INTRODUCTION TO THE PROPOSED PROJECT SITE

ENVIRONMENTAL IMPACT ASSESSMENT (EIA) FOR THE PROPOSED SEPANG GOLDCOAST SOUTH DEVELOPMENT ON LOT 115621 TO LOT 115630, LOT 115633 TO LOT 115636 (PLOT 67), PT 5248 TO PT 5256 (PLOT 68 TO PLOT 76), PT 9504, PART OF PT 9515 AND PART OF GOVERNMENT LAND, MUKIM SEPANG, DAERAH SEPANG, SELANGOR DARUL EHSAN.

LAND OWNER & DEVELOPER

Sepang Goldcoast Sdn. Bhd.
3rd floor, Wisma CNI,
No. 2 Jalan Perunding U1/17,
Hicom Glenmarie Industrial Park,
Seksyen U1, 40150 Shah Alam,
Selangor Darul Ehsan
T: 03-5888 7778; F: 03-5888 7168

PROJECT AREA

Project Site Total Area:
344.02 hectares **/ (850.10** acres)
Reclamation Area: **62.1%**
~**213.67** hectares / (~**528** acres)

- Hybrid Reclamation Area: **35.97%**
  ~**123.75** hectares (~**305.8** acres)
- Conventional Reclamation Area: **26.13%**
  ~**89.92** hectares (~**222.2** acres)

ENVIRONMENTAL CONSULTANT

EUROPASIA ENGINEERING SERVICES SDN. BHD.
No. 63A-2 & 65-2, Petaling Utama Avenue,
Jalan PJS1/50,Taman Petaling Utama,
46150 Petaling Jaya,
Selangor Darul Ehsan
Attn. : Ms. Geetha P. Kumaran (CEP-CS0033)
(EIA Study Team Leader)

JURISDICTION

Majlis Perbandaran Sepang (MPSp)

ACCESSIBILITY

- Main route access from **Federal Route 5 (FR5)**
- **Jalan Bagan Lalang** or **Persiaran Pantai Utara**
- Internal roads within Kg. Bagan Lalang

CURRENT SITE CONDITION

Coastal Intertidal area along Bagan Lalang coastline between Sg Sepang Kecil and Sg Sepang Besar

PROJECT HISTORY

1. Avani Sepang Goldcoast Resort Development for Plot 66 and Plot 67 has obtained EIA approval from DOE Selangor on 25th October 2005 [ref:(B)50/011/200/207 Jld.2(2)] and has started hotel operations from Year 2010 until present.
2. Sepang Goldcoast Sdn. Bhd. via its subsidiary Carey Island Waterfront Sdn. Bhd. obtained EIA approval for the Proposed Commercial Development on PT 9580 (Lot 5722), South Coast, Sepang Goldcoast, Mukim Sepang, District of Sepang, Selangor Darul Ehsan on 22nd August 2017 [Ref. No.: (B)B 50/011/200/018 Jld.2 (17)].
3. Sepang Goldcoast Sdn. Bhd. will want to start their South Coast development to boost the eco-tourism in Bagan Lalang, Selangor

ZONING COMPATIBLITY

Based on the "**Rancangan Tempatan Majllis Perbandaran Sepang (Pengubahan 4) 2025** " the proposed development is in line with the zoning i.e., Commercial with a Plot Ratio of 1:2.

LEGAL ASPECT

SCHEDULE 1

Activity 12:
Development in Coastal and Hill Area

a) Construction of building or facilities with 80 rooms or more in coastal area

Activity 14:
Waste Treatment and Disposal

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

SCHEDULE 1

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

Activity 20: Road

c) Construction of road, tunnel, or bridge traversing or adjacent or near to environmental sensitive areas.

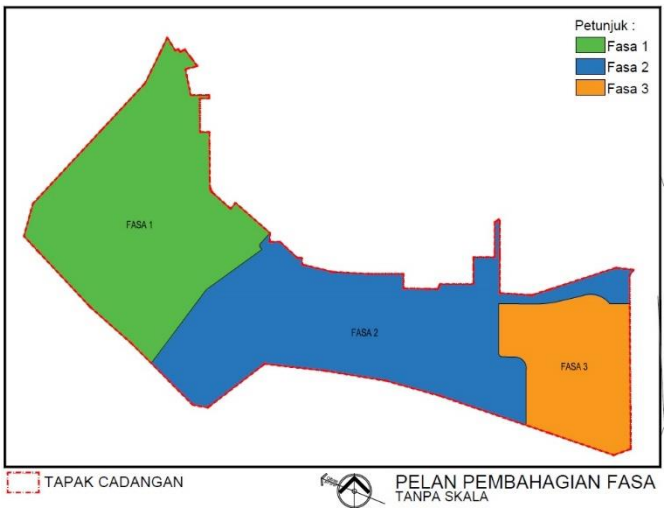
SCHEDULE 2

Activity 7:
Land Reclamation

a) Coastal reclamation or land reclamation along river banks involving an area of 50 hectares or more

b) Coastal reclamation or land reclamation along river banks within or adjacent or near to environmental sensitive areas

c) Reclamation for man-made island



Phase 1 - 2024 to 2033 (10 years)
Phase 2 - 2034 to 2043 (10 years)
Phase 3 - 2044 to 2053 (10 years)
Total= 30 years

STRATEGIC LOCATION & HIGH ACCESIBILITY

- Its location along Bagan Lalang Coast as a main tourist destination in Selangor.
- Close to Kuala Lumpur International Airports (KLIA), main international gateway into Malaysia.

LANDUSE OPTIMIZATION

- Proposed commercial development would **upgrade** the economic land value.
- **Optimize** the usage of reclaimed land and engineered beach, which is presently Bagan Lalang Coast.
- **Increase** the value of property in the surrounding areas and create more job opportunities within tourism, recreational and food & beverages industries.

ECONOMY AND DEVELOPMENT

- Sepang Goldcoast South Development will generate significant business opportunities for SMEs, international operators, operation and maintenance of entertainment, leisure, hospitality, medical suites, nursing homes in Sepang.

ENVIRONMENTAL MATTERS

- The development of Sepang Goldcoast South is taking steps to preserve mangrove swamps for both educational and eco tourism purposes.

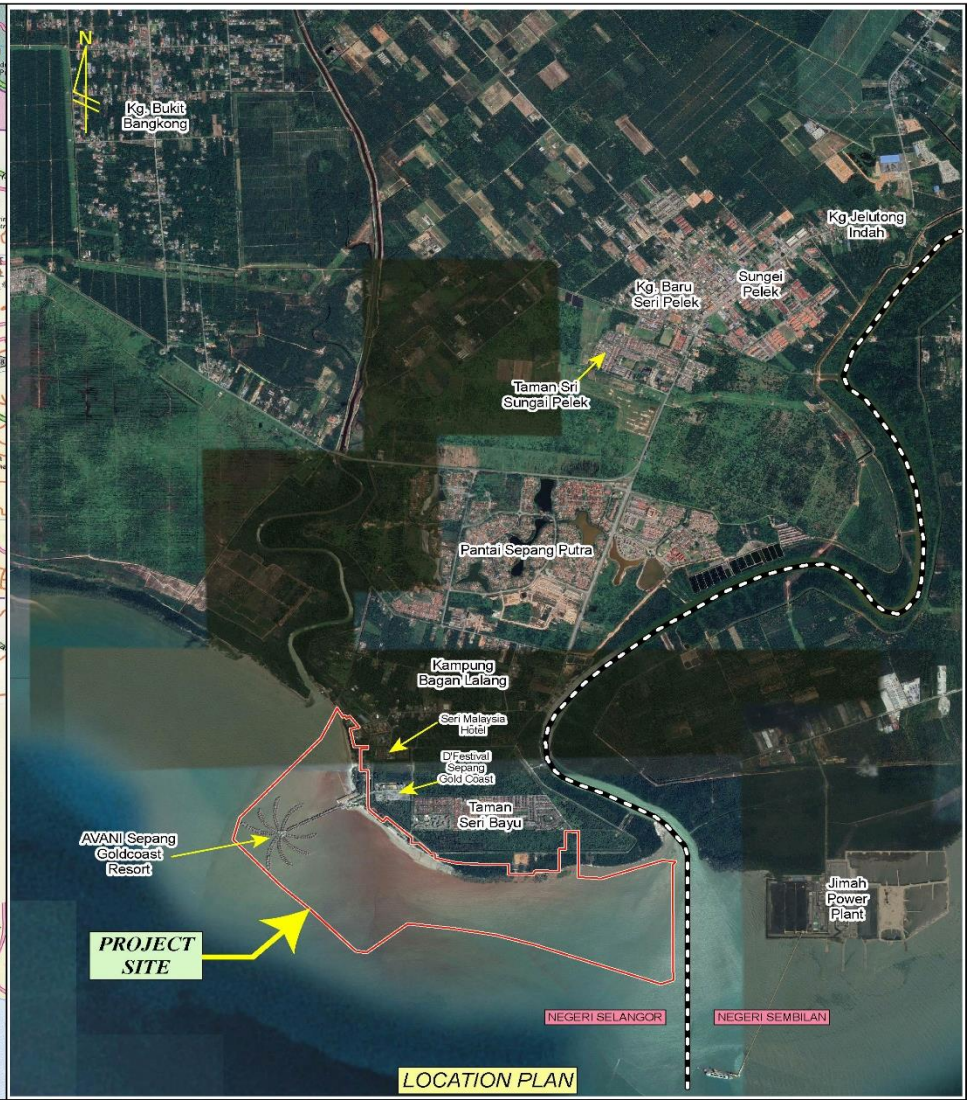
OTHER SUPPORTING MATTER

- Expands the **employment market** ranging from laborers (i.e., construction phase) to office/clerical works (i.e., operational phase of the commercial enterprises).
- KLIA Aeropolis development is expected to provide a spill over effect on the surrounding areas including Sepang Goldcoast South development especially from a real estate perspective.

CONFORMANCE TO NATIONAL TOURISM POLICY 2020-2030 & UNITED NATIONS SUSTAINABLE DEVELOPMENT GOALS

- 5 sustainable development goals are matched with the proposed South Coast Development

KEY & LOCATION PLANS



CURRENT ON-SITE CONDITION

Resorts and restaurants along Bagan Lalang coast

Bagan Lalang coastal beach

Sepang Goldcoast Avani Resort

Medan Selera Bagan Lalang

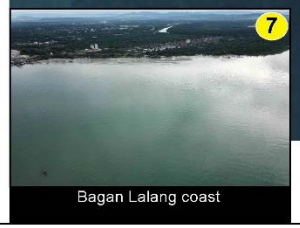
Bagan Lalang coastal beach

Fringing mangroves along Bagan Lalang coast

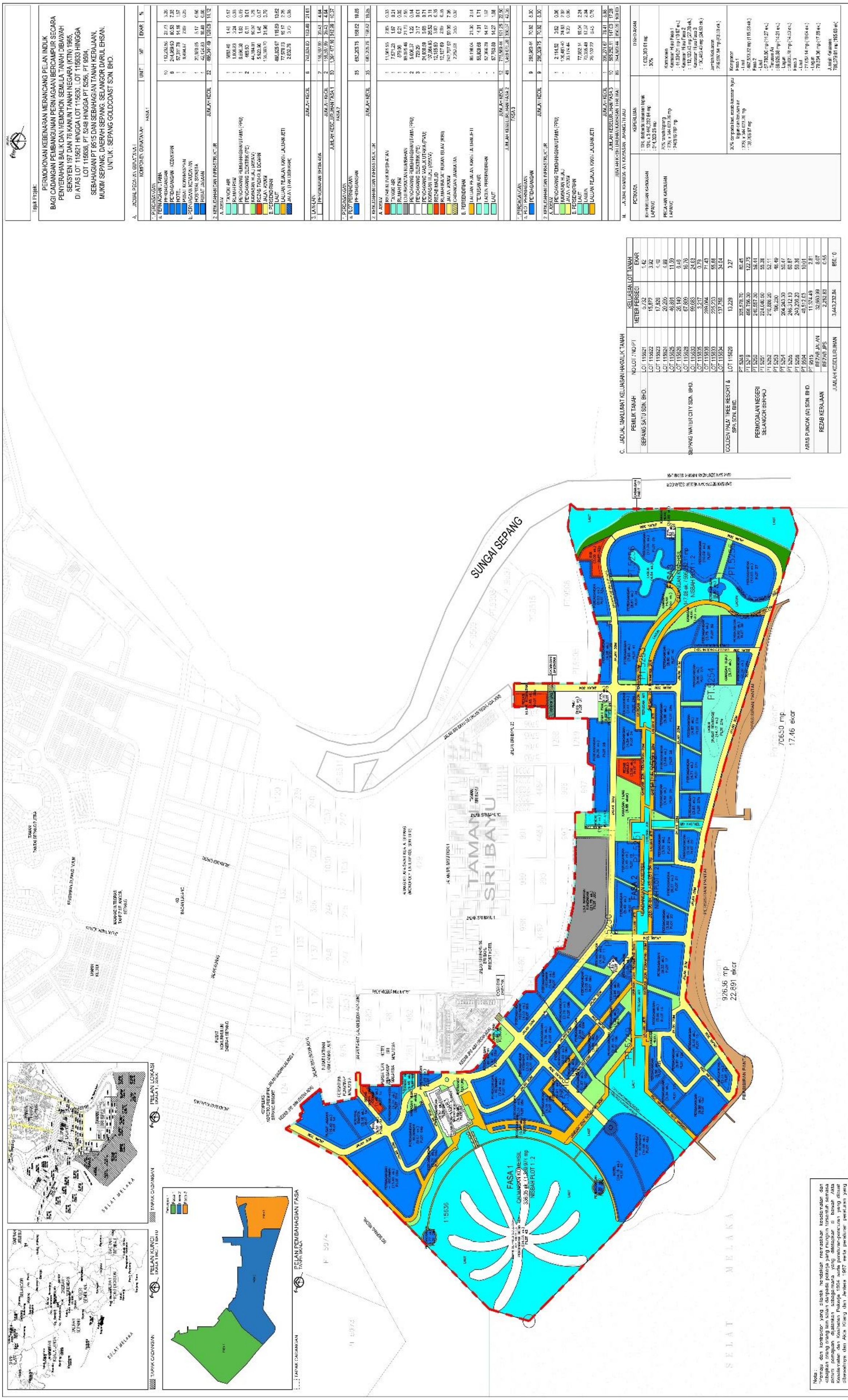
JPS drain reserve

Local and orang asli Houses

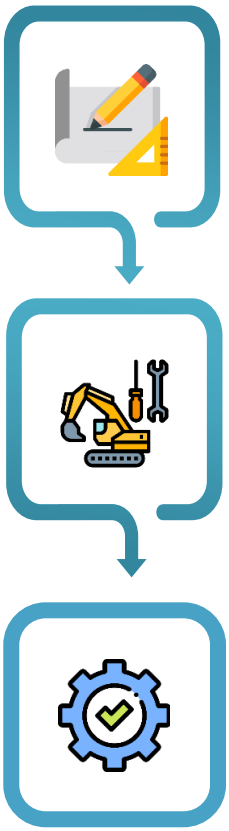
IMMEDIATE RECEPTORS



PROPOSED LAYOUT PLAN OF THE PROJECT SITE



PROJECT ACTIVITIES



PRE-CONSTRUCTION STAGE

- ✓ Land Survey
- ✓ Hydrography Survey
- ✓ Subsurface Investigation
- ✓ Traffic Impact Studies
- ✓ Marine Risk Assessment
- ✓ Social Impact Assessment
- ✓ Hydraulic Studies
- ✓ Environmental Studies
- ✓ Engineering Studies
- ✓ Health Impact Assessment

CONSTRUCTION/RECLAMATION STAGE

- Site Preparation and Vegetation Clearing
- Mobilization of Workers and Equipment
- Staff Accommodation and Site Office
- Hybrid reclamation & Engineered Beach Establishment
- STP construction
- Landscaping and Replanting of mangrove
- Waste Generation, Management and Disposal

OPERATIONAL STAGE

- Commercial & Eco-tourism activities
- Maintenance work for STP and discharge monitoring
- Waste Generation, Management and Disposal
- Shorelines Monitoring

ESTIMATED UTILITIES DEMAND & GENERATION

CONSTRUCTION STAGE		OPERATIONAL STAGE
		Maximum electricity demand **120.86 (MVA).**
		Total water demand figure is approximated to be **79,594,073 L/D**
Sewage generation is **67,500 L/day** (300 PE)		Sewage generation is **58,380,975 L/day** (**259,471 PE**)
Generation solid waste is **300 kg/day** (300 PE)		Generation of solid waste is **260 tons/day (259,471 PE)**

PHYSICAL ENVIRONMENT

HYDROGRAPHY AND BATHYMETRY

According to National Coastal Erosion Study (NCES) 2015, proposed Project Site can be categorized as **Category III – Acceptable Erosion**: Slowly retreating coastline of less than 1m per year with generally no human settlement and minimal agricultural activity, and not served by public infrastructure and facilities.

From bathymetry survey, the development is located on **delta area** (inundated at high tide) with approximate depth of 0mMSL, only small portion of area with depth approximately -2mMSL. Water depth in front of the development ranges between -2mMSL to -40mMSL.

HYDROLOGY

Project Site is located between the two (2) estuaries of **Sg. Sepang Besar** and **Sg. Sepang Kechil.**

The surface runoff flows 2 ways from the land base of the Project Site flows southwestwards into JPS canal which is channelized and flows into Sg. Sepang Besar in the eastern region and eventually discharges into Straits of Melaka.

GENERAL GEOLOGY

Project Site is situated on **Gula Formation.**

The Project Site is situated in area with Modified Mercalli Intensity (MMI) scale of V-VI with low peak ground acceleration (PGA) ranging from 4 to 5.9%.

SOIL INVESTIGATION

Based on the soil investigation (SI) conducted a total of **eight (8) exploratory boreholes** were drilled within the Project Site.

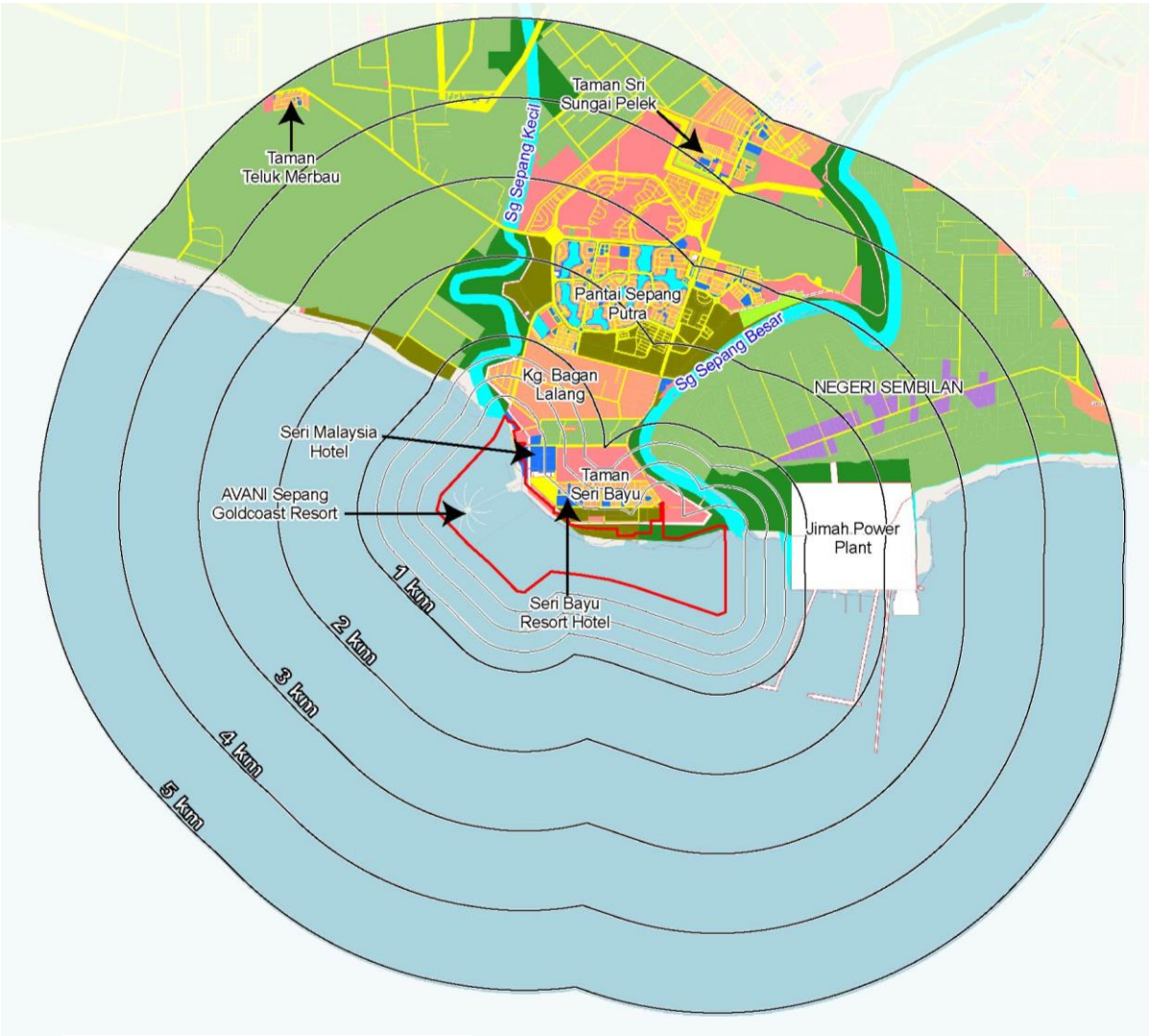
Generally, top soil consists of majority very loose fine SAND and very soft to soft Clayey SILT of approximately 19.50m to 37.50m thick with a SPT-N value of up to 20 blows/300mm, followed by subsoil layer of, Silty SAND, Clayey SILT, Silty CLAY of approximately 6.0m to 33.0m thick with a SPT-N value of 20 to 50 blows/300mm.

No bedrock was encountered at all boreholes. All boreholes were terminated after six (6) consecutive hard layers in which the SPT-N values are greater than 50 blows/300mm.

HYDROGEOLOGY & GROUNDWATER

The Project Site is located on very high potential aquifer regime of this region. The nearby **active tube wells** are located at Kg. Tumbuk Darat which is approximately 11 km northwest from the proposed Project Site.

LANDUSE



Legend

- Badan Air
- Industri
- Infrastruktur dan Utiliti
- Institusi dan Kemudahan Masyarakat
- Komersial
- Pengangkutan
- Pertanian
- Perumahan
- Tanah Kosong
- Tanah Lapang dan Rekreasi
- Hutan

LANDUSE

Water body is the **highest land use** components covered with a total area of 21,090.84 acres (64.41%) followed by agriculture (6,731.20 acres; 20.56%), residential (2,333.20; 7.13%) and Institution & Community Facilities.

BIOLOGICAL ENVIRONMENT

FLORA AND FAUNA

- ✓ Survey conducted at Project Site and surrounding mangrove forest area; Fifteen (15) mangrove species from four (4) families were sampled from the mangroves of Sg. Sepang Besar and Sg. Sepang Kecil. The mangroves were most represented by the Rhizophoraceae.
- ✓ Long-tailed macaques (*Macaca fascicularis*), dusky leaf monkey (*Trachypithecus obscurus*) and silvery lutung (*Trachypithecus cristatus*) were commonly found at the mangroves area along Sg. Sepang Besar and Sg. Sepang Kecil.
- ✓ Reptile species at the Project Site are comprise of common mangrove snakes, monitor lizards, flying lizards, green crested lizards.

ENVIRONMENTAL SENSITIVE AREA (ESA)

- ✓ Based on the Local Plan of Majlis Perbandaran Sepang (Pengubahan 4) 2025, the proposed Project Site is **within of ESA area** of Delta Pantai Bagan Lalang and Persisiran Pantai while Hutan Paya Bakau Sg. Sepang Besar and Sg. Sepang Kecil is located within the vicinity of the proposed project site.

IMPORTANT BIRDS AND BIODIVERSITY AREA (IBA)

- ✓ Nearest IBA is North Central Selangor Coast (MY011) (~55km northwest) and Tanjung Tuan (MY012) (~25km southeast).

MARINE RESOURCES

- ✓ **Sixty-seven (67)** macrobenthos taxa were recorded.
- ✓ **Thirty-five (35)** zooplankton taxa were recorded.
- ✓ **Thirty-three (33)** taxa of the phytoplankton were recorded.
- ✓ **Thirty-one (31) fish taxa** from 21 families were sampled from the Bagan Lalang coastal waters

SOCIO-ECONOMIC AND HUMAN ENVIRONMENT

TOTAL POPULATION (Population and Housing Census of Malaysia, 2020 – District Sepang)

- ❑ Total population estimation for Sepang District is 257,500.
- ❑ Ethnic composition:- 71.3% Bumiputera, 14.8% Chinese, 13.4% Indian, and Others 0.6%. Meanwhile non-citizens are 10.8%.

SOCIAL IMPACT ASSESSMENT

Social impact assessment has been carried out and prepared by YZD Planning & Consult Sdn Bhd.

FOCUS GROUP DISCUSSIONS (FGD)

Focus Group Discussions were conducted with the identified impacted communities which are fishermen, residents (direct / indirect), Orang Asli, businessmen, and visitors or tourists. In addition, FGD were also conducted with government agencies and NGOs/Associations.

The main issues arising from the discussion and SIA findings are elaborated in Chapter 6.

BASELINE SAMPLING

WATER QUALITY

Sg. Sepang Kecil (SK1 & SK2)

- Most of the parameters complied within the Malaysian Marine Water Quality Standards 2019 MMWQS Interim Class E1 (Coastal Plain) limit.
- Exceedances were recorded for parameter nitrate (NO_3) and aluminum.

Sg. Sepang Besar (SB1, SB2, SB3 & SB4)

- Most of the parameters complied within the Malaysian Marine Water Quality Standards 2019 MMWQS Interim Class E1 (Coastal Plain) limit.
- Exceedances were recorded for parameter nitrate (NO_3), mercury and feacal coliform.

Bagan Lalang coastal waters (MW1, MW2, MW3 & MW4)

- Most of the parameters complied within the Malaysian Marine Water Quality Standards 2019 MMWQS Interim Class 3 limit.
- Exceedances were recorded for parameter nitrate (NO_3), aluminium and mercury.

AIR QUALITY

- Complied to Malaysian Ambient Air Quality Standards 2013, Standard 2020.

NOISE

- Existing noise level **exceeded** stipulated limit of First Schedule [Suburban Residential (Medium Density), Recreational
- Daytime of 60 dBA for sampling station N1 (60.6 dBA), N3 (68.6 dBA), and N4 (60.3 dBA).
- Nighttime of 55 dBA for sampling station N3 (60.3 dBA) and N4 (60.7 dBA).

VIBRATION

- The Vertical Peak Particle Velocity (mm/s) at V1, V2, V3 and V4 have shown that the curves **exceeded** the maximum velocity level of 200 µm/s or 0.2 mm/s for First Schedule for Residential.

ODOUR

- The perceived odour concentration **within** the project site surroundings for unpleasant smells namely drainage and burning smoke ranged from <2 D/T [Very Faint] to 4 D/T [Noticeable].

BASELINE RIVER WATER, MARINE WATER, AMBIENT AIR, NOISE, VIBRAION AND ODOUR SAMPLING STATIONS

Sampling	Latitude	Longitude
SB1	2°36'57.26"N	101°43'42.36"E
SB2	2°37'2.01"N	101°42'52.06"E
SB3	2°36'18.04"N	101°42'9.05"E
SB4	2°35'50.30"N	101°42'43.97"E
SK1	2°37'5.62"N	101°41'14.91"E
SK2	2°36'39.67"N	101°41'5.31"E
D1	2°35'47.72"N	101°42'5.70"E
MW1	2°35'26.13"N	101°42'27.88"E
MW2	2°35'22.81"N	101°42'53.71"E
MW3	2°35'12.70"N	101°41'35.67"E
MW4	2°36'18.00"N	101°40'48.34"E
A1N1V1O1	2°36'37.43"N	101°41'7.87"E
A2N2V2O2	2°36'4.45"N	101°41'19.88"E
A3N3V3	2°35'56.01"N	101°41'33.19"E
A4N4V4O4	2°35'48.12"N	101°42'31.34"E
O3	2°35'55.98"N	101°41'33.19"E
BO1	2°36'6.66"N	101°41'25.32"E
BO2	2°35'49.12"N	101°41'37.12"E

CONSTRUCTION PHASE

LOGISTIC ROUTE

LOGISTIC ACCESS: Federal Route 5 (FT5) → Jalan Bagan Lalang (B119) → Jalan Lokan → Project Site.

IMPACTS

- **Noise and dust disturbances** - impacted settlement would be Kg. Bagan Lalang, Taman Sepang Putra, Taman Seri Bayu and resorts in Pantai Bagan Lalang.
- **Increment of traffic risks** especially by heavy vehicles onto Jalan Bagan Lalang (B119).
- Possible **oil spillage and spillage of raw construction materials** onto public roads.
- The increase of **traffic hazards**.

MITIGATION MEASURES

- Implement **Traffic Management Plan (TMP).**
- **Regular sweeping** / cleaning of access roads.
- **Flagmen** must be stationed at the access road junctions to control and direct traffic.
- Vehicles will have to observe **speed limits.**
- Proper **warning signs**, signals or warning light and barricade are recommended to ensure safety and smooth flow of traffic.
- **Wash trough** is proposed at each phase of the Project site's entrance/exit gateway.

WORKER' ACCOMODATION

Estimated **300 workers** shall be needed during construction stage.
Direct Discharge of **untreated sewage** can cause water and air pollution.

IMPACTS

- **Generation of sewage and solid waste**.
- **Without proper sewage management**, untreated raw sewage could cause water pollution and lead to spread of disease and thus creating hazard to the communities nearby.

MITIGATION MEASURES

- Most of the workers will be accommodated in the nearby residential areas such as Taman Seri Bayu and Pekan Sungai Pelek area.
- Site office should **be kept clean at all time**.
- Sufficient **basic amenities** such as water and electricity must be available.
- **No open-burning** of rubbish shall be carried out.
- **Comply with the Employees' Minimum Standard** of Housing Accommodations and Amenities (Accommodation & Centralized Accommodation) Regulations 2020 and Law of Malaysia (Act 446) Employees' Minimum Standards of Housing, Accommodations and Amenities (Accommodation and Centralized Accommodation) Regulations 2020, if constructed.

HYBRID RECLAMATION/EARTHWORKS

The **total fill** for the whole development is 9,301,304 m^3. The earth fill (5,164,713 m^3) and sand fill material (4,136,591 m^3) will be obtained from the possible approved source at the state of Selangor and earth & rock from Negeri Sembilan with the necessary approvals.

IMPACTS

- Under the **worst-case scenario** and no erosion control mitigation measures are implemented, the soil erosion rate for reclamation works for the earthworks areas is **76.4 tons/ha/year**. Total sediment yield is estimated to be **1,038.6 tons** per storm event.

MITIGATION MEASURES

- Implementation of **LD- P2M2**.
- Provision of **eleven (11) sediment basins**.
- Maintenance of the **drainage network** and sediment basins.
- **Compliance** to Condition of Approvals (COAs).
- Construct temporary sand bunds with geo membrane, perimeter drain/silt fence/silt curtain along the site boundary and use sandbags as necessary to prevent mudflows off-site and ensure effective perimeter control.

COASTAL HYDRAULIC ASSESSMENT

Waves Modelling Findings
Waves heights are much lower as approaching the Sg. Sepang Besar river mouth and create a much sheltered and calmer area. Proposed development will provide shelter from the propagation waves where the height of the wave reduces to 0.05m to 0.2m.

Mud Transport Assessment Findings
Mean and maximum suspended sediment concentration are almost negligible at the proposed development area;

Sediment Transport Assessment Findings
Condition with deepening of the sea bed in front of Sungai Sepang Besar shows improvement in terms of potential bed level change.

Hydraulic Assessment Findings

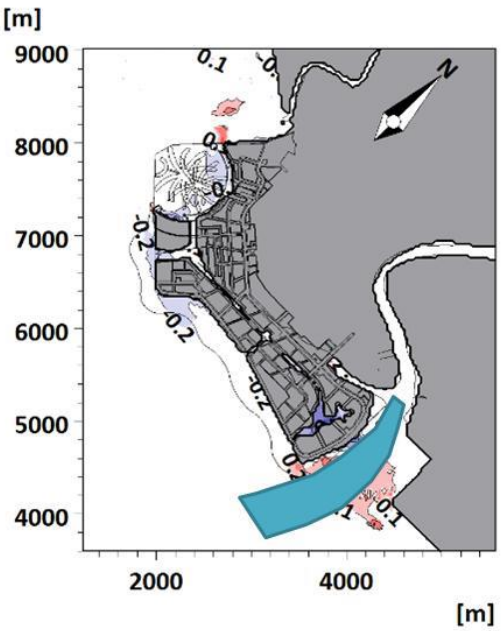
- Current flow pattern and speed shows changes with the implemented of proposed development. Changes in current pattern and speed occur especially at the river mouth of Sungai Sepang Besar where the current speed increase. This is due to the choking of the area thus might lead to potential deepening of seabed/erosion. There is certain area that may experience reduction in current speed which may lead to potential sedimentation.
- Wave analysis shows that the proposed development does not give any significant impact to the palm area of Avani Goldcoast Sepang and development area. There are decrease in significant wave height when it reaches Sg Sepang Besar. Proposed development will provide shelter from the propagation waves where the height of the wave decrease.
- From the Mud Transport analysis, reclamation activities might lead to disturbance to the sensitive receptors but are localized at the proposed development.
- Hydraulic report has already been approved by JPS Malaysia on 28/07/2022 with ref:(6)dlm PPS14/7/B60.

RECOMMENDATION AND MITIGATION MEASURES

1. SILT CURTAINS

Proposed location of Silt Curtain installation

2. DEEPENING OF SEABED IN FRONT OF RIVER MOUTH



Proposed location for deepening / dredging in front of Sungai Sepang Besar.

3. SHORELINE MONITORING

The shoreline monitoring should be carried out every three (3) months during the construction, and every six (6) months after completion of the project. The shoreline monitoring shall stop after three (3) years project completed.

CONSTRUCTION PHASE

AIR POLLUTION

Upon commencement of earthworks and reclamation, the air quality within and the surrounding of the development may **deteriorate**.

IMPACTS

- **Increased level of PM10 and PM2.5** due to spillage or wind-blown dust from uncovered material.
- **Traffic movement** on dirt road will churn up the surface and may incite hazy condition especially during dry and windy periods.
- Might directly **affect the residents** of Kg. Bagan Lalang, Taman Sepang Putra, Taman Seri Bayu and resorts in Pantai Bagan Lalang.

MITIGATION MEASURES

- Provision of **wash trough**.
- Constant **wetting and cleaning of roads** connecting the Site to external public roads.
- Proper **covering of raw materials** and topsoil stockpiles.
- **Traffic management** trough speed limits and regular maintenance of vehicles / machinery.
- To **erect hoarding**/ new jersey barrier along the boundary of the Project Site.

NOISE POLLUTION & VIBRATION NUISANCE

The development can cause considerable noise emission and vibration nuisance.

IMPACTS

- **High noise and vibration level** will create nuisance and pose psychological effect to the receptors, and to some extend may cause physiological effect.
- **Ground vibration** from heavy vehicle movements and piling activities.
- **Nearest Impacted Receptors**: - Kg. Bagan Lalang, Taman Sepang Putra, Taman Seri Bayu and resorts in Pantai Bagan Lalang.

MITIGATION MEASURES

- Construction activities should be done only during **day-time**.
- **Maintain all equipment and machinery**.
- **Compliance with DOE** and **DOSH noise limits** for occupational noise levels to mitigate the noise emission to nearby receptors.
- Establish a "Public Communication Centre" for the purpose of disseminating information about the construction activities and for receiving complaints

WATER POLLUTION

Site clearing and earthwork activities will have a significant impact on the hydrological regime.

IMPACTS

- **Incidence of improper management** of wastes will result in organic pollution.
- **Any discharge that fails** to comply with NWQS and MMWQS Standard, will pollute the receiving river and marine.

MITIGATION MEASURES

- Provision of **11 sediment basins**.
- Site office and site toilets are equipped with septic tanks and regularly desludged.
- Implementation of LDP2M2.

WASTE GENERATION

The amount of **waste generated** continues to increase due to the increasing population and development.

IMPACTS

- **Indiscriminately dumping** of domestic waste.
- **Sewage to be generated** during the construction stage is at 67,500 l/day (~estimated 300 workers; which is equivalent to 300 PE).
- Diesel or hydraulic oil spill onto soil causing the **soil and marine water contamination**.

MITIGATION MEASURES

- All domestic and building waste will be **disposed off site to an approved dumpsite**, i.e. Tanjung Dua Belas Sanitary Landfill.
- **No burning of wastes** (i.e., rubbish and unused materials).
- Temporary toilet should be **desludged regularly**.
- All scheduled waste must be **handled as per requirements of the Environmental Quality** (Scheduled Wastes) Regulations 2005.

CONSTRUCTION PHASE

TRAFFIC

Based on the TIA findings for SGC South Development, Level of Service (LOS) for identified road are:

- FT5: LOS A (Phase 1) → LOS E (Phase 2) → LOS B (Phase 3)
- Jalan Bagan Lalang: LOS A (Phase 1) → LOS D (Phase 2) → LOS D (Phase 3)
- Jalan Lokan: LOS A (Phase 1) → LOS E (Phase 2) → LOS E (Phase 3)
- The traffic hazards impact is expected to be **short term.**

MITIGATION MEASURES

- Implementation of **Traffic Management Plan (TMP)**.
- Adequate **temporary signage and markings** need to be installed as recommended by JKR and local authority guidelines.

MARINE TRAFFIC AND NAVIGATION

Two (2) charted navigational hazards in the area which is a submarine fibre optics cable lies along the coastline, owned and operated by TIME.com and Bembek Shoal with charted depth +0.4m above the chart datum. However, these hazards **do not present any significant risk** to the proposed activity.

MITIGATION MEASURES

- Movement of barge **must be controlled** and monitored by 24/7 Marine Operation Control Centre (MOCC).
- **Containment bund** (rock or sand) must be marked by flashing light at interval not less than 10m apart to alert other traffic
- Submerged sand discharging line (if in use) must be marked by floating blinkers at interval of not less than 10m apart to alert other traffic
- Work area must be designated and marked by appropriate light buoys.
- **Standard Operating Procedure (SOP)** and **Emergency Response Plan (ERP)** shall be prepared for controlling traffic of work vessels in order to minimise risk of collision and grounding.

BIOLOGICAL ENVIRONMENT

IMPACTS

- **Human-Wildlife Conflicts (HWC)** involving long-tailed macaques (*Macaca fascicularis*) and dusky leaf monkey (*Presbytis obscura*).
- Wildlife road kill.
- Mangrove removal of 8.62 hectares.
- Decimation of benthos within affected project areas, significantly depletes density, biomass, diversity, and changes macrobenthos feeding.
- Loss of fishing ground.

MITIGATION MEASURES

- Implementation of **Wildlife Management Plan**.
- Mangrove replanting at areas approved by Jabatan Perhutanan Negeri Selangor.
- Increasing the number of Fish Aggregating Devices (FADs) and Artificial Reefs (AR).

SOCIAL ENVIRONMENT

IMPACTS

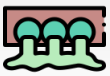
- Environmental nuisances, potential river and marine water pollution, ambient air pollution, noise and vibration nuisances are among environmental entities that would affect the existing community surrounding the Proposed Project.

MITIGATION MEASURES

- To **receive complaints and feedback** from affected fishermen and affected communities.
- To carry out **CSR** activities, programs and assistance together with fishermen and affected communities
- To implement the **Social Impact Management Plan (SIMP) as agreed.**

OPERATIONAL PHASE

STORMWATER MANAGEMENT



A flood mitigation by managing the surface run off during heavy downpour.

IMPACTS

- **A higher and faster peak discharge** is anticipated due to the increased imperviousness created by the presence of built-up units, paved road systems and reclamation plots.
- Without proper management of drainage, heavy surface runoff is expected.

MITIGATION MEASURES

- **Drainage system** shall be provided within the project site to channel the storm water into Selat Melaka at the nearest distance.

WATER POLLUTION

Treated Sewage discharge from 260,000PE STP.

IMPACTS

- Pollution of Sg. Sepang Besar and the adjacent coastal zone presents several risks including Fishkill as well as contamination of waters (in terms of bacteria) affecting recreational activities.
- High ammonia and organics not only can incur Fishkill in the river, but also to cage cultures in the vicinity. Suitability of water for pond aquaculture may also be jeopardized. High nutrients can also incur algae blooms.
- Bacteria contaminated water can increase presence of waterborne pathogens; jeopardizing recreational activities.

MITIGATION MEASURES

- During phase 1, compliance of the proposed STP to standard A of the Environmental Quality (Sewage) Regulations 2009.
- During phase 2 & 3, the modeling exercise established that the following thresholds should not be exceeded :
  - o BOD < 10 mg/L
  - o NH_3-N < 5 mg/L
  - o NO_3-N < 10 mg/L
  - o T-P < 2 mg/L
- Monthly monitoring for all parameters listed in the Environmental Quality (Sewage) Regulations 2009, fecal coliform, E. coli, total coliform and enterococci at Sg. Sepang Besar and the coastal zone, at SB3, SB4, MW1 and MW2.

FLOOD RISK

With rapid urbanization, any development may put the land area under flood risk.

IMPACTS

- **Unlikely flood risks** as per Laporan Banjir Tahunan 2020 and Tahunan 2021 published by Pusat Ramalan dan Amaran Banjir Negara, Jabatan Pengairan dan Saliran Malaysia, there is no record or incident of flooding in the Project Site area.

MITIGATION MEASURES

- As the project will be reclaimed to the higher ground level, possibility of the development to encounter flood risk is unlikely.

WASTE MANAGEMENT

Regular collection, transportation as well as processing and disposal or recycling and monitoring of different types of waste materials.

IMPACTS

- **Lack of maintenance** will result in unpleasant smell and unsightly view.
- Indiscriminate, discharge of untreated wastewater can be detrimental to the water quality.
- All drainage systems and piping will be clogged if the sullage and kitchen wastes are discharged without a proper trap.
- Improper disposal of solid waste may affect aesthetic quality, a source of water contamination and proliferation of disease vectors.

MITIGATION MEASURES

- Solid waste shall only be disposed at an approved dumpsite (i.e., Tanjung Dua Belas Sanitary Landfill).

OPERATIONAL PHASE

AIR & NOISE

Upon full operation, due to increase of tourists, residents and commercial tourism activities.

IMPACTS

- **Increase of traffic** contributing factors to air and noise pollution.

MITIGATION MEASURES

- **Provision** of sufficiently sized junctions, traffic signages and proper maintenance of **road network system**.
- **Regulatory procedures** or control of traffic emissions to comply with the legislative limits.
- **Heavy landscaping** can be used to naturally screen the surroundings.
- **Landscape buffer at Phase 3** to be established will minimize dust dispersion from Jimah Powerplant.

BIOLOGICAL ENVIRONMENT

Tourists' influx cause unattended rubbish increases → attract long tailed macaque → increase frequency cases of HWC

IMPACTS

- Human-wildlife conflict (HWC) may still potentially occur during the operation phase. HWC cases reported involving two (2) species - long-tailed macaques (*Macaca fascicularis*) and dusky leaf monkey (*Presbytis obscura*) from surrounding.

MITIGATION MEASURES

- **Implementation** of aesthetically pleasing, visually enhancing and extensive **landscaping** will attract a community of small animals and provide a wholesome environment.
- Implementation of **Wildlife Management Plan**.
- **Mangrove replanting** and monitoring.

SOCIO-ECONOMIC ENVIRONMENT

Tourists influx and more vibrant tourism and commercial activity in this area.

IMPACTS

- **Increase current status of living** of the local population residing nearby in terms of public utilities, amenities and infrastructures.

MITIGATION MEASURES

- Continue to implement **Social Impact Management Plan (SIMP)** and **CSR** Program during Phase 1, Phase 2 and Phase 3 operation stage.
- Scheme proposal includes Empowerment of Fishermen through Fishery Taskforce Committee Sepang.
- To give priority of jobs, business and entrepreneur training to the surrounding community.

TRAFFIC

When the overall SGC South Coast area is being opened up, it can cause considerable noise emission and vibration nuisance.

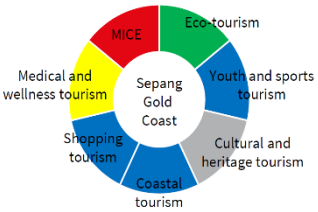
IMPACTS

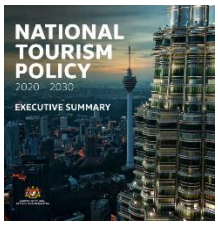
- By year 2031, the peak hour two-way traffic demands (inbound and outbound) of **Phase 1** development would be ranging from 6,000 to 8,100 PCU/hour.
- By year 2041, the demands of both **Phase 1** and **Phase 2** will range between 13,190 and 18,754 PCU/hour.
- Ultimately in the year 2048, the hourly demands during peaks will reach 14,840 to 22,158 PCU.

MITIGATION MEASURES

- **Junction improvements** have been recommended to ensure smooth and safe flow of traffic and acceptable level of service performance for the surrounding junctions.

- **SGC South development** is conformance to **Local Plan of Majlis Perbandaran Sepang 2025 (Pengubahan 4)** and the **National Tourism Policy 2020 – 2030** to drive the development of high value and innovative tourism products and services in the State of Selangor and also Malaysia.





- Engineered accelerated ground consolidation in plots within overall three (3) phases to allow for common infrastructure establishment to follow suit after reclamation. **Eleven (11) sediment basins** for the overall development must be carried out in order to ensure that the surface run off is at a manageable level to ensure compliance to limits on surface quality control as per the recommendations of the Land Disturbing Pollution Prevention and Mitigation Measures (LDP2M2). The hybrid reclamation method is also innovative idea to minimize impacts.

- STP Discharge Compliance to **Standard A** of the Environmental Quality (Sewage) Regulations 2009 is adequate to preserve the water quality of Sg. Sepang Besar, coastal region in Phase 1. For Phase 2 and Phase 3, impact of STP is significant thus treated STP effluent shall not exceeded **modelled Waste Load Allocation (WLA)** limit of BOD (<10 mg/L); NH_3-N (<5 mg/L); NO_3-N (<10 mg/L) and T-P (<2mg/L).

- Based on the approved Hydraulic study, recommendation to minimize impacts of the reclamation during construction and operated stages such as regular shoreline monitoring, revetment design, installation of silt curtains and deepening of seabed of Sg. Sepang Besar.

- Mangrove replanting at the designated area with Jabatan Perhutanan Negeri Selangor, Placement of Fish Aggregating Device (FAD) (Unjam) and Artificial Reef in the coastal waters of Bagan Lalang with Jabatan Perikanan Negeri Selangor, human-wildlife conflict management especially for monkeys of Lotong and Kera within Bagan Lalang area with the Jabatan Perhilitan Negeri Selangor. There is also commitment to conduct underwater noise pollution assessment during the operational stage as per Jabatan Perikanan Malaysia request in the EMP.

- Implementing the **Social Impact Management Plan (SIMP)** is crucial to bring benefits to the local fishermen and surrounding affected community and to ensure they are not impacted during the construction and operation stage.

- SGC South development can carry on within the context of a **sustainable eco-tourism framework development** and eventually create a more vibrant environment and opportunity to Sepang, Selangor as well as enhance socio-economic profile within this area during this Post-COVID Era.