WORKING PAPER 2L

SOCIAL IMPACT ASSESSMENT (SIA) REPORT

By

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CHAPTER 1 INTRODUCTION

1.1 GROWTH PERSPECTIVE OF PORT KLANG

Port Klang is Malaysia's principal gateway and busiest port offering facilities and services to handle a wide variety of cargoes ranging from containers to break bulk cargoes as well as capacity to handle liquid and dry bulk cargoes of all types and shipment sizes. It is strategically located on the west coast of Peninsular Malaysia at the northern end of the Straits of Malacca, one of the world's busiest trade routes with vast amount of containerised cargo movement going east-west and north-south (**Figure 1.1**). Due to its strategic location, Port Klang handles more than 50% of all Malaysian seaborne traffic.

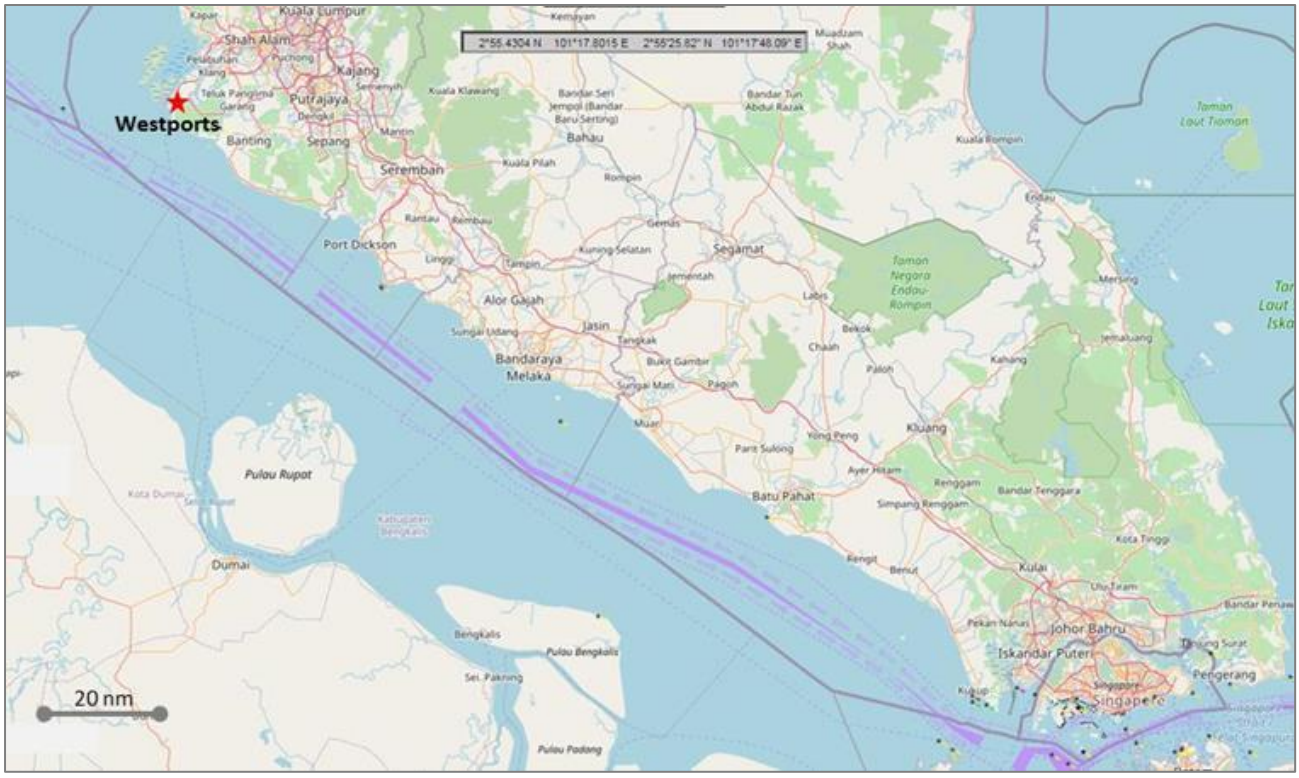
Port Klang is made up of three ports, namely, Northport, Southport and Westports (**Figure 1.2**). Collectively, these three ports play an important role in the development of the Malaysian economy and in its global outreach in the country's burgeoning international trade.

The Port Klang Authority indicated that Port Klang handled 12.3 million TEUs of containerised cargo in 2018, of which about 61.4% comprised transhipment boxes, 19.4% were import and 19.2% were export cargo (Port Klang Authority Annual Report 2018). Container volume is measured in twenty-foot equivalent units or TEUs where a TEU represents the volume of a standard 20 feet long intermodal container. In 2018, Port Klang was ranked 12th amongst the top 20 container ports in the world and the second busiest port in Southeast Asia. Container ships have been getting bigger over the years for operational efficiency. To remain competitive and maintain its position as a mega hub port as well as address the rising competition among the regional ports within Southeast Asia, Port Klang facilities and services must expand to accommodate these Ultra Large Container Vessels.

In 2000, Northport and Southport merged into one entity. Subsequently called Northport (M) Bhd, the port terminal, however, is unable to expand its terminal facilities further to cater to the trend of increasing vessel sizes due to a number of factors: first, constraints in land area as the area surrounding it is fully developed with port terminals, storage yards, warehouses and other ancillary support buildings; and second, inadequate turning basin and limited channel depth and width along the Northern Channel of Selat Klang.

The Northern Channel has a depth of 11.2m and a width of 300m. Container vessels that are longer than 300m in length face difficulties in berthing as the water channel in front of the berths are inadequate for turning. Further, only container vessels that have a draft depth of less than 11m are able to use the Northern Channel safely. Ships with draft of more than 11m are required to use the Southern Channel, resulting in longer navigation time and distance for large vessels. Given the space constraints faced on land and on the water channel, it would be difficult for Northport to expand further to take on larger vessels and increasing vessel volumes in the future.

Figure 1.1: Shipping Channel along the Straits of Melaka



Source: https://www.sea-seek.com/Port-Klang-Kelang-Selangor-Malaysia (accessed 02 March2020)

Westports in Pulau Indah, on the other hand, has the advantage of being surrounded by land that is still undeveloped, albeit zoned for port expansion and industrial development. It is accessed through the Southern Channel of Selat Klang, a water body with a water depth of 15 to 17.5, and a turning basin of 500m that allows ships of more than 400m length to turn easily and navigate safely.

Data from the Port Klang Authority indicate that in 2018, Westports handled 18% of all containers passing through the Straits of Malacca and accounted for 77.4% share of the container volume in Port Klang. With respect to container throughput, Westports handled 9.53 million TEUs in 2018, in contrast to 2.78 million TEUs handled by Northport over the same period. The bulk of the container volume is contributed by transshipment containers (67%) and to a smaller degree by gateway containers (33%). Transshipment is the shipment of goods or containers to an intermediate destination, then to another destination, while gateway means handling the import and export of the container business.

A port planning study commissioned by Westports in 2018 projected that the container throughput at Westports would grow to about 28 million TEUs a year by 2040 based on a review of the regional port market, regional economic growth factors, port connectivity and competitiveness. Westports is now operating at more than 80% of its container handling capacity. The port study estimated that Westports' container throughput demand would reach

92% of its existing handling capacity by 2025, an operational level that would result in congestion, longer transit time and higher cost. It is crucial therefore for Westports to undertake a capacity expansion, failing which Westport and Port Klang would face severe congestion issues and would be unable to handle additional cargo beyond 2025.

Capacity expansion is important as Malaysia needs to prepare itself to cater to the growing need for container-handling capacity from shipping lines. Expansion of Westports is necessary firstly, to meet the anticipated growth in the containerised sea-freight industry and the increasing trend towards larger vessel size; secondly, to achieve greater efficiency in operations, and lastly, to ensure that Port Klang remains competitive in view of the consolidation and expansion of Singapore's ports in Tuas as well as to maintain its lead against other planned container port terminals in Indonesia. Nationally, the proposed expansion would further strengthen Port Klang's role as the pre-eminent port for the nation's gateway trade and also reinforce the terminal as one of the main transhipment hubs in the Southeast Asia region for international container shipping alliances.

Figure 1.2: Location Plan of Port Klang

Source: https://www.sea-seek.com/Port-Klang-Kelang-Selangor-Malaysia (accessed 02 March 2020)

1.2 PROJECT BRIEF FOR WESTPORTS PHASE 2 DEVELOPMENT

Westports Malaysia Sdn Bhd (hereinafter referred to as "Westports") started operations as Kelang Multi Terminal Sdn Bhd in 1994 and was renamed in 1997 as Westports Sdn Bhd. The company proposes to expand its port handling facilities to cater to the anticipated growth in containerised sea-freight and the increasing trend towards larger vessel size. The proposed expansion is called "Westports Phase 2 Development - Proposed Expansion of Container Terminal CT10 – CT17 and its Associated Works at Westports Pulau Indah in Selangor Darul Ehsan".

As a multi-cargo seaport, Westports started operations by handling conventional cargo that comprises mixed steel coils, animal feed, edible products, fertilisers, building-related cargo, palm oi, petroleum, chemicals and liquefied petroleum gas. The conventional cargo terminals handled close to 10.7 million tonnes of bulk cargo in 2017. This represented close to 60% market share of conventional cargo handled in Port Klang.

However, global and regional connectivity makes Westports an attractive transhipment hub. The transformation of Westports into a mega hub was gradual. It started to handle container cargo and provided a range of port services that include bunkering, storage, warehousing, cargo/freight handling and other port related facilities and services. Container cargo or containerised boxes are currently handled through nine (9) container terminals (CT1 to CT9).

Over the years, Westports expanded its container terminals to accommodate an increase in shipping activities, i.e. import, export and transhipment and a growing volume of container cargo throughput. In 2018, container throughput increased to 9.5 million TEUs, an improvement over 9.0 million TEUs the previous year. Its container volume has grown exponentially making Westports the leading terminal operator in Port Klang, controlling 77.4% of the market share in 2018.

The conventional cargo and container cargo terminals are separate from each other but are laid out linearly along the western and south-western coast of Pulau Indah facing Selat Klang. Together, the conventional cargo quay and container quay have a contiguous quay length of 8,442m. The straight container quay measures 5,800m in length and accommodates 67 ship-to-shore cranes, from CT1 to CT9. In area terms, the existing container port covers a land area of about 535.47 hectares (Westports Sustainability Report 2018).

With respect to direct jobs and employment, Westports has a workforce of 4,603 employees in 2018, almost all of whom are locals from Pulau Indah and the surrounding areas in Daerah Klang. Only 2 employees (in Management) are foreigners (Westports Sustainability Report 2018). An economic impact study conducted by PricewaterhouseCoopers indicated that the proposed Westports' expansion plan is expected to generate an economic output of RM55.3 billion from 2021 to 2080. It also found that the Project could contribute around RM19 billion to Malaysia's GDP over the 60-year period, generate over 6,000 jobs on average and act as a catalyst for trade growth.

To expand its business, Westports plans to extend its container port by adding an additional eight (8) container terminals, i.e. CT10 to CT17. Upon completion, the expansion will add

4,800m of additional terminal length to cater for container vessels of up to 400m overall length (LOA) and will be able to handle a projected container throughput of 28 million TEUs per year by 2040. In addition to the container terminals, the expansion also involves the development of other ancillary facilities to support the terminal port functions. These ancillary components include the transfer yards, storage yards, back-of-terminal facilities, containment area for a future free trade zone as well as a special reserve that will be dedicated for the proposed East Coast Rail Link (ECRL) yard.

Approximately 550 hectares of land are required to accommodate the container terminals and the ancillary support facilities. Part of the project site involves land owned by Westports and adjoining the existing port; the other part of the project site is on the foreshore area that would be reclaimed for the purpose. The Project will be undertaken in 2 phases: Phase 1 (from 2022 – 2027) and Phase 2 (from 2026 – 2050). Upon completion, the proposed expansion project will be fully integrated with the existing CT1 – CT9 terminals.

A masterplan study of the Project was conducted in 2018 and completed in October 2019. The study included various technical studies and assessments by specialist consultants engaged by Westports to affirm the need for the Project, assess the suitability of the project site and compatibility with the surrounding land use. The technical studies included the following: port planning, marine traffic risk and navigational safety, coastal hydraulics and land traffic assessment. These studies were complemented by fieldwork and site investigations that include topographic and bathymetric surveys, sediment sampling, land traffic survey and soil investigation. All these site investigation works form the baseline conditions for the masterplan study.

A number of layout options and configurations for the port expansion were studied by port planning experts from Hong Kong to establish the most efficient configuration and one with the least impact on the environment. The selected layout configuration was presented to the Port Klang Authority in November 2019 where agreement in-principle was given.

In addition to the technical studies, Westports also commissioned a Preliminary Environmental and Social Impact Assessment Study in 2019. This was essentially a screening and scoping exercise to briefly review the environmental and social characteristics of the area within 5km radius of the project boundary and identify key environmental and social issues and stakeholder groups that need to be taken in consideration in the overall planning of the port expansion. The study involved site reconnaissance and secondary data review. Informal interviews and discussions were also held with the local fishermen and the Department of Fisheries Selangor to obtain further insights relating to the fishing activities in Pulau Indah, including fishermen's concerns and challenges faced by them. These preliminary findings set the platform for the scope of work, assessment methodology and approach for the current Social Impact Assessment study.

1.3 CONFORMANCE WITH NATIONAL AND STATE PLANS AND POLICIES

The need to expand Westports' capacity is predicated on a number of strategic factors:

1) To meet the anticipated growth in containerised sea-freight industry and the increasing trend towards larger vessel size;
2) To achieve greater efficiency in port operations;
3) To ensure Port Klang remains competitive against the consolidation and expansion of Singapore's ports and the other planned container port terminals in Indonesia;
4) To support the national government's plans, policies and strategies to re-engineer economic growth for greater prosperity through expansion and strengthening the country's major infrastructure and transportation facilities. This includes expanding port capacity and operations.
5) To support Selangor state government's strategy to promote Port Klang as the main port of entry and import-export centre in Malaysia, strengthen the position of Port Klang as part of the Greater Kuala Lumpur investment centre and stimulate the further development of the port and maritime industrial zones in and around Port Klang; and
6) To support the strategy of Majlis Perbandaran Klang towards strengthening and promoting Port Klang as a maritime hub.

Whilst the economic factors for the Project have been summarily discussed in the Growth Perspective of Port Klang and Project Brief for Westports Phase 2 Development above, its conformance with national, state and local government policies is reviewed in the following sections.

1.3.1 Eleventh Malaysia Plan (2016 – 2020)

Westports Phase 2 expansion is in line with the Government's national development plans and policies set out in the Eleventh Malaysia Plan (2016 – 2020). To promote national economic expansion, Strategic Thrust 5 of the Eleventh Malaysia Plan (2016 – 2020) is to strengthen and expand the country's major infrastructure and transportation facilities to support economic expansion. This particular strategic thrust recognises that it is vital to continuously improve the quality of port infrastructure as it contributes to better logistics performance that will lead to higher seaborne trade, a stronger maritime industrial sector as well as the transportation and logistics sector. These are sectors are crucial in providing the impetus towards yielding higher economic growth for the country and region. Strategy A3 of the Eleventh Malaysia Plan specifically calls for the expansion of port capacity, access and operations with attention on Focus Area 3, which is, unleashing the growth potential of the logistics sector and enhancing trade facilitation.

Indeed, if accessibility, capacity and efficiency of Westports are further enhanced through its proposed expansion, the port can play a significant part as a trade enabler, employer, centre of technology and know-how and initiator of positive multiplier and spillover effects. It can stimulate entrepreneurship, create jobs, attract private capital, and increase foreign exchange earnings for the country.

1.3.2 *Rancangan Fizikal Negara 3 (RFN3)*

Similarly, one of the themes of *Rancangan Fizikal Negara 3 (RFN3)* is improving the competitiveness of the country's economy. *RFN3* is a written statement prepared by *Jabatan Perancangan Bandar dan Desa Semenanjung Malaysia* in 2015 outlining strategic policies to guide the direction of physical planning at the federal and state level. *RFN3* is clear with respect to the role of the ports in national economic development. RFN Policy 31 advocates enhancement of major airports and ports to strengthen the country's economic competitiveness. Related to enhancement of ports, Policy direction PD1.5 of *RFN3* advocates strengthening the ports through the expansion of port operations and capacity whilst policy direction PD1.5D recommends improving the logistics industry and supply chain management to ensure that products are produced, transported and distributed more efficiently and cost effectively.

Westports Phase 2 expansion is aligned with RFN Policy 31 and Policy direction PD1.5, i.e. to establish Port Klang as the country's main port of entry and preferred transhipment and logistics hub with the aim of intensifying the country's economic competiveness in South-east Asia and the Asian-Pacific region.

1.3.3 Selangor Structure Plan, 2035

Westports Phase 2 expansion is also aligned with the development policies and strategies of the Selangor Structure Plan 2035 which has identified Klang and Port Klang as a strategic growth centre *(pusat pertumbuhan strategic).* One of its policy directions (i.e. *Hala Tuju 6*) sets out to support, promote and facilitate Port Klang as the main port of entry and the preferred transhipment and logistics hub in Malaysia. Aligned with this is *Dasar BM13* that advocates strengthening Port Klang's position as part of the Greater Kuala Lumpur investment centre and stimulating further development of the Port Klang - Pulau Indah - Telok Gong - Sijangkang region as the industrial hub for port and marine-related activities.

The industrial zones in Port Klang and Pulau Indah currently operate as the regional distribution hub as well as a trading, warehousing and logistics centre offering extensive warehousing, distribution and manufacturing facilities. The Selangor Halal Hub is located in Pulau Indah to take advantage of the ease of access to import/export facilities provided by Westports. Likewise, proximity and access to port facilities (as well as highway connectivity to the rest of the country) are likely reasons for IKEA Supply (M) Sdn Bhd to invest RM900 million in a regional supply chain and distribution centre in Pulau Indah that is currently under construction. In addition to IKEA, site preparation is currently underway for the development of the Selangor Bio Bay, a project on 1,352 acres of seafront land in Pulau Indah earmarked for the biotechnology industry.

The 2020 government budget allocated of RM50 mil for the repair and maintenance of roads leading to Port Klang and Westports, as well as the feasibility studies on the Serendah-Port Klang Rail Bypass for cargo shipments and the Klang Logistics Corridor (a dedicated privatised highway connecting Northport and Westports) will benefit Northport and Westport.

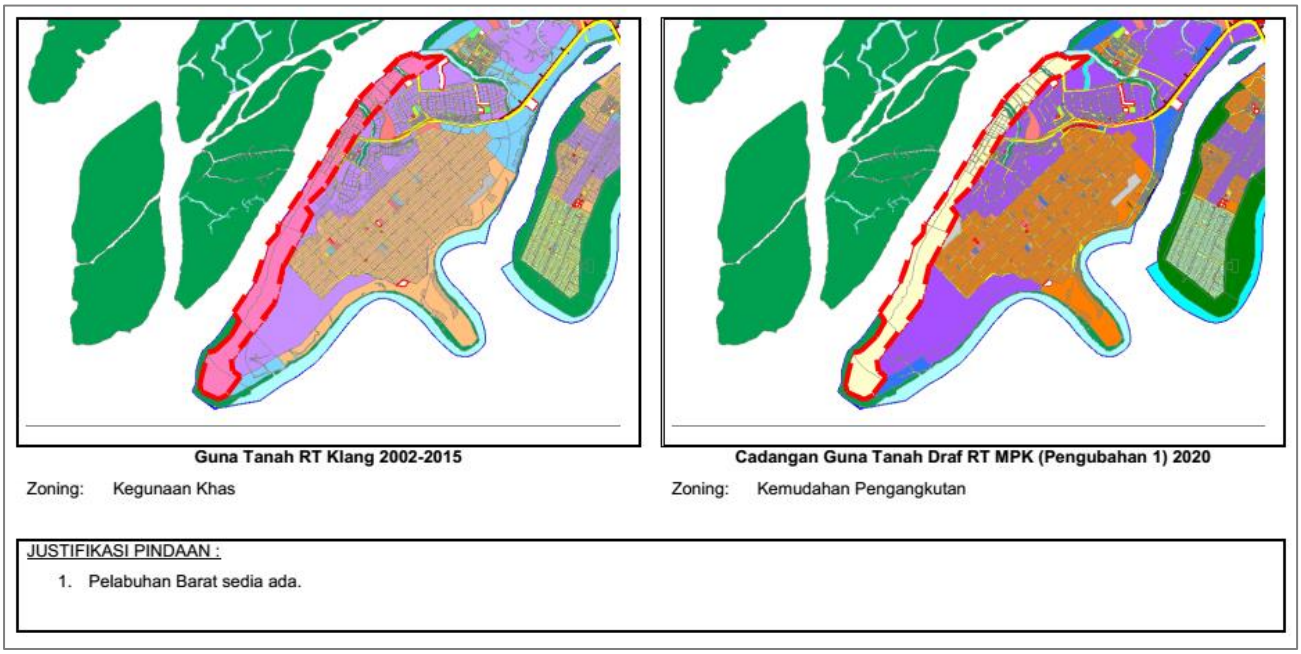
Through Westports Phase 2 development, Selangor State will directly and indirectly benefit through the flow-on and multiplier effects along the value chain. Benefits may include improved employment and job opportunities, easing of out-migration of local workers, enhanced business opportunities and linkages, improved income and livelihood, economic growth especially in the development of the industrial, business, services and residential sectors, and improved physical and social facilities and services to the community.

1.3.4 *Rancangan Tempatan Majlis Perbandaran Klang (Pengubahan 1) 2020*

Draf Rancangan Tempatan Majlis Perbandaran Klang (Penggantian) 2035

Draf Rancangan Tempatan Majlis Perbandaran Klang (Pengubahan 1) 2020 that was prepared in 2011 recognised Port Klang and Westports as catalysts for economic growth in the country. With respect to Pulau Indah in general and Westports in particular, *RT Klang (Pengubahan 1) 2020* has earmarked the island as an industrial hub and has rezoned *Blok Perancangan Kecil (BPK9.3)* in Pulau Indah where Westports is located from *Kegunaan Khas* to *Kemudahan Pengangkutan* on account of the existing port (**Figure 1.3**).

Figure 1.3: Rezoning of BPK 9.3



Source: *Rancangan Tempatan Majlis Perbandaran Klang (Pengubahan 1) 2020*

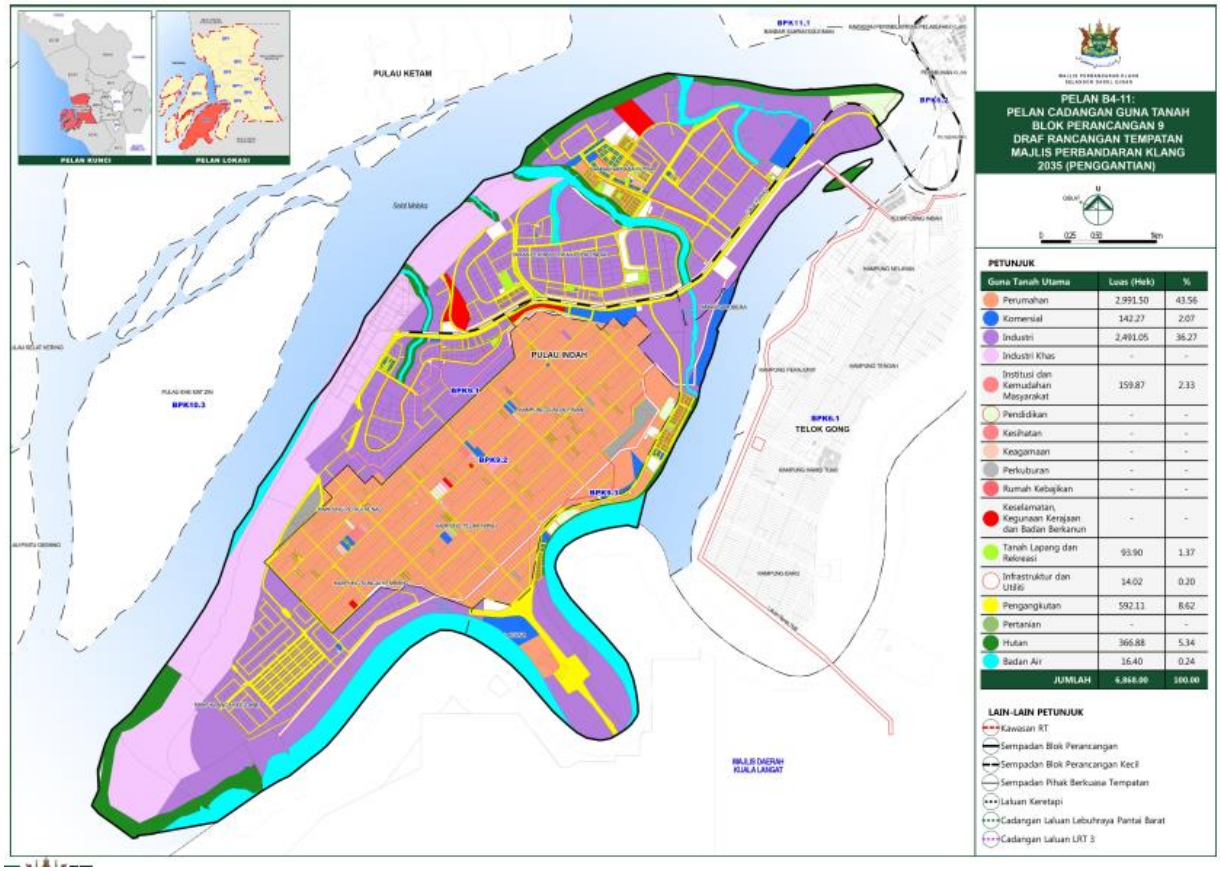
The recently completed *Draf Rancangan Tempatan Majlis Perbandaran Klang (Penggantian) 2035* (*Draf RT Klang 2035*) supersedes the earlier document. One of the eight development strategies recommended in *Draf RT Klang 2035* is the endorsement of Port Klang and Westports as economic growth enablers for Klang,

Selangor and the nation through the economic linkages and spill-over effects both ports can create along the value chain.

The sub-strategies recommended in *Draf RT Klang 2035* include: (1) reviewing Westports' land requirement for its operations including the ancillary support facilities; (2) conducting more in-depth planning of the area surrounding the maritime hub; and (3) initiating collaboration between Majlis Perbandaran Klang and the Port Klang Authority to review the additional land that is required for future port expansion and the establishment of distriparks and other ancillary facilities and services that are needed to support the ports and the maritime industrial zone in Port Klang and Pulau Indah.

Draf RT Klang 2035 has zoned *BPK9.3 (*where Westports is located) for Special Industry *(Industri Khas)* which includes port and marine-related activities (**Figure 1.4**). With respect to land use compatibility and compliance with the zoning, Westports Phase 2 development is in conformance with the future land use zoning plan for *BPK9.3.* The Project Proponent, Westports Malaysia Sdn Bhd, undertakes to apply for land conversion and planning permission upon approval of the SIA and EIA studies and thus will be in line with the State's planning requirements.

Figure 1.3: Proposed Land Use Plan of *Blok Perancangan 9, Pulau Indah*



Source: *Draf Rancangan Tempatan Majlis Perbandaran Klang (Penggantian) 2035*

1.4 STATUTORY REQUIREMENTS FOR AN SIA STUDY

It is a requirement under sub-section 22(2A) of the Town and Country Planning Act, 1976 (Act 172) and sub-section 20B(1) and (2) of the Town and Country Planning (Amendment) Act, 2017 (Act A1522) to submit a social impact assessment for major projects that may have significant direct social impacts before these projects can be approved for development. For projects that are not likely to have any significant social impacts, sub-section 21A(1) of Act A1522 still requires social issues and impacts to be addressed and the analysis and findings to be incorporated into the planning development report which is to be submitted in tandem with the project layout plan to the local planning authority for their approval.

Manual Penyediaan Laporan Penilaian Impak Sosial (SIA) bagi Projek Pembangunan (Edisi ke-2), 2018 prepared by PLANMalaysia serves as a guidance document in the preparation of a social impact assessment (SIA) study. The *Manual* identifies the project types that are subject to a SIA; as well as the category of SIA the Project falls under based on the severity and significance of direct impacts on the affected communities.

The existing container wharf at Westports is 5,800m in length and the port covers an area of about 535.47 hectares. The proposed Westports Phase 2 development involves extending the existing container wharf by 4,800m and requires reclamation works involving 550 hectares of land and foreshore area to accommodate the additional container terminals and the ancillary support facilities and services. Based on the *Manual*, the SIA for Westports Phase 2 development is classified under Category 1 and subject to section 20B of the Town and Country Planning (Amendment) Act, 2017, Act A1522.

The definition is as follows:

	Category 1	**Type of Development**	**Development Characteristics**
1	Foreshore Reclamation *(Penebusgunaan Pinggir Laut)*		
	a) Foreshore reclamation	Foreshore reclamation including man-made islands	• Involving 50 hectares and above; and • Excludes reclamation for the construction of jetty or beach nourishment by JPS
2	Major National Infrastructure *(Infrastruktur Utama Negara)*		
	b) Marine port	1) National port 2) Regional port 3) State port – located within state boundary	• Covers passenger and cargo port; • Includes upgrading of existing ports and port expansion involving an increase of 50% or more of its existing area; and • Excludes passenger/fishing jetty.

Source: *Manual Penyediaan Laporan Penilaian Impak Sosial (SIA) bagi Projek Pembangunan (Edisi ke-2), 2018*

1.5 RELEVANT REGULATIONS, GUIDELINES AND DOCUMENTS

The following regulations, guidelines and documents are referred to in the proposed project:

1) Legislation and Policy Documents
   - Town and Country Planning (Amendment) Act, 2017 (Act A1522)
   - Town and Country Planning Act, 1976 (Act 172)
   - Environmental Quality Act 1974 and amendments thereof
   - National Land Code 1965 (Act 56)
   - Local Government Act 1976 (Act 171)

2) Guidelines and Manuals
   - *Manual Penyediaan Laporan Penilaian Impak Sosial (SIA) bagi Projek Pembangunan (Edisi ke-2), 2018*
   - Guidelines on Erosion Control for Development Projects in the Coastal Zones 1/97
   - Environmental Impact Assessment Guidelines for Coastal and Land Reclamation Activities
   - Integrated Coastal Management Plan (ICM 2007) for Klang and Kuala Langat by Lembaga Urus Air Selangor (LUAS)
   - Integrated Shoreline Management Plan (JPS)
   - National Coastal Resource Management Policy

3) Supporting Documents
   - Eleventh Malaysia Plan 2015-2020
   - *Rancangan Fizikal Negara 3 (RFN3)*
   - *Rancangan Struktur Negeri Selangor 2035*
   - *Draf Rancangan Tempatan Majlis Perbandaran Klang (Pengubahan1)2020*
   - *Draf Rancangan Tempatan Majlis Perbandaran Klang (Penggantian) 2035*

1.6 OBJECTIVES OF THE SIA STUDY

The primary objective of the SIA is to identify the affected communities and interest groups within the zone of impact and to establish how they will be affected by the Project during the construction and operational phases.

More specifically, the study objectives shall address the following:

1) Establish a close representation of the baseline demographic and socio-economic profile of the communities residing within the zone of impact;

2) Identify potential social impacts (both positive and negative) resulting from the construction and operation of the Project. This includes perceptions and responses from the affected communities and interest groups in relation to the different phases of the Project.
3) Recommend pragmatic and attainable measures to enhance positive impacts and to minimise or mitigate adverse impacts during the construction and operation phases; and

4) Develop implementable management and monitoring measures during construction and operational phases so as to monitor, manage and resolve community/stakeholders' concerns and complaints during Project implementation.

1.7 STRUCTURE OF THE SIA REPORT

The SIA report shall assume the follow structure.

Chapter	Title	Focus
1	Introduction	• Brief introduction and background to the Project; • Conformance with national and state development plans and policies; • Objectives of the SIA study; • Structure of the Report and the Study Team.
2	Project Description	• Overall description of the Project; development components; implementation phases and schedule
3	Study Approach and Methodology	• Study approach; • Methodology (identification of the zone of influence, sample size calculation, identification of key stakeholders, stakeholder engagements, key informant interviews, perception survey and method for impact analysis)
4	Baseline Study and Findings	• Qualitative analysis of the socio-economic environment • Social profiling of survey respondents • Key findings of perception survey • Key findings of stakeholder engagements, and • Key findings of key informant interviews
5	Social Impacts and Mitigation Measures	• Identification and assessment of significant social impacts to the local population and stakeholders during construction and operational phases of the Project. • Recommend mitigation measures for all potential adverse impacts during construction and operational phases.
6	Social Impact Management Plan (SIMP)	• A summary in a table format identifying potential adverse and positive impacts throughout the project duration and their mitigation measures. • Identify relevant agencies/parties to be involved in mitigation, monitoring and implementation of the SIMP, including grievance management.
7	Conclusion	• Conclusion drawn from the Study

1.8 PROJECT PROPONENT

Westports Malaysia Sdn Bhd is the Project Proponent for Westports Phase 2 Development - Proposed Expansion of Container Terminals CT10 – CT17 and its Associated Works at Westports Pulau Indah, Selangor (hereinafter referred to as "the Project").

The correspondence address and contact details are as listed below:

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Fax:	03-3169 4100
Contact person:	Mr. Ahmad Damanhury bin Ibrahim
Designation:	Head of Port Projects
Email address:	admad@westports.com.my

1.9 SIA STUDY TEAM

SMHB Sdn Bhd is the Social Impact Assessment consultant for the Project. The consultants and other technical researchers who are involved in the preparation of the SIA Study are listed below. The SIA Study is also prepared using data and findings from the various technical studies and assessments by specialist consultants engaged by Westports to affirm the need for the project and the suitability of the project site. The technical studies include the following: port planning, marine traffic risk and navigational safety, coastal hydraulics and land traffic assessment.

The correspondence address and contact details of SMHB Sdn Bhd are as listed below:

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SIA Study Team Members

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2	Dr Gobi Krishna a/l Sinniah	• Ph.D. *(Perancangan Pengangkutan),* Newcastle University • Board of Town Planner Malaysia. Registration No. A0531 • Malaysian Institute of Planners. Registration No. MIP/684 • Malaysian Association of Social Impact Assessment. Registration No. MSIA/0077
Support Specialist Consultant		
1	Dr Harinder Rai Singh	• Ph.D. (Marine & Coastal Ecology), University Malaya • DoE Subject Specialist (Ecological Studies – Marine and Coastal Biology/Aquatic Ecology) Registration No. SS0276
Research Assistants		
1	Mohd. Firdaus	• B.A (Urban Planning), UTM

Other Technical Consultants

No.	Name	SIA Contribution
1	SMHB Sdn Bhd	• EIA consultant
2	HSSI Sdn Bhd	• Engineering related works (soil investigation, port design)
3	BMT Asia Sdn Bhd	• Port planning • Marine traffic risk assessment and navigational safety
4	Runding Trafik MZK Sdn Bhd	• Land traffic impact assessment
5	DHI Water & Environment (M)	• Coastal hydraulics study
6	Cheong Hon Loong	• Soil erosion and sedimentation Analysis

CHAPTER 2 PROJECT DESCRIPTION

2.1 PROJECT LOCATION

Westports is within the township of Port Klang and is one of the three main ports along the Straits of Malacca that manages gateway and trans-shipment container cargo. Westports manages port operation involving container and conventional cargo. It also provides a range of port services, including storage services, marine services, rental services, and other ancillary services. Port Klang Authority (PKA), a statutory corporation, plays the role as trade facilitator and regulator of all the major gateways located in Port Klang, namely Westports, Northport, and Southport (Southpoint). PKA is also responsible for port planning and development, regulator of privatized facilities and services, free zone authority, and management of assets.

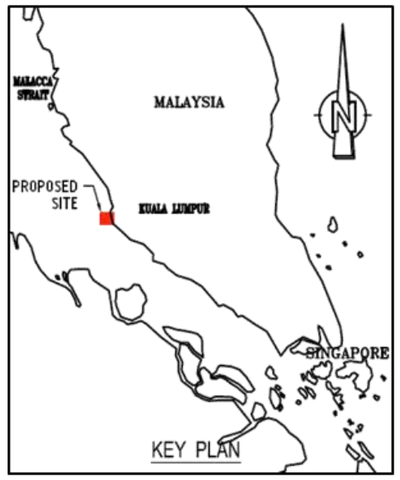
The proposed expansion of Westports Phase II will be situated at the coastal area of the State of Selangor, at the southern tip of Pulau Indah, adjacent to the existing terminals of Westports. The total area that will be developed for the Project, is approximately 550ha. The Project site is surrounded by existing port facilities, islands, and townships. Pulau Indah, Pulau Indah Industrial Park, Southport, and Northport lie to the north-east of the site; Telok Gong, Telok Panglima Garang, and Pulau Carey to the east; the islands of Pulau Che Mat Zin, Pulau Klang, Pulau Pintu Gedong, Pulau Selat Kering, Pulau Tengah, and Pulau Ketam generally to the north, and the Straits of Malacca to the west.

The Project site is located southwest of Kuala Lumpur, about 60km away from Kuala Lumpur city centre. The site is accessible via the Federal Highway (West-East), E1 North Klang Valley Expressway (NKVE), E5 Lebuhraya Shah Alam (KESAS), and Route 181 Pulau Indah Highway. The Kuala Lumpur International Airport (KLIA) situated about 80km away from the Project site, is easily accessible via E6 North-South Expressway Central Link (ELITE) and E26 South Klang Valley Expressway (SKVE).

Figure 2.1 shows the location of the proposed Westports Phase II development relative to the landmarks in the vicinity of the Project area. The coordinates of the Project boundary points are shown in **Figure 2.2** and listed in **Table 2.3**.

Figure 2.1: Location of Project

Figure 2.2: Project Boundaries



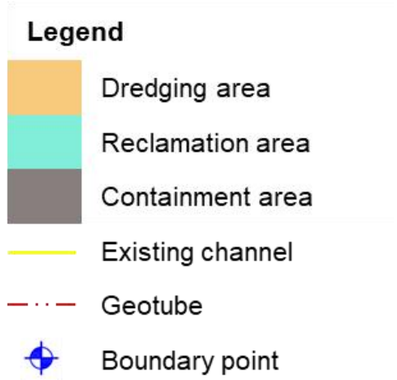


Table 2.3 Coordinates of Project boundaries

Point	Coordinates (in WGS84 format)	
	Latitude	Longitude
PT1	2° 54' 25.33" N	101° 16' 42.93" E
PT2	2° 54' 31.86" N	101° 16' 31.74" E
PT3	2° 54' 00.06" N	101° 16' 02.74" E
PT4	2° 53' 32.35" N	101° 15' 53.08" E
PT5	2° 50' 30.50" N	101° 15' 16.98" E
PT6	2° 50' 28.59" N	101° 15' 26.50" E
PT7	2° 51' 24.35" N	101° 15' 37.58" E
PT8	2° 53' 08.35" N	101° 15' 58.21" E
PT9	2° 53' 17.78" N	101° 16' 03.95" E
PT10	2° 51' 31.67" N	101° 15' 54.07" E
PT11	2° 51' 54.82" N	101° 16' 06.41" E
PT12	2° 51' 59.21" N	101° 16' 06.26" E
PT13	2° 51' 59.85" N	101° 16' 27.46" E
PT14	2° 53' 06.47" N	101° 16' 25.49" E
PT15	2° 53' 12.33" N	101° 16' 25.34" E
PT16	2° 52' 37.53" N	101° 16' 47.89" E
PT17	2° 52' 56.79" N	101° 16' 52.46" E
PT18	2° 53' 09.93" N	101° 16' 57.35" E

2.2 PROJECT DEVELOPMENT CONCEPT

The development of Westports Phase II will involve the construction of eight (8) container terminals, i.e. CT10-CT17, which will be integrated with the existing CT1-CT9 terminals. This Project involves a total area of approximately 550ha and a total berth length of 4,800m. The Westports Phase II development will increase the current port capacity of 15 million TEUs to 28 million TEUs upon full completion of the Project.

Each of the eight (8) container terminals under Westports Phase II will be constructed with a nominal length of 600m, comprising two (2) berths. Prior to the construction of the terminals and the associated facilities, initial works involving sand filling, surcharge removal, dredging, and reclamation works will take place in the vicinity of the navigation channels of the Southern Access Channel (Selat Klang), Eastern Channel (Selat Lumut), and the containment area (free trade zone area).

The salient features of the Westports Phase II expansion is as detailed below:

Number of container terminals	8 container terminals; CT10 – CT17
Number of berths	16
Configuration of berths	4 x 4
Total length (m)	4,800
Length of each berth (m)	600
Capacity (million TEUs)	13
Total area to be developed (approx.) (ha)	550
Volume of material to be dredged (approx.) (million m^3)	20 (Phase 1); 29 (Phase 2)
Volume of sand required for reclamation and filling works (approx.) (million m^3)	10 (Phase 1); 19 (Phase 2)

The main Project components and concepts for the proposed development of Westports Phase II expansion are listed below:

a. *The proposed CT10-CT13 will be extended from CT9 onwards, parallel to the alignment of the existing Westports berths. The remaining CT14-CT17 berths will bend southwards in order to maximize the distance between the Southern Access Channel (Selat Klang) and berthing areas;*

b. *Capital dredging works at the berthing areas to -18.0mCD, followed by reclamation works to the platform level of +8.0mCD for the new Westports terminals;*

c. *Entrance of the existing navigation channel, i.e. the Southern Access Channel located to the south of the Project site, will be widened by 300m to 800m and dredged to a depth of -18.0mCD;*

d. *A free trade zone (FTZ) of approximately 162ha (400ac), will be located to the east of the new container terminals, extending from the southern tip of Pulau Indah. The FTZ will be developed into an industrial area with light and medium industries;*

e. *Compensation dredging will be conducted along the Eastern Channel (Selat Lumut) up to -8.0mCD and width of 500m. This is based on the recommendation of the hydraulic study, in order to ensure that the anticipated changes to currents and water levels due to the proposed reclamation works will not impact the upstream areas along Selat Lumut;*

f. *Construction of port components including berths, quay transfer yards, container storage yards, and Back-of-Terminal (BOT) facilities. Other*

associated port facilities such as administration building, maintenance and repair workshops, marshalling building, terminal gates, and sewerage treatment plant will also be developed as part of the Project; and

g. *Construction of the proposed East Coast Rail Link (ECRL) rail yard for the Port Klang station that will be located within Westports Phase II area.*

2.3 PROJECT PHASING PLAN

The development of Westports Phase II will be carried out in two (2) phases – Phase 1 (CT10-CT13) and Phase 2 (CT14-CT17), with the planning for the port to be fully operational by year 2050. **Figure 2.3** illustrates the phases involved in the proposed development.

The Phase 1 works of the proposed Westports expansion is expected to commence in year 2021 and continue through to year 2034, whilst Phase 2 will be from year 2033 – 2050. The phasing plan for the development of Westports Phase II is shown in **Table 2.1**. **Figure 2.4** shows the proposed phasing plan for the reclamation, dredging, and filling works whereas **Figure 2.5** shows the phasing plan for the construction of wharves, yards, and BOT.

Table 2.1 Phasing plan of Westports Phase II development

Phase	Component	Dredging	Filling & Surcharge Removal	Construction Works*
hase 1	CT10		2021 – 2022	2023 – 2025
	CT11		2022 – 2023	2024 – 2026
	CT12		2024 – 2025	2028 – 2030
	CT13		2026 – 2027	2032 – 2034
	Dredging Area (-18.0mCD)	2022 – 2028		
	Containment Area			
Phase 2	CT14		2033 – 2034	2036 – 2038
	CT15		2035 – 2036	2040 – 2042
	CT16		2037 – 2038	2044 – 2046
	CT17		2039 – 2040	2048 – 2050
	Dredging Area (-18.0mCD)	2034 – 2041		
	Eastern Channel Dredging Area (-8.0mCD)			
	Containment Area			

*Note: * Construction works comprise the construction of wharves, container storage yards, Back-of-Terminal (BOT) facilities and port infrastructure.*

The details of the works involved in each phase are described below:

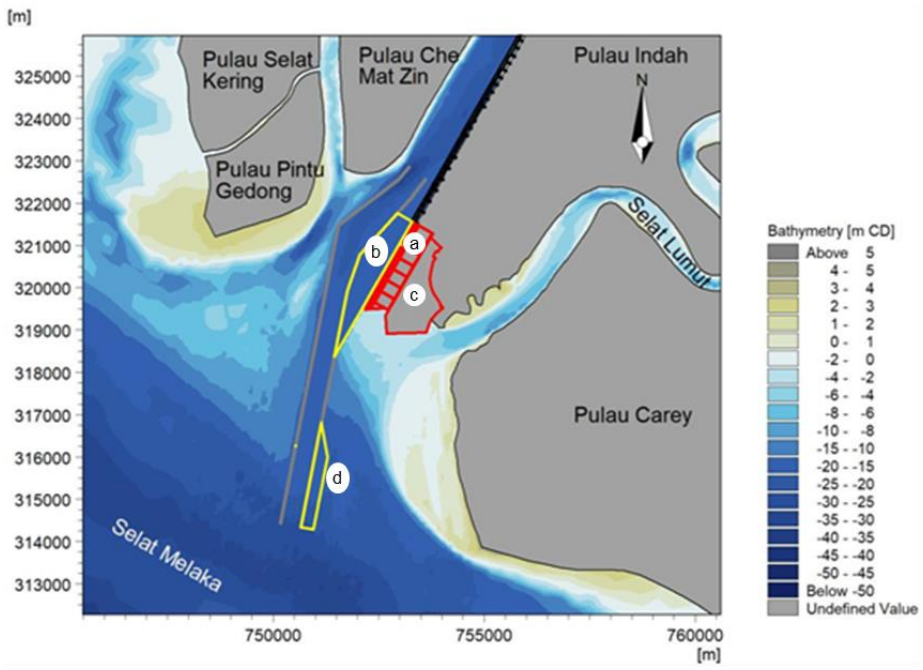
Phase 1

1 *Reclamation at CT10-CT13 to +8.0mCD by using sand obtained from the approved sand source; estimated volume of sand required is 10.5 million m^3;*

2 *Capital dredging at the berthing area to -18.0mCD; dredged materials of suitable quality will be used to fill the containment area (free trade zone area). Unsuitable dredged materials will be disposed of at an approved disposal site. The estimated volume of dredged materials is 20 million m³;*

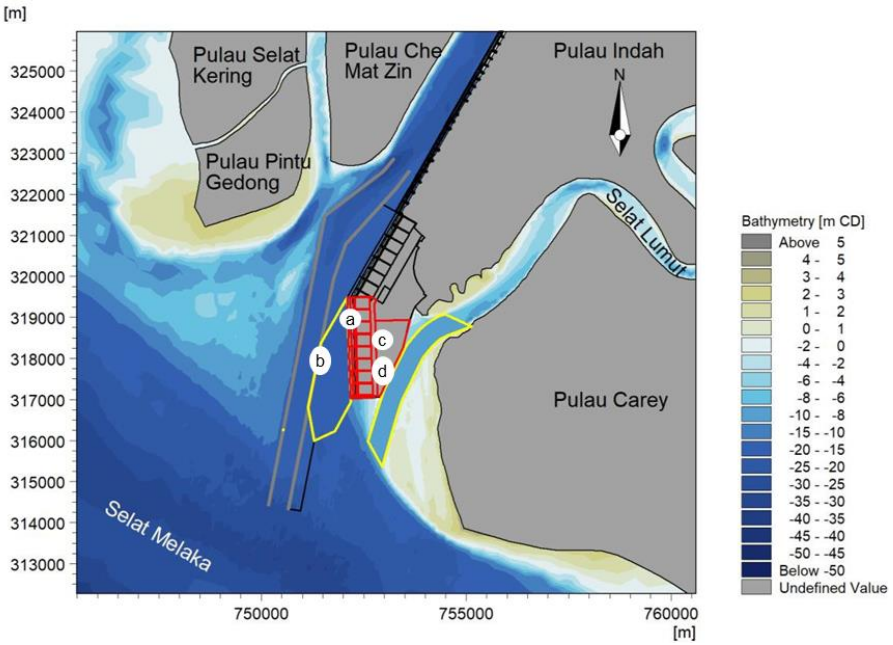
3 *Reclamation at Phase 1 free trade zone area by reusing suitable dredged materials; and*

4 *Capital dredging for the widening of the entrance of Southern Access Channel to 800m, with an estimated dredged volume of 250,000m³.*



Phase 2

- *Reclamation at CT14-CT17 by using sand obtained from the approved sand source. The estimated volume of sand required is 19 million m³;*
- *Capital dredging at the berthing area to -18.0mCD; dredged materials of suitable quality will be reused to backfill the free trade zone area. Unsuitable dredged materials will be disposed at an approved disposal site. The estimated volume of dredged materials is 16.5 million m³;*
- *Reclamation at Phase 2 free trade zone area (southern end) by reusing suitable dredged materials;*
- *Capital dredging along the Eastern Channel of approximately 12.5 million m³, to a depth of -8.0mCD.*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-50 - -45
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Figure 2.3: Westports Phase II development phases – Phase 1 and Phase 2

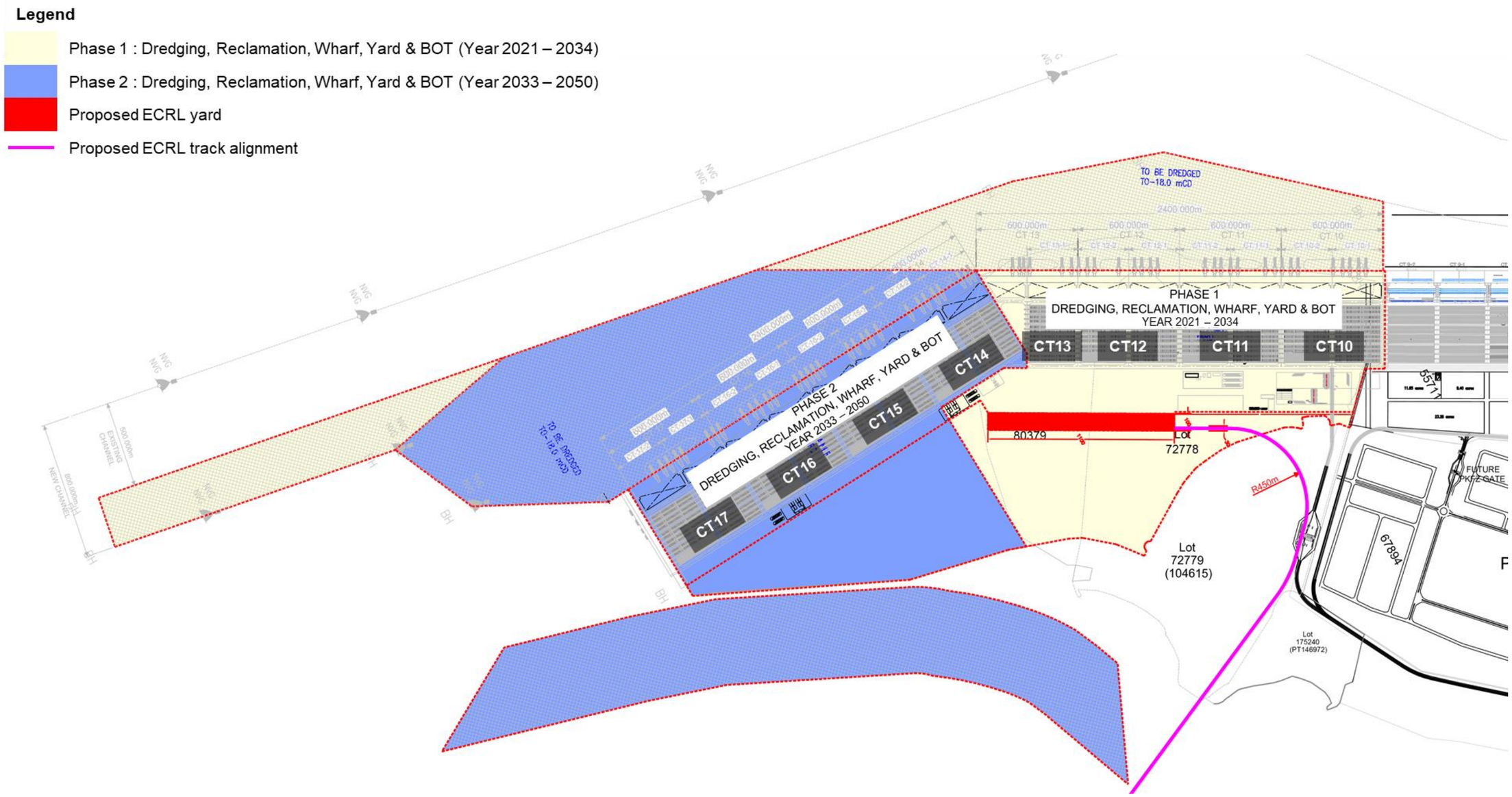


Figure 2.4: Proposed Construction Phasing Plan for Reclamation, Dredging and Filling Works

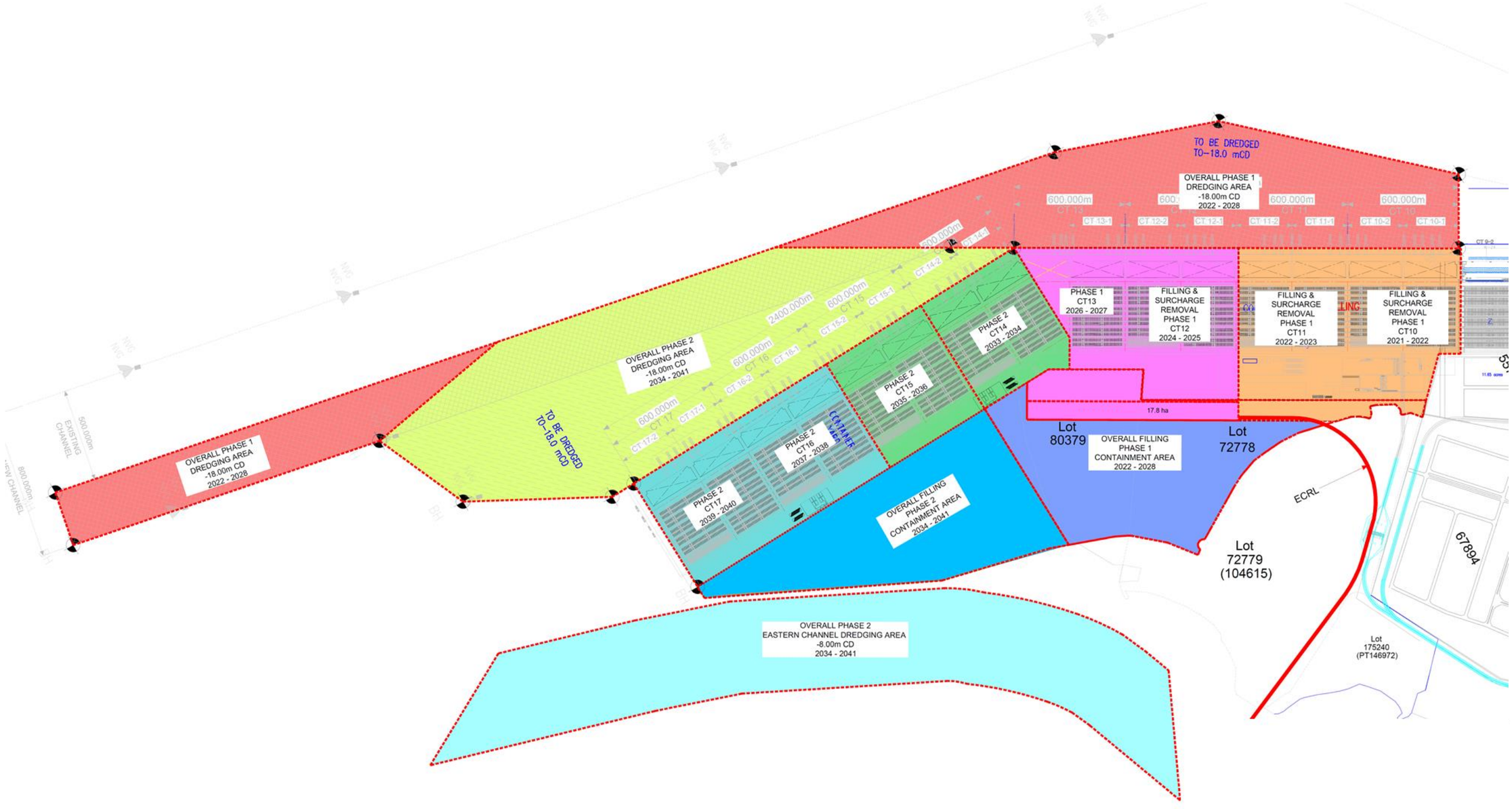
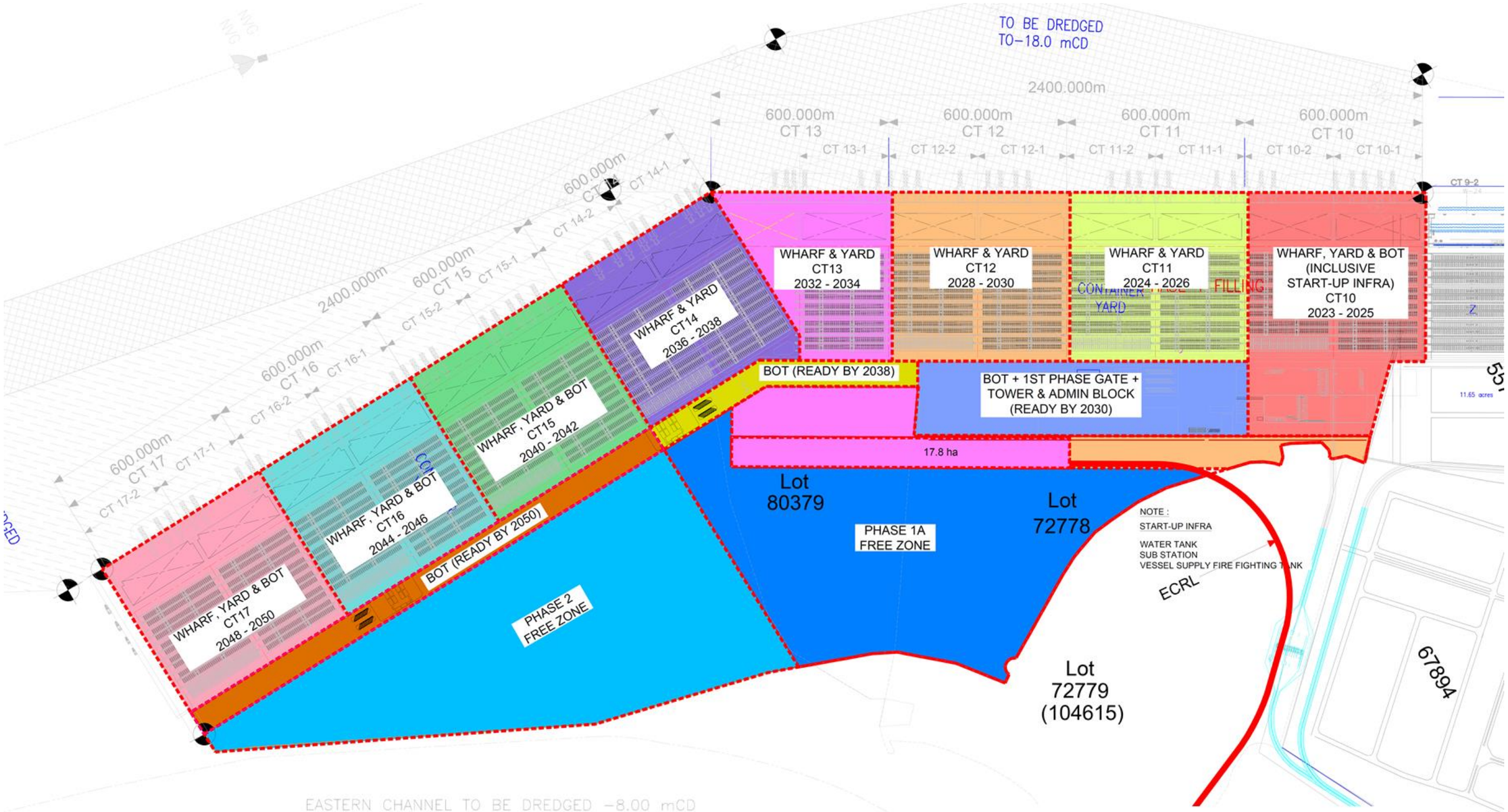


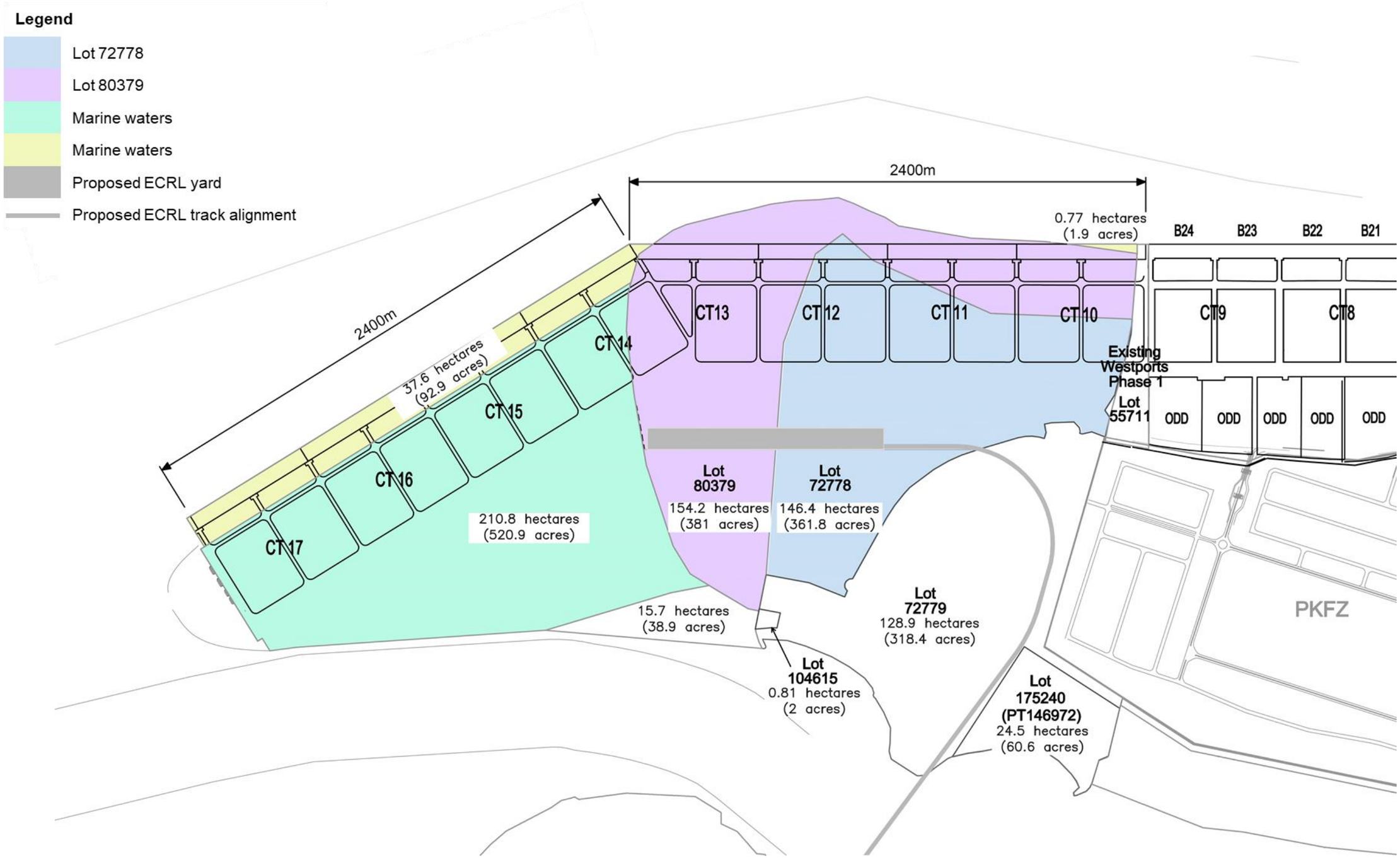
Figure 2.5: Proposed Construction Phasing Plan For Wharves, Yard and Back-of-Terminal (BOT)



6.3 LAND LOTS WITHIN PROJECT AREA

The Project area occupies two (2) land lots (Lot 72778 and Lot 80379) and marine waters. These land lots have been acquired by Westports Malaysia Sdn. Bhd. The land lots within the proposed Project area are shown in **Figure 2.6** below.

Figure 2.6: Land Lots within the Proposed Project Area



2.4 PORT LIMITS OF PORT KLANG

The port limits of Port Klang encompasses an area of about 70 square nautical miles which covers the waterways at the approaches, inner harbour, and navigable rivers within the port. **Table 2.2** and **Figure 2.7** show the location and coordinates of the gazetted port limits in Port Klang.

The Project site is located within the Port Klang port limits. The Project boundary is approximately 2.2nm at the point nearest to the South Pilot Station, and about 3.2nm from the South Fairway Buoy.

The locations for ships to anchor within the port limits at Pintu Gedong area are shown in **Table 2.3** and **Figure 2.8**. These locations comprise areas for ships anchoring temporarily or awaiting berthing instructions, vessels approved for 'ship to ship transfer' activities, ships engaged in bunkering activities, as well as ships awaiting entry to the Selat Melaka Shipyard.

The Project site does not encroach into these anchoring areas.

Table 2.2 Coordinates of gazetted port limits in Port Klang

Point	Coordinates (in WGS84 format)	
	Latitude	Longitude
A	3° 07.24' N	101° 16.48' E
B	3° 13.47' N	101° 10.32' E
C	3° 13.47' N	101° 12.44' E
D	3° 07.24' N	101° 19.00' E
E	3° 07.24' N	101° 28.30' E
F	2° 50.21' N	101° 28.30' E
G	2° 50.21' N	101° 20.00' E
H	2° 45.00' N	101° 20.00' E
I	2° 48.06' N	101° 14.00' E
J	2° 54.12' N	101° 14.00' E
K	3° 04.08' N	101° 19.51' E

Sources: *1) Port Klang Malaysia Marine Information Handbook, Fifth Revision dated 1st July 2019*
2) PKA Marine Notice KS/LPK/01/2012 Notice to Shipowners, Shipping Agents, Masters, Port Pilots, Bunker Vessel Operators, Port Terminal Operators and Port Community

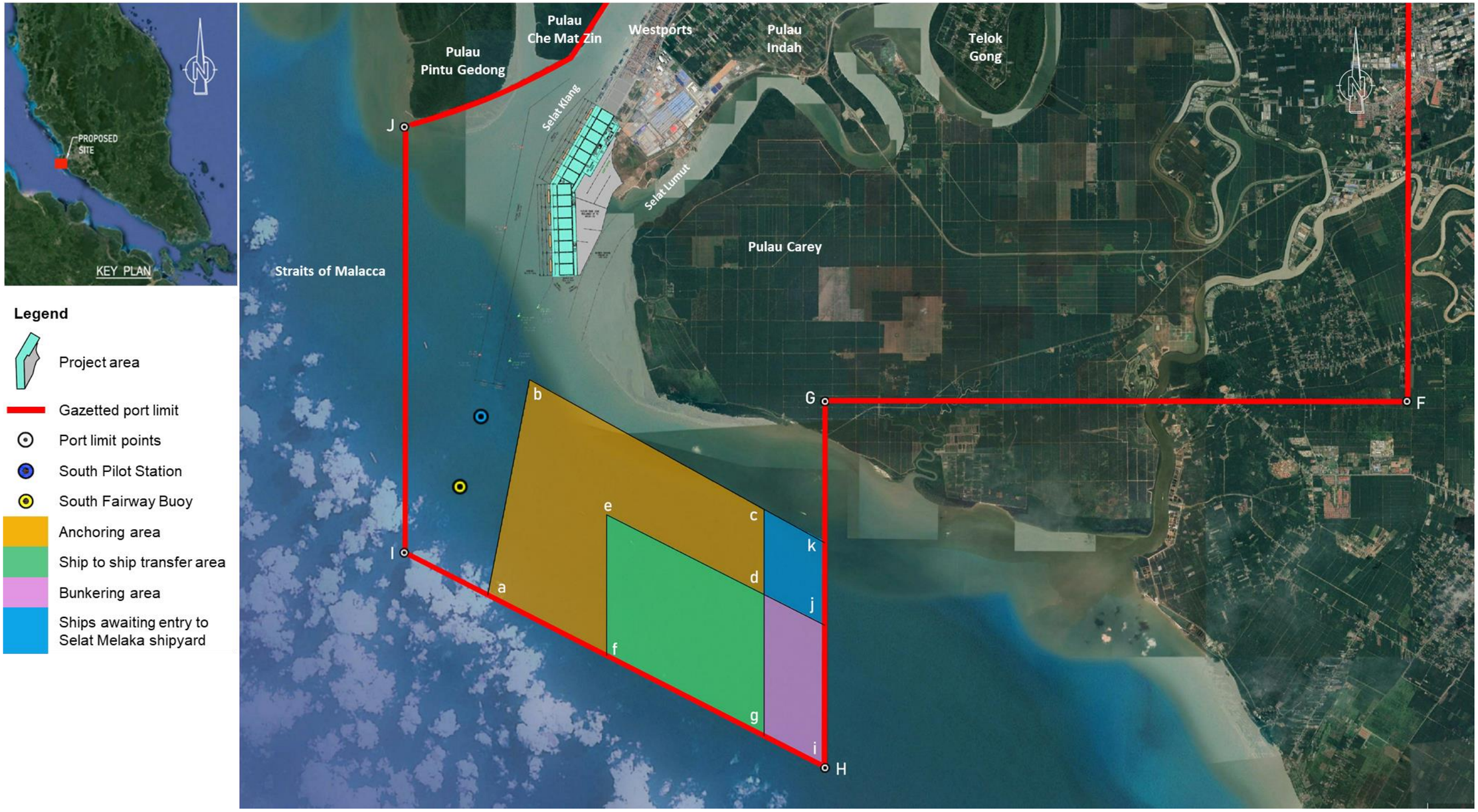
Table 2.3 Coordinates for anchoring of ships within the port limits at Pintu Gedong Area

Point	Coordinates (in WGS84 format)	
	Latitude	Longitude
Ships anchoring temporarily or awaiting berthing instructions		
a	2° 47' 28" N	101° 15' 11" E
b	2° 50' 31" N	101° 15' 47" E
c	2° 48' 40" N	101° 19' 07" E
d	2° 47' 28" N	101° 19' 07" E
e	2° 48' 36" N	101° 16' 53" E
f	2° 46' 35" N	101° 16' 53" E
Vessels approved for 'ship to ship transfer' activities		
d	2° 47' 28" N	101° 19' 07" E
e	2° 48' 36" N	101° 16' 53" E
f	2° 46' 35" N	101° 16' 53" E
g	2° 45' 27" N	101° 19' 07" E
Ships engaged in the bunkering activities		
d	2° 47' 28" N	101° 19' 07" E
g	2° 45' 27" N	101° 19' 07" E
i	2° 45' 00" N	101° 20' 00" E
j	2° 47' 01" N	101° 20' 00" E
Ships awaiting entry to Selat Melaka Shipyard		
c	2° 48' 40" N	101° 19' 07" E
d	2° 47' 28" N	101° 19' 07" E
j	2° 47' 01" N	101° 20' 00" E
k	2° 48' 13" N	101° 20' 00" E

Sources: *1) Port Klang Malaysia Marine Information Handbook, Fifth Revision dated 1st July 2019*
2) PKA Marine Notice KS/LPK/01/2012 Notice to Shipowners, Shipping Agents, Masters, Port Pilots, Bunker Vessel Operators, Port Terminal Operators and Port Community

Figure 2.7: Gazetted Port Limits in Port Klang

Figure 2.8: Location of Anchorage Area within Port Limits at Pintu Gedong Area



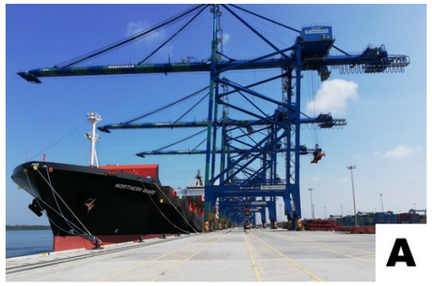
2.5 PROJECT COMPONENTS

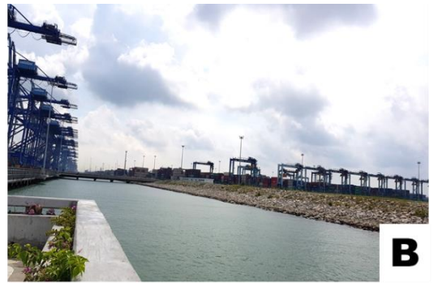
The existing port components comprise of container terminals, break bulk, dry bulk, liquid bulk terminals, mineral bulk jetties, and cement jetties. Other port components include the tower block, business centre, container terminal gate, vehicle terminal, maintenance and repair bays, marshalling centre, and sewage treatment plant. The functions of each port component and service facility are listed in **Table 2.4**. **Figure 2.9** shows the existing port layout and its components at Westports.

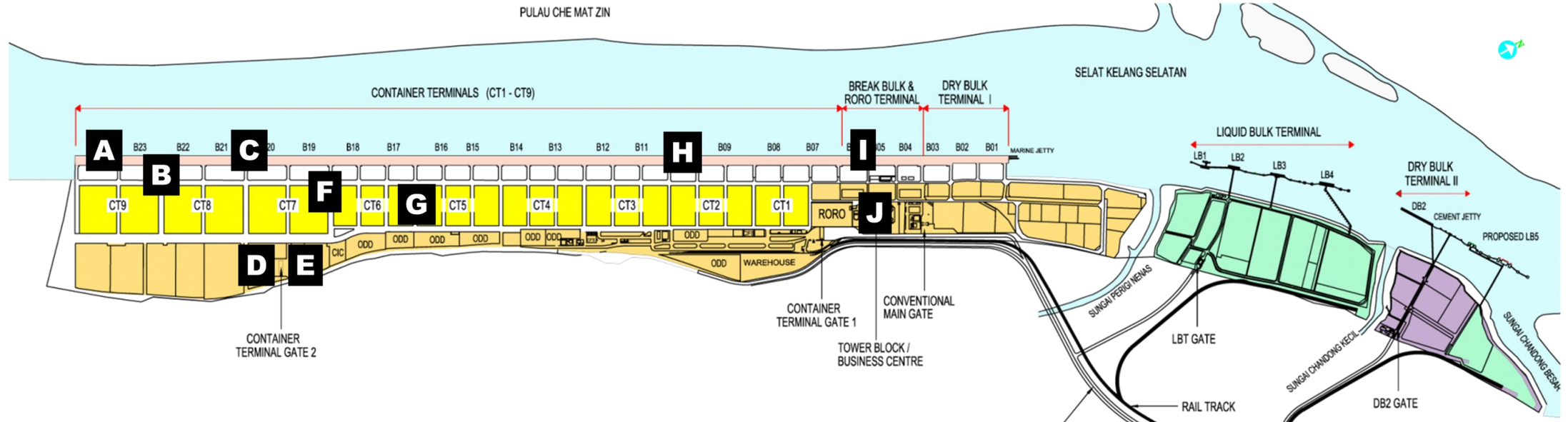
Table 2.4 Existing port components and service facilities at Westports

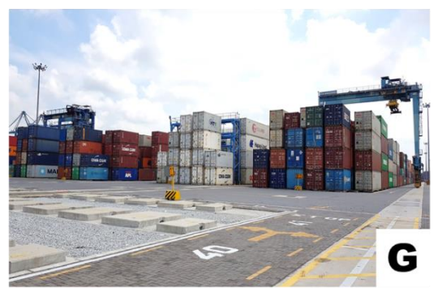
Port Component / Service Facility	Functions
Container terminals (CT1-CT9)	Wharf and yard for berthing and storing containers
Dry bulk terminal	Handles minerals or grains stored in loose piles Example: potash, industrial sand, wheat, sugar
Break bulk terminal	Manages non-containerised general cargo Example: iron, steel, machinery, wood pulp, yacht
Liquid bulk terminal	Handles cargo transported and stored in liquid form Example: palm oil, diesel oil, petrol
Mineral bulk jetty	Manages mineral resources Example: iron ores
Cement jetty	Transports cement using loading and discharging pipes which connects jetty to consignee facilities
Bulk storage	Handles steel, timber, agriculture, and mineral cargoes
On-Dock Depot (ODD)	Stores empty boxes within terminals
Reefer (Refrigerated containers)	Handles temperature-sensitive cargoes
Bunkering	Supplies fuel for ships docking at terminals
Distripark	Provides storage services and warehousing of cargoes
Container Freight Station (CFS)	Transit point for global cargo distribution
Vehicle Transit Centre (VTC)	Provides services for pre-shipment and pre-delivery inspections and minor repairs

Figure 2.9: Existing Port Layout and its Components at Westports









Source: Official Webpage of Westports; http://www.westportsholdings.com/our-port/

Table 2.5 lists the current port facilities which includes the type and number of facilities available at Westports.

Table 2.5 Current Facilities at Westports

Components	Container Terminals	Liquid Bulk	Dry Bulk	Break Bulk
Berths				
Number of berths	20	5	5	4
Length (m)	5,800	1,307	1,135	800
Draft (m)	15.0 – 17.5	9.0 – 16.0	11.9 – 15.0	15.0
Storage				
Annual capacity (mil TEUs)	14			
Reefer points	2,608			
Warehouses / Covered storage (m^2)			11,706	6,689
Open yard (m^2)			-	68,840
Equipment				
Quay cranes	67			
Rubber-tyred gantry cranes	185			
Straddle carriers / empty stackers	15			
Prime movers	524			
Trailers	515			
Reach stackers	11			
Unloader cranes	2			

Source: Port Klang Authority; data updated as at December 2019

2.6 Proposed Project Components for Westports Phase Ii

The proposed port components for Westports Phase II will be similar to the existing Westports terminal facilities. **Figure 2.10** and **Figure 2.11** shows the port components and other associated buildings and terminal facilities at the proposed Westports Phase II development.

Figure 2.10: Proposed Port Components and Terminal Facilities at Westports Phase II

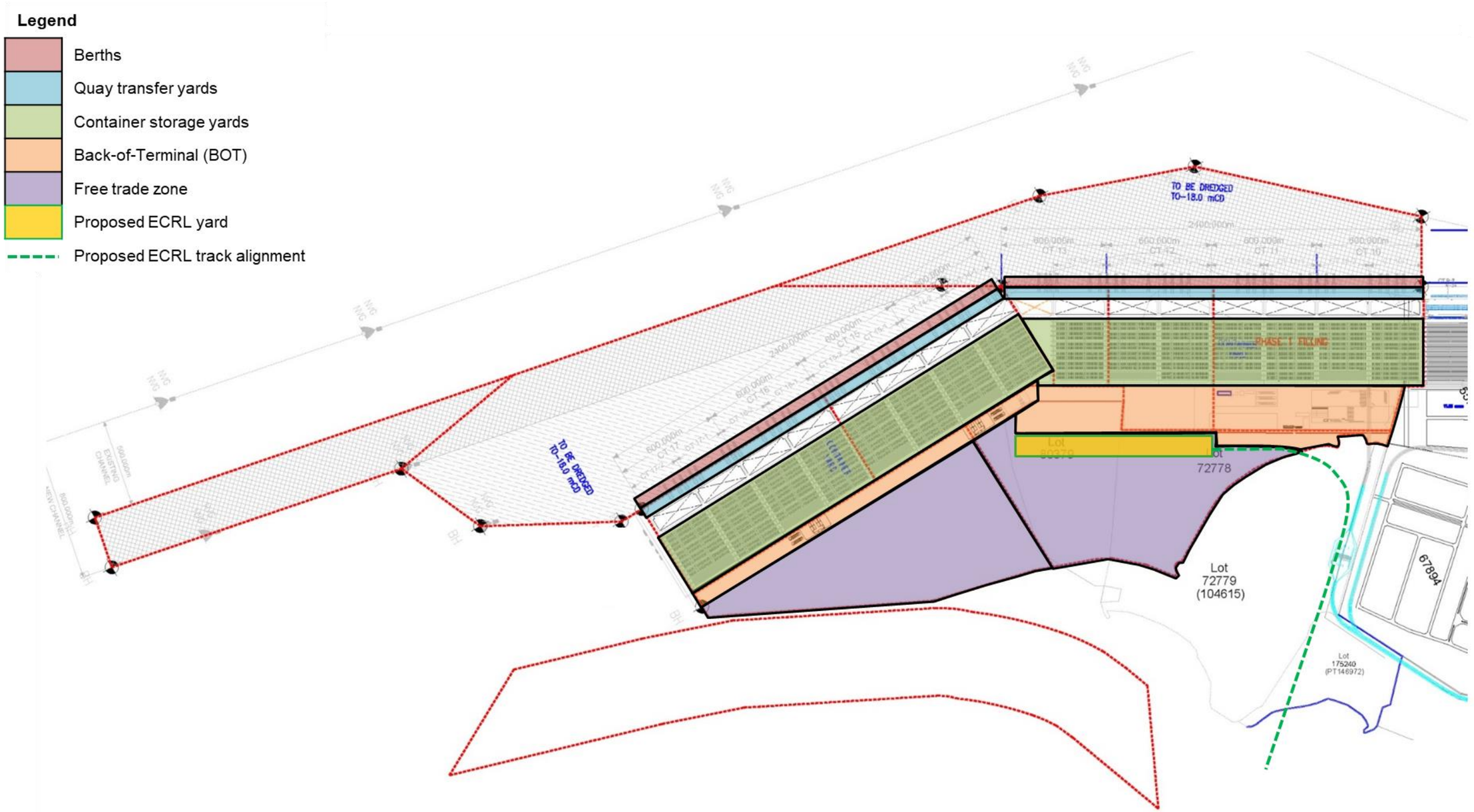
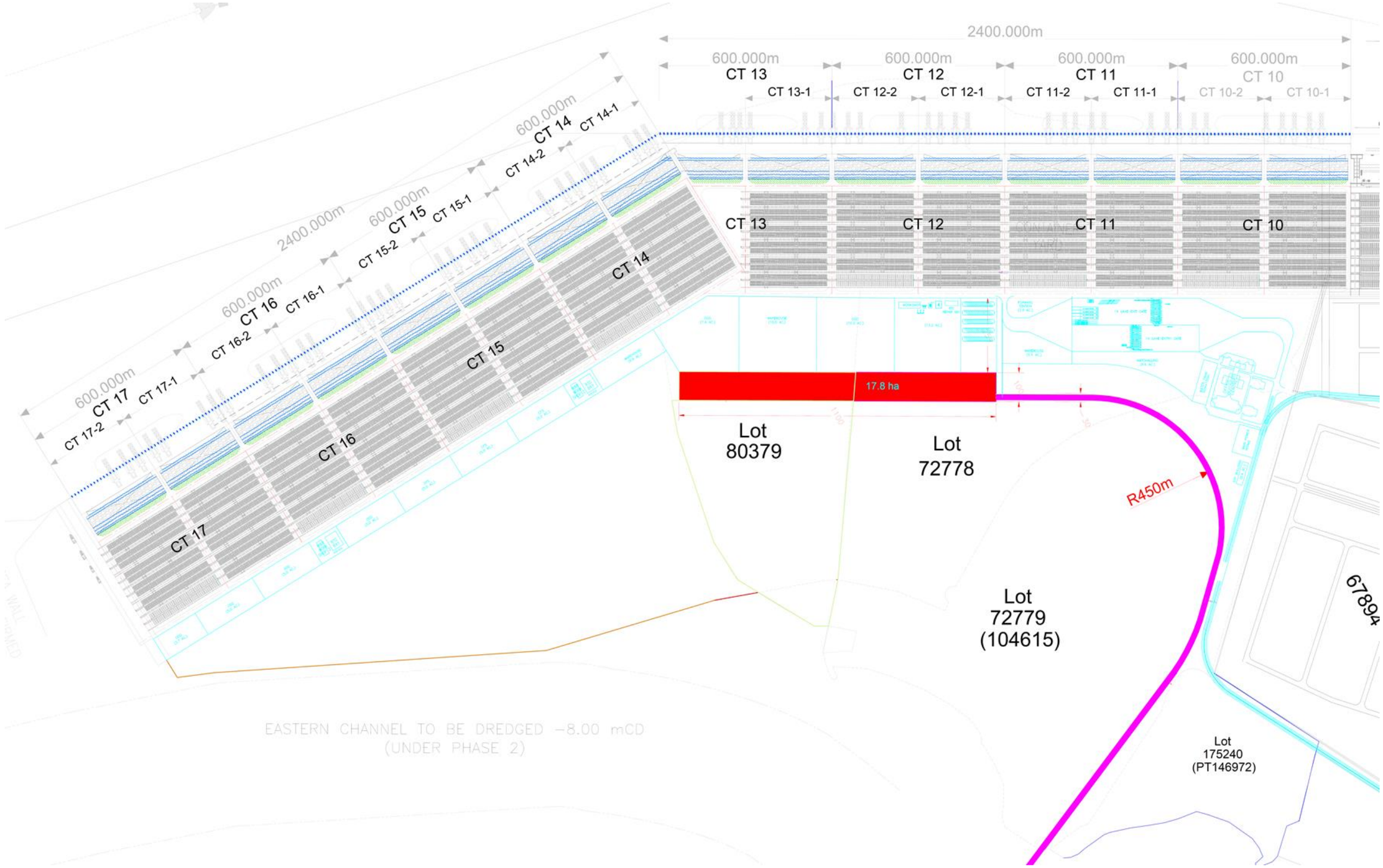


Figure 2.11: Proposed Port Components and Terminal Facilities at Westports Phase II



1) BERTHS AND QUAY TRANSFER YARDS

A total of eight (8) container terminals, i.e. CT10-CT17 will be constructed in phases, providing an additional 13 million TEUs of handling capacity upon full completion of the Project. Each terminal is expected to be 600m long and 447m wide.

The loading and unloading activities of containers will take place at the transfer yards by using quay cranes. Each container terminal will be equipped with quay cranes for loading and unloading of containers.

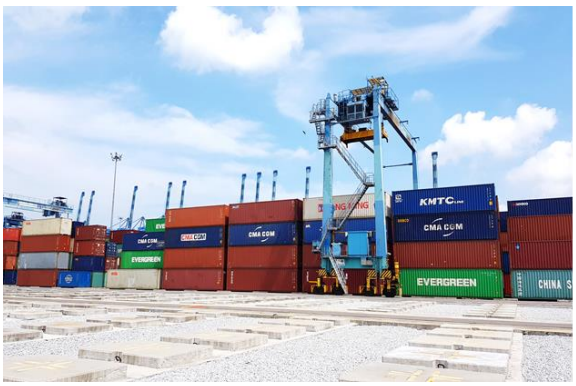
Plate 2.1 which shows the Westports berth at CT9 and the quay cranes (in blue), illustrates the loading and unloading facilities that will be provided at Westports Phase II.

Plate 2.1 Westports berth at CT9

2) CONTAINER STORAGE YARDS

Each container storage yard is expected to be 600m long and 271.35m wide. At the storage yards, rubber-tyred gantries (RTGs) will be used to move and stack containers. **Plate 2.2** shows the container storage yard and RTG.

Plate 2.2 Container Storage Yard at Westports



3) BACK-OF-TERMINAL (BOT)

The proposed facilities at the Back-of-Terminal (BOT) for the Westports Phase II development include the following:

- *Terminal entrance gates;*
- *Substation;*
- *Administration building;*
- *Custom building;*
- *Maintenance and repair workshops;*
- *Marshalling centre;*
- *On-Dock Depot (ODD) area; and*
- *Forward station.*

4) FREE TRADE ZONE

The free trade zone (FTZ) is estimated to be approximately 162ha (400ac). This area will be developed into an industrial area with light and medium industries.

5) PORT UTILITIES

Port utilities include basic infrastructure that will support the port functionality, such as water supply, telecommunication, electricity supply, sewage treatment plant, drainage system, and access roads.

Water supply to the container yards will be provided by Pengurusan Air Selangor Sdn. Bhd. Potable water will be used for domestic usage, sprinkler system, hydrant supply, and vessel supply. All pipes for the water supply will be laid in trenches.

Telecommunication services at the proposed port area will be provided by Telekom Malaysia Berhad whilst the electricity supply system will be furnished by Tenaga Nasional Berhad.

Two (2) units of small-scale sewage treatment plant (SSTP) will be constructed at CT10 and CT14 to facilitate and support the maintenance and repair workshops as well as the administration building. The SSTPs will be extended aeration types of system and each SSTP will be built with a capacity of 250 P.E. Currently, there is one (1) SSTP located at CT7 to facilitate the marshaling building, 14-lane exit gate, and maintenance and repair workshops.

Drainage system at the container terminals will be designed into sub-catchments where each sub-catchment will encompass one container yard. Gravel beds with sub-soil drains will be laid at the container stacking area. The sub-soil drains will be connected to the arterial culvert system which ultimately discharges into the sea via several outlets. The drainage system will be built as a covered system using Class Z pipe culverts.

Access roads within the terminal containers will be designed to facilitate the transportation of containers using the port vehicles such as rubber-tyred gantries (RTGs), straddle carriers, prime movers, trailers, and forklifts. Carriageways with frequent movements of heavy machinery and vehicles will be overlaid with paver blocks while premix will be used for the main access road.

2.7 EAST COAST RAIL LINK (ECRL) PROJECT

The East Coast Rail Link (ECRL) Project proposes the rail alignment to end at Westports Phase II. ECRL which connects the East Coast and West Coast of Peninsular Malaysia, is an initiative to spur development within the East Coast Economic Region (ECER). This alignment is designed to improve the connectivity to the East Coast region and to balance the economic development between the East and West Coasts. ECRL spans up to 640km, from Kota Bharu to Port Klang, and will traverse across five states, namely Kelantan, Terengganu, Pahang, Negeri Sembilan, Selangor, and the Federal Territory of Putrajaya.

Section C of the ECRL alignment with an approximate length of 185km, will traverse from Mentakab to Port Klang. Approaching Pulau Carey, the alignment will head westwards and run parallel to the existing SKVE. It will then continue on to the western side of Pulau Carey before heading northwest and crosses Selat Lumut onto Pulau Indah. The alignment will end within the Westports Phase II development, at the BOT and adjacent to the free trade zone.

The development of the supporting infrastructure for the ECRL station that will be located within the Westports Phase II area, will be developed by Westports as part of its expansion activities. The main infrastructure components will include the station platform, depot building, access roads, and ancillaries.

2.8 PROJECT ACTIVITIES

1) PRE-CONSTRUCTION PHASE

The pre-construction stage of the Project involves the undertaking of technical and design studies. They include:

a) Topographic and bathymetric surveys

These surveys are undertaken by EGS (Malaysia) Sdn. Bhd. The main purpose of the topographic survey is to identify the land elevations and boundaries of the existing soil terrain and orientation of the reclaimed land. Bathymetric survey is conducted to identify the depth of the seabed mainly at the proposed reclamation area, berthing area, and navigation channels.

b) Port development concept planning and engineering design

The study of port development planning, development of port layout, and design, were carried out by BMT Asia Sdn. Bhd. and HSSI Sdn. Bhd. The port layout options were developed with various alternatives. The optimized and preferred port layout has been selected and finalized with the consideration of various factors, i.e. port development and operational costs, layout optimization, port construction plans, environmental

concerns, throughput forecasts of Port Klang and Westports, and Westports' business strategies.

c) Environmental impact assessment (EIA)

The environmental impact assessment (EIA) study is carried out firstly to determine the status of the existing environment and to identify any sensitive receptors that may be impacted by the anticipated Project activities. The study then identifies the key environmental issues and the main impacts likely to arise from the proposed development, and provides recommendations for mitigation measures to avoid or minimize the potential impacts of the Project. The EIA study encompasses other studies relevant to the Project as described below.

d) Hydraulics and hydrodynamics assessment

The hydraulics and hydrodynamics assessment is undertaken by DHI Water and Environment (M) Sdn. Bhd. The hydraulic modelling involves the study of waves, currents, and sediment transport in the proposed Project area and its vicinity. The coastal hydraulics study also include the assessment of temporary (short-term) and permanent (long-term) impacts due to the development of the Project. Temporary impacts involving sediment spills are associated with the capital dredging and reclamation works of Westports expansion whereas permanent impacts encompass the changes in water levels, flushing capacity, current flows, waves, and sediment transport conditions which will remain after the completion of the proposed Project and during operations of the expanded port.

e) Soil investigation

Soil investigation study is undertaken by Strata Geotechnics Sdn. Bhd. The main objective of the study is to determine the geotechnical engineering properties of the subsoil condition at the proposed Project site for foundation design. Soil investigation is performed by conducting in-situ tests and collecting disturbed and undisturbed soil samples for laboratory testing, which are important data required for design and construction works.

f) Soil erosion and sedimentation analysis

The soil erosion and sedimentation analysis is conducted to determine the erosion rates and sediment yield at the Project site in its existing condition, with and without mitigation measures during the construction phase, and during the operational phase. The assessment also covers the high erosion risk period and high sedimentation yield period. Mitigation measures during the construction and operational phases are proposed accordingly, and as necessary.

g) Marine ecology assessment

The marine ecology assessment encompasses the marine habitats and their biological productivities, as well as the capture fisheries and aquaculture activities within and surrounding the Project area. The status of the marine ecosystem in the Study area is established, following by the identification and evaluation of potential impacts on the marine ecology and fisheries activities arising from the proposed development and the

subsequent port operations. Recommendations are then provided to mitigate the impacts.

h) Marine traffic risk and navigational safety assessment

Marine traffic risk and navigational safety assessment are conducted by BMT Asia Sdn. Bhd. and Aycity Emmar Technologies Sdn. Bhd. Marine traffic risk assessment covers the existing marine traffic environment and marine-based facilities within and in the vicinity of the Study area, as well as any additional marine traffic expected to be generated during the pre-construction, dredging, and construction phases that may contribute to marine traffic congestion and risks to navigational safety. The projected traffic levels during the operational phase following the expansion of Westports, is also included in the study.

Navigational safety assessment considers the scenarios that a vessel may be exposed to during transit to and from the proposed Project area. Among factors that are considered include vessel maneuverability and the support required, site conditions such as sea room, and adverse met-ocean conditions prevalent at the Project site.

Another supplementary assessment known as the Full Mission Shiphandling Simulation (FMSS) is undertaken by KASI (Malaysia) Sdn. Bhd. This simulation utilizes a software that is specifically designed to create the scenario of a Project site on a 3D database. Series of real-time shiphandling simulation runs are carried out using the model, under accurate and realistic environments.

i) Land traffic impact assessment

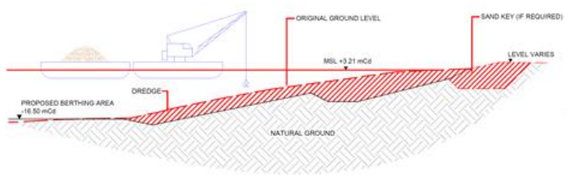
Land traffic impact assessment is undertaken by Runding Trafik MZK Sdn. Bhd., a traffic and transportation planning consultant. The traffic impact assessment covers the current traffic and road performance in the vicinity of the proposed Project, especially along Pulau Indah Highway and South Klang Valley Expressway (SKVE). The assessment also addresses the expected increase in traffic arising from the proposed expansion of Westports Phase II and the impacts on the existing road network and junctions in future year 2028 and 2038.

Generally, the above activities during the pre-development phase of the Project involve sampling works at the Project area and its vicinity, surveys and engagements with the stakeholders and affected members of the community, as well as desktop studies. These activities are considered as low-impact activities, however the findings of the assessments will be described in detail in the following chapters of this Report.

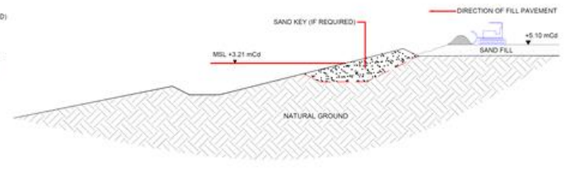
2) CONSTRUCTION PHASE

The construction of the port terminals and its associated facilities involve extensive activities such as dredging, reclamation, sand filling, surcharge removal, compaction and consolidation of reclaimed land, as well as the construction of port structures and terminal facilities. The construction activities are as detailed in the sections below. **Figure 2.12** and **Figure 2.13** show the construction methodology at the proposed Project site.

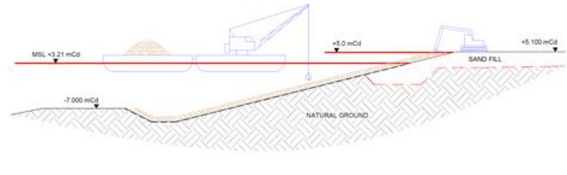
Figure 2.12: Port Construction Methodology – Sheet 1



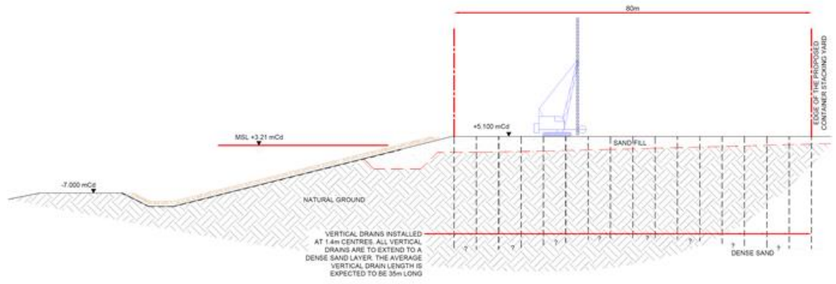
STAGE 1
DREDGE THE BERTHING AREA, REVETMENT SLOPE AND KEY TRENCH
(IF REQUIRED) TO THE REQUIRED LINE AND LEVEL



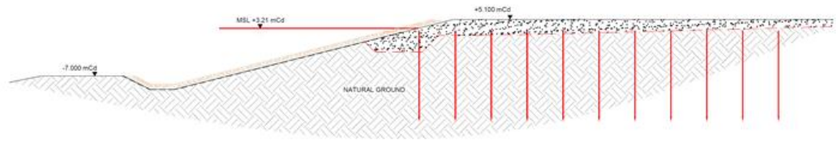
STAGE 2
PLACE SAND FILL ACROSS THE SITE TO RL +5.10 mCd
FILL PLACEMENT SHOULD START ON THE EASTERN SIDE OF THE SITE AND WORK OUT INTO THE SEA



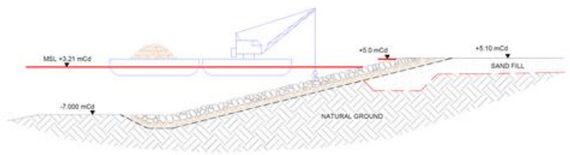
STAGE 3
TRIM THE RECLAMATION FACE TO THE REQUIRED LINE AND LEVEL
PLACE THE GEOTEXTILE SEPERATION LAYER, FILTER ZONE ROCK AND
SECONDARY ARMOUR ROCK LAYERS UP TO RL 5.0mCd



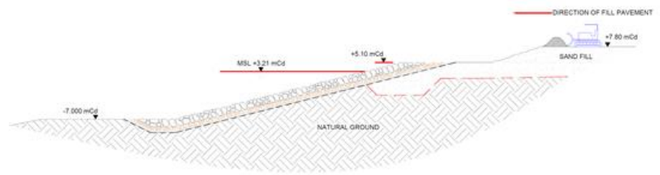
STAGE 4
INSTALL THE VERTICAL DRAINS WITHIN THE REVEMENT ZONE



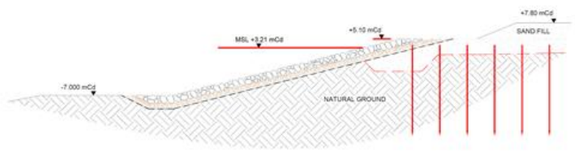
STAGE 5
3 MONTH CONSOLIDATION PERIOD



STAGE 6
COMPLETE CONSTRUCTION OF THE REVETMENT UP TO 5.0mCd

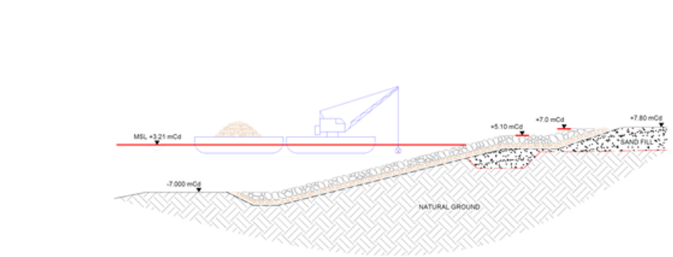


STAGE 7
PLACE SAND FILL UPTO RL +7.80mCd
FILL PLACEMENT SHOULD START ON THE EASTERN SIDE AND WORK OUT INTO THE SEA
INSTALL AND MONITOR GEOTECHNICAL INSTRUMENTATION AS APPROPRIATE

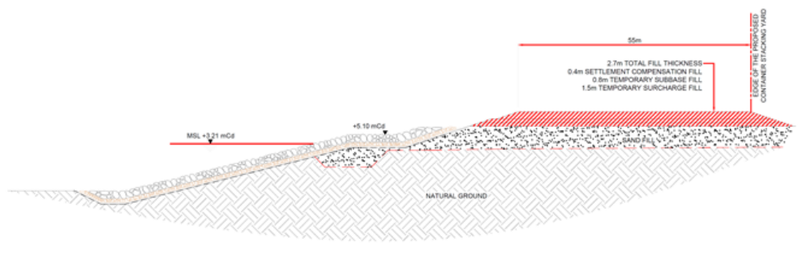


STAGE 8
3 MONTH CONSOLIDATION PERIOD

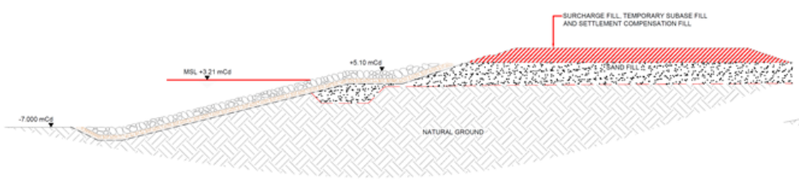
Figure 2.13: Port cCnstruction Methodology – Sheet 2



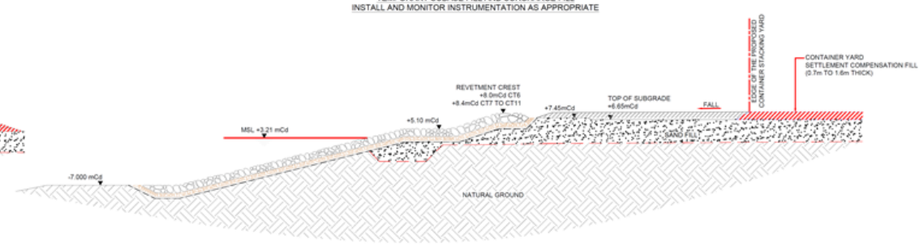
STAGE 9
CONSTRUCT THE REVETMENT UP TO RL +7.0mCd



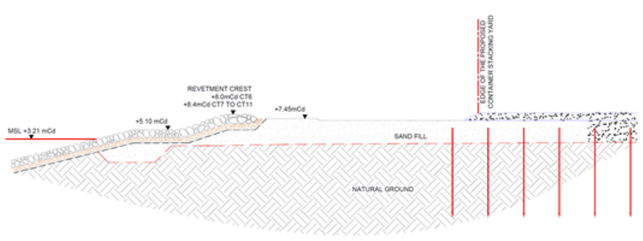
STAGE 10
PLACETHE REVETMENT ZONE SETTLEMENT COMPENSATION FILL,
TEMPORARY SUBASE FILL AND SURCHARGE FILL
INSTALL AND MONITOR INSTRUMENTATION AS APPROPRIATE



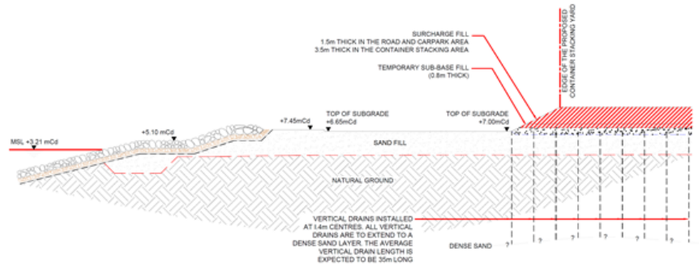
STAGE 11
3 MONTH CONSOLIDATION PERIOD



STAGE 12
REMOVE THE REVETMENT ZONE SURCHARGE AND TEMPORARY SUB-BASE FILL
COMPLETE THE REVETMENT CONSTRUCTION
PLACE THE CONTAINER YARD SETTLEMENT COMPENSATION FILL
INSTALL AND MONITOR GEOTECHNICAL INSTRUMENTATION AS APPROPRIATE

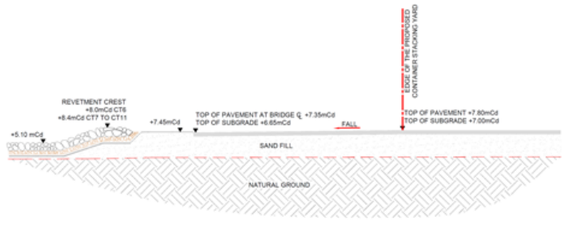


STAGE 13
6 TO 9 MONTH CONSOLIDATION PERIOD TO SUIT THE MASTER DEVELOPMENT PLAN
MONITOR GEOTECHNICAL INSTRUMENTATION AS APPROPRIATE



STAGE 14
INSTALL VERTICAL DRAINS WITHIN THE CONTAINER YARD AREA
PLACE THE CONTAINER YARD TEMPORARY SUB-BASE FILL AND SURCHARGE FILL
INSTALL AND MONITOR GEOTECHNICAL INTRUMENTATION AS APPROPRIATE

STAGE 15
3 MONTH CONSOLIDATION PERIOD
MONITOR GEOTECHNICAL INSTRUMENTATION AS APPROPRIATE



STAGE 16
REMOVE THE SURCHARGE FILL AND TEMPORARY SUBBASE FILL
GRADE SUBBASE TO FINAL LEVEL
CONSTRUCT THE ROAD, CARPARK AND CONTAINER STACKING AREA PAVEMENT

3) DREDGING WORKS

Dredging at the reclamation site for the berthing area and approach channel involves a combination of two operations as follows:

i. Dislodging of the soil to be removed from the seabed; and

ii. Pumping of the spoil material into a barge for transportation to an authority-approved disposal area, or, if the material is sandy and suitable to be used as fill material, it will be deposited into the reclamation area of the free trade zone for use as bulk fill.

It is expected that the dredging works will be performed hydraulically using Cutter Suction Dredger (CSD). The estimated daily production rate for a CSD is 15,000 m^3/day. Two (2) units of CSD will be used in Phase 1 and four (4) units will be used in Phase 2. The seabed materials will be cut and pumped from the seabed by the CSD and discharged by pipeline into a hopper barge. Once in the hopper barge, the spoil material will be inspected, and, if silty, the spoil material will be dispatched to an authority-approved disposal area. Sandy spoil material that meets the requirements of the construction specification for hydraulic sand fill will be dispatched to the reclamation area of the free trade zone for use as bulk fill.

Site investigations indicate that the estimated amount of material to be dredged during the Phase 1 works involving CT10-CT13 and the Southern Access Channel is 20 million m^3 whilst Phase 2 which involves CT14-CT17 and the Eastern Channel is 29 million m^3. The results from the borehole tests indicate that most of the dredged materials can be reused for the reclamation works (refer to **Section 6.4.7** and **Appendix 2B** for more details on the soil investigation results).

When the contractor takes silty spoil material to the designated disposal area, on the return trip, he may choose to carry sand fill from the sand fill borrow source back to the reclamation area. Ideally, the selected spoil disposal area should be in the general vicinity of the sand borrow area, or between the sand borrow area and the reclamation site, in order to reduce the number of trips required for transport of the spoil and fill material. The exact area for the spoil disposal area will be determined and finalised by the contractor prior to the commencement of construction works.

The impacts on the environment will be felt at the dredging site and at the spoil disposal area in the form of silt plumes. During operation of the dredging plant, there is potential for over-wash discharge from the hopper while it fills with sediment. This over-wash may create sediment plumes and localised high seawater turbidity.

Formation of sediment plumes are also expected at the spoil disposal area. As such, the spoil disposal area will be located at a site where the water is at least 25m deep, as required by the Department of Irrigation and Drainage (DID), and away from rich marine resources and fishing areas. The spoil disposal areas are designated areas that have received approval from the DOE. All the necessary permits and permissions will be obtained by the specialist contractor prior to the commencement of spoil disposal operations.

4) CONSTRUCTION OF CONTAINMENT BUNDS

A perimeter bund with internal bunds will be erected at the containment area (free trade zone area) to contain the fill materials and to prevent sediment from dispersing into the surrounding waterways. The containment bund will be designed to improve the sediment settling process and limit the amount of sediment flowing out in the tailwater discharge. Suitable material from the dredged areas will be used for the filling of the containment area. Calm condition in the bunded area and the settling time created by the internal bunds will assist in producing tailwater of good quality leaving the containment bunds. The proposed bunding arrangement is illustrated in **Figure 2.14**.

Two (2) types of containment bunds are proposed for use at the containment area, i.e. sand-filled geotubes to be used in shallow areas, and combined sand core with sand-filled geotubes suitable for deeper areas will be used to form the shoulders and the top of the bund. **Figure 2.15** shows the types of containment bunds proposed at the containment area (free trade zone area).

Figure 2.14: Proposed Bunding at the Containment Area

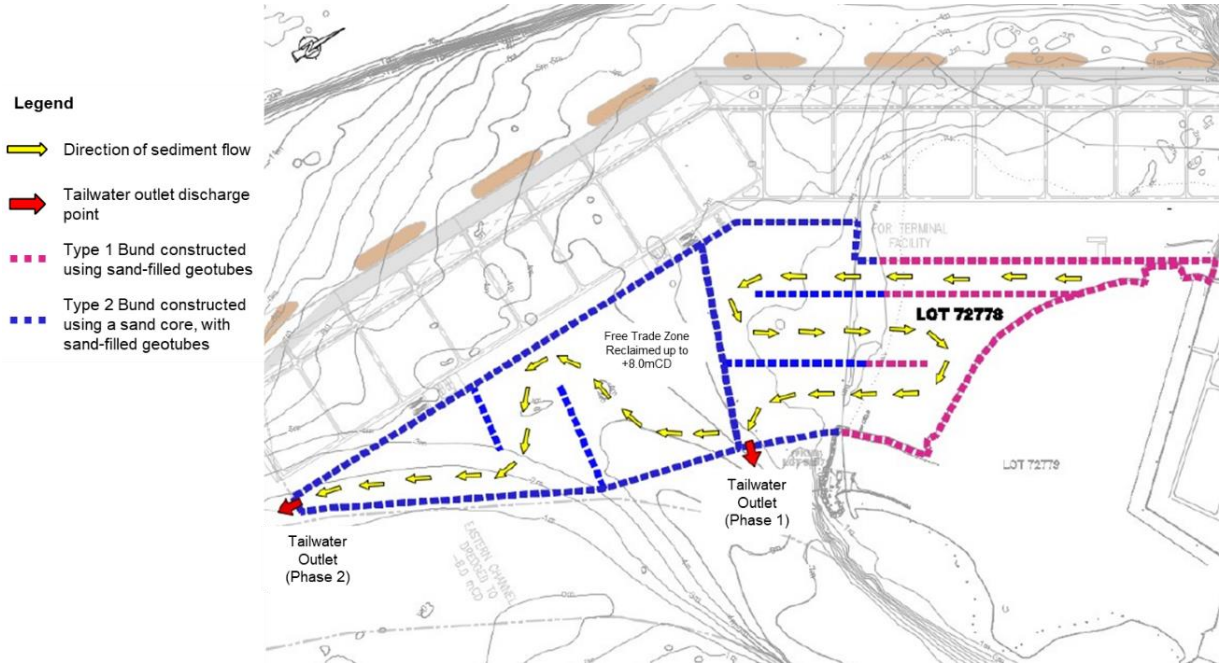
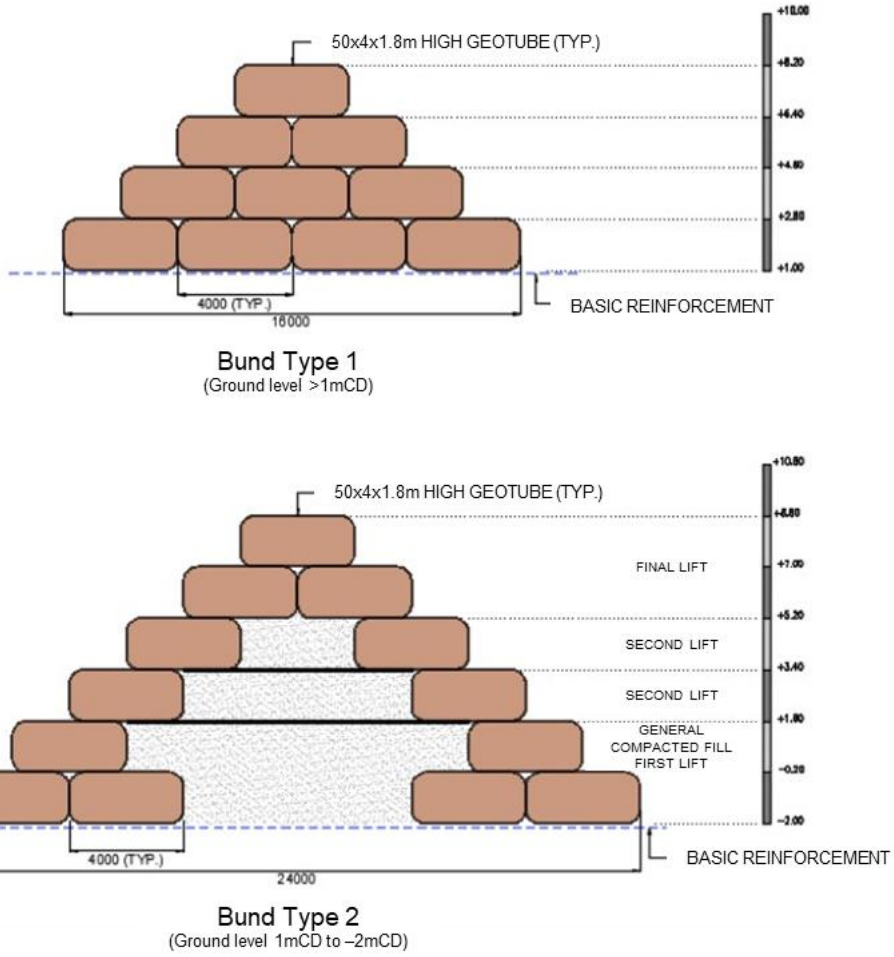


Figure 2.15: Recommended Types of Containment Bunds



5) RECLAMATION, SANDFILLING, AND SURCHARGE REMOVAL

Filling and Construction of Revetment Below RL +5.10mCD

This stage involves reclamation works to build up a platform to a surface level at RL +5.10mCD that will be above the normal high tide level. This will provide a dry working platform that is suitable for vertical drain construction equipment. It is expected that the reclamation works will be performed hydraulically using Trailer Suction Hopper Dredger (TSHD). The estimated daily production rate of a TSHD is 20,000m^3/day.

The bulk fill material predominantly comprises clean sand (with low content of fines) and this material will be placed along the existing shoreline and gradually pushed out into the sea. The fill will be placed to lie at its natural angle of repose that is expected to be between 1V:4H and 1V:5H depending on the grain size of the sand fill.

During placement of sand fill and revetment rock below RL +5.10mCD, it is likely that sediment plumes will be generated. Due to the nature of the natural soils, and its inherent geotechnical instability, containment bunds cannot be economically constructed to control the spread of the sediment plumes at the reclamation site. As

such, the impact of the sediment plumes at the reclamation site will be minimized by one or more of the following measures:

i. *Using sand fill that has a low silt and clay content;*

ii. *Installing floating silt curtains at strategic locations;*

iii. *Constructing revetment as soon as possible; and*

iv. *Constructing revetment from relatively clean rocks.*

It is expected that reclamation works will begin in the north-eastern corner of CT10, and work out into the sea in a southerly direction. Placement of the sand fill will need to be completed in several lifts in order to avoid the initiation of slope failures along the seaward edge of the reclamation. When the platform level has reached RL +5.10mCD, an 80-metre wide strip of vertical drains will be installed along the seaward edge of the reclamation for stability purposes. In order to minimise erosion damage to the reclamation platform and the generation of silt plumes, the revetment will be constructed in stages as soon as the reclamation progresses.

Trimming of the seaward edge of the reclamation to the final grade and profile below RL +5.10mCD will be carried out by a grab dredger and/or backhoe. The proposed revetment zone comprises a geotextile filter layer, a gravel filter zone, a secondary armour rock layer, and a primary armour rock layer. In the inter-tidal region, final trimming of the reclamation fill material needs to be quickly followed by the placement of the geotextile, filter gravel, and secondary armour layers so as to provide a temporary surface that is resistant to erosion and collapse under tidal action. Placement of the primary armour rock layer must also be undertaken as soon as possible to reduce the risk of erosion and damage due to wave and tidal action.

The gravel filter zone, secondary armour rock layer, and primary armour rock layer will be transported to site in a hopper barge, and carefully placed on the revetment by a clamshell grab. Within the inter-tidal zone, the filter and armour rock layers may be placed by a grab operating from a shallow draft barge, or by a backhoe operating from the reclamation platform. Placement of the revetment layers will commence at the lowest level, working up to the desired level of the revetment.

The armour rock will be sized to withstand the design wave and expected tidal currents. The typical size of the primary armour rock layer is 200 to 1500kg (approximately 550 to 1100mm in diameter). It is graded to provide filter protection for the sand fill to guard against damage or failure of the underlying geotextile filter. A geotextile filter will be placed beneath the rock filter to ensure that sand particles do not migrate through the filter gravel and armour layers. The final selection of the geotextile grade will depend on the particle size distribution of the sand fill and filter gravel material.

Filling and Construction of Revetment Above RL +5.10mCD

This stage involves reclamation works to raise the platform surface from RL +5.10mCD up to the finished platform level of +8.00mCD.

The fill material will predominantly comprise clean hydraulic sand fill, and this material will be placed along the existing shoreline and gradually pushed out towards the seaward edge of the reclamation by conventional earthmoving equipment. The fill will be placed to lie at its natural angle of repose that is expected to be 1V:5H depending on the grain size of the sand fill.

It is expected that reclamation works will begin in the north-eastern corner of CT10 and work out into the sea in a southerly direction. Placement of the sand fill will need to be completed in several lifts in order to avoid the initiation of slope failures along the seaward edge of the reclamation. A period of consolidation and strength gain within the underlying natural soil will be required between each successive lift of fill.

As all construction works in this stage will be undertaken above the normal high tide level, the environmental impacts are expected to be minimal. Standard silt control measures, such as silt fences, back-falling temporary surface grades, and silt traps, will be constructed as necessary to minimise the flow of the silt-laden stormwater into the adjacent sea.

Trimming of the seaward edge of the reclamation to the final grade and profile above RL +5.10mCD will be carried out by a backhoe excavator. Placement of the primary armour rock layer will be undertaken as soon as possible to reduce the risk of erosion and damage due to storm wave action.

The gravel filter zone, secondary armour rock layer, and primary armour rock layers will be transported to site in a hopper barge, and temporarily stockpiled on the reclamation platform by a clamshell grab. Placement of the revetment layers will be completed by a backhoe excavator and will commence at the lowest level and work up the revetment.

The armour rock has been sized to withstand the design wave and expected tidal currents. The typical size of the primary armour rock layer is 200 to 1500kg (approximately 550 to 1100mm in diameter). It is graded to provide filter protection for the sand fill to guard against damage or failure of the underlying geotextile filter. A geotextile filter will be placed beneath the rock filter to ensure that sand particles do not migrate through the filter gravel and armour layers. The final selection of the geotextile grade will be dependent on the particle size distribution of the sand fill and filter gravel material.

6) COMPACTION AND CONSOLIDATION OF RECLAIMED LAND

Following completion of various areas of the reclamation, a settlement-monitoring programme will be instituted to confirm consolidation rates and extent of underlying seabed material or residual fill settlement. This monitoring programme will continue throughout the construction phase of post-reclamation and the results of monitoring will be used to confirm the programme for reclamation, pavement, and services construction.

Surcharging works will be undertaken within the revetment zone and, if economically viable, within the container stacking and access road areas. The purpose of the surcharging works is to minimize long-term settlement of the reclaimed building platform and the density of underlying soils.

Conventional land-based compaction equipment may be used to compact the reclamation materials above high water level. Vibroflotation or vibratory rolling technique may be used to compact the sand materials below the high tide level. Final selection of the compaction methods will be made on site during compaction trials at the start of the earthwork construction.

7) CONSTRUCTION OF PORT STRUCTURES AND TERMINAL FACILITIES

Construction of Container Wharves

In general, the construction of the container wharves will begin from CT10 to CT13, and move westwards to CT14 onwards until CT17. **Figure 2.16** illustrates the typical cross section of the container wharves.

Stage 1: Dredging Works

The present depth at the proposed berth location is approximately 0 to -19.0mCD. In order to achieve -18.0mCD depth at the proposed berthing area, dredging works will be carried out. The estimated amount of materials to be dredged is approximately 49 million m^3. The suitable dredged materials shall be used to backfill the free trade zone area whereas unsuitable dredged materials shall be disposed of at the approved disposal area to be determined by the appointed contractor.

Stage 2: Marine Piling Works

Upon completion of the dredging works, marine piling works using driven piles will commence. The piling will be set below the three access bridges for each of the container terminal.

Stage 3: Casting of Pile Caps and Transfer Beams

Upon completion of the piling works, the casting of the pile caps and other in-situ elements will be carried out.

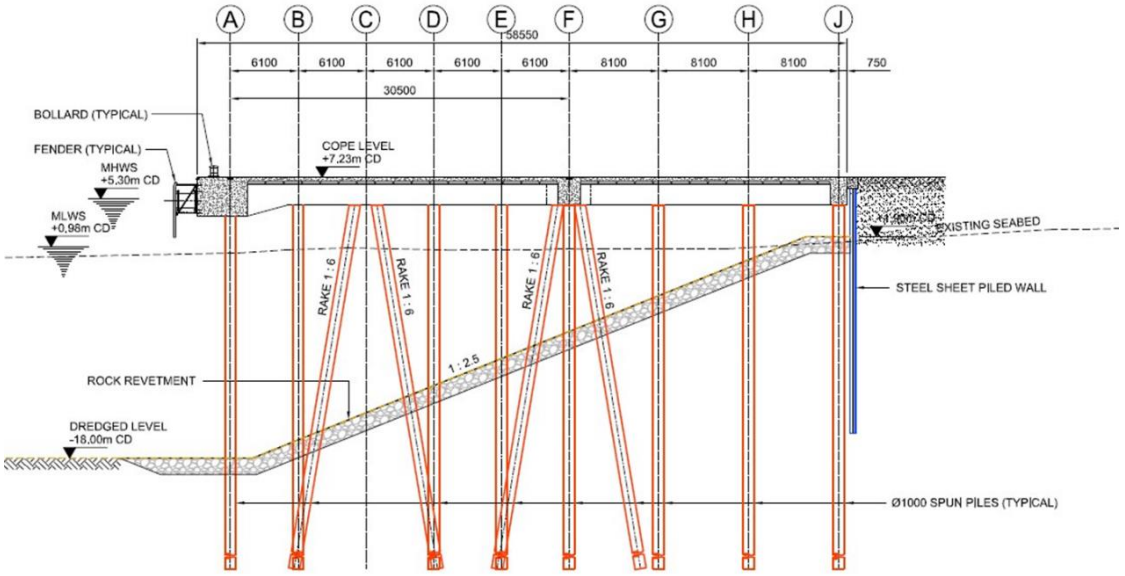
Stage 4: Precast Elements

The installation of precast elements to form the deck would be undertaken upon completion of the Stage 3 works. The precast elements are basically concrete slabs that will form the base or foundation of the container wharves, access bridges, and container yards.

Stage 5: Ancillary Equipment

Installation of the quay cranes, rubber-tyred gantries, and other associated equipment will be carried out at this stage.

Figure 2.16 Typical cross section of a container wharf



Typical Cross Section of Container Wharf
(Scale 1:150)

Construction of Container Yards

The construction of container yards will involve the following components:

a. *Earthworks*

The container yards will be developed in phases, i.e. starting from CT10 westwards to CT17. For each phase, the earthworks will be carried out to the proposed design levels. The existing ground level will be cut and graded to the required formation level. The excess earth will be back-filled to the undeveloped yard area next to the container yard undergoing construction. Temporary drainage comprising of earth drain and retention pond will be provided to prevent any flooding or ponding during construction period.

b. Drainage

Drainage for each container yard will be designed based on a 10-year storm interval. The Urban Stormwater Management Manual for Malaysia (MSMA) of the Department of Irrigation and Drainage (DID) Malaysia will be used for the calculation of the stormwater runoff. The drainage system is designed into sub-catchments where each sub-catchment encompasses one container yard. The drainage flow from the container yard will be channelled out to the sea via several outlets. The drainage system is designed as a covered system using Class Z pipe culverts.

Gravel beds with sub-soil drains will be laid at the container stacking area. The sub-soil drains will be connected to the arterial culvert system which ultimately discharges into the sea.

c. Pavement

There will be two (2) types of pavement within the container yards, namely gravel beds and paver blocks. Gravel beds pavement will be used at the container stacking yards while paver blocks will be laid for carriageways of heavy machinery and vehicles.

Construction of the gravel beds pavement at the container stacking area will be carried out in the following sequence:

i. Excavation to formation level and compaction to required specification

ii. Laying of 533mm dia. HDPE perforated pipe, 150mm crusher run, and geotextile TS 65

iii. Laying of graded gravel

Construction of the paver block pavement will be conducted in stages as outlined below:

i. Clearing of the existing ground.

ii. Excavation of the existing ground to formation level and compaction of the foundation.

iii. Laying and compaction of 200mm thick crusher run. The sub-base granite layer will form the base support of the pavement.

iv. Laying and compaction of 300mm thick Cement Treated Crushed Rock (CTCR) base. The base will form the foundation of the paver blocks.

v. Laying of 50mm coarse sand. The sand layer will ensure that stormwater will be able to seep through the pavement.

vi. Laying of 100mm thick precast concrete blocks and filling of gaps with sand.

d. Utilities

Water supply to the container yards will be provided by Pengurusan Air Selangor Sdn. Bhd. Potable water will be used for domestic usage, sprinkler system, hydrant supply, and vessel supply. All pipes for the water supply will be laid in trenches which will be excavated using the open excavation method. Laying of the water pipes will be carried out before pavement laying is carried out.

Telecommunication services at the proposed port area will be provided by Telekom Malaysia Berhad whilst the electricity supply system will be furnished by Tenaga Nasional Berhad. Telecommunication and power supply lines will be laid and placed below the pavement layer.

Small-scale sewage treatment plant (SSTP) will be constructed to cater for the domestic wastewater generated from within the Westports Phase II port area, specifically from the maintenance and repair workshops, as well as the administration building. The SSTPs will be extended aeration types of system, each with a capacity of 250 P.E.

Drainage system at the container terminals will be designed into sub-catchments where each sub-catchment will encompass one container yard. Gravel beds with sub-soil drains will be laid at the container stacking area. The sub-soil drains will be connected to the arterial culvert system which ultimately discharges into the sea via several outlets. The drainage system will be built as a covered system using Class Z pipe culverts and will be designed based on a 10-year storm interval.

Access roads within the terminal containers will be designed to facilitate the transportation of containers using the port vehicles such as rubber-tyred gantries (RTGs), straddle carriers, prime movers, trailers, and forklifts. Carriageways with frequent movements of heavy machinery and vehicles will be overlaid with paver blocks while premix will be used for the main access road.

e. Structures

Piling works will only be carried out for foundations of high mast towers, sub-stations, maintenance and repair workshops, and marshalling building. All other foundations will be constructed on pad foundations. The structures will be built to the necessary loading and required protection/cover from environmental degradation due to site conditions. Concrete for structural works will be obtained from off-site batching plant.

2.9 OPERATIONAL PHASE

The operational phase includes commissioning of port terminals and facilities, and the additional vessel berthing activities at the new Westports terminals.

1) BERTHING OF VESSELS

All vessels that are entering, leaving, or navigating within the port limits in Port Klang must engage a licensed pilot from Westports to berth the vessel. Pilotage is mandatory in Port Klang as it has been declared a Compulsory Pilotage District. As such, all vessels bound for Westports berths must notify their estimated time of arrival seven (7) days in advance to the Westports Control Centre (WCC). The shipping agents must request for a pilot at least two (2) hours in advance of the estimated time of arrival of the vessel. For vessels departing from berths or inner anchorages to pilot stations, the agents shall request for pilots at least one (1) hour prior to departure. Any inward and outward bound vessels requesting pilotage services shall complete a vessel checklist for piloted movements in the pilotage district.

Port Klang Authority also manages and operates the Vessel Traffic Management System (VTMS) for the pilotage district of Port Klang, which includes the approaches to the Northern and Southern Channels. This system allows vessels that are due to arrive at pilot stations to be identified and tracked in advance. The Estimated Time of Arrival (ETA) information is conveyed to the appropriate pilot control centres, and vessels will be notified of pilot boarding and berthing information. VTMS is also linked to the Malacca Straits Surveillance System and is supported by the Automatic Identification System (AIS), a network of radars, and communication facilities.

2) LOADING AND UNLOADING ACTIVITIES AND STORAGE OF CONTAINERS

The typical operational procedures at the container terminals are ship-to-shore operation and yard operation. The ship-to-shore operation is the loading and unloading of containers from the vessel to the shore. The main equipment that will be used is the Quay Crane (QC). Meanwhile, the yard operation involves the movement and storage of containers in the yard area. The equipment which is typically used is the Rubber-Tyred Gantry (RTG). **Figure 2.17** shows the daily inbound and outbound flow depicting the typical operational cycle at the container terminals.

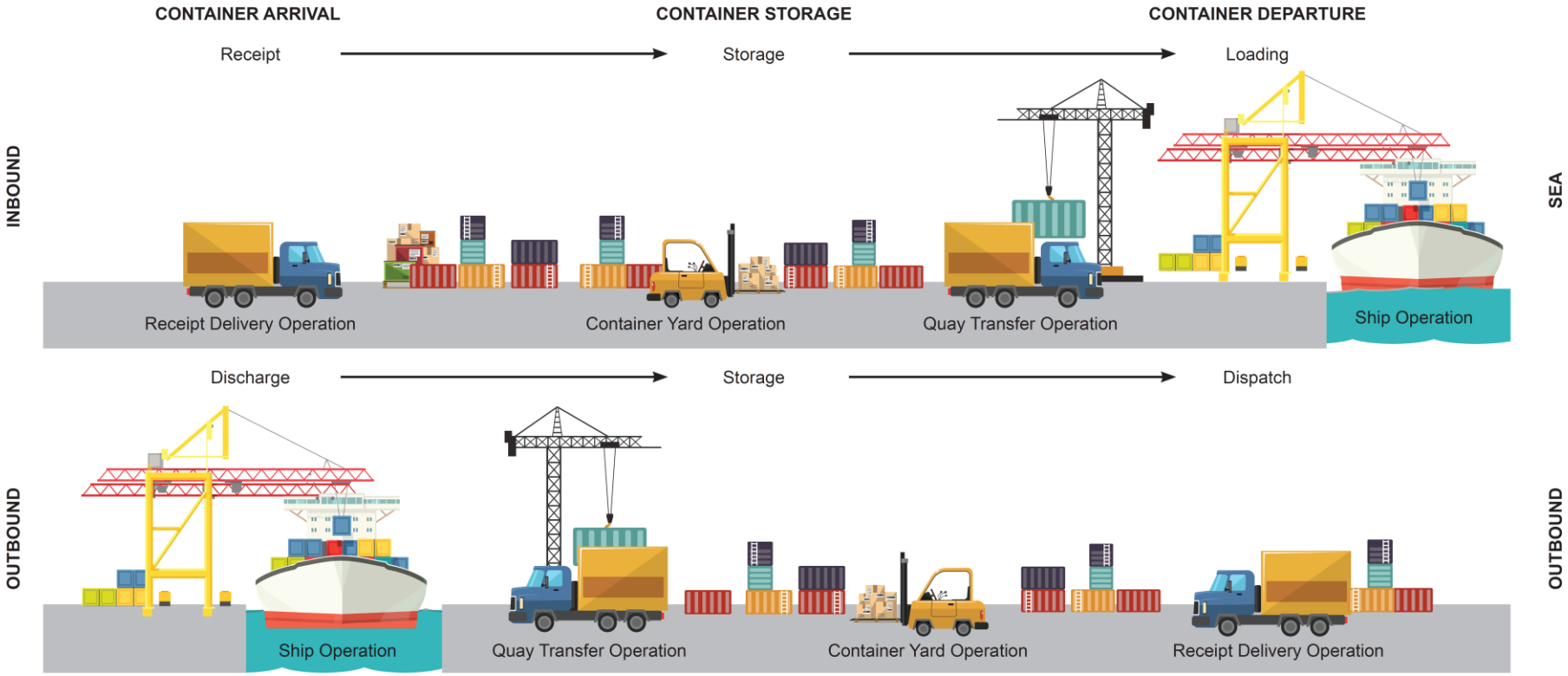
3) MAINTENANCE DREDGING

Maintenance dredging is required within the port limit to ensure safe navigational depth of -18.0mCD at the entrance channels and basins; the maintenance dredging works are carried out by Port Klang Authority. Maintenance dredging works are also required at the berths and these works are conducted by Westports.

4) MAINTENANCE OF PORT FACILITIES AND EQUIPMENT

Port operations involve extensive and continuous usage of cargo-handling machinery and equipment which requires maintenance and repair from time to time. The BOT facilities at the port include maintenance and repair workshops to handle the maintenance works.

Figure 2.17: Typical Operational Cycle at Westports Container Terminals



Source: Westports Sustainability Report 2018

8) GENERATION AND HANDLING OF PORT WASTES

In the Environmental Quality (Scheduled Wastes) Regulations 2005, the First Schedule lists the types of wastes that are classified as scheduled wastes. These wastes shall be disposed of at prescribed premises. Currently, scheduled wastes that are generated at Westports is stored and disposed of by the appointed and licensed contractor as mandated in the Environmental Quality Act 1974. These wastes, i.e. types and amount, are reported using the Electronic Scheduled Waste Information System (eSWIS) introduced by the Department of Environment (DOE) Malaysia.

The International Maritime Organization (IMO) is an international body that develops and establishes international shipping regulations. IMO has 174 members of the shipping nations and Malaysia has been a member since 1971. The International Convention for the Prevention of Pollution from Ships (MARPOL) introduced in 1973, is the key IMO convention which covers the prevention of pollution of the marine environment by ships from operational and accidental causes as well as pollution by chemicals, goods in packaged form, sewage, garbage, and air pollution. It includes six (6) annexes as listed below:

i. *Annex I – Regulations for the Prevention of Pollution by Oil*
ii. *Annex II – Regulations for the Control of Pollution by Noxious Liquid Substances in Bulk*
iii. *Annex III – Prevention of Pollution by Harmful Substances Carried by Sea in Packaged Form*
iv. *Annex IV – Prevention of Pollution by Sewage from Ships*
v. *Annex V – Prevention of Pollution by Garbage from Ships*
vi. *Annex VI – Prevention of Air Pollution from Ships*

The general types of wastes that originate from shipping vessels include oily wastes, noxious liquid substances, sewage, garbage, as well as cargo residues during the loading and unloading operations. The volume of wastes generated on board ships depends on the size and type of the ship, the duration of the journey before docking, and the waste management practices on board. At Westports, vessel delisting activities are handled by shipping agents appointed by the respective shipping lines. Shipping agents will then directly appoint waste transporters to transport the wastes directly to the licensed facilities for disposal.

Another source of wastes is produced from the maintenance and repair workshops at Westports. These wastes are classified as scheduled wastes which requires proper handling, disposal, and waste management. Among the scheduled wastes generated are used engine oil, used oil mixed water, sludge and oily residues, used saw dust, used drums, used oil filters, gloves, and rags. The types of wastes that are currently being handled at the maintenance and repair workshops at Westports is presented in **Table 2.6**.

Table 2.6 Types of wastes generated at Westports maintenance and repair workshops

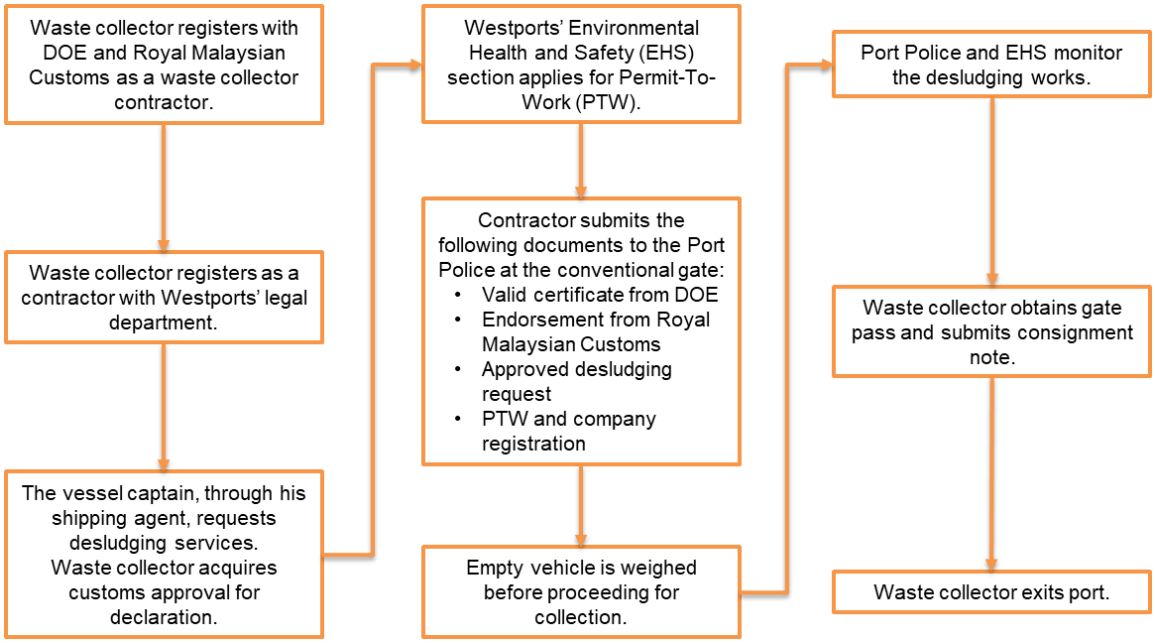
Type / SW Code	Description *Environmental Quality (Scheduled Wastes) Regulations 2005*	Wastes Generated at Westports
SW3	***Wastes containing principally organic constituents which may contain metals and inorganic materials***	
SW305	Spent lubricating oil	Used engine oil
SW307	Spent mineral oil-water emulsion	Used oil mixed water
SW312	Oily residue from automotive workshop, service station oil or grease interceptor	Sludge
SW4	***Wastes which may contain either inorganic or organic constituents***	
SW408	Contaminated soil, debris or matter resulting from cleaning-up of a spill of chemical, mineral oil or scheduled wastes	Used saw dust
SW409	Disposed containers, bags or equipment contaminated with chemicals, pesticides, mineral oil or scheduled wastes	Used drums
SW410	Rags, plastics, papers or filters contaminated with scheduled wastes	Used oil filters
		Used gloves/rags

Source: Westports Sustainability Report 2019, Westports Holdings Berhad

Westports has developed and implements a Standard Operating Procedure (SOP) on port reception services for handling of port wastes. The SOP governs the handling, management, and safe disposal of wastes generated at the port terminals. It covers the receipt, transfer, transportation, and final disposal of scheduled and general wastes. The SOP of Westports port reception services is presented in **Figure 2.18** below.

Westports' waste management system promotes proper segregation of disposable and recyclable wastes. The effluent treatment plant system conforms to the Environmental Quality (Industrial Effluents) Regulations 2009. Sludge collection system from shipping vessels and the new bunkering procedure were developed and implemented in compliance with the Environmental Quality (Scheduled Wastes) Regulations 2005 and International Convention for the Prevention of Pollution from Ships (MARPOL) International Laws Annex I & II, respectively.

Figure 2.18: Standard Operating Procedure (SOP) of Westports Port Reception Services



Source: Westports Sustainability Report 2017

2.10 ABANDONMENT PHASE

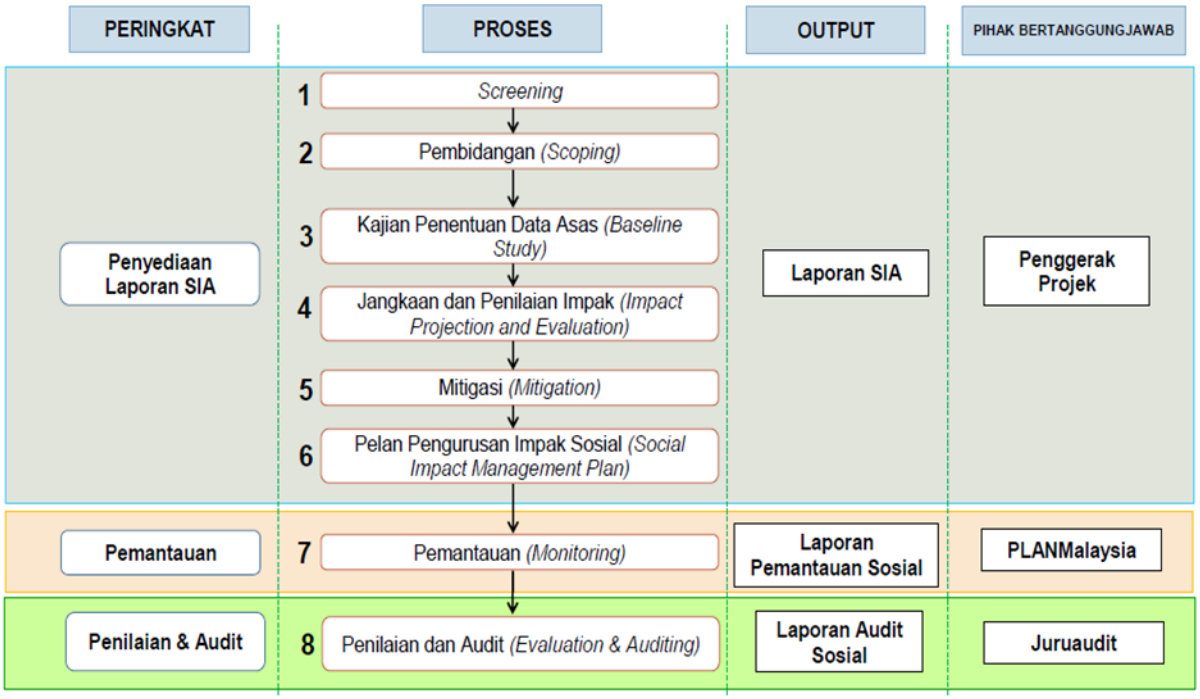
Though highly unlikely, the abandonment phase will be taken into consideration in the EIA assessment of impacts, in the event that the Project is called off at any stage after works have commenced or if the port terminal cease to operate and the infrastructure needs to be removed from the construction site.

Chapter 3 STUDY APPROACH AND METHODOLOGY

3.1 INTRODUCTION

The approach and methodology undertaken in this SIA is community-based. It is guided by the process and procedure advocated in the SIA Manual (PLANMalaysia, 2018) and illustrated in the following flow chart (**Figure 3.1**).

Figure 3.1: Social Impact Assessment Process and Procedures



Source: PLANMalaysia, 2018

The sequence of activities in the process involves the following:

1) Screening
2) Social impact scoping
3) Baseline study
4) Social impact assessment and impact projection
5) Development of mitigation measures
6) Formulation of Social Impact Management Plan (SIMP)

Screening is performed prior to commencement of the SIA study. The purpose in respect to the proposed Project is to ascertain whether the Project requires an SIA under section 20B of the Town and Country Planning (Amendment) Act, 2017, Act A1522 and the category of SIA as defined in the *Manual Penyediaan Laporan Penilaian Impak Sosial (SIA) bagi Projek Pembangunan (Edisi ke-2) 2018*.

Upon confirmation that the SIA is required, a **scoping** exercise is conducted to identify the zone of impact, the key stakeholders who may be impacted, potential issues and impacts that may likely arise from the Project, the type of data and information to be collected, and including appropriate data collection and impact analysis methods to be used.

Following the preliminary findings of the scoping exercise, a **baseline study** is undertaken. This involves collection of data and information relating to the demographic and socio-economic profile of the communities, the key stakeholders and interest groups who are located within the zone of impact and who may likely be affected by the Project.

The baseline data and information forms the basis for **impact identification and impact assessment**. Potential impacts arising from the construction and operation phases of the Project may be positive or adverse. Their significance on the different groups of stakeholders may range from negligible or minor to moderate, high or very high.

Impacts that are significant and adversely affect the demographic character as well as the social and economic wellbeing and livelihood of the community and liveability of their settlement need to be addressed. Likewise, environmental changes and likely impacts to changes in land use and development potential within the zone of impact and the larger region surrounding it. Hence, appropriate and practical **mitigation measures** have to be formulated in order to avert or minimise impacts that cannot be avoided.

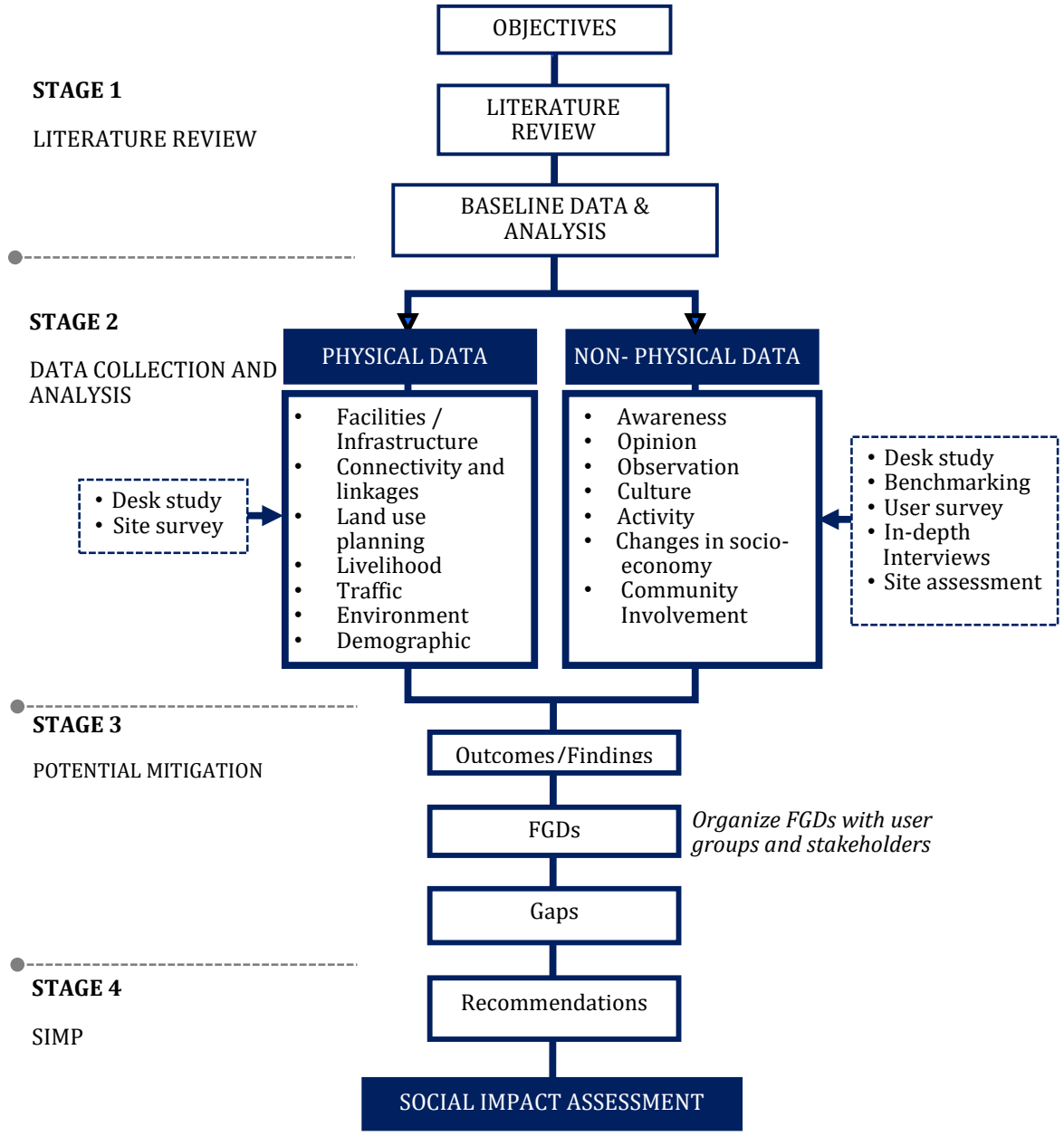
The final activity in the SIA preparation involves drafting of the **Social Impact Management Plan (SIMP).** Its purpose is to reiterate the key actions that need to be taken to mitigate and manage the social impacts, identify the roles and responsibilities of the Project Proponent (and its contractors/representatives), the relevant government agencies, stakeholders and communities throughout the life of the Project, during construction, operation and the decommissioning of the Project.

3.2 STUDY FRAMEWORK

The SIA for the Project study was conducted in four (4) stages. Stage 1 involved literature review of reports, studies and plans that have relevance to the Project as well as preliminary identification of potential impacts to the communities that could arise from the Project. Information from Stage 1 was subsequently used in Stage 2 to construct the baseline data indicators. Data was collected through desk study, community/stakeholder survey, key informant interviews and site surveys. The outcome of the data analysis was brought to the FGDs in Stage 3 for verification and updates from the local community and stakeholders. Once the data and outcome were verified, they were used in Stage 4 to identify key and significant impacts and to formulate

relevant mitigation measures to address or minimise impacts as well as to draw up the Social Impact Management Plan. (**Figure 3.2**)

Figure 3.2: Study Framework



The assessment of the scope, data collection and impacts involve research using both qualitative and quantitative data. This is to ensure the results provide a holistic view of the issues being discussed. It enables each issue to be analysed in depth and at the same time measures the impact perceptions on the proposed development project.

3.3 THE STUDY BOUNDARY

The study boundary, sometimes referred to as the Zone of Influence (ZOI), covers areas that are likely to receive direct and indirect impacts attributable to the implementation of the Project. The ZOI adopted for this SIA study covers an area that lies at least 5km radial distance from the boundary of the Project site. This assumption is similar to the impact zone that is adopted in the Environmental Impact Assessment study for the proposed Project. Although the study boundary covers a 5-km radial zone, it is recognised that the radial distance from the Project site boundary can be extended beyond 5km to include other areas that could also be affected by the Project activities, e.g. dredging.

The proposed Project lies at the southern tip of Pulau Indah, extending immediately seawards from the existing Westport's port terminals. **Figure 3.3** shows the location of the Project site and the general ZOI extending to a 5km radial distance from the proposed Project boundary. The settlements within 5km radial distance from the Project boundary are indicated in **Figure 3.4,** whilst the location and photographs of some of the land uses are shown in **Figure 3.5**.

The **primary ZOI (ZOI 1)** for this study is identified as areas located within 1km radius from the project site boundary. The 1km radius is used as a guideline since changes to the environment and land uses which have direct social implications usually occur within this distance. A large part of ZOI 1 was observed to be characterised by open vacant grassland, disturbed mangrove and an intertidal area; the other part of the project site is in the sea. Other uses within ZOI 1 comprise the Anglers' Resort, Pantai Acheh and part of the Port Klang Free Zone (PKFZ).

The **secondary ZOI (ZOI 2)** covers areas located within 1km to 3km radius from the project boundary. The 3km radius is used as a guideline based on two considerations, i.e. the presence of the local settlements from the project boundary and the extent to which the indirect impacts are likely to reach the local population inside the secondary zone. The settlements located within this zone include part of Kg. Perigi Nenas in Pulau Indah and Perkampongan Orang Asli Sg Kurau in Pulau Carey.

The **tertiary ZOI (ZOI 3)** covers areas within 3km to 5km radius from the project site. This ZOI involves settlements that are located between 3km 5km radius from the project site boundary, i.e. Kg Perigi Nenas and part of Kg Sg Kembong. However, some flexibility is adopted by extending the ZOI further to include certain stakeholder groups beyond the 5km buffer line. These interest groups include the Orang Asli at Kg Orang Asli Pulau Indah, and the fishing community from Teluk Gong. As part of the fishing community, it is relevant that their views are sought and considered in this SIA study.

Figure 3.3: Zone of Influence – 5km radial distance from the Project boundary

Figure 3.4: Settlements within 5km radial distance from the Project boundary


KEY PLAN
PROPOSED SITE
Pulau Tengah
Pulau Selat Kering
Pulau Che Mat Zin
Pulau Pintu Gedong
Pulau Indah
Kg. Sg. Pinang
Kg. Orang Asli Pulau Indah
Kg. Telok Nipah
Telok Gong
Kg. Sg. Kembong
Kg. Perigi Nenas
Westports
Selat Klang
PKFZ
Selat Lumut
Straits of Malacca
Pantai Acheh
Angler's Resort
Pulau Carey
Perkampungan Orang Asli Sg. Kurau
1km
3km
5km
Google Earth
N
5 km

Figure 3.5: Location and photographs of sensitive receptors within 5km radial distance from the Project boundary

The land uses (including villages, industrial and recreational facilities) located according to their ZOI are summarised in **Table 3.1.**

Table 3.1: Settlements and Other Land Uses within 5km Radial Distance from the Project Site

Mukim	ZOI 1 (0 – 1km)	ZOI 2 (1 – 3km)	ZOI 3 (3 – 5km)
Pulau Indah	• Anglers' Resort • Pantai Acheh • Port Klang Free Zone (PKFZ) • Mangroves • Open vacant land • Selat Lumut and Selat Klang	• Kg. Perigi Nenas • Westport's container terminals • Port Klang Free Zone (PKFZ) • Peninsular Sailing Club • Pulau Indah public marina • Inai Kiara Sdn. Bhd (ship repair and maintenance facility) • Part of Pulau Che Mat Zin, Pulau Selat Kering and Pulau Gedung Pintu • Selat Lumut and Selat Klang	• Kg Perigi Nenas • Kg.Sg Kembong • Westport's container terminals • Westport's conventional terminals • Part of Pulau Che Mat Zin, Pulau Selat Kering and Pulau Gedung Pintu • Selat Lumut and Selat Klang • Selat Melaka
Pulau Carey		• Perkampungan Orang Asli Sungai Kurau, Pulau Carey • Oil palm estate	• Oil palm estate

3.4 SCREENING

The proposed Westports Phase 2 development involves extending the existing 5,800m long container wharf by another 4,800m in order to accommodate an additional eight (8) more container terminals. In doing so, the existing land area of 535.47 hectares will be expanded by another 550 hectares through sand filling, surcharge removal, dredging, and foreshore reclamation in the vicinity of the navigation channels of the Southern Access Channel (Selat Klang) and Eastern Channel (Selat Lumut).

The screening exercise conducted for the Project confirmed that a SIA study is required under section 20B (1) and (2) of the Town and Country Planning (Amendment) Act, 2017, Act A1522. As it is an infrastructure project of national and strategic interest, the Project is likely to generate direct social impacts to the local communities and the surrounding areas. As such, potential impacts need to be identified and mitigation measures recommended in minimising or managing the impacts.

In addition, verification with PLANMalaysia's *Manual Penyediaan SIA* (2nd Edition, 2018) confirmed that the SIA is classified under Category 1 as the Project involves reclamation of more than 50 hectares of foreshore area and requires increasing the existing land area by more than 50%. Conditions that warrant the Project to be classified as Category 1 SIA is defined below.

	Category 1	**Type of Development**	**Development Characteristics**
1.	Foreshore Reclamation *(Penebusgunaan Pinggir Laut)*		
	a) Foreshore reclamation	Foreshore reclamation including man-made islands	• Involving 50 ha. and above; • Excludes reclamation for the construction of jetty or beach nourishment by JPS
2.	Major National Infrastructure *(Infrastruktur Utama Negara)*		
	b) Marine port	1) National port 2) Regional port 3) State port – located within state boundary	• Covers passenger & cargo port; • Includes upgrading of existing ports and port expansion that involves an increase of 50% or more of its existing area; • Excludes passenger/fishing jetty.

Source: *Manual Penyediaan Laporan Penilaian Impak Sosial (SIA) bagi Projek Pembangunan (Edisi ke-2), 2018*

3.5 SCOPING

Scoping was conducted between July and September 2018 with the aim of achieving the following:

1) To identify the key local stakeholders that would be affected by the Project;

2) To identify and prioritise preliminary social issues and concerns that are likely to arise from the implementation of the Project; and

3) To identify the appropriate survey methodology and impact analysis methods to be used for the SIA study.

Generally, the main social impact variables that are often correlated with adverse social impacts of a development proposal include:

- Demographic change, e.g. change to the size and profile of the local population, influx of temporary or foreign work force (i.e. factors that may affect the cohesion of the local community), etc.;
- Livelihood and economic change, e.g. new patterns and sources of employment and income, factors that affect the livelihood of the local community, land and property value and property rental, etc.;
- Socio-economic wellbeing and liveability e.g. access to community services and facilities, housing, community lifestyle, traffic congestion, public road safety, etc.
- Environmental change, e.g. loss of natural habitat or changes to the hydrological regime, water and air quality, which could lead to loss of livelihood in a resource-dependent community, risk of flooding, etc.; and
- Health and safety change, e.g. public health, deterioration of environmental quality, crime and public safety, etc. and
- Contribution to land use change and regional development.

3.5.1 Site Reconnaissance

In conducting the scoping exercise, two (2) site reconnaissance visits were made to the project site and the local communities located within the 5km zone of impact, i.e. one in Pulau Indah and another to Pulau Carey. A combination of windshield and walking survey was used to make preliminary visual observations of the communities located inside the 5km zone of impact as well as activities at the fishing jetties in Kg Sg Kembong and Kg Telok Nipah in Pulau Indah.

Part of the project site was observed to be open vacant grassland, disturbed mangrove and an intertidal area; the other part of the project site is in the sea. Hence, relocation or displacement of human activities is not required.

3.5.2 Informal Interviews and Meetings

To identify the likely issues and concerns that could arise from the proposed Project, informal interviews were held with representatives from the fishing community. An informal meeting was held with the chairman and members of *Persatuan Nelayan Kawasan Pelabuhan Klang* (the association representing the fishermen from Pulau Indah,) in 16 August 2018 and with representatives from KS Aquaculture, a company which operates about 50% of the caged fishery projects registered in Pulau Ketam, on 27 August 2018.

Additionally, an informal meeting was also held with the deputy director of the Department of Fisheries Selangor in September 2018 to inform the department about the proposed Project, to secure the department's views on the problems faced by the fishermen in the Port Klang area as well as to request for preliminary data on fish landings and the profile of the fishermen in Pulau Indah.

3.5.3 Identification of Stakeholders

Arising from the informal interviews conducted between August and September 2019, the scoping exercise identified at least five (5) stakeholder groups that could potentially be affected, either directly or indirectly and in varying degrees, by the Project. Generally, a stakeholder is defined as individuals, communities, groups and institutions who:

- Are most likely to experience, at significant levels, any potential negative and/or positive impacts of the proposed Project;
- Are vulnerable members of the community within the proposed Project area; and
- Has the mandate (such as government agencies) over the various elements of the Project's activities.

The stakeholders located within 5km radius from the Project site boundary were identified as:

1) The local communities residing in Kampong Perigi Nenas and part of Kampong Sg Kembong in Pulau Indah and Kampong Orang Asli Sg Kurau in Pulau Carey. The three local communities are located within 2.5km to 5km radial distance from the Project site boundary. (Kampong Teluk Nipah, on the other hand, is located about 6.3km away whilst Kampong Sg Pinang and Kampong Orang Asli Sg Pinang are located about 9.2km away from the Project site boundary).

2) The coastal fishermen from Kampong Sg Kembong and Kampong Teluk Nipah in Pulau Indah and the orang asli fishermen from Jeti Perkampongan Orang Asli Sg Kurau in Pulau Carey. Almost all the fishermen fish in the water channels around the port area, Selat Lumut and the Klang Islands, and where unimpeded access to the water channels is important;
3) Recreational fishing enthusiasts and weekend day-trippers to Anglers Resort and Pantai Acheh in Pulau Indah. Both recreational sites are located inside the 1km radial distance from the Project site boundary;
4) Recreational fishing operators, most of whom are part-time fishermen and operating out from Pengkalan Kg Telok Nipah and Pengkalan Kg Sg Kembong and where unimpeded access to the open sea through Selat Lumut and Selat Klang is important ;
5) Members of the Peninsular Sailing Club, whose access to the open sea is through Selat Lumut and Selat Klang, and unimpeded access to the open waters is important;
6) Inai Kiara Sdn Bhd, a dredging and reclamation company that operates a ship repair and maintenance facility facing Selat Lumut. Located about 3km away from the Project site boundary, access to the open sea is likewise important to the operations of the facility.

Depending on the impact of the Project activities, e.g. dredging, the radial distance from the Project site boundary can be extended beyond 5km to include the marine aquaculture (floating fish cage culture) farms located along the water channels between Pulau Ketam and Pulau Tengah, between Pulau Tengah and Pulau Klang and between Pulau Klang and Pulau Selat Kering. The floating fish cages are located between 9.5km to 13.5km away from the Project site.

3.5.4 Identification of Preliminary Concerns and Opportunities

The preliminary concerns and opportunities discerned through the informal interface with the stakeholders and DoF Selangor during the scoping exercise is summarised in **Table 3.2.**

Table 3.2: Summary of Preliminary Concerns and Opportunities

No.	Social Impact Variables	Identification of Preliminary Concerns and Opportunities
1	Livelihood and economic change	• Threats to fishing grounds and mollusc harvesting sites posed by the construction and operation of the port expansion • Unhindered access to the fishing grounds • Longer travelling distance and incurrence of higher fuel cost to get to the fishing grounds • Safety of fishermen at sea due to increase in marine traffic • Alternative livelihood for fishermen • Job and business opportunities for the locals • Positive spillover effects, e.g. demand for food, housing, etc. from increased port activities • Anticipated improvement to household income and disposable income

2	Environmental change	• Loss of breeding grounds for prawns and fish • Decline in marine resources • Reduced water quality (from trash and oil spill from marine vessels) • Coastal erosion
3	Liveability and social wellbeing	• Increased volume and movement of container traffic and its impact on public road safety • Influx of non-local and foreign workers and demand on social and infrastructure facilities and services • Increase in housing demand, land and rental value
4	Health and safety	• Noise and air pollution • Crime and personal safety
5	Demographic change	• Inflow of foreign workers • Inflow of non-local workers
6	Culture and heritage	• Maintain the kampong environment
7	Land use	• Stimulate further land development in Pulau Indah and the Klang region

The preliminary concerns and opportunities that were identified in the scoping exercise allowed certain assumptions to be made to the various social impact variables with respect to potential impacts and their significance. **Table 3.3** summarises the preliminary potential impacts, their anticipated significance, and likelihood of impact and consequence of impact. These assumptions were useful in framing the survey questionnaire to the local communities and fishermen and in the interviews with key informants.

Table 3.3: Summary of Potential Impacts and their Significance

Potential Impact	Significance of Impact	Likelihood of Impact	Consequence of Impact
Coastal fishing	Negative/Moderate	Likely	Moderate
Recreational fishing	Negative/Minor	Likely	Minor
Health and Safety:			
• Road safety	Negative/Moderate	Likely	Moderate
• Marine safety	Negative/Minor	Likely	Minor/Moderate
• Dust and noise pollution	Negative/Minor	Unlikely	Minor
Recreational facilities along foreshore areas	Negative/Minor	Likely	Minor
Employment of local residents	Positive/Moderate	Likely	Moderate
Local business opportunities	Positive/Moderate	Likely	Moderate
Housing demand	Positive/Minor/Moderate	Likely	Minor/Moderate
Land value	Positive/Minor/Moderate	Likely	Minor/Moderate

3.6 STUDY METHODOLOGY

Triangulation methodology was used to collect socio-economic baseline data. This involves using more than one method to gather data. The methodology is a combination of qualitative and quantitative methods to develop a comprehensive understanding of a socio-economic situation as well as to increases data validity through cross verification from more than one source (Patton, 1999, 2001; Carter *et al*. 2014). For the purpose of this SIA, a combination of qualitative and quantitative methods was used and they include key informant interviews, observations, survey questionnaires, focus group engagements, dialogues, meetings and review of published and unpublished documents.

Data and information regarding the study area were obtained from both primary and secondary sources. Whilst secondary sources from published and unpublished data and reports of various government departments and agencies are generally good at providing general background and trends, it is data from primary sources that are significant and relevant in this study to understand the perception and acceptance of the local communities towards the proposed project. **Table 3.4** summarizes the various data collection methods undertaken for the study.

Table 3.4: **Quantitative and Qualitative Data Collection Methods Undertaken**

Method	Research Approach Undertaken	Date of Event	Number of Participants
Qualitative			
FGD	1st FGD with State Assemblyman of Port Klang, Head of Kg Perigi Nenas and Kg Sg Kembong, members of MPKK and Biro Kg Perigi Nenas	18th Jan. 2020	13
FGD	2nd FGD with Persatuan Nelayan Kawasan Kuala Langat, officers from DoF Selangor, DoF Port Klang and LKIM Selangor	28th Feb. 2020	29
Dialogue	Dialogue with Penghulu Pulau Indah, Heads of Kg Perigi Nenas, Kg Telok Nipah, Kg Telok Gong and members Biro Kg Perigi Nenas, Perkampongan Orang Asli Kg Sg Kurau and Sg Judah of Pulau Carey	03 Mar. 2020	13

FGD	3rd FGD with Persatuan Nelayan Kawasan Pelabuhan Klang, officers from DoF Selangor, DoF Port Klang and LKIM Selangor	6th Mar. 2020	12
FGD	4th FGD with residents and fishermen of Perkampongan Orang Asli Sg Kurau and Kg Sg Judah of Pulau Carey and Kg Orang Asli Sg Pinang of Pulau Indah	13th Mar. 2020	83
Meeting	Meeting with officers from the Department of Fisheries Selangor	29th Jan. 020	2
Meeting	Meeting with the Director of LKIM Selangor	10th Feb 2020	1
Meeting	Meeting with officer from the Planning Department, Majlis Perbandaran Klang	18th Jun 2020	1
Meeting	Briefing and feedback session with the Chairman and board members of Lembaga Pelabuhan Klang	17th Aug 2020	10
Key informant interview	Key informant interview with the Hon Secretary of the Peninsular Sailing Club	29th Dec 2019	1
Key informant interview	Key informant interview with the *ketua nelayan* Kg Sg Kembong	01 Mar. 2020	1
Key informant interview	Key informant interviews with the part-time fishermen of Pengkalan Kg Sg Kembong	01 Mar. 2020	3
Key informant interview	Key informant interview with the recreational fishing boat operators at Pengkalan Telok Nipah	01 Mar. 2020	2

Key informant interview	Key informant interview with the owner/operator of floating fish chalet *(rumah rakit)*	01 Mar. 2020	1
Key informant interview	Key informant interview with a local resident of Kg Sg Kembong	01 Mar. 2020	1
Key informant interview	Key informant interview with site staff of Inai Kiara Sdn Bhd	23 Feb. 2020	1
Key informant interview	Key informant interview with the recreational fishermen and anglers	23 Feb. 2020	26
Quantitative			
Survey	Questionnaire Survey, interview and engagement with local community	14th -16th Mar. 2020	350
Survey	Questionnaire Survey and interview with fishermen of Pulau Indah, Kuala Langat and Pulau Carey	28th Feb – 13th Mar. 2020	73

3.6.1 Secondary Data

Secondary information and data were collected from published and unpublished official documents obtained from the government agencies. These include, amongst others, the 2010 Population Census, *Rancangan Tempatan Maljis Perbandaran Klang 2020, Rancangan Tempatan Maljis Perbandaran Klang 2035*, National Plan of Action for the Management of Fishing Capacity in Malaysia (Plan 2) published by the Department of Fisheries Malaysia, *Laporan Banci 2017/2018. Jilid 2: Sosio-ekonomi Nelayan dan Data Isi Rumah (Sendi) Ketiga* and *Kajian Cadangan Pelan Pembangunan untuk Nelayan Pesisir Pantai yang Terkesan Akibat Projek Pembangunan Di Malaysia*, both published by Lembaga Kemajauan Ikan Malaysia. Other reports referred to for purpose of benchmarking include the Final Report of Social Impact Assessment for PIPC Pengerang, Kuantan Maritime Hub, Penang South Reclamation and the Port of Tanjung Pelepas. Data and information from the Project Proponent (PP), the Traffic Impact Assessment Report, the Hydraulic Reports and Environmental Impact Assessment (EIA) for the proposed Project were also referred to.

3.6.2 Primary Data

Primary data comprises socio-economic data collected through the household and perception survey as well as the feedback obtained from the survey and engagement with the stakeholders pertaining to the perceived impacts and concerns towards the Project. Over and above the secondary information, which forms the general and key background, primary data were obtained through a combination of qualitative and quantitative methods that include:

i) Quantitative Method

a) Questionnaire surveys

ii) Qualitative Method

a) Focus Group Discussion (FGD)

b) Dialogue Session

c) Meetings

d) Key informant interviews

a) Questionnaire Surveys

A household and perception survey was conducted on the local and fishermen communities living within 5km radial distance from the project boundary. The data was collected to conduct a demographic and socio-economic profiling of the local communities living within ZOI 1, ZOI 2 and ZOI 3. It involved a public opinion poll gathered through a questionnaire survey directed to both the directly impacted fishing communities and the impacted local settlements within the area of 5km radius. Two questionnaires surveys were undertaken;

a) Households within the ZOI (5-km)

b) Fishermen within and outside ZOI

b) Focus Group Discussion (FGD)

Focus Group Discussion is a rapid way to collect insight information from the respondents for their collective and diverse opinions and perceptions regarding the Project. Four FGDs were conducted to collect information from the local heads of villages within the ZOI and the fishermen associations, who have a sound understanding of the local social issues of the area and their concerns. The FGDs focused on the main issues and impacts that might arise as a result of the Project as well as invited suggestions and recommendations that the community or fishermen proposed to highlight to the Project Proponent or the relevant government agencies.

c) Dialogue Session

This method was used to in the meeting with the *penghulu* of Pulau Indah and heads of the settlements located within the ZOI and in Telok Gong and Pulau Carey. The purpose of the dialogue was first, to introduce the Project to the stakeholders, and secondly, to allow them to raise concerns and requests or seek further explanations directly from Project Proponent. The dialogue session also served as a platform for the stakeholders to make recommendation with respect to ways to improve fishing boundaries and regulations on port limit encroachment.

d) Key Informant Interviews

Informal data gathering involving other stakeholders, i.e. recreational boat operators, part-time fishermen, operators of floating fish chalets along Seat Lumut as well as the recreational fishermen, anglers and weekend visitors, were held in local restaurants and fishing jetties in Kg Sg Kembong and Kg Telok Nipah, as well as at the fishing jetty at the Anglers Resort.

The key informant interviews were conducted a set of open-ended questions. The purpose of the interviews is to further explore information on social economic characteristics of the stakeholders, i.e. their livelihoods, employment, local businesses, and their views and perception with respect to the impact the Project might have on them.

3.7 SAMPLE FRAME AND SAMPLE SIZE

Two questionnaire surveys were undertaken targeting at:

i) Heads of households within the ZOI

ii) Fishermen groups

The sampling frame was derived from information given by the Penghulu of the Mukim and Head of Villages. The main respondent was the head of household. Although Kg Teluk Nipah is outside the 5km radial distance from the project boundary, nonetheless, it is included in the household and perception survey due to the presence of fishermen and persons related to the fishing industry (i.e. recreational fishing boat operators, part-time fishermen, etc.) within its community. In total, there were 2,800 heads of households within the ZOI (including Kg Telok Nipah) with an estimated population of 12,100.

The study involved two types of sampling which are **Stratified Random Sampling and Purposive Sampling.** Stratified Random Sampling was used to survey head of households and selection of houses was done randomly according to ZOI. Meanwhile, Purposive Sampling was chosen to survey the fishermen who are registered with the Fisheries Department.

There are a number of approaches to determine sample size. These include using a census for small populations, imitating a sample size of similar studies, using published tables (e.g. Kreijcie & Morgan Table), using a sample size calculator (e.g. Raosoft), or applying formulae to calculate a sample size (e.g. Raosoft, Yamane, Slovin or Cochran).

For the purpose of this study, Yamane's formula (1967) was used in sample size determination used. Yamane's equation is as follows:

$$n = \frac{N}{1 + N * (e)^2}$$

Where
n = sample size
N = size of population (In this Study refers to households)
e = margin of error
1 = a constant value

A confidence level of 95% and a margin of error of 5% were adopted. Respondents from the villages were selected using random sampling whereby a larger sample was taken from the village nearest to the Project site. The demographic and socio-economic profile as well as the views and perceptions of the respondents from these villagers will serve as a benchmark and representative of the impacted population.

The number of households located within the ZOI and including Kg Teluk Nipah is approximately 2,100 in 2018. Since the population, i.e. number of households is known, using Yamane equation and assuming a confidence level of 95% and margin of error of 5%, a random sample of 336 households was obtained. For the proposed Project, the sample size was rounded up to 350 households.

The population unit is the number of head of households since it is not intended to survey more than one individual from a household.

Table 3.5 shows the distribution of sample size for the households. The survey covered mainly head of households within ZOI. Therefore, the main set of questionnaires administered were mainly the heads of the households. Each of them was interviewed to gather information on their basic households' profiles, demographic characteristics, housing, household income, expenditure levels and their views, opinions and their impacts of the project.

This survey also involved 73 fishermen from Pulau Indah, Pulau Carey and Kuala Langat who are mainly involved in fishing activities near the project site. Different set of questionnaires were used and they were interviewed immediately after FGD sessions. As advised by the Fisheries Department, only fishermen whose are registered with the Fisheries Department were selected to attend and have their feedback recorded in the

questionnaire survey. This to avoid "illegal" parties taking advantage and making unnecessary demands in the future.

Table 3.5: Summary of Sampling Frame for Household and Fishermen Survey

Settlements	Population	No. of Household Heads	No. of Households Surveyed (no.& %)
Local Community within 5-km of Project Site (Settlements ONLY)			
Kg.Perigi Nenas	6800	1500	187 (53%)
Kg. Sungai Kembong	2500	750	94 (27%)
Kg. Teluk Nipah	2800	550	69 (20%)
Total	**12,100**	**2800**	**350 (100%)**
Fishing Community within 5-km ZOI and including Kuala Langat			
	No of fishermen	**No. of licenced fishermen**	**No. of licensed fishermen surveyed**
Perkampungan Orang Asli Sungai Kurau, Pulau Carey	71	33	**33 (17%)**
Persatuan Nelayan Pulau Indah	150	81	**15 (42%)**
Persatuan Nelayan Kuala Langat	100	79	**25 (41%)**
Sub-total	**321**	**193**	**73 (60%)**
TOTAL			**73**

3.8 SOCIAL IMPACT ASSESSMENT METHODS

Social Impact Assessment involves a number of steps. In the scoping exercise, a preliminary set of significant impacts (both positive and negative) were identified. This would involve impacts during the construction and operational phases of the project in terms of the types of impacts, likelihood the impacts that will occur and the magnitude of the impacts. A Matrix system as provided in the *Manual Penilaian Impak Sosial bagi Projek Pembangunan (Edisi Ke-2)* by the PLANMalaysia (2018) to be used as a guide to establish qualitatively the cause and effect relationship, where the social impact issues are taken as variables and the communities living within ZOI are the recipients of the

impacts. To identify and assess potential impacts associated with or resulting from project activities, the project team used professional judgment and desktop analysis of technical studies undertaken for this Project to identify potential impact and predict their significance and severity on the communities.

Identification of issues and concerns raised by the stakeholders and evaluation of the significance of impacts shall be undertaken for the construction and operation phases. Significance of impact is dependent on its severity and probability of occurrence. Severity is a measure of the seriousness of the identified impact upon the stakeholder. It can be quantified using a numerical value scale by assigning a value to each perceived impact.

Values range from High, Moderate, Low or Minor/No Effect. A value of 0 is assigned to an impact that has 'Minor/No Effect' to a respondent, and a higher value, for example, 3 for 'High' if the impact is regarded to have a higher effect on the respondents.

Probability of impact occurrence is also measured using a numerical value scale, where a probability scale of 1 is assigned to one-off occurrence; a scale of 2 assigned to rare occurrence; a scale of 3 is assigned to occasional occurrence and a 4 is assigned to an occurrence that is continuous.

The significance of each impact shall be determined based on its severity and probability of occurrence, and using the formula advocated in the Manual for Social Impact Assessment for Projects (PLANMalaysia, 2018), i.e.

Significance score = Severity x Probability of occurrence

To facilitate assessment and to decide the level of action required for mitigation, the significance scores shall be grouped into classes according to the classification advocated in the Manual for Social Impact Assessment for Projects (PLANMalaysia, 2018) as indicated below.

Rating scale of 0 to 4	No or minimal impact, low priority, and therefore, no or minimum action is needed
Rating scale of 5 to 8	Low impact; prevention actions recommended
Rating scale of 9 to 12	Medium impact; preventive or mitigating measures are required
Rating scale of 13 to 16	High impact; mitigating measures are required

Although the grouping system is largely subjective, it is nonetheless a system that has been consistently used in SIA studies. If used judiciously, the level of partiality is generally acceptable. Thus, with the grouping system, it is possible to assess whether the variables for this Project require:

1) No or minimal action if the impact is minor or low; or
2) Preventive action to reduce impacts if significance of the impacts is deemed moderate; or
3) Mitigating measures to overcome or reduce the impact during planning, construction or operation stage if the significance level is considered to be high.

3.9 MITIGATION MEASURES

3.9.1 During construction

Appropriate mitigating measures shall be proposed for the construction and operation phases of the Project. During construction, issues relating to increased traffic movement and transportation of dredge and fill materials, heavy equipment and machinery, etc. will be a potential concern for public safety especially along public roads. Additionally, housing of foreign workers will also need to be addressed so as to minimise potential social conflict between the local residents and the foreign workers.

With respect to health and safety of the general public and workers, adequate security measures to prevent accidents and injury will have to be addressed when transporting construction equipment and materials along public roads.

3.9.2 During operation

The preliminary findings show that the fishing and aquaculture activities are mainly located to the north of the proposed Westports Project area such as Pulau Ketam and Pulau Tengah and will not be affected by the Project. Because of the extensive port activities on Pulau Indah, fishing has been on a decline over the years and majority of the fishermen have switched to supplying recreational fishing boats, breeding and sale of live baits.

The EIA will further identify and confirm if there will be direct impact to the nearby communities arising from the Westports expansion and if so, quantify as far as possible, the income presently generated from the fishing and related activities. The information required for this quantification will need to be furnished by Pejabat Perikanan Daerah Klang, Lembaga Kemajuan Ikan Malaysia, and Persatuan Nelayan Kawasan Klang and Pulau Indah.

From the preliminary survey conducted in 2018, generally, the local communities question the possibility of the local residents getting jobs in new industrial projects as few have the required skill sets. With respect to the proposed Project, it is envisaged that positive benefits will be generated for the local communities, for example, job creation, and enhancement of the local economy by increasing business with local suppliers and service providers as well as create opportunities for up-skilling amongst the local labour force.

3.10 SOCIAL IMPACT MANAGEMENT PLAN

Following the Social Impact Assessment, the Project Proponent needs to prepare a Social Impact Management Plan (SIMP). The SIMP establishes the roles and responsibilities of the Project Proponent, government, stakeholders and communities throughout the life of the Project, in mitigating and managing social impacts and opportunities during construction, operation and the decommissioning of the Project. The SIMP for the proposed Project shall:

1. Reflect the findings and recommendations of the Project's social impact assessment, including feedback from engagement with stakeholders.

2. Present a concise summary of the findings of the social, economic and demographic character of the zone of impact and the potential positive and negative impacts.

3. Provide a summary for all stakeholders regarding the potential positive and negative impacts of the Project, proposed mitigation and management strategies and implementation actions. The actions nominated to resolve issues shall be accompanied by progress measures and time frames in the monitoring plan, and be reported on as Project implementation proceeds.

4. Identify the roles and responsibilities of the Project Proponent and key stakeholders, i.e. relevant government agencies and departments, service providers and communities through construction, operation and decommissioning of the Project. In preparing the plan, discussion and collaboration with stakeholders, particularly the local government, government departments and agencies, and specific service providers is crucial.

CHAPTER 4 DEMOGRAPHIC PROFILE AND SOCIO-ECONOMIC ENVIRONMENT

4.1 DEMOGRAPHIC PROFILE OF DAERAH KLANG AND MUKIM KLANG

The population of Daerah Klang recorded a total of 891,200 persons in 2017, 65% of whom reside in Mukim Klang and the remaining 35% in Mukim Kapar (*RT MPKlang 2035*). With respect to ethnic distribution, the Malay community accounted for 45% of Daerah's Klang population, 25% Chinese, 18.4% Indians, 0.5% Others and 10.8% Foreigners. The age distribution recorded 24.2% as being under 15 years of age, 70.5% in the 15 to 64 age group and 5.2% being 64 years and above (**Table 4.1**). A similar ethnic and age distribution pattern was observed for Mukim Klang over the same period. For purpose of comparison, the working age population (15 – 64 years of age) in Daerah Klang and Mukim Klang (70%) is higher than the national percentage (67%) for the country.

Table 4.1: Ethnic and Age Distribution in Klang, 2017

Population Characteristics	Daerah Klang (2017)		Mukim Klang (2017)		Mukim Kapar (2017)	
	Frequency	%	Frequency	%	Frequency	%
Ethnic composition						
Malay	402,800	45.2	244,600	42.3	158,200	50.4
Chinese	223,200	25.0	152,500	26.4	70,700	22.5
Indian	164,400	18.4	119,400	20.7	NA	NA
Others	4,200	0.5	3,000	0.5	NA	NA
Foreigner	96,600	10.8	58,100	10.1	NA	NA
Total	891,200	100.0	577,600	100.0	313,600	100.0
Age Distribution						
<15 years old	215,500	24.2	138,600	24.0	76,900	24.5
15 - 64 years old	629,600	70.6	410,100	71.0	219,500	70.0
>64 years old	46,100	5.2	28,900	5.0	17,200	5.5
Total	891,200	100.0	577,600	100.0	313,600	100.0

Source: Kajian RT Majlis Perbandaran Klang (Penggantian) 2035

The population of Daerah Klang is projected to increase at an annual average rate of 1.9% from 891,200 in 2017 to about 1.25 million persons by 2035 *(RTKlang 2035).* The labour force is projected to grow from 421,800 to 644,000 by 2035 on an average growth rate of about 0.7% per annum. Similarly, employment is projected to increase from 356,500 jobs to about 588,100 jobs by 2035 or at an average annual growth rate of 2.8%. The optimistic projection is attributed primarily to the induced effects of the industrial and port sectors located in the Daerah. With respect to Port Klang, *RTKlang 2035* has taken cognisance of its role as an enabler of further economic growth through the supply chain or economic linkages; thus, one of the development strategies is to reinforce the function of Port Klang as an international maritime centre.

4.2 SOCIO-ECONOMIC PROFILE OF PULAU INDAH

Pulau Indah is divided into two distinct parts by the Pulau Indah Highway (Route 181). The area located north, south and west of Pulau Indah Highway is industrial in character, where the major industrial and infrastructure facilities include Westports, Port Klang Free Zone (PKFZ), Pulau Indah Industrial Park and Halal Park where multiple full-scale factories such as Federal Flour Mill, F&N, Scientex Berhad, PMB Spectrum, Mewah Oil, Oleon and Central Sugar are in operation. The MILS Logistics Hub provides integrated logistics services such as halal logistic, freight management, warehousing, transportation and project cargo management. Furthermore, many government agencies including National Hydrographic Centre of Malaysia, Royal Malaysian Navy, Royal Malaysian Customs Department and Malaysia Maritime Enforcement Agency are located here. In contrast, the area east of the Pulau Indah Highway (Route 181) is largely Malay Reserve land that is clustered with four traditional Malay villages where some of their residents still subsist on agriculture (fruit and vegetable farming and animal husbandry), cottage industry and fishing activities.

Pulau Indah's economic growth to a large extent is based on Westports' port handling facilities and the industrial developments that are driven by it. Westports and the development of Pulau Indah began in 1994 with its master developer, Central Spectrum Sdn Bhd. According to Central Spectrum's website, as of 2016, about 500 companies have established operations in the Pulau Indah Industrial Park and the Halal Hub in areas related to manufacturing, chemicals, freight forwarding, materials handling, fabrication, logistics, warehousing, labelling and packaging, food processing and production. It also includes the industrial premises located inside the Port Klang Free Zone and the liquid bulk handling and storage area operated by Westports. By the end of 2019, IKEA, the Swedish furniture retailer has set up its new regional distribution and supply chain centre for ASEAN in Pulau Indah. In addition, the Selangor Bio Bay, a biotechnology R&D centre and mixed use project is currently being implemented by Central Spectrum Sdn Bhd. It is located along the eastern flank of the island with direct access to SKVE and the other parts of the country via Persiaran Pulau Lumut.

With respect to social impacts, some of the direct and indirect multiplier effects that are likely to arise from the operation of the existing port and industrial parks in Pulau Indah are, amongst others, job creation, income generation, livelihood improvement, employment and business opportunities and improvement or upgrading of local social amenities and services.

4.3 DEMOGRAPHIC PROFILE OF PULAU INDAH

Pulau Indah had a population of around 20,000 people in 2010 (Population and Housing Census 2010). Records of the Penghulu Pulau Indah, Bahagian Pembangunan, Pejabat Daerah Klang, indicated that in 2015, the population in Pulau Indah had increased to about 35,988 persons (**Table 4.2)**. The increase has been significant over the years primarily due to the inflow of local workers from outside Pulau Indah to take up job and business opportunities provided by Westports, Port Klang Free Zone, Pulau Indah Industrial Park and the Halal Park. The presence of local workers is especially evident in Kg Perigi Nenas and Kg Sg Pinang, where tracts of vacant or idle have been converted for development of small housing schemes, e.g. single-story and double-storey terrace houses, for sale or for rent to workers.

Table 4.2: Population of Pulau Indah, 2015

Name of Villages and New Residential Areas	Distribution by Ethnic Group					Total Population
	Malay	Chinese	Indian	Orang Asli	Others	
Kg Perigi Nenas	6,420	0	10	0	70	6,500
Kg Sg Kembong	2,000	0	0	0	100	2,100
Kg Teluk Nipah	888	10	0	0	0	898
Kg Sg Pinang	NA	NA	NA	NA	NA	13,245
Kg Orang Asli Pulau Indah	11	0	0	251	0	262
Bandar Armada Putra	NA	NA	NA	NA	NA	5,250
Laguna Park	NA	NA	NA	NA	NA	1,000
New residential areas: (Taman Sri Pinang, Taman Saujana, Taman Kg Sg Pinang, Laguna Park)	6,009	39	105	0	1,471	6,738
					Total	**35,988**

NA: Breakdown by ethnicity is not available

Source: Pejabat Penghulu Pulau Indah, Bahagian Pembangunan, Pejabat Daerah Tanah dan Galian Daerah Klang

4.4 SOCIO-ECONOMIC PROFILE OF THE ZONE OF INFLUENCE

The zone of influence (ZOI) of the Project has been identified as the area within a radius of 5km from the boundary of the Project. The ZOI covers the entire Port Klang Free Zone (0km to 3km from the Project boundary), part of the Malay Reserve land in Pulau Indah (3km to 5km) and part of the palm oil plantation in Pulau Carey (2.5km to 5km).

Two settlements are located inside the ZOI namely Kg Perigi Nenas (2.5km to 5km) in Pulau Indah and Kg Orang Asli Sg Kurau (2.5km) in Pulau Carey (**Figure 4.1**). Part of Kg Sg Kembong lies at the fringe of the 5km impact zone. On the other hand, Kg Teluk Nipah, Kg Sg Pinang and Kg Orang Asli Pulau Indah along Sg Changdong lie more than 6km and 9.2km respectively northeast of the project boundary.

Malay Reserve land takes up almost a third of Pulau Indah's land area. Located in the centre of the island, the reserve lies immediately east of Westports and north of the Port Klang Free Zone. Livelihood in the villages inside the reserve is still dependent on agriculture (oil palm smallholdings, fruit orchards, vegetable plots), poultry farming and animal husbandry (cattle and goats) for subsistence and the market, cottage industry, provision of homestay facilities and coastal fishing.

Figure 4.1: Settlements inside the 5km Zone of Influence

4.4.2 Land Use

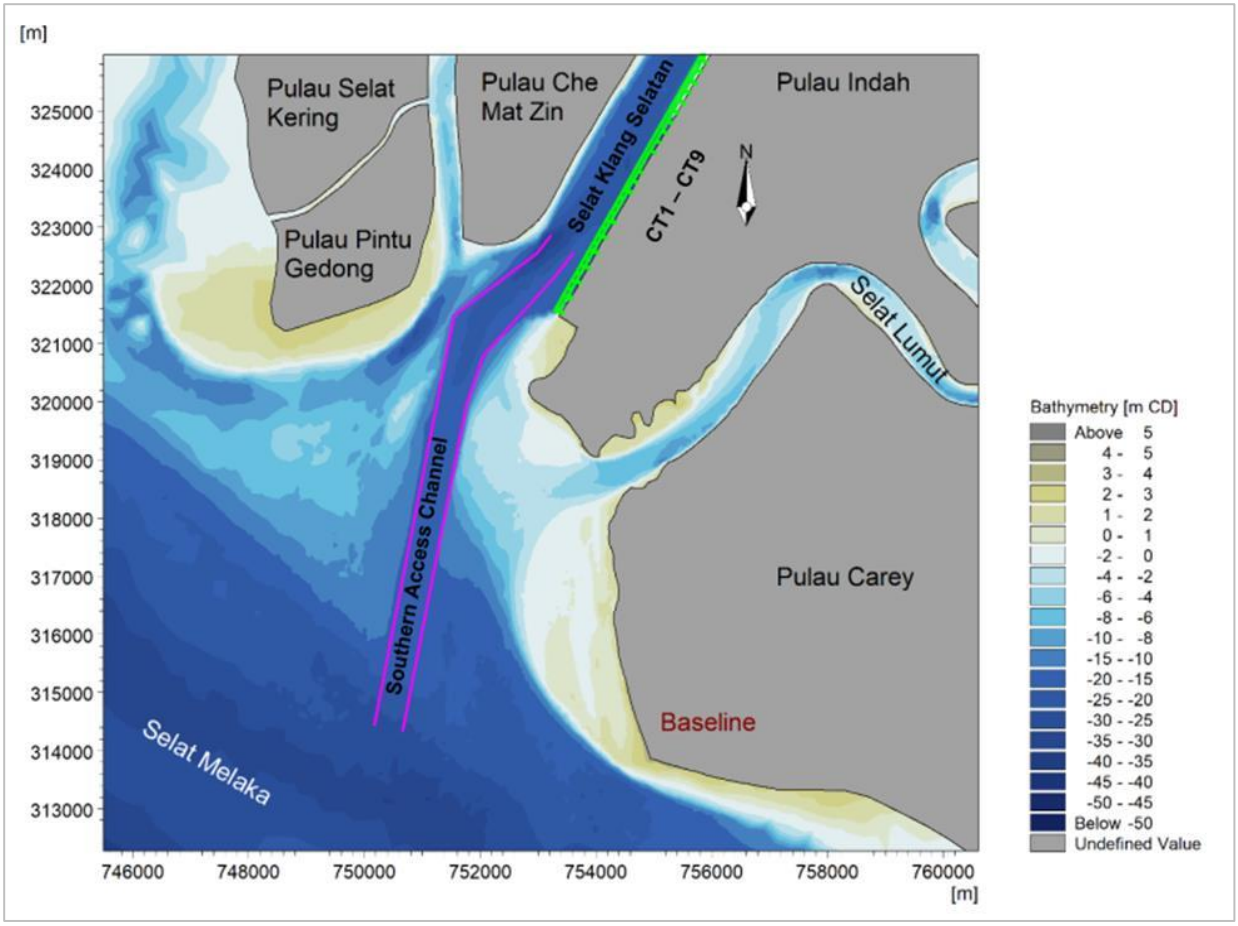
1) <u>Land Use within the Project Site</u>

The project site straddles Lot 72778 and Lot 80379 and part of the offshore marine area facing Selat Klang. Lot 72778 and Lot 80379 are owned by Westports Malaysia Sdn Bhd. Lot 72778 is partly open grassland and partly covered with mangroves (about 97 hectares). On-site observation made by the EIA ecologist in mid-May 2020 found the mangroves to be fairly disturbed, with signs that the area had been harvested previously and is now covered with juvenile saplings in some areas. Part of the shoreline has completely eroded, while other parts have been filled in and stabilised with rock embankment. The shoreline receives the full effect of tidal changes. During low tide, a short beach that is partly sandy and silty is exposed. Even though on private land and fenced, the beach is used (albeit illegally) by campers, recreational fishers and members of the public on weekends (**Plate 4.1**). Lot 80379, on the other hand, is largely submerged and was formed through a process of accretion.

Plate 4.1: Mangroves and Beach at the Project Site

The offshore marine area is intertidal. The bathymetry chart of the offshore area around the southern tip of Pulau Indah shows water depths ranging from 0m to -2m CD around the location of the intertidal mudflats and between -2 and -4m CD towards the Southern Access Channel in Selat Klang (**Figure 4.2**). The waters surrounding the project site is exposed to relatively strong northeast and southwest monsoon waves and cross currents (DHI, Hydraulic Study. April 2020).

Figure 4.2: Bathymetry Chart of the Project Site



Source: Hydraulic Study (Final Report) for Westports Phase II Expansion, Pulau Indah, Selangor. DHI (April 2020)

2) Land Use on the 0 to 3km Zone of Influence

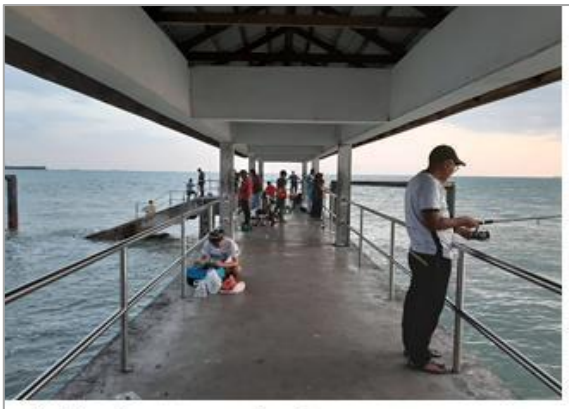
Westports port facilities, Port Klang Free Zone (PKFZ) and Inai Kiara's ship repair and maintenance facility are the major land uses located within this zone. Activities involved are predominantly industrial and low-manning, i.e. container and bulk cargo handling, storage and warehousing, materials handling, chemicals, freight forwarding, fabrication, logistics, packaging, processing and manufacturing, ship repair and maintenance.

About a third of this zone is vacant/idle grassland that is currently being used as grazing land by cattle farmers from the village and occasionally for paragliding during the weekend. About 318 acres of the area is government-owned and designated as a free trade zone. Another part of the vacant land has been approved for a combined-cycle gas turbine power plant.

Located at the south-eastern tip of this zone is the Anglers' Resort, a private-owned recreational area covering close to 9,000 sq.m (approximately 2 acres) of land. Provided with a club house,

canteen, chalets, toilet facilities, a 50m long fishing pier and 80m long rock revetment, it is popular with local day trippers and fishing enthusiasts especially on weekends (**Plate 4.2**). Pantai Acheh along the eastern shoreline is a short sandy beach that is exposed during low tide; it is another popular recreation area for local visitors and local fishers.

Plate 4.2: Local recreation and tourism areas – Anglers' Resort and Pantai Acheh



Fishing jetty at Anglers' Resort

Pantai Acheh at low tide

Rock embankment at Anglers' Resort

Fishing at Pantai Acheh

3) Land Use on the 2.5km to 5km Zone of Influence

The land uses inside this zone were identified through observations made using a combination of windshield (by car) and walking surveys.

1) Agriculture and Animal Husbandry

Agriculture is the prevalent land use activity and accounts for most of the land usage inside this ZOI. The main cultivated crop is palm oil – in smallholdings around Kg Perigi Nenas, Kg Sg Kembong, Kg Teluk Nipah and Kg Sg Pinang in Pulau Indah and in plantations (Sime Darby) in Pulau Carey. Cultivation of other crops and animal husbandry, albeit on a small scale, were also observed in the ZOI. They include are vegetables and fruit trees (for self-consumption), coconut, sugarcane and banana (as cash crop). In Kg Perigi Nenas, the animal farms include three (3) cattle farms, one (1) poultry farm and one (1) goat farm. The farms in Kg Sg Kembong are smaller and comprise three (3) cattle farms and two (2) chicken farms. Although Kg Teluk Nipah is outside the 5km impact zone, nonetheless, the village has at least four (4) small scale cattle farms.

Kg Orang Asli Sg Kurau is a Mah Meri settlement of about 200 people comprising 71 households and located along the western coast of Pulau Carey. Although the settlers are primarily inshore fishermen and mollusc collectors along the river banks, mangroves and mudflats, it was observed during the site visit made in March 2020 that some root crops, bananas and fruit trees are grown (on a limited scale) for self-consumption.

2) Small-scale Business Premises

Small-scale businesses are located linearly mainly along Persiaran Sultan Abdul Aziz, the main local road linking Route 181 (Pulau Indah Highway) to Kg Perigi Nena, Kg Sg Kembong and Kg Teluk Nipah. The shops and businesses provide a wide range of local level goods and services ranging from sundry shops, roadside food stalls and restaurants to tailors/ready-made clothing, hairdressing/barber, mini markets, supply of fishing gear, fish baits and plastic products, furniture, motorcycle repair, welding workshops, metal foundry, printing, contractor, and cottage industry (e.g. *muruku* production, fresh dressed chicken).

No shops were observed at Kg Orang Asli Sg Kurau during the site visit.

3) Community Facilities

The community inside the ZOI in Pulau Indah are provided with social and religious facilities. Kg Perigi Nenas has one mosque, two *suraus*, a Muslim cemetery, one community service centre and multi-purpose hall, and a football field. Educational facilities include one primary school, one religious school and two *tabikas*.

The community facilities located in Kg Sg Kembong include one mosque, 3 *suraus*, one community hall, one secondary school, one primary school and one *tabika*. The post office and government health clinic are located in Kg Teluk Nipah.Kurau

Kg Orang Asli Sg Kurau is provided with a multi-purpose community hall. However, schools, healthcare and other community facilities are located at the bigger orang asli settlements in

Kg Orang Asli Sg Judah and Kg Orang Asli Sg Bumbun and in Jugra, the main town in Pulau Carey.

4) Infrastructure and Public Utilities

Overall, the ZOI is well connected to the Federal and JKR roads through a combined network of State and local roads. Pulau Indah is accessible from Kajang and Putrajaya through Pulau Carey via South Klang Valley Expressway (SKVE) and from Kuala Lumpur, Shah Alam and Klang through Telok Gong via KESA which connects to the Pulau Indah Expressway (Route 181). The local roads are laid out in a grid fashion and connect to Route 181 at priority junctions.

When implemented, the proposed Pulau Indah Ring Road (PIRR) will connect to Persiaran Pulau Lumut and from there to the SKVE and KESAS. The proposed PIRR is aligned along the eastern coast of Pulau Indah. Starting from the intersection of Persiaran Pulau Lumut with SKVE, it bypasses the traditional villages that are located centrally on the island and connects with Route 181 at the southern end of the Port Klang Free Zone (PKFZ) and Westports. When completed, the PIRR will handle a large proportion of the heavy industrial traffic emanating from Westports and its proposed Phase 2 expansion and the PKFZ, and thus segregate part of the industrial traffic from the general traffic.

Although there is adequate connectivity to the rest of the Klang Valley via Route 181 and KESAS, and southwards via Persiaran Pulau Lumut and the SKVE, poor road conditions and high movement of container lorries to and from the port and the surrounding industrial parks is a concern expressed by the communities located inside the ZOI. Road accidents and public road safety are concerns especially during morning and evening peak hours.

Water and electricity supply is available throughout Pulau Indah, although there have been instances of power or water supply disruption. This is an issue that has to be resolved by the service providers, through better management or upgrading of existing facilities. With respect to telecommunications and waste management facilities, the ZOI and the rest of the island are well-served.

Access to Kg Orang Asli Sg Kurau in Pulau Carey is via a circuitous red laterite track through Sime Darby's extensive palm oil estate. Water is piped in from the mainland whilst electricity is supplied from Sime Darby's biogas plants (using palm oil waste) and a standby diesel generator.

5) Recreational Facility

With frontage to Selat Lumut, the 150-berth Pulau Indah Public Marina and Peninsular Sailing Club are located about 3.5km away from the project site boundary. The Pulau Indah Public Marina is one of the five (5) public marinas in the country that are operated by Jabatan Laut Malaysia and provides berthing, dry berth area, slipway, freshwater supply and garbage disposal service to foreign and local yacht and boat owners for a fee. It is also used by sports and recreational fishing boat operators to provide charter service to individuals, groups of anglers or families for recreational fishing activities around the water channels of the Klang Islands.

A private sailing club, the Peninsular Sailing Club is based at the public marina. The club's office and open boat storage area are located inside the site office operated and maintained by Jabatan Laut Malaysia. The club has 50 members, almost all of whom are expatriates working the country. In a key informant interview with the honorary secretary of the club on 29 December 2019, it is understood the sailing club is open only on Sundays, and boats are usually taken out in the evenings and depending on the tide.

6) Institutional Facility

Jabatan Laut Malaysia has a site office at the Pulau Indah Public Marina to manage and maintain the marina. According to the department's marina notice NM 1/2019 (Pewartaan Marina Awam JLM, 2019), Jabatan Laut charges a fee for use of the marina's facilities, i.e. mooring and dry berth areas, slipway, supply of clean water and garbage disposal service.

7) New Land Development

The gradual inflow of non-local workers into Pulau Indah to take on employment opportunities at the port and the industrial areas has led to an increase in population from about 20,000 in 2010 to almost 35,900 by 2015 (Pejabat Penghulu Pulau Indah, 2015). Correspondingly, the population increase has led to a demand for housing. This is evident in the growing trend to convert and develop tracts of vacant or idle land in the Malay Reserve into small housing schemes, e.g. single-story and double-storey terrace houses, for sale or for rent to workers in Kg Perigi Nenas and Kg Sg Pinang (**Plate 4.3**).

Plate 4.3: New Housing Projects, Kg Perigi Nenas

Under construction, Taman Perigi Nenas Kg Perigi Nenas (June 2019)

Under construction, Taman Perigi Nenas Kg Perigi Nenas (December 2019)

Under construction, Kg Perigi Nenas (December 2019)

Under construction, Kg Perigi Nenas (December 2019)

4.4.2 Coastal Fishing

Coastal fishing used to be one of the mainstays of the local residents in Pulau Indah; however, reliance on the coastal waters for marine landings and the intertidal mudflats along the coast for food resources is declining due to a number of factors, key amongst them being loss of traditional fishing ground and breeding and feeding areas for marine resources.

Two fishing jetties are located inside the 5km ZOI, namely, Pengkalan Kg Sg Kembong in Pulau Indah and Jeti Perkampongan Orang Asli Kg Sg Kurau in Pulau Carey. The fishing jetty in Kg Telok Nipah is located 6.3km away from the project site boundary, Kg Sg Pinang and Kg Orang Asli in Pulau Indah are located 9.3km away, whilst jetties in Telok Gong are located more than 10km away from the project site boundary.

Data provided by DoF Selangor in 2018 showed that Pulau Indah had 81 fishermen operating from five fishing jetties, namely, Pengkalan Kg Sg Kembong Pengkalan Kg Teluk Nipah, Pengkalan Sg Pinang, Pengkalan Kg Orang Asli Pulau Indah and Pengkalan Sg Changdong. Pulau Carey had 80 fishermen operating from Kg Sg Kurau, Kg Sg Judah and Kg Melayu. However, not all of them are licensed boat owners. The majority of the fishermen in Pulau Indah and Pulau Carey are inshore coastal fishermen fishing in the water channels around the Klang Islands, Pulau Indah and Pulau Carey. Almost all of them are licensed as Zone A fishermen due to the size of the boats, capacity of the outboard motor and traditional fishing gear used. Their fishing grounds are restricted to areas lying between 0 to 8 nautical miles outside the port limit.

To manage marine natural resources, the fishing grounds are divided into four fishing zones through a licensing scheme whereby zones are designated for specific fishing gear, classes of vessels and ownership. The four management zones are attempts to provide equitable allocation of resources and reduce conflict between traditional and commercial fishermen. By definition, Zone A refers to fishing grounds that are located up to 8 nautical miles from the shore, reserved solely for small-scale fishermen using traditional fishing gear and owner-operated vessels (DoF, 2015).

Feedback through key informant interview with the officers of DoF Selangor on 29 January 2020 and during a focus group engagement held with some members of Persatuan Nelayan Kawasan Pelabuhan Klang on 6 March 2020 indicated that coastal fishing has declined over the years. Data provided by LKIM Selangor in February 2020 showed the decline in fish landings (from Zone A fishermen) in Pulau Indah between 2013 and 2019 (**Table 4.3**). For comparison, a similar decline was recorded for Telok Gong over the same period.

Table 4.3: Fish Landings from Zone A Fishermen in Pulau Indah

Year	Pulau Indah (kg)	Telok Gong (kg)
2013	226,881	715,057
2014	155,996	631,809
2015	161,999	574,765

2016	49,439	352,498
2017	122,222	456,964
2018	109,270	337,651
2019	81,374	318,707

Source: LKIM Selangor, February 2020.

The fishermen have found it increasingly difficult to sustain their livelihood for a number of reasons that include:

1. Reduction in the traditional fishing grounds following the gazetting of the new port limits for Port Klang in January 2012 (**Figure 4.3**);
2. A significant decline in fish stocks, particularly the demersal species;
3. Declining water quality along the water channels of the Klang Islands where they fish, seemingly from siltation and effluents (organic material, suspended solids, etc.) from the urban and industrial activities in Klang;
4. Loss of mangroves and fish and prawn breeding habitats due to reclamation, sand mining and other coastal development works;
5. Longer distance and higher fuel cost incurred in going further out to new fishing grounds as they are no longer permitted to fish inside the port limits;
6. Safety of fishermen at stake as they have to traverse a longer distance and fish in more open waters; and
7. Cost of maintaining or replacing fishing gear and equipment.

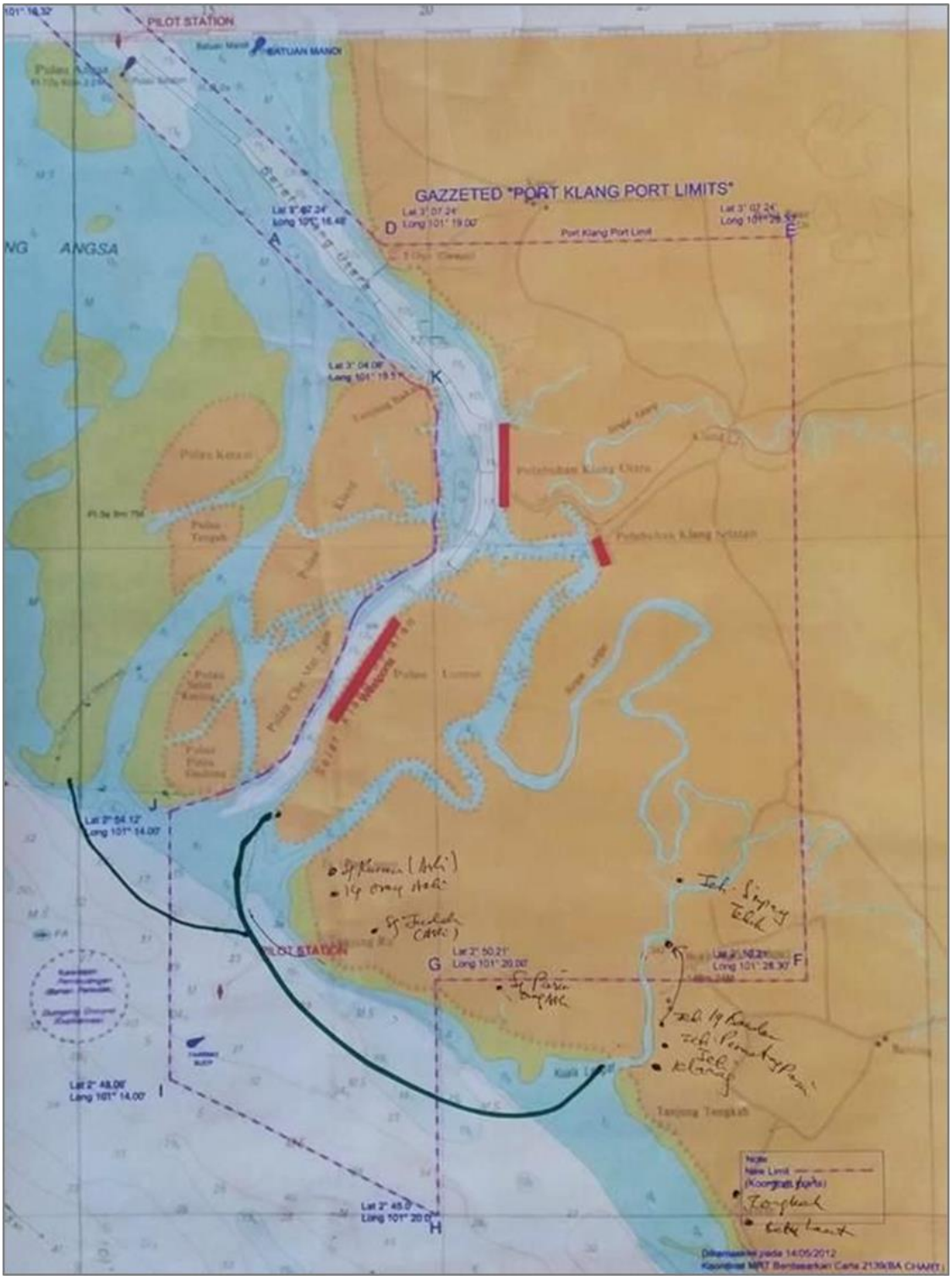
Figure 4.3: Gazetted Port Klang Limits (effective 25 Jan 2012)

Source: Port Klang Authority. Notice to Shipowners, Shipping Agents, Masters, Port Pilots, Bunker Vessel Operators, Port Terminal Operators and Port Community. January 2012

The orang asli fishermen of Kg Sg Kurau are both inshore fishermen as well as coastal food resource harvesters, collecting horseshoe crabs, bivales and gastropods along the river banks and mudflats during low tide as their main source of food and income. Their fishing grounds and marine resource harvesting areas are around Selat Lumut, the waters around Pulau Mat Zin and Pulau Pintu Gedung and along the western and southern coast of Pulau Carey (**Figure 4.4).**

The orang asli community are experiencing a significant decline in fish landings and coastal food resource collection. They have attributed the decline to a number of factors: loss of natural habitats (i.e. mangroves and *nipah* forest) due to clearing for plantation, coastal erosion, declining water quality and changes to the coastal sediment texture due to sand mining and dredging activities upstream along Selat Lumut. Consequently, this has forced the orang asli of Kg Sg Kurau to rely less on the sea for a living but to look for alternative income sources. Only 44% of the Kg Sg Kurau orang asli community are full-time fishermen. This feedback was gathered from participants at the focus group engagement held with them at the Dewan Komuniti in Kg Sg Kurau on 13 March 2020. At the engagement session, 39 out of 71 fishermen indicated they no longer own a boat or are no longer full time fishermen, either due to their inability to renew their boat licence with DoF or they have opted for alternative work as contract day labourers at the palm oil estate nearby or are self-employed. As sea harvest becomes uncertain, being a contract day labourer provides more stable income for these families This feedback was similarly expressed in a study of declining coastal food resources and harvesting sites in Pulau Carey conducted by the Faculty of Agriculture of University Putra Malaysia in 2018 (Nur Leena Wong, 2018).

Figure 4.4: Boundary of inshore Fishing Ground and Marine Resource Harvesting



Sites of the Orang Asli Community in Pulau Carey (the boundary is drawn by participants at the Focus Group Discussion at Kg Sg Kurau, Pulau Carey on 13 March 2020)

Despite not having direct access to the sea due to loss of boat or boat licence, many orang asli from Kg Sg Kurau still travel on land to the coast to fish and glean for molluscs either for sale or for self-consumption. Gleaning is a fishing method used in shallow coastal, estuarine and brackish waters or in habitats exposed during low tide. Both women and men glean, but in many countries and regions gleaning is mostly done by women and children who walk in the shallow water or on the exposed mudflats, to harvest/collect coastal food resources. This is a common practice amongst the Mah Meri community along Sg Chandong in Pulau Indah, and along Sg Kurau and the intertidal mudflats along Tanjung Rhu, Laut Moyang and Laut Kepau on the western and southern coast of Pulau Carey (Nur Leena Wong, 2018). The activity is carried out by men and women during neap and spring low tide by digging into the mud for *kepah*, *siput sedut. katip, liput hisap, lokan* and *lokan tanah.*

4.5 SOCIO-DEMOGRAPHIC PROFILE OF THE COMMUNITY IN THE ZONE OF INFLUENCE

The socio-demographic profile of the community located inside the ZOI was established based on a sample survey conducted between 12th and 16th March 2020. Results from the sample survey are used to ascertain the characteristics of the community located inside the ZOI.

Using stratified random sampling, a total of 350 respondents were sampled according to the geographical location of the villages. Being the village that is nearest to the project site, a larger percentage of respondents were sampled from Kg Perigi Nenas (70%), whilst a smaller sample was taken from Kg Sg Kembong (20%). Despite being located about 6.5km away from the project site, Kg Teluk Nipah (10%) was sampled as it has a high proportion of fishermen residing there. Information were gathered for a number of demographic and social variables that include gender, ethnicity, age, educational attaiment, employment, income, length of stay, house category and house ownership.

1) Gender and Ethnicity

The majority of the respondents were males (68%) while the rest females (31%). Most of the respondents were Malay (99.4%), followed by Indian (0.3%) and Orang Asli (0.3%)(**Table 4.4**). The predominance of the Malay community is unsurprising given that a major part of the ZOI falls inside Malay Reserve land.

Table 4.4: Ethnic Breakdown of Respondents

Ethnicity	Frequency	Percent (%)
Malay	348	99.4
Indian	1	0.3
Orang Asli	1	0.3
Total	**350**	**100.0**

Source: Household Survey, SMHB, 2020

2) Age Distribution

The working age population, i.e. between 17 and 64 years old, in the ZOI is very high. Those aged between 36 and 55 years accounted for 48% of the respondents, whilst those in the 26 to 35 year-old group formed 26% of the total sample group. About 14% of the respondents are aged between 56 and 64 (**Table 4.5**). Given appropriate training and re-skilling, the existing population potentially forms a steady pool of human resource for the port and other industrial activities in Pulau Indah.

Table 4.5: Respondents by Age Category

Age Group	Frequency	Percent (%)
17-25	24	6.9
26-35	91	26.0
36-55	168	48.0
56-64	50	14.3
65 and above	17	4.9
Total	**350**	**100.0**

Source: Household Survey, SMHB, 2020

3) Educational Attainment

By educational attainment, 53.7% reported they have completed secondary education, followed by college diploma at 20% and tertiary qualification at almost 9%. Only 3.4% had no formal education. This implies that a large proportion of the working age population in the ZOI are educated; similarly, with appropriate re-skilling and training, the local population is an asset and potentially forms a steady pool of human resource for the port and other industrial activities in Pulau Indah (**Table 4.6**).

Table 4.6: Educational Attainment of Respondents

Level of Education	Frequency	Percent (%)
No Formal Education	12	3.4
Primary School	24	6.9
Secondary School	188	53.7
STPM/Matriculation	23	6.6
College/Diploma	72	20.0
Degree and Above	31	8.9
Total	**350**	**100.0**

Source: Household Survey, SMHB, 2020

4) Employment

Most of the respondents (54.6%) are in private employment, while 14.3% are in government service and 11.1% are engaged in business. However, unemployment is relatively high (8.0%). Indeed, options need to be looked at to improve their employability and access to jobs that are

compatible with their experience and educational level (**Table 4.7**. Engagement in farming and fishing do not appear significant, as farmers account for only 1% and less than 1% are full-time fishermen. A higher proportion of part-time fishermen over full-time fishermen appear to indicate the movement of fishermen to alternative work (e.g. in the factories or port as part-time or contract staff) as a means to improve their income and livelihood

Table 4.7: Employment Distribution

Employment	Frequency	Percent (%)
Farmer	4	1.1
Business	39	11.1
Govt. service	50	14.3
Private employment	191	54.6
Self-employed	5	1.4
Retired	17	4.9
Unemployed	28	8.0
Housewives	1	0.3
Fishermen (full time)	3	0.8
Fishermen (part time)	12	3.5
Total	**350**	**100.0**

Source: Household Survey, SMHB, 2020

5) Monthly Income

Close to 25% of the respondents reported a monthly income below RM1,000, 26.9% in the RM1,001 – RM2,000 income group, 28% in the RM2,001 – RM3,000 income group and almost 11% having income between RM3,001 to RM4,000. Only 3.1% had incomes of more than RM5,000 per month (**Table 4.8**).

Table 4.8: Monthly Income Distribution

Income	Frequency	Percent (%)
< RM,1000	86	24.6
RM1,001 – RM2,000	94	26.9
RM2,001 – RM3,000	98	28.0
RM3,001 – RM4,000	38	10.9
RM4,001 – RM5,000	23	6.6
RM5,000 and above	11	3.1
Total	**350**	**100.0**

Source: Household Survey, SMHB, 2020

Monthly household income refers to the combined income of all working members of the household who are 15 years and over and living in the same household unit. Close to 25% reported a monthly household income between RM2,001 to RM3,000, another 16.6% have a monthly household income of between RM3,001 to RM4,000, whilst close to 25% reported a monthly household income of RM4,001 and above. Overall, the majority of the households in

the ZOI belong to the B40 income group where the national average for B40 income group is RM4,360 (**Table 4.9**).

Table 4.9: Monthly Household Income Distribution

Household Income	Frequency	Percent (%)
<RM1000	34	9.7
RM1001 – RM2000	85	24.3
RM2001 – RM3000	86	24.6
RM3001 – RM4000	58	16.6
RM4001 – RM5000	46	13.1
RM5001 and above	41	11.7
Total	**350**	**100.0**

Source: Household Survey, SMHB, 2020

From the observed monthly household income, it can be inferred that the community in the ZOI have very little savings and are likely to require social support in future. It is anticipated that the Project would be able to provide them with employment or job and business opportunities through the spillover economic effects from the Project.

6) Length of Residence

Most of residents in the ZOI have stayed in the area for more than 21 years (44.0%), whilst 19.4 % have stayed in the area for less than five years (**Table 4.10**). It appears that the area is resided by both newcomers, as well as those who have resided in the area for a long time. As for the latter, their views on the Project will likely be influenced by their experience of the port and the industries that have emerged over the past 20 or more years since the inception of Westports and the industrial parks under Central Spectrum, the master developer, and by the multiplier effects (or negative consequences) the port and these industries have initiated on the island.

Table 4.10: Length of Residence

Length of Stay	Frequency	Percent (%)
Below 5 years	68	19.4
6 - 10 years	50	14.3
11 - 15 years	50	14.3
16 - 20 years	28	8.0
21 – 25 years	110	31.4
26 years and above	44	12.6
Total	**350**	**100.0**

Source: Household Survey, SMHB, 2020

7) House Type and Ownership Status

The majority (49.7%) in the ZOI reside in traditional kampong houses, while 34.3% reside in terrace houses, and 16% in apartments (**Table 4.11**). Sixty-five percent (65%) reported owning the house they are occupying, 33% are tenants renting the premises they are staying whilst 5% are Others i.e. people staying with families or relatives.

Table 4.11: House Type and Ownership Status

House Type	Frequency	Percent (%)
Kampong house	174	49.7
Terrace house	120	34.3
Apartment	56	16.0
Total	**350**	**100.0**
Ownership Status	**Frequency**	**Percent (%)**
Self-Owned	228	65.1
Rental	117	33.4
Others (staying with families or relatives)	5	1.4
Total	**350**	**100.0**

Source: Household Survey, SMHB, 2020

8) Household Size

The average size of the household in the ZOI is between 4 – 6 persons as reported by 50.9% of the respondents, while 34% reported living in a group of 1 to 3 persons (**Table 4.12**). For comparison, the average household size in Daerah Klang was 4.06 in 2017 (RTKlang 2035).

Table 4.12: Household Size

Household Size	Frequency	Percent (%)
1 - 3 persons	119	34.0
4 - 6 persons	178	50.9
7 - 10 persons	51	14.6
10 persons and Above	2	0.6
Total	**350**	**100.0**

Source: Household Survey, SMHB, 2020

4.6 DEMOGRAPHIC AND SOCIO-ECONOMIC PROFILE OF THE FISHING COMMUNITY IN THE STUDY AREA

The local fishermen are potentially the ones to be directly and severely impacted by the Project. Two fishing jetties are located inside the 5km ZOI, namely, Pengkalan Kg Sg Kembong in Pulau Indah and Jeti Perkampongan Orang Asli Kg Sg Kurau in Pulau Carey. Pengkalan Kg Telok Nipah is located 6.3km away from the project site boundary; Kg Sg Pinang and Kg Orang Asli in Pulau Indah are located 9.3km away, whilst jetties in Telok Gong are located more than 10km away from the project site boundary. The fishermen who were interviewed are registered with either Persatuan Nelayan Kawasan Pelabuhan Klang (covers Pulau Indah and Telok Gong) and Persatuan Nelayan Kuala Langat.

As elaborated in section 4.4.2, the local fishermen rely on the coastal waters for fish landings and the intertidal mudflats along the coast for marine food resources. The majority of the fishermen in Pulau Indah and Pulau Carey are inshore coastal fishermen fishing in the water channels around the Klang Islands, Pulau Indah and Pulau Carey. Almost all of them are licensed as Zone A fishermen due to the size of the boats, capacity of the outboard motor and traditional fishing gear used. Their fishing grounds are restricted to areas lying between 0 to 8 nautical miles outside the port limit

To understand the socio-economic profile of the fishing community who depend on the coastal waters and intertidal mudflats around Pulau Carey, the Klang Island and Pulau Ketam for their livelihood, a total of 73 fishermen (100% males) from Pulau Indah, Pulau Carey and Kuala Langat were randomly selected as respondents and interviewed between February and March 2020. Findings from the sample survey were used to establish the profile of the fishing community. The distributions of the respondents are as follows: (**Table 4.13**)

Table 4.13: Distribution of Respondents from the Fishing Community

Location	Frequency	Percent (%)
Persatuan Nelayan Pelabuhan Klang	15	20.5
Persatuan Nelayan Kuala Langat	25	34.3
Pulau Carey	33	45.2
Total	73	100.0

Source: Fishermen Survey, SMHB, March 2020

4.6.1 Age and Ethnic Distribution of Fishermen

Respondents aged between 36 and 55 years form 57.5% of the sample group. Those over 55 years old comprise 19.2% of the total sample group (**Table 4.14**). Those aged between 17 and 35 years old made up 23.3% of the respondents.

The age profile of fishermen in Pulau Indah, Kuala Langat and Pulau Carey is consistent with the profile of the coastal fishing community in Selangor and the country, that is, the coastal fishing community is an aging community whereby a significant proportion of them are 55 years and above. In a socio-economic census conducted by Lembaga Kemajuan Ikan Malaysia

(LKIM) between 2017 and 2018, the distribution of the fishermen in Selangor by age category are: 35 – 55 years old (48.7%), more than 55 years old (38.9%) and under 35 years old (12.0%) (LKIM, Jilid 2 – Laporan Banci 2017/2018). Nationally, the traditional fishing community is already an aged community. A national study conducted by the Institute of Gerontolgy of University Putra Malaysia reported the coastal fishing community being dominated by those aged 60 years and older (17.5%) compared to those in the commercial fishing (8.5%) and 58.2% of the fishermen aged 40-59 years in 2008 (Tengku Aizan Hamid, et *al)*. The inference is the coastal fishing industry will be dominated by older fishermen in the future and that coastal fishing for a livelihood is not a go-to option amongst the younger members of the working age population.

Most of the respondents were from the Malay community (49.4%), followed by the Orang Asli (48.0%) from Pulau Carey, Chinese and Indian (1.3% each).

Table 4.14: Distribution of Respondents by Age Category

Age (years old)	Frequency	Percent (%)
17 - 25	7	9.6
26 - 35	10	13.7
36 - 55	42	57.5
>55	14	19.2
Total	73	100.0

Source: Fishermen Survey, SMHB, March 2020

4.6.2 Educational Attainment of Fishermen

With respect to level of educational attainment, the majority of the fishermen in the study area have a secondary school education (43.8%) and primary school (20.6%); about 28.8% had no formal education. In contrast, 52.5% of the fishermen in Selangor had a primary school education and 37.5% with a secondary school education (LKIM, Laporan Banci, 2017/2018).

This suggests that given the large percentage of respondents with formal education (albeit basic in some respects), with training and re-skilling, some of these fishermen may have the opportunity to opt for alternative work. Where appropriate, they should be given priority to jobs that are suitable to their skills and capability (**Table 4.15**).

Table 4.15: Level of Educational Attainment

Educational Attainment	Frequency	Percent (%)
No formal education	21	28.8
Primary school	15	20.6
Secondary school	32	43.8
STPM/Matriculation	4	5.5
College/Diploma	1	1.3
Total	73	100.0

Source: Fishermen Survey, SMHB, February - March 2020

4.6.3 Economic and Occupational Status

Table 4.16 shows that most of the respondents reside within 3 km to 5 km from the project site; although 21.9% claimed to reside less than 3 km from the proposed site. (Based on satellite images from Google Map, Jeti Perkampongan Orang Asli Sg Kurau in Pulau Carey is about 2.5 km away from the project site boundary and Pengkalan Kg Sg Kembong is about 4.5km away).

With respect to boat ownership, 93.1% of the responded owned their fishing boat.

Table 4.16: Distance from Proposed Site Boundary

Distance from Project Site Boundary	Frequency	Percent %
Less than 3km	16	21.9
3 to 5km	44	60.3
More than 5km	13	17.8
Total	**73**	**100.0**

Source: Fishermen Survey, SMHB, February - March 2020

- **Monthly Income**

Table 4.17 shows the monthly income of the fishermen derived from fishing activity, of which 56.1% had incomes of between RM1,001 – RM2,000 per month, 28.8% with a monthly income of less than RM1,000, and 12.3% are in the RM2,001 – RM3,000 income group. Only 2.8% had incomes of between RM 3,001 – RM 4,000.

Table 4.17: Monthly Income of Fishermen

Monthly Income	Frequency	Percent %
< RM 1,000	21	28.8
RM 1,001 - RM 2,000	41	56.1
RM 2,001 – RM 3,000	9	12.3
RM 3,001 – RM 4,000	2	2.8
Total	**73**	**100.0**

Source: Fishermen Survey, SMHB, February - March 2020

For comparison, the census report of fishermen prepared by LKIM indicate that nationally about 24.9% of the Zone A fishermen have a monthly income of RM 1,000 or less; 38.6% with a monthly income between RM 1,001 and RM 2,000; 17.4% earning between RM 2,001 and RM 3,000 per month and 7.2% earning between RM 3,001 and RM 4,000 monthly (LKIM, Laporan Banci, 2017/2018).

- **Monthly Household Income, Expenditure and Savings**

Household income refers to the combined incomes of all working members of a household who are 15 years or older and occupying the same housing unit. The majority of the households (53.5%) have a monthly household income that ranges between RM 1,001 and RM 2,000; whilst 28.7% have a monthly household income of RM 1,001 and less (**Table 4.18**).

Table 4.18: Monthly Household Income of Fishermen

Monthly Income	Frequency	Percent %
< RM 1,000	21	28.8
RM 1,001 - RM 2,000	39	53.5
RM 2,001 – RM 3,000	11	15.1
RM 3,001 – RM 4,000	2	2.2
Total	**73**	**100.0**

Source: Fishermen Survey, SMHB, February - March 2020

The average fishermen monthly household income of RM 1,546 is regarded low compared to RM 6,958 for the whole country (Department of Statistics, 2016). With this level of household income, the respondents are categorised under the bottom 40% income (B40) group.

Further probe on their expenses found that 56.2% of the households of fishermen have a monthly household expenditure of below RM 1,000 and 39.7% have a household expenditure of RM 1,000 to RM 2,000 per month (**Table 4.19**). Furthermore, around 61.6% claimed they do not have any monthly savings while 24.7% claimed to have savings below RM100 monthly (**Table 4.20**).

Table 4.19: Monthly Household Expenditure

Monthly Household Expenditure	Frequency	Percent %
< RM 1,000	41	56.2
RM 1,001 - RM 2,000	29	39.7
RM 2,001 – RM 3,000	3	4.1
Total	**73**	**100.0**

Source: Fishermen Survey, SMHB, February - March 2020

Table 4.20: Monthly Household Savings

Monthly Household Savings	Frequency	Percent %
< RM 100	18	24.7
RM 101 - RM 200	2	2.7
RM 201 – RM 300	8	11.0
No savings	45	61.6
Total	**73**	**100.0**

Source: Fishermen Survey, SMHB, February - March 2020

4.6.4 Status of Fishermen

- **Zone A Fishermen**

The fishermen do not go far to fish as all of them are inshore fishermen combing their own territorial waters around Selat Lumut, Pulau Carey and right up to Pulau Ketam and the Klang Islands, all of which is under Zone A (**Figure 4.5**). However, four (4) fishermen from Kuala Langat reported that they go beyond Zone A, although they did not elaborate whether in doing so it was against the conditions of their fishing boat licence or that they fished in the deeper open waters as hired crew members of big trawlers.

The proposed port expansion project is seen by the fishing community as a further reduction of their fishing grounds and declining fish stock, and arising from that, concern and anxiety that their livelihood would likely be affected. With respect to safety in crossing the sea and getting around the expanded port structure, most of the boats are equipped with safety lights and communication devices. Despite that, many of the fishermen have requested for measures to be implemented to safeguard boat access and safety in going around the new port extension and in crossing Selat Klang to get to the fishing grounds around the Klang Islands, Pulau Ketam and Pulau Carey.

- **Length of Time as Fishermen**

Almost 46.6% of the local fishermen reported they have been involved in fishing activities in the area for more than 25 years, approximately around the same time as the start of operations at Westports in 1994. Another 35.6% have between 16 – 25 years of experience (**Table 4.21**).

Table 4.21: Length of Time as Fishermen

Years of Involvement	Frequency	Percent %
6 – 15 years	13	17.8
16 – 25 years	26	35.6
> 25 years	34	46.6
Total	**73**	**100.0**

Source: Fishermen Survey, SMHB, February - March 2020

- **Reasons for Becoming A Fisherman**

Despite a tough livelihood, 68.5% of the respondents indicated they were involved as fishermen to help family and it has been a family tradition. Almost 22% indicated they had no choice and the remaining 9.6% became a fisherman due to interest (**Table 4.22).** With such a background, coastal or inshore fishing is seen as a traditional vocation. Furthermore, the coastal fishing community is an aging community whereby a significant proportion of the fishermen are 55 years and above, and therefore, is expected to be dominated by older fishermen in the future.

Table 4.22: Reasons for becoming a Fisherman

Reasons	Frequency	Percent %
Interest	7	9.6
Family tradition	50	68.5
No choice	16	21.9
Total	**73**	**100.0**

Source: Fishermen Survey, SMHB, February - March 2020

Figure 4.5: Boundary of Zone A Fishing Zone

(Boundary drawn by En. Lanusa Layon at the Focus Group Discussion in Kg Sg Kurau, Pulau Carey on 13 March 2020)

4.7 KEY FINDINGS OF THE PERCEPTION SURVEY

4.7.1 Project Awareness

With respect to the respondents' knowledge of the Project, 67% of the 350 respondents indicated they were unaware of it (**Table 4.23**). In a separate perception survey conducted with 73 fishermen following the focus group engagements with Persatuan Nelayan Pelabuhan Klang, Persatuan Nelayan Kuala Langat and Nelayan Perkampongan Orang Asli Sg Kurau, 45% of them indicated they were aware of the Project either through word of mouth or from members of the Persatuan Nelayan.

Table 4.23: Awareness about the Project

Awareness	Residents		Fishermen	
	Frequency	Percent %	Frequency	Percent %
Aware of project	115	32.9	33	45.0
Not aware	235	67.1	40	55.0
Total	**350**	**100.0**	**73**	**100.0**

Source: Perception Survey, SMHB, March 2020

4.7.2 Opinion on Current Problems faced by the Community

Movement of heavy industrial traffic, traffic congestion, dangerous road junctions and high accident rates along Route 181 were cited as key concerns by more than 50% of the community. The community believed current traffic problems and road safety issues along Route are attributed to a large extent to the port activities. They believe these Tissues will continue to apply throughout the implementation and operation of the Project. Therefore, measures are needed to adequately control and manage traffic movement and volume that are anticipated to increase further with the port expansion and ensure that public road safety is safeguarded.

Infrastructure issues related to poor road conditions, poor drainage system, occasional water supply disruption and poorly managed solid waste disposal concerned about 41% of the community. Though problems related to poor infrastructure management are not directly related to the Project Proponent's existing activities, nonetheless, these concerns will need to be addressed as heavy vehicular movement will invariably affect road conditions and increased port activities will place pressure on existing water and power supply.

4.7.3 Response towards the Project

1) The Local Community

Positive response for the Project was recorded amongst the residents where 73.3% indicated they would support the Project (**Table 4.24**), primarily for the employment opportunities and the potential job and business linkages that could be generated. Prospects of improved income and livelihood to the community as well as the development impetus the Project could initiate to the local community, Pulau Indah and the Klang region as a whole were also cited as one of the main reasons for supporting the Project.

However, at the same time, the community believed that increase in heavy vehicular movement, road safety and deteriorating road conditions will persist during the construction and operation phases of the Project. Although environmental concerns were raised with respect to noise nuisance and flooding, these concerns were secondary in contrast to traffic issues during the construction and operation phases of the Project.

Other concerns of the residents relate to community health and safety and social integration with the foreign workers, especially during the construction phase.

Table 4.24: Response to the Project

Response	Residents		Fishermen	
	Frequency	Percent %	Frequency	Percent %
Support	172	73.3	15	20.5
Oppose	52	16.0	26	35.7
Uncertain	118	10.7	32	43.8
No Opinion	8	2.3	-	-
Total	**350**	**100.0**	**73**	**100.00**

Source: Perception Survey, SMHB, March 2020

2) The Fishing Community

In contrast, 35.7% of the fishermen group indicated disagreement with the Project (**Table 4.24)** whilst 20.5% supported the Project; and 43.8% were uncertain. The fishing community is dependent on fishing as their main source of income and livelihood. Opposition to the Project is based on their concern that the Project would further destroy the habitats and breeding grounds for fish and prawn fries as well as reduce the area of their fishing ground in the event the port limit has to be expanded in tandem with the port expansion. Additionally, the fishermen believe they would be forced to travel longer distances to their fishing grounds as they have to skirt around the new port structure (**Table 4.25**). These are the major factors that the fishermen believe would affect their income and livelihood.

Those who expressed support envisaged participation, either directly or indirectly, in the activities of the Project and the employment and business spillover effects associated with the port operation. The Project is viewed as an opportunity by some fishermen to migrate to alternative jobs and in the long term, make an improvement to their livelihood.

Therefore, mitigation measures need to be developed to ensure their income can be sustained. Measures may include looking into options to improve their economic status by providing new jobs that are compatible with their experience and educational level once the Project is implemented. During the Focus Group Discussion (FGD) session with the fishermen, fishermen were asked whether or not they had children working as fishermen and whether they would encourage the younger generation to continue working as fishermen. More than half responded that they look forward to the Project Proponent offering their children a job or an opportunity to migrate to alternative work options, including providing the younger members of the community with assistance towards getting the relevant skills and training to participate in the activities of the port. Overall, they would encourage their children to work in any industrial activity in Pulau Indah to improve their livelihood.

4.7.4 Perceived Impacts and Concerns

1) <u>During construction phase</u>

Based on their experience with the existing port and surrounding indusries, the respondents were positive that the Project would generate benefits. The key positive impacts envisaged are summarised below:

Positive Impact during construction phase	Response (%)
Increase in demand for housing and rental value	52.6
Business opportunities resulting from spillover effects	50.6
Employment opportunities	49.6
Further growth and development in the ZOI, Pulau Indah and the Klang region	48.6

While accepting the Project would bring positive impact during construction, the main concerns of the residents are construction noise, health and safety, social conflict and liveability of their traditional village environment due to inflow of non-local or foreign workers. Their main concerns are listed as follows:

Negative Impact during construction phase	Response (%)
Noise nuisance from construction activities	60.7
Health and safety of the community related to inflow of foreign workers	44.0
Conflict and risk related to the inflow of foreign workers	42.7
Traffic congestion and public road safety	40.0

2) <u>During operation phase</u>

Economic wellbeing, liveability, better quality of life and development inside the ZOI and the surrounding Malay Reserve area were identified by the respondents as the key positive impacts that are likely to happen during the operation phase of the Project.

The key positive impacts are listed as follows:

Positive Impact during operation phase	Response (%)
Employment and business opportunities	56.7
Enhanced land, property and rental value due to increased demand for housing	56.7
Improved livelihood and socio-economic wellbeing	54.7
Further growth in the ZOI and the region	50.7
Improved infrastructure and utilities	49.3
Development of abandoned or idle land	42.7

Among the major negative impacts during the operation phase, the community continues to view traffic congestion and public road safety seriously as they anticipate further volume and movement of heavy vehicles arising from an increase in activities at the new port extension and industries at the new free trade zone. The other serious concern pertains to the continuing presence of foreign workers and the problems that are perceived to be associated with them, i.e. health, safety and social conflict with the local community.

The main negative concerns are as listed:

Negative Impact during operation phase	Response (%)
Traffic movement, congestion and public road safety	44.7
Community safety and health, crime and robbery	44.6
Social conflict and integration issues due to increasing numbers of non-local and foreign workers	38,7
Air, water and noise pollution	32.7

4.8 FEEDBACK FROM FOCUS GROUP ENGAGEMENTS, DIALOGUES AND KEY INFORMANT INTERVIEWS

A total of four (4) focus group discussions (FGDs) and one dialogue were held between January and March 2020, first, to briefly disclose the main features of the proposed Project to key members of the affected communities and other stakeholders who may have interest in the administration in the area; and second, to obtain their feedback and opinion on what they perceive to be the main impacts on their community. Key comments and feedback received from the stakeholders are summarised in **Table 4.25**.

Concurrently, a number of key informant interviews and meetings were also conducted between December 2019 and March 2020 with other stakeholders or people with interest in the area in order to verify and augment information and feedback. Some of the stakeholders include government agencies, namely, the Department of Fisheries (DoF) Selangor, DoF Pelabuhan Klang, Lembaga Kemajuan Ikan Malaysia (LKIM) Selangor and Majlis Perbandaran Klang. Feedback from the institutional stakeholders are summarised in **Table 4.26.**

Other stakeholder groups with interest in the Project area include:

1) The Peninsular Sailing Club, whose members need to be assured that access to the open sea will be unhindered;
2) Part-time fishermen who, in between work shifts and weekends, fish to supplement their income;
3) Operators of recreational fishing boats who bring sports and recreational fishermen out to the fishing grounds;
4) Operators of *rumah rakit* or floating fish chalets who provide an alternative facility to fish and holiday by the water channel; and
5) Anglers and day trippers who frequent the fishing jetties and beach front for an inexpensive way to spend their weekends.

Feedback from the interviews with these stakeholder groups are summarised in **Table 4.27**.

Table 4.25: Summary of Feedback and Comments from Stakeholders (held through Focus Group Discussions and Dialogues)

FGD No.	FGD Stakeholders	Date of Engagement	Venue	No. Participants
FGD 1	ADUN Pelabuhan Klang Ketua kampong Kg Perigi Nenas Ketua kampong Kg Sg Kembong Members of MKPP Members of Biro Perigi Nenas	18/1/2020	Balai Raya Kg Perigi Nenas	13
FGD 1: Summary of Comments and Feedback from Stakeholders				
	1. ADUN requested fishermen from Teluk Gong be included in FGD with the fishing community. Although Telok Gong fishermen fish along Selat Lumut and the estuary of Sg Langat, some of them use Selat Lumut to access to the waters around Pulau Ketam. 2. ADUN agreed the Project is beneficial to the local community in Pulau Indah, but cautioned that the character of Kg Perigi Nenas must be safeguarded as *Kampong Tradisi*. Land conversion from agriculture to housing and commercial use must be controlled to protect its *Kampong Tradisi* status. *(The SIA team informed that land use zoning, land conversion and safeguarding the status of Kg Perigi Nenas as Kampong Tradisi is under the ambit of Majlis Perbandaran Klang).* 3. The population of Pulau Indah increased by about 10,000 people over the last decade or so as a result of in-migration of workers to work at the port and in the industrial parks. Supply of water and electricity and provision of other services must be improved as inflow of more workers is anticipated with the Project. 4. Other issues faced by the local community and fishermen must be addressed. Issues relate to the following: • The Project will bring about an increase in traffic entering and leaving the Project site. Therefore, public road safety must be addressed. • Road condition will deteriorate with more traffic movement originating from the port. Road upgrading must be addressed. • A traffic impact assessment (TIA) must be prepared to address traffic distribution. *(Westports informed that a TIA has already been completed).* • Access to the fishing grounds in Pulau Ketam and the surrounding water channels must be kept available to fishermen. • Monitoring of foreign workers at the Project site is crucial. • Re-training the fishermen to take advantage of the opportunities presented by Westports' expansion must be considered. • Priority of employment and business at the Project be given to local			

residents;

5. Proposals and suggestions from the FGD participants include:
   - Set up a skills training centre (TVET) in Pulau Indah to train and equip the locals residents and the orang asli with the right skill sets to participate in Westports' activities.
   - Set up a traditional tourism centre, with emphasis on homestay, eco-tourism and eco-farming as an alternative source of income and livelihood for the locals.

6. ADUN expressed support for the Project as it is in line with the national long-term objective to strengthen the logistics and transportation sectors, and also in tune with UPEN Selangor's development strategy for Port Klang and the setting up of a maritime industrial zone in Port Klang and Pulau Indah.

FGD 2	**Persatuan Nelayan Kuala Langat (representatives from Pengkalan Tongkah, Kelanang, Permatang Pasir, Bandar Laut and Sijangkang)**	**28/02/2020**	**Pejabat Nelayan Kuala Langat, Banting**	**25 fishermen 1 officer (DoF Selangor) 1 officer (DoF Port Klang Office) 2 officers (LKIM Selangor)**
FGD 2: Summary of Comments and Feedback from Stakeholders				
	1. The fishing jetties of Kuala Langat are located more than 11km southeast of the Project site. A FGD was conducted with Persatuan Nelayan Kuala Langat upon the advice of LKIM Selangor as some fishermen from the area fish around the channels of the Klang Islands and Pulau Ketam. Generally, however, the fishing ground for fishermen from Kuala Langat stretches along the extensive coastline from Pulau Carey to Tanjung Sepat and Sepang 2. 90% at the FGD disagreed with the Project. Reasons cited include: • Fear the port limit might be extended for the port expansion; • Should the port limit be extended, fishermen have to take a longer route/distance to go around the port limit; • Higher fuel cost is incurred because of longer distance; • Safety issues, e.g. collision, arise when the marine vessels come too close to the small fishing boats *(DoF officer reminded fishermen they are not allowed to fish inside the port limit. The SIA team explained that the average container vessel speed along the South Channel is between 10 to 12 knots, i.e. 18 to 22km per hour and because of their small size, the fishing boats are more manuoverable to avoid the bigger vessels);* • Fish landings will decline further because of oil leaks from marine vessels; • More losses incurred when fishing nets are ensnared or destroyed by passing marine vessels *(DoF officer reminded fishermen they are not allowed to fish inside the port limit).* 3. However, 10% have no objection to the Project. Reasons cited include: • Future for fishing is discouraging because of declining fish landings; and • Time to move on to alternative jobs and other employment opportunities that give more stable income and improved livelihood.			

Dialogue 01	**Penghulu Pulau Indah Ketua kampong Kg Perigi Nenas Ketua kampong Kg Teluk Nipah Ketua kampong Kg Telok Gong Members of Biro Perigi Nenas Representatives from Kg Sg Kurau and Sg Judah, Pulau Carey**	**03/02/2020**	**Balai Raya Kg Perigi Nenas**	**13**

Dialogue 01: Summary of Comments and Feedback from Stakeholders

1. The penghulu remarked that a number of issues currently faced by the local residents are associated with the port and its activities. The key issues include:
   - Traffic congestion, high accident rate and poor road conditions
   - Poor management and disposal system of waste originating from the port
   - Loss of traditional fishing grounds in the establishment of the port limit and its consequences to the fishermen and their livelihood

2. With the port expansion, a number of concerns arise. They relate to:
   - Threat of disease and feeling of unease with presence of foreign workers;
   - Possibility of backflow and flooding in upstream Telok Gong due to dredging at the mouth of Selat Lumut are blocked or during high tide or storm surge;
   - Increase in housing demand from port and industrial workers may lead to an increase in housing density and change to the character of the village;
   - Blocking access to the sea due to the length of the port expansion;
   - Further decline in water quality and marine eco-system;
   - Further deterioration of traffic movement, road condition and public road safety due to increased lorry containers in the future. Propose separate road for heavy container vehicles and separate road for local residents;
   - Handling of emergency situations in future if there is only one main access road leading into Pulau Indah and the project site;
   - Increasing pressure on community services and facilities, e.g. health, due to increase in worker population.

FGD 4	**Persatuan Nelayan Pelabuhan Klang (Pengkalan Sg Kembong,**	**06/03/2020**	**Pejabat Nelayan**	**8 fishermen 2 officers (LKIM**

	Sg Pinang, Teluk Nipah, Kg Sg Udang, Kg Perajurit and Pendama)		**Pelabuhan Klang, Jalan Aur, Klang**	**Selangor) 2 officers (DoF, S'gor)**

FGD 4: Summary of Comments and Feedback from Stakeholders

1. With the port extension, access of fishing boats to the surrounding water channels around the Klang Islands and Pulau Ketam is less direct. Fishermen have to travel a longer distance in order to clear the port extension. More time and money will be incurred to clear the extended length of the new port.

2. The fishing boats will have to go into deeper open waters south of the port extension to get to the Klang Islands and Pulau Ketam. Respondents fear their boats and engine size may not handle this well. Most of the fishing boats are small fiberglass boats with small outboard motor of either 30HP or 35HP.

3. Risk and safety of fishermen at stake whilst traversing a longer distance, and encountering bigger container vessels.

4. Proposals by respondents:
   - Create a channel *(terusan)* say 20m wide, along the proposed wharf extension to allow for passage of small boats, without having to traverse the entire length of the new 4.8km long container wharf.
   - Compensate or subsidise the fishermen for additional fuel cost.
   - Assist the fishermen to upgrade/get bigger boats and equipment so that they can go into deeper open waters.
   - Monthly allowance given to each full-time fishermen during construction.
   - Initiate fish restocking programme, at least 4 times a year.
   - Extend Westports' CSR programme to include the fishermen group (e.g. TVET, business contracts, counselling, re-training and re-skilling).
   - Propose that the Project Proponent offer the children of the fishing community jobs, including providing assistance towards getting the relevant skills and training to participate in the activities of the port.

FGD 4	**Orang asli fishermen from Kg Sg Kurau and Kg Judah of Pulau Carey and Kg Orang Asli Pulau Indah**	**13/03/2020**	**Dewan Komuniti Perkampongan Kg Sg Kurau, Pulau Carey**	**81 fishermen** **1 officer (DoF S'gor)** **1 officer (JAKOA S'gor)**
	FGD 4: Summary of Comments and Feedback from Stakeholders			
	1. The orang asli (OA) are coastal fishermen. They fish around the waters surrounding the Klang Islands, harvest mollusc along the mangrove fringes of Pulau Carey and fish for prawns around the intertidal mudflats off southern tip of Pulau Indah. 2. Only 32 out of 71 fishermen have a boat licence. 2. Main issues: • Fish and prawn landings have reduced over the years which the OA attribute to declining water quality, declining fish stock due to overfishing and loss of mangroves. • The western shoreline of Pulau Carey and mangrove forests has receded over the years. Harvesting sites for coastal food resources have also declined. • Concerned that dredging and reclamation to be undertaken for the Project might destroy fish and prawn breeding area, aggravate the receding coastline, and adversely affect the coastal mangrove forests and harvesting sites for coastal food resources. • The Project will destroy the intertidal mudflats at the mouth of Selat Lumut, an area frequented by the OAs during low tide for prawns. They do not fish at the intertidal mudflats due to strong cross currents. • Questioned whether dredging along the mouth of Selat Lumut would lead to further erosion or subsidence of the coastal areas around Sg Kurau and the western shoreline of Pulau Carey. • Queried whether the Project might affect the beach at Tanjung Rhu where the annual Puja Pantai, a thanksgiving ritual is held. 5. **<u>Proposals by OAs</u>**: • Monthly allowance to be given to OA families during construction • Introduce fish and prawn hatching or re-stocking programme near their village and along the coast • Propose the Project Proponent offers the younger members of the Mah Meri fishing community jobs or assistance towards getting the relevant skills and training to participate in the activities of the port or the industries that are being developed in Pulau Indah.			






Table 4.26: Summary of Feedback from Institutional Stakeholders

No.	Feedback from Key Informant Interviews with Institutional Stakeholders	Date of Engagement	Venue
1	**Dept. of Fisheries Selangor En. Abdul Azim (Pegawai) Cik Dashanlinni (Pegawai)**	**29/01/2020**	**Jabatan Perikanan (DoF) Selangor, Shah Alam**
	1. The coastal fishermen and orang asli coastal food resource collectors will be directly impacted by the Project. Almost all the fishermen in Pulau Indah, Pulau Carey and Kuala Langat are inshore/coastal fishermen; as licensed Zone A fishermen, they are restricted to 0 to 8 nautical miles outside the port limit. 2. The intertidal mudflats south of Pulau Indah are breeding and feeding areas for fish and prawn. It is an area frequented by the orang asli fishermen from Pulau Carey for prawns during low tide. However, due to strong cross strong flow, most inshore fishermen in small fishing sampans do not fish there. 3. DoF advised the following concerns be considered with respect to the Project: • Dredging around the port area might change the current flow pattern and affect the breeding and feeding grounds for fish and prawns; • Loss of fishing grounds and impact on the fishermen's livelihood; • Marine traffic and safety of the coastal and recreational/sports fishermen (from presence of container ships, dredging vessels, pontoons, mooring system, cables, etc.); • Interview the orang asli (Mah Meri) fishermen in Pulau Carey; and • Safeguard use of the shore area in Pulau Carey for the Mah Meri's annual thanksgiving ritual • Alternative job options for the fishermen if fishing is no longer a viable livelihood due to declining catch and loss of fishing grounds and fish breeding areas. 4. Monitoring the Port Limit is conducted by the Marine Police and Coastguards and Port Police to ensure that fishing boats do not operate inside the Port Limit. Occasionally encroachment by fishing boats does occur. 5. Accidents involving fishing boats and container vessels have occurred and usually involved fishing nets being snared or damaged by container vessels. Compensation to the fishermen is normally handled by the shipping agents. 6. DoF Selangor will assist the SIA team to make contact with the Orang Asli fishermen in Pulau Carey, and provide information about the fishermen association, number of registered fishermen and fishing boats, and fish landings by jetty. Official request are to be addressed to DoF Selangor or DoF Klang District Office. DoF Selangor will assign Cik Dashalinni to assist in organising a meeting with the Pulau Carey orang asli fishermen.		

No.	Feedback from Key Informant Interviews with Institutional Stakeholders	Date of Engagement	Venue
2	**Lembaga Kemajuan Ikan Malaysia (LKIM) Selangor** **Puan Norazian bte Safian (Director)**	**10/02/2020**	**LKIM Selangor, Shah Alam**
	1. LKIM advised the SIA team to engage with the fishermen associations as they represent the fishermen and their welfare. 2. In addition to Persatuan Nelayan Kawasan Pelabuhan Klang who represent fishermen from Pulau Indah and Teolk Gong, LKIM advised the SIA team to interface with Persatuan Nelayan Kawasan Kuala Langat as their members also fish around Pulau Ketam, Pulau Carey and the channels around the Klang Islands. 3. LKIM consented to assist the SIA team in arranging meetings with Persatuan Nelayan Kawasan Pelabuhan Klang and Persatuan Nelayan Kuala Langat, as well as provide information on fish landings for Pulau Indah and a census report of the fishermen by states.		
3	**Jabatan Perancang Bandar, Majlis Perbandaran Klang (MPKlang)** **Tpr. Norhayati Bt. Mohd Ladzim**	**18/6/2020**	**Jabatan Perancang Bandar, Maljis Perbandaran Klang**
	1. MPKlang has received an objection from Westports objecting to the rezoning of part of their land earmarked for port expansion to Ecology. Westports' objection and application to rezone the use from Ecology to Industry is currently being considered by the Selangor State Planning Committee. 2. MPKlang advised the SIA team to refer to RTKlang 2020 for land use zoning since it is a gazetted document, and to refer to RTKlang 2035 only for policy matters as the document is under under review and revision. 3. MPKlang advised that LUAS, JPS and Jabatan Perhutanan be consulted as the project involves coastal reclamation. *The SIA team informed the hydraulics and fisheries consultants working on the EIA have been in consultation with JPS and Forestry Department and that the Hydraulics Report has been submitted to JPS for consideration. Regarding LUAS, an erosion and sedimentation report has also being prepared for the EIA and that LUAS will be consulted (as per KM's requirements) when an application is made for Kebenaran Merancang (KM).*		

No.	Feedback from Key Informant Interviews with Institutional Stakeholders	Date of Engagement	Venue
3	**Jabatan Perancang Bandar, Majlis Perbandaran Klang (MPKlang)** **Tpr. Norhayati Bt. Mohd Ladzim**	**18/06/2020**	**Jabatan Perancang Bandar, Maljis Perbandaran Klang**
	4. MPKlang takes Green Technology seriously and request that the report include how it will be addressed in the construction and operations of the port. 5. Concerns to be addressed in the report should include • Accommodation of foreign workers • Economic benefits to the local community • Marine traffic and safety of fishermen 6. TADMAX and 1MBDB are adjoining neighbours and need to be consulted for their objection/comments. *The SIA team will take note but informed that seeking neighbours' comments/objection is a requirement during application of Kebenaran Merancang.*		

Table 4.27: Summary of Feedback from Key Informant Interviews

No.	Feedback from Key Informant Interviews with Other Stakeholders	Date of Engagement	Venue
1	**Peninsular Sailing Club** **Mr. Ramasamy Menon** **Hon.Secretary**	**29/12/2019**	**Peninsular Sailing Club, Pulau Indah Marina**
	1. The sailing club's office and open boat storage area (10,000 sq ft) at them marina are rented from Jabatan Laut. 2. The marina is under Jabatan Laut who charges mooring fees on private boats (local and foreign). 3. The Club has 50 members, comprising ex-RSYC members and expatriates. 4. The club is open for recreational sailing only on Sunday and conducted in the late afternoon and evening and only during high tide. 5. The sailing route stays closer to the Pulau Carey coastline (because of deeper water), clears the port limit (marked by buoys) before heading to the open sea.		

No.	Key Informant Interviews	Date of Engagement	Venue
1	**Peninsular Sailing Club Mr. Ramasamy Menon Hon.Secretary**	**29/12/2019**	**Peninsular Sailing Club, Pulau Indah Marina**
	6. The keel of the sailing boats varies from 2m to 2.8m in depth. The sailing boats avoid the intertidal zone that is located south of Westports because of shallow water, mudflats and cross currents. 7. The proposed reclamation and its extent over Selat Lumut will not affect the sailing route or access to the open sea, according to Mr Menon. Access to the open sea is not an issue so long as a channel width of at least 300m and a depth of -3m are maintained along Selat Lumut for manoeuvring and to accommodate the keel. *(The SIA team informed him that a channel width of at least 700m will be maintained and the mouth of Selat Lumut will be dredged to a depth of -8m*). 8. Collision with big marine vessels or tug boats and pontoons during dredging and reclamation is not an issue. The recreational sailing boats are small crafts and can be manoeuvred to avoid other marine vessels or structures in the water.		
2	**En. Adnan bin Kamis *ketua nelayan Kg Sg Kembong***	**01/03/2020**	**Pengkalan Kg Sg Kembong**
	1. Sungai Chandong and Selat Lumut are regular fishing grounds for inshore fishermen from Kg Sg Kembong 2. Fish catch has declined. There is also encroachment by big boats using *pukat tunda* in Zone A, and they have been seen pulling up along Selat Lumut and as far up as Sungai Chandong. This increases the risk and competition for the inshore fishermen. 3. There are concerns from fishermen if Westports proceeds with reclamation and port extension. There will be sand dredging, which causes water pollution, affects coastal habitats (shrimps and fish fries will be affected), and mangroves. Currently, the remaining mangrove habitat in Pulau Indah is 10%. 4. Damage of fishing nets by marine vessels is another problem, even though the fishermen install their nets outside of vessel traffic route. 5. The head of Persatuan Nelayan Pelabuhan Klang had a dialogue recently with Port Klang Auhority, Police NorthPort, Police WestPort, Jabatan Laut and Jabatan Perikanan on Westports' proposed expansion plan. The Persatuan Nelayan used that opportunity to brief the parties on the problems and concern related to Westports in the last 4 years..		

No.	Key Informant Interviews	Date of Engagement	Venue
2	**En. Adnan bin Kamis** ***ketua nelayan Kg Sg Kembong***	**01/03/2020**	**Pengkalan Kg Sg Kembong**
	6. Fishermen are not allowed to fish inside the port limit and will be arrested if they do because the port limit is a restricted (gazetted) area. Fishing equipment, e.g. boats and fishing gear will be seized and the fishermen will be fined if caught inside that area. 7. The area where Westports is located is abundant with fish and was the traditional fishing ground for the Pulau Indah fishing community. Not being allowed to fish in there has affected the income and livelihood of a lot of fishermen. Fishermen have not received any compensation from Westports, nor have they ever being called for a dialogue or discussion. If compensation is not forthcoming, most fishermen would like Westports to allocate some funds towards the Fishermen Welfare Fund. 8. Currently, fishermen with boat license are not many; some of them work as recreational boat operator for fish enthusiasts. However, it is difficult to obtain a license from Jabatan Laut Malaysia to operate a recreational boat. Thus far, En. Adnan believes only 10 recreational boat licences have been issued. 9. Related to fishing boat licence, En. Adnan informed that there are about 48 fishing boats in Pulau Indah with license and more than 200 fishing boats without license. Full time coastal fishermen earn about MYR 1,400 – RM 2,000 per month. 10. Sand dredging activity conducted by Westports over the years has caused a number of issues to the fishermen. The dredging activity has caused water turbidity, dirty sand on the beach, decrease of sand on the beach, water pollution and disturbance to fish habitat. 11. Incidents like oil spill, trash discharged by vessels and damage to fishing nets are likely to exacerbate the fishermen's concerns as the number of container vessels increases. The fish stock is also likely to decline further with dredging and reclamation activities.		
No.	**Key Informant Interviews**	**Date of Engagement**	**Venue**
3	**En. Nazaruddin, Kg Perigi Nenas, part-time fisherman**	**01/03/2020**	**Pengkalan Kg Sg Kembong**
	1. E, Nazaruddin works for a factory in Kajang; he has been fishing part-time for 5 years now and will continue fishing to supplement his household income. 2. He fishes around Selat Lumut and Pulau Carey, sometimes around Pulau Ketam, but rarely in the open sea because of his small fiberglass boat and size of the outboard motor. He avoids the intertidal area south of Westports		

	because of shallow waters and strong cross currents. 3. Income from part-time fishing is about RM 100 per trip (one day/ night fishing). He fishes 8 days a month, and only during the weekend from 2am – 8 am; though sometime for 24-48 hours. 4. Fish catch has declined considerably due to *hakisan,* sedimentation, too many fishing boats (and competition), encroachment of bigger boats from Zone B into Zone A and oil spill from marine vessels. He believes Westports' expansion might lead to further decline in fish population and their habitats. 5. There are more part-time fishermen compared to full-time fishermen operating in Pulau Indah. The main reason is poor income because of declining fish landing, competition from other fishermen and big boats from other fishing zones that encroach into Zone A which is designated for inshore/coastal fishermen. 6. He expressed concern that the reclamation and port expansion might lead to further decline in fish population and their habitats.		
4	**Amat bin Rozal, Kg Perigi Nenas, part-time fisherman**	**01/03/2020**	**Pengkalan Kg Sg Kembong**
	1. En. Amat is a part-time fisherman (unlicenced) from Kg Perigi Nenas. To his knowledge, there are only 10 full-time fishermen who have a fishing boat licence and operate from Pengkalan Kg Sg Kembong. 2. He works full-time at Northport. As a part-time fisherman; he goes out about 12 days a month for an average of 7 to 8 hours per trip. He fishes around Selat Lumut, Teluk Nipah and Sungai Changdong. Income derived from part-time fishing is around RM 60 – 100 per trip (usually overnight fishing). On average, his net income from part-time fishing is RM 600 to RM 800 per month after deducting operational costs (i.e. fuel, food, cigarettes, bait, etc.). 3. Full-time fishermen go out an average 20 to 24 days a month. En Amat does not have a fishing boat licence because the government (Jabatan Perikanan) has put a freeze on new applications to allow the fish population to recover. 4. Declining fish landing is a key issue that En. Amat has identified. He attributes declining catch to an increase in water pollution, *hakisan*, low water quality (turbid), oil spill and trash (which he attributes to passing marine vessels as well as from Sg Klang). Strong winds and *musim timur* and *musim barat* deter him from going further. 5. The declining catch, however, is offset by high fish prices offered by seafood restaurants. This makes it worth his effort to continue part-time fishing to augment his income from his job at Northport.		

No.	Key Informant Interviews	Date of Engagement	Venue
5	**En. Fadli, Kg Teluk Nipah, recreational boat operator**	**01/03/2020**	**Jeti Kg Teluk Nipah**
	1. Weekends and public holidays are busy periods for recreational boat operators. Fishing enthusiasts vary from groups of friends to families and individuals. 2. Normally every trip stays out for about 12 hours. Trips that start in the morning return to the jetty in the evening and vice versa. Making two trips over 24hours is not uncommon. 3. Boat rental is RM 450 per boat for a 12-hour trip and it can fit 5 - 6 people. For trips to the open sea, the rental cost is up to RM 1,000 per boat for a 12-hour trip. On average, En. Fadli earns more than RM 1,000 per month from running these trips. 4. Whilst En. Fadli acknowledged he needs a licence from Jabatan Laut to operate his recreational fishing boat; but due to cost of the licence and insurance and other requirements imposed by the issuing department, he and most of his friends have been operating without one. He believes only 20 such licences have been issued so far by Jabatan Laut.		
6	**En. Azlan, recreational boat owner, part-time fisherman and resident of Kg Sg Kembong**	**01/03/2020**	**Pengkalan Kg Sg Kembong**
	1. About 40% of the local villagers work at Westports on a full-time basis, and fish only in between shifts and on weekends, according to En Azlan. 2. It is difficult to obtain a recreational boat licence because its issuance is regulated and controlled by Jabatan Laut. The *jabatan* also does not permit change of name from the existing boat owner to a third party. 3. On the issue of fishing boat licence, the government has stopped issuing new licences to regulate the number of fishermen as well as to allow the fish stock to recover. To seek a solution to the issue, the fishermen have proposed to the government to provide full time and part time licenses. For part time, the licence is just to allow them to fish without any facilities or subsidies provided by government.		

No.	Key Informant Interviews	Date of Engagement	Venue
7	**Muhammad Kadir bin Yakub, *rumah rakit* operator**	**01/03/2020**	**Jeti Kg Teluk Nipah**
	1. There are about 7 *rumah rakit* (floating fish chalets) along Selat Lumut, all of which are owned by the local villages. Usually, the *rumah rakit* are fully rented out on weekends and public holidays. 2. A person is charged between RM 45 to RM 60 for night fishing and RM 30 for day fishing for a 12-hour session. A typical *rumah rakit* accommodates 10 people and is rented out for RM 450 to RM 600 for a 12-hour session. Often times, the facility operates two 12-hour sessions a day. 3. The floating structures are fully equipped with fresh water (brought over from the island), electricity (genset), kitchen, bedrooms, toilets and fishing deck.		
8	**En. Khalid, local villager of Kg Sg Kembong**	**01/03/2020**	**Jeti Kg Sg Kembong**
	1. Local fishermen do not fish around the intertidal zone because of strong cross current and too shallow. Regular fishing area is off Pulau Carey and Pulau Ketam. 2. There are too many part-time fishermen, most of whom hold other jobs and go out to fish between shifts or on weekends, either for self-consumption or to sell to seafood restaurants at an attractive price. 3. Many locals in Kg Sg Kembong are part time fishermen; some bring recreational fishing enthusiasts around Selat Lumut, without a recreational boat licence. .		
9	**Site office staff, Inai Kiara Sdn Bhd**	**23/02/2020**	**Site office, Inai Kiara Sdn Bhd**
	1. The core business is ship repair and maintenance, mainly coastal marine vessels. 2. Base for the company's dredgers and suction hoppers. 3. Berthing area for vessels serving some of the industrial companies at the PKFZ. 4. Access to/from the open sea must be unhindered.		

No.	Key Informant Interviews	Date of Engagement	Venue
10	**Recreational fishermen/Anglers** • **En. Fazli & family, Bangi** • **En. Ramli & 5 others, Banting** • **Mr. Tai & friend, Westports staff**	**23/02/2020**	**Anglers' Resort**
	1. Reasons for coming to Anglers Resort – the place has a long fishing jetty (50m length), clean toilets, canteen and chalets for overnight stay, but usually most visitors/anglers sleep along the fishing jetty. 2. A cheap form of recreation and a cheap place for the family and groups of friends to spend the weekend. 3. Anglers visit and fish very regularly, at least every weekend. 4. Quantity of catch varies – sometimes *ikan gelama*, *ikan pari or jenahak* if lucky, but nothing most times. 5. Catch has declined significantly; the anglers attribute decline to oil spills from marine vessels and sediments. 6. Anglers will likely return to the fishing jetty regardless of reclamation, construction works or even when the port is in full operation. 7. Additional feedback from Mr Tai and friend of Westports – they fish every Sunday evening. Mr Tai rents a single storey terrace house in Kg Sg Pinang with 2 others for RM 1,200 a month, whilst his friend rents a flat in Pangsapuri Samudera for RM500 a month.		
	Recreational fishermen (fish in open sea) • **Iwan & family, Bandar Puteri, Klang** • **Rusdi & 5 friends, Wangsa Maju** • **Anonymous & 3 friends, Bukit Jalil**	**01/02/2020**	**Jeti Teluk Nipah**
	1. Fish very often, almost every week or every fortnight in the open sea around Pulau Ketam or Pulau Carey. 2. Rental of fiberglass boat costs between RM450 to RM600 for a 12-hour trip, usually leaving in the evening and returning early the following morning. 3. Prefers taking off from Jeti Teluk Nipah due to jetty facilities, many recreational boat operators on standby, clean public toilets, food and refreshments and live bait available. 4. Occasionally, rents a *rumah rakit* (floating fish chalet) along Selat Lumut for RM600 a night (12 hours). 5. An inexpensive sport/recreation/hobby with family and friends. 6. Will continue coming back even with reclamation works in progress or when the new port is operating.		

4.9 CONCLUSION

From the perception surveys, focus group engagements and key informant interviews, there was mixed acceptance and agreement with the Project. Overall the local residents were in agreement as they anticipate job and business opportunities and spillover effects from the Project, especially during the operation phase. However, their main concern is traffic congestion, poor road conditions and road safety along Federal Route 181 that is associated with heavy volume and movement of heavy container lorries from Westports, especially during the morning and evening peak hours. The other concern is over social conflict, health, crime and public safety, a perception often times perceived to be associated with the inflow of foreign workers.

The issue of significance to the fishing community is the impact on their livelihood as a result of the destruction of the mangrove and intertidal areas that serve as breeding and feeding grounds for fish and prawn fries, as well as harvesting sites for marine food resources (for the orang asli). Others concerns include safety at sea as the volume of marine vessels will invariably increase with the expanded port operations and higher fuel cost to be incurred as the fishermen have to travel a longer distance to get to their fishing grounds. However, the positive outcome from the perception survey and key informant interviews is the expression by some fishermen that they were prepared to "re-settle" into alternative jobs and other business opportunities, an option that has also been recommended in the National Plan of Action for the Management of Fishing Capacity in Malaysia (Plan 2) 2015, a blueprint from the Department of Fisheries Malaysia.

CHAPTER 5 IMPACT ASSESSMENT AND MITIGATION MEASURES

5.1 INTRODUCTION

Social impacts would likely occur to communities and social groups living and working within the 5km zone of influence when the Project is being implemented. Different groups would experience different impacts, both positive and negative. Impacts may not occur simultaneously during implementation; rather, their occurrence may vary across time. Some impacts may be short term occurring during the construction phase of the Project and often cease upon completion of construction or as a result of mitigation measures or natural recovery. In contrast, long term impacts often arise during operation and are potentially more significant due to the extended period of impact exposure; others may persist even after the Project is completed.

PLANMalaysia's SIA Manual (2nd Edition) has identified impacts as changes to the social, cultural and livelihood aspects of the communities. These changes are grouped into different social variables: demographic character, socio-economic wellbeing, liveability, community values and lifestyle, health and safety, geographical process and economic development of the region. These variables will invariably affect the community, either directly or indirectly.

In addition, this chapter also discusses the necessary mitigation measures to overcome or minimize the negative impacts while maximizing the positive impacts arising from the Project. The mitigation measures have taken into consideration several factors such as acceptability of the project by the communities, supporting their economic wellbeing, addressing road safety issues, minimising socio-cultural changes, improving liveability and encouraging geographical changes to Pulau Indah and the surrounding region.

5.2 KEY CONCERNS OF THE STAKEHOLDERS

The main stakeholders are the local residents and fishermen. Chapter 4 has identified the issues and concerns raised by the stakeholders with respect to the Project during the construction and operational phases of the Project. The key concerns of both groups are summarised as follows:

Summary of key issues and concerns of the community

1. Economic and business opportunities

Westports had a total workforce force of 4,603 in 2018, out of which only 2 are foreigners (Westports Sustainability Report 2018). Seemingly, a large proportion of

the workforce comprises local residents of Pulau Indah and the surrounding areas in Daerah Klang. Upon completion and operation, the Project is anticipated to generate another 6,000 jobs to manage and operate the additional container terminals.

About 73.3% of the respondents in the perception survey viewed the Project favourably with respect to the new employment opportunities and business linkages that can be created with the port expansion. The challenge going forward is to look at ways to strengthen the skill set of the local population to ensure that they can participate and benefit from the Project.

2. Livelihood of the Fishing Community and Marine Resource Collectors

Close to 36% of the fishermen who were interviewed in the perception survey opposed the Project but 44% were uncertain in their opinion. The biggest concern of the fishing community (including the marine food resources harvesters) is loss of income and livelihood as dredging and reclamation activities will invariably affect the areal extent and quality of the fishing grounds. This includes destruction of the breeding and feeding grounds and habitats of fish and prawn fries and source of marine food resources (i.e. bivalves and gastropods) as the mangroves and intertidal mudflats are dredged and filled for development. In addition, there is apprehension that the Port Klang limits might be extended to encompass a bigger anchorage area and shipping channel to accommodate the extended port structure, thus making a bigger part of the waters off limits to the fishermen.

Those who were favourable to the Project supported it with the hope that they would have an opportunity to benefit from the employment and business spill-over effects associated with the port operation. The Project is viewed as an opportunity by some fishermen to move away from fishing to other jobs and in the long term, make an improvement to their livelihood.

3. Traffic congestion and public road safety

Currently, Pulau Indah Highway (Federal Route 181) serves as the main access to Pulau Indah from the mainland, and is used by industrial traffic as well as local traffic emanating from the villages. Although not as heavily utilised as Route 181, the alternative access is from the SKVE through Persiaran Pulau Lumut. It is therefore not surprising that the volume of heavy industrial traffic, poor road conditions, dangerous road junctions, high accident rates and public road safety along Route 181 have been cited by about 55% of the respondents during the perception survey as the biggest concern of the residents of Kg Perigi Nenas, Kg Sg Kembong and Kg Teluk Nipah.

Impact from increase in traffic volume and vehicular movement will be significant along Route 181 during both Project construction and operation. The current level of service (LOS) along Route 181 ranges from A to C outside the morning and evening peak hours and D and E along certain stretches, especially during evening peak hours (Westports TIA Report, 2019). Indeed, with the Project, the traffic condition is

expected to worsen during both construction and operation unless mitigation measures are applied.

4. **Environmental changes**

   Loss of mangroves and intertidal mudflats (areas with fairly high density of marine live as well as serving as the breeding and feeding grounds and habitats of fish and prawns), reduced water quality due to increased water turbidity, accidental or indiscriminate spillage of oil, fuel ad trash from passing vessels, as well as sediment deposition and erosion are the main environmental concerns of the fishermen. Local residents, on the other hand, were concerned with the threat of flash flooding upstream of Selat Lumut and noise from the construction activity.

5. **Access and safety of fishermen at sea**

   In order to clear the length of the extended port structure, the fishermen will have to take a longer route to go out to sea, and incur a higher fuel cost. In addition is the threat of collision with the larger marine vessels and damage to fishing nets as the number of marine vessels increase with the expansion of port activities.

6. **Social conflict, crime and health issues**

   Social conflict, crime and community safety, and health issues connected with the inflow of foreign workers, especially during the construction phase, were perceived as concerns by 43% of the local residents. Therefore, the location of the worker camp site or worker quarters and supervision of their movement will have to be addressed during the construction phase to mitigate residents' concerns.

5.3 SIGNIFICANCE OF SOCIAL IMPACT

This section evaluates the potential impacts by using a matrix and scoring system to assess their significance on the communities. Significance of impact is dependent on its severity and probability of occurrence. The assessment of the significance of the impacts identified in this SIA is guided by the risk rating method outlined in the SIA Manual for Development Projects (2nd Edition) published by the PLANMalaysia, of which two criteria - severity and probability - are assessed in determining the overall impact significance.

The severity of an impact measures how seriously the potential impact will affect the community and stakeholder. This can be quantified using a value scale of 1 to 4, as shown in **Table 5.1.** However, it must be underscored that the severity value assigned to each impact is based on response of the surveyed population with no mitigation measures being considered

Table 5.1: Severity Value Scale

Severity Scale	Impacts
1	Low or Minor/No effect
2	Moderate
3	High
4	Very high (severe)

Source: PLANMalaysia, SIA Manual 2nd Edition (2018)

Probability represents the likelihood that a given risk event is expected to occur. The likelihood can be established using the four ratings shown in **Table 5.2.**

Table 5.2: Probability Scale

Probability Scale	Impact Occurrence
1	Very unlikely to occur
2	Rarely or not expected to occur
3	Likely – could occur
4	Common occurrence

Source: PLANMalaysia, SIA Manual 2nd Edition (2018)

The Severity and Probability scores given to each potential impact has taken into account the findings of the perception survey as well as feedback from the various key informant interviews conducted with some stakeholder and institutional representatives during the engagement sessions.

In addition, to reduce biasness in the assignment of ratings for Severity and Probability, this assessment method also relied on input from specialists who are proficient and competent on the issues pertaining to the proposed Project and have the capacity to anticipate or predict future impact. Specialist advice was solicited in a series of informal consultations held in July 2020 and they included the specialist for water quality, marine traffic and risk, fisheries, marine ecology and coastal hydraulics.

From the Severity and Probability ratings, a Significance Score is then appended to each impact using the following formula:

Significance Score = Severity x Probability

Again, it must be highlighted that the significance score derived at is based on response of the surveyed population with no mitigation measures being considered.

The classification of significance scores outlined in the SIA Manual, 2nd Edition (2018) as shown in **Table 5.3** serves as a guide for impact assessment and to determine the level of action required for mitigation.

Table 5.3: Level of Significance Scores with Outcomes

Colour Code	**Green**	**Yellow**	**Orange**	**Pink**	**Red**
Significance Score	1-2	3-5	6-7	8-11	12-16
Impacts & Priority	Low impact, not significant	Significant (Low priority)	Significant (Medium priority)	Significant (High priority)	Significant (Very High Priority)
Outcome/ Mitigation Action	No action or mitigation needed	Continual improvement or control mitigation measures	Preventive measures	Immediate preventive and mitigation measures	Project shall not be approved unless site is relocated or redesigned

Source: PLANMalaysia, SIA Manual 2nd Edition (2018)

The grouping system is largely subjective. However, if used judiciously, the level of partiality is generally acceptable as a guide for preventive and mitigation measures. Thus, with the grouping system, the numerical significance scores for each impact are ascertained, as shown in **Table 5.4** during the construction phase and **Table 5.5** during the operational phase of the Project.

Table 5.4: Severity, Probability and Significance Score of Identified Impacts (Planning/Construction Phase)

Social Impact Variables	Impact Issues	Qualitative Risk Impact Matrix		Significance Score
		Severity level	Probability level	
A. Change in Demographic Processes				
A.1 Change in Demographic Patterns (Size and Characteristics)				
Community	Inflow of construction workers into the project area to take up available jobs, thereby changing demographic profile of the ZOI temporarily.	+2	2	+4
Fishermen	Inflow of construction workers into the project area to take up available jobs, thereby changing demographic profile temporarily	+2	2	+4
B. Socio-economic Wellbeing and Livelihood				
B.1 Employment and Business				
Community	Increased job opportunities to the local community and spillover business opportunities, e.g. supply of food, local-level goods and services, etc. to workers.	+4	3	**+12**
Fishermen	Jobs are available ranging from skilled to semi-skilled and odd jobs. However, low to moderate opportunity for the fishermen due to different skills and experience	-2	4	-8
B.2 Livelihood				
Community	An opportunity to improve household income through job and business opportunities.	+4	3	**+12**
Fishermen	Livelihood may be affected by loss of fishing ground due to dredging and reclamation activities. Chances are low to moderate in shifting to other economic activities	-4	3	**-12**

Social Variables	Impact Issues	Qualitative Risk Impact Matrix		Significance Score
		Severity level	Probability level	
C. Impacts towards Liveability of Community				
C.1 Housing Demand				
Community	Increased demand for housing accommodation from inflow of workers to take up jobs and business. This may spur the development of vacant/idle land to provide more accommodation. Demand is likely to come from local migrant workers as foreign construction workers have to be housed in worker quarters. Housing rentals are likely to increase due to demand for accommodation.	+4	3	**+12**
Fishermen	Demand for housing and higher rental value will benefit the locals, including the fishermen in the ZOI and surrounding areas	+4	3	**+12**
C.2 Access to Infrastructure, Utilities, Community Services and Amenities				
Community	Reclamation and construction works will be conducted in sub-phases and staged sequentially over 30 years. About 200 workers will be involved per sub-phase. Added demand on community services will not arise. However, there will be additional demand on utilities, i.e. water and power supply, waste collection and management.	-3	2	-6

Social Variables	Impact Issues	Qualitative Risk Impact Matrix		Significance Score
		Severity level	Probability level	
C4. Environmental Changes				
Community	Noise and dust pollution from construction activities. Flash flooding upstream, siltation and drainage issue	-2	2	-4
Fishermen	Loss of mangroves Reduced water quality, sediments, trash, oil and fuel spills Erosion of coastal areas (marine food harvesting sites)	-4	2	**-8**
C.5 Crime and safety				
Community	Inflow of migrant workers can cause an increase in crime and community security.	-4	2	**-8**
D. Socio-cultural Processes (conflicts and risks)				
D.1 Social Integration				
Community	Social interaction and integration concerns from the inflow of non-local workers.	-3	2	-6
Fishermen	Social interaction and integration concerns from inflow of non-local workers.	-3	2	-6
D.2 Health				
Community	Community's uneasiness over potential health-related issues arising from the presence or proximity of foreign workers.	-2	3	-6

Social Variables	Impact Issues	Qualitative Risk Impact Matrix		Significance Score
		Severity level	Probability level	
D.3 Risk perception in the community				
Community	Sense of unease over the presence or proximity of foreign workers, and the perception that the worker quarters could be a place of social ills, e.g. drug abuse, petty crimes and socially disruptive behaviour between the workers and local youths.	-3	2	-6
Fishermen	Worry and stress over reduced income and livelihood and uncertainty of the future	-4	3	**-12**
E. Impact on Land and Marine Safety				
E. 1 Public Road Safety				
Community	Increase in container traffic volume along Route 181 will further exacerbate traffic congestion and public road safety.	-3	4	**-12**
E.2 Access to Sea and Marine Safety				
Fishermen	Increase in marine traffic, i.e. sand barges, tug-boats, dredgers, suction hoppers, etc. may jeopardise safety or hinder access of fishing boats as they head towards the open sea. This may occur throughout the dredging and reclamation period.	-3	3	**-9**

Social Variables	Impact Issues	Qualitative Risk Impact Matrix		Significance Score
		Severity level	Probability level	
F. Geographical Processes				
F.1 Impact on Land Use				
Community	Impact on the land use surrounding the project site leading to development of idle or vacant land and revitalisation of abandoned housing and commercial projects in Pulau Indah.	+2	3	+6
Community	Positive impact on the land use surrounding the project site leading to development of idle or vacant land and revitalisation of abandoned housing and commercial projects in Pulau Indah.	+2	3	+6
G. Regional Economic Development				
Community	Potential spillover effect to the construction, building and transport sectors.	+4	4	**+16**

Table 5.5: Severity, Probability and Significance Score of Identified Impacts (Operational Phase)

Social Group	Impact Issues	Qualitative Risk Impact Matrix		Significance Score
		Severity level	Probability level	
A. Change in Demographic Processes				
Change in Demographic Patterns (Size and Characteristics)				
Community	Inflow of workers into the project area to take up technical and management positions at the port. Job availability and recruitment will occur continuously throughout the life cycle of the Project. Moderate to high impact.	+4	3	+12
B. Socio-economic Wellbeing and Livelihood				
B.1 Employment and Business				
Community	Increased job and business opportunities to the local community. Jobs ranging from skilled to semi-skilled, in operation and management. (At least 6,000 new jobs will be created. Westports' employment policy and practice prioritises hiring of local residents.)	+4	4	**+16**
Fishermen	Employment opportunities are available, ranging from skilled to semi-skilled and contract jobs. However, low to moderate opportunity for the fishermen due to lack of necessary skills and experience and educational attainment.	-3	4	**-12**

B.2 Livelihood				
Community	Due to the Project Proponent's policy of hiring locals first, local residents will have access to jobs, according to their educational attainment, experience and skills	+4	4	**+16**
Fishermen	Due to lack of experience, skills and educational attainment, may have difficulty moving to alternative economic activities	-4	4	**-16**
C. Impacts towards Liveability of Community				
C.1 Housing Demand				
Community	Increased housing demand from inflow of workers to take up jobs and business. Workers are likely to be locals from around the region or other parts of the country. House rentals are also likely to increase. This may spur the development of vacant/idle land within the zone of influence to provide more housing.	+3	4	**+12**
C.2 Access to Infrastructure, Utilities and Community Services and Amenities				
Community	Increasing demand on local amenities and services (e.g. clinics, schools, etc.) as the population increases. Added pressure will be placed on infrastructure utilities e.g. water and power supply, waste collection and management as the population increases.	-4	2	**-8**
C3. Crime and Community Safety				
Community	Anxiety over potential safety threats due to inflow of migrant and non-local workers.	-3	2	-6

D. Socio-cultural Processes				
D.1. Social Integration				
Community	Lack of integration between the local residents and the new workers (non-local or foreign). Occasionally occurring with foreign nationals, but any conflict is more likely to occur amongst themselves than with the locals. Lower probability of occurrence if the Project Proponent adheres to their policy of hiring priority to the locals	-3	2	-6
D.2 Health				
Community	Anxiety over potential health issues arising from proximity of quarters for foreign workers, especially when their living quarters are crowded and their movements are not monitored closely. This is understandable given the recent detection of COVID-19 in worker quarters.	-3	2	-6
D.3 Risk perception in the community				
Community	Sense of unease over the presence or proximity of foreign workers, and the perception that the worker quarters could be a place of social ills, e.g. drug abuse, petty crimes and socially disruptive behaviour between the workers and local youths, and disease.	-3	2	-6
Fishermen	Anxiety over income and livelihood	-4	3	**-12**

E. Impact on Road and Marine Safety				
E.1 Road Safety				
Community	Rise in container traffic during operation will further aggravate road congestion public road safety	-3	3	**-9**
E.2 Access to sea and Marine Safety				
Fishermen,	Safety of small fishing boats at stake as marine container traffic volume and movement increases	-4	3	**-12**
F. Geographical Processes				
F.1 Impact on Land Use				
Community	Impact on the growth potential of land surrounding the project site and the ZOI. High to moderate during operational stage	+3	4	**+12**
G. Regional Economic Development				
Community	Potential spillover and multiplier effect to the region and nation, especially in the logistics and transportation sectors	+4	4	+16

5.4 LEVEL OF SIGNIFICANCE AND OUTCOME SCENARIOS

Table 5.4 (Construction Stage) and Table 5.5 (Operational Stage) show the significance of the impact. To reiterate, the ratings in the rating system are subjective and not entirely based on data collected, but on expert opinion. If the system is used consistently and judiciously, the level of partiality will not become a fatal flaw.

A significant score of 1 to 2 is considered a low priority requiring virtually no actions on an impact; 3 to 5 is considered low impact and requires monitoring; 6 to 7 is considered a medium or moderate significance where preventive measures are needed; 8 to 11 is considered a high significance requiring mitigation action, and finally, 12 to 16 is considered a very high priority, where preventive and/or mitigations are required to overcome the negative impacts. One of the key features of using the rating system is that it can immediately provide a definitive outcome of the variable. The outcome is whether the variable will need;

- No action;
- Monitoring action to minimise the impact;
- Preventive action; or
- Preventive and/or mitigation action to reduce or minimise the problems arising from the implementation of the project at the planning, construction or operational phases of the project.

The significance ratings of the perceived impacts to the local population and the fishing community are indicated in **Table 5.6** for the construction and operational phases of the Project.

Among the positive impacts that are considered high priority and significant to the local population are:

1) Employment and business opportunities from the port activities. For example, new businesses under the initiative of the local population may also come on-stream to service the workers during construction and operational phases;

2) An opportunity to improve their household income, livelihood and lifestyle;

3) Increased demand for housing and rental accommodation due to the inflow of non-local workers;

4) Land use change from agriculture to a use that enhances the value to the land;

5) An impetus for the revitalisation of abandoned housing and commercial projects or the development of idle vacant land; and

As for the negative impacts, the most significant and high priority impact relates to:

1) The livelihood of the full-time fishermen and the possibility that their livelihood might not be sustained.

2) Risk perception of the fishermen of uncertainty over their future

3) Safety of fishing boats in light of an increase in marine traffic volume and movement.

4) Further exacerbation of traffic congestion and road safety along the major distributor road, i.e. Federal Route 181 that serves the island.

To a lesser extent, some impacts have moderate significance to the community, but which nonetheless, still require either monitoring or preventive action to minimise their impacts. The variables with moderate significance include:

1) Perceived fear and anxiety over crime, public safety, health and social conflict – issues usually associated with the presence or proximity of foreign workers.

2) Increased demand and pressure on existing infrastructure and community amenities and services arising from population increase.

Table 5.5: Level of Significance of Probable Impacts (Planning/Construction Phase)

Impacts	Significance Score		Rating	Outcome
	Positive	Negative		
A. Change in Demographic Patterns (Size and Characteristics)				
Community Fishermen		+4	Moderate	No action required
B. Socio-economic Wellbeing and Livelihood				
B.1 Employment and Business				
Community	+12		**Very High**	No action required
Fishermen		-8	High	Continual improvement or Mitigation action
B.2 Livelihood				
Community	+12		**Very High**	No action required
Fishermen		-12	**Very High**	Preventive and/or mitigation action
C. Liveability of Community				
C.1 Housing Demand				
Community Fishermen	+12		**Very High**	No action required
C.2 Access to Infrastructure, Services and Amenities				
Community Fishermen		-6	Moderate	Preventive action
C.4 Environmental Changes				
Community		-4	Low	Monitoring action
Fishermen		-16	**Very high**	Preventive and/or mitigation action

C.5 Crime and safety				
Community		-6	Moderate	Preventive measures
D. Socio-cultural Processes (conflicts and risks)				
D.1 Social integration				
Community		-6	Medium	Preventive action
D.2 Health				
Community		-6	Medium	Preventive action
D.3 Risk perception in the community				
Community		-6	Medium	Preventive action
Fishermen		-12	**Very high**	Preventive and /or mitigation action
E. Land and Marine Safety				
E.1 Public road safety				
Community		-12	**Very High**	Preventive and/or Mitigation action
E.2 Access to sea and marine safety				
Fishermen		-9	**High**	Continual improvement or Mitigation action
F. Geographical Process				
F.1 Impact on Land Use				
Community	+6		Moderate	Monitoring action
G. Regional Economic Development				
Community	+16		**Very high**	No action required

Table 5.7: Level of Significance of Probable Impacts (Operational Phase)

Impacts	Significance Score		Rating	Outcome
	Positive	Negative		
A. Change in Demographic Patterns (Size and Characteristics)				
Community	+12		**Very high**	No action required
B. Socio-economic Wellbeing and Livelihood				
B.1 Employment and Business				
Community	+16		**Very High**	No action required
Fishermen		-12	**Very high**	Preventive and/or mitigation action
B.2 Livelihood				
Community	+12		**Very High**	No action required
Fishermen		-16	**Very High**	Preventive and/or mitigation action
C. Liveability of Community				
C.1 Housing Demand				
Community	+12		**Very High**	No action required
C.2 Access to Infrastructure, Utilities, Community Services and Amenities				
Community		-8	**High**	Continual improvement or mitigation action
C.4 Crime and Community Safety				
Community		-6	Moderate	Preventive measures

Impacts	Significance Score		Rating	Outcome
	Positive	Negative		
D. Socio-cultural Process				
D.1 Social Integration				
Community		-6	Moderate	Preventive action
D.2 Health				
Community		-6	Moderate	Preventive action
D.3 Risk perception in the community				
Community		-6	Moderate	Preventive action
Fishermen		-12	**Very High**	Preventive and/or mitigation action
E. Impact on Land and Marine Safety				
E.1 Road safety				
Community		-9	**High**	Preventive and/or mitigation action
E.2 Access to sea and marine safety				
Fishermen		-12	**Very High**	Preventive and/or mitigation action
F. Geographical Process				
F.1 Impact on Land Use				
Community	+12		**Very high**	No action required
G. Regional Economic Development				
Community	+16		**Very high**	No action required

5.5 POTENTIAL IMPACTS AND MITIGATION MEASURES

The recommendations for potential mitigation measures are mainly for the negative impacts. Generally, positive impacts will not require any preventive and mitigation measures regardless of their ratings, unless stated.

Given the nature of the proposed Project, it is acknowledged that some of the mitigation measures identified are not measures that the project proponent could implement but should be implemented by the relevant government agencies, as well as state and local government departments. The mitigating measures identified classified into construction and operational phases.

The mitigation measures that are recommended take into account, among others, the following factors:

i. An opportunity to address the high impact or significant issues, especially those affecting the livelihood, safety and liveability of the community;

ii. Acknowledgement of feedback and suggestions provided by the community and institutional stakeholders during the public engagements via key informant interviews, perception survey and focus group engagements;

iii. Consistent with the aspirations of the community;

iv. Appropriate and can be implemented effectively.

v. Promotes and raises skills level of the local community and utilizes human resources available

vi. In line with the capacity of the project proponent and government agencies

vii. Proposes stipulated time frame of implementation, whether during planning, construction and project implementation or operational phase of the Project.

5.5.1 Potential Impact during Pre-construction

Pre-construction Phase

In the planning or pre-construction stage of the Project, the main activities that are carried out are surveys, engineering design and technical studies that include the following:

1) Topographic and bathymetric surveys;

2) Preliminary planning and design of the port layout to determine the most optimal layout;

3) Pre-environmental impact assessment;

4) Hydraulics and hydrodynamics assessment;

5) Soil investigation;

6) Soil erosion and sedimentation study;

7) Marine ecology assessment;

8) Pre-social impact assessment;

9) Marine traffic and navigation risk assessment; and

10) Land traffic impact assessment.

11) The impact is not very significant and no mitigations are needed. .

These are specialist studies involving professional and technical input to conduct sampling and survey works at the Project area and its vicinity, desktop studies, computer simulation and engineering design work. These activities are low-impact activities and do not involve any inflow of migrant workers, non-local or foreign. Therefore, no change in demographic character, liveability, socio-economic wellbeing, etc. is expected.

Mitigation Measures

No action required.

5.5.2 Potential Impact during Construction Phase

A. Significant Positive Impact

1) Socio-economic Wellbeing: Employment and Business

Most of the new jobs created during the construction phase would be related to activities such as land clearing, dredging, reclamation, surcharge removal, infill, compaction, and construction of the port structures, infrastructure and terminal facilities. Jobs range from unskilled to skilled labour and contract work. In addition, generation of 'spin-off' businesses is also likely. "Spin-off" opportunities include small businesses like supply of food and local-level goods and services to construction workers. Although small-scale, these operations do not require considerable capital and can create new income-generating activities for the local community, which in turn will enhance their income level.

Mitigation Measures

To maximise benefits to the local population, priority is to be given to the local workforce. The Project Proponent can play its role through communication and publicity

on job opportunities and positions that are available. In addition, through its CSR programme, the Project Proponent can extend skills training to the youths of the community to increase their chances of getting a position in the Project. This can be done by collaborating with agencies such as *Institut Latihan Perindustrian, GiatMARA, KEMAS* and other educational institutions.

2) Liveability of the Community: Housing

As people move into the project area in anticipation of employment and business opportunities, demand for local housing are likely to increase. This in turn, would result in higher rental and property value, prompting local property owners to upgrade or improve their asset, and in the long term, enhance their income and livelihood.

Mitigation Measures

No mitigation action required.

3) Geographic Processes: Impact on Land Use

It is likely that when the Project is under construction, its impact on the land use of areas surrounding the project site will be positive. The Project is likely to stimulate development inside the ZOI which is still predominantly agricultural in use, development of idle or underutilised land, and the rejuvenation of abandoned housing and commercial projects located in other parts of the island.

However, a balance must be struck between development inside the ZOI and safeguarding the traditional kampong character of the settlements, especially Kg Perigi Nenas, which has been earmarked as a *kampong tradisi* in the ongoing study for *Rancangan Tempatan Majlis Perbandaran Klang (Penggantian) 2035* that was recently publicised for public comment.

Mitigation Measures

Development inside the ZOI is subject to land use zoning and development controls and regulations of Majlis Perbandaran Klang. Clear guidelines for land conversion and development of Malay Reserve land inside the ZOI need to be drafted into the ongoing study for *Rancangan Tempatan Majlis Perbandaran Klang (Penggantian) 2035* so that future development of the ZOI is not in conflict with the aim to safeguard the cultural character of Kg Perigi Nenas as a *kampong tradisi*.

B. Significant Negative Impact

1) Socio-economic Wellbeing and Livelihood: Livelihood of the Fishing Community

The income and livelihood of the fishing community, who are dependent on the waters near and around the project site, would be affected, during dredging and reclamation. Issues pertain to loss of fishing and breeding grounds for fish and prawns, the need to find alternative fishing grounds and incurrence of higher fuel cost as the fishermen have to go a longer distance to circumvent the construction site and activities.

Likewise, the marine food resource collectors, typically from the orang asli community in Kg Sg Kurau, would be affected as the intertidal areas lying south of Pulau Indah are dredged and filled in for the port extension. The intertidal areas are sources of prawns and shellfish and serve as marine harvesting areas during low tide.

Mitigation Measures

In the engagements conducted with the fishing community and marine resource harvesters of Kg Sg Kurau, a request was made for a monthly allowance to be made to members of the fishing community during the construction phase. This was to compensate for loss of livelihood, damage to nets and higher fuel costs. For information, a study commissioned by LKIM and conducted by MIER in 2019 indicated that monetary contribution to the affected fishing community is not uncommon. This was observed in the development of Stesen Janakuasa Sultan Azlan Shah in Manjung, Perak, a 2100 MW power plant undertaken by TNB Janamanjung Sdn Bhd, wholly-owned by Tenaga Nasional Sdn Bhd involving 325 hectares of reclaimed land. An amount of RM 7,000 (one-off) was paid as *saguhati* to each licenced boat owner. Similarly, MIER's study reported a similar contribution (RM 3,000) to the fishing community in the development of the Sabah oil and gas terminal in Sipitang and Kimanis, Sabah. Contributions were also made to licenced fishing boat owners during the implementation of Seri Tanjung Phase 2 and Penang Second Bridge project in 2011 and 2012 respectively (MIER, 2019).

With respect to the proposed Project, direct monetary contribution will not be proposed as a mitigation measure. Instead, the following measures to assist the fishermen can be considered during the construction and operational phases of the Project:

a) Assist the fishermen in upgrading their boats, engine capacity, fishing equipment and safety gadgets so that they are better equipped to travel longer distances. Assistance could take the form of a contribution from the Project Proponent to the fishermen's welfare fund to be managed by LKIM, the agency that is responsible for fishermen welfare.

b) Offer younger members of the fishing community an opportunity to migrate from the fishing sector to jobs in the port. The proposal is for the Project Proponent to extend its CSR programme to include the younger members of the fishing community for counselling, job re-training and re-skilling to enable them to acquire

the relevant skills and training necessary to participate in the activities of the port or the industries that are being developed in Pulau Indah;

c) Restore habitats upon completion of the dredging and reclamation phase, if post-reclamation site conditions are still suitable, e.g. mangrove replanting. Recovery of the benthic community post dredging and reclamation is anticipated. The MIER study has also found that mangrove replanting in Penang has initiated positive signs of recovery of gastropods and bivalves collection sites and improved fish landings during the operational phase, but not to the level before implementation (MIER, 2019). Jabatan Perhutanan as the lead is crucial, due to its experience and expertise.

d) Introduce fish and prawn hatcheries or re-stocking programme. It is a programme to be headed by DoF because of its experience and expertise, and can be contracted or empowered to the affected fishermen. Under this programme, fish fingerlings and prawn fires can be released into the areas where the resources are depleted. There are reports of increased fish landings from the areas where re-stocking programmes have been carried out (MIER 2019, DoF 2015, Olaniyi *et al* 2012);

e) Consider recreational or sport fishing as an alternative income source and livelihood. Recreational fishing in Pulau Indah (currently taking off from Jeti Kg Telok Nipah and Jeti Kg Sg Kembong) has provided a number of part-time fishermen an opportunity to supplement their income. The economic benefits associated with it include generating revenue and employment in the local economy, promoting non-market goods like wellbeing derived from the activity as well as promoting Pulau Indah, especially the fishing villages, namely Kg Sg Kembong and Kg Teluk Nipah, as eco-tourism destinations. Indeed, eco-tourism that is related to recreational fishing can be seen as an emerging area for employment generation and may help to overcome the necessity to provide jobs and income to the local fishing population.

Partnership between Majlis Perbandaran Klang, Jabatan Laut and the state/local tourism promotion organisation/s is crucial in bringing this activity forward as an employment and income generator in Pulau Indah.

2) Land and Marine Safety: Public Road Safety

The 4-lane Federal Route 181 is the main expressway used by industrial, commercial and local residential traffic on the island. Heavy container traffic, congestion, deplorable road conditions threaten public road safety along Federal Route 181. The local residents are concerned that the situation would exacerbate with the expansion of the port operations.

Federal Route 181 is used by almost 50,000 vehicles daily and that 2,300 accidents with 26 deaths were recorded in 2017 (The Star, 16 May 2019). It further reported that the South Klang district police department attributed the situation to poor road

conditions, aggressive driving, not adhering to speed limits and non-functioning street lights.

A traffic impact assessment commissioned by Westports in 2018 found that most roads and road junctions in Pulau Indah are currently operating at acceptable levels of service. Parts of the existing road network that are operating at unacceptable levels of service include a short stretch of Federal Route 181 leading to Northport during evening peak hour and two junctions – one coming out from the Federal Flour Mill and another coming out from Westports Main Gate to join Federal Route 181 – during evening peak hour.

Mitigation Measures

To improve road safety and congestion, measures include implementing the projects that are either committed or proposed by *Kementerian Kerja Raya,* which include:

a) Widening of Federal Route 181. The road improvement exercise is currently being implemented by JKR in stages and is expected to be completed by 2021. However, the number of lanes remains the same. To ease traffic congestion, it may be necessary to widen to 6 lanes (Westports TIA Report 2018);

b) Completion of the Pulau Indah Ring Road (PIRR) is one of the key measures to improve traffic distribution and movement and relieve congestion along Federal Route 181. A project that is committed by Kementerian Kerja Raya Malaysia, when completed the PIRR will serve as an alternative distributor road, connecting Federal Route 181 at a point near the entrance to the Project site to the SKVE. Its alignment runs almost parallel to the eastern shoreline of Pulau Indah linking Westports, Port Klang Free Zone and other future industrial parks in southern Pulau Indah to the proposed Selangor BioBay project and ultimately to Persiaran Pulau Lumut and the SKVE.

Other measures to consider include:

c) To improve public road safety, a separate motorcycle lane may be required along Federal Route 181 so that motorcycles are segregated from huge trailers and container vehicles

d) As hundreds from the B40 group travel to Pulau Indah for work daily, it is necessary to address non-functioning street lighting and road resurfacing in order to improve road safety.

e) A risk mapping exercise to identify dangerous stretches is another effort to reduce the number of accidents.

f) Priority junctions along Federal Route 181 may not be efficient in traffic management during peak hour traffic when the main road flow is too high to allow side road traffic to pull into, thus causing excessive queues on the minor/side

roads. To improve junction management and traffic flow, it may be necessary to signalise the priority junctions (Westports TIA Report, 2018).

3) Land and Marine Safety: Marine Safety

Issues involving safety of the fishermen, re-routing to the fishing grounds and damage to fishing nets were raised during the FGD with fishermen groups. There will be an increase in marine traffic movement along Selat Klang and Selat Lumut during construction and operation. Between April 2018 and March 2019, a total of 7,146 ship calls were recorded at Westports container terminals or a daily ship call of between 22 to 23 ships per day (MTRA, July 2019). The number of daily ship calls is anticipated to increase to 73.7 by 2050 and these will be staggered over a 24-hour period, i.e. 2 to 3 ships per hour. Although small fishing boats do sometimes criss-cross the navigational channels when going to and from their respective fishing grounds, the frequency of ship calls at 2 to 3 ship calls per hour is not anticipated to hinder or conflict with the movement of fishing boats.

Furthermore, the speed of container vessels within the Port Klang Port Limits does not appear to pose any hazard to the small fishing boats. The average travelling speed of the vessels along the navigation channel is between 10 – 12 knots, i.e. 18.9 to 22.6 km per hour. The width of navigation of both northbound and southbound routes is approximately 500m.

The fishermen are well aware that they are prohibited from fishing close to the marine facilities, the navigational aids as well as inside the approach channel within the Port Limits. However, incidents like damage to their drift nets sometimes occur when the nets drift close to or even encroach into the navigational channel. In respect to being hit by passing marine vessels, according to the Port Klang Authority, statistics for the past 17 years between 2003 and 2019, indicate there were 41 cases of accidents or incidents at Westports, but none of which involved collision or personal injury to the fishermen.

Mitigation Measures

Conflicts between fishing boats and marine vessels or barges used to transport dredging and fill materials can be reduced through:

a) Use of navigation buoys and markers to demarcate working areas and marine traffic routes to allow fishermen to go out to sea and return to their base safely.

b) Set up a taskforce for the fishing community to serve as a platform for periodic engagements between the fishermen and the Project Proponent to address any fishing related problems throughout the construction and operational phases of the project in a timely and agreeable manner. It is proposed that the taskforce

be initiated by the PP in collaboration with LKIM, an agency that is mandated to oversee fishermen welfare.

c) The Project Proponent needs to ensure all measures identified in the Marine Traffic Risk Assessment (MTRA) are followed and implemented as approved by Marine Department. In addition, specific mitigation measures as recommended by Environmental Impact Assessment are to be adopted by the Project Proponent.

4) Liveability of Community: Social Conflict and Integration

One of the concerns cited by the community is the inflow of foreign workers into the project site and the surrounding areas and the perception of social conflict and non-integration with the local population.

The construction period (involving dredging, reclamation and construction) will be staged sequentially over several sub-phases over a period of 29 to 30 years between 2021 and 2050. Generally, dredging and reclamation works do not require a big labour force. The estimated worker population is not expected to exceed 250 workers at any one time and workers will be moved from phase to phase throughout the construction period.

Mitigation Measures

a) The recent amendment to Act 446 (The Workers' Minimum Standards of Housing and Amenities (Amendment) Act 2019 (Act 446), extends to all employment sectors providing housing and accommodation for workers and came into force on 1st June 2020. The amended Act 466 makes it compulsory for employers in all industrial sectors, including construction, to provide accommodation for workers that meet minimum standards as outlined in the Act.

b) The project contractors have to comply with the amended Act 466 in providing workers quarters that are of reasonable standard and equipped with basic facilities for the workers such as proper sanitary facilities, water and electricity supply, canteen, recreational area, etc. CIDB's guidelines for temporary construction workers' amenities and accommodation can be used as a guide (CIDB Technical Publication No. 185, 2018).

c) Concern that foreign workers might change the composition of the local population or act as a source of social conflict is not expected to occur or at worst will be minor. Migrant construction workers, especially foreigners, should be briefed on local sensitivities and practices to avoid social conflict with the local communities. They should also be briefed on the consequences of disturbing the peace and breaking the laws, to minimise misunderstandings with the locals.

d) Construction and site facilities such as site offices, vehicles depots, mustering points, are to be kept as deep within the project site as feasible, so as to minimise contacts with the daily movements and activities of the residential enclaves. This is something that can be adopted by the project management considering the very large size of development phases.

e) To minimise or avoid any socio-cultural conflicts between the foreign workers and the local community, a mechanism, e.g. a Community Consultative Committee (CCC), is needed to serve as a platform for communication between the local communities and the project contractors. It is to be initiated by the project contractors together with the *ketua kampongs,* with support from their respective *Majlis Pengurusan Komuniti Kampong* and the Port Police to be on the watch-out for and address any social conflicts as well as to to ensure all rulings are enforced.

5) Liveability of Community: Infrastructure, Utilities, Services and Amenities

It is more likely that during the construction phase, added demand will be placed on existing water and power supply, rather than on existing community services and facilities like schools and health centres.

Mitigation Measures

The Project Proponent and its contractors should engage with and advise the relevant authorities and service providers on their phased implementation schedule and estimated demand for those services to ensure their timely delivery.

6) Liveability of Community: Health

Activities undertaken during construction, especially using heavy machineries during pilling works, may cause an increase of noise levels and erosion. Continuous and intermittent loud noises are detrimental to the psychological well-being of the workers as well as the local people in the surrounding areas. Disposal of solid waste, inadequate sewage facilities and sanitation may result in unhygienic conditions and disease outbreaks such as dengue, typhoid and cholera in the workers' base camp.

Mitigation Measures

Dust, water and noise are among the parameters that will be monitored closely during project implementation as recommended in EIA report. These concerns will be closely monitored and any spikes will be reported to the health authorities or Department of Environment (DOE). Coordinated action by government agencies, Project Proponent and the contractors are needed to resolve health issues at

project site. Mandatory instructions with stiff fines and penalties to all project contractors will also be very important.

7) Liveability of Community: Environmental Changes

Concerns were raised during engagements with the communities about flash flooding upstream along Selat Lumut, erosion along the western coast of Pulau Carey, reduced water quality and removal of mangroves and mudflats.

In the recent hydraulics study conducted for the EIA of the Project, modelling results indicate that there will be insignificant impacts on water levels and flushing capacity. More significantly, upstream flooding is unlikely as there are no changes in the water levels along Sg Klang and Sg Langat.

The hydraulic study predicts that the proposed Project development during the dredging and reclamation works will induce only localised changes in currents and sediment, but will not cause any significant impacts beyond the Project area. As such, the water quality is not expected to have significant change in terms of sediment loads, and the consequent impact on the marine ecosystem in the adjacent areas of the Project due to water quality changes, is also not expected to be significant. The impacts will also be temporary until the dredging and reclamation activities cease.

With respect to erosion, the modelled results of the hydraulics study show that there will be a reduction in erosion rate at the western shorelines of Pulau Carey. Instead, sedimentation volume may increase. This may be beneficial to the mangrove habitats and the marine resource harvesting sites along the shoreline.

The marine water quality around the port area is currently moderate, based on the results of the water quality sampling conducted in early 2020. Admittedly, there are occasions where the quality is affected by accidental spillage of oil and fuel, maintenance dredging of the existing shipping channel, ballast water discharge from the marine vessels and general shipping movement. During construction, the TSS load is predicted to increase less than 5mg/L along the water channels where the aquaculture farms are located in Pulau Ketam, Pulau Selat Kering and Pulau Cher Mat Zin. The predicted TSS load is not significant and will not have any impact on the floating fish farms.

About 97 hectares of mangroves and mudflats will be removed for the port expansion. Findings of the marine and ecological report for the EIA study for the Westports expansion project observed that the mangroves were generally disturbed with low species richness. On the other hand, fairly rich density of gastropods and bivalves were observed at the mudflats. Admittedly, there will be losses of ecological services during dredging and reclamation, but recovery of the benthic community post-reclamation is anticipated due to the process of natural ecological succession.

Mitigation Measures

Action measures include regular monitoring of the water quality and disturbed areas and compliance with the EIA's requirements.

5.5.3 Potential Impact during Operational Phase

A. Significant Positive Impact

1) Demographic Changes: Change in Demographic Character

Once the project enters the operational phase, employment will change from low-skilled workers to jobs requiring higher skills and qualifications. Although the Project Proponent has a policy of hiring local workforce, they, however, may not have the necessary skill sets, qualifications and experience to handle certain tasks and responsibilities. Professional, technical and managerial positions are likely to be sourced from outside Pulau Indah. It is also unlikely that the Project Proponent will engage foreigners for the operational phase as the existing port operations has shown that 99% of the current workforce are Malaysians, of which more than 40% are from Pulau Indah.

Population density is expected to increase significantly due to the inflow of locals (i.e. Malaysians) from outside Pulau Indah to take on the employment and business opportunities arising from the expanded port activities. Likewise the demographic character of the island will also change in the long term to one that is more diverse, significantly younger, with higher educational attainment, are higher income earners and have more disposable income. These new entrants into the local labour market will have a beneficial impact on the local economy in terms of an increase in spending power and consumer spending. The proportion of those in the prime working age group 25 – 54 years) is anticipated to increase. The inflow of Malaysian workers into the ZOI is also fortuitous as it allows for easier integration with the local residents and minimises any fear or perception of erosion of traditional values and culture.

Mitigation Measures

Population growth generated by the Project is expected to create demands on community services and amenities, like health clinics, schools, places of worship, etc. as well as increased demand for water and electricity supply and solid waste management. The challenge is for Majlis Perbandaran Klang, the State Department of Education, the utility service providers and other relevant department and agencies to project the additional demand requirements and address the additional facilities and services required.

2) Socio-economic Wellbeing and Livelihood: Employment and Business

The port development will generate a significant number of direct and project-induced employments. Direct employment will be generated by the port itself. It is estimated the port expansion will generate more than 6,000 jobs on average, ranging from skilled blue-collar labour in operations such as crane operators, port ground staff, ground maintenance, technicians, truck and train operators to white collar professionals in management such as berth and yard planners. Given the Project Proponent's policy to employ local workforce as practically possible, these jobs are expected to be filled by the local population. In 2018, 99.9% of Westports' employees were Malaysians, 72% being bumiputera and 41% were local residents of Pulau Indah. Close to 53% of the employees were aged 30 years and below and another 43% aged between 31 and 50 years (Westports Sustianability Report 2018).

Likewise, direct and indirect project-induced employment will be created by downstream services and businesses, e.g. supply goods and services to the port, such as food catering, security, cleaning companies, waste management, restaurants and minimarts.

Multiplier and spillover effects are anticipated at the local, regional and national level. i.e. logistics (i.e. cold chain), transportation, warehousing, sorting, distribution, finance and insurance, manufacturing, retailing, e-commerce, etc.

Mitigation Measures

Job recruitment as well as training and up-skilling programmes should be communicated to the local community. This can be done though the office of the p*enghulu* of Pulau Indah or the *ketua kampong*. In addition to supporting the local population, the aim in the long term, is also to grow the port's own workforce and capability from within the community as well as increase orang asli workforce participation.

3) Liveability: Housing

Demand for housing and rental accommodation is expected to rise correspondingly as the inflow of workers increases to take up the various jobs generated by the project. Rental and property values are expected to increase in areas, particularly, in Pulau Indah and Port Klang in general.

Mitigation Measures

Investors within and outside the local community may also use the Project as an opportunity to develop inside the ZOI and the areas surrounding the project site in anticipation of the population increase. Hence, long term planning for utilities and community services and amenities is needed to cater for such increases.

Projection for the new requirements should be taken into consideration in the Local Plan for Daerah Klang 2035 that is under preparation.

4) Impact on Land Use

When the Project is fully operational, the surrounding land use is likely to benefit, giving rise to the development of new housing, industry and businesses.

Mitigation Measures

Regulation and control of development inside the ZOI and the surrounding areas have to be addressed in the Local Plan for Daerah Klang 2035 (currently under preparation) to ensure that the overall development trend and building density is sustainable and in sympathy or consistent with the character of the overall ZOI, that is, a traditional village.

5.1 5.3.4 Significant Negative Impacts

1) Socio-economic Wellbeing and Livelihood: Employment and Business

The fishing community will be the most adversely affected stakeholders as they are dependent entirely on fishing and marine resource collection (for the orang asli). Indeed, grave concerns about their livelihood have been raised by them through the stakeholder engagements with respect to their income and livelihood as they need to travel a longer distance to the fishing grounds. This incurs additional fuel costs, and the need to upgrade their boat and fishing gear as they have to head further out to sea.

A number of them acknowledged that with declining fish population coupled with competition from part-time fishermen and gradual loss of spawning and feeding ground, sustaining a livelihood and improving one's quality of life as a inshore coastal fishermen is fraught with difficulties.

Mitigation Measures

The mitigation measures discussed in **section 5.5.2 (B) Significant Negative Impacts during Construction Phase** are applicable for the Operational phase, the reason being that project implementation will be staged sequentially over 29 to 30 years between 2021 and 2050. Staging the project sequentially allows the port to operate in areas where construction is completed, whilst the other parts of the project site are still being developed.

Providing employment and training opportunities to the younger members of the local community should be an ongoing process and seen as part of the Project

Proponent's CSR programme to assist them to move from the fishing sector to other economic sectors.

Restoration and recovery of the habitats post-reclamation is possible. However, it is also a long term task involving replanting, and monitoring to allow recolonization to take place. Likewise, with fish re-stocking, it is a long term programme involving commitment from DoF and its partners and constant monitoring to ensure that the fish population increases.

Promoting recreational fishing as an alternative income source and livelihood for the fishermen and as an employment and income generator in Pulau Indah should be seen as a long term programme. Regulation, control and assistance from Majlis Perbandaran Klang, Jabatan Laut and the state/local tourism promotion organisation/s is necessary to ensure the facilities at Pengkalan Teluk Nipah and Kg Sg Kembong are properly maintained and the fishing villages promoted as an eco-tourism destination.

5) Liveability of Community: Infrastructure, Utilities, Services and Amenities

Added demand will be placed on existing water and power supply, and community services and facilities like schools and health centres.

Mitigation Measures

The Project Proponent and its contractors should engage with and advise the relevant authorities and service providers on their phased implementation schedule and estimated demand for those services to ensure their timely delivery.

6) Liveability of Community: Health, Safety and Crime

The perceived health issues, crime and community safety associated with the proximity of foreign workers does not arise during the operational phase as the majority of the new entrants into the workforce would likely be Malaysians from Pulau Indah and areas outside it.

7) Liveability of Community: Marine Safety

6.1 The increase in marine traffic volume may cause marine traffic congestion and also increase the risk of safety hazard to fishing boats. With a proper marine traffic management plan and port traffic control, these risks can be minimised significantly.

Mitigation Measures

The Port Klang Authority utilizes a Vessel Traffic Management System (VTMS) to monitor marine traffic and ship movements within the pilotage districts. Furthermore, Malaysia has adopted the Convention on the International Regulations for Preventing Collisions at Sea 1972 since 1980 which provides the navigation rules to prevent collisions between vessels, including large ships and smaller fishing vessels.

5.6 SUMMARY

The Project is perceived to generate positive and negative impacts during the construction and operational phases

Potential positive impacts are: new employment and business opportunities, increase in property and rental value, revitalisation of abandoned housing and commercial projects, stimulus for the development of idle or underutilised land in the ZOI, local economic growth in the ZOI and the surrounding areas and improved infrastructure and public amenities.

Potential negative impacts are: loss and degradation of mangroves and habitats, threat to the livelihood of the fishermen, increased traffic movement, and public road safety.

Overall, the local community's perception of the Project is very favourable. They perceived that the benefits would be greater than the adverse impacts. Whilst a section of the fishing community was opposed to the Project, the majority were uncertain about their support/opposition; but were open to assistance from the Project Proponent to assist them in securing employment at the new port operations or to be trained in other skills that will allow them to move from fishing to alternative employment.

It is also clear that to mitigate the potential adverse impacts, the role of certain agencies, namely, DoF, LKIM, Jabatan Laut and Majlis Perbandran Klang, are particularly important, especially to the fishermen and the regeneration of the mangroves and habitats.

Lastly, a mechanism or platform needs to be formed to receive, address and resolve stakeholder concerns. Throughout the life cycle of the Project, queries and grievances related to the project activities are bound to arise from community and fishermen stakeholders, and which are to be addressed and resolved in an appropriate manner. The mechanism serves as a platform for interfacing and communication between the community and the Project Proponent, identification and resolution of concerns early and in an expeditious manner. The formation of such a mechanism should be a collaborative effort between the Project Proponent, representatives of the stakeholder groups and the relevant institutional

stakeholders, e.g. MP Klang, LKIM or DoF. The inclusion of the institutional stakeholders is important to enable them to communicate with the affected stakeholders, especially in instances where grievances are channelled to them for resolution,

5.7 Project Abandonment

Westports complements the national port agenda to become one of the leading transhipment hubs in the ASEAN region and globally. The port creates value for economic growth nationally, especially in the logistics and transportation sectors. Further, the proposed expansion is in line with the government's 5-year Logistics and Trade Facilitation Masterplan (2015-2020) and will have significant impact on the Malaysian economy with an estimated economic output of RM55 billion being projected within a 10-year period. The expansion will give more than 6,000 direct jobs on average and thousands more through the multiplier and spillover effects it can be generated across the value chain. It is also projected that the port will contribute RM19 billion to the country's gross domestic product over a 60-year period.

The port started operations in 1994 and has grown to handle more than 14 million TEUS in 2018 to become the largest transhipment port in the country, second largest in the South-east Asian region and 12th globally. Therefore, project abandonment is not a probably option.

CHAPTER 6 SOCIAL IMPACT MANAGEMENT PLAN

6.1 INTRODUCTION

A Social Impact Management Plan (SIMP) is prepared to fulfil the requirements for Social Impact Assessment (SIA) as stipulated in the *Manual Penilaian Impak Sosial Bagi Projek Pembangunan (Edisi Ke-2)* PLANMalaysia, 2018. The aim of SIMP is achieve the following:

a) Provide a summary of the potential positive and negative impact of the Project during the planning, construction and operational phases.
b) Present the specific mitigation measures and related implementation action
c) Suggest the roles, responsibilities and functions of the Project Proponent, contractor and sub-contractor, local government agencies and the communities regarding social impact management during the construction and operation of the Project.
d) Provide a pragmatic mechanism to implement the SIMP

6.2 SOCIAL IMPACT MANAGEMENT PLAN (SIMP)

This SIMP relates to the identified potential social impact for which mitigation measures have been recommended based on the expected outcome of the Project. Included in the SIMP, are indicator of impact, the monitoring programme and the frequency of monitoring during construction and operational period of the Project. The SIMP is based on information gathered from field survey, household survey, discussions, Focus Group Discussion (FGD), government agencies, consultants and key informants. Specifically, the consultants have carried out the following:

a) Meetings and consultations with government agencies (i.e. Department of Fisheries, LKIM, Majlis Perbandaran Klang) and the respective consultants for the EIA, MRA, Hydraulics, Marine Ecology as ell as Marine Traffic and Risk Assessment studies.
b) Household Survey through questionnaires and discussion with the sampled respondents in Kg. Perigi Nenas, Kg. Sungai Kembong, Kg. Teluk Nipah, and Kg Sungai Kurau in Pulau Carey.
c) Four (4) FGDs or stakeholder engagements with the local resident, fishermen and orang asli communities.
d) A dialogue with the penghulu of Pylau Indah and village heads of Kg Perigi Nenas, Kg Teluk Nipah, Kg Telok Gong and representatives of Perkampingan Orang Asli Sg Kurau.
e) Key infor5mat interviews with other stakeholders.

Based on the outcomes of the stakeholder consultations, social survey results and identification of key positive and negative impacts of the Project, the SIMP has been developed as a set pragmatic and implementable best management practices for the Project, as shown in **Tables 6.1**.

Table 6.1: Impact Mitigation and Management Measures

Impact	Rating	Expected Outcome	Mitigation Measure	Project Phase			KPIs	Responsibility	Monitoring Frequency
				Planning	Construction	Operational			
A. SOCIO-ECONOMY AND JOB OPPORTUNITIES **A.1 Emp[loyment and Business Opportunities**									
• Perceived threat to income and livelihood of fishermen	Very High	• To sustain fishermen's income and livelihood • To restore habitats and fish stocks post-reclamation • To establish a mechanism for engagement and conveyance of fishermen's concerns	• Give job priority to the local workforce and younger members from the fishing community • Assist in training and improving skill sets of younger members of the community • Assist fishermen to upgrade boats, engine capacity, fishing gear and safety equipment • Promote recreational fishing and eco-tourism as an emerging area for employment and income generation • Restore habitats post reclamation, i.e. mangrove replanting, fish re-stocking • Set up a special taskforce to spearhead engagement amongst stakeholders • Implement community engagement programs, e.g. dialogues, outreach programs)		✓	✓	• Documentation of fishermen population within ZOI • Quarterly stakeholder engagement of the special taskforce • Yearly monitoring of compliance with EIA and MTRA approval requirements • Job skills training extended to at least 30% of the local community, including fishermen community	• State Government • MP Klang • LKIM • DOF • DoE • Forestry Dept • Project Proponent • Special taskforce	• Interim – 5 years • Census – 10 years

Impact	Rating	Expected Outcome	Mitigation Measure	Project Phase			KPIs	Responsibility	Monitoring Frequency
				Planning	Construction	Operational			
B. LIVEABILITY OF COMMUNITY									
B.1 Access to Infrastructure, Services and Amenities									
• Increased demand on social amenities (e.g. health facilities, places of worship, schools, etc.) • Added pressure to existing infrastructure and utility services due to population increase	Moderate	• To upgrade existing community facilities or provide additional amenities • To improve infrastructure and utility services	• Project Proponent (PP) to engage with the relevant agencies and service providers throughout all phases of the operational stage to facilitate the upgrading or provision of additional facilities and services.		✓	✓	• Implement at least 50% of the facilities planned in RT Klang 2035	• MP Klang • Utility service providers • Education Department • Health Department • BPEN • PP	• Continuous throughout operational phase

Impact	Rating	Expected Outcome	Mitigation Measure	Project Phase			KPIs	Responsibility	Monitoring Frequency
				Planning	Construction	Operational			
B.2 Crime and Safety									
• Concern for personal and community safety due to proximity of foreign workers	High	• To reduce perception of crime and threat to personal or community safety	• Set up a community watch program to control anti-social behaviour and increase local community surveillance program • Implement community engagement programs involving the PP and its contractors and community representatives • Monitor movement of foreign workers by project contractors • Locate worker quarters away from local settlements to minimise contact • Comply with Workers' Minimum Standards of Housing and Amenities (Amendment) Act 2019 (Act 446)		✓	✓	• At least two engagement a year between the PP, its contractors community leaders and local law enforcement agencies throughout all stages of the Project • Maximum reported cases of crime arising from foreign workers not more than 10 per year.	• Project Proponent • Contractors • Port Police • PDRM • Immigration Department • MP Klang • CCC	• Continuous monitoring throughout construction and operational phase

Impact	Rating	Expected Outcome	Mitigation Measure	Project Phase			KPIs	Responsibility	Monitoring Frequency
				Planning	Construction	Operational			
C. SOCIO-CULTURAL PROCESS									
C.1 Social Integration and Social Conflict									
• Potential increase in social conflicts resulting from inflow of non-local workers • Concern over lack of social integration between the local community and non-local workers	Moderate	• To improve social integration and reduce conflicts	• Set up a community watch programme, a collaboration between the PP and his contractors and representative from the community • Implement community engagement programmes (e.g. open discussions, outreach programmes, etc.) • Close monitoring of foreign workers movement by PP's contractors • Locate worker camp/s outside the villages • Provide shops and amenities within the construction site and worker quarters to minimise contact with the locals		✓	✓	• A minimum of 2 meetings between the, PP and his contractors and community representative to be held every year • Maximum reported cases of social conflict not more than 10 cases per year. • Minimum two outreach programs a year	• Project Proponent • Contractors • PDRM • Port Police	• Quarterly throughout construction phase • Annually throughout operational phase.

Impact	Rating	Expected Outcome	Mitigation Measure	Project Phase			KPIs	Responsibility	Monitoring Frequency
				Planning	Construction	Operational			
C.2 Risk Perception in Community									
• Perceived social issues associated with proximity of foreign workers	Moderate	• To improve social integration and reduce conflicts	• Set up a community watch programme to control anti-social behaviour • Implement community engagement programmes and outreach programmes .		✓	✓	• Maximum reported cases of social conflict not more than 10 per year.	• PDRM • CCC • AADK • Immigration Department • Port Police	• Quarterly throughout the construction phase
• Fishermen concern on loss of fishing ground and disruption cause by vessels	Very High	• To provide alternative job opportunities for fishermen group • To initiate habitat recovery and fish re-stocking programmes post-reclamation	• Collaboration between fishermen association with Community Consultative Committee • Promote eco-tourism and recreational fishing as alternative income generator		✓	✓	• CCC engagement twice a year for monitoring and reporting of concerns, progress and further action to be taken	• DOF • LKIM • CCC • MP Klang	• CCC engagement twice a year through construction and operational phase • Continuous monitoring of habitat and fish population recovery programme

Impact	Rating	Expected Outcome	Mitigation Measure	Project Phase			KPIs	Responsibility	Monitoring Frequency
				Planning	Construction	Operational			
C.3 Health									
• Potential public health concern with increase of foreign workers	Moderate	• To initiate health monitoring programs on migrant workers at project site	• Control movement of migrant workers especially foreign workers • Enhance the health monitoring program at project site (on and off working days) and workers quarters • Comply with the Workers' Minimum Standards of Housing and Amenities (Amendment) Act 2019 (Act 446)		✓	✓	• Health monitoring program at project site • Less than 10 cases every month on health problems (i.e. communicable diseases)	• Project Proponent • Contractor • Health Department	• Continuous throughout construction of the Project.

Impact	Rating	Expected Outcome	Mitigation Measure	Project Phase			KPIs	Responsibility	Monitoring Frequency
				Planning	Construction	Operational			
D. IMPACT ON MARINE AND LAND SAFETY **D.1 Land Traffic and Road Safety**									
• Increased movement and volume of container traffic, and public road safety	Very high	• To improve road congestion and management of container vehicular movement • To improve public road safety	• Complete the Pulau Indah Ring Road (PIRR) as an alternative access for container traffic • Separate motorcycle lane along Federal Route 181 • Implement traffic improvement schemes recommended in the TIA for the Project, e.g. signalise priority junctions • Resurface road • Improve non-functioning street lighting • Schedule, monitor and control movement of container vehicles during peak hours		✓	✓	• Reduce 2019 recorded accidents by 30% • Reduce 2019 fatalities by 30%	• JKR • PDRM • MP Klang • Project Proponent	• Continuous monitoring

Impact	Rating	Expected Outcome	Mitigation Measure	Project Phase			KPIs	Responsibility	Monitoring Frequency
				Planning	Construction	Operational			
D. IMPACT ON MARINE AND LAND SAFETY									
D.2 Safety of Fishing Boats									
• Safety of fishermen due to increase in marine traffic	High	• To minimise collision of fishing boats with marine vessels •	• Set up and operationalise the taskforce for the fishermen as a platform for interface and communication between the fishermen and the Project Proponent • Improve safety measures via marker or buoys on sea within project site and port limit		✓	✓	• Marker or buoys to demarcate high risk areas to drop nets • Taskforce for the fishermen to engage every 6 months • Compliance with EIA approval requirements • Compliance with MRA approval requirement • Compliance with Hydraulics approval	• Port Klang Authority • LKIM • Maritime Department • Project Proponent • Fishermen Association	• Continuous throughout construction and operational phase. • Stakeholder engagement twice a year throughout construction and operational phases

6.3 IMPLEMENTATION OF THE SOCIAL IMPACT MANAGEMENT PLAN

This section recommends some pragmatic mechanism to implement the Social Impact Management Plan (SIMP).

6.3.1 Social Impact Assessment Monitoring

The SIA is a management plan to ensure that the existing communities in and around the Project area are not unduly affected. During the construction and operational phases, there will be a lot of workers, foreseen to be migrants, working in the area. The sudden surge in the number of workers may cause fear and anxiety amongst the local communities, which is one of the reasons to develop the SIMP to ensure actions are taken to help avert their concerns. While there is a mechanism to implement the EMP by the DOE; however there is no equivalent mechanism to implement and monitor the SIMP. Social problems are in a way very similar to environment problems. If they are not addressed properly, the problems can be magnified, and the ramifications will be far reaching as we are dealing with people who have different views, opinions and requirements. Therefore, implementation of the Project will require a lot more liaison work.

The monitoring programme itself should be carried out by a qualified person. The frequency and purpose of monitoring social impact mitigations are already proposed in the SIMP. To ensure the SIMP is implemented to the satisfaction of the communities, a mechanism is proposed, in the form of a Consultative Community Committee (CCC), which acts as a platform not only to oversee to the proper implementation of the SIMP, but also to act as a liaison and clearing centre on all complaints and related matters on the social environment and affected society itself. The CCC can also oversee to the proper monitoring of the Project, acts as a first stop centre on all complaints and queries help to set targets on employment, procurement of workers, reference records such as housing statistics, land use data, population statistics and labour records.

Monitoring activities should be communicated to the CCC at the same time as they are communicated to the other relevant government agencies. The CCC members should be given the opportunity to discuss and comment on the preliminary draft of the Annual SIMP Report.

6.3.2 Consultative Community Committee (CCC)

The proposed Project is a significant state and national project. A strong engagement between the Project Proponent, the community and key stakeholders is important to ensure that the community and the key stakeholders are informed of the Project and key issues that may arise during the implementation can be resolved. The Community Consultative Committee (CCC) plays a crucial role by providing a platform for open discussion between representatives of the Project Proponent, the community, the local authority and other key stakeholders.

It must be highlighted, however, that the CCC is not a decision-making or regulatory entity, but takes on merely a consultative or advisory role. The entity has to be set up by the local authority whereby important information can be disseminated to representatives of the local community, and conversely, where the latter can channel their concerns on issues related to their communities' social wellbeing such as the environment, quality of life, safety and potential risks that they may face in respect to the Project.

6.3.3 Setting up the CCC

It is important to recognise that not all significant projects will require a CCC, and that in some cases there may be other ways to ensure there is effective community engagement. Some flexibility is required in the setting up of the CCC. The CCC can be established at different stages of a project. In some cases, this may be during the planning phase of the project to allow for early feedback from the potentially affected stakeholders among the local communities as well as from any other agencies that may have a role to play or interest in the project and/or the affected communities. In other cases, this may occur following the approval or implementation of the project.

The decision to set up the CCC for the proposed Project has to be established by the local authority, i.e. Majlis Perbandaran Klang, in consultation with PLANMalaysia Selangor. Such a decision can be guided by the following considerations:

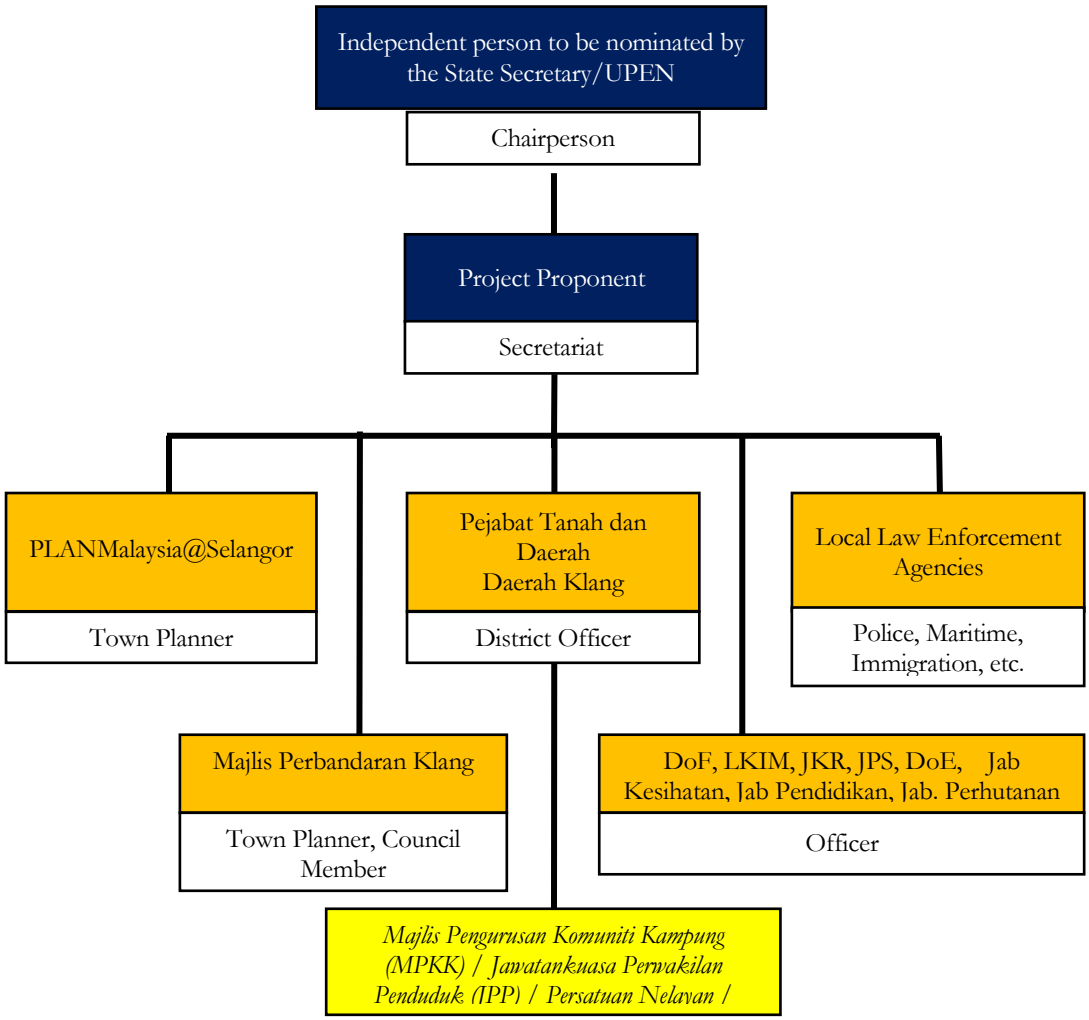
a) The magnitude of the Project and its potential social impact;
b) The level of public interest in the Project;
c) The engagement strategy of the PP; and
d) Whether the formation of the CCC complements any other consultative engagements already undertaken by the local authority and the PP.

6.3.4 Membership of the CCC

The membership of the CCC should include an independent chairperson from the state level, who can be from the state secretary's office or UPEN, with representatives from PLANMalaysia@Selangor, Majlis Perbandaran Klang, DoE Selangor, JKR, Land Office, Jabatan Kesihatan, etc. playing an advisory role. The CCC should also include representatives from the PP, local community (JKKK, JPP, etc.), and other relevant local law enforcement agencies, welfare agencies, etc.

The independent chairperson should be an impartial member with experience in community relations with an understanding of the regulatory requirements set by the State or local council, and act as a moderator during all CCC meetings.

A preliminary chart (**Figure 6.1**) illustrating the membership of the CCC is shown below. It must be reiterated here that this is subject to change.



Source: Adapted from *Manual Penilaian Impak Sosial Bagi Projek Pembangunan (Edisi Ke-2)* PLANMalaysia, 2018

6.3.5 Function of the CCC

As an advisory entity, the main role of the CCC is to act as a bridge between the PP, local communities and governmental agencies within and surrounding the Project area. Specifically, the goals of the CCC are to:

1) Establish a good relationship between the PP and the local community;
2) Allow the PP to keep the local community informed of the Project status of development, while seeking the opinion and views of local community regarding the Project;

3) Respond to concerns and grievances raised by the local community;
4) Allow the local community members to seek information from the PP and provide feedback on the planning, development, and implementation of the Project: and
5) Ensure the local community receives the best social, environmental, and economical outcomes from the Project.

6.4 Monitoring and Reporting Mechanism

The monitoring and reporting mechanism is necessary and important In order to ensure that the recommended mitigations measures are carried out and at the same time, to assess the effectiveness of the mitigation measures and the actual social impact incurred during construction and operation stages.

Following the guidelines from PLANMalaysia's Manual for SIA 2nd Edition 2018, the PP is advised to prepare the SIMP Report on a calendar year basis in tandem with the Annual Environmental Management Report (EMP Report) to allow for comparisons of impacts across disciplines. The annual SIMP Report has to be submitted to the Director of PLANMalaysia@Selangor and Majlis Perbandaran Klang at the stipulated time.

6.5 TASKFORCE FOR THE FISHING COMMUNITY

In addition to the CCC, it is recommended that a special task force or platform, spearheaded by LKIM, is to be formed in collaboration with the PP and representatives from the Persatuan Nelayan and other affected parties connected to the fishing sector. Its role is to:

i) Receive complaints and feedbacks from the impacted fishermen and other affected parties;

ii) Conduct joint activities with the fishermen and the local community;

iii) Conduct engagements with the fishermen and the local community; and

iv) Serves as a contact or 'one-stop' point for all measures in the SIMP that are related to the fishermen group.

For these measures, the PP has to ensure all required actions from the task force will be carried out in a timely and appropriate manner.

No. Siri | | | |

KAJIAN PENILAIAN IMPAK SOSIAL

Westports Phase II Development

Proposed Expansion of Container Terminal CT10 – CT17

and its Associated Works at Westports Pulau Indah Selangor

BORANG SOAL SELIDIK

(KUMPULAN PENDUDUK)

Nama pembanci :_____
Tarikh bancian :_____
No telefon :_____

Nama responden : _____
No.Tel : _____
Alamat : _____

ARAHAN:

1. **Tandakan (/) atau isikan bahagian kosong yang disediakan**

2. **Sebelum mengisi borang berikan penjelasan kepada responden berkenaan projek yang dicadangkan:**

SEGALA MAKLUMAT ADALAH SULIT

RINGKASAN PENGENALAN PROJEK

Westports pada masa kini mengendalikan sebuah pelabuhan kontena di Pulau Indah yang mempunyai sembilan terminal kontena. Untuk memperkekalkan daya saingnya di peringkat global, Westports bercadang untuk mengembangkan pelabuhan yang sedia ada dengan lapan lagi terminal kontena. Pembesaran Westports diperlukan untuk meningkatkan kapasiti dan keupayaan untuk mengendalikan jumlah kontena yang semakin meningkat pada masa depan. Projek yang dicadangkan ini melibatkan pengorekan dan penambakan sebahagian kawasan laut yang terletak di selatan pelabuhan yang sedia ada. Pelaksanaan pelan pengembangan akan mengambil masa 25 tahun.

Sebagai salah satu daripada komuniti yang mungkin mengalami sebarang kesan oleh projek ini, kami menjalankan soal selidik ini untuk mendapatkan pandangan anda mengenai projek ini.

Kami mengalu-alukan kerjasama anda.

Sekian, termia kasih.

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CADANGAN PEMBESARAN WESTPORTS DI PULAU INDAH, SELANGOR

Soal Selidik KETUA ISI RUMAH di Pulau Indah dan Sekitar

Bahagian A: LATAR BELAKANG RESPONDEN

1. Jantina:

   1) Lelaki _____ 2) Perempuan _____

2. Asal Usul Responden:

   a) Orang Tempatan:
   1) Kawasan Pulau Indah (Nyatakan kampong_____)
   2) Kawasan Pulau Carey (Nyatakan kampong _____)
   3) Lain-lain _____

   b) Bukan orang tempatan: _____

3. Umur (tahun):

   1) 17-25 tahun _____ 2) 26-35 tahun _____
   3) 36-55 tahun _____ 4) 56-64 tahun _____
   5) > 65tahun _____

4. Bangsa:

   1) Melayu _____ 2) Cina _____
   3) India _____ 4) Lain-lain _____

5. Pendidikan:

   1) Tiada pendidikan formal _____ 2) Sekolah Rendah _____
   3) STPM, Matrikulasi _____ 4) Sekolah Menengah _____
   5) Kolej/Institut (Diploma) _____ 6) Sarjana Muda dan Ke atas _____

6. Taraf perkahwinan:

   1) Bujang _____ 2) Berkahwin _____
   3) Janda _____ 4) Duda _____

7. Agama:

   1) Islam _____ 2) Hindu _____
   3) Budha _____ 4) Kristian _____
   4) Lain-lain _____

8. Pekerjaan:

1) Kerajaan / Sektor Awam
2) Berniaga Sendiri
3) Syarikat swasta
4) Tidak Bekerja
5) Surirumah
6) Pelajar Kolej / Universiti
7) Pesara
8) Kerja sendiri / Kampung
9) Petani
10) Nelayan Sepenuh Masa _____ **(Jawab Bahagian B dibahagian seterusnya)**
11) Nelayan Separa Masa _____ **(Jawab Bahagian B dibahagian seterusnya)**

(Nyatakan pekerjaan lain atau kerja sampingan sekiranya ada _____)

9. Jangkamasa menetap di kampung:

1) 1 – 5 tahun
2) 6 – 10 tahun
3) 11 – 15 tahun
4) 16 – 20 tahun
5) 21 – 25 tahun
6) 26 tahun ke atas

10. Jarak rumah anda dari kawasan tapak kajian:

1) Kurang dari 3 km _____
2) 3 hingga 5 km _____
3) 5 km dan lebih (Nyatakan _____)

11. Pendapatan ANDA sebulan:

1) < RM1000 _____
2) RM1001 – RM2000 _____
3) RM2001 – RM3000 _____
4) RM 3001- RM 4000 _____
5) RM4001 – RM 5000 _____
6) > RM 5000 _____

12. Pendapatan keluarga sebulan:

1) < RM1000 _____
2) RM1001 – RM2000 _____
3) RM2001 – RM3000 _____
4) RM 3001- RM 4000 _____
5) RM4001 – RM 5000 _____
6) > RM 5000 _____

13 Perbelanjaan Bulanan Isi Rumah:

1) < RM1000 _____
2) RM1001 – RM2000 _____
3) RM2001 – RM3000 _____
4) RM 3001- RM 4000 _____
5) RM4001 – RM 5000 _____
6) > RM 5000 _____

14. Simpanan Bulanan Isi Rumah:

1) < RM100 _____
2) RM101 – RM200 _____
3) RM201 – RM300 _____
4) > RM301 _____
5) Tiada Simpanan _____

15. Nyatakan jenis tempat kediaman/rumah anda?

1) Rumah Kampung _____
2) Teres 1 tingkat _____
3) Teres dua tingkat _____
4) Rumah Pangsa/Apartment _____
5) Rumah Kedai _____
6) Setinggan _____

16) Pemilikan rumah dan keluasan (kaki persegi/kp)

1) Hak Milik Sendiri (_____kp)
2) Sewa _____
3) Lain-lain (Nyatakan) _____

17) Saiz isi keluarga:

1) 1 – 3 orang _____
2) 4 – 6 orang _____
3) 7 – 10 orang _____
4) Lebih daripada 10 orang _____

18) Pemilikan kenderaan dan bilangan:

1) Basikal _____(bil)
2) Motosikal _____
3) Kereta _____
4) Van _____
5) Pacuan 4 roda _____
6) Bas _____

Bahagian B: AKTIVITI NELAYAN (Jika Berkenaan Sahaja)

15. Zon Penangkapan Ikan: (Sila tunjuk dalam Peta yang dilampirkan)
    1) Zon A _____ 2) Zon B _____
    3) Zon C _____ 4) Luar ZON (Nyatakan _____)

16. Tempoh Menjadi Nelayan:
    1) kurang 5 tahun _____ 2) 6-15 tahun _____
    3) 16-25 tahun _____ 4) >26 tahun _____

17. Jenis/Kategori Nelayan:
    1) Nelayan Persisiran Pantai_____ 2) Nelayan Laut Dalam _____
    3) Akuakultur _____ 4) Lain-Lain (_____)

18. Sebab-sebab memilih nelayan sebagai sumber pekerjaan :
    1) Minat _____ 2) Mewarisi pekerjaan keluarga _____
    3) Tiada Pilihan _____ 4) Mengikuti program insentif kerajaan _____

19. Cara Pemasaran Hasil Tangkapan:
    1) Peraih atau Taukeh _____ 2) Sendiri _____
    3) Persatuan nelayan _____ 4) Untuk Kegunaan Sendiri Sahaja _____

20. Berapa hari Anda turun ke laut dalam SEMINGGU:
    1. Musim Tengkujuh _____ hari
    2. BUKAN Musim Tengkujuh _____ hari

21. Namakan Pengkalan Bot anda: _____

22 Cara Penangkapan Ikan: _____

23. Anggaran Perbelanjaan setiap kali turun ke laut: _____

24. Adakah Anda pernah mengalami **KEMALANGAN** bot di laut?
    1) Ya (Nyatakan sebab kemalangan_____
    2) TidaK _____

25. Adakah anda mengahadapi apa-apa **ANCAMAN** ketika menjalankan kerja menangkap ikan di laut?
    1) Ya (Nyatakan bentuk ancaman _____
    2) Tidak _____

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Bahagian C: PENGETAHUAN DAN PERSEPSI TERHADAP PROJEK

26. Adakah anda mengetahui tentang cadangan projek ini?

1) Ya (Nyatakan sumber maklumat _____
2) Tidak _____

27. Apakah reaksi anda berhubung projek berkenaan?

1) Sokong _____ 2) Tidak sokong _____
3) Tidak pasti _____ 4) Tidak peduli _____

28. Jika tidak menyokong terangkan sebab-sebabnya

_____

_____

_____

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Bahagian D: JANGKAAN KESAN SECARA UMUM PENDUDUK MENGENAI KESAN PROJEK

EKONOMI DAN PEKERJAAN	SANGAT TIDAK SETUJU (1)	TIDAK SETUJU (2)	SETUJU (3)	SANGAT SETUJU (4)
1) Akan *menambah peluang pekerjaan*				
2) Akan *menambah peluang pekerjaan sampingan*				
3) Akan *menambah peluang pekerjaan kepada ahli keluarga*				
4) Akan *menambah pendapatan kepada diri sendiri*				
5) Akan *menambah pendapatan kepada ahli keluarga*				
6) Akan *meningkatkan perbelanjaan / kos sara hidup*				
7) Akan *meningkatkan tingkat simpanan kewangan*				
8) Akan *meningkatkan nilai harta tanah*				
9) Akan *meningkatkan kos sewa rumah*				
SOSIAL DAN GAYA HIDUP				
1) Akan menyebabkan *perubahan aktiviti ekonomi* (Contoh, daripada kerja sendiri kepada makan gaji)				
2) Akan *mengubah gaya hidup keluarga*				
3) Akan *menyebabkan masalah keselamatan*				
- pekerja asing				
- pekerja tempatan				
4) Akan *menimbulkan masalah dari segi keagamaan*				
- pekerja asing				
- pekerja tempatan				
5) Akan *menimbulkan permusuhan dikalangan penduduk*				
- pekerja asing				
- pekerja tempatan				
ALAM SEKITAR				
1) Projek *akan merosakkan sumber alam semulajadi*.				
2) Projek akan *menjejaskan kawasan bakau dan kawasan pembiakan ikan di Selat Lumut dan sekitarnya*				
3) Projek *akan menimbulkan masalah pencemaran air di Selat Lumut dan kawasan laut di sekitarnya*				
4) Projek akan menimbulkan masalah penambahan sisa pepejal/sampah				
5) Mempengaruhi aktiviti rekreasi di sekitar kawasan kajian				

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Bahagian E: PANDANGAN PENDUDUK MENGENAI IMPAK PROJEK

Nyatakan **MASALAH SEMASA DI KAWASAN SEKITAR** melalui skala di bawah
[5. Sangat banyak, 4. Banyak, 3. Sederhana, 2. Sedikit, 1. Amat sedikit, 0. Tiada kesan]

Bil.	Kenyataan	Skala Jawapan					
	Lalulintas						
01	Kesesakan lalulintas	0	1	2	3	4	5
02	Banyak kenderaan berat keluar masuk di kawasan ini	0	1	2	3	4	5
03	Kadar kemalangan yang tinggi	0	1	2	3	4	5
04	Keadaan jalan dan persimpangan yang merbahaya dan tidak memuaskan	0	1	2	3	4	5
	Kemudahan Infrastruktur						
05	Jalan rosak dan tidak diselenggara	0	1	2	3	4	5
06	Longkang dan parit tersumbat atau tidak diselenggara	0	1	2	3	4	5
07	Bekalan air yang semakin tidak mencukupi	0	1	2	3	4	5
08	Lambakan sisa pepejal yang tidak terkawal						
	Alam Semulajadi/bencana						
08	Hakisan tanah dan retakan tanah	0	1	2	3	4	5
09	Wabak penyakit dan masalah kesihatan penduduk	0	1	2	3	4	5
10	Bencana alam seperti banjir kilat	0	1	2	3	4	5
11	Peningkatan sisa pepejal / sampah	0	1	2	3	4	5
	Pencemaran						
12	Masalah kebisingan	0	1	2	3	4	5
13	Pencemaran air	0	1	2	3	4	5
14	Pencemaran udara	0	1	2	3	4	5
15	Peningkatan sisa pepejal / sampah	0	1	2	3	4	5
	Aktiviti Nelayan						
16	Kekurangan tempat tangkapan ikan akibat aktiviti pelabuhan	0	1	2	3	4	5
17	Laluan kapal membahayakan bot-bot nelayan	0	1	2	3	4	5

Pada pendapat anda, **KESAN POSITIF** yang dijangka akan berlaku semasa **PROJEK DALAM PERANCANGAN / PEMBINAAN**.
[5. Sangat banyak, 4. Banyak, 3. Sederhana, 2. Sedikit, 1. Amat sedikit, 0. Tiada kesan]

	Ekonomi dan Pekerjaan						
01	Peluang pekerjaan kepada penduduk tempatan	0	1	2	3	4	5
02	Peluang perniagaan di sekitar tapak pembinaan	0	1	2	3	4	5
03	Meningkatkan permintaan perumahan baru	0	1	2	3	4	5
04	Meningkatkan harga sewaan rumah di kawasan sekitar	0	1	2	3	4	5
05	Pembangunan sekitar berkembang	0	1	2	3	4	5
06	Lain-lain:						

Pada pendapat anda, **KESAN NEGATIF** yang dijangka akan berlaku semasa **PROJEK DALAM PERANCANGAN / PEMBINAAN.**
[5. Sangat banyak, 4. Banyak, 3. Sederhana, 2. Sedikit, 1. Amat sedikit, 0. Tiada kesan]

Bil.	Kenyataan	Skala Jawapan					
01	Pencemaran alam sekitar (air, udara, hakisan dsbn) akibat aktiviti pembinaan	0	1	2	3	4	5
02	Masalah kebisingan akibat aktiviti pembinaan	0	1	2	3	4	5
03	Kesesakan dan keselamatan di jalanraya menuju ke kawasan pelabuhan	0	1	2	3	4	5
04	Menjejaskan kawasan paya bakau dan kawasan rekreasi di muara Selat Lumut	0	1	2	3	4	5
05	Meningkatan sisa buangan / pepejal akibat aktiviti pembinaan	0	1	2	3	4	5
06	Mengancam keselamatan nelayan keluar/masuk ke laut	0	1	2	3	4	5
07	Menjejaskan kawasan paya bakau dan kawasan pembiakan ikan di muara Selat Lumut dan sekitarnya	0	1	2	3	4	5
08	Menyukarkan kerja-kerja mendarat/melabuh bot	0	1	2	3	4	5
09	Lain-lain	0	1	2	3	4	5

Pada pendapat anda, **KESAN POSITIF** yang dijangka akan berlaku kepada anda/masyarakat **SELEPAS PROJEK SIAP DIBINA DAN BEROPERASI.**
[5. Sangat banyak, 4. Banyak, 3. Sederhana, 2. Sedikit, 1. Amat sedikit, 0. Tiada kesan]

Bil.	Kenyataan	Skala Jawapan					
01	Taraf hidup penduduk dapat ditingkatkan melalui pembangunan projek ini	0	1	2	3	4	5
02	Migrasi masuk penduduk bukan tempatan di kawasan sekitar	0	1	2	3	4	5
03	Meningkatkan sosio-ekonomi penduduk tempatan	0	1	2	3	4	5
04	Memacu pertumbuhan ekonomi setempat	0	1	2	3	4	5
05	Projek ini memberi manfaat terhadap generasi akan datang	0	1	2	3	4	5
06	Mewujudkan peluang perniagaan baharu	0	1	2	3	4	5
07	Memberi peluang pekerjaan kepada penduduk tempatan	0	1	2	3	4	5
08	Meningkatkan permintaan perumahan baru	0	1	2	3	4	5
09	Meningkatkan nilai hartanah dan potensi pembangunan di kawasan sekitar	0	1	2	3	4	5
10	Meningkatkan harga sewaan rumah di kawasan sekitar	0	1	2	3	4	5
11	Penambahbaikan kemudahan infrasturktur dan utiliti sedia ada disebabkan peningkatan penduduk dan pekerja	0	1	2	3	4	5
12	Mewujudkan penyediaan lebih kemudahan perkhidmatan	0	1	2	3	4	5
13	Mewujudkan menaiktaraf, pengurusan lalu lintas yang lebih cekap, dan pembinaan jalan baru	0	1	2	3	4	5
14	Lain-lain	0	1	2	3	4	5

Pada pendapat anda, **KESAN NEGATIF** yang dijangka akan berlaku kepada anda/masyarakat **SELEPAS PROJEK SIAP DIBINA DAN BEROPERASI.**
[5. Sangat banyak, 4. Banyak, 3. Sederhana, 2. Sedikit, 1. Amat sedikit, 0. Tiada kesan]

Bil.	Kenyataan	Skala Jawapan					
01	Meningkatkan kesesakan jalan raya disebabkan pertambahan kenderaan berat	0	1	2	3	4	5
02	Meningkatkan isu keselamatan dan tahap kemalangan jalan raya disebabkan pertambahan kenderaan berat	0	1	2	3	4	5
03	Meningkatkan pencemaran quality air di perairan kerana minyak dari kapal	0	1	2	3	4	5
04	Meningkatkan kesesakan dan kesibukan lalu lintas di perairan	0	1	2	3	4	5
05	Meningkatkan jumlah pekerja asing dan penduduk bukan tempatan						
06	Kemasukan pekerja asing mungkin meningkatkan masalah sosial (spt kecurian, integrasi dengan penduduk tempatan, kesihatan)	0	1	2	3	4	5

07	Kemasukan lebih ramai orang mungkin menekankan kemudahan dan perkhidmatan sedia ada seperti sekolah, klinik kesihatan, pelupusan sisa, dsbn	0	1	2	3	4	5
08	Meningkatkan kemampuan perrumahan untuk orang tempatan	0	1	2	3	4	5
09	Kemasukan orang luar mungkin mengubah bentuk dan watak kampong-kampong sedia ada	0	1	2	3	4	5
10	Meningkatkan sisa pepejal/sampah di kawasan kampong dan sekitarnya	0	1	2	3	4	5
11	Mewujudkan aktiviti penangkapan ikan secara haram di kawasan larangan pelabuhan	0	1	2	3	4	5
12	Kawasan tangkapan ikan terjejas	0	1	2	3	4	5
13	Akses keluar/masuk kawasan muara selat terhad dan mengancam keselamatan						
14	Kos meningkat disebabkan perlu mencari kawasan tangkapan yang baru	0	1	2	3	4	5
15	Perubahan jarak dan laluan untuk ke kawasan laut	0	1	2	3	4	5
16	Lain-lain	0	1	2	3	4	5

Setelah mengetahui mengenai **KESAN-KESAN POSITIF DAN NEGATIF** yang mungkin berlaku daripada cadangan pembangunan **Projek** ini**,** adakah anda bersetuju sekiranya projek ini dilaksanakan? Nyatakan tahap persetujuan anda.

- ☐ Tidak pasti
- ☐ Tidak bersetuju
- ☐ Amat tidakbersetuju
- ☐ Bersetuju
- ☐ Amat Bersetuju

Bahagian F: PANDANGAN KESELURUHAN

29. Adakah cadangan pembangunan tersebut akan meningkatkan kualiti hidup anda secara keseluruhan?

_____

_____

_____

_____

30. Lain-lain pandangan berhubung cadangan projek tersebut (Jika ada)

_____

_____

_____

_____

TERIMA KASIH ATAS KERJASAMA ANDA

No. Siri | | | |

KAJIAN PENILAIAN IMPAK SOSIAL

Westports Phase II Development

Proposed Expansion of Container Terminal CT10 – CT17

and its Associated Works at Westports Pulau Indah Selangor

BORANG SOAL SELIDIK

(KUMPULAN NELAYAN)

Nama pembanci :_____
Tarikh bancian :_____
No telefon :_____

Nama responden : _____
No.Tel : _____
Alamat : _____

ARAHAN:

1. **Tandakan (/) atau isikan bahagian kosong yang disediakan**

2. **Sebelum mengisi borang berikan penjelasan kepada responden berkenaan projek yang dicadangkan:**

SEGALA MAKLUMAT ADALAH SULIT

RINGKASAN PENGENALAN PROJEK

Westports pada masa kini mengendalikan sebuah pelabuhan kontena di Pulau Indah yang mempunyai sembilan terminal kontena. Untuk memperkekalkan daya saingnya di peringkat global, Westports bercadang untuk mengembangkan pelabuhan yang sedia ada dengan lapan lagi terminal kontena. Pembesaran Westports diperlukan untuk meningkatkan kapasiti dan keupayaan untuk mengendalikan jumlah kontena yang semakin meningkat pada masa depan. Projek yang dicadangkan ini melibatkan pengorekan dan penambakan sebahagian kawasan laut yang terletak di selatan pelabuhan yang sedia ada. Pelaksanaan pelan pengembangan akan mengambil masa 25 tahun.

Sebagai salah satu daripada komuniti yang mungkin mengalami sebarang kesan oleh projek ini, kami menjalankan soal selidik ini untuk mendapatkan pandangan anda mengenai projek ini.

Kami mengalu-alukan kerjasama anda.

Sekian, termia kasih.

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CADANGAN PEMBESARAN WESTPORTS DI PULAU INDAH, SELANGOR

Soal Selidik Nelayan Kawasan Pelabuhan Klang, Kuala Langat dan Pulau Carey

Bahagian A: LATAR BELAKANG RESPONDEN

1. Jantina:

   1) Lelaki _____ 2) Perempuan _____

2. Asal Usul Responden:

   1) Kawasan Pelabuhan Klang (Nyatakan kampong_____)
   2) Kawasan Kuala Langat (Nyatakan kampong _____)
   3) Kawasan Pulau Carey (Nyatakan kampong _____)

3. Umur (tahun):

   1) 17-25 tahun _____ 2) 26-35 tahun _____
   3) 36-55 tahun _____ 4) 56-64 tahun _____
   5) > 65tahun _____

4. Bangsa:

   1) Melayu _____ 2) Cina _____
   3) India _____ 4) Lain-lain _____

5. Pendidikan:

   1) Tiada pendidikan formal _____ 2) Sekolah rendah _____
   3) STPM, Matrikulasi _____ 4) Sekolah menengah _____
   1) Kolej/Institut (Diploma) _____ 6) Sarjana Muda dan Ke atas _____

6. Taraf perkahwinan:

   1) Bujang _____ 2) Berkahwin _____
   3) Janda _____ 4) Duda _____

7. Agama:

   1) Islam _____ 2) Hindu _____
   3) Budha _____ 4) Kristian _____
   4) Lain-lain _____

8. Pekerjaan:

1) Nelayan Sepenuh Masa _____
2) Nelayan Separa Masa (Nyatakan pekerjaan lain atau kerja sampingan sekiranya ada _____)

9. Pemilikan Bot:

1) Pemilik Bot (Nyatakan bilangan bot dimiliki _____)
2) Penyewa Bot _____
3) Sementara (awak-awak) _____
4) Lain-lain (Nyatakan _____)

10. Jarak rumah anda dari kawasan tapak kajian:

1) Kurang dari 3 km _____
2) 3 hingga 5 km _____
3) 5 km dan lebih (Nyatakan _____)

11. Pendapatan ANDA sebulan:

1) < RM1000	_____	2) RM1001 – RM2000	_____
3) RM2001 – RM3000	_____	4) RM 3001- RM 4000	_____
5) RM4001 – RM 5000	_____	6) > RM 5000	_____

12. Pendapatan keluarga sebulan:

1) < RM1000	_____	2) RM1001 – RM2000	_____
3) RM2001 – RM3000	_____	4) RM 3001- RM 4000	_____
5) RM4001 – RM 5000	_____	6) > RM 5000	_____

13 Perbelanjaan Bulanan Isi Rumah:

1) < RM1000	_____	2) RM1001 – RM2000	_____
3) RM2001 – RM3000	_____	4) RM 3001- RM 4000	_____
5) RM4001 – RM 5000	_____	6) > RM 5000	_____

14. Simpanan Bulanan Isi Rumah:

1) < RM100	_____	2) RM101 – RM200	_____
3) RM201 – RM300	_____	4) > RM301	_____
5) Tiada Simpanan	_____		

Bahagian B: AKTIVITI NELAYAN

15. Zon Penangkapan Ikan: (Sila tunjuk dalam Peta yang dilampirkan)
    1) Zon A _____ 2) Zon B _____
    3) Zon C _____ 4) Luar ZON (Nyatakan _____)

16. Tempoh Menjadi Nelayan:
    1) kurang 5 tahun _____ 2) 6-15 tahun _____
    3) 16-25 tahun _____ 4) >26 tahun _____

17. Jenis/Kategori Nelayan:
    1) Nelayan Persisiran Pantai_____ 2) Nelayan Laut Dalam _____
    3) Akuakultur _____ 4) Lain-Lain (_____)

18. Sebab-sebab memilih nelayan sebagai sumber pekerjaan :
    1) Minat _____ 2) Mewarisi pekerjaan keluarga _____
    3) Tiada Pilihan _____ 4) Mengikuti program insentif kerajaan _____

19. Cara Pemasaran Hasil Tangkapan:
    1) Peraih atau Taukeh _____ 2) Sendiri _____
    3) Persatuan nelayan _____ 4) Untuk Kegunaan Sendiri Sahaja _____

20. Berapa hari Anda turun ke laut dalam SEMINGGU:
    1. Musim Tengkujuh _____ hari
    2. Bukan Musim Tengkujuh _____ hari

21. Namakan Pengkalan Bot anda: _____

22 Cara Penangkapan Ikan: _____

23. Anggaran Perbelanjaan setiap kali turun ke laut: _____

24. Adakah Anda pernah mengalami **KEMALANGAN** bot di laut?
    1) Ya (Nyatakan sebab kemalangan_____
    2) TidaK _____

25. Adakah anda mengahadapi apa-apa **ANCAMAN** ketika menjalankan kerja menangkap ikan di laut?
    1) Ya (Nyatakan bentuk ancaman _____
    2) Tidak _____

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Bahagian C: PENGETAHUAN DAN PERSEPSI TERHADAP PROJEK

26. Adakah anda mengetahui tentang cadangan projek ini?

1) Ya (Nyatakan sumber maklumat _____
2) Tidak _____

27. Apakah reaksi anda berhubung projek berkenaan?

1) Sokong _____ 2) Tidak sokong _____
3) Tidak pasti _____ 4) Tidak peduli _____

28. Jika tidak menyokong terangkan sebab-sebabnya

_____

_____

_____

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Bahagian D: JANGKAAN KESAN SECARA UMUM PENDUDUK MENGENAI KESAN PROJEK

EKONOMI DAN PEKERJAAN	**SANGAT TIDAK SETUJU (1)**	**TIDAK SETUJU (2)**	**SETUJU (3)**	**SANGAT SETUJU (4)**
1) Akan *menambah peluang pekerjaan*				
2) Akan *menambah peluang pekerjaan sampingan*				
3) Akan *menambah peluang pekerjaan kepada ahli keluarga*				
4) Akan *menambah pendapatan kepada diri sendiri*				
5) Akan *menambah pendapatan kepada ahli keluarga*				
6) Akan *meningkatkan perbelanjaan / kos sara hidup*				
7) Akan *meningkatkan tingkat simpanan kewangan*				
8) Akan *meningkatkan nilai harta tanah*				
9) Akan *meningkatkan kos sewa rumah*				
SOSIAL DAN GAYA HIDUP				
1) Akan menyebabkan *perubahan aktiviti ekonomi* (Contoh, daripada kerja sendiri kepada makan gaji)				
2) Akan *mengubah gaya hidup keluarga*				
3) Akan *menyebabkan masalah keselamatan*				
- pekerja asing				
- pekerja tempatan				
4) Akan *menimbulkan masalah dari segi keagamaan*				
- pekerja asing				
- pekerja tempatan				
5) Akan *menimbulkan permusuhan dikalangan penduduk*				
- pekerja asing				
- pekerja tempatan				
ALAM SEKITAR				
1) Projek *akan merosakkan alam semulajadi*.				
2) Projek akan *menjejaskan kawasan bakau dan kawasan pembiakan ikan di Selat Lumut dan sekitarnya*				
3) Projek *akan menimbulkan masalah pencemaran air di Selat Lumut dan kawasan laut di sekitarnya*				

Bahagian E: PANDANGAN NELAYAN MENGENAI IMPAK PROJEK

Nyatakan **MASALAH SEMASA DI KAWASAN SEKITAR** melalui skala di bawah
[5. Sangat banyak, 4. Banyak, 3. Sederhana, 2. Sedikit, 1. Amat sedikit, 0. Tiada kesan]

Bil.	Kenyataan	Skala Jawapan					
	Lalulintas						
01	Kesesakan lalulintas	0	1	2	3	4	5
02	Banyak kenderaan berat keluar masuk di kawasan ini	0	1	2	3	4	5
	Kemudahan Infrastruktur						
03	Jalan rosak dan kotor	0	1	2	3	4	5
04	Longkang dan parit tersumbat	0	1	2	3	4	5
05	Gangguan bekalan air dan bekalan elektrik	0	1	2	3	4	5
	Alam Semulajadi/bencana						
06	Terdapat hakisan tanah dan retakan tanah	0	1	2	3	4	5
07	Wabak penyakit dan masalah kesihatan penduduk	0	1	2	3	4	5
08	Bencana alam seperti banjir kilat	0	1	2	3	4	5
	Pencemaran						
09	Masalah kebisingan	0	1	2	3	4	5
10	Pencemaran air	0	1	2	3	4	5
11	Pencemaran udara	0	1	2	3	4	5
	Aktiviti Nelayan						
12	Kehadiran Nelayan Asing	0	1	2	3	4	5
13	Kekurangan tempat tangkapan ikan akibat aktiviti pelabuhan	0	1	2	3	4	5
14	Laluan kapal membahayakan bot-bot nelayan	0	1	2	3	4	5

Pada pendapat anda, **KESAN POSITIF** yang dijangka akan berlaku semasa **PROJEK DALAM PERANCANGAN / PEMBINAAN.**
[5. Sangat banyak, 4. Banyak, 3. Sederhana, 2. Sedikit, 1. Amat sedikit, 0. Tiada kesan]

	Ekonomi dan Pekerjaan						
01	Peluang pekerjaan kepada penduduk sekitar	0	1	2	3	4	5
02	Peluang perniagaan di sekitar tapak pembinaan	0	1	2	3	4	5
03	Kualiti hidup yang lebih baik	0	1	2	3	4	5
04	Nilai hartanah meningkat	0	1	2	3	4	5
05	Pembangunan sekitar berkembang	0	1	2	3	4	5
	Lain-lain:						

Pada pendapat anda, **KESAN NEGATIF** yang dijangka akan berlaku semasa **PROJEK DALAM PERANCANGAN / PEMBINAAN.**
[5. Sangat banyak, 4. Banyak, 3. Sederhana, 2. Sedikit, 1. Amat sedikit, 0. Tiada kesan]

Bil.	Kenyataan	Skala Jawapan					
01	Lambakan kapal-kapal pembinaan di muara Selat Lumut dan kawasan tambakan	0	1	2	3	4	5
02	Menjejaskan tempat tangkapan ikan disebabkan laluan di perairan terhad	0	1	2	3	4	5
03	Pencemaran alam sekitar (air, bunyi, udara)	0	1	2	3	4	5
04	Masalah kebisingan akibat aktiviti pembinaan	0	1	2	3	4	5
05	Mengancam keselamatan nelayan keluar/masuk ke laut	0	1	2	3	4	5
06	Menjejaskan kawasan bakau dan kawasan pembiakan ikan di muara Selat Lumut dan sekitarnya	0	1	2	3	4	5
07	Menyukarkan kerja-kerja mendarat/melabuh bot	0	1	2	3	4	5
08	Kawasan ternakan ikan/aktiviti akuakultur terancam	0	1	2	3	4	5
09	Kesesakan jalanraya menuju ke kawasan pelabuhan	0	1	2	3	4	5
10	Lain-lain						

Pada pendapat anda, **KESAN POSITIF** yang dijangka akan berlaku kepada anda/masyarakat **SELEPAS PROJEK SIAP DIBINA DAN BEROPERASI.**
[5. Sangat banyak, 4. Banyak, 3. Sederhana, 2. Sedikit, 1. Amat sedikit, 0. Tiada kesan]

Bil.	Kenyataan	Skala Jawapan					
01	Taraf hidup penduduk dapat ditingkatkan melalui pembangunan projek ini	0	1	2	3	4	5
02	Migrasi masuk penduduk	0	1	2	3	4	5
03	Meningkatkan sosio-ekonomi penduduk tempatan	0	1	2	3	4	5
04	Meningkatkan pertumbuhan penduduk di kawasan sekitar	0	1	2	3	4	5
05	Projek ini memberi manfaat terhadap generasi akan datang	0	1	2	3	4	5
06	Memacu pertumbuhan ekonomi setempat	0	1	2	3	4	5
07	Memberi peluang pekerjaan kepada penduduk tempatan	0	1	2	3	4	5
08	Meningkatkan nilai hartanah	0	1	2	3	4	5
09	Meningkatkan harga sewaan rumah di kawasan sekitar	0	1	2	3	4	5
10	Mewujudkan peluang perniagaan baharu	0	1	2	3	4	5
11	Meningkatkan permintaan perumahan baru	0	1	2	3	4	5
12	Meningkatkan kemudahan pengangkutan	0	1	2	3	4	5
13	Meningkatkan kemudahan infrastruktur sedia ada	0	1	2	3	4	5
14	Lain-lain:						

Pada pendapat anda, **KESAN NEGATIF** yang dijangka akan berlaku kepada anda/masyarakat **SELEPAS PROJEK SIAP DIBINA DAN BEROPERASI.**
[5. Sangat banyak, 4. Banyak, 3. Sederhana, 2. Sedikit, 1. Amat sedikit, 0. Tiada kesan]

Bil.	Kenyataan	Skala Jawapan					
01	Meningkatkan kesesakan jalan raya disebabkan pertambahan penduduk bila aktiviti bandar beroperasi	0	1	2	3	4	5
02	Meningkatkan pencemaran udara dan bunyi bising	0	1	2	3	4	5
03	Meningkatkan kesesakan dan kesibukan lalu lintas di perairan	0	1	2	3	4	5
04	Meningkatkan jumlah pekerja asing dan penduduk bukan tempatan	0	1	2	3	4	5
05	Meningkatkan masalah sosial (spt kecurian)	0	1	2	3	4	5

06	Mewujudkan aktiviti penangkapan ikan secara haram di kawasan larangan pelabuhan	0	1	2	3	4	5
07	Kawasan tangkapan ikan terjejas	0	1	2	3	4	5
08	Akses keluar/masuk kawasan muara selat terhad dan mengancam keselamatan						
09	Kos meningkat disebabkan perlu mencari kawasan tangkapan yang baru	0	1	2	3	4	5
10	Perubahan jarak dan laluan untuk ke kawasan laut	0	1	2	3	4	5
11	Lain-lain:						

Setelah mengetahui mengenai **KESAN-KESAN POSITIF DAN NEGATIF** yang mungkin berlaku daripada cadangan pembangunan **Projek** ini, adakah anda bersetuju sekiranya projek ini dilaksanakan? Nyatakan tahap persetujuan anda.

- ☐ Tidak pasti
- ☐ Tidak bersetuju
- ☐ Amat tidakbersetuju
- ☐ Bersetuju
- ☐ Amat Bersetuju

Bahagian F: PANDANGAN KESELURUHAN

29. Adakah cadangan pembangunan tersebut akan meningkatkan kualiti hidup anda secara keseluruhan?

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30. Lain-lain pandangan berhubung cadangan pembangunan industri tersebut (Jika ada)

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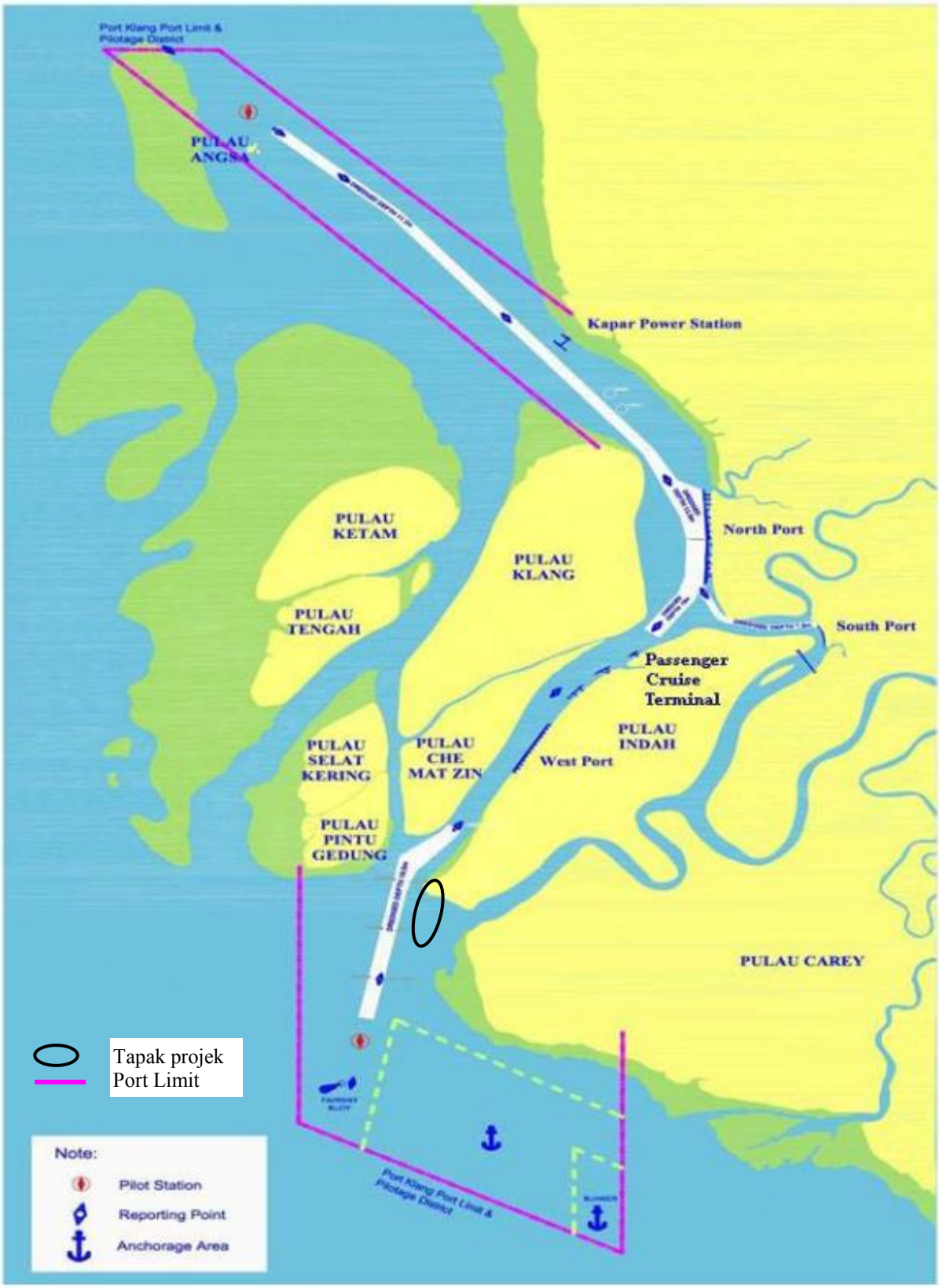
SEKIAN TERIMA KASIH



Lokasi Tapak Projek di Pulau Indah, Kawasan Laut disekitarnya dan Kawasan Had Pelabuhan Klang
(Sumber: Port Klang Malaysia Marine Information Handbook, 4th Edisi 2016)

SMHB Engineering Sdn Bhd 167729-A
38, Jalan 1/76D, Desa Pandan, 55100 Kuala Lumpur, Malaysia | tel: 603-9281 1122 fax: 603-9281 1199 | email: smhbkl@smhb.com website: www.smhb.com

WESTPORTS PHASE II DEVELOPMENT

PROPOSED EXPANSION OF CONTAINER TERMINAL CT10 - CT17 AND ITS ASSOCIATED WORKS AT WESTPORTS PULAU INDAH, SELANGOR DARUL EHSAN

Focus Group Engagement

Venue: Balai Raya Kampung Perigi Nenas
Date: 18 January 2020
Time: 11:00 am

Attendance List

Bil	Nama	Nama Agensi / ~~Kedudukan~~ Jawatan	No. Telefon	Tandatangan
1	LT.(B) Mohd Fauzi Othman	Ketua Kampung Perigi Nenas	019-5595571	
2	~~AZMIZAM~~ ZAMAN HURI	~~ADUN N46~~ PELABUHAN KLANG	019-2210278	
3	Shamsul Aff Abdul Wasir	Westports	0123950305	
4	Navinraj Naidu	Westports	014-3332209	
5	RAHIMAH BT MAT HANIPIAH	BIRO PERIGI NENAS	012-3989277	
6	SITI SAWALIAH SHAOR	BIRO PERIGI NENAS	011 27265875	
7	SAADAH BT AHMAD	BIRO PERIGI NANAS	018 2297376	
8	NOOR AZIZAH BT NORDIN	BIRO PERIGI NENAS	0113126304-7	
9	NORAZITA ABDUL RAHMAN	BIRO PERIGI NENAS	0126301034	
10	RUZAINI BT ABDULLAH	BIRO EKONOMI	019-2695571	
11	AHMAD FAIZ ~~FAIZ~~ B. M. KAMIL	~~KETUA KAMPUNG~~ SUNGAI LUMUT	014-9221193	
12	NOOR WAIDA TOROF	BIRO MPKK P. NANAS	011-27173578	
13	MD ZAINOL FAIZULLAH B. HYAB	S/U MPKK PERIGI NENAS	019 2034396	

SMHB Engineering Sdn Bhd 167729-A
36, Jalan 1/76D, Desa Pandan, 55100 Kuala Lumpur, Malaysia | tel: 603-9281 1122 fax: 603-9281 1199 | email: smhbkl@smhb.com website: www.smhb.com

WESTPORTS PHASE II DEVELOPMENT

PROPOSED EXPANSION OF CONTAINER TERMINAL CT10 - CT17 AND ITS ASSOCIATED WORKS AT WESTPORTS PULAU INDAH, SELANGOR DARUL EHSAN

Focus Group Engagement

Venue: Balai Raya Kampung Perigi Nenas
Date: 18 January 2020
Time: 11:00 am

Attendance List

Bil	Nama	Nama Agensi / Kedudukan	No. Telefon	Tandatangan
14	MOHD ZAHRIN BIN MAT PAZIL	BIRO PERIGI NENAS	014-6469229	
15	Mohammad Ameer Shafik B. Mokiddi	PA YB AZMIZAM	017-2661349	
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WESTPORTS PHASE II DEVELOPMENT
PROPOSED EXPANSION OF CONTAINER TERMINAL CT10 - CT17 AND ITS ASSOCIATED WORKS AT WESTPORTS PULAU INDAH, SELANGOR DARUL EHSAN

Focus Group Engagement

Tempat: Pejabat Persatuan Nelayan Kawasan Kuala Langat
Lot 1362, Jalan Morib, Kg Tongkah, Banting
Tarikh: 28 Februari 2020
Masa: 10:00 pagi – 1:00 petang

Senarai Peserta

	Nama	Nama Agensi / Pengkalan / Jawatan	No. Telefon	Tandatangan
1	NORASIKIN ABD CATIF	Pengkalan Kelanang	0176132670	
2	CHIM SUN HWA	Pengkalan Kelanang	0132265775	
3	DAIMAN BIN PERON	Pengkalan Pulau Ceres	-	
4	MOHD ZAINURIN	P. Kg BANDAR	-	
5	ZAMZAMISMAIL	KELANANG		
6	SAMSUDDIN B SARIYO	KG BANDAR		
7	ABDUL RAHMAN BIN ALI	KELANANG		
8	Anuar Mohd Shukib	Sijangkang	019-6339851	
9	MOHD AZMAN TALIAH	SIJANGKANG	0193643544	
10	DEGU ANAK SAGAP	SG Judah P-Carey	0193567426	
11	HAMIRUDDIN ZAINAL ABIDIN	PERMOTANG PASIR	0173050506	
12	ZAIRUL KAMEL B. YUSOF	P. PORIK.	016-9162666	
13	Muralee a/l Rangamuthu	Tongkah	016-2228344	

WESTPORTS PHASE II DEVELOPMENT
PROPOSED EXPANSION OF CONTAINER TERMINAL CT10 - CT17 AND ITS ASSOCIATED WORKS AT WESTPORTS PULAU INDAH, SELANGOR DARUL EHSAN

Focus Group Engagement

Tempat: Pejabat Persatuan Nelayan Kawasan Kuala Langat
Lot 1362, Jalan Morib, Kg Tongkah, Banting
Tarikh: 28 Februari 2020
Masa: 10:00 pagi – 1:00 petang

Senarai Peserta

	Nama	Nama Agensi / Pengkalan / Jawatan	No. Telefon	Tandatangan
1	MAJANI MASROM	TONGKAH KBTNKS	0183270259	
2	PGB/AH MOHAMMAD	AJK	017-3075740 3054	
3	[illegible]	TANJONG KALE	013-3738952	
4	JANUSA M/L LAYON	Pulau CAREY	016-4191417	
5	MUHD SHAHRIR B. SHAARANI	DOF, Klang	012-2922015	
6	M DASHALINNI A/P MOHAN	DOF, KUALA LANGAT/SEPANG	018-7604506	
7	Mohd Firdaus Mahadzir	PPNK K. LANGAT	012-6469081	
8	Dr Harinder Rai Singh	UiTM, Shah Alam	0122877104	
9	Mohd Jaman Haris	PPNK K.Langat	0169665557	
10	Tang Yg-San	SMHB		
11	[illegible]	SMHB		
12	MOHD KHAIRI RASAN	P. PASIR	013-6656293	
13				

WESTPORTS PHASE II DEVELOPMENT
PROPOSED EXPANSION OF CONTAINER TERMINAL CT10 - CT17 AND ITS ASSOCIATED WORKS AT WESTPORTS PULAU INDAH, SELANGOR DARUL EHSAN

Focus Group Engagement

Tempat: Kompleks JKKK Perigi Nenas
Pulau Indah
Tarikh: 02 Mac 2020
Masa: 10:00 pagi – 1:00 petang

Senarai Peserta

	Nama	Nama Agensi / Pengkalan / Jawatan	No. Telefon	Tandatangan
1	MOHD JULKARNAIN BIN ALIHAFASH	PEG. DAERAH/ TANAH KLANG	012 9236757	
2	MOHD FAUZI BIN OTHMAN	KETUA KAMPUNG PERIGI NANAS	019-3575371	
3	Azman b. Samdin	Ketua Kg. Telok Nipah	014-2609902	
4	TUAN ZARIF AIMAN B. TUAN HALIM	Westports Malaysia	014-5187556	
5	Rosli bin Ismail	Kg Ketua Kampung Telak Gang	013-2056336	
6	AZMI			
7	KAMAL-B-AJIL			
8	GANDI ONAN-TIGA			
9	Mohd Zahrin Mat Pala	MPKK Perigi Nenas	014-6469229	
10	IMPOI AHMAD	MPKK P. NENAS		
11	RAUDAH BT MAT HANIPIAH	MPKK P. NENAS	012-3989277	
12	RUZAINI BT ABDULLAH	P. NENAS	019-2695371	
13	NORFARAH BT LAKIM	MPKK TELOK NIPAH	014-7174703	

Focus Group Engagement

Tempat: Kompleks JKKK Perigi Nenas
Pulau Indah
Tarikh: 02 Mac 2020
Masa: 10:00 pagi – 1:00 petang

Senarai Peserta

	Nama	Nama Agensi / Pengkalan / Jawatan	No. Telefon	Tandatangan
14	SARIMAH MAT NOH	MPKK TELUK NIPAH	017-6998054	
15	HJH MAIMUNAH BT BORHAN	"	-	
16	HJH JAMILAH BT BORHAN	"	019-3097192	
17	RAKIP ANAK BABA	KOA. Sg. Kurau P. Carey	-	
18	ROSLAN ANAK SAHIL	"		
19	JAMAL ANAK PUKAR	"		
20	LANUZA A/L LAZON	KOA. Sg. Kurau P. Carey	01[illegible]-4191417	
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WESTPORTS PHASE II DEVELOPMENT

PROPOSED EXPANSION OF CONTAINER TERMINAL CT10 - CT17 AND ITS ASSOCIATED WORKS AT WESTPORTS PULAU INDAH, SELANGOR DARUL EHSAN

Focus Group Engagement

Tempat: Pejabat Persatuan Nelayan Kawasan Pelabuhan Klang
Jalan Aur, Klang
Tarikh: 06 Mac 2020
Masa: 9:30 pagi – 12:00 petang

Senarai Peserta

	Nama	Nama Agensi / Pengkalan / Jawatan	No. Telefon	Tandatangan
1	TANBEH TASLIM	K. PENGKALAN - sg. udang.		[signature]
2	SUNYI BIN INCHI	K. PENGKALAN - pulau indah orang asli		[signature]
3	Ahmad Long Mat	s/u PKIn - sg. udang.		[signature]
4	AZAMAN BIN MUHAMAD	K.P PERAJURIT		[signature]
5	IBRAHIM YAAKUB	P. Ka. PENDAMAR		[signature]
6	mohd Solah B. mustapha	Pejabat Perikanan Daerah Klang.		[signature]
7	Adnan Kamis	ALP. Ahli lembaga pengarah, Teluk Gedong		[signature]
8	MUHAMMAD ALIF Bin ABD AZIZ	LKIM		[signature]
9	ADLI B. HAMDAN	PNK PK.		[signature]
10	SHAMSUDDIN B. IBRAHIM	PNK PK		[signature]
11	BADLI B. SALEH	PENGERUSI P.N.K - Jalan Langat		[signature]
12	Tan Yee Noon	SMHB.		[signature]
13	Dr Hamidar	SMHB/UiTM		[signature]

MD ISA — PANGKALAN SG KEMBONG — [signature]

Focus Group Engagement

Tempat: Pejabat Persatuan Nelayan Kawasan Pelabuhan Klang
Jalan Aur, Klang
Tarikh: 06 Mac 2020
Masa: 9:30 pagi – 12:00 petang

Senarai Peserta

	Nama	Nama Agensi / Pengkalan / Jawatan	No. Telefon	Tandatangan
14	Mohamad Firdaus	SAHR / UTM		
15	Dr. Gobi	SAHR / UTM		
16				
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WESTPORTS PHASE II DEVELOPMENT

PROPOSED EXPANSION OF CONTAINER TERMINAL CT10 - CT17 AND ITS ASSOCIATED WORKS AT WESTPORTS PULAU INDAH, SELANGOR DARUL EHSAN

Focus Group Engagement

Tempat: ~~Kompleks JKKK Perigi Nenas~~ Jeti Perkampungan Orang Asli Sg. Kurau
~~Pulau Indah~~ Pulau Carey
Tarikh: ~~02 Mac 2020~~ 13 March 2020
Masa: 10:00 pagi – 1:00 petang

Senarai Peserta

	Nama	Nama Agensi / Pengkalan / Jawatan	No. Telefon	Tandatangan
1	M.DASHALINNI A/P MOHAN	DOF SELANGOR	018-7604606	
2	NENKA ANAK MAT ~~NENKA~~	BATIN SG. KURAU		
3	NURAMALI FAKRULLAH	JAKOA KUALA LANGAT	012-6770775	
4	DALMAN BIN PEROU	TOK BATIN		
5	KAMET A/L KADIR	A Buati =	—	
6	ECOL BIN TAKA			
7	MOHD RUKAOS B. MUSA			
8	MOHD FARDAOS BIN ROMLI		0166327453	
9	RAKEI ANAK BARA			
10	SHARIP BIN KATAN			
11	RAZALI BIN	BRAHIM		
12	MUKIM			
13	Ramani			
14	Kidol BIN Nempin			
15	JAMIL BIN kamal		013-4303728	
16	RAMLAN BIN NENGKAK			

17	Razia anak Aris			
18	TABO ANAK MAT			
19	Lingau Anak Mam			
20	AHANAKBOKOU			
21	SAMSUDIN BIN ATAN			
22	SELI			
23	JAMIL BIN EMPING			
24	SUZAZA BIN MANAN			
25	SIDI BIN SAMSUDDIN			
26	SUBBET ANAK PERAT			
27	UANAPI BIN RAHATAN			
28	Sahim Bin Sudam			
29	RAS BIN SHAMSUDDIN			
30	IZAM A/BABA			
31	KAMAL A/L TABA			
32	MOHD AJA BIN OLYOK			
33	ZAINAL ANAK KELANG			
34	ALI ANAK KELANG			
35	NEMENG-BINKUTAN			
36	Ali			
37	AMRAN ANAK MAN			
38	DENGeli Bin Johan			
39	AZN			
40	JABON			
41	Batai			
42	EKHETNOT			
43	ATAN KATANG			
44	Li Bin Jonan			
45	Bahi anak - katan			
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WESTPORTS PHASE II DEVELOPMENT

PROPOSED EXPANSION OF CONTAINER TERMINAL CT10 - CT17 AND ITS ASSOCIATED WORKS AT WESTPORTS PULAU INDAH, SELANGOR DARUL EHSAN

Focus Group Engagement

Tempat: ~~Kompleks JKKK Perigi Nenas Pulau Indah~~ Jeti Perkampongan Orang Asli Sg. Kurau Pulau Carey

Tarikh: ~~02 Mac 2020~~ 13 March 2020.

Masa: 10:00 pagi – 1:00 petang

Senarai Peserta

	Nama	Nama Agensi / Pengkalan / Jawatan	No. Telefon	Tandatangan
1	Sungi bin Inchi	810118-10-5671	018-2357258	Sungi
2	Intan bin Ipindik	600120-10-6539	011-11398670	Intan
3	Degu Anak Sagap	580920-10-5849	0198568426	
4	Hassan B. Jaba	661205-10-6289	"	
5	AMIRUL ADLI BIN MOHD KHAIRI	940614-08-6761	010-4648865	
6	ANUAR BIN ATAN	-	-	
7	GHANI BIN ANI	-	-	
8	CIPRE ~~CIPRE~~ CIP BIN YUSOF	-	-	
9	MALIK BIN GHANDI	-	-	
10	YUSNI BIN AJIL	-	-	
11	yusini	-	-	
12	BABA	-	-	
13	yusop	-	-	
14	kamal			
15	KHAIRUL	-	-	
16	Aridin	-	-	

17	ARIS BIN JOHAN	911208-10-6507	—	
18	MOHAMAD RAZALI KAMAL	920507-10-5091	—	
19	AMIR BIN GANI	930418-10-6015	—	
20	ISAM BIN RAMAT	810627-10-6013	—	
21	JURI ANAK NGOO	790204-10-5197	—	
22	KAMALUZAMAN	830823-10-5915	—	
23	JEFRI AKAC MAN	891219-10-5213	—	
24	JELI BIN INCHI	781[illegible]	—	
25	ARISAM BIN ATAN	870829-13-5321	—	
26	JAMALI BIN JOHAN	990422-10-6127		
27	SUHAIDAI BT NENENG	010701-10-0872		
28	ATAN BIN JAMIL	630428-10-7949		
29	NORDIN ANAK JOHAN	841008-10-6093		
30	JEFRI BIN UDIN	861216-13-6319		
31	KANGKO ALI HASAN	000704-10-2583		
32	HAZRIMIN IKMAL BIN HASSAN	971227-10-6419	—	
33	M. SHAFIQZAN IKMAL BIN HASSAN	980506-10-6311	—	
34	ARZAM BIN ATAN	010814-10-0623	—	
35	RORAZI ANAK ECOL	000604-10-0337		
36	Haizol ANAK UDIN		—	
37	DENGER ALI JOHAN	861025-10-5023		
38	LANUZA @ L LAYON	741026-10-5061		
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