6 th August 2017	

Table 1.2 (cont'd) ► List of EIA Study Consultants




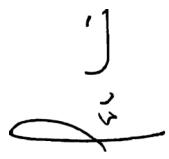





Name	Qualification	Registration with DOE				Area(s) of Study	Signature
		Category	Area/Field	ID No.	Valid Date		
B. EIA Study Team Member:							
11. Ir. Dr. Zaki Zainudin	B.Sc. (Chemical Engineering), M.Sc. (Environmental Engineering), PhD. (Environmental Engineering)	Subject Consultant	<ul style="list-style-type: none">Water QualityWater Quality Modelling	SS0205	30 th Nov 2020	Water Quality	
12. Assoc. Prof. Dr. Zaidi Che Cob	B.Sc. (Ecology), M.Sc. (Shellfish, Biology, Fisheries & Culture),	Subject Consultant	<ul style="list-style-type: none">Marine EcologyMangrove Ecology	SS0237	31 st July 2018	Marine Ecology	
13. Prof. Dr. Nor Ghani Md Nor	B.A. (Economics & Account), M.A. (Economics), PhD. (Economics)	Subject Consultant	<ul style="list-style-type: none">Economic Valuation of Environmental ImpactsEnvironmental Cost Benefit Analysis	SS0252	14 th May 2018	Environmental Economic Evaluation	
14. Capt. Ismail Hashim	Malaysian Certificate of Education, Division 1, Ordinary National Certificate in Nautical Science, Master Mariner Class 1	Subject Specialist	Marine Traffic and Navigational Safety	SS1290	30 th April 2020	Marine Traffic and Navigation	

Table 1.3 ► List of EIA Study Assistant Consultants

Name	Qualification	Registration with DOE			Area of Study	Supervised by	Signature
		Category	Area/Field	ID No.			
1. Muhammad Faiz Abdullah	B.Sc. (Environmental Sc.)	Assistant Consultant	<ul style="list-style-type: none"> ■ Air Quality ■ Noise and Vibration ■ General Environmental Management 	AC0903	General Environmental Management	Rosniza Ramli	
2. Muhammad Fauzan Pauzi	B.Eng (Civil)	Assistant Consultant	<ul style="list-style-type: none"> ■ Water Quality ■ Wastewater ■ Solid Waste Management 	AC5011	Water Quality	Ir. Dr. Zaki Zainudin	
3. Shareena Azliani A. Aziz	B. Eng (Civil), M.Eng (Water Engineering)	Assistant Consultant	<ul style="list-style-type: none"> ■ Water Quality ■ Wastewater 	AC5082	Water Quality	Ir. Dr. Zaki Zainudin	
4. Putri Zulaikha Md Bakri	B. Eng (Civil)	Assistant Consultant	<ul style="list-style-type: none"> ■ Water Quality ■ Wastewater ■ Solid Waste Management 	AC5080	Water Quality	Ir. Dr. Zaki Zainudin	
5. Zahara Yaakop	B.Eng (Civil)	Assistant Consultant	<ul style="list-style-type: none"> ■ Erosion and Sedimentation ■ Hydraulics & Coastal Engineering 	AC1119	Sediment Transport	Ir. Iwan Tan Sofian Tan	

1.4 Project Location

Ideal Heights Development Sdn. Bhd., a wholly owned subsidiary of Ideal Heights Properties Sdn. Bhd. intends to perform a mixed development involving land reclamation at east coast of Peninsular Malaysia in the capital city of Pahang, Kuantan (*Figure 1.1*). The proposed project lies on an extensive mudflat and abuts 3 km along the coastline of Tanjung Lumpur where the northern border is opposite the on-going construction of KWRC Phase 1 whereas the southern border ends at Kampung Anak Air (*Figure 1.2*). The Project is located 2 km east of Kuantan City and 4 km south of Teluk Cempedak. Kuantan Port is located approximately 11 km away towards north of the Project. With a distance of less than 300 m from Sungai Kuantan river mouth, the existing navigation channel of Sungai Kuantan runs parallel to the northern boundary of the Project site. The coordinates of the proposed project are shown in *Figure 1.3*.

By land, the Project site is connected via Federal Road 183 (Tanjung Lumpur Highway) and subsequently connected through the northern and southern expressways via Jalan Kampung Tanjung Lumpur and Jalan Yayasan Pahang respectively.

The land reclamation will cover an area of 273.57 ha (676 ac) with a built-up area including water bodies of about 472.67 ha (1,168 ac). The proposed man-made land will also bring about improvements to Sungai Kuantan river mouth. The Project Proponent is committed to dredge the Sungai Kuantan river mouth and its navigational channel. Suitable dredged material will be used as the reclamation fill material. The proposed project includes land clearing, reclamation and dredging area which are presented in *Figure 1.4*.



Figure 1.1 ► Location of the Proposed Project in Kuantan, Pahang

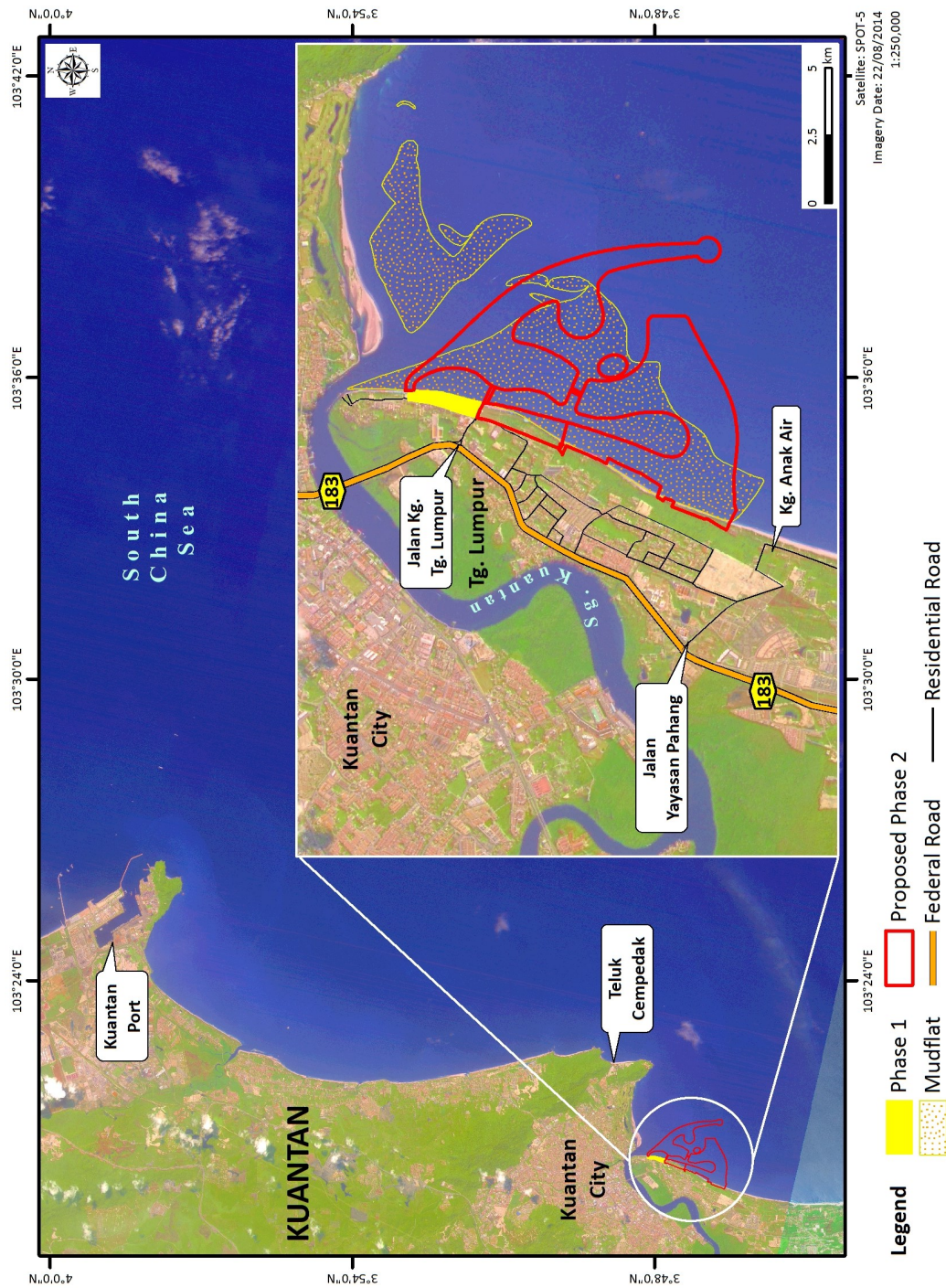


Figure 1.2 ► Project Location at Tanjung Lumpur, Kuantan

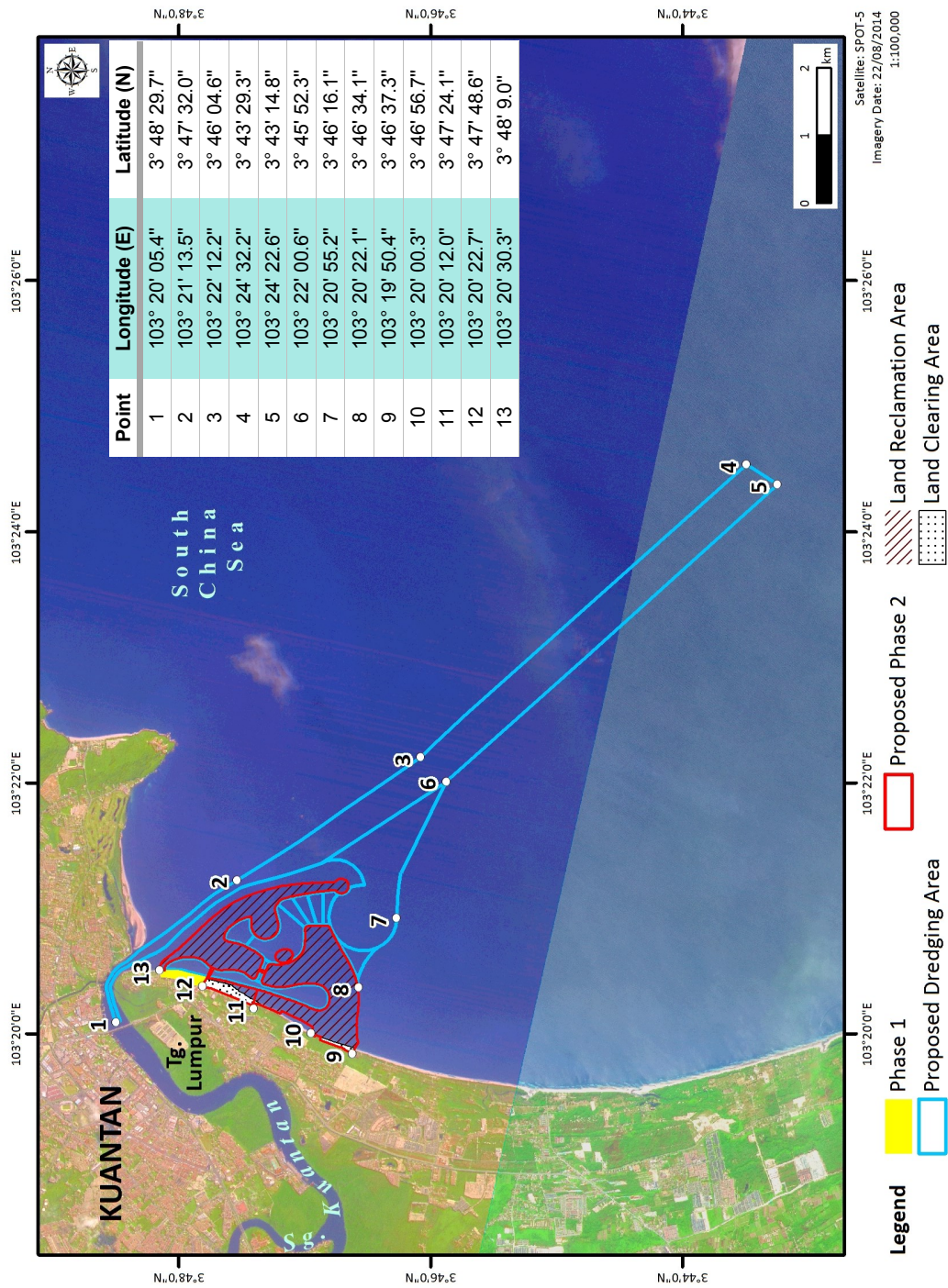


Figure 1.3 ▶ Coordinates Points of the Proposed Project Area

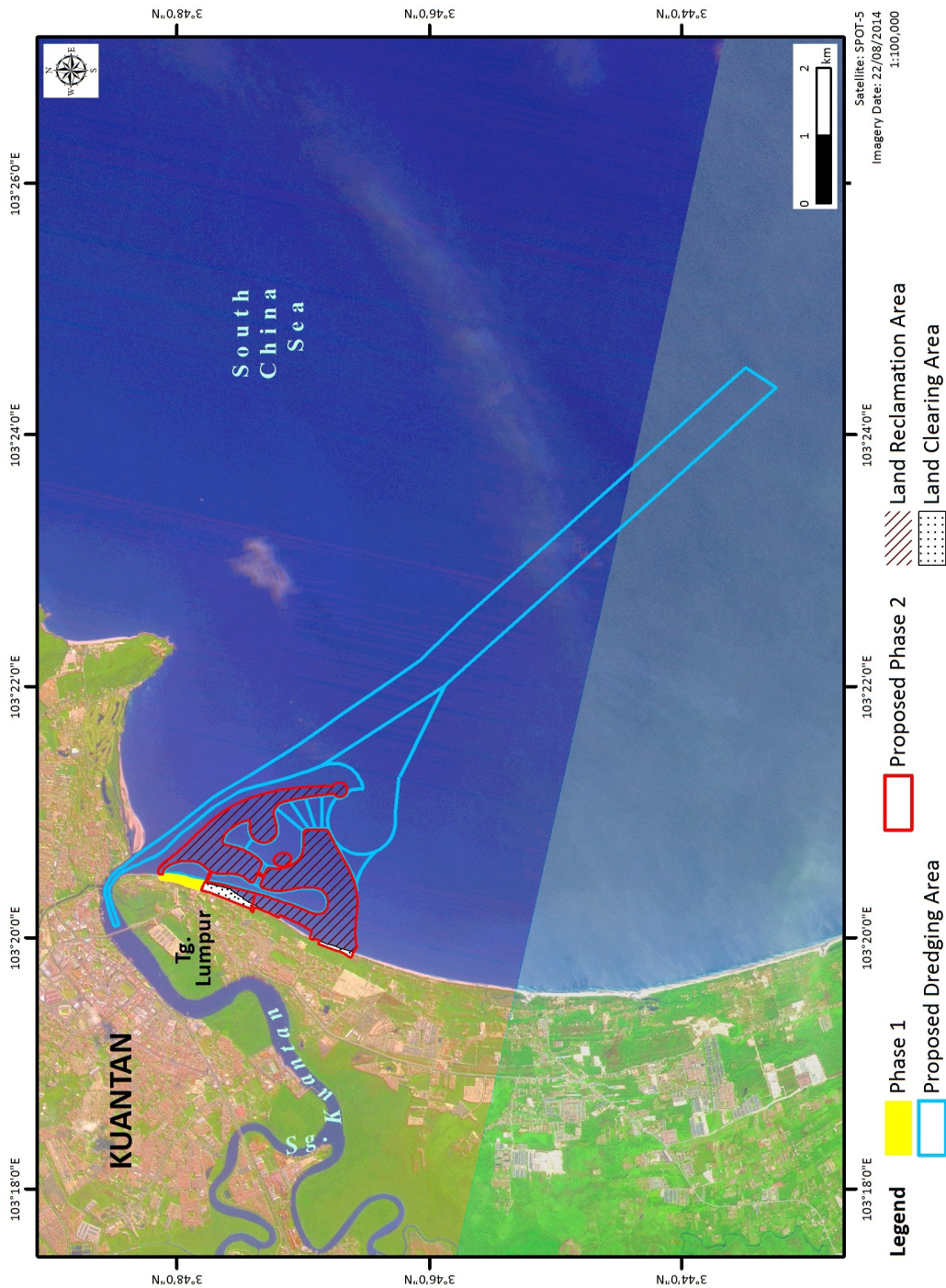


Figure 1.4 ► Proposed Land Reclamation and Dredging Areas

1.5 Project Chronology

The State Secretary of Pahang has approved for the Project to be developed off the coast of Tanjung Lumpur via a letter dated 13th January 2012 (Ref. No.: SUK.PHG/UPEN.002/8.08.331 ()) (*Attachment 1*). Subsequent to that, a signing ceremony was performed on October 18th, 2012 between the State Government of Pahang, Newston International Group Sdn. Bhd. and Ideal Heights Development Sdn. Bhd., witnessed by Sultan Pahang Sultan Ahmad Shah and state secretary Datuk Seri Muhammad Safian Ismail (*Photo 1.1*). KWRC Phase 2 development will be launched in stages with several phases over the next 10 years.



Photo 1.1 ► Signing Ceremony (from left Datuk Seri Muhammad Safian Ismail, Dato' Sri Adnan bin Yaakob, DYMM Sultan Pahang Sultan Ahmad Shah and representatives from the Project Proponent)

Source: <http://www.kwrc.com.my>

Thereafter, on June 5th 2013, the Project Proponent has appointed Dr. Nik & Associates Sdn. Bhd. to carry out the EIA and Hydraulic studies for the Department of Environment (DOE) and Department of Irrigation and Drainage (DID) approvals. The KWRC main development is divided into two (2) phases namely:

- i) Phase 1 which consists of construction of a serviced apartment, a commercial complex, a showroom and a commercial bungalow on the coastline of Tanjung Lumpur, Kuantan, Pahang. A Preliminary EIA report for Phase 1 has been submitted on 24th September 2013 (Ref: DNA/EA/13/061-007) and it has been approved by DOE Pahang (Ref: AS: C50/013/700/022(44) dated 6th November 2013); and
- ii) Phase 2 is a 472.67 ha of mixed development involving dredging and reclamation activities off the coast of Tanjung Lumpur, Kuantan.

For Phase 2, a preliminary site assessment (PAT) form was submitted to DOE Pahang on 2nd May 2014 which was later approved on 17th July 2014. DOE Pahang has stated that the Project requires an EIA (Second Schedule) study to be submitted to the Federal DOE for approval. One of the stages in the EIA (Second Schedule) is to submit Terms of Reference (TOR). However, a TOR can only be submitted to DOE once the proposed project is included in the local plan. On 21st November 2014, the Pahang state government through its letter has agreed to reserve 1,168 ac (472.67 ha) to pave way for KWRC, with development land/title not more than 500 ac (202.34 ha).

In early 2015, the KWRC reclamation project has been successfully incorporated into Rancangan Tempatan Daerah Kuantan 2013-2015 and falls under Blok Perancangan Kecil (BPK) 2.19. The BPK 2.19 is designated to be developed for business and services which is parallel with the KWRC development. Besides carrying out an EIA study, any projects that are involved with land reclamation must go through the National Physical Planning Council (MPFN) for consent. Subsequent to that, series of meeting with JPBD Pahang were held to justify the Project to be tabled to MPFN for consent.

On 4th January 2016, development order (DO) for KWRC Master Plan has been approved in principle by Majlis Perbandaran Kuantan (MPK). Among the conditions are to provide an EIA study. Subsequent to the submission of TOR on 18th December 2015, a site visit involving DOE officers, panels experts, EIA consultants and Project Proponent was held on 27th January 2016. In order to get further opinions, comments and suggestions from target audience regarding the Project and its impacts, focus group discussion (FGD) sessions were conducted on 9th February 2016. Among the target audience were fishermen and locals within the Tanjung Lumpur area. All the outcomes from the FGD sessions will be elaborated further in *Chapter 6 (Section 6.4.5)* of this EIA report. A public dialogue was held on 23rd April 2016 at Dewan Serbaguna Peramu, Kuantan. On top of that, the hydraulic study for this project has been submitted to the Federal DID which was later approved on 11th May 2016 (refer to *Attachment 2* for the approval letter). The KWRC development has been tabled in the MPFN 25th Meeting (No.1/2016) which was chaired by the Prime Minister on 21st July 2016. The Council had decided to approve the development with conditions (*Attachment 3*).

The chronology of the Project is tabulated in *Table 1.4*.

Table 1.4 ► Project Chronology

Date	Item
13 th January 2012	Pahang State Government has given Newston International Group Sdn. Bhd. (Newston) to reclaim 500 ac of land in Tanjung Lumpur, Kuala Kuantan.
18 th October 2012	Agreement signing between Pahang State Government and Newston, witnessed by HRH of Sultan Pahang.
5 th June 2013	Appointment of EIA Consultant for EIA and Hydraulic Studies (Dr. Nik & Associates Sdn. Bhd.)
6 th November 2013	PEIA study for Phase 1 has been approved by DOE Pahang (Ref: AS: C50/013/700/022(44).
17 th July 2014	Approval preliminary site assessment (PAT) for Phase 2.
21 st November 2014	Pahang State Government has agreed to reserve 1,168 ac to pave way for KWRC project, with development land/title less than 500 ac.
Early 2015	KWRC has been successfully incorporated into Rancangan Tempatan Daerah Kuantan 2013-2015.
20 th May 2015	Meeting with JPBD Pahang on MPFN Status of the proposed Project.
27 th August 2015	Meeting with JPBD Pahang and other state technical agencies on MPFN Status of the proposed Project.
18 th December 2015	TOR submission to DOE Federal.
21 st December 2015	Hydraulic Study submission to DID Federal.
4 th January 2016	Development Order for KWRC Master Plan has been approved in principle by Majlis Perbandaran Kuantan (MPK).
27 th January 2016	A site visit involving DOE's officers, panels experts, EIA consultants and Project Proponent.
9 th February 2016	Focus Group Discussion (FGD) sessions with fishermen and locals.
12 th February 2016	TOR Panel Review Meeting at DOE Putrajaya.
9 th April 2016	Poster announcement of Public Dialogue.
11 th April 2016	Approval of TOR.
18 th April 2016	Hydraulic Study (Revision 02) submission to DID Federal.
23 rd April 2016	Public Dialogue was held at Dewan Serbaguna Peramu, Kuantan.
11 th May 2016	Approval of Hydraulic Study.
4 th August 2016	MPFN has approved the KWRC development with conditions.

1.6 EIA Study Approach

The scope of work of this EIA study follows the requirements of relevant framework, policies, conditions and guidelines. The proposed project concept and location is compatible and supported by policies, laws and guidelines published by the government agencies such as Federal Department of Town and Country Planning, Pahang Department of Town and Country Planning, Federal Department of Environment, Kuantan Municipal Council and other relevant agencies.

1.6.1 Policies

The following policies have been referred to in order to analyze the proposed Project's compliance as summarized in *Table 1.5* and is elaborated further in each sub-section.

Table 1.5 ► Project Compliance Policies

Policies	Compliance	Remarks
National Physical Plan-2 (NPP2)	√	The proposed project takes into account all the policies applicable and adheres to it.
National Coastal Zone Physical Plan (RFZPPN)	√	The proposed project has been approved by the National Physical Planning Council (MPFN).
Pahang Structure Plan (2002-2020) (RSNP)	√	The proposed project is consistent with the relevant strategies outlined by the State Government.
Kuantan Local Plan (Amendment) 2013-2015	√	The Project aims to draw investors in boosting the economic growth of Kuantan thus, making it in-line with its local plan that gazettes the area for business and services activities.
East Coast Economic Region (ECER) 2008	√	The KWRC development is parallel to the objective designated for its area as tourism local corridors.
National Policy of Climate Change 2010	√	The proposed project considers the principles sustainable development and conserving the environment.
National Biodiversity Policy 1998	√	The proposed project takes into account the sustainability of the Project site's biodiversity.
Integrated Shoreline Management Plan (ISMP) Pahang	NA	The ISMP has been deemed obsolete thus it is not considered in this study.

1.6.1.1 National Physical Plan 2 (NPP2) 2010

The NPP2 sets out the national strategic spatial planning policies and measures to be taken to implement projects in respect to the general direction and broad pattern of the land use, physical development and conservation in Peninsular Malaysia. The spatial planning vision, policies, measures and land allocations of NPP2 will be implemented primarily through the State Structure Plans and Local Plans and eventually through the Action Area Plans and programmes. *Table 1.6* shows the NPP2 policies that are pertinent to the proposed project.

Table 1.6 ► National Physical Plan (NPP2)

Policy	Measures	Remarks
<p>NPP 2: Future urban growth centres shall be concentrated in strategic conurbations.</p> <p>IP 2: Concentration of development in conurbations</p>	<ul style="list-style-type: none"> Urban-based economic activities will be concentrated in the main conurbations of Kuala Lumpur, George Town, Johor Bahru and Kuantan to promote efficiency in land use and infrastructure planning and should be globally competitive. The development of industrial and economic clusters will be promoted within the conurbation areas to achieve economies of scale. 	<p>KWRC is designed with commercial facilities, dining promenades, malls, hotels, spa, themed park, villas, business centres and convention centres which can boost the economic growth in Kuantan.</p>
<p>NPP 12: Tourism development zones in each state shall focus on specialised regional niche products based on their locational advantages and availability of resources.</p> <p>IP 12: Man-made tourism resources</p>	<ul style="list-style-type: none"> To promote development of tourism products within the tourism zones according to their locational advantages: <ol style="list-style-type: none"> International shopping to be enhanced in designated major urban centres, border towns and other free trade zones in order to maximise tourist and excursionist gateway capture for economic benefits. Health, wellness, sports and events tourism shall be further developed in all major cities/towns with readily available supporting infrastructure while more wellness zones providing traditional therapies should be promoted within coastal resorts and rural destinations. Medical tourism shall be further expanded in the main conurbations of Kuala Lumpur, George Town, Johor Bahru and Kuantan. Educational tourism shall be further developed in the existing institutions or higher learning and new Educational Cities/ Towns will be established providing conducive environments for students' development and equipped with the appropriate facilities. The nation's importance as Meetings, Incentives, Conventions and Exhibitions (MICE) destination shall be supported through continuous infrastructure developments in all major cities. 	<p>KWRC is a unique integrated waterfront resort concept that blends residential, commercial, attractions and marina facilities within its development.</p>

Table 1.6 (cont'd) ► National Physical Plan (NPP2)

Policy	Measures	Remarks
NPP 13: High quality tourism infrastructure and facilities shall be provided to enhance tourists comfort and safety without comprising the quality of the environment.	<ul style="list-style-type: none"> Efficient and comprehensive transportation system (air, water, rail and road) and accessibility shall be planned and improved, to support tourism growth and expansion or integrated tourism packages. 	<ul style="list-style-type: none"> The modes of transport, especially by road and water, will be enhanced to increase the level of accessibility to and from the KWRC as well as to accommodate the possible traffic volume from KWRC. A 3 hectare area has been reserved for bus terminal and public carpark on the reclaimed land. A cruise ship terminal and yacht club will be allocated at the southeast of the development to attract mariners to the KWRC.
	<ul style="list-style-type: none"> Other support infrastructure such as information technology, clean toilets, money changing facilities, transit facilities, safety boxes and facilities to cater for domestic tourists, family tourists and independent travelers shall be provided for within tourism zones. 	<ul style="list-style-type: none"> A Customs, Immigration and Quarantine (CIQ) Complex will be built adjacent to the cruise ship terminal. The CIQ Complex will be responsible for the inspection and quarantine of tourists arrivals and departures at the terminal. The complex will provide various facilities for domestic tourists, family tourists and independent travelers.
NPP 15: The growth of the four main conurbations of Kuala Lumpur, George Town, Johor Bahru and Kuantan shall be supported to enhance their global competitiveness.	The provision of infrastructure and facilities particularly in power supply, housing, recreation, entertainment and environmental quality which are necessary to support the k-economy sector shall be enhanced and improved.	The 472.67 hectare development comprises of housing, business centre, recreation and entertainment to cater to the future expected population in Kuantan.
NPP 19: Sufficient affordable housing with adequate community facilities, including security facilities and services, shall be provided in major urban centres to meet the requirements of the population.	<ul style="list-style-type: none"> Adequate housing equipped with infrastructure, public facilities and amenities shall be provided based on affordability. Public common user's space shall be provided for social interaction and sustainable communities. 	<ul style="list-style-type: none"> KWRC is a unique integrated waterfront resort concept that blends residential, commercial, attractions and marina facilities within its development. Open spaces, coastal parks, waterfront and a cycling park are provided in support of sustainable communities.

Table 1.6 (cont'd) ► National Physical Plan (NPP2)

Policy	Measures	Remarks
NPP 24: Sensitive coastal and marine ecosystems shall be protected and managed in a sustainable manner. IP 17: Sensitive coastal ecosystems	Coastal planning and development shall take into account the strategies and measures contained in the National Coastal Zone Physical Plan (MPFN) and the various Integrated Shoreline Management Plan (ISMP).	All measures outlined in the National Coastal Zone Physical Plan (MPFN) must be adhered to.
NPP 27: The spatial planning framework shall incorporate mitigation and adaptation measures against the impacts of climate change. IP 21: Potential affected coastal areas due to climate change	Shoreline stabilization structures (such as dykes and sea walls) shall be strengthened in critical areas of high economic value or strategic importance.	The proposed type of coastal structures are addressed in <i>Chapter 5: Project Description</i> of this EIA report.

1.6.1.2 National Coastal Zone Physical Plan (RFZPPN) 2012

Through the 2nd National Physical Plan, the implementation of NPP 24 policy is further detailed in the National Coastal Zone Physical Plan (RFZPPN) whereby this policy focuses on the coastal zone reclamation as listed in *Table 1.7*.

Table 1.7 ► National Coastal Zone Physical Plan (RFZPPN)

Policy	Measures	Remarks
RFZPPN 6: Reclamation in the coastal zone is only permitted should its economic benefits be higher than its social and environmental costs.	<ul style="list-style-type: none"> All proposed coastal reclamation must be referred to the National Physical Planning Council (MPFN) 	MPFN has approved the KWRC development with conditions.
	<ul style="list-style-type: none"> Coastal reclamation shall not be encouraged except for the development of ports of strategic national importance. 	The proposed reclamation has already been approved and incorporated in the Kuantan Local Plan (Amendment) 2013-2015 (<i>Figure 1.5</i>).

Table 1.7 (cont'd) ► National Coastal Zone Physical Plan (RFZPPN)

Policy	Measures	Remarks
RFZPPN 6: Reclamation in the coastal zone is only permitted should its economic benefits be higher than its social and environmental costs.	<ul style="list-style-type: none"> ■ Coastal reclamation shall only be considered with the following conditions: <ul style="list-style-type: none"> i. It is important to control erosion or for the purpose of beach nourishment. 	Based on the hydraulic study assessment, erosion is predicted to occur along 3 km upstream of the river, along about 1 km of the coastline south of the Project site, the southern coastline, bridge piers, canal area, northeast edge of the dredged channel and tip of the southeastern end of the reclamation. However, the impact is minimize by implement proper mitigation measure as per <i>Chapter 7: Evaluation of Impacts and Chapter 8: Mitigating Measures</i> .
	<ul style="list-style-type: none"> ii. It shall not affect the natural processes of coastal hydrology regime. 	There is minimal impact on the natural processes of the coastal hydrology regime.
	<ul style="list-style-type: none"> iii. It shall not affect the stability of the adjacent project site including the coastal zone. 	Impact on the stability of the adjacent project site including the coastal zone is minimal.
	<ul style="list-style-type: none"> iv. It shall not affect the natural habitat especially ESA Ranks 1 and 2. 	There is minimal impact on ESA at Sungai Kuantan where erosion is observed to extend approximately 3 km upstream of the Tanjung Lumpur bridge. However, the impact is minimize by implement proper mitigation measure as per <i>Chapter 7: Evaluation of Impacts and Chapter 8: Mitigating Measures</i> .
	<ul style="list-style-type: none"> v. The economic and social benefits of the coastal reclamation are much higher than its environment and social cost. 	The economic and social benefits of the Project is explained in <i>Chapter 7: Evaluation of Impacts</i> .
	<ul style="list-style-type: none"> ■ All coastal reclamation works with an area of more than 20 hectares should obtain an EIA approval. 	This EIA study is prepared for submission to DOE for approval.

1.6.1.3 Pahang Structure Plan 2002-2020

The concept of KWRC is consistent with the state government's strategy to provide quality and comfortable residential units for all levels of society. The relevant policies are listed as in *Table 1.8*.

Table 1.8 ► Pahang Structure Plan 2002-2020

Policy	Measures	Remarks
RSN LP1: New developments, especially around the major towns, need to prioritise in-fill and brownfield development while greenfield development needs proper evaluation.	New developments are sited within the boundaries of existing towns where most of the residential areas, employment opportunities and services are already provided.	The KWRC development is designed with commercial facilities, dining promenades, malls, hotels, spa, themed park, villas, business centres and convention centres which can boost the economic growth in Kuantan.
RSN LP13: Facilities and support services will be upgraded to facilitate tourism.	The level of accessibility to tourist destinations in the form of the quality of land or sea routes and public transportation modes like buses, taxis and water transport (boat or ferry) which are more efficient will provide comfort and ease to visitors.	The KWRC development will provide commercial marine facilities such as cruise ship terminal and CIQ as well as bus terminal for land transportation.
RSN IKS 8: To provide public facilities which are adequate and complete in fulfilling the needs of all levels of the community.	To encourage involvement and contribution by the private sector in providing facilities like private hospital/clinic to accommodate the increase in population that cover those from various socio-economic background.	The KWRC development will provide facilities such as private hospital, international school, hypermarket, shopping mall.
RSN IKS 9: Adequate recreational facilities need to be provided in order to accommodate the needs of the population.	To provide open spaces at every housing development based on the 10% standard from each area that is to be developed.	The KWRC development provides open spaces at every housing development based on the 10% standard from each area that is to be developed.

1.6.1.4 Kuantan Local Plan (Amendment) 2013 - 2015

According to the Kuantan Local Plan (Amendment) 2013 - 2015, the proposed KWRC project falls in the area of Sub-Planning Block (BPK) 2.19: Jaya Gading - Gambang as shown in *Figure 1.5*. BPK 2.19 is gazetted for business and services activities which are parallel with the proposed KWRC development.

The proposed development is envisaged to draw the interest of investors into bringing in capital and will result in benefits to Kuantan's economic growth and in increasing and accommodating the population. This objective is in line with the Kuantan Vision of "***Membangunkan Kuantan Sebagai Pusat Metropolis, Bandar Sejahtera (Livable) Dan Teras Pembangunan Pantai Timur***" ("Developing Kuantan as a Metropolitan Centre, Livable City and Backbone of East Coast Development").

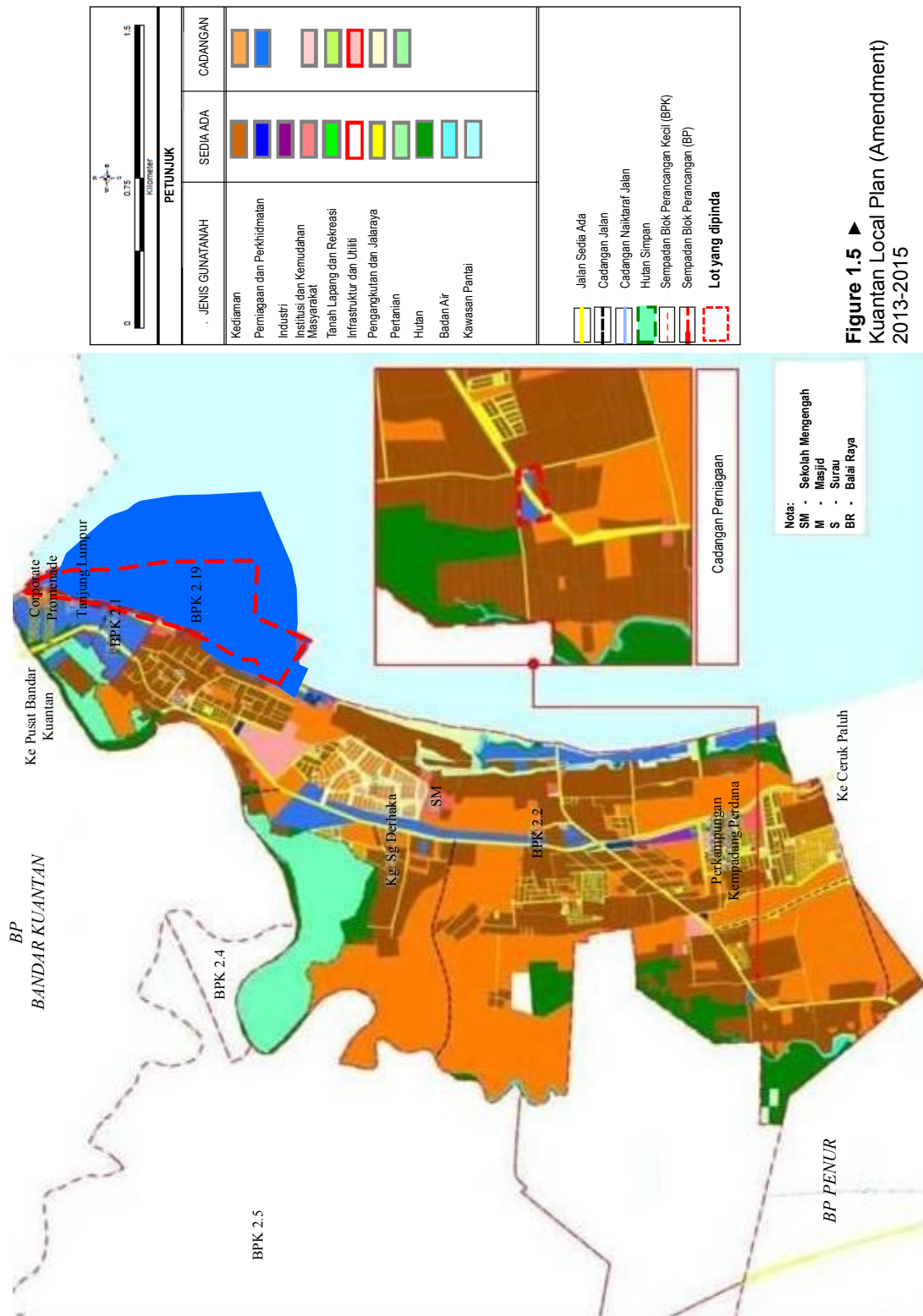


Figure 1.5 ►
Kuantan Local Plan (Amendment)
2013-2015

1.6.1.5 East Coast Economic Region (ECER) 2008

The ECER plan identifies projects and programmes to reduce regional socio-economic disparities, eradicate poverty and improve income and wealth distribution in a sustainable manner. In planning the development of ECER, every project to be carried out should not only benefit the state concerned, but will also contribute to the socio-economic development of ECER as a whole. *Figure 1.6* shows the ECER local corridors which are important as these are the basis in identifying the key cluster projects to be implemented.

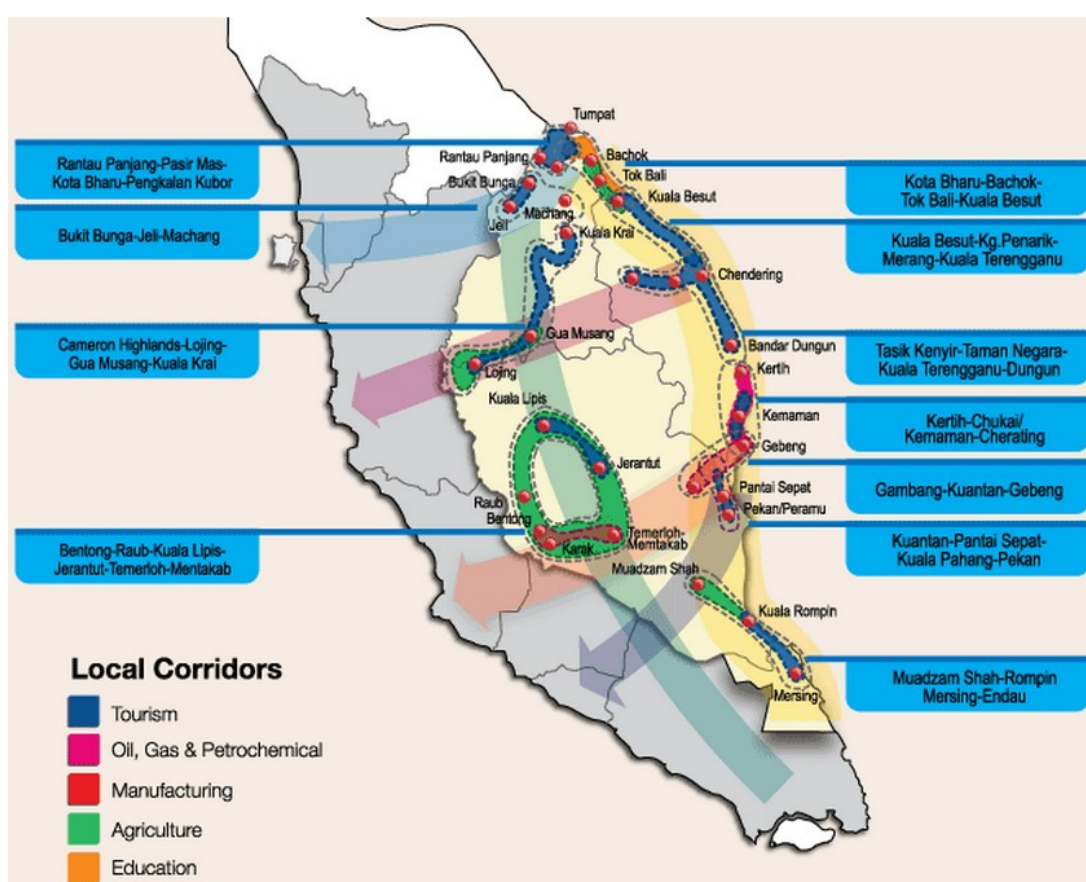


Figure 1.6 ► ECER Local Corridors

The Kuantan-Pantai Sepat-Kuala Pahang-Pekan areas are designed under ECER to be tourism local corridors. Tourism is one of the key contributors to the economic growth of ECER which covers three components: Heritage and Culture, Urban and Coastal Tourism, and Environment and Ecotourism.

The KWRC project has the potential to be one of the key enablers that will contribute towards the transformation of the Greater Kuantan Area into becoming a vibrant conurbation. Among the key economic enablers are as follows:

Table 1.9 ► Key Economic Enablers of KWRC

Economic Cluster	Measures	Remarks
Tourism Local Corridor: Kuantan-Pantai Sepat-Kuala Pahang-Pekan	To improve access via upgrading of existing road networks.	The KWRC development will also include the upgrading of the main access roads to Jalan Tanjung Lumpur and to Yayasan Pahang in order to cater for the future development traffic.
	To mitigate against flooding and coastal erosion.	Coastal protection structures and in handling flooding issues will be designed and handled systematically to allow development of the KWRC project to take place with minimal disruption.
	To improve utilities and sewerage.	The KWRC development project includes plans towards providing major utilities such as water, electricity, Information Communication Technology (ICT) and fixed line infrastructure, as well as a sewerage system.
	Real estate development	The KWRC development will focus on developing and providing sufficient residential, leisure and commercial properties to meet the region's economic demands and growth.
	Conservation of environment	Special emphasis will also be placed in conserving the environment to ensure sustainability for the future. Conservation of the region's rich flora and fauna will be given due attention to ensure the development that occurs will also protect the natural environment.

1.6.1.6 National Policy on Climate Change 2010

It is recognized that adverse effects and impacts of climate change and extreme weather have intensified the occurrence of natural disasters. Among others, sea-level rise, floods, coastal erosion and land erosion which have impacted human health and safety and caused changes to natural and built landscapes. Thus, the Project is intended to integrate with the following principles as outlined in the National Policy on Climate Change 2010 to foster sustainable economic and human development as well as environmental conservation.

Table 1.10 ► National Policy on Climate Change

Principles	Strategic Thrusts	Remarks
P1: Development on a Sustainable Path Integrate climate change responses into national development plans to fulfil the country's aspiration for sustainable development.	ST2-P1: Institute measures to make development climate-resilient through low carbon economy to enhance global competitiveness and attain environmentally sustainable socio-economic growth.	All mitigation measures proposed for the Project will be integrated and balanced.
P2: Conservation of Environment and Natural Resources Strengthen implementation of climate change actions that contribute to environmental conservation and sustainable use of natural resources.	ST4-P2: Adopt balanced adaptation and mitigation measures to strengthen environmental conservation.	All mitigation measures proposed for the Project will be integrated and balanced.

1.6.1.7 National Biodiversity Policy 1998

Among the National Biodiversity Policy 1998 strategies that are relevant to the proposed Project are as listed in *Table 1.11*.

Table 1.11 ► National Biodiversity Policy

Strategy	Action Plan	Remarks
Strategy 2: Enhance sustainable utilisation of the components of biological diversity.	Ensure sectors performing Environmental Impact Assessments (EIAs) accord due priority to biological diversity.	The EIA study encompasses several components including physical-biological sectors which cover flora and fauna studies within a 5-km radius from the Project site.
Strategy 10: Minimise impacts of human activities on biological diversity.	Ensure effective enforcement for the compliance of mitigation and rehabilitation measures in all activities that present potential dangers to biological diversity.	Appropriate mitigation measures have been addressed as per <i>Chapter 8: Mitigating Measures</i> .

1.6.2 Guidelines

The scope for this EIA study is done in accordance with the following guidelines:

- i) Environmental Impact Assessment Guidelines in Malaysia. Department of Environment Malaysia. 2016;
- ii) Environmental Impact Assessment (EIA) Guidance Document for Coastal and Land Reclamation;
- iii) Guidelines on Erosion Control for Development Projects in the Coastal Zones 1/97;
- iv) Guidelines of Preparation of Coastal Engineering Hydraulic Study and Impact Evaluation (for Hydraulic Studies using Numerical Models) (Fifth Edition). 2001;
- v) The Shoreline Management Plan of the Coastline from Kuala Sungai Pahang to the State Boundary of Pahang/Terengganu. Department of Irrigation and Drainage, Malaysia. 2002;
- vi) Environmental Impact Assessment (EIA) Guidance Document for Sand Mining/Dredging Activities;
- vii) Guidelines for Prevention and Control of Soil Erosion and Siltation in Malaysia;
- viii) The Planning Guidelines for Environmental Noise Limits and Control;
- ix) Buku Panduan Kawasan Sensitif Alam Sekitar. Department of Environment Malaysia. 1993;
- x) Long-term Sea Level Change in the Malaysian Seas from Multi-mission Altimetry Data. Din *et al.*, 2012; and
- xi) Guidelines on the Economic Valuation of the Environmental Impacts for EIA Projects. Department of Environment. 2010.

1.6.3 EIA (Second Schedule) Terms of Reference (TOR) Approval Conditions

The TOR approval conditions as tabulated in *Table 1.12* have been taken into considerations and included in this EIA study.

Table 1.12 ► EIA (Second Schedule) TOR Approval Conditions

No.	Item	Consultant Remarks
1	Needs to obtain MPFN approval as per comments received from the Kuantan Local Council (MPK) via a letter dated 10 th February 2016 with the reference number of (32) dlm.MPK/J:T/5-25 JLD 3.	The KWRC development has been taken up the MPFN 25 th Meeting (No.1/2016) which was chaired by the Prime Minister on 21 st July 2016. The Council had decided to approve the development with conditions (<i>Attachment 3</i>).
2	Comments received from the Marine Department Malaysia (Eastern Region) via a letter dated 14 th February 2016 with the reference number of JLWT 15/27 Jld 11 (69) must be included.	A separate study on Marine Risk Assessment will be submitted to the Marine Department Malaysia for approval. However, study on the existing marine traffic is presented in <i>Chapter 6: Existing Environment</i> . The impacts and mitigation measures on marine traffic according to the Project components are presented in <i>Chapter 7: Evaluation of Impacts</i> and <i>Chapter 8: Mitigation Measures</i> .
3	All comments from the related agencies and expert panel submitted to you either in written form or which were discussed and included in the minutes in the Panel Review Meeting dated 12 th February 2016 must be included.	All comments by the related agencies and expert panel have been incorporated in this EIA report.
4	The methodology of each study is to be clearly stated in the EIA report.	All methodologies of each study area are stated accordingly in <i>Chapter 6</i> of this EIA report.
5	Mitigation measures are proposed.	Mitigation measures are addressed according to the Project components as in <i>Chapter 8</i> of this EIA report.
6	Reference of related guidelines is to be based on the latest guidelines as published by this Department including <i>Environmental Impact Assessment Guidelines In Malaysia 2016</i> and the guidelines from the other relevant agencies.	All references of related guidelines are listed in <i>Chapter 1</i> of this EIA report.
7	The Project Planning Schedule is to be included.	The Project Planning Schedule is presented in <i>Chapter 5</i> of this EIA report.

1.7 Legal Aspects

The following legislations act as a foundation to the Project implementation and are referred to in conducting this EIA study:

- i) Environmental Quality (Prescribed Activities) (Environmental Impact Assessment) Order 2015;
- ii) Environmental Quality Act 1974 (Amendment 2012) and Subsidiary Legislations;
- iii) Exclusive Economic Zone Act 1984;
- iv) Continental Shelf Act 1966;
- v) Fisheries Act 1985;
- vi) Environmental Quality (Scheduled Wastes) Regulations, 2005;
- vii) Solid Waste and Public Cleaning Management Act 2007;
- viii) Environmental Quality (Sewage) Regulation 2009;
- ix) Environmental Quality (Clean Air) Regulation;
- x) Lembaga Kemajuan Ikan Malaysia Act 1971 (Act 49);
- xi) Port Authorities Act (1963) (Revised 1992); and
- xii) Merchant Shipping (Oil Pollution) Act 1994.

1.7.1 Environmental Quality Act 1974 (Amendment 2012)

As specified under the Environmental Quality (Prescribed Activities) (Environmental Impact Assessment) Order 2015 and the Environmental Quality Act 1974 (Amendment 2012), any activity which may have significant environmental impact is categorised as “Prescribed Activity”, with an Environmental Impact Assessment (EIA) study being the prerequisite component for an approval. Section 34A of the Environment Quality Act 1974 (Amendment 2012) requires any project proponent with projects falling under the prescribed activity category to submit a report to the Director-General of the Department of Environment (DOE). This report shall contain, *inter alia*, “an assessment of the impact of such activity will have or is likely to have on the environment and the proposed measures that shall be undertaken to prevent, reduce or control the adverse impact on the environment.”

Table 1.13 tabulates the multi-prescribed activities of the Environmental Quality (Prescribed Activities) (Environmental Impact Assessment) Order 2015. The location of the multi-prescribed activities are shown in *Figure 1.7*.

Table 1.13 ► Multi-Prescribed Activities of the Proposed Project

Prescribed Activity		Term	Details
First Schedule	Item 12 (a)	Development in coastal and hill area	Construction of building or facilities with 80 rooms or more in coastal area
First Schedule	Item 14 (c)(i)	Waste treatment and disposal	Sewage : Construction of sewage treatment plant with 20,000 population equivalent or more
First Schedule	Item 15 (a)	Dredging	Capital dredging
First Schedule	Item 15 (b)	Dredging	Disposal of unsuitable dredged materials
First Schedule	Item 18	New township	Construction of new township consisting of 2,000 housing accommodation units or more or covering an area of 100 hectares or more
Second Schedule	Item 7 (a)	Land reclamation	Coastal reclamation or land reclamation along river banks involving an area of 50 hectares or more

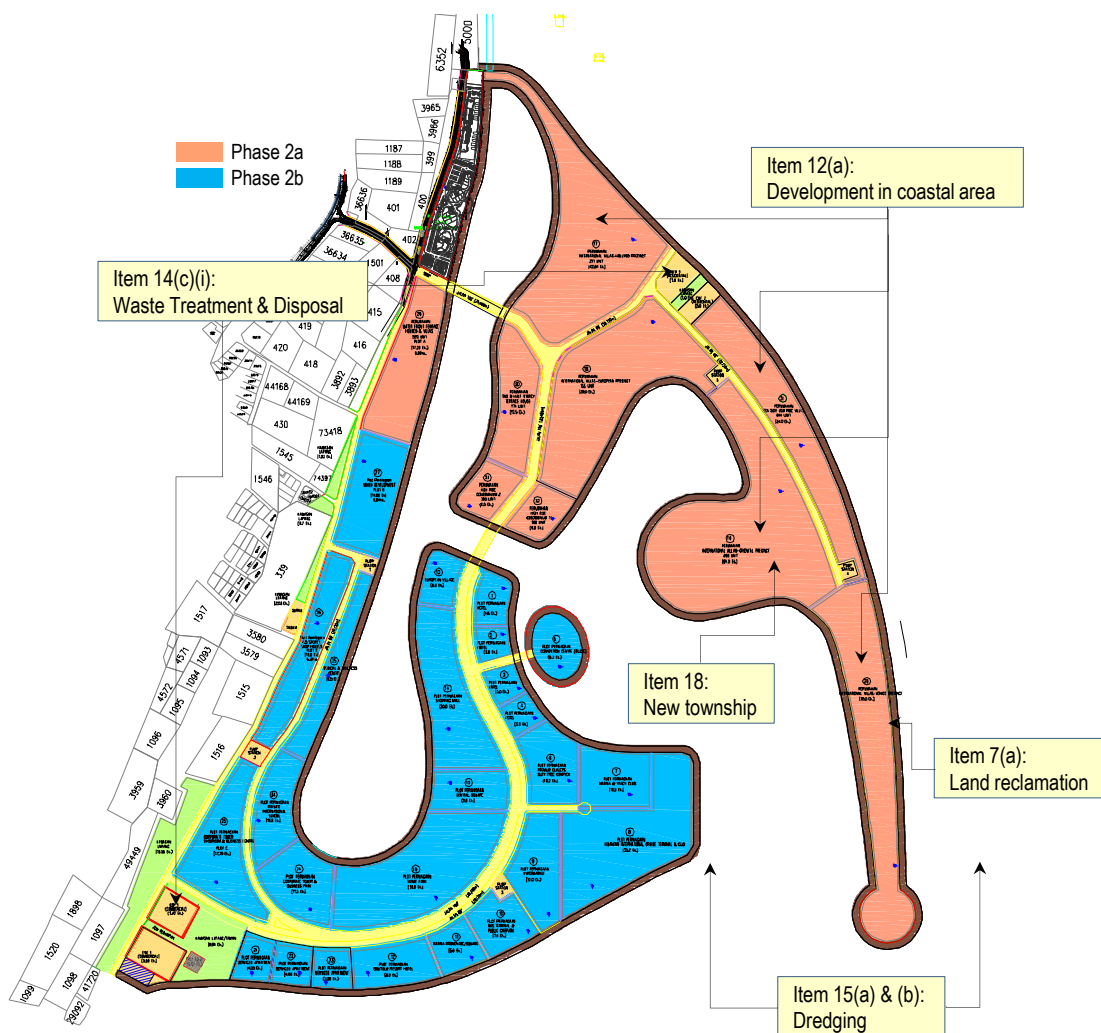


Figure 1.7 ► Location of the Multi-Prescribed Activities

1.8 Objectives of EIA Study

The EIA study is conducted to fulfill the following objectives:

- i) To survey and describe the existing physical environment of the proposed project area and its surroundings within the study area. This will include, among others: climate and meteorology, hydrology and hydraulics, geology, water quality, air quality, noise, infrastructure, utilities, transportation and land use. The study shall also include an analysis of existing seabed topography, and existing erosion and sedimentation patterns in the proposed area;
- ii) To survey and describe the existing biological environment in the proposed project area and its surroundings within the study area, including flora and fauna (density and diversity), ecological systems, as well as habitat values;
- iii) To survey and describe the existing socio-economic environment of the local population who will be directly or indirectly affected by the proposed project. The study will particularly highlight the fisherman population, tourism activities and the aquaculture activities (if any);
- iv) To assess significant environmental effects of the proposed project and its related activities at different stages of project implementation;
- v) To suggest mitigating measures that can eliminate, control or minimize negative impacts of the project, and to propose plans for surveillance and monitoring of environmental effects;
- vi) To discuss the environmental significance of potential residual impacts; and
- vii) To formulate a general outline of the Environmental Management Plan (EMP) as well as the Emergency Response Plan (ERP) for the implementation of the project.

1.9 Structures of EIA Report

The EIA report will be structured as follows:

Volume 1: Executive Summary

The executive summary is written in Bahasa Malaysia and English. The main subjects covered in this volume include summarized descriptions of the project components, activities, impacts on the environment and mitigating measures recommended. Recommendations for an EMP will also be included.

Volume 2: Main Report

The volume covers the project details, the site's baseline conditions as well as the interpretation of data from the EIA and Hydraulic studies as well as findings from the Public Dialogue and other pertinent inputs from the public. The chapters of the main report are listed as follows:

- Chapter 1: Introduction;
- Chapter 2: Terms of Reference;
- Chapter 3: Statement of Need;

- Chapter 4: Project Options;
- Chapter 5: Project Description;
- Chapter 6: Existing Environment;
- Chapter 7: Evaluation of Impacts
- Chapter 8: Mitigating Measures;
- Chapter 9: Environmental Management Plan (EMP); and
- Chapter 10: Study Findings

Volume 3: Appendices

This volume provides all the certificate of analysis, socio-economic questionnaire, and information on the Public Dialogue. The appendices are assigned as follows:

- Appendix 3A: Public Dialogue and Focus Group Discussion; and
- Appendix 3B: Certificate of Analysis.