

EXECUTIVE SUMMARY

INTRODUCTION



PROJECT PROPONENT

Parkland City Sdn Bhd
No. 112, Jalan Tun Perak
75300 Melaka



EIA CONSULTANT
Alam Dinamik Sdn Bhd
No. 19 & 19A
Jalan Bukit Impian 1
Taman Impian Emas
81300 Skudai
Johor Darul Takzim

PROJECT DESCRIPTION

- Parkland City Sdn Bhd has a total land area of 552.15 ac (211.31 ha) which includes Lot 894, Lot 801, and Lot 799 in Mukim Grisek.

PROPOSED INDUSTRIAL PARK AT LOT 801 & PART OF LOT 894 AND SEWAGE TREATMENT PLANT (STP) AT PART OF LOT 894, MUKIM GRISEK, DAERAH TANGKAK, JOHOR DARUL TAKZIM



LEGAL REQUIREMENT

First Schedule

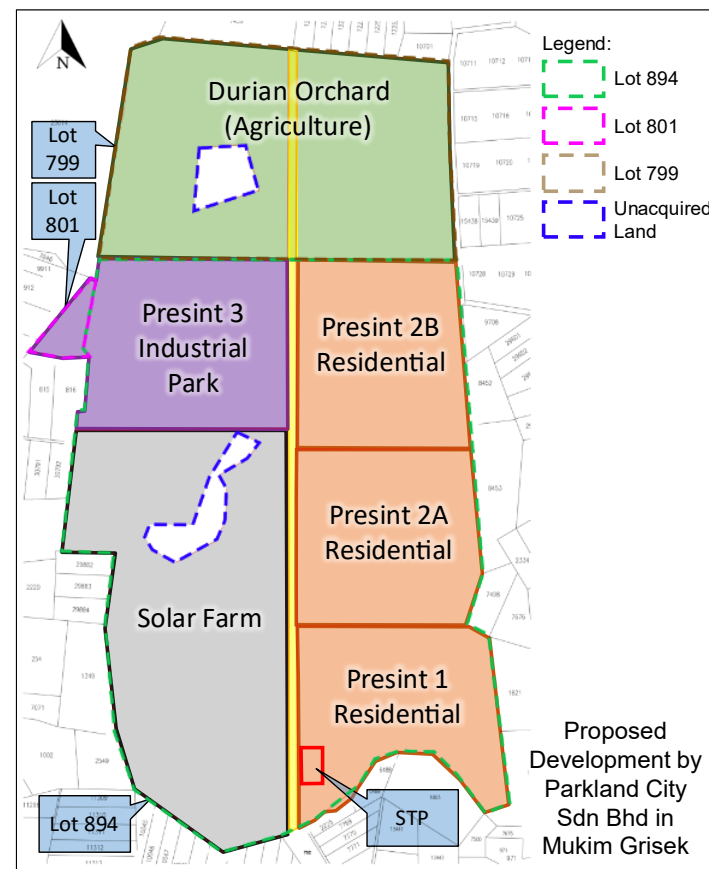
14. Waste Treatment and Disposal

(c) Sewage

(i) Construction of sewage treatment plant with 20,000 population equivalent or more.

17. Industrial Estate Development

Development of industrial estate covering an area of 20 hectares or more.

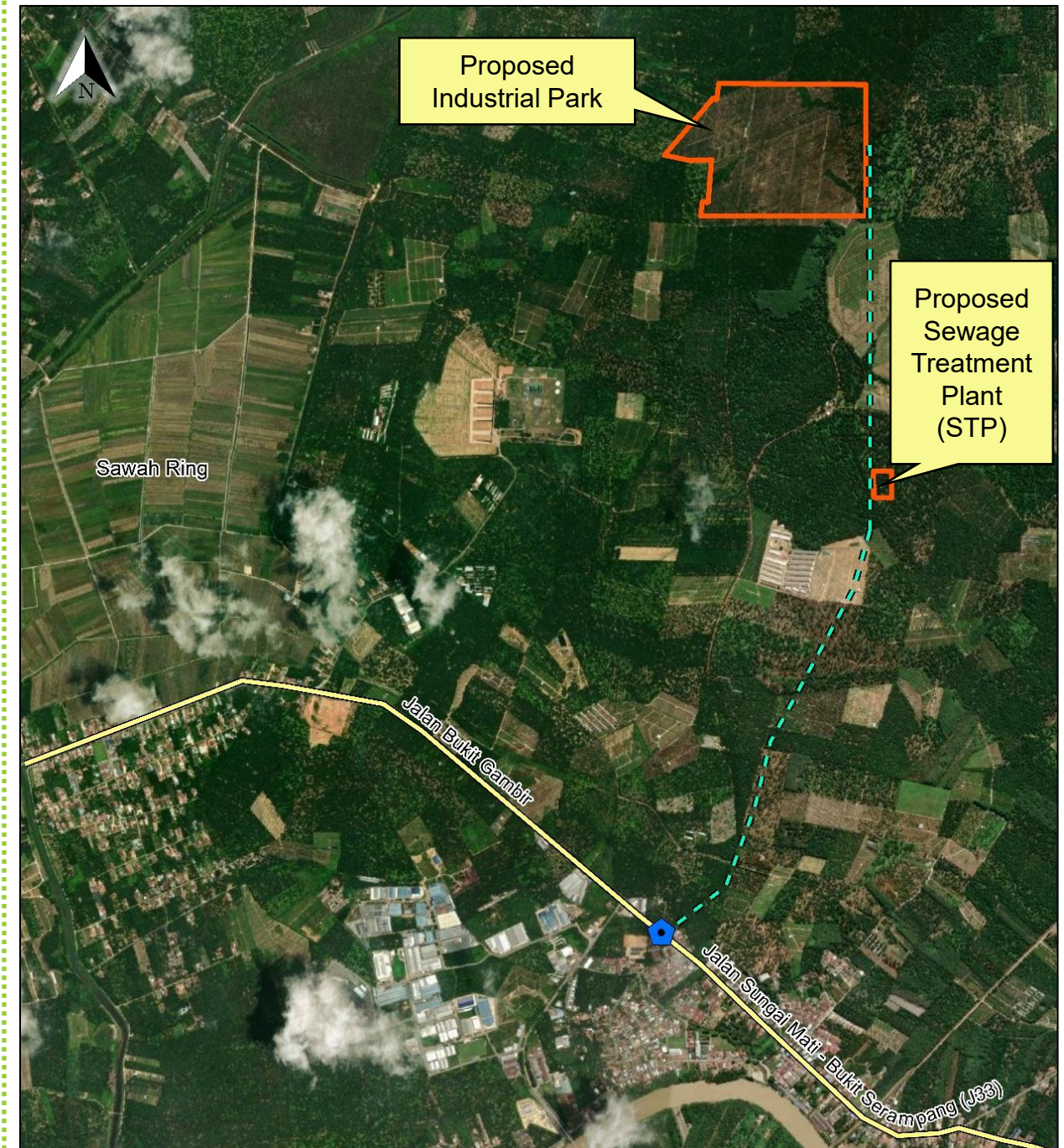


Lot	Development Zone	Type of Development
Part of Lot 894	Presint 1	Residential with Sewage Treatment Plant (STP)
Part of Lot 894	Presint 2A	Residential
Part of Lot 894	Presint 2B	Residential
Part of Lot 894	Presint 3	Industrial park
Lot 801		
Part of Lot 894	Solar Farm	Solar farm
Lot 799	Durian Orchard	Agriculture

PROJECT LOCATION



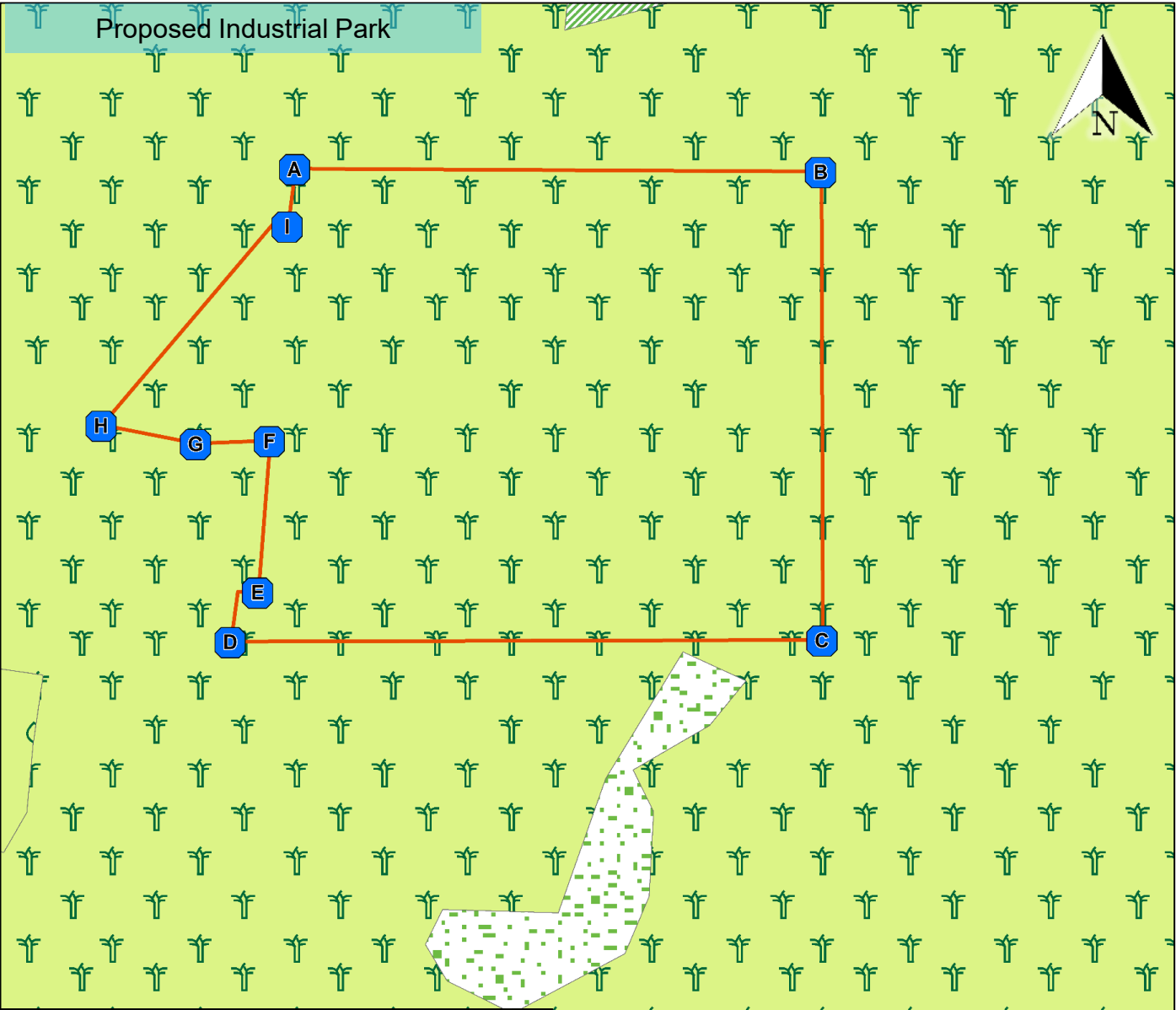
The proposed industrial park is located on 140.28 ac (56.77 ha) of land at Lot 801 & Part of Lot 894 and the proposed sewage treatment plant is located on 3.05 ac (1.23 ha) at Part of Lot 894, Mukim Grisek, Daerah Tangkak, Johor Darul Takzim. The proposed Project is located under Majlis Daerah Tangkak (MDT).



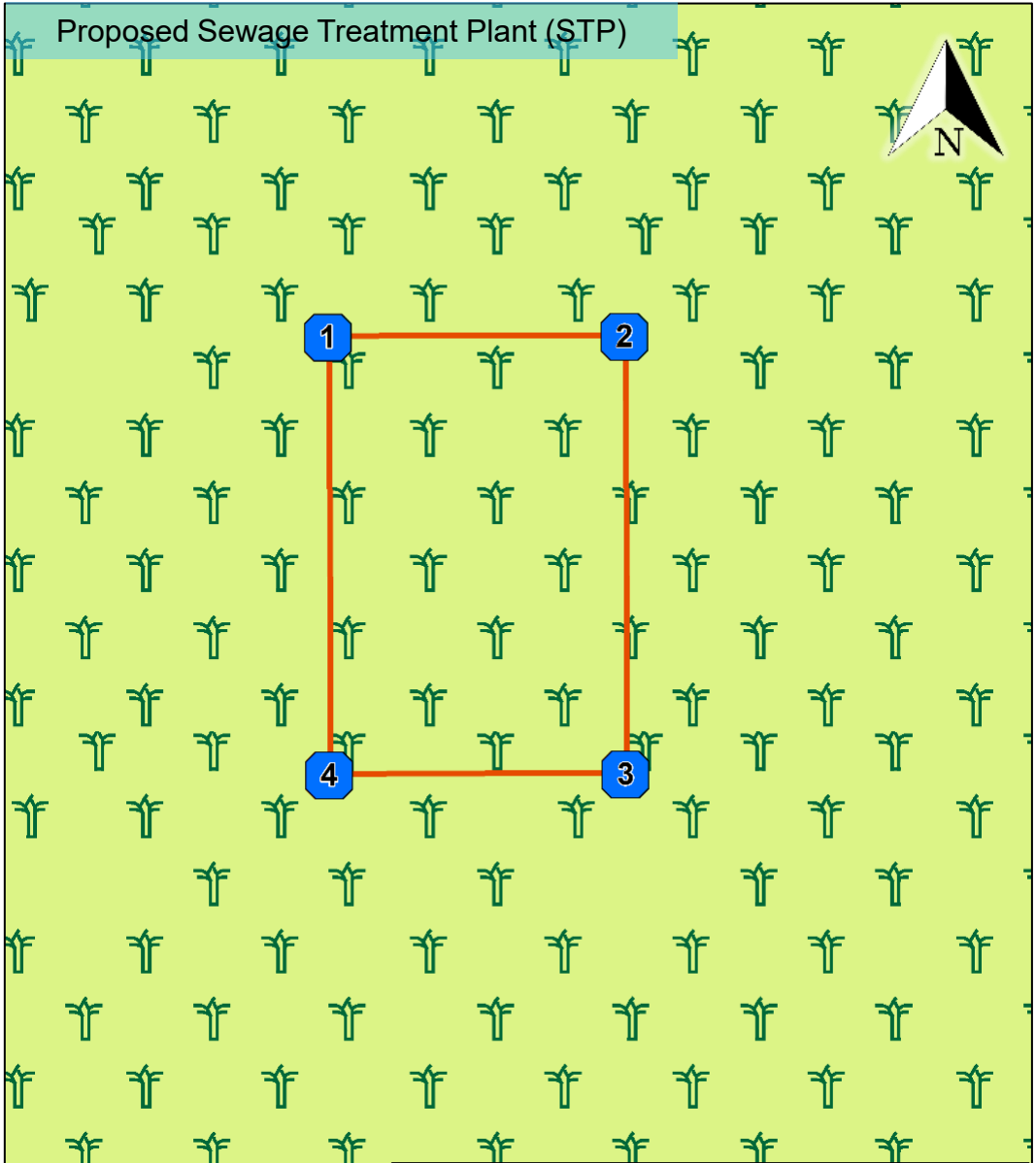
Legend

Project Boundary
 Access Road
 Proposed Access Road
 ● Access Point

BOUNDARY COORDINATES OF THE PROPOSED INDUSTRIAL PARK AND SEWAGE TREATMENT PLANT (STP)



Name	Longitude	Latitude
A	102°42'25.76"E	2°15'13.83"N
B	102°42'50.18"E	2°15'13.64"N
C	102°42'50.09"E	2°14'51.92"N
D	102°42'22.94"E	2°14'51.83"N
E	102°42'24.12"E	2°14'54.21"N
F	102°42'24.76"E	2°15'01.00"N
G	102°42'21.21"E	2°15'00.90"N
H	102°42'16.83"E	2°15'02.10"N
I	102°42'25.40"E	2°15'11.26"N



Name	Longitude	Latitude
1	102°42'51.52"E	2°14'09.61"N
2	102°42'54.52"E	2°14'09.76"N
3	102°42'54.58"E	2°14'05.36"N
4	102°42'51.61"E	2°14'05.27"N

Legend



Project Boundary



Bushes



Oil Palm



Others (Agriculture)

PROJECT LAYOUT OF THE PROPOSED INDUSTRIAL PARK

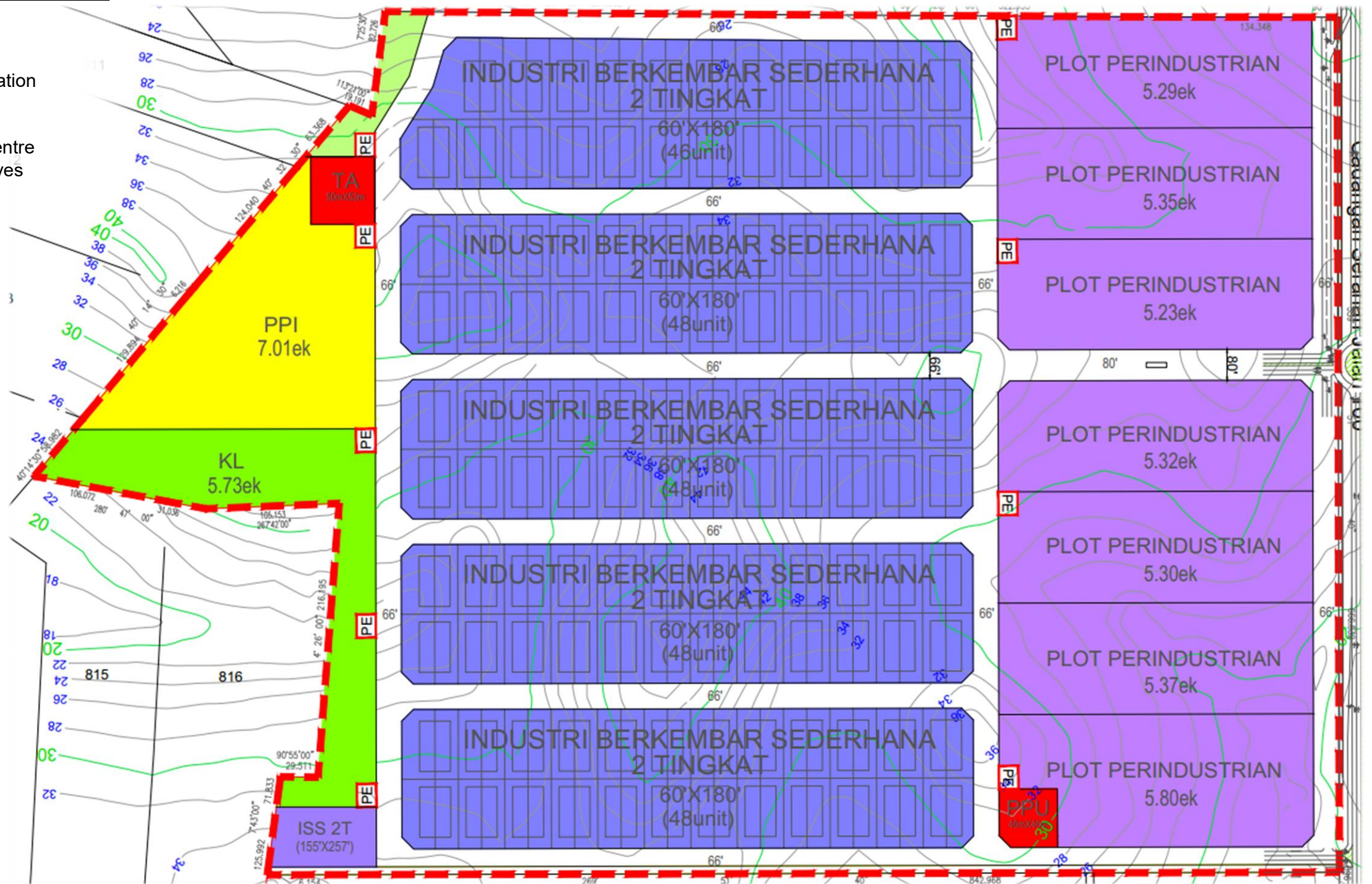
Components of the proposed Project

A. Industrial

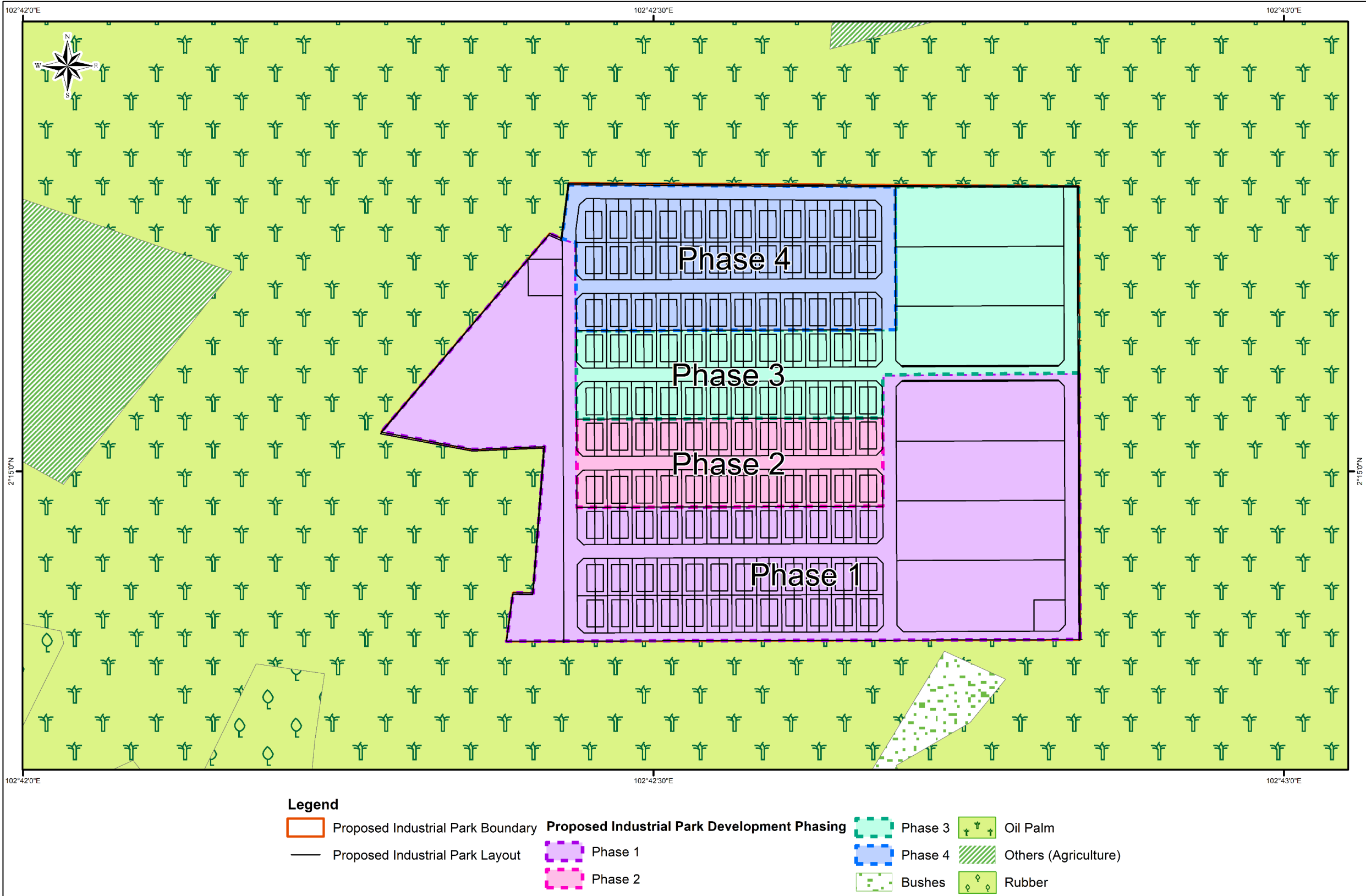
- a) Plot Perindustrian – 7 units
- b) Industri Sederhana Sesebuah 2 Tingkat (155' x 257') – 1 unit
- c) Industri Sederhana Berkembar 2 Tingkat (60' x 180') – 238 units

B. Public Facilities & Infrastructure

- a) Open Space
- b) Green Area
- c) Water Tank
- d) Main Dividing Substation
- e) Electrical Substation
- f) Utility Reserve
- g) Industrial Service Centre
- h) Road & Lane Reserves



PROPOSED INDUSTRIAL PARK DEVELOPMENT PHASING

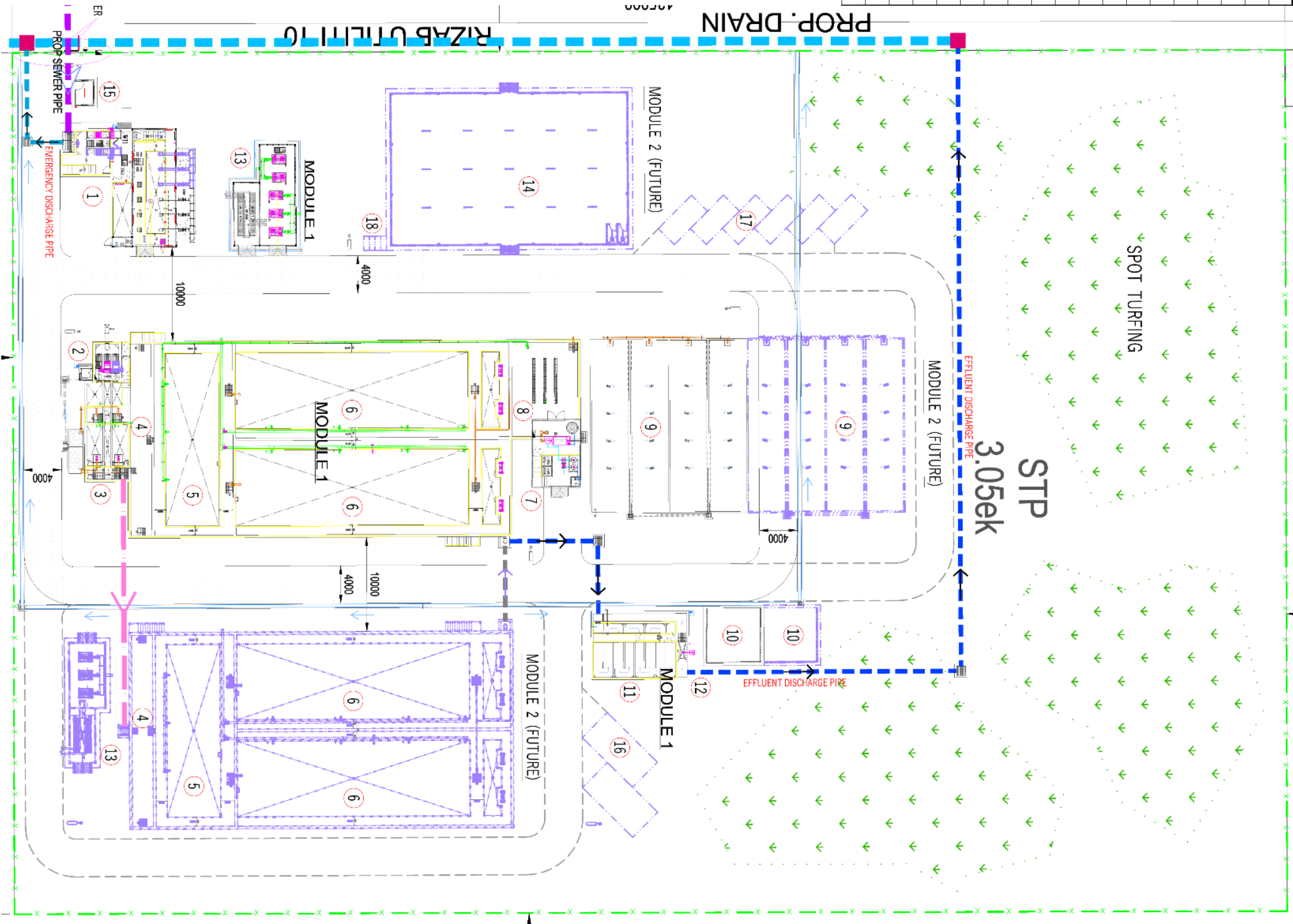


EXECUTIVE
SUMMARY

PROPOSED INDUSTRIAL PARK AT LOT 801 & PART OF LOT 894 AND SEWAGE TREATMENT
PLANT (STP) AT PART OF LOT 894, MUKIM GRISEK, DAERAH TANGKAK, JOHOR DARUL TAKZIM

PROJECT LAYOUT OF THE PROPOSED SEWAGE TREATMENT PLANT (STP)

NO.	LEGEND
1	PRIMARY SCREEN, PUMP STATION
2	SECONDARY SCREEN, GRT & GREASE CHAMBER
3	DISTRIBUTION CHAMBER
4	ANOXIC TANK
5	EQUALIZATION TANK
6	SBR TANK
7	THICKENER & CHEMICAL ROOM
8	SLUDGE HOLDING TANK
9	SAND DRYING BED
10	SLUDGE STORAGE HUT
11	CHLORINATION CHAMBER
12	FLOW MEASUREMENT CHAMBER
13	BLOWER & CONTROL ROOM
14	ADMIN BUILDING
15	GUARD HOUSE
16	TANKER PARKING
17	CAR PARKING
18	MOTORCYCLE PARKING



PROJECT ACTIVITIES FOR THE PROPOSED INDUSTRIAL PARK

Pre-Construction Stage

- The activities during pre-construction stage are limited to land survey and soil investigation (SI).

Construction Stage

Survey Setting Out

- Original Ground Level (OGL) survey will be checked on site and verified against the construction drawing for any discrepancies.

Access Point During Construction Stage

- Access points are provided for the proposed industrial park and STP.
- Each access point will be equipped with wash trough.

Site Clearing

- Site clearance shall be carried out within the limit of contract by removal of fallen trees, shrubs etc.
- Stripping of top soil will be carried out up to about 150 mm layer of soil that can support vegetation.

Management of Biomass Waste

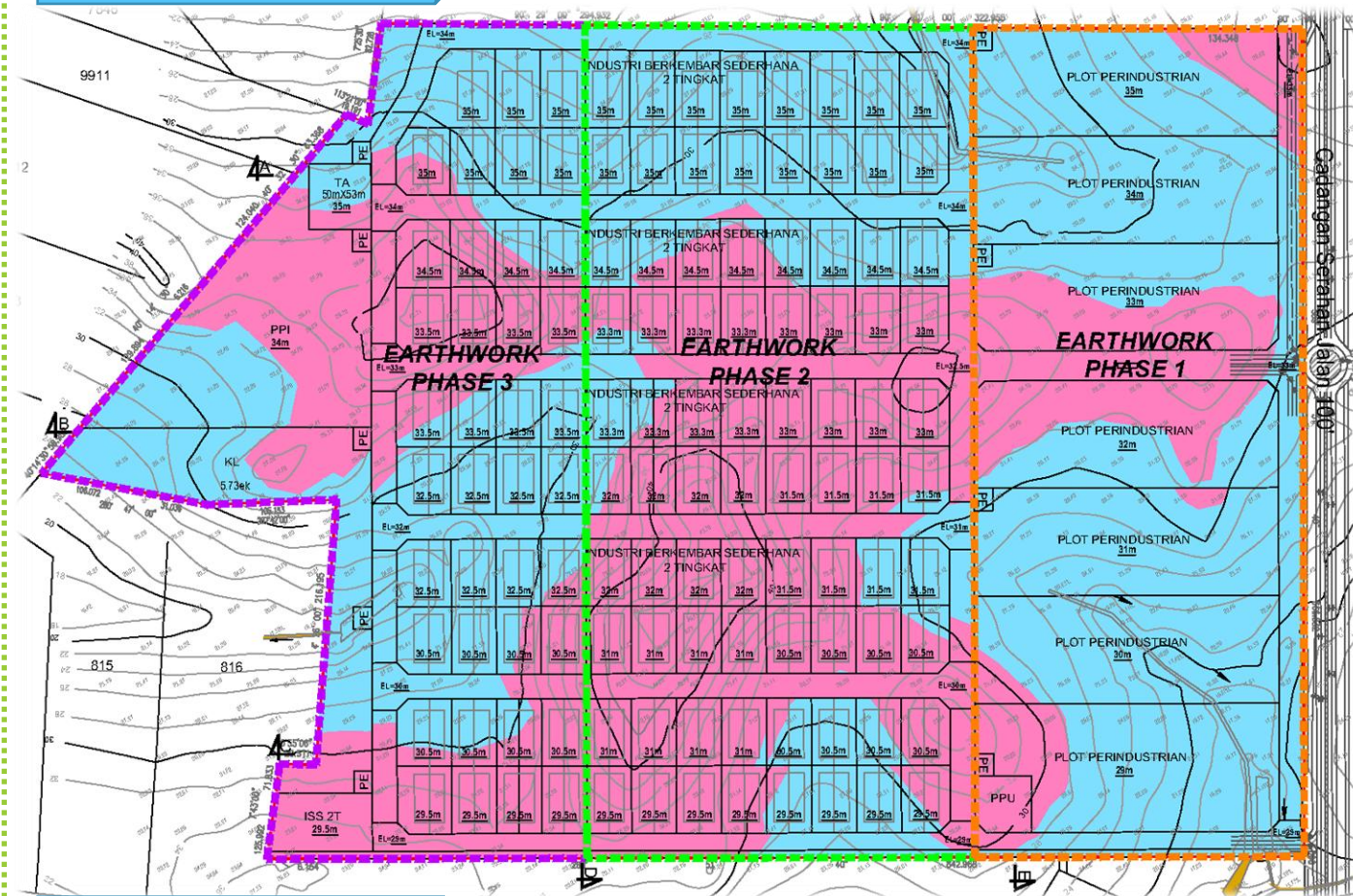
- The estimated biomass waste generation is 3,047.35 ton of oil palm fronds and trunks.
- The biomass removed during land clearing will be deposited at the proposed open space and low-lying area within the proposed industrial park.

Earthwork and Construction

- The earthwork for the proposed industrial park will be carried out in three (3) phases.
- The volume of cut is 1,195,900 m³ while volume of fill is 1,194,500 m³.
- Earthwork is expected to commence after the approval of "Pelan Kerjatanah, Jalan dan Perparitan".

Construction Stage

EARTHWORK CUT AND FILL



EARTHWORK DURATION

Phase	Period	Duration
1	April 2027 – September 2027	6 months
2	July 2027 – September 2027	3 months
3	October 2027 – December 2027	3 months

LEGEND

	Area of Cut
	Area of Fill

CUT AND FILL VOLUME

Phase	Area (ha)	Volume of Cut (m ³)	Volume of Fill (m ³)
1	18.04	138,400	508,800
2	20.73	711,300	330,200
3	18.0	346,200	355,500
Overall (Whole Project)		1,195,900	1,194,500

PROJECT ACTIVITIES FOR THE PROPOSED INDUSTRIAL PARK

Operational Stage

**Solid and Scheduled Waste**

Industrial activities shall generate solid and scheduled waste. Solid waste shall be disposed of at the disposal site approved by the local authority meanwhile scheduled waste shall be managed in accordance with Environmental Quality (Scheduled Waste) Regulations 2005.

**Generation of Sewage**

Sewage generated from the proposed industrial park shall be treated in sewage treatment plant (STP) at Presint 1. The discharge shall be treated to comply with standard B of the Environmental Quality (Sewage) Regulations 2009.

Abandonment Stage

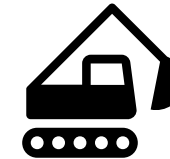


Abandonment can occur at any stage of the project. Abandonment during the planning stage will not result in any major financial losses other than the costs incurred for undertaking various studies and planning. If abandonment happens during the construction phase, the Project Proponent shall prepare plan for the removal or disposal of temporary structures and facilities. The Project Proponent shall inform DOE Johor and submit Abandonment Plan.

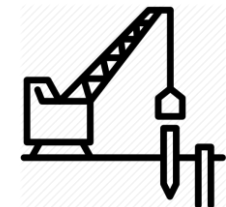
PROJECT IMPLEMENTATION SCHEDULE
FOR THE PROPOSED INDUSTRIAL PARK

The earthwork phase of the proposed industrial park will take approximately 9 months. The construction works will be completed in 5 years from January 2028 until December 2032.

Phase / Duration	Earthwork Phase			Development Phase			
(Year)	Phase 1	Phase 2	Phase 3	1	2	3	4
2027	Apr 2027	Jul 2027	Oct 2027				
	Sep 2027	Sep 2027	Dec 2027				
2028				Jan 2028			
2029				Dec 2029	Jan 2029		
2030					Dec 2030	Jan 2030	
2031						Dec 2031	Jan 2031
2032							Dec 2032

PROJECT ACTIVITIES FOR THE PROPOSED SEWAGE
TREATMENT PLANT (STP)

Excavation



Piling Works

Construction
of StructureExternal Works and
M&E WorksTesting & Commission
and Handing OverPROJECT IMPLEMENTATION SCHEDULE
FOR THE PROPOSED SEWAGE TREATMENT
PLANT (STP)**Design and
Submission**

Aug 2025 – Sep 2026

**Civil &
Structure**

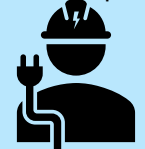
Oct 2026 – Jul 2027

**External Works**

Aug 2027 – Oct 2027

**Mechanical &
Electrical**

Nov 2027 – Apr 2028

**Inspection
Works**

May 2028 – Jul 2028



EXISTING ENVIRONMENT

Topography and Land use



- The elevation of the proposed industrial park is between 15.96 m to 47.47 m above the mean sea level whereas the proposed STP is between 9.25 m to 20.10 m above the mean sea level respectively.
- The land uses within 500 m and 5 km radius of the Project site consist of oil palm plantation, agriculture, residential and industrial.

Geology and Soil



- The soil of the Project site is Triassic, which is interbedded sandstones, siltstone and shale.
- A soil investigation (SI) work carried out in the vicinity of the proposed Project site on February 2025 to investigate the top to bottom profile of the soil.
- Four (4) boreholes were drilled within the Project site.

Climate and Meteorology



- Based on Batu Pahat Meteorological data, the dominant wind direction was from south to north.
- The monthly mean rainfall amount at Craigielea Estate for year 2015 – 2024 was in the range of 8.2 – 572.7 mm.

Hydrology



- The proposed Project site is located within Sg Muar river basin.
- Surface runoff from both proposed industrial park and STP flows into detention pond at Presint 1 before discharge into Pt Gan Tian. Pt Gan Tian then meanders for about 2.45 km before entering Pt Pelampong.
- Then, it meanders about 2.0 km before entering Sg Muar. Sg Muar meanders for about 63.20 km before discharging into Selat Melaka.

Water Quality



- Water sample was taken at ten (10) stations.
- The Water Quality Index (WQI) fell within Class II to Class III.

Ambient Air



- Ambient air was sampled at three (3) stations.
- The ambient air quality at all sampling stations are well below the specified limits.

Noise Level



- Noise was measured at three (3) stations.
- The measured noise levels at all sampling stations are well below the specified limits.

Socio-economic



- Based on *Rancangan Tempatan Daerah Tangkak 2030*, the Project site is located within *Blok Perancangan Kecil MG2.8: Kg Hujung Tambak – Pt Raja* where it is zoned as agriculture.
- Nevertheless, under *Draf Rancangan Tempatan Daerah Tangkak 2030 (Pengubahan 5)* that is in the process of being gazetted, the zone has been changed from agriculture to industrial and residential.

Traffic

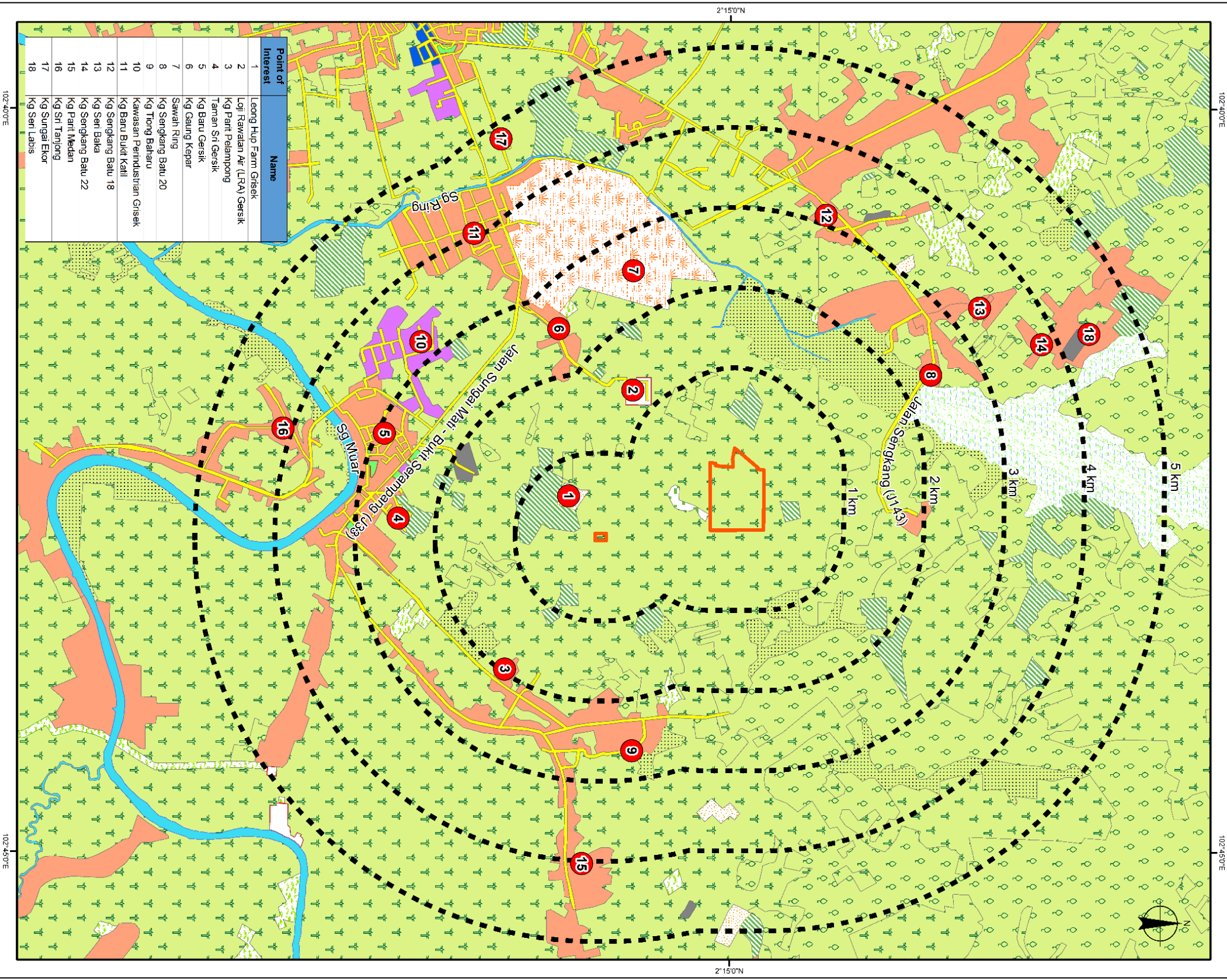


- The proposed Project site can be accessed via Jalan Sungai Mati – Bukit Serampang (J33).
- Jalan Sungai Mati – Bukit Serampang (J33) is currently operating at level of service (LOS) ranging from LOS A to LOS B.

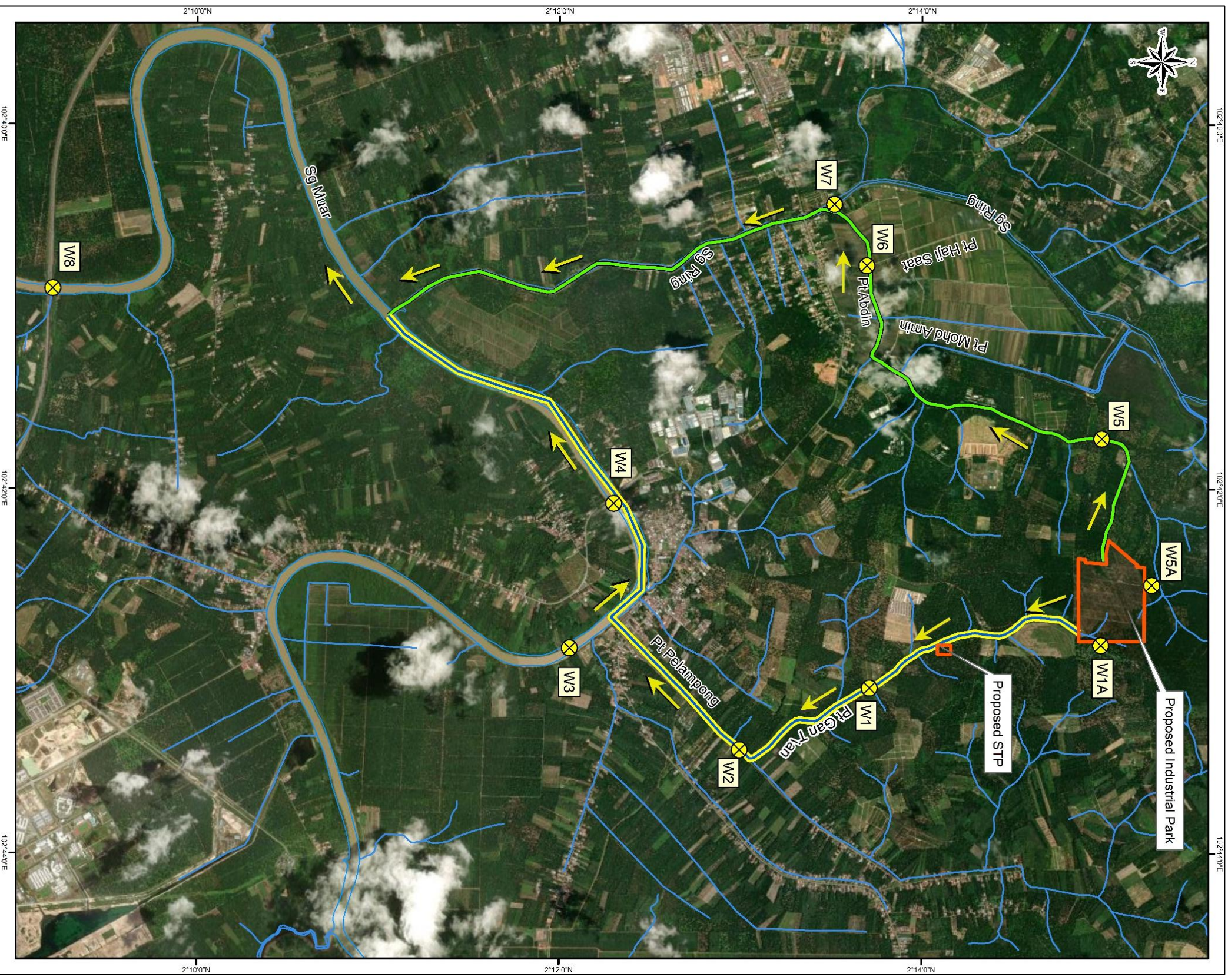
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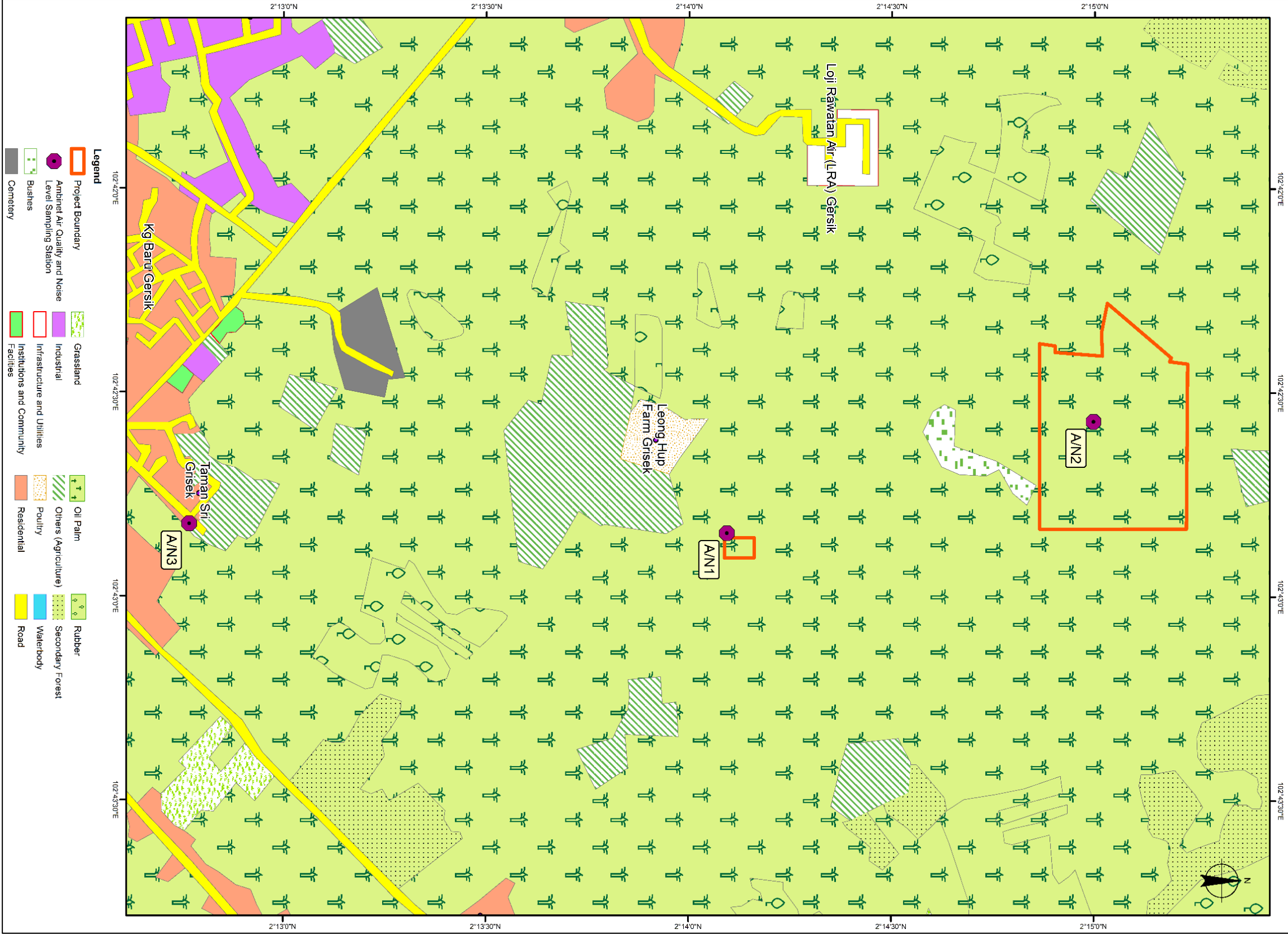
LAND USE 5 KM RADIUS



SAMPLING STATIONS FOR WATER QUALITY



SAMPLING STATIONS FOR AMBIENT AIR QUALITY AND NOISE LEVEL





BASELINE SAMPLING RESULTS

WATER QUALITY

Classification of Water Quality Based on National Water Quality Standard for Malaysia (Measured on 12th December 2024, 27th February 2025 & 11th May 2025)

Parameter	Station W1A	Class	Station W1	Class	Station W2	Class	Station W3	Class	Station W4	Class	Station W5A	Class	Station W5	Class	Station W6	Class	Station W7	Class	Station W8	Class
Dissolved Oxygen (mg/l)	6.81	II (5-7)	7.28	I (>7)	5.82	II (5-7)	1.45	IV (1-3)	2.73	IV (1-3)	5.95	II (5-7)	6.57	II (5-7)	7.15	I (>7)	6.92	II (5-7)	3.18	III (3-5)
BOD ₅ at 20°C (mg/l)	10	IV (6-12)	18	V (>12)	10	IV (6-12)	17	V (>12)	10	IV (6-12)	8	IV (6-12)	9	IV (6-12)	6	IV (6-12)	3	III (3-6)	10	IV (6-12)
COD (mg/l)	18	II (10-25)	40	III (25-50)	23	II (10-25)	35	III (25-50)	29	III (25-50)	17	II (10-25)	29	III (25-50)	17	II (10-25)	<10	I (<10)	29	III (25-50)
Total Suspended Solids (mg/l)	2	I (<25)	131	III (50-150)	52	III (50-150)	14	I (<25)	15	I (<25)	33	II (25-50)	6	I (<25)	33	II (25-50)	50	III (50-150)	10	I (<25)
Ammoniacal Nitrogen (mg/l)	0.05	I (<0.1)	0.17	II (0.1-0.3)	0.15	II (0.1-0.3)	0.22	II (0.1-0.3)	0.24	II (0.1-0.3)	0.07	I (<0.1)	0.04	I (<0.1)	0.23	II (0.1-0.3)	0.20	II (0.1-0.3)	0.33	III (0.3-0.9)

Water Quality Index (WQI) of Sampling Stations

Parameters	Sampling Station									
	W1A	W1	W2	W3	W4	W5A	W5	W6	W7	W8
Water Quality Index (WQI)	81	61	67	56	65	76	77	78	78	65
Class	II (76.5-92.7)	III (51.9-76.5)	III (51.9-76.5)	III (51.9-76.5)	III (51.9-76.5)	III (51.9-76.5)	II (76.5-92.7)	II (76.5-92.7)	II (76.5-92.7)	III (51.9-76.5)

NOISE LEVEL

Measured from 5th to 7th March 2025

Sampling Station	Noise Level L _{Aeq}	DOE Recommended Noise Level*
Day Time		
N1	47.6	65 dBA
N2	44.1	
N3	49.7	
Night Time		
N1	40.5	60 dBA
N2	38.9	
N3	42.5	

*Guidelines for Environmental Noise Limits and Control (DOE Malaysia, 2019) – Second Schedule; Permissible Sound Level (L_{Aeq}) by Receiving Land Use for Existing Built Up Areas; Suburban and Urban Residential, Mixed Development

AMBIENT AIR QUALITY

Sampled from 5th to 7th March 2025

Parameter	Concentration (µg/m ³) at sampling station			*Limit (µg/m ³)
	A1	A2	A3	
Particulate Matter less than 10 micron (PM ₁₀)	55.6	83.3	69.4	100* (24 hours)
Particulate Matter less than 2.5 micron (PM _{2.5})	13.9	27.8	27.8	35* (24 hours)
Carbon Monoxide (CO)	<1.0	<1.0	<1.0	30,000* (1 hour) 10,000* (8 hour)
Sulphur Dioxide (SO ₂)	<1	<1	<1	80* (24 hour)
Nitrogen Dioxide (NO ₂)	<1	<1	<1	70* (24 hour)
Hydrogen Sulphide (H ₂ S)	< 1.0	-	<1.0	4# (24 hours)

*Malaysia Ambient Air Quality Standards (MAAQS) 2020
Alberta Ambient Air Quality Objectives

POTENTIAL IMPACTS AND MITIGATION

SOIL EROSION &
SEDIMENTATION**IMPACT**

- Exposure of bare soil during land clearing activity will cause erosion and depletion of soil organic matter.

MITIGATION

- Proper planning of earthwork and implementation of BMPs such as earth drain, check dam, silt fence, sediment basin and wash trough.

SURFACE
HYDROLOGY**IMPACT**

- Change of land use will increase the amount of surface runoff.

MITIGATION

- Proper implementation of BMPs such as earth drain to channel surface runoff into sediment basin, providing sufficient sediment basin and regular desilting will help to mitigate the risk of flooding at the Project site.
- Provision of detention pond to regulate the post development flow.

RIVER WATER
QUALITY**IMPACT**

- During construction phase, the main concern to water quality is discharge of surface runoff with high Total Suspended Solids (TSS).
- During operational phase, discharge of untreated sewage will degrade water quality.

MITIGATION

- Proper planning of earthwork and implementation of BMPs such as earth drain with check dam, sediment basin, silt fence and wash trough.
- Sewage from the proposed development shall be channelled to sewage treatment plant (STP) to undergo treatment.

AMBIENT AIR
QUALITY**IMPACT**

- The construction and earthworks activities will result in suspended particulates or airborne dust.
- The movement of vehicles on access roads and exhaust fumes could stir up dust during construction phase.
- During operational phase, the treatment of sewage will generate odour i.e. H₂S emission.

MITIGATION

- Spraying of water on the roads especially at exit and inlet points.
- Vehicles to pass through a wash trough prior to leaving the site.
- Monitoring of traffic volume and observation of speed limits for heavy vehicles.
- Sufficient buffer of 30 m has been provided as required in MSIG for development of STP.

NOISE LEVEL

IMPACT

- During construction phase, the operation of stationary and mobile equipment or machineries may contribute to the noise level.
- During operational phase, the blower for SBR tank and grit & grease chamber will generate noise.

MITIGATION

- Practice sequence of operations so that piling and other ground impacting operations do not occur in the same period.
- All construction vehicles must be checked for proper installation of engine silencer to reduce emitted noise level.
- During operational phase, blower for SBR tank will be housed in an enclosed building.
- Noise shall be controlled to level below 65 dBA as per MSIG requirement.

WASTE
MANAGEMENT**IMPACT**

- Activities during construction and operational phase will generate biomass waste, scheduled waste and solid waste.

MITIGATION

- Biomass can also be shredded into small pieces prior to removal and disposal at the proposed development open space and low-lying area within the Project site.
- Scheduled waste should be managed in accordance with the Environmental Quality (Scheduled Wastes) Regulations 2005 during construction phase.
- Solid waste shall be disposed of at the disposal site approved by the local authority during construction and operational phase.

TRAFFIC

IMPACT

- The presence of large vehicles, as well as movements onto and off the Project site is expected to contribute to small increase on traffic volume within the area during construction phase.
- The development of the proposed Project will lead to increase in traffic volume on the surrounding roads.

MITIGATION

- Precautions for the construction traffic management must be taken to ensure minimal disruption and potential danger to traffic and road users during the construction phase.
- To upgrade and improve the roadway and new access (junction) to the Project site as per recommendation in the TIA report.

PROPOSED ENVIRONMENTAL MONITORING PROGRAMME



CONSTRUCTION PHASE

Impact Monitoring <u>Water quality</u> - Five (5) monitoring stations. - Compliance with National Water Quality Standards (NWQS). <u>Ambient air</u> - Three (3) ambient air monitoring stations. - Compliance with Malaysia Ambient Air Quality Standards (MAAQS) 2020. <u>Noise level</u> - Three (3) noise monitoring stations. - Compliance with Second Schedule, (Receiving Land Use for Land Use for Existing Built Up Areas) Planning Guidelines for Environmental Noise Limits and Control 2019.	Performance Monitoring <u>Sediment basin</u> - Monitor height of silt in silt storage zone. - Daily checking and desilting for every 3 months or as needed. <u>Wash trough</u> - Monitor catch basin. - Daily checking and desilting for every 3 months or as needed. <u>Temporary earth drain</u> - Monitor drain. - Daily checking and desilting for every 3 months or as needed. <u>Access road</u> - Road should be well-paved to prevent dust generation and prevent damage to vehicles using the road.	Performance Monitoring <u>Stockpile area</u> - Stockpile should be covered during storm. <u>Silt fence</u> - Monitor silt collection area. - Daily checking <u>Workshop</u> - Housekeeping. - Daily checking of spillage. Compliance Monitoring <u>Sediment basin</u> - Monitor discharge point of sediment basin during storm event more than 12.5 mm. - Discharge Total Suspended Solid (TSS) <50 mg/l. <u>Workers' quarters</u> - Monitor quarters for sanitary condition and discharge from septic tank.	Impact Monitoring <u>Water quality</u> - Five (5) monitoring stations. - Compliance with National Water Quality Standards (NWQS). <u>Ambient air</u> - Three (3) ambient air monitoring stations. - Compliance with Malaysia Ambient Air Quality Standards (MAAQS) 2020. <u>Noise level</u> - Three (3) noise monitoring stations. - Compliance with Second Schedule, (Receiving Land Use for Land Use for Existing Built Up Areas) Planning Guidelines for Environmental Noise Limits and Control 2019.	Performance Monitoring <u>STP components</u> <u>SBR tank</u> - Daily monitoring of flowrate, pH, DO, F/M ratio, OUR, SOUR, sludge age, MLSS, MLVSS. Compliance Monitoring <u>Effluent discharge</u> <u>Discharge point</u> - Monitor parameters listed in Environmental Quality (Sewage) Regulations 2009. - Compliance with Standard B of Environmental Quality (Sewage) Regulations 2009.
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ABANDONMENT / DECOMMISSIONING PHASE

Impact Monitoring <u>Water quality</u> - Five (5) monitoring stations. - Compliance with National Water Quality Standards (NWQS).	Impact Monitoring <u>Noise level</u> - Three (3) noise monitoring stations. - Compliance with Second Schedule, (Receiving Land Use for Land Use for Existing Built Up Areas) Planning Guidelines for Environmental Noise Limits and Control 2019.	Compliance Monitoring <u>Scheduled waste</u> - Monitor for chemicals (solid and/or liquid). - Compliance with Environmental Quality (Scheduled Wastes) Regulations 2005.
Impact Monitoring <u>Ambient air</u> - Three (3) ambient air monitoring stations. - Compliance with Malaysia Ambient Air Quality Standards (MAAQS) 2020.	Compliance Monitoring <u>Solid waste</u> - Collection and disposal of waste from dismantling of structures. - Compliance with Local authority guidelines for disposal upon demolition work.	