

ENVIRONMENTAL IMPACT ASSESSMENT REPORT (First Schedule) EXECUTIVE SUMMARY

MENGGANTIKAN JAMBATAN FT 2684/009/00 SUNGAI DUNGUN, DUNGUN, TERENGGANU



PROJECT IMPLEMENTER

JABATAN KERJA RAYA (JKR) MALAYSIA

Cawangan Alam Sekitar & Kecekapan Tenaga (CASKT)
Ibu Pejabat Jabatan Kerja Raya Malaysia,
Tingkat 23, Menara PJD, No. 50, Jalan Tun Razak,
50400 Kuala Lumpur.

DIRECTOR: Ar. IDr. Rinna Siow



EIA CONSULTANT

ECO SYNERGY SOLUTIONS SDN BHD

No. 2-22 Komplek Sentral Point,
Jalan TKS 1, Taman Kajang Sentral,
43000 Kajang, Selangor Darul Ehsan

TEAM LEADER: Mr. Shamsol Azhar bin Ismail



INTRODUCTION AND PROJECT CONCEPT

01

The planning and design of this Project was carried out by the Project Implementer while the construction works will be carried out by contractors that are appointed by Project Implementer. The Project will be closely monitored by JKR Negeri Terengganu and JKR Daerah Dungun as Superintendent Officer (S.O) and S.O Representative respectively.

02

The scope of this Project are demolition of the existing precast arch culvert. Construction of a new bridge with a length of 100m and width of 12.5m (R3 standard), upgrading the access road with a total length of 160m, construction of an access road for villagers to SK Jongok Batu, geotechnical works (soil treatment), construction of road drainage systems, installation of streetlights and road furniture, environmental protection works including non-physical works, utility relocation, and construction of temporary access and bridge.

03

The road pavement and bridge design is according to JKR R3 Geometric Design Standard. The geometric design criteria for the road construction following Arahan Teknik Jalan (AT J8/86) Pindaan 2015.



LEGAL REQUIREMENT

Subject to Section 34A(1) of the Environmental Quality Act 1974 [127] and Environmental Quality (Prescribed Activities) (Environmental Impact Assessment) Order 2015, the project fall under

First Schedule

Activity 20 (C) Road

Construction of road, tunnel or bridge traversing or adjacent or near to environmentally sensitive areas

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STATEMENT OF NEEDS

- The Rural Development Policy (DPLB) has formulated the vision of “Rural Area is Prosperous, Inclusive, Sustainable and Holistic” as the main agenda in the external development process cities in Malaysia by 2030, which can be met following its 10 cores. Vision a prosperous countryside that illustrates the Government’s desire to ensure rural communities have access to infrastructure and social facilities comparable to the area city.
- Through this DPLB, the Government is highly committed in bridging and eliminating the gap in quality of life between cities and rural areas, creating economic opportunities and creating a conducive social atmosphere and environment to attract current residents in rural areas especially youths to continue reside in the countryside. In addition, the Government intends to attract some residents and investors in the city to migrate to the countryside to increase the number of productive population and economic capacity in rural areas.
-
- The countryside will also be an important destination vacation and tourism from within the country and abroad to enjoy the beauty of nature, cultural heritage and pleasure of living in the countryside.



Vision for “Prosperous Rural, Inclusive, Sustainable and Holistic” is refined again in 10 cores



ACCESS ROAD

The project site is accessible from Dungun town through Jalan Bukit Besi - Dungun/Route 132 for about ±27.6km and for the next ±2.8 km using Jalan Kuala Berang/Route 14 . From Jalan Kuala Berang/Route 14, turn left onto Jalan Tepus - Kg Kuala Jengai/T125 and continue ±19.0 km to reach the project area (FT2684; Jalan Kuala Jengai – Jongkok Batu).

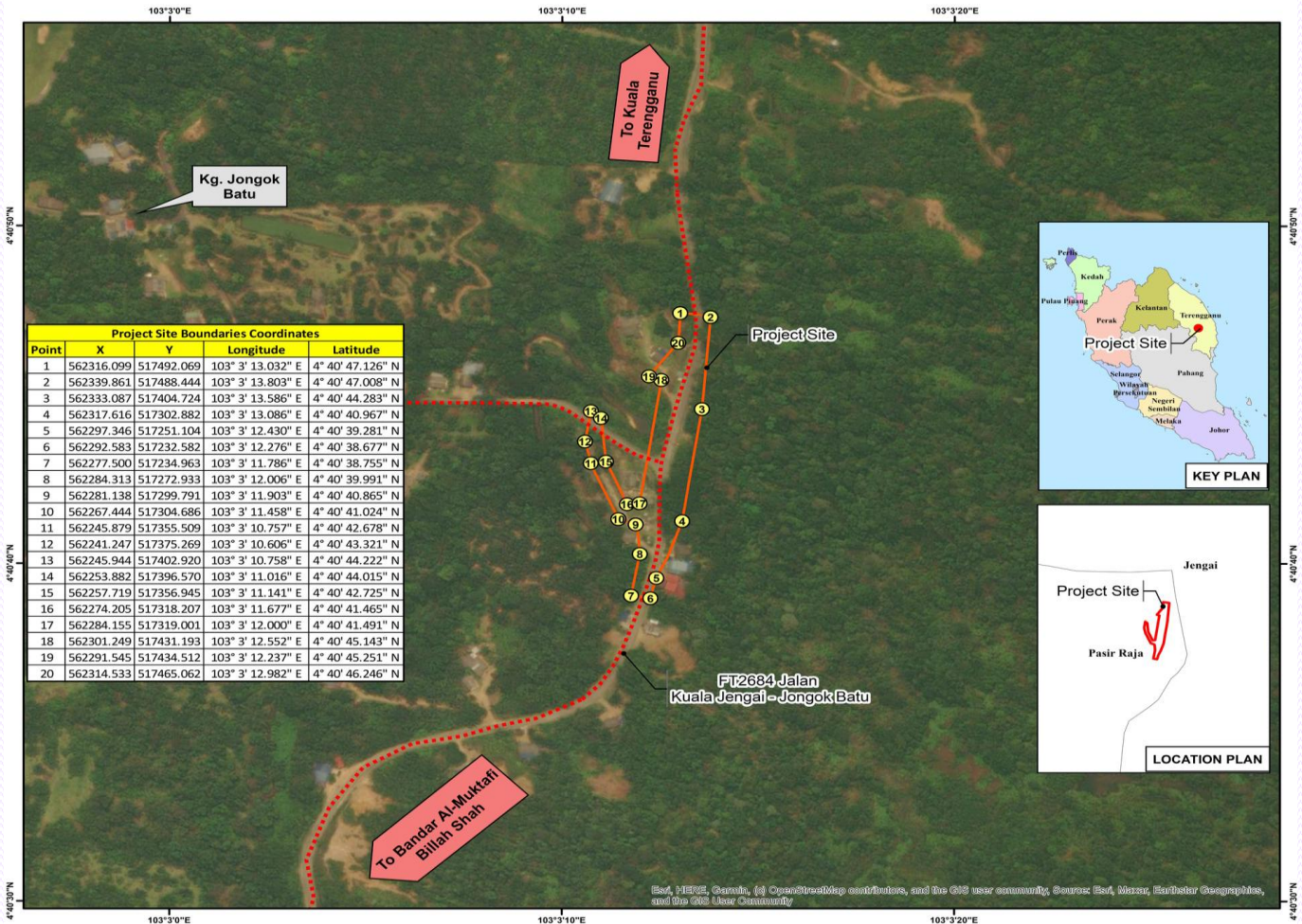


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PROJECT LOCATION

NEAREST TOWN: Paka (±54.4 km)



EXISTING ENVIRONMENT (WITHIN 5 KM RADIUS)



Settlements

There are six (6) settlement areas known as Kg. Jongok Batu, Kg. Lubuk Seladang, Kg. Belimbing, FELDA Semaring, Kg. Pelambor, and Kg. Sungai Iman.



Agriculture

The oil palm plantation can be found in 1 to 2 km radius to the north and 2 to 4 km radius to the south of the project boundary. The oil palm plantation is operated by FELDA and smallholder.



Forest

Jenai Forest Reserve is located within 1-1 km from the project site.



Institution

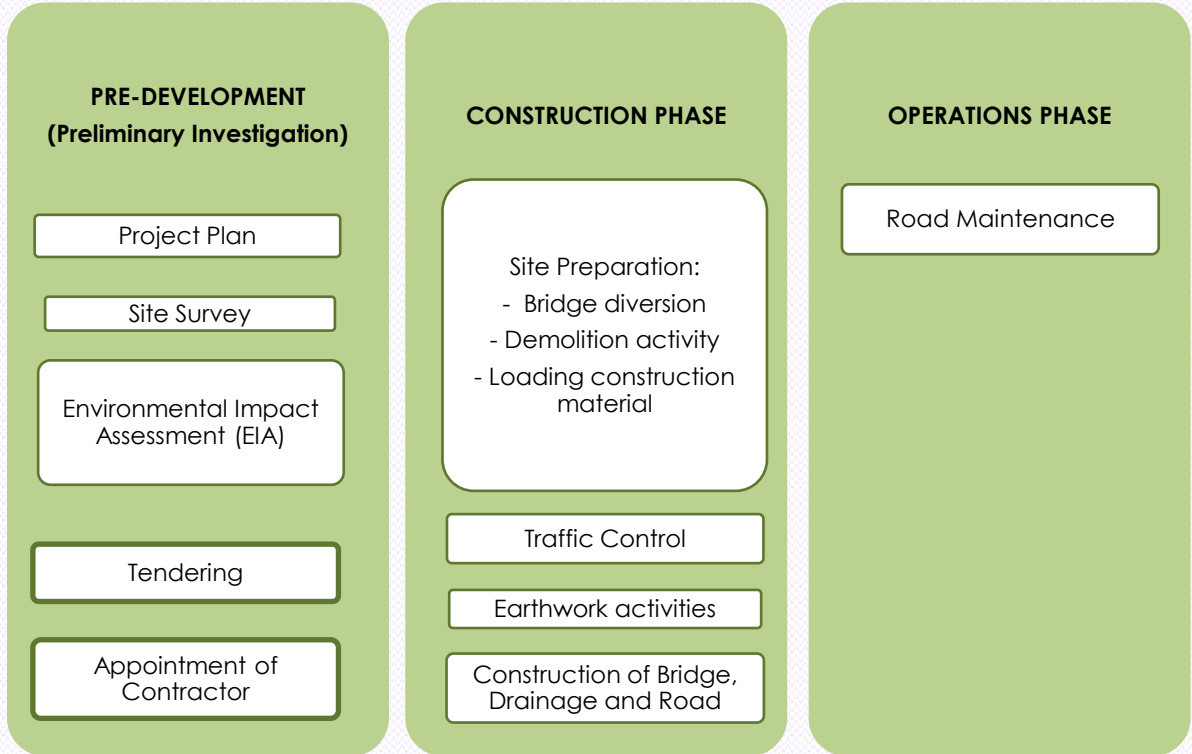
Primary school i.e., SK Jongok Batu and rural clinic i.e., Klinik Desa Jongok Batu is located within 500m from the project site

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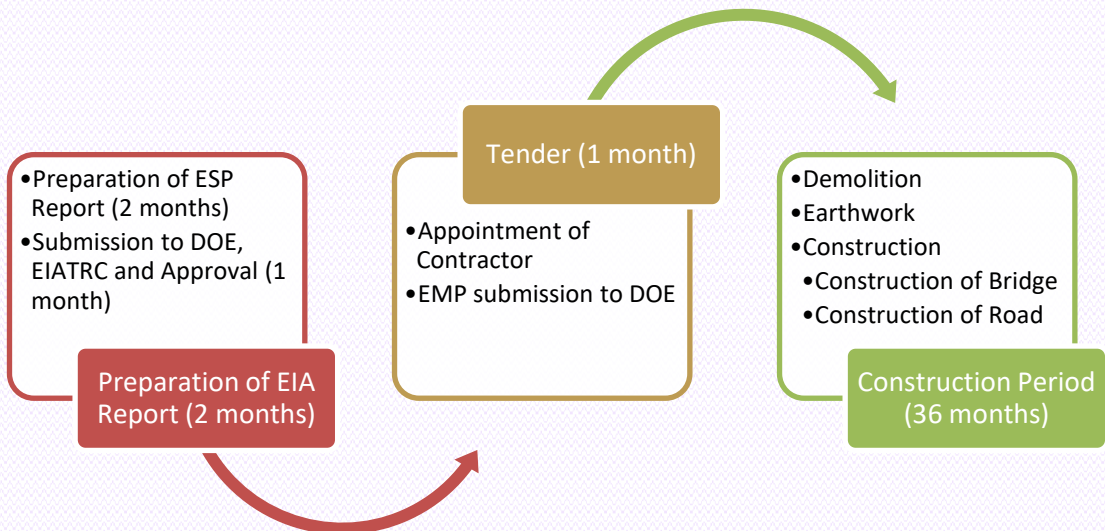
MENGGANTIKAN JAMBATAN FT 2684/009/00 SUNGAI DUNGUN, DUNGUN, TERENGGANU



PROJECT ACTIVITIES



TENTATIVE WORK PROGRAMME

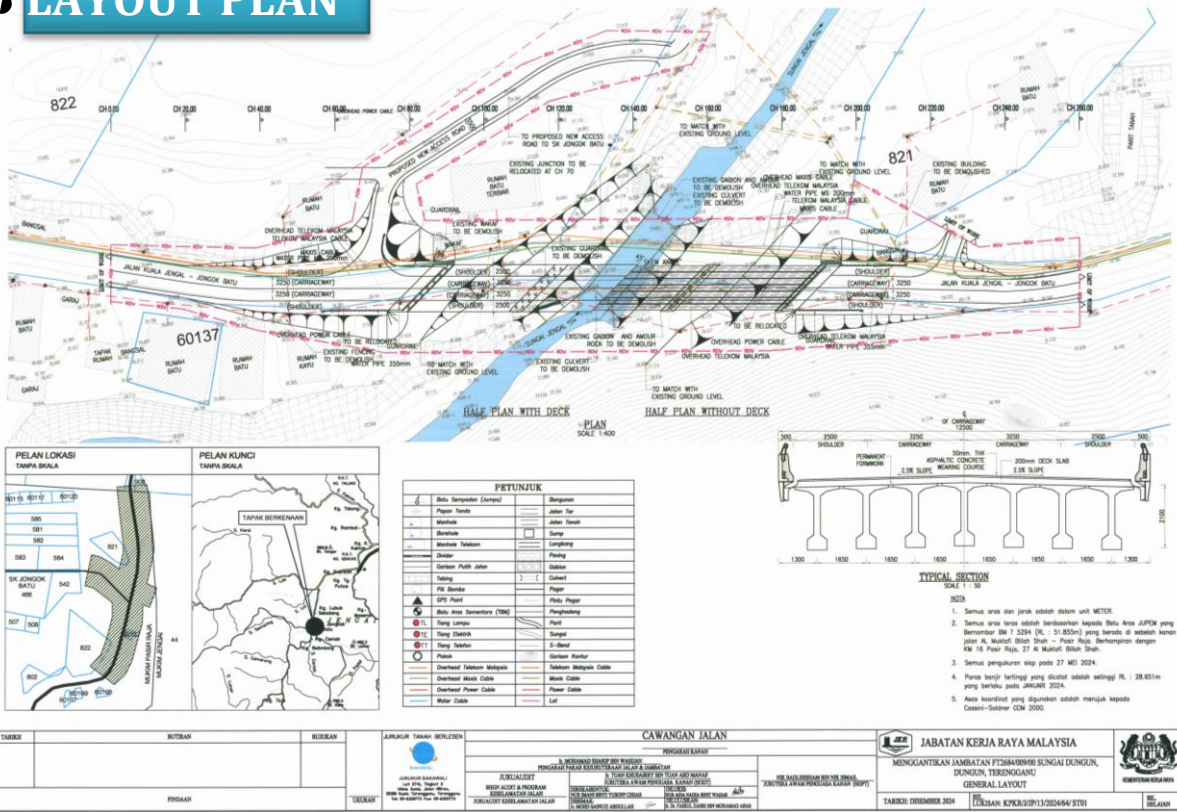


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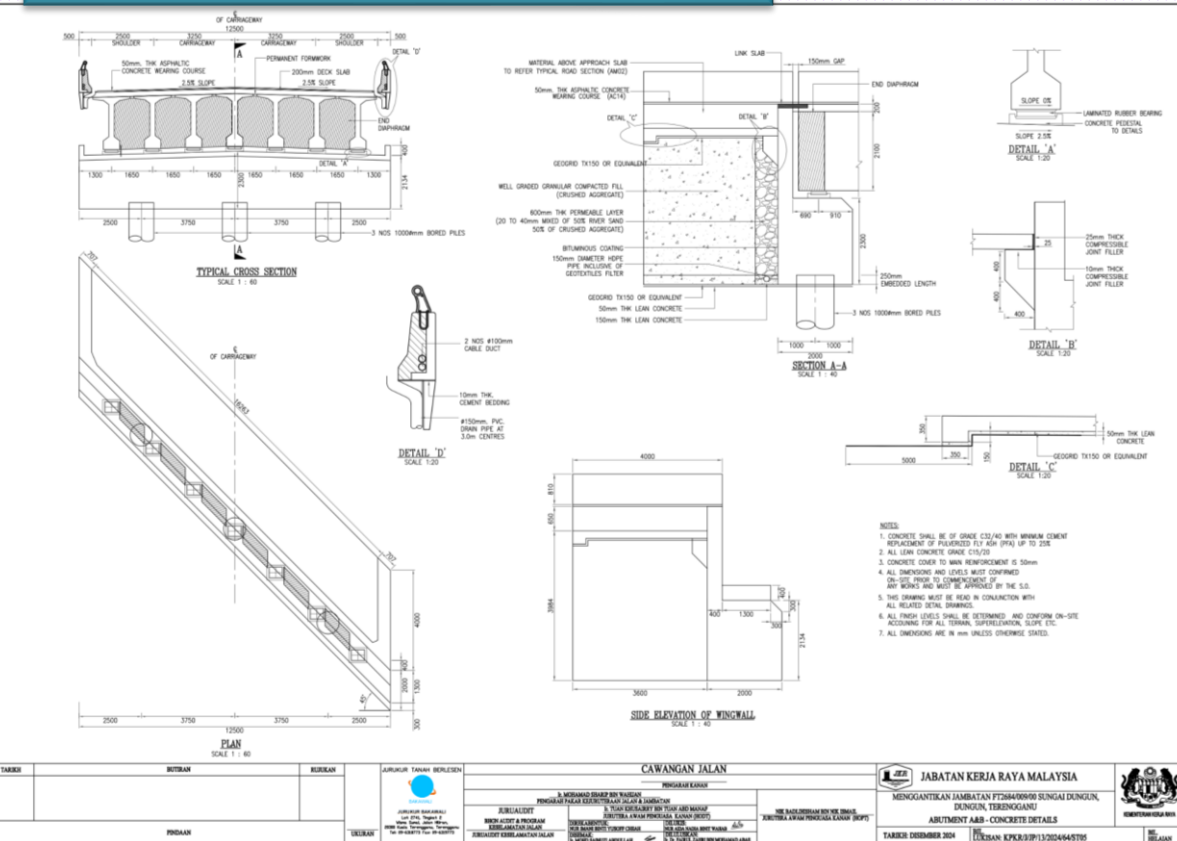
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LAYOUT PLAN



ABUTEMENT CONCRETE DETAILS



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EXISTING ENVIRONMENT



Climate

Meteorological Station: KUALA TERENGGANU

- **Annual Rainfall:** Highest; 4020.3 mm (2023), Lowest; 1860.4 mm (2015)
- **Temperature:** Highest; 28.4 °C (2024), Lowest; 27.4 °C (2022)

- **Relative Humidity:** Maximum: 84.7%
Minimum: 81.1%
- **Wind Rose:**
Percentage of Calm: 27.9%
Highest wind blow: 22.3% (SW)
Lowest wind blow: 2.4% (NW)



Geology

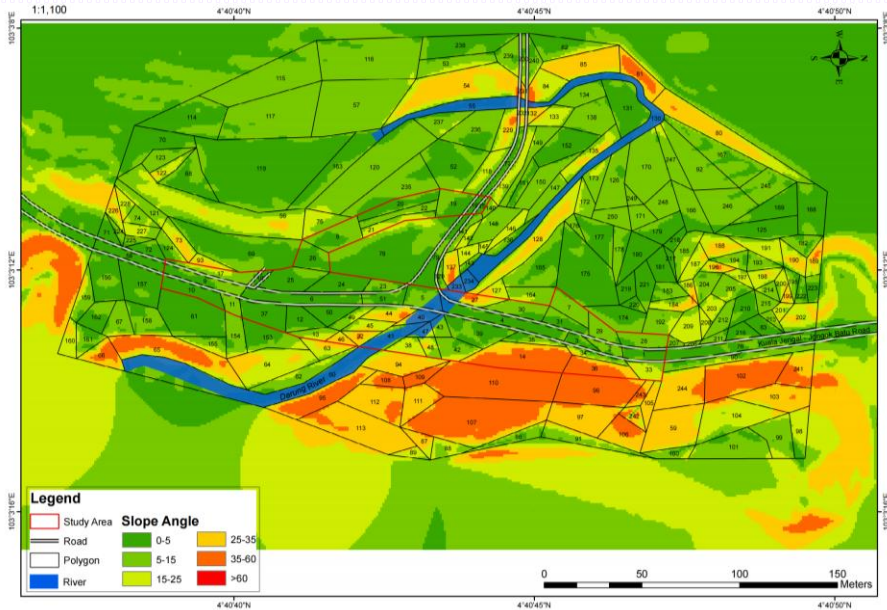
Carboniferous or older meta-sedimentary especially schist, phyllite and slate, intruded by Early Triassic granite.

Soil Characteristics

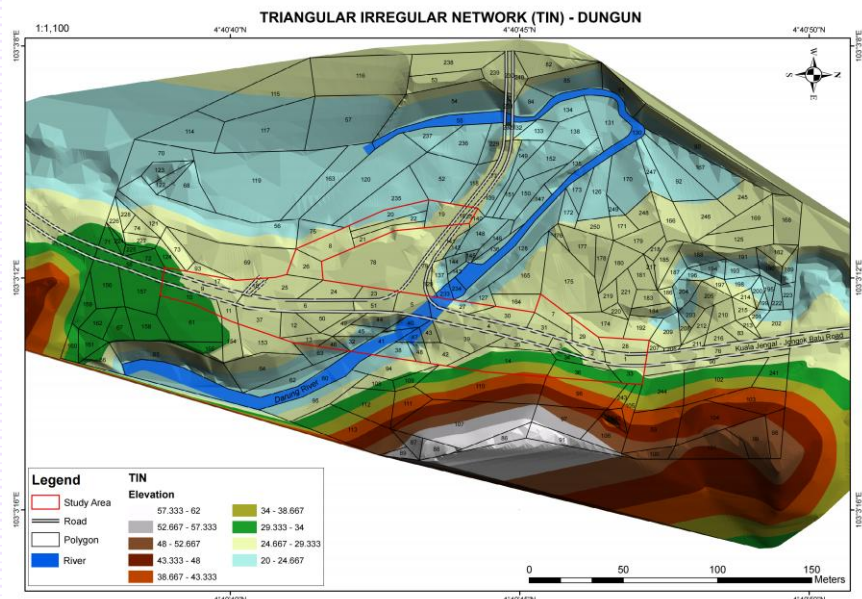
Sandy Silt and Gravelly Silt



Slope Angle



Elevation



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EXISTING ENVIRONMENT

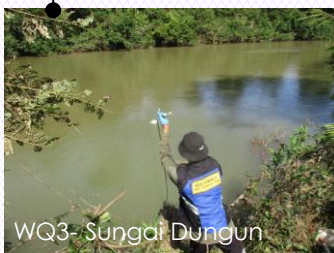
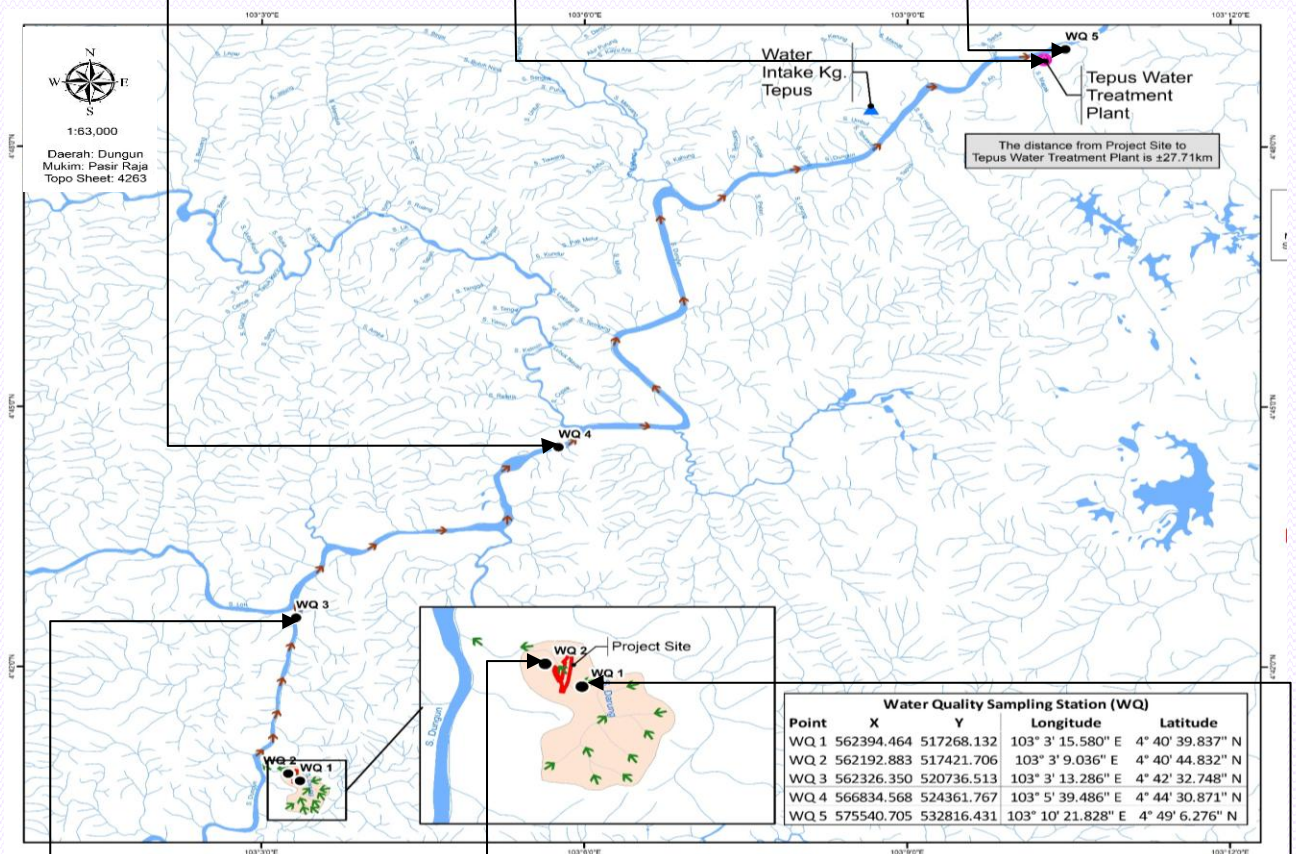
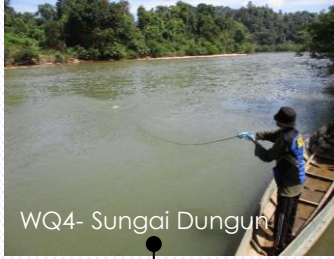


Water Quality

Five (5) locations of sampling stations were selected. The range of WQI is ranged from 91.30 to 92.46. All sampling stations are in varying categories of 'Clean'.

Water Intake Point (WIP)

The nearest Water intake point is Water Intake Tepus Water Treatment Plant (WTP) (± 27.71 km - river flow)



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EXISTING ENVIRONMENT



Ambient Air Quality

There are three (3) ambient air quality sampling stations.

The results of the analysis show baseline values for Particulate Matter (PM) 10 is $14 \mu\text{g}/\text{m}^3$ at all sampling stations. PM2.5 between $16 \mu\text{g}/\text{m}^3$ and $31 \mu\text{g}/\text{m}^3$

Noise Level

There are three (3) noise level sampling stations.

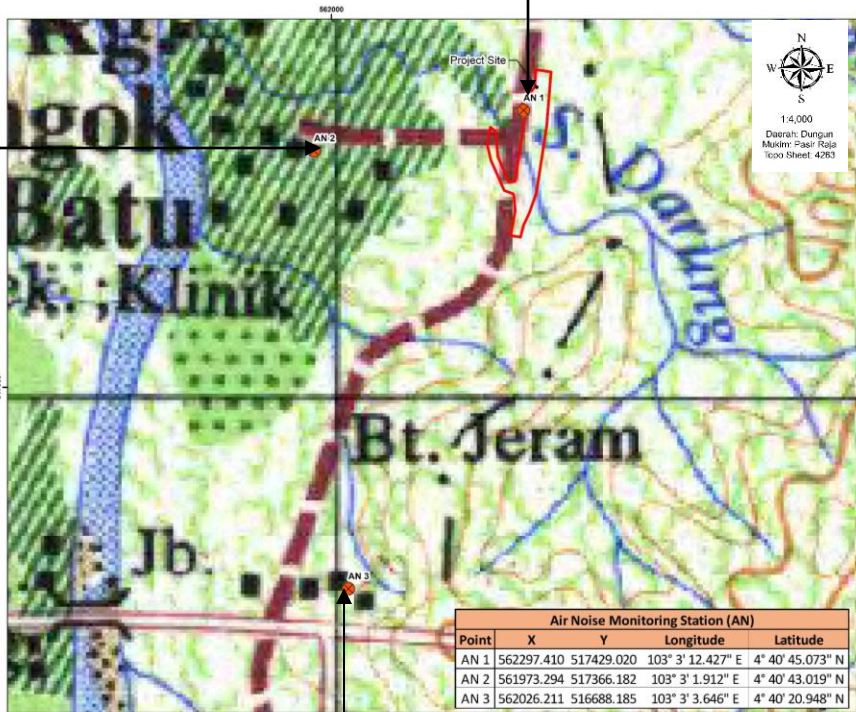
The baseline LAeq are ranging between 56.9 dBA and 65.0 dBA for day time. For night time, the LAeq are 54.1 dBA and 64.7 dBA



AN2- Kg. Jongok Batu



AN1- Project Site Boundary



AN3- Access Road; Jalan Kuala Jengal – Jongok Batu

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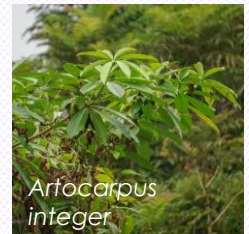
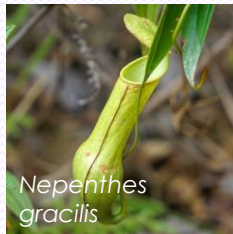
EXISTING ENVIRONMENT



Flora Study

Ten (10) most dominant family at the project site

Family	No of Genus	No of Species
Fabaceae	7	8
Moraceae	2	7
Arecaceae	5	5
Rubiaceae	4	5
Euphorbiaceae	3	5
Lamiaceae	3	3
Malvaceae	3	3
Melastomataceae	3	3
Dilleniaceae	2	3
Rhizophoraceae	2	3

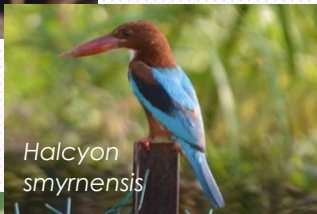
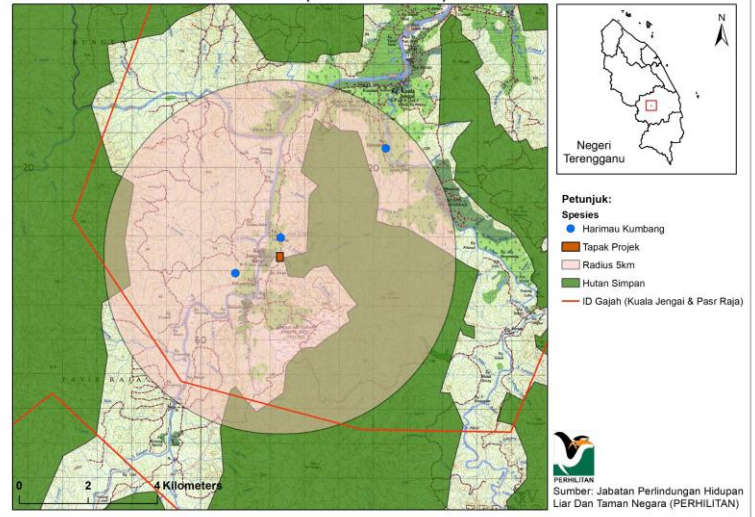


Fauna Study

Findings:

- ❖ 70 avian' species from 38 family
- ❖ 19 mammals' species from 15 family
- ❖ 17 herpetofauna's species from 12 family

REKOD ADUAN KONFLIK HIDUPAN LIAR DALAM RADIUS 5KM DI SEKITAR TAPAK CADANGAN PROJEK MENGGANTIKAN JAMBATAN FT2684/009/00 SUNGAI DUNGUN, DUNGUN, TERENGGANU (TAHUN 2020-2024)



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EXISTING ENVIRONMENT



Socio Economy Study

- Project Acceptance: 100%
- Total respondents: 192 people
- Sample Distribution: Kg. Jongok Batu, Kg. Belimbing, Kg. Lubuk Seladang, FELDA Semaring, Kg. Sungai Iman and Kg. Pelambar



Socio survey picture



Surau FELDA Semaring



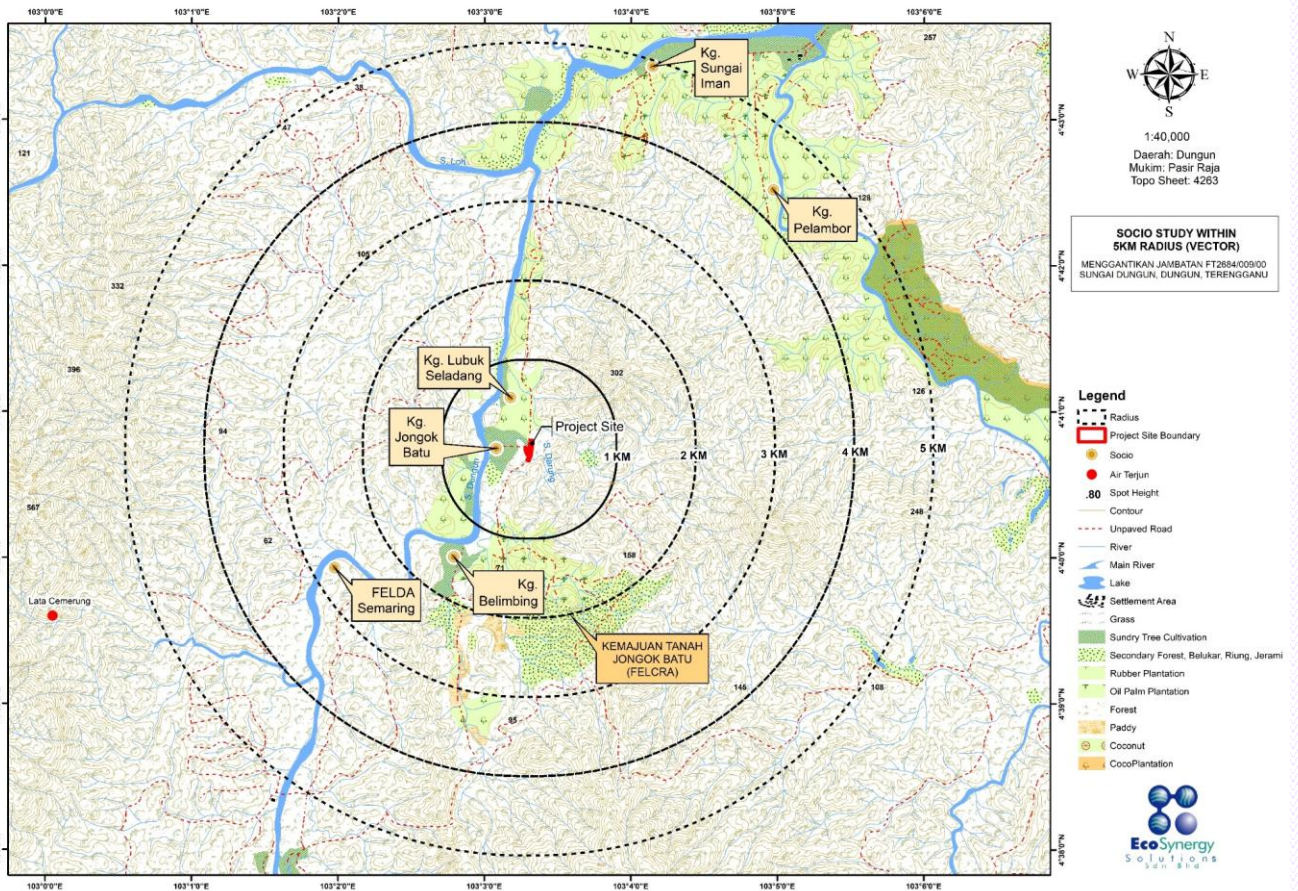
Balairaya Kg Jongok Batu



Masjid Jamek Kg Jongok Batu



Gelanggang Sepak Takraw Kg. Jongok Batu



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POTENTIAL IMPACTS AND MITIGATION MEASURES

01 EROSION RISK

- Earthworks may lead to erosion and subsequently sedimentation



- Schedule and staging earthwork – avoid monsoon season
- Intallation of LD-P2M2 at the project site for;
 - Runoff control management
 - Erosion control management
 - Sediment control management

02 WATER POLLUTION

- Earthwork increase Total Suspended Solid, turbidity and Sedimentation in river
- Accident spillage from skid tank, oil and grease
- Leakage at the portable toilet cause sewage enter the river system



- Schedule and staging earthwork – avoid monsoon season
- Intallation of LD-P2M2 at the project site for;
 - Runoff control management
 - Erosion control management
 - Sediment control management
- Portable toilet must be sited 50-m away from the waterways.
- Regular inspection and maintenance of portable toilet
- Storage spill oil and waste oil in proper container
- Skid tank must be placed in containment bund with 110% capacity

03 AIR POLLUTION

- Vehicles moving in and out the project site contribute to soil re-suspension.
- Vehicular emission from transport vehicles and other machineries during the construction phase.
- Open burning may cause air pollution.



- Limit vehicles speed
- Paved road with crusher run
- Prohibited open burning
- Use water bowser or spray road surface with water during dry season
- Lorries and trucks shall not overload.
- Regular maintenance of heavy vehicles and machinery

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POTENTIAL IMPACTS AND MITIGATION MEASURES

04 NOISE LEVEL

- Contributed by the movement of vehicles, tractors and machines throughout the whole process of the construction period.



- Use quieter machinery or install silencer
- Regular service of vehicles and machinery
- Use PPE to protect workers hearing
- Conduct noise monitoring at sensitive receptor
- Work is limited at day time (0700 to 1700) only

05 WASTE MANAGEMENT

- Biomass – may cause blockage and pollute river water. Increase COD and BOD
- Construction waste – may pose safety and health hazard
- Sewage – may pollute river water with microbes. Increase COD and BOD.
- Solid waste – causing uncleanliness and proliferation of disease vector.
- Scheduled waste – may pollute river water and soil



- Reused tree trunk as pole for silt fence or material for check dam.
- Disposal of waste at licensed facility.
- Prohibited open burning at project site.
- Portable toilet must be maintained by appointed contractor
- Portable toilet and stockpile area must be sited 50-m away from water ways
- Proper storage to contained all scheduled waste

06 GEOHAZARD

- Slope instability may cause erosion and landslide



- Regular slope maintenance must be conducted to ensure slope stability.
- Any sign of crack or damage on the geotechnical measures must be reported to JKR State for further action.
- Potholes on the road surface need to be repaired immediately after reports are made by the public.

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POTENTIAL IMPACTS AND MITIGATION MEASURES

07 HYDROLOGY

- Erosion may cause sedimentation and shallow the river bed.
- Biomass blockage may cause ponding and flash flood
- Temporary bridge diversion may alter the river flow. It also may reduce stream channel stability that cause instability and erosion of the riverbanks



- Scheduled development
- Avoid construction near monsoon season
- Installed and maintained LDP2M2 tools
- Temporary protection using measures like control blankets to protect the river banks and minimize sediment runoff.
- Work by-segment strategy allow stabilization process at the working area

08 FLORA

- Direct impacts of vegetation removal are soil erosion, sedimentation, elevated surface runoff and water flow which affect the river water quality



- Removal of trees and shrubs must be done in stages
- Prohibited open burning
- Vegetative cover along river bank must be maintained

09 FAUNA

- The wildlife species is identified lived in the adjacent forest area that provide good shelter and food source.
- It may be exposed to noise level disturbance, poaching, illegal trapping and road kill



- Prohibition of illegal poaching, trapping and hunting
- Staging land clearing to allow slow-moving animals to move to adjacent forest area
- Transverse bars shall be installed to reduce vehicle speed
- Drivers are prohibited from feeding the wildlife

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POTENTIAL IMPACTS AND MITIGATION MEASURES

10 SOCIO ECONOMY

- Sharing access road may cause safety hazard
- Employment Opportunities
- Impact on air quality
- Impact on noise level
- Impact river water quality
- Human Wildlife Conflict



- Project period notice signs should be placed near the project area
- Temporary bridge diversion must be well maintained in good condition and must be perfect to face the flood season
- Demolished structures must be disposed of in areas approved by the local authority (PBT)
- Detour signs must be placed at least 500 m in both areas before arriving at the project
- Approach local community heads and advertise to the community to encourage locals to participate in jobs
- Speed limit signage shall be installed. Frequent spray the road surface to control dust dispersion
- Working house shall be limited at daytime only
- All LDP2M2 tools must be installed and maintained regularly
- Prohibit wildlife hunting and poaching among the workers
- Conduct public engagement

11 PUBLIC HEALTH

- Accidental injury
- Disease is normally related to personal hygiene, sanitation and vaccinations
- Disperse of particulate matter in the air may cause respiratory problems in sensitive individuals
- Water borne disease



- Foreign workers must undergo medical examination at FOMEMA panel clinics
- Workers must be provided with PPE
- Clear signboard indicating danger areas, proper lighting and first aid facilities must be provided at the project site.

12 TRAFFIC MANAGEMENT

- Accidental injury
- Traffic congestion



- Implement traffic management plan during construction period following Arahan Teknik (Jalan) ATJ 2C/85 (Pindaan 2017) Manual on Traffic Control Devices: Temporary Signs and Work Zones Control

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ENVIRONMENTAL MONITORING

PERFORMANCE MONITORING (PM)

LD-P2M2 Tools	Parameters	Recommended Limits	Frequencies
Sediment Trap	Silt Marker	2/3 depth from sediment trap	Weekly or after rain event (in-situ) Subjected to the Condition of Approval (COA)
Turfing	Performance	-	Subjected to the Condition of Approval (COA)
River Buffer			
Silt fence			
Earth Drain with Check Dam			
Wash Trough Sediment level			
Temporary or permanent waterway crossing (culvert/bridge)	Structure and Performance		

COMPLIANCE MONITORING (CM)

Parameter	Monitoring Locations	Compliance Standard	Frequencies
Total Suspended Solids (TSS)	Silt Trap (ST 1, ST 2, ST 3 & ST 4)	50 mg/L	Subjected to the Condition of Approval (COA)
Turbidity	Silt Trap (ST 1, ST 2, ST 3 & ST 4)	250 NTU	Subjected to the Condition of Approval (COA)

IMPACT MONITORING (IM)

Component	Regulated Parameters	Applicable Standards	Frequencies
Ambient Air Quality	PM ₁₀	100 µg/m ³	Subjected to the Condition of Approval (COA)
	PM _{2.5}	35 µg/m ³	
	NO ₂	70 µg/m ³	
	SO ₂	80 µg/m ³	
	CO	10 µg/m ³	
	Ozone	100 µg/m ³	
Noise	LA _{eq}	For LA _{eq} Day: 60 dBA Night: 55 dBA	Subjected to the Condition of Approval (COA)
	L ₁₀		
	L ₅₀		
	L ₉₀		
	L _{min}		
	L _{max}		
Water Quality	pH	6.0 - 9.0	Subjected to the Condition of Approval (COA)
	Temperature	-	
	Turbidity	50 NTU	
	Dissolve Oxygen, (DO)	5 - 7 mg/L	
	Total Suspended Solid (TSS)	50 mg/L	
	Biological Oxygen Demand (BOD)	3 mg/L	
	Chemical Oxygen Demand (COD)	25 mg/L	
	Oil and grease	0.04; N	
	Total Coliform (count/100)	5000	
Ammoniacal Nitrogen (N-NH ₃)	250 NTU		