

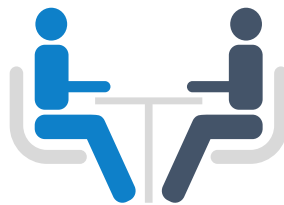


# EIA for the Proposed New Lawas Airport at Sundar, Lawas, Limbang Division, Sarawak

Proponent:



Regional Corridor Development Authority



Qualified Persons:



CHEMSAIN

Chemsain Konsultant Sdn. Bhd.

## Legislative Requirement



### Environmental Quality (Prescribed Activities) (Environmental Impact Assessment) Order, 2015

ITEM 2 AERODROME

Sub-item (a) Construction of a new aerodrome involving a runway of 1,000 metres or longer.

## Statement of Need

- To relocate the existing Lawas STOLport that is constantly being affected by floods and erosion;
- To be an integral component for the Growth of the Oil & Gas Industry;
- To boost air connectivity to Lawas;
- To be a catalyst for the Eco-Tourism Industry of Northern Sarawak; and
- To support Lawas as the nerve centre of the NRDA region under the SCORE initiative.



# Project Description

## Proposed New Lawas Airport

- **Location:** at Sundar, Lawas, Limbang Division, about 11 km away from existing STOLport (refer to **Figure ES-1**)
- **Size:** 207.56 Ha



## Project Size and Capacity

- The new Lawas airport will cater to 194,200 to 244,400 passengers by 2050. It will be a **Code 3C airport** with a 1,790 m runway, but earthwork for a 2,500 m runway will be done in two stages.

# Project Concept and Components

## Aircraft

### Phase 1



ATR 72-500

### Phase 2



Boeing B737-800 /  
Airbus A321

## Components

### Airside

- 04/22 45m width Runway, Runway End Safety Area (RESA), Taxiway, Apron
- Passenger Terminal Building, CAAM ATC Tower and Office, CAAM & Meteorological Staff Quarters
- MET Station & MET Farm, Airport Fire Rescue Station
- Fuel Shed (Paved Platform only)

### Landside & Airport System

- Carparks, Access Road & Internal Circulation Roads
- DVOR-Radio Navigation System)/DME, Simple Approach Lighting System at Runway 22, Precision Approach Lighting System at Runway 04, ILS/DME, VHF LLZ

### Utilities & Support

- SEB Main Substation, CAAM Substation, Water Main Suction Tank & Pump House, Reservoir & Fire Fighting Tank, Sewage Treatment Plant, Detention Pond, Substation for AGL, Central Utility Building
- Provision for Future Cargo and Support Facilities, Future Fuel Depot

## Environmental Pollution Control

### Sewage

- Construction- Septic tank
- Operation- Sewage treatment plant of 450PE

### Greywater & Kitchen Water

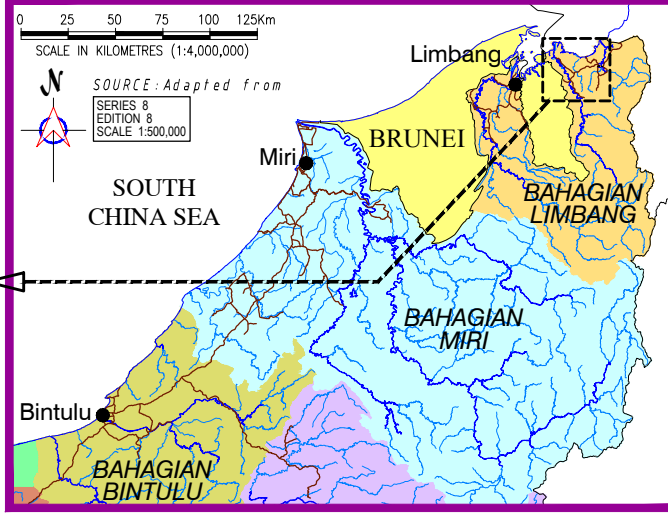
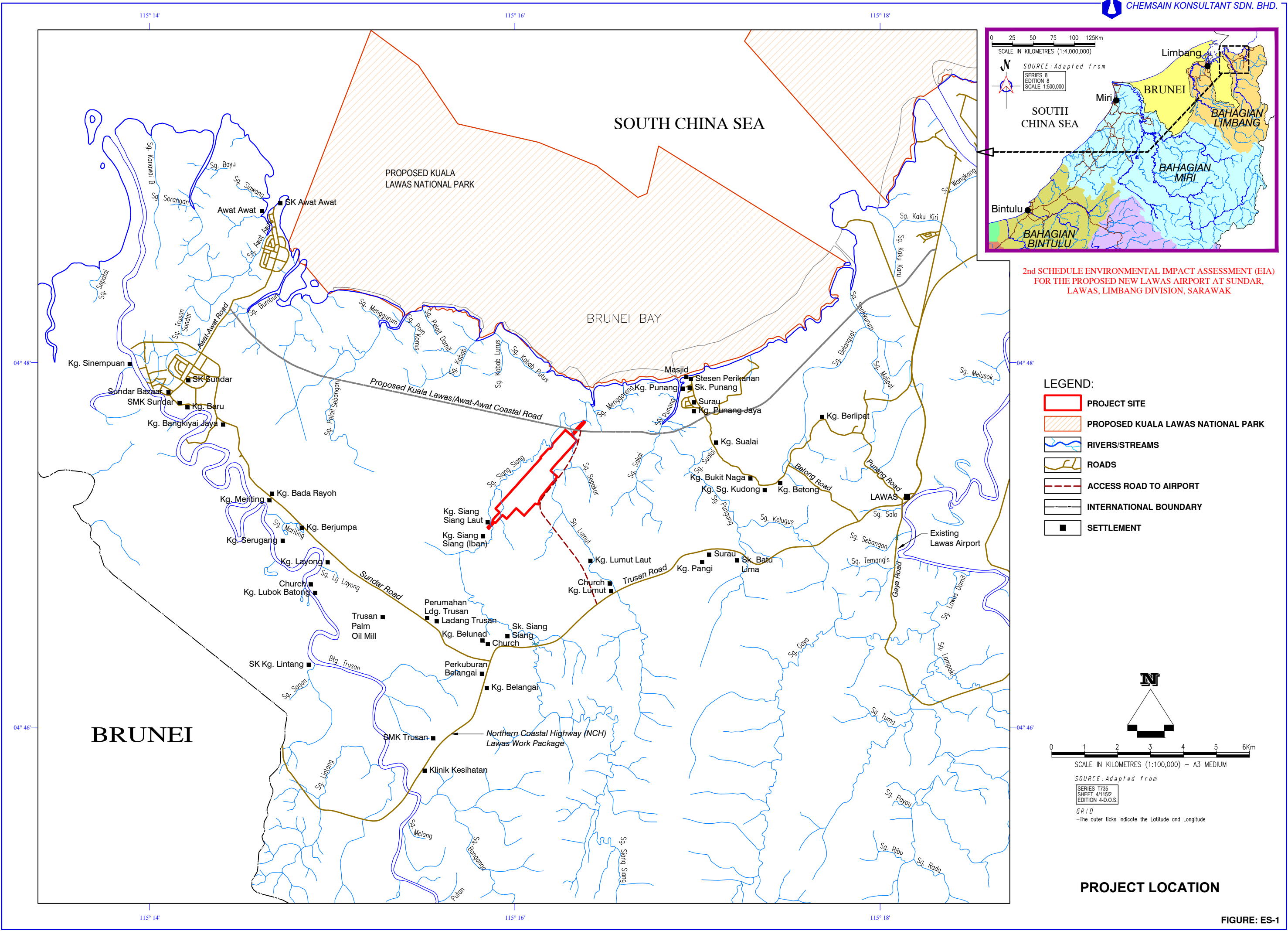
- Greywater- STP for treatment
- Kitchen water - oil & grease interceptor

### Stormwater

- Channel into perimeter drain, four (4) discharge points
- One (1) detention pond and three (3) natural ponds to detent runoff

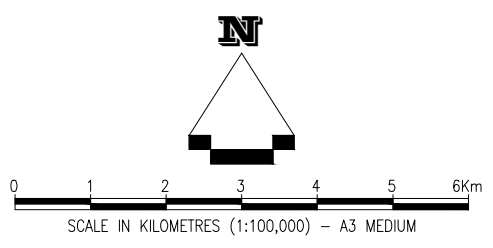
### Waste Management

- Solid waste- disposed off at council approved dumpsite
- Scheduled waste- managed as per EQ (Scheduled Wastes) Regulations, 2005



2nd SCHEDULE ENVIRONMENTAL IMPACT ASSESSMENT (EIA) FOR THE PROPOSED NEW LAWAS AIRPORT AT SUNДАР, LAWAS, LIMBANG DIVISION, SARAWAK

- LEGEND:**
- PROJECT SITE
  - PROPOSED KUALA LAWAS NATIONAL PARK
  - RIVERS/STREAMS
  - ROADS
  - ACCESS ROAD TO AIRPORT
  - INTERNATIONAL BOUNDARY
  - SETTLEMENT



SOURCE: Adapted from  
 SERIES T735  
 SHEET 4/115/2  
 EDITION 4-D.O.S.  
 GRID  
 -The outer ticks indicate the Latitude and Longitude

**PROJECT LOCATION**

FIGURE: ES-1

# Project Activities

Boundary survey, topographical assessment, land acquisition, soil investigation, EIA, stakeholder engagement, finalization of design, agencies approvals



**Pre-  
construction**

**Construction**

- Site clearing and earthwork is expected to commence in Q1, 2024, Phase 1 construction is expected to be carried out in Q3, 2025.
- Implementation schedule for airport Phase 2 construction is not available at current stage.



- Phase 1 Airport operation –Q4 2028
- Target to cater up till 194,200 visitors for design year 2035

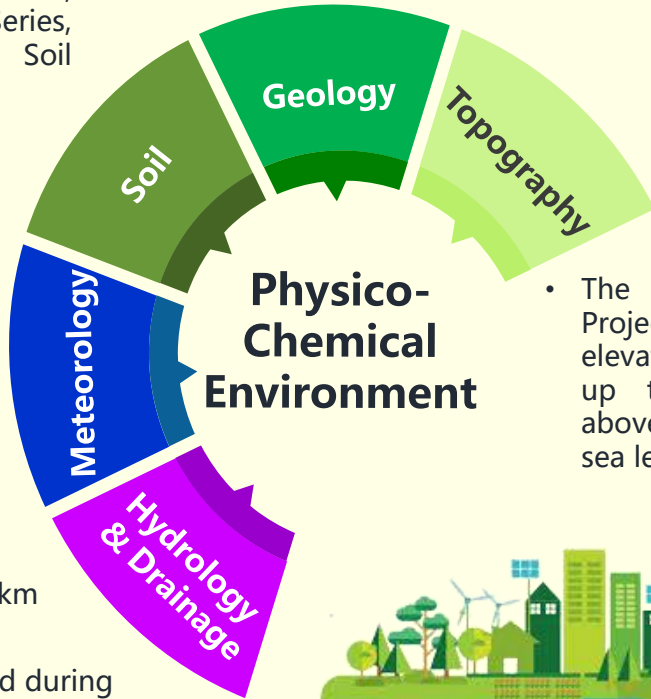


**Operation**

# Existing Environment

- The Anderson Soil Series is the dominant soil at the Project site, others are Mukah/Epai Soil Series, Merit Soil Series, Rajang Soil Series.

- The Project site is underlain generally by the geological deposit from the Pleistocene-Holocene and Sedimentary Oligocene-Miocene period.

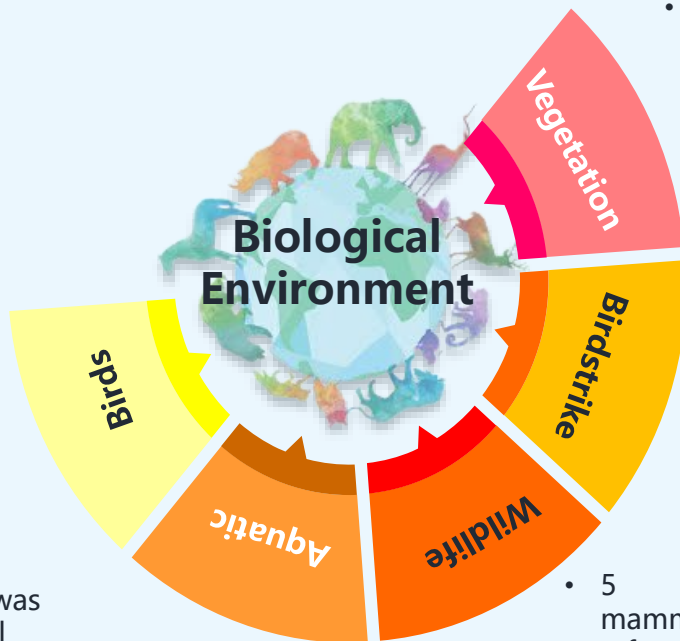


- Generally, an equatorial type of climate characterised by hot and humid weather all year round

- The proposed Project site has elevation levels up to 70 m above mean sea level.

- Site lies between Sg. Siang Siang and Sg. Lumut, both of which drain the site.
- Water catchment**- not within 8 km radius of intake points
- Flood**- low lying area experience flood during high flow.

- 19 bird species found near the Project site. None are categorized as threatened under IUCN Red List.
- Migratory birds foraging ground -Kuala Trusan-Sundar sandbar (19 km northwest of Project site).
- Two swiftlet farms located near to the Project site.



- Project site is covered by oil palms, partly an old secondary forest and logged-over forest.

Birdstrike incidents gradually decrease over the years.

- Kuala Lawas- sightings of dolphins, dugong and green turtle. Abundant seagrasses was recorded from Bukit Sari until Kpg. Punang during a survey.

- 5 species mammals,
- 4 frogs, species, 2 reptiles species- Common skink and Common Flying lizard.

- Sg. Siang Siang recorded 10 fish species during the survey, while Sg. Lumut recorded 8 fish species.

# Existing Environment

## Environmental Baseline Sampling

### Surface Water Quality

- Twelve (12) surface water samples were collected. W2-W6 each have 2 samples (high tide & low tide)
- The water quality results were compared against Class IIB of the National Water Quality Standards for Malaysia (NWQSM)
- Most of the water quality parameters tested are within the Class IIB limits except for DO, COD, AN, Turbidity, Iron, TCC, FCC.



### Ambient Air Quality

- Four (4) ambient air quality samples were collected.
- All parameters for all sampling locations shows level below the threshold limit of Malaysian Ambient Air Quality Standards (MAAQS).
- For A1, additional parameter, PAH was analysed. It is below  $0.001\mu\text{g}/\text{m}^3$ .



### Ambient Noise Level

- Six (6) ambient noise levels were sampled.
- The noise levels for all sampling points were within the stipulated limit Schedule 1 of The Guidelines for Environmental Noise Limits and Control, 2019 for Suburban Residential (Medium Density), Recreational except for during night-time at N1, N2, and N3.



### Vibration

- One (1) vibration monitoring was carried out.
- The peak particle velocity exceeded the maximum velocity level of  $0.2\text{ mm}/\text{s}$  accordance to DOE' s Environmental Vibration Limits and Control, 3rd Edition, 2021



(Refer to Figure ES-2 for Sampling Locations)

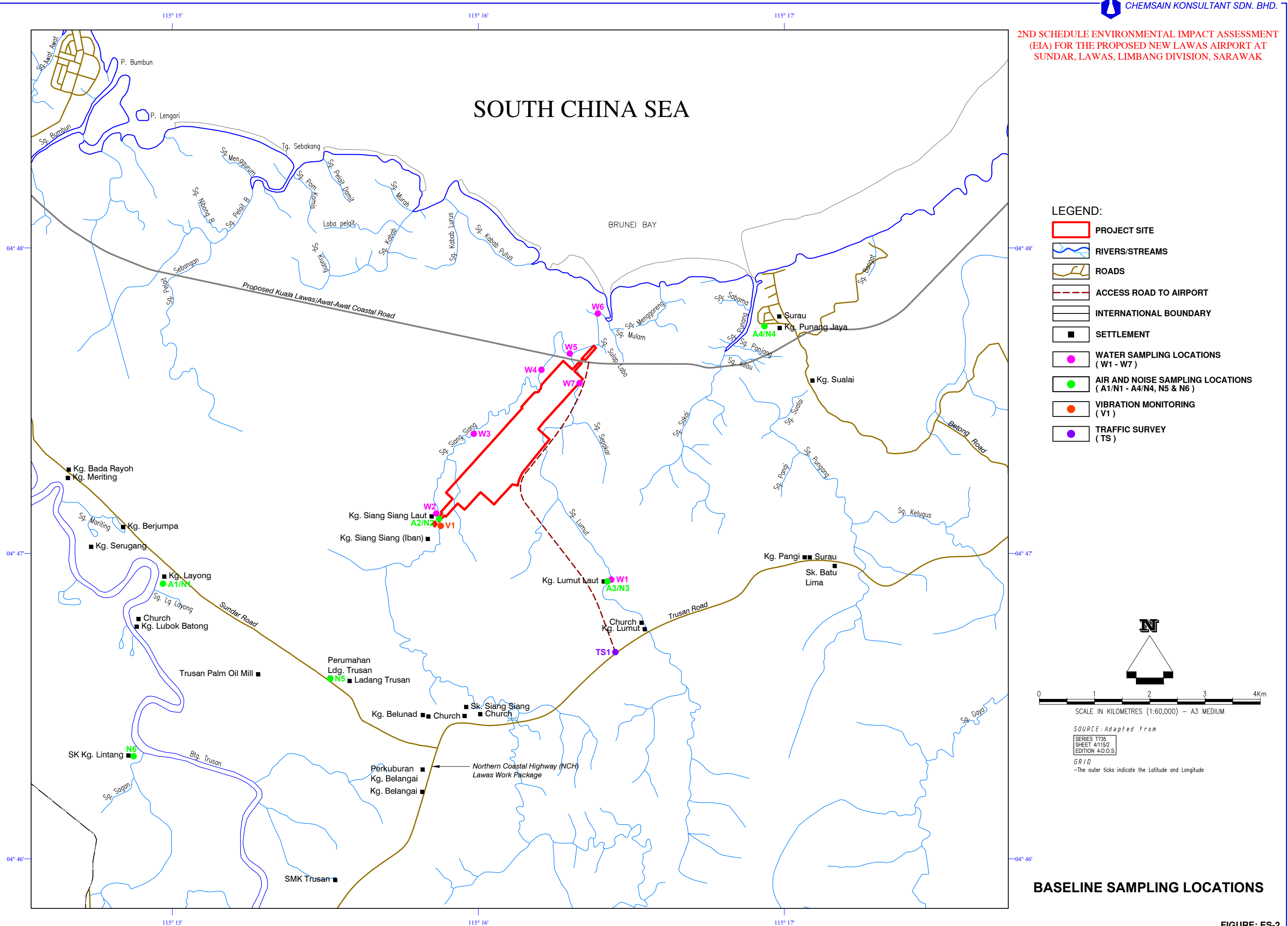
## Existing Public Health Survey

- Survey were carried out together with social survey at 15 settlements within 5 km radius of the Project site.
- Study area's health indicators good, akin to national records, but slightly higher death rates possibly due to vast remote regions in Sarawak.

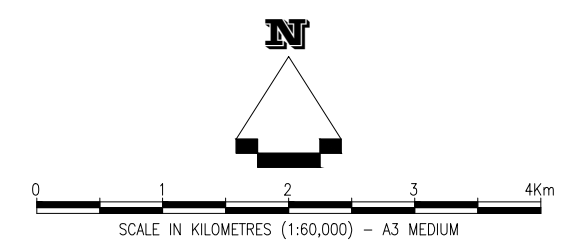


- It also has good access to basic amenities, clean drinking water, and a relatively low disease burden, but specific health concerns include food poisoning, dengue fever, malaria, syphilis, tuberculosis, and COVID-19.

SOUTH CHINA SEA



- LEGEND:**
- PROJECT SITE
  - RIVERS/STREAMS
  - ROADS
  - ACCESS ROAD TO AIRPORT
  - INTERNATIONAL BOUNDARY
  - SETTLEMENT
  - WATER SAMPLING LOCATIONS (W1 - W7)
  - AIR AND NOISE SAMPLING LOCATIONS (A1/N1 - A4/N4, N5 & N6)
  - VIBRATION MONITORING (V1)
  - TRAFFIC SURVEY (TS)



SOURCE: Adapted from  
 SERIES T736  
 SHEET 41152  
 EDITION 4-D.O.S.  
 GRID  
 -The outer ticks indicate the Latitude and Longitude

**BASELINE SAMPLING LOCATIONS**

FIGURE: ES-2



## Socio-Economic Environment



### Regional Population

Lawas District is one of the two districts of Limbang Division. The total population of the District was 36,604 in 2020 (DOSM, 2020)



### Sensitive Receptors

The current nearest sensitive receptors identified are Kg. Siang Siang Laut, Kg. Siang Siang Iban and Kg. Lumut Laut.



### Existing Land Uses

The dominant land uses within 5 km of the Project site are mainly oil palm plantation, and villages. Burial grounds within the Project site has been relocated as per JAIS requirement.



### Social Survey Findings

All respondents are from the nearest residential areas. Majority of the respondents did not voice objection towards the Project. However, their main concerns are summarized as follow:

- Noise from aircraft and traffic going to and from airport
- Risk to general safety
- Loss of income sources
- River water pollution
- Air pollution
- Flood
- Traffic generation and congestion



# Evaluation of Impacts & Mitigation Measures



## Noise

### Moderate

- Excessive noise creates nuisance and cause disturbance to human beings
- High noise level from aircraft take off during airport operation

### Mitigation Measures

- Limit construction activities to 7.00 am – 6.00 pm.
- Provide Hearing Protection Device (HPD) for workers in high noise areas.
- Reduce/restrict night time flights.
- Establish a 660m buffer zone from the runway end to Kg. Siang Siang Laut boundary.
- Plan future land use around the airport considering the noise levels and restricted development (e.g bird attraction facilities, landfills, etc.)

## Ecology



### Mitigation Measures

- No hunting activities is allowed.
- Sighting of protected wildlife should be reported to Sarawak Forestry Corporation or Forest Department Sarawak.
- Maintain the perimeter fence to prevent wildlife intrusion overland into the airfield.
- Record and report birdstrike events.

### Moderate

- Wildlife loses habitat
- Sediment runoff affects aquatic life
- Potential of birdstrike



## Water Quality

### Minor

- Deterioration of water quality of the nearby waterbodies due to sediment runoff, untreated sewage, and accidental spillage and leakage.

### Mitigation Measures

- Install sediment ponds, check dams, wheel washing facilities at proposed locations before commencement of earthwork and construction.
- Sewage generation from the Project site will be treated to Environmental Quality (Sewage) Regulations, 2009. During construction and operation, septic tanks and sewage treatment plant will be installed respectively. The discharge shall comply with Standard B and Standard A respectively.
- All scheduled wastes shall be handled, stored and disposed of in accordance with the Environmental Quality (Scheduled Wastes) Regulations, 2005. The Project Proponent shall refer to the Guidelines for Packaging, Labelling and Storage of Scheduled Wastes in Malaysia

# Evaluation of Impacts & Mitigation Measures

## Flooding



### Minor

- Flooding has been a concern to the residents of neighbouring low-lying area.

### Mitigation Measures

- Construct temporary drainage to capture surface runoff from the Project site before commencement of the earthwork and construction.
- Ensure the drainage is not blocked at all times.



## Air Quality

### Mitigation Measures

- Minimize dust from open area.
- Public road (Lawas-Merapok-Sindumin Road) fronting the access road into the site will be swept clear of mud and soil particles at all times to avoid dispersion of dust.
- Prohibit open burning of solid and vegetative wastes.
- Any fuel burning equipment to be regularly maintained and serviced to prevent the emergence of dark smoke. Written notification shall be submitted to DOE Sarawak for approval prior to the installation.

### Minor

- Emission from construction vehicles, aircrafts and ground operational vehicles

## Waste Management



### Moderate

- Indiscriminate waste management will contaminate surface water

### Mitigation Measures

- Scheduled wastes shall be managed and handled in accordance with the Environmental Quality (Scheduled Waste) Regulation 2005.
- Educate and practise good housekeeping among the workers.
- No open burning shall be allowed at the Project site.
- Waste clean-up measures are to be undertaken on at least a monthly basis to collect any waste or unused materials from the construction site. All waste collected should be managed and disposed of in accordance with the accepted best practice for waste collection and disposal.

# Evaluation of Impacts & Mitigation Measures



## Health Impact

### Minor

- Mild noise impact during construction and operation.
- Surface water is not suitable for body contact and is only safe for consumption after proper treatment.

### Mitigation Measures

- Carry out good housekeeping at the site .
- All workers have to be monitored to identify changes in health status due to potential infectious and hazardous substances to health.
- Frequent monitoring to eliminate any vector breeding sites is recommended.



## Socio-Economic

### Mitigation Measures

- Recruitment of workforce should prioritize the employment of locals from Lawas who are interested to work in the project whenever applicable.
- Entry into the construction site throughout the whole construction period should be limited to construction crew and authorized personnel only and admittance of the public should be strictly prohibited.
- Grievance mechanism shall be set up to receive and resolve grievances from the stakeholders.

### Minimal

- Impacts on employment and economy
- Benefits of providing links
- Land compensation for affected landowners.
- Concerns on noise pollution, risk to general safety, loss of income source, air , floods etc. are recorded.

## Occupational Health and Safety



### Minor

- Construction site hazard such as falling during working at height, tripping, fire due to hot works, etc.
- Airport operation hazards may include near miss, bird strike, take off and landing accidents, adverse weather operation, low visibility procedures.

### Mitigation Measures

- Workers should always be provided with suitable working gears and PPE during construction.
- Necessary signage for the Project development should be erected to indicate danger and safety procedures wherever deemed required.
- An Airport Emergency Plan should be established by airport operator with participation of stakeholders.
- Enforce training and safety procedure for all personnel.
- Training of drivers and emergency response personnel shall be provided.

## Traffic Generation Impacts



### Minor

- Land and air traffic expected to increase.

### Mitigation Measures

- Erect temporary warning sign, use of barrier, warning blinkers, beacon light, flashing arrows, and flag man to guide the traffic at the junction to Lawas-Merapok-Sindumin Road from the Project site.
- Vehicles using the roads should not be overloaded.
- Proper pavement markings should be made, and signs put in place to ensure the safety of operations.
- Strict adherence to the relevant regulations related to air and road transport.



## Abandonment

### Mitigation Measures

- All waste material should be properly disposed of by the existing Project Proponent after abandonment.
- Dismantle or demolish structures that are unsafe or cannot be assured to remain safe with time and remove all materials from site.
- An abandonment plan shall be submitted to DOE at least three months prior to Project abandonment.

### Minor

- Abandoned structures can be unsightly; encourage squatting, and creates a suitable habitat for harbouring pests and disease vectors.

# Proposed Monitoring Locations

## Proposed Monitoring During Construction

### Surface Water



- 12 samples
- **Compliance standard:** Baseline data, Class IIB of NWQSM
- **Frequency:** Quarterly

- 4 samples

- **Compliance standard:** Malaysia Ambient Air Quality Standard (MAAQS), 2013

- **Frequency:** Quarterly

### Ambient Air



- 3 samples
- **Compliance standard:** Baseline data, Guidelines for Environmental Noise Limits and Control, 2019
- **Frequency:** Quarterly

### Noise



### Socio-economic



- Kg. Siang Siang Laut and Kg. Siang Siang Iban
- **Compliance standard:** Baseline data, **Frequency:** Half yearly

## Proposed Monitoring During Operation

### Surface Water



- 12 samples
- **Compliance standard:** Baseline data, Class IIB of NWQSM
- **Frequency:** Quarterly

- 4 samples

- **Compliance standard:** Malaysia Ambient Air Quality Standard (MAAQS), 2013

- **Frequency:** Quarterly

- 6 samples
- **Compliance standard:** Baseline data, Guidelines for Environmental Noise Limits and Control, 2019
- **Frequency:** Quarterly

### Noise



### Socio-economic



- Kg. Siang Siang Laut and Kg. Siang Siang Iban
- **Compliance standard:** Baseline data, **Frequency:** Annually