

Environmental Impact Assessment (First Schedule)

“CADANGAN PEMBANGUNAN BERCAMPUR (KEDIAMAN DAN KOMERSIAL) DI ATAS LOT-LOT 295-306, 308, 309, 424, 425 & 3194-3196 MUKIM 6 & LOT-LOT 113, 114, 157, 174, 1276-1279, 1297, 1302, 6388, 6389, 6391, 6392 & 20564, MUKIM 7, DAERAH SEBERANG PERAI SELATAN, PULAU PINANG”

PROJECT OVERVIEW

SCIENTEX (SKUDAI) SDN BHD intends to develop mixed-development (residential and commercial) along with related infrastructure and community facilities on Lots 295-306, 308, 309, 424, 425 & 3194-3196 Mukim 6 & Lots 113, 114, 157, 174, 1276-1279, 1297, 1302, 6388, 6389, 6391, 6392 & 20564, Mukim 7, Daerah Seberang Perai Selatan, Pulau Pinang. The development will span approximately 684.678 acres (277.08 hectares)

LEGAL REQUIREMENT

First Schedule

- Prescribed Activity 16 - Housing**
Housing development covering an area of 50 hectares or more.
- Prescribed Activity 18 – New Township**
Construction of new township consisting of 2,000 housing accommodation units or more or covering an area of 100 hectares or more)

EXISTING LAND USE

- Agricultural
- Draft Local Plan for Seberang Perai District 2030 (DRSTP, 2030) - **Blok Perancangan Kecil (BPS4 – Sg. Bakap-Valdor** and **BPS5 – Jawi-Kg. Besar**, which are zoned for Agricultural

REZONING

- Rezoning application from Agricultural Area to **Kawasan Keutamaan Pembangunan 1 (KPP 1)** has been approved by PlanMalaysia@Penang through the State Planning Committee Meeting No. 9/2024 held on 21st October 2024 (Ref. No: JPBD/P6/LS – 017/2024, 21 November 2024)
- Officially approved by Mesyuarat Majlis Kerajaan Negeri (MMKN) (Ref. No: JPBD/P6/LS-017/2024, 7 May 2025)

ACCESSIBILITY

- Jalan Kerian Kedah (P161) & Jalan Kampung Padang (K134)

PROJECT COMPONENTS



PETUNJUK PELAN INDUK	UNIT	%	EKAR	HEKTAR	MPS	%
A. PERUMAHAN						
(i) RUMAH HARGA BEBAS						
RT2 RUMAH TERES 2 (18' x 65') - 2 TINGKAT	6,780	62.98	195.948	79.297	792.973.34	28.62
JUMLAH (i)	6,780	62.98	195.948	79.297	792.973.34	28.62
(ii) KEMAJUAN MASA HADAPAN (KMH)						
PLOT 1 - PERUMAHAN HARGA BEBAS	225	2.09	16.061	6.500	64.996.55	2.35
PLOT 2 - PERUMAHAN HARGA BEBAS	688	6.39	47.749	19.323	193.233.33	6.97
RMKU PLOT 1 - PERUMAHAN RUMAH MUTIARAKU (RMKu) (PERUMAHAN BERTINGKAT)	1,712	15.90	18.306	7.408	74.081.75	2.67
RMKU PLOT 2 - PERUMAHAN RUMAH MUTIARAKU (RMKu) (PERUMAHAN BERTINGKAT)	1,360	12.63	14.525	5.878	58.780.21	2.12
JUMLAH KECIL (ii)	3,985	37.02	96.641	39.109	391.092.21	14.11
JUMLAH KECIL A	10,765	100.00	292.589	118.407	1,184,065.55	42.73
B. PERNIAGAAN						
(i) KOMERSIL						
KP2 KEDAI PEJABAT (22'x70') - 2 TINGKAT	161	100.00	6.017	2.435	24,349.93	0.88
JUMLAH (i)	161	100.00	6.017	2.435	24,349.93	0.88
(ii) KEMAJUAN MASA HADAPAN						
PLOT KOMERSIL (KMH)	4	-	24.213	9.799	97,986.52	3.54
JUMLAH (ii)	4	-	24.213	9.799	97,986.52	3.54
JUMLAH KECIL B	165	-	30.230	12.234	122,336.46	4.42
C. KAWASAN LAPANG & LANSKAP						
KL KAWASAN LAPANG	-	-	74.184	30.021	300,211.97	10.83
LANSKAP KEJUR / LEMBUT	-	-	5.064	2.049	20,493.28	0.74
KH KAWASAN HIJAU / CERUN	-	-	1.949	0.789	7,887.32	0.28
JUMLAH KECIL C	-	-	81.197	32.859	328,592.57	11.86
D. KEMUDAHAN AWAM DAN INFRASTRUKTUR						
D DEWAN	4	-	2.135	0.864	8,640.04	0.31
S SURAU	2	-	2.580	1.044	10,440.89	0.38
M MASJID	1	-	5.890	2.384	23,835.98	0.86
TAPAK PASAR BASAH	1	-	5.120	2.072	20,719.90	0.75
TAPAK SEKOLAH	2	-	8.000	3.237	32,374.85	1.17
PPU PENCAWANG PEMBAHAGI UTAMA (45M x 45M)	2	-	1.000	0.405	4,046.86	0.15
CS PENCAWANG ELETRIK JENIS PADAT (6.0M x 3.0M)	19	-	0.171	0.069	692.01	0.02
PE PENCAWANG ELETRIK JENIS SATU RUANG (15.24M x 15.24M)	29	-	1.653	0.669	6,689.45	0.24
PE PENCAWANG ELETRIK JENIS DUJA RUANG	1	-	0.081	0.033	327.80	0.01
MENARA TELEKOMUNIKASI (1M x 1M & 5M x 5M)	25	-	0.150	0.061	607.03	0.02
TA TANGKI AIR	1	-	2.746	1.111	11,112.67	0.40
STP LOJI RAWATAN KUMBAHAN	1	-	3.824	1.548	15,475.18	0.56
KTA KAWASAN TADAHAN AIR	6	-	36.810	14.896	148,964.77	5.38
CADANGAN RIZAB JALAN	-	-	210.502	85.187	851,871.28	30.74
JUMLAH KECIL D	94	-	280.662	113.580	1,135,798.70	40.99
JUMLAH KESELURUHAN PEMBANGUNAN (A+B+C+D)	11,024	-	684.678	277.080	2,770,797.34	100.00

EXECUTIVE SUMMARY

STATEMENT OF NEED

Statement of Need of Proposed Project

- Addressing Housing Demand**
 - The increase in population & rural-urban migration has led to a rising demand for affordable and quality housing. This development will help to fulfil state and national housing policies by offering a range of residential units catering to various income groups.
- Supporting Economic Growth**
 - The integration of commercial and light business areas within the development is intended to stimulate local economic activities, create employment opportunities, and support small and medium enterprises (SMEs), thereby boosting the local economy.
- Enhancing Public Infrastructure and Services**
 - The project includes the development of road networks, drainage systems, utilities, and public amenities which will enhance the quality of life for future residents and the surrounding community.
- Urban Planning and Land Optimization**
 - The project seeks to optimize land use in line with the Local Plan and Structure Plan
- Environmental and Social Integration**
 - With proper planning and mitigation measures, the development will integrate environmental conservation aspects ensuring a balance between development and ecological sustainability.

PROJECT OPTIONS

SITE OPTIONS

- Compatibility with the Government's development policies and strategy for future uses
- Suitability of land use

NO PROJECT OPTION

- No physical changes to the existing site condition
- No development will not have significant environmental impact to the surrounding area

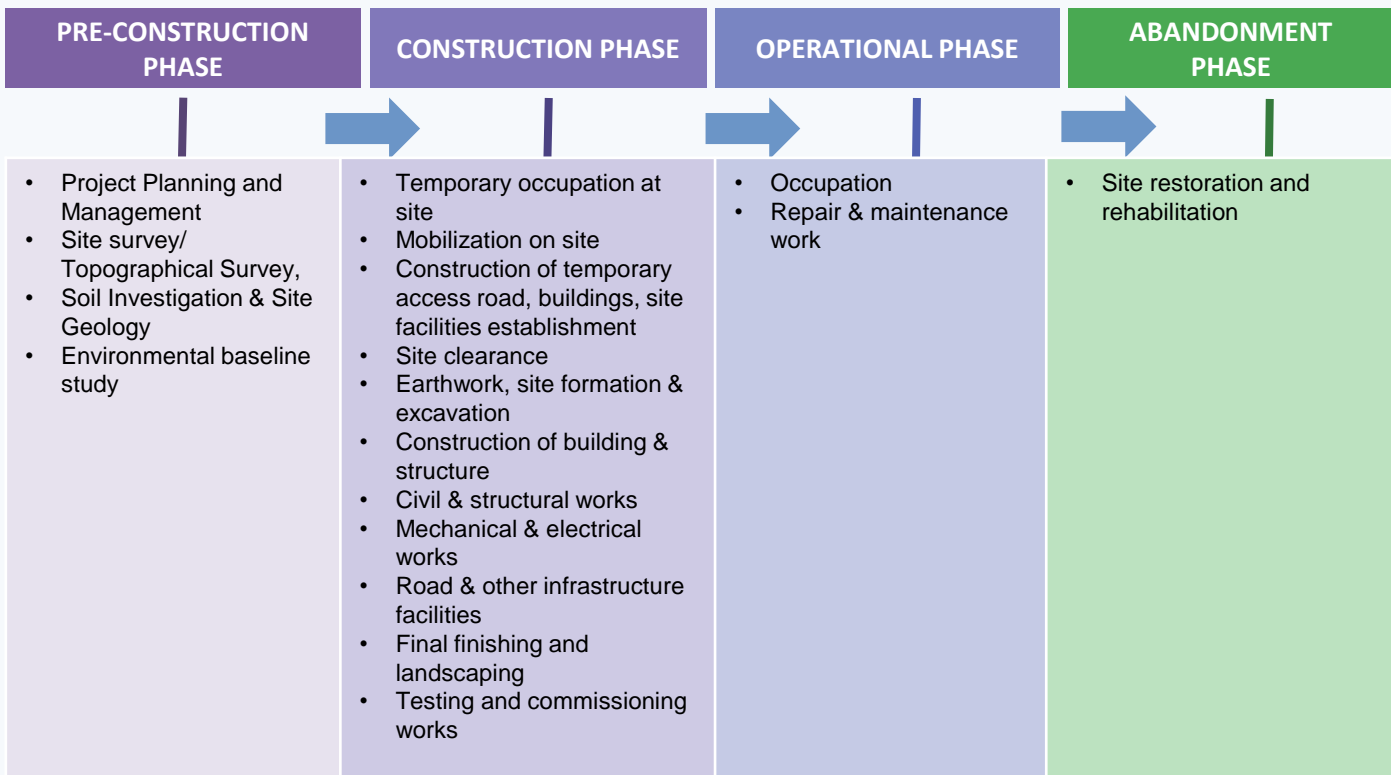
YES PROJECT OPTION

- This project will create another development in line with the landuse zoning and suitability of the surrounding land
- Significant positive impacts in creation of temporary & permanent job opportunities.
- Increase economic growth and generate revenue



EXECUTIVE SUMMARY

PROJECT ACTIVITIES



UTILITY DEMAND & WASTE GENERATION

No.	Utility Demand	Description
1.	Population Equivalent (PE)	<ul style="list-style-type: none"> The estimated PE = 49,225 PE To cater for the treatment of sewage, a Sewage Treatment Plant (STP) with a capacity of 49,300 PE is proposed to be developed However, as the STP exceeds a capacity of 20,000 PE, it falls under Prescribed Activity 14(c)(i): Construction of sewage treatment plant with 20,000 population equivalent or more. Therefore, a separate EIA report must be submitted to the DOE and obtain EIA approval prior to the commencement of STP construction.
2.	Water Demand	<ul style="list-style-type: none"> Water demand estimation: <ul style="list-style-type: none"> ➤ Phase 2 (8,166,027 L/Day), ➤ Phase 3 (2,440,220 L/Day), ➤ Phase 4 (651,360 L/Day), ➤ Phase 5 (3,072,000 L/Day), ➤ Phase 6 (4,215,505 L/Day)
3.	Electricity Demand	<ul style="list-style-type: none"> Electrical load estimation: <ul style="list-style-type: none"> ➤ Phase 2 (13,421 kWMD) ➤ Phase 3 (5,836 kWMD) ➤ Phase 4 (1,606 kWMD) ➤ Phase 5 (2,048 kWMD) ➤ Phase 6 (8,978 kWMD)
4.	Waste Generation	<ul style="list-style-type: none"> Solid waste estimated = 59,070 kg/day= 59.1 ton/day (1.2 kg/person/day)

EXECUTIVE SUMMARY

PHYSICO-CHEMICAL ENVIRONMENT

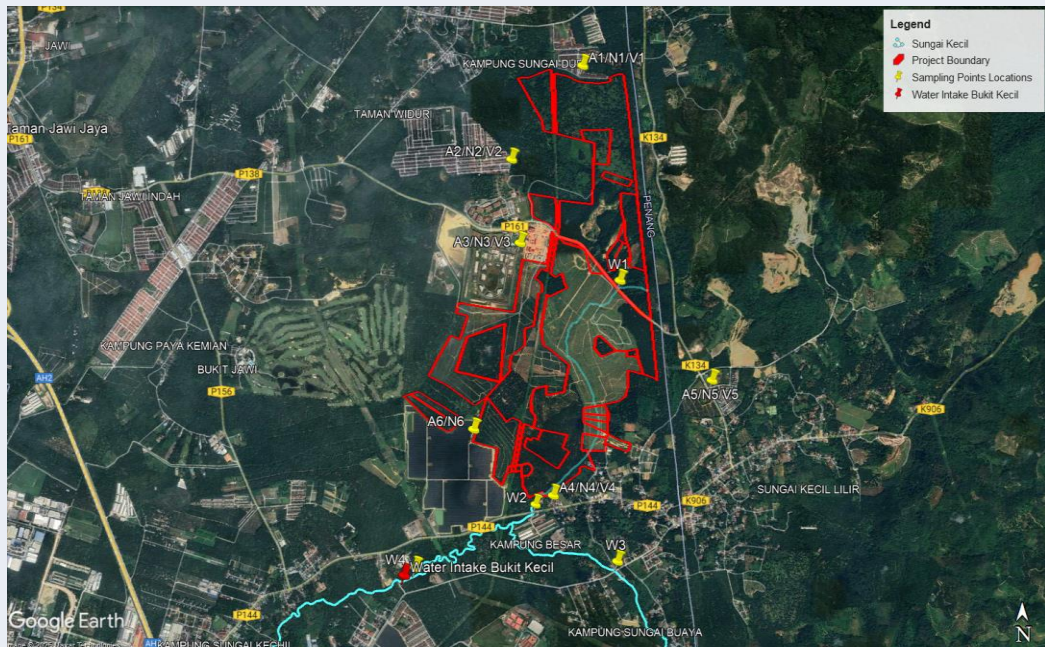
EXISTING ENVIRONMENT	DESCRIPTION																																																																																																																																				
TOPOGRAPHY & TERRAIN CLASSIFICATION	<ul style="list-style-type: none"> According to the topographical survey plan, the highest point in the proposed site is located at approximately 61m above mean sea level, representing a hill crest in the north east area while the lowest point at 8m elevation is situated towards the south west. Slope gradient: 0° - 15° (96.64% - CLASS I), 15° - 25° (3.34% - CLASS II), 25° - 35° (0.02% - CLASS III) 																																																																																																																																				
GEOLOGY	<ul style="list-style-type: none"> The proposed site area is underlain by Granite. The soil profile from residual soil & igneous rock 																																																																																																																																				
HYDROLOGY	<ul style="list-style-type: none"> Historically, the discharge from the project site can be divided into two parts <ul style="list-style-type: none"> The northern part of the project site connected with Sungai Jawi through a small natural watercourse The southern part of the project site connected with Sungai Kerian via a very small tributary of Sungai Kecil The proposed project site was fall under the Section 14(i) Water Enactment 1967 The project site area is not officially designated as being within a flood-prone area Downstream of the project site has been identified as flood prone zone which at Kampung Sungai Kecil There is water intake downstream of the project site namely Muka Sauk Bukit Kecil which approximately 2km away The water from Muka Sauk Bukit Kecil will pumped into Bukit Panchor reservoir before being further treated at the LRA Bukit Panchor 																																																																																																																																				
ENVIRONMENTAL SAMPLING <ul style="list-style-type: none"> Air Quality 	<ul style="list-style-type: none"> The results indicate that all tested parameters comply with the permissible limits set by the MAAQS 2020 at every sampling station. <table border="1"> <thead> <tr> <th rowspan="2">Test Parameter</th> <th rowspan="2">Unit</th> <th rowspan="2">Compliance Limit</th> <th colspan="2">A1</th> <th colspan="2">A2</th> <th colspan="2">A3</th> <th colspan="2">A4</th> <th colspan="2">A5</th> <th colspan="2">A6</th> </tr> <tr> <th>Result</th> <th>Compliance Status</th> <th>Result</th> <th>Compliance Status</th> <th>Result</th> <th>Compliance Status</th> <th>Result</th> <th>Compliance Status</th> <th>Result</th> <th>Compliance Status</th> <th>Result</th> <th>Compliance Status</th> </tr> </thead> <tbody> <tr> <td colspan="15" style="text-align: center;">BASELINE SAMPLING DATE: 14 - 15 MARCH 2025</td> </tr> <tr> <td>Particulate Matter 10 (PM₁₀)</td> <td>µg/m³</td> <td><100</td> <td>53</td> <td>Complied</td> <td>51</td> <td>Complied</td> <td>56</td> <td>Complied</td> <td>54</td> <td>Complied</td> <td>58</td> <td>Complied</td> <td>52</td> <td>Complied</td> </tr> <tr> <td>Particulate Matter 2.5 (PM_{2.5})</td> <td>µg/m³</td> <td><35</td> <td>16</td> <td>Complied</td> <td>14</td> <td>Complied</td> <td>17</td> <td>Complied</td> <td>15</td> <td>Complied</td> <td>17</td> <td>Complied</td> <td>15</td> <td>Complied</td> </tr> <tr> <td>Nitrogen Dioxide (NO₂)</td> <td>µg/m³</td> <td><280</td> <td>ND</td> <td>Complied</td> <td>ND</td> <td>Complied</td> <td>ND</td> <td>Complied</td> <td>ND</td> <td>Complied</td> <td>ND</td> <td>Complied</td> <td>ND</td> <td>Complied</td> </tr> <tr> <td>Sulphur Dioxide (SO₂)</td> <td>µg/m³</td> <td><80</td> <td>ND</td> <td>Complied</td> <td>ND</td> <td>Complied</td> <td>ND</td> <td>Complied</td> <td>ND</td> <td>Complied</td> <td>ND</td> <td>Complied</td> <td>ND</td> <td>Complied</td> </tr> <tr> <td>Carbon Monoxide (CO)</td> <td>mg/m³</td> <td><10</td> <td>ND</td> <td>Complied</td> <td>ND</td> <td>Complied</td> <td>ND</td> <td>Complied</td> <td>ND</td> <td>Complied</td> <td>ND</td> <td>Complied</td> <td>ND</td> <td>Complied</td> </tr> <tr> <td>Ozone (O₃)</td> <td>µg/m³</td> <td><180</td> <td>ND</td> <td>Complied</td> <td>ND</td> <td>Complied</td> <td>ND</td> <td>Complied</td> <td>ND</td> <td>Complied</td> <td>ND</td> <td>Complied</td> <td>ND</td> <td>Complied</td> </tr> </tbody> </table>	Test Parameter	Unit	Compliance Limit	A1		A2		A3		A4		A5		A6		Result	Compliance Status	Result	Compliance Status	Result	Compliance Status	Result	Compliance Status	Result	Compliance Status	Result	Compliance Status	BASELINE SAMPLING DATE: 14 - 15 MARCH 2025															Particulate Matter 10 (PM ₁₀)	µg/m ³	<100	53	Complied	51	Complied	56	Complied	54	Complied	58	Complied	52	Complied	Particulate Matter 2.5 (PM _{2.5})	µg/m ³	<35	16	Complied	14	Complied	17	Complied	15	Complied	17	Complied	15	Complied	Nitrogen Dioxide (NO ₂)	µg/m ³	<280	ND	Complied	ND	Complied	ND	Complied	ND	Complied	ND	Complied	ND	Complied	Sulphur Dioxide (SO ₂)	µg/m ³	<80	ND	Complied	ND	Complied	ND	Complied	ND	Complied	ND	Complied	ND	Complied	Carbon Monoxide (CO)	mg/m ³	<10	ND	Complied	ND	Complied	ND	Complied	ND	Complied	ND	Complied	ND	Complied	Ozone (O ₃)	µg/m ³	<180	ND	Complied	ND	Complied	ND	Complied	ND	Complied	ND	Complied	ND	Complied
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ENVIRONMENTAL SAMPLING <ul style="list-style-type: none"> Vibration 	<ul style="list-style-type: none"> The results indicate that the vibration levels at all sampling stations comply with the permissible limits outlined in the Guideline for Environmental Vibration Limits and Control (DOE, 2021). Therefore, it is considered safe and unlikely to cause damage to nearby buildings. <table border="1"> <thead> <tr> <th>Monitoring Station</th> <th>V1</th> <th>V2</th> <th>V3</th> <th>V4</th> <th>V5</th> </tr> </thead> <tbody> <tr> <td>Receiving Land Use Category</td> <td>Residential</td> <td>Residential</td> <td>Residential</td> <td>Residential</td> <td>Residential</td> </tr> <tr> <td>Recommended Limit</td> <td>0.8 mm/s to 1.6 mm/s</td> <td>0.8 mm/s to 1.6 mm/s</td> <td>0.8 mm/s to 1.6 mm/s</td> <td>0.8 mm/s to 1.6 mm/s</td> <td>0.8 mm/s to 1.6 mm/s</td> </tr> <tr> <td rowspan="4">BASELINE</td> <td>Peak Particle Velocity (mm/s)</td> <td>0.559</td> <td>0.533</td> <td>0.562</td> <td>0.538</td> <td>0.567</td> </tr> <tr> <td>Compliance Status</td> <td>Complied</td> <td>Complied</td> <td>Complied</td> <td>Complied</td> <td>Complied</td> </tr> <tr> <td>Degree of Perception</td> <td>Barely noticeable</td> <td>Barely noticeable</td> <td>Barely noticeable</td> <td>Barely noticeable</td> <td>Barely noticeable</td> </tr> <tr> <td>Environmental Impact</td> <td>Little</td> <td>Little</td> <td>Little</td> <td>Little</td> <td>Little</td> </tr> </tbody> </table>	Monitoring Station	V1	V2	V3	V4	V5	Receiving Land Use Category	Residential	Residential	Residential	Residential	Residential	Recommended Limit	0.8 mm/s to 1.6 mm/s	0.8 mm/s to 1.6 mm/s	0.8 mm/s to 1.6 mm/s	0.8 mm/s to 1.6 mm/s	0.8 mm/s to 1.6 mm/s	BASELINE	Peak Particle Velocity (mm/s)	0.559	0.533	0.562	0.538	0.567	Compliance Status	Complied	Complied	Complied	Complied	Complied	Degree of Perception	Barely noticeable	Barely noticeable	Barely noticeable	Barely noticeable	Barely noticeable	Environmental Impact	Little	Little	Little	Little	Little																																																																																																																																																																								
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Recommended Limit	0.8 mm/s to 1.6 mm/s	0.8 mm/s to 1.6 mm/s	0.8 mm/s to 1.6 mm/s	0.8 mm/s to 1.6 mm/s	0.8 mm/s to 1.6 mm/s																																																																																																																																																																																																															
BASELINE	Peak Particle Velocity (mm/s)	0.559	0.533	0.562	0.538	0.567																																																																																																																																																																																																														
	Compliance Status	Complied	Complied	Complied	Complied	Complied																																																																																																																																																																																																														
	Degree of Perception	Barely noticeable	Barely noticeable	Barely noticeable	Barely noticeable	Barely noticeable																																																																																																																																																																																																														
	Environmental Impact	Little	Little	Little	Little	Little																																																																																																																																																																																																														
ENVIRONMENTAL SAMPLING <ul style="list-style-type: none"> Water Quality 	<ul style="list-style-type: none"> The findings were evaluated against the National Water Quality Standards (NWQS) for river water. The water quality assessment based on the Water Quality Index classification revealed that the existing waterways was found to be of "Clean" quality for W2 & W3 while "Slightly Polluted" class at W1 & W4 and all locations are within "Class II" type <table border="1"> <thead> <tr> <th rowspan="3">Parameters</th> <th rowspan="3">Unit</th> <th rowspan="3">Compliance</th> <th colspan="8">BASELINE (14 MARCH 2025)</th> </tr> <tr> <th colspan="8">Sungai Kecil</th> </tr> <tr> <th colspan="2">W1</th> <th colspan="2">W2</th> <th colspan="2">W3</th> <th colspan="2">W4</th> </tr> <tr> <th>Class IIB</th> <th>Result</th> <th>Class</th> <th>Result</th> <th>Class</th> <th>Result</th> <th>Class</th> <th>Result</th> <th>Class</th> </tr> </thead> <tbody> <tr> <td>pH</td> <td>unitless</td> <td>6-9</td> <td>5.5</td> <td>Class III</td> <td>6.3</td> <td>Class IIA</td> <td>6.3</td> <td>Class IIA</td> <td>6.3</td> <td>Class IIA</td> </tr> <tr> <td>BOD - 5 days test @ 20°C</td> <td>mg/L</td> <td>3</td> <td>2.1</td> <td>Class IIA</td> <td>1.9</td> <td>Class IIA</td> <td>1.3</td> <td>Class IIA</td> <td>1.9</td> <td>Class IIA</td> </tr> <tr> <td>COD</td> <td>mg/L</td> <td>25</td> <td>16.0</td> <td>Class IIA</td> <td>12.0</td> <td>Class IIA</td> <td>8.0</td> <td>Class I</td> <td>12.0</td> <td>Class IIA</td> </tr> <tr> <td>Total Suspended Solids</td> <td>mg/L</td> <td>50</td> <td>13.0</td> <td>Class I</td> <td>17.0</td> <td>Class I</td> <td>68.0</td> <td>Class III</td> <td>89.0</td> <td>Class III</td> </tr> <tr> <td>Ammoniacal Nitrogen</td> <td>mg/L</td> <td>0.3</td> <td>1.2</td> <td>Class IV</td> <td>1.1</td> <td>Class IV</td> <td>0.7</td> <td>Class III</td> <td>1.1</td> <td>Class IV</td> </tr> <tr> <td>Dissolved Oxygen (DO)</td> <td>mg/L</td> <td>5-7</td> <td>6.1</td> <td>Class IIA</td> <td>6.2</td> <td>Class IIA</td> <td>6.8</td> <td>Class IIA</td> <td>6.2</td> <td>Class IIA</td> </tr> <tr> <td>Conductivity</td> <td>µS/cm</td> <td>-</td> <td>98.9</td> <td>Class I</td> <td>99.5</td> <td>Class I</td> <td>100.3</td> <td>Class I</td> <td>100.1</td> <td>Class I</td> </tr> <tr> <td>Temperature</td> <td>°C</td> <td>-</td> <td>26.7</td> <td>Class II</td> <td>26.8</td> <td>Class II</td> <td>26.1</td> <td>Class II</td> <td>26.5</td> <td>Class II</td> </tr> <tr> <td>Turbidity</td> <td>NTU</td> <td>50</td> <td>14.22</td> <td>Class IIA</td> <td>15.9</td> <td>Class IIA</td> <td>42.9</td> <td>Class IIA</td> <td>62.9</td> <td>-</td> </tr> <tr> <td>Oil & Grease</td> <td>mg/l</td> <td>-</td> <td>16</td> <td>-</td> <td>15.9</td> <td>-</td> <td>19</td> <td>-</td> <td>15</td> <td>-</td> </tr> <tr> <td>Faecal Coliform</td> <td>MPN/100ml</td> <td>400</td> <td>203</td> <td>Class IIB</td> <td>191</td> <td>Class IIB</td> <td>173</td> <td>Class IIB</td> <td>189</td> <td>Class IIB</td> </tr> <tr> <td>Total Coliform</td> <td>MPN/100ml</td> <td>5000</td> <td>184</td> <td>Class IIA</td> <td>175</td> <td>Class IIA</td> <td>147</td> <td>Class IIA</td> <td>166</td> <td>Class IIA</td> </tr> <tr> <td>Escherichia coli</td> <td>MPN/100ml</td> <td>-</td> <td>152</td> <td>Class IIA</td> <td>144</td> <td>Class IIA</td> <td>128</td> <td>Class IIA</td> <td>139</td> <td>-</td> </tr> <tr> <td rowspan="3">WATER QUALITY INDEX (WQI)</td> <td>SCORE</td> <td>76.5-92.7</td> <td>78.26</td> <td></td> <td>82.35</td> <td></td> <td>83.03</td> <td></td> <td>77.30</td> <td></td> </tr> <tr> <td>CLASS</td> <td></td> <td>Class II</td> <td></td> <td>Class II</td> <td></td> <td>Class II</td> <td></td> <td>Class II</td> <td></td> </tr> <tr> <td>STATUS</td> <td></td> <td>Clean</td> <td></td> <td>Slightly Polluted</td> <td></td> <td>Clean</td> <td></td> <td>Clean</td> <td></td> <td>Slightly Polluted</td> </tr> </tbody> </table>	Parameters	Unit	Compliance	BASELINE (14 MARCH 2025)								Sungai Kecil								W1		W2		W3		W4		Class IIB	Result	Class	Result	Class	Result	Class	Result	Class	pH	unitless	6-9	5.5	Class III	6.3	Class IIA	6.3	Class IIA	6.3	Class IIA	BOD - 5 days test @ 20°C	mg/L	3	2.1	Class IIA	1.9	Class IIA	1.3	Class IIA	1.9	Class IIA	COD	mg/L	25	16.0	Class IIA	12.0	Class IIA	8.0	Class I	12.0	Class IIA	Total Suspended Solids	mg/L	50	13.0	Class I	17.0	Class I	68.0	Class III	89.0	Class III	Ammoniacal Nitrogen	mg/L	0.3	1.2	Class IV	1.1	Class IV	0.7	Class III	1.1	Class IV	Dissolved Oxygen (DO)	mg/L	5-7	6.1	Class IIA	6.2	Class IIA	6.8	Class IIA	6.2	Class IIA	Conductivity	µS/cm	-	98.9	Class I	99.5	Class I	100.3	Class I	100.1	Class I	Temperature	°C	-	26.7	Class II	26.8	Class II	26.1	Class II	26.5	Class II	Turbidity	NTU	50	14.22	Class IIA	15.9	Class IIA	42.9	Class IIA	62.9	-	Oil & Grease	mg/l	-	16	-	15.9	-	19	-	15	-	Faecal Coliform	MPN/100ml	400	203	Class IIB	191	Class IIB	173	Class IIB	189	Class IIB	Total Coliform	MPN/100ml	5000	184	Class IIA	175	Class IIA	147	Class IIA	166	Class IIA	Escherichia coli	MPN/100ml	-	152	Class IIA	144	Class IIA	128	Class IIA	139	-	WATER QUALITY INDEX (WQI)	SCORE	76.5-92.7	78.26		82.35		83.03		77.30		CLASS		Class II		Class II		Class II		Class II		STATUS		Clean		Slightly Polluted		Clean		Clean		Slightly Polluted
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Environmental Baseline Sampling Point Locations



EXECUTIVE SUMMARY

BIOLOGICAL ENVIRONMENT

FLORA

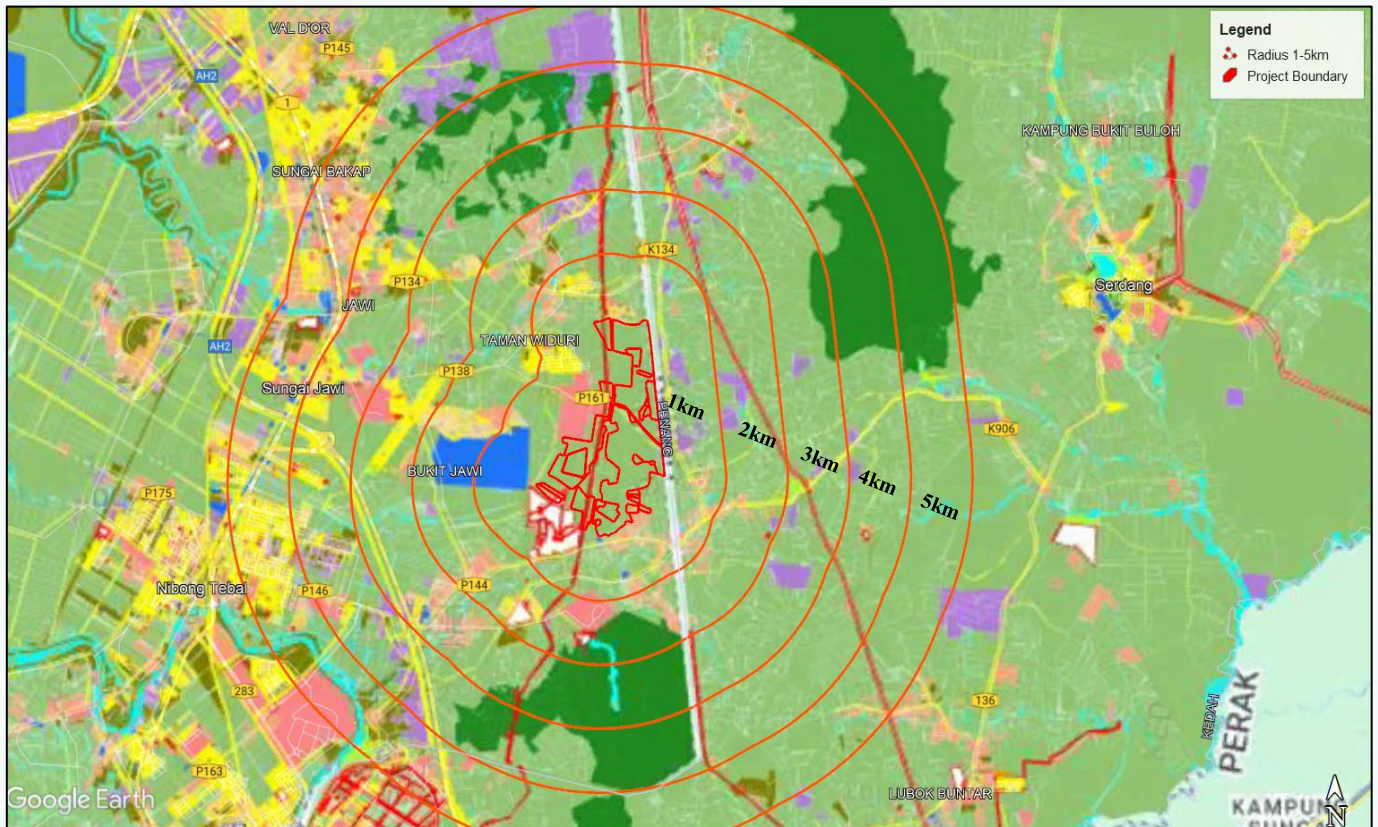
- The flora composition of the entire Project Site is dominated by oil palm plantation with the presence of shrubs and riparian vegetation.
- Interspersed among the oil palm trees are patches of natural vegetation, including common undergrowth species such as grasses, ferns, and wild shrubs typically found in secondary growth or disturbed habitats.
- No trees with girths exceeding 0.8 meters were identified on-site

FAUNA

- Generally, the fauna on the project site is typical of those found in habitats associated with oil palm plantations, including common species such as rats, lizards, birds, and other types of pests.
- There are no endangered animal species within the project site, as the area has been previously disturbed and modified for agricultural use

HUMAN ENVIRONMENT

SURROUNDING LANDUSE



EXECUTIVE SUMMARY

HUMAN ENVIRONMENT

SOCIAL IMPACT ASSESSMENT

- A **Social Impact Assessment (SIA)** was carried out by the appointed consultant, **Shaari Planners Sdn Bhd.** Based on the **Panduan Pelaksanaan Penilaian Impak Sosial bagi Projek Pembangunan (PPSIA) 2023**, the proposed project has been classified under **SIA Category B** for the State of Penang.
- Data collection:
 - 1) Questionnaire survey : **residential (370 respondents), commercial (106 respondents), & industrial (31 respondents),**
 - 2) Focus group discussion (**Government agency, community representative**),
 - 3) Interviews (**Immigration Detention Depot, Majlis Keselamatan Negara Negeri Pulau Pinang, Pejabat Ketua Pegawai Keselamatan Kerajaan Malaysia Negeri Pulau Pinang (CGSO)**)
- The respondents believe that this project has the potential to **generate positive impacts such as creating new business opportunities, enhancing infrastructure facilities, and improving accessibility and connectivity in the area.**
- However, there is a concerns rise over **water supply disruptions & potential safety issues** affecting nearby residents.
- Overall, most of the responednts were **positive towards the proposed development**

PELAN ZON PENGARUH BAGI KAJIAN PENILAIAN IMPAK SOSIAL (SIA) BAGI CADANGAN PEMBANGUNAN BERCAMPUR DI ATAS LOT-LOT 295-306, 308, 309, 424, 425 & 3194-3196 MUKIM 6 & LOT-LOT 113,114, 157, 174, 1276-1279, 1297, 1302, 6388, 6389, 6391, 6392 & 20564 MUKIM 7, DAERAH SEBERANG PERAI SELATAN, PULAU PINANG.

UNTUK TETUAN SCIENTEX (SKUDAI) SDN BHD



TANPA SKALA

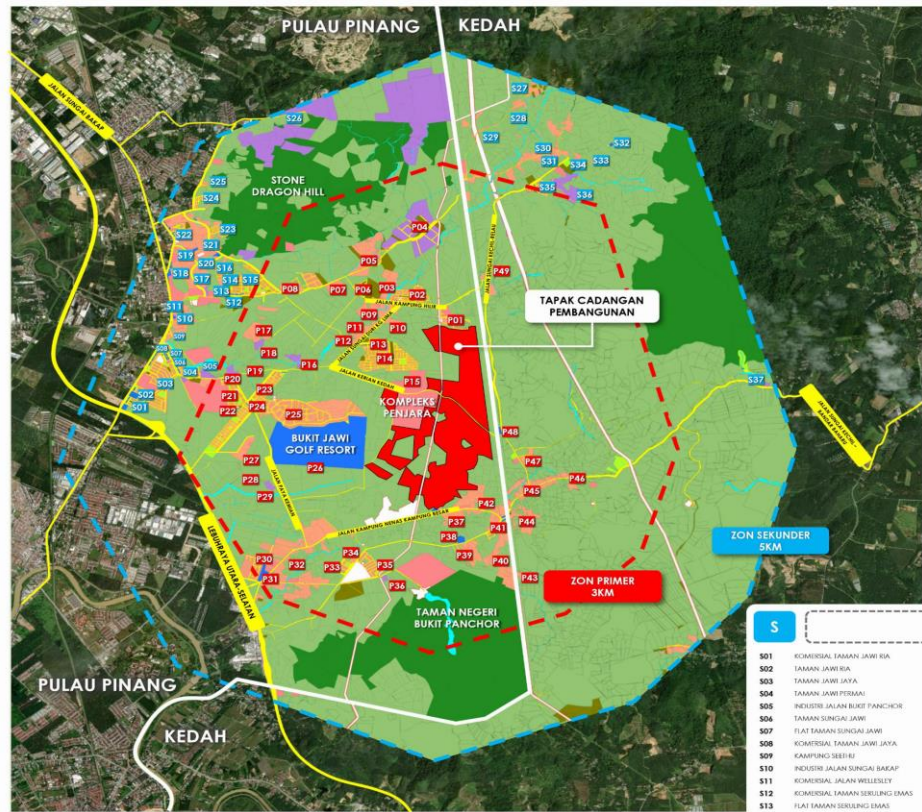
GUNAHANAH UTAMA

PERUMAHAN	KAMPUNG
KOMERSIAL	PENGANGKUTAN
INDUSTRI	INFRASTRUKTUR & UTILITI
INSTITUSI & KEMUDAHAN MASYARAKAT	PERTANIAN
TANAH LAPANG & REKREASI	HUTAN
TANAH KOSONG	BADAN AIR

SENARAI KAWASAN TERLIBAT

ZON PRIMER (0-3KM)	
P01	TAMAN SUNGAI DURI PERMAI
P02	TAMAN SUNGAI DURI INDAH
P03	KAMPUNG MANGKUD SUNGAI DURI
P04	INDUSTRI JALAN SUNGAI BACING
P05	KAMPUNG SUNGAI BACING
P06	KAMPUNG TERUSSINI
P07	KAMPUNG JALAN PENGHELU HAMAM
P08	KAMPUNG WELLESLEY
P09	KAMPUNG SUNGAI DURI
P10	KAMPUNG SURAU SUNGAI DURI
P11	KAMPUNG KUB SUNGAI DURI
P12	KAMPUNG LIMA
P13	KOMERSIAL TAMAN WEDURI
P14	TAMAN WEDURI
P15	PERUMAHAN PENJARA SPS
P16	INDUSTRI HALAMAN INDAH
P17	KAMPUNG CHANGKONG DAMIR
P18	INDUSTRI JALAN BACING
P19	KOMERSIAL JALAN KERIAN KEDAH
P20	KOMERSIAL JALAN JAWI INDAH
P21	TAMAN JAWI INDAH
P22	FLAT TAMAN JAWI INDAH
P23	TAMAN HALAMAN INDAH
P24	KOMERSIAL LORONG HALAMAN INDAH
P25	BUKU JAWI VILA
P26	BUKU JAWI COLETT
P27	KAMPUNG LADANG SEMPAH
P28	KAMPUNG PATA KEMAN
P29	INDUSTRI KIG PATA KEMAN
P30	TAMAN SUNGAI KECHIL
P31	KOMERSIAL JALAN SERDOLAH
P32	KAMPUNG NEMAS
P33	KAMPUNG BARU SUNGAI KECHIL
P34	KAMPUNG LADANG SUNGAI KECHIL
P35	TAMAN PANCHOR
P36	INDUSTRI JALAN ECU BUKU PANCHOR
P37	KOMERSIAL KAMPUNG BESAR
P38	KOMERSIAL JALAN SUNGAI KECHIL
P39	KAMPUNG BARU SUNGAI BUAYAT
P40	KAMPUNG SUNGAI BUAYAT 1
P41	KOMERSIAL KAMPUNG BESAR
P42	KAMPUNG BELAR
P43	KAMPUNG SUNGAI BUAYAT 2
P44	KAMPUNG BELANGKANG PERAK
P45	KAMPUNG MASRIE
P46	KAMPUNG BALAU LAMA
P47	KAMPUNG KEADA SUNGAI KECHIL
P48	KOMERSIAL JALAN KERIAN INDAH
P49	KAMPUNG SUNGAI KAMPAI

ZON SEKUNDER (3-5KM)	
S01	KOMERSIAL TAMAN JAWI RIA
S02	TAMAN JAWI RIA
S03	TAMAN JAWI JAYA
S04	TAMAN JAWI PERMAI
S05	INDUSTRI JALAN BUKU PANCHOR
S06	TAMAN SUNGAI JAWI
S07	FLAT TAMAN SUNGAI JAWI
S08	KOMERSIAL TAMAN JAWI JAYA
S09	KAMPUNG SEREJI
S10	INDUSTRI JALAN SUNGAI BAKAP
S11	KOMERSIAL JALAN WELLESLEY
S12	KOMERSIAL TAMAN SERULUNG EMAS
S13	FLAT TAMAN SERULUNG EMAS
S14	TAMAN SERI SERULUNG
S15	TAMAN SERI SERULUNG
S16	TAMAN SUNGAI BAKAP PERSEMANA
S17	KAMPUNG MANGKUD SUNGAI
S18	KOMERSIAL JALAN BESAR
S19	KAMPUNG SUNGAI BAKAP
S20	KAMPUNG PERMANGANG ABA
S21	TAMAN RASA RIA
S22	KAMPUNG BAKAE MAJI
S23	TAMAN PERSEMBA
S24	KOMERSIAL JALAN INDAH
S25	TAMAN JELITA
S26	INDUSTRI JALAN LIMA KONGSI
S27	KAMPUNG SERI KEMBANG
S28	KAMPUNG LOTI BUKU
S29	KAMPUNG BUKU BATUS BAKI
S30	KAMPUNG PADANG
S31	KAMPUNG BENGANG BELAU
S32	FABRIKASI BUKU
S33	KAMPUNG PATA SEMAMBU
S34	KAMPUNG TENGGAL ASAS
S35	TAMAN RELAU INDAH
S36	INDUSTRI RELAU
S37	INDUSTRI SUNGAI KECHIL

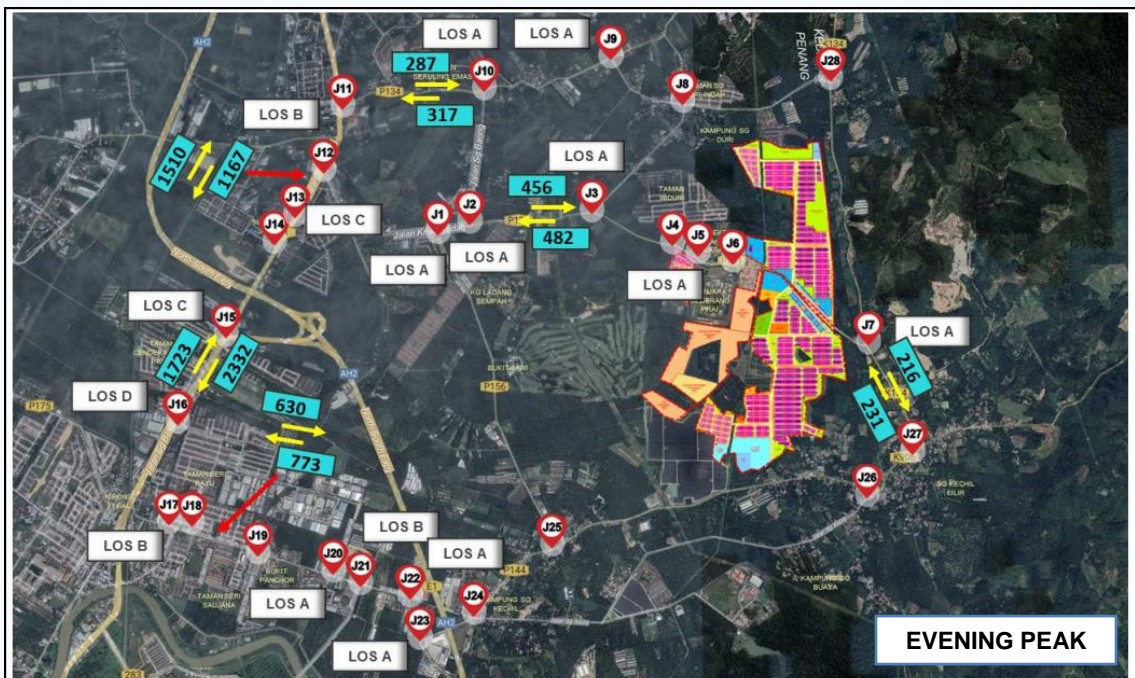
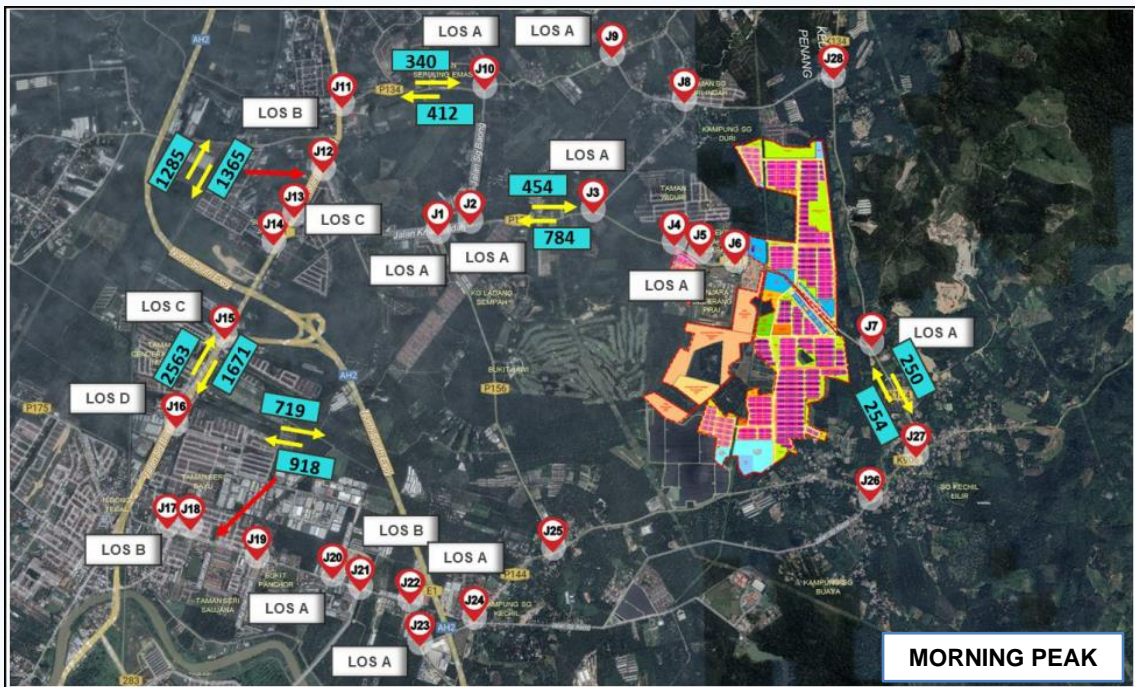


EXECUTIVE SUMMARY

HUMAN ENVIRONMENT

TRAFFIC IMPACT ASSESSMENT

- **Traffic Impact Assessment (TIA)** study has been carried out by **PERUNDING TRAFIK DINAMIK SDN BHD**. There are **J1 to J28** existing junctions studied in order to generate the traffic flow at the proposed development. The results of the traffic counts revealed that the peak hours for the study are between **7:00 am to 8:00 am for the morning peak hour** and **5:15 pm to 6:15 pm for the evening peak**.
- The existing junction performance analysis concluded that major junctions are performing at good level of service from **LOS A-LOS B**



EXECUTIVE SUMMARY

POTENTIAL IMPACT & MITIGATION MEASURES

POTENTIAL IMPACTS	MITIGATION MEASURES
CONSTRUCTION PHASE	
AIR QUALITY <ul style="list-style-type: none"> Dust from vehicle & equipment use Dust from exposed area Dust from earthwork activities 	<ul style="list-style-type: none"> Ensure access and internal roads are kept smooth, well-graded, and clean. Air pollution control/ dust control (construct of wash bay, provide hoarding, water jet spray,) Machinery & vehicle regularly service and maintained Ambient air quality impact monitoring to be conducted on periodical basis to assess & monitor the ambient air quality at the project area
NOISE LEVEL & VIBRATION <ul style="list-style-type: none"> Noise from moving vehicles/ vehicle passing by through main road; Noise from transported of heavy equipment Noise from machineries operation Vibration from piling work 	<ul style="list-style-type: none"> Construction work scheduling during daytime. No works take place at nighttime. Employ noise control measures (install of perimeter hoarding, used noise barriers, PPE for workers) Machinery & vehicle regularly service and maintained
WATER QUALITY <ul style="list-style-type: none"> Land clearing and earthworks activities; Untreated sewage discharge from workers quarters or site office; Uncontrolled surface runoff; Erosion and sedimentation 	<ul style="list-style-type: none"> Implementation of LD-P2M2 tools prior to commencement of earthwork Any surface water runoff discharge from the project site to the offsite area of the project site during the earthwork & construction shall comply to TSS<50mg/L & turbidity<250NTU Any discharge of wastewater into the watercourses direct or indirectly must be avoided
EROSION & SEDIMENTATION <ul style="list-style-type: none"> Site clearing and earthwork activities Untreated sewage discharge Uncontrolled surface runoff; Erosion and sedimentation Land disturbing activities on-site; 	<ul style="list-style-type: none"> The LD-P2M2 tools at the project site shall be constructed before land-disturbing activities Runoff & stormwater management on site Erosion and sediment control Stockpile management whereby the stockpiled area shall be away from any watercourse Temporary covers of exposed areas Regular site inspection, maintenance and monitoring of BMPs on-site.
WASTE MANAGEMENT <ul style="list-style-type: none"> Biomass Waste Solid Waste/Construction Waste Sewage Scheduled Waste 	<ul style="list-style-type: none"> All biomass waste will be temporarily stockpiled on site, properly covered and away from watercourse as per ESCP/LD-P2M2 Provide adequate bins covers within the project site for solid waste management The handling and disposal of sewage should be in accordance with Environmental Quality (Sewage) Regulations, 2009. The handling and disposal of scheduled waste should be in accordance with Environmental Quality (Scheduled Wastes) Regulations 2005.
TRAFFIC <ul style="list-style-type: none"> Movement of vehicle passing by via the main access road Movement of transportation of soils to the project site 	<ul style="list-style-type: none"> Scheduled heavy vehicle traffic during peak hour Vehicles for carrying building materials, debris and excavated materials should be clean, well maintained and in good running condition Vehicle speeds should be limited within the project site.
SAFETY AND HEALTH <ul style="list-style-type: none"> Safety to the construction workers 	<ul style="list-style-type: none"> Prepare of Emergency Response Plan (ERP) in case of emergencies on site Provide Personal Protective Equipment (PPE) to construction workers
LAND-USE, LANDSCAPE AND VISUAL <ul style="list-style-type: none"> Aesthetics 	<ul style="list-style-type: none"> The removal of vegetation shall be minimized whereby it can be removed in stages. Rehabilitation of the site through landscaping & replanting the area
FLORA & FAUNA <ul style="list-style-type: none"> Land clearing activities cause permanent loss if current vegetation No threatened floras and no endangered fauna within the project site 	<ul style="list-style-type: none"> All no-go areas will be demarcated; Erosion control measures will be implemented in disturbed areas. Cleared areas which are not being used shall be re-vegetated using plants or seed of locally occurring species (if any)
SOCIO-ECONOMIC <ul style="list-style-type: none"> Potential job opportunities to the locals; Potential social conflict between the foreign workers and local community 	<ul style="list-style-type: none"> The project proponent should advertise to the surrounding community for encouraging locals to participate in jobs that are suitable to their skill; The contractor shall make sure the foreign workers recruit to have a work permit to enter the construction site
FLOOD RISK <ul style="list-style-type: none"> Minor flooding issues 	<ul style="list-style-type: none"> Temporary sediment ponds will be constructed to temporarily store stormwater before it is released into the existing drain Temporary earth drain, silt fences, check dam will be constructed on site

EXECUTIVE SUMMARY

POTENTIAL IMPACT & MITIGATION MEASURES

POTENTIAL IMPACTS	MITIGATION MEASURES
OPERATIONAL PHASE	
AIR QUALITY <ul style="list-style-type: none"> Fugitive emissions from mobile vehicles 	<ul style="list-style-type: none"> Regularly serviced & maintained the vehicles Avoid running engines for long periods of time when in a stationary position Observed vehicle speed limit
NOISE LEVEL & VIBRATION <ul style="list-style-type: none"> Noise from machinery & equipment 	<ul style="list-style-type: none"> Landscaping and natural buffers can help soften the noise from human activities; Regularly serviced & maintained the vehicles Avoid running engines for long periods of time when in a stationary position Observed vehicle speed limit
WATER QUALITY <ul style="list-style-type: none"> Surface runoff discharge Effluent discharge 	<ul style="list-style-type: none"> The treated sewage within the project site shall comply with the Environmental Quality (Sewage) Regulation 2009.
EROSION & SEDIMENTATION <ul style="list-style-type: none"> There are no construction activities during the operation phase, and the surface of the ground has been covered by impervious surface and building. Therefore, the impact of erosion is minimized 	<ul style="list-style-type: none"> Erosion and sedimentation will not be major impacts and no mitigation measures are necessary with the exception of rehabilitation works take place. Permanent drainage network & detention ponds will be installed at-site to capture runoff from the site
WASTE GENERATION <ul style="list-style-type: none"> Solid waste/municipal wastes 	<ul style="list-style-type: none"> The waste generated shall be deposited at the approved disposal site.
TRAFFIC <ul style="list-style-type: none"> Additional vehicles trip generated Movement of vehicle passing by the main access road 	<ul style="list-style-type: none"> Shall abide by local authorities and JKR requirements for traffic management and transportation requirements. The recommendation outline in TIA Report shall be used as a guide by project proponent and authorities to ensure that the smooth of future traffic network
SAFETY & HEALTH <ul style="list-style-type: none"> Public safety and health with the occupancy of the building. 	<ul style="list-style-type: none"> Observed vehicle speed limit
LAND-USE, LANDSCAPE AND VISUAL <ul style="list-style-type: none"> Aesthetics 	<ul style="list-style-type: none"> Rehabilitation of the site through landscaping and replanting the area
FLORA & FAUNA <ul style="list-style-type: none"> No significant impact on flora and fauna. 	<ul style="list-style-type: none"> No mitigation measures are required.
SOCIO-ECONOMIC <ul style="list-style-type: none"> Attract additional population, thus increasing the population Employment opportunities Business opportunities 	<ul style="list-style-type: none"> The project proponent should advertise to the surrounding community for encouraging locals to participate in jobs that are suitable to their skill
FLOOD RISK <ul style="list-style-type: none"> Minor flooding issues 	<ul style="list-style-type: none"> Permenant detention ponds will be constructed to store stormwater before it is released into the existing drain Permanent drainage system will be constructed installed at-site to capture runoff from the site

EXECUTIVE SUMMARY

IMPACT & COMPLIANCE MONITORING



AIR QUALITY



NOISE LEVEL



WATER QUALITY



VIBRATION

PARAMETER

PM10, PM2.5, Nitrogen Dioxide (NO₂), Sulfur Dioxide (SO₂), Carbon Monoxide (CO), Ozone (O₃)

Laeq, Lmin, Lmax, L10, L50, L90

pH, DO, Turbidity, Conductivity, BOD, COD, TSS, AN, Oil & Grease, E.Coli, Total Coliform, Faecal Coliform

Peak particles velocity

STANDARD

New Malaysia Ambient Air Quality Standard 2020

Guidelines for Environmental Noise Limits and Control, Third Edition 2019 (Reprint, 2021)

National Water Quality Standards (NWQS)

Guideline for Environmental Vibration Limits and Control (DOE, 2021)

FREQUENCY REPORTING

Quarterly

Quarterly

Quarterly

Quarterly

NO OF STATIONS

6

6

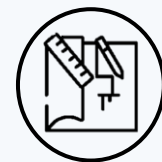
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PERFORMANCE MONITORING



SEDIMENTATION POND



BMPs in ESCP/LD-P2M2

PARAMETER

TSS
Turbidity

Any other BMPs proposed in ESCP/LD-P2M2

STANDARD

TSS: 50 mg/L
Turbidity: 250 NTU

-

MONITORING

Monthly

Inspection & Monitoring (Daily inspection during earthwork & after storm event)

NO OF STATIONS

As per proposed in ESCP/LD-P2M2

EXECUTIVE SUMMARY

STUDY FINDINGS

- ❖ The proposed Mixed Development (Residential and Commercial) on Lots 295-306, 308, 309, 424, 425 & 3194-3196 Mukim 6 & Lot-Lot 113, 114, 157, 174, 1276-1279, 1297, 1302, 6388, 6389, 6391, 6392 & 20564, Mukim 7, Daerah Seberang Perai Selatan, Pulau Pinang. Spreading over 684.678 acres (277.08 hectares) of development area comprises of housing scheme and commercial properties with infrastructure & community facilities which will be developed by SCIENTEX (SKUDAI) SDN.BHD.
- ❖ The preliminary existing environmental studies was conducted which include site survey, soil investigations, site geology, as well as environmental baseline assessment, etc.
- ❖ Overall findings shows that the potential impact from the project site to the surrounding areas could be in minimal & in the short term period.
- ❖ With the assumption all proposed ESCP/LD-P2M2 components implemented on site, the impacts could be mitigate accordingly.
- ❖ As such, to ensure that the P2M2s are effective on-site, an Environmental Management Plan with Environmental Auditing & Monitoring Programme are recommended to the project proponent
- ❖ Overall, the development in Jawi area is expected to drive economic, social, and infrastructural advancements, contributing positively to the area's long-term growth and prosperity.