EXECUTIVE SUMMARY

FIRST SCHEDULE ENVIRONMENTAL IMPACT ASSESSMENT

MEMBINA JAMBATAN MERENTASI SG. BESUT DI JALAN (FT003) JERTIH, BESUT, TERENGGANU

PROJECT IMPLEMENTER

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Contact Person : Datin Dr. Vijayalakshmi Samuel (*Director, Principal Consultant*)

Email : vijayalakshmi@agvenvironment.com

OVERVIEW

Jabatan Kerja Raya (JKR) Malaysia is undertaking a critical infrastructure upgrade for a 1.50 km stretch of Jalan (FT003) in Jertih, Besut. The Project aims to alleviate chronic traffic congestion, enhance road safety, and improve overall travel efficiency. The current infrastructure is insufficient to handle increasing traffic volumes, especially during peak hours, holidays, and festive seasons, leading to significant delays and safety concerns. The proposed upgrades including dual carriageways and improved road geometry are designed to streamline traffic flow, reduce bottlenecks, and significantly shorten travel times for road users.

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

First Schedule

Activity 13: Development in Slope Area

Development or land clearing less than 50% of an area with slope ≥ 25° but < 35°

Activity 20: Road

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

PROJECT COMPONENTS

- Construction of a New Bridge (Bridge 1)
- Demolish and Reconstruction of an Existing Bridge (Bridge 2)
- Upgrading of Existing 1.5 km Roadway
- Upgrading of Existing 1.2 km Underpass Road
- Supplementary work

STATEMENT OF NEED

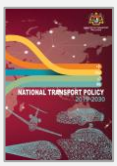
CONFORMANCE TO POLICIES AND PLANS

The Project is in line with the following policies and plans at international, national, and state levels

UN SDGs Agenda 2030

Twelfth Malaysia Plan 2021 – 2025

Fourth National Physical Plan 2021 – 2040



National Transport Policy 2019 – 2030

Pelan Induk Terengganu Sejahtera 2030

RSN Terengganu 2050

RTD Besut 2035

ECONOMIC BENEFITS OF THE PROJECT

✓ Support for Local Economic Activities

- Improved transport infrastructure will facilitate faster and more efficient movement of goods and services. It will help small businesses, traders, and farmers move goods more quickly and efficiently, eventually boosts local economic activity

SOCIAL BENEFITS OF THE PROJECT

✓ Enhanced Accessibility and Connectivity

- This Project will improve access to essential services by easing traffic flow, particularly during peak hours and seasons

✓ Job Creation and Community Benefits

- Will create employment opportunities for local residents and boost local economy

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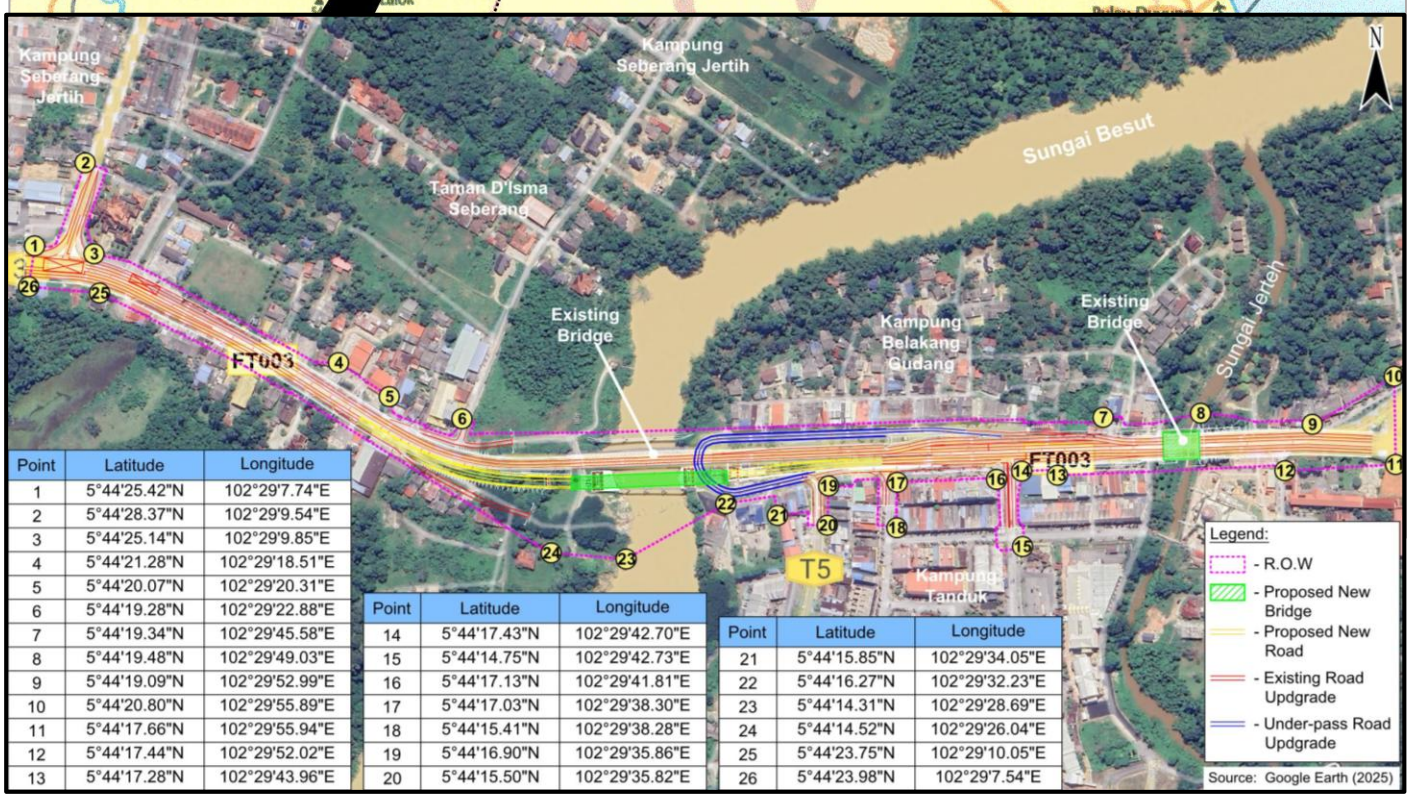
PROJECT LOCATION AND LAYOUT



Point	Latitude	Longitude
1	5°44'25.42"N	102°29'7.74"E
2	5°44'28.37"N	102°29'9.54"E
3	5°44'25.14"N	102°29'9.85"E
4	5°44'21.28"N	102°29'18.51"E
5	5°44'20.07"N	102°29'20.31"E
6	5°44'19.28"N	102°29'22.88"E
7	5°44'19.34"N	102°29'45.58"E
8	5°44'19.48"N	102°29'49.03"E
9	5°44'19.09"N	102°29'52.99"E
10	5°44'20.80"N	102°29'55.89"E
11	5°44'17.66"N	102°29'55.94"E
12	5°44'17.44"N	102°29'52.02"E
13	5°44'17.28"N	102°29'43.96"E

Point	Latitude	Longitude
14	5°44'17.43"N	102°29'42.70"E
15	5°44'14.75"N	102°29'42.73"E
16	5°44'17.13"N	102°29'41.81"E
17	5°44'17.03"N	102°29'38.30"E
18	5°44'15.41"N	102°29'38.28"E
19	5°44'16.90"N	102°29'35.86"E
20	5°44'15.50"N	102°29'35.82"E

Point	Latitude	Longitude
21	5°44'15.85"N	102°29'34.05"E
22	5°44'16.27"N	102°29'32.23"E
23	5°44'14.31"N	102°29'28.69"E
24	5°44'14.52"N	102°29'26.04"E
25	5°44'23.75"N	102°29'10.05"E
26	5°44'23.98"N	102°29'7.54"E

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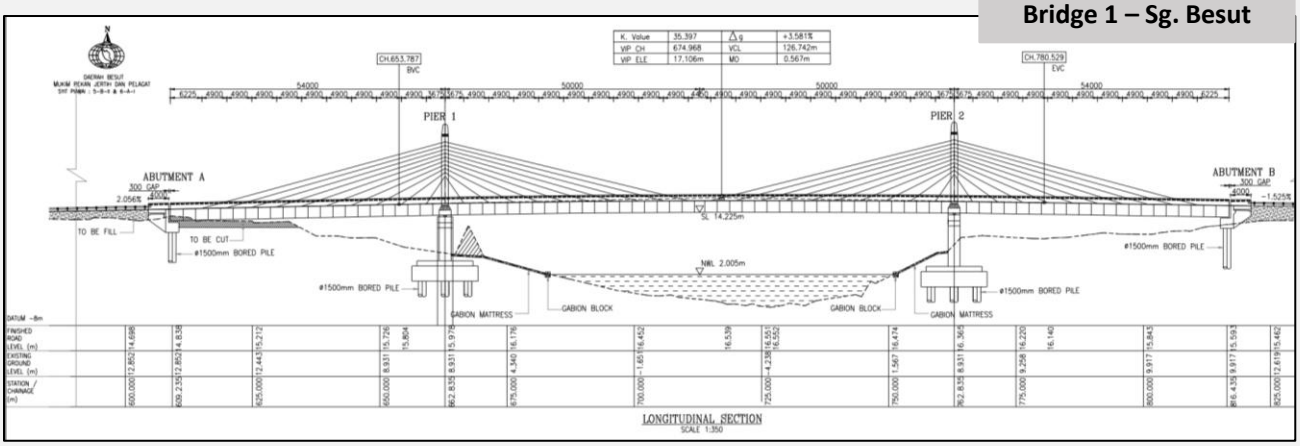
PROJECT COMPONENT

Bridge Design Criteria

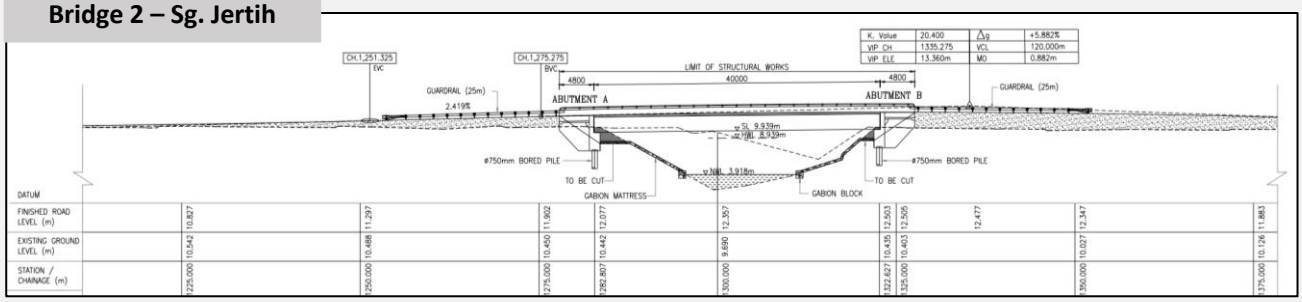
Specification	Bridge 1	Bridge 2
Span Length	210 m	40 m
Width	15 m	11.5 m + 11.5 m
Type of Bridge	Extradosed Bridge	Fully Integral Bridge
Type of Beam	Segmental Box Girder	40 m Post Tensioned T Beam
Standard	JKR R5	JKR R5
Lane Width	3.5 m	3.5 m
Shoulder Width	3.0 m	3.0 m
Parapet	500 mm New Jersey Parapet	500 mm New Jersey Parapet
Type of Foundation	2000 mm Dia. Bored Piles	750 mm Dia. Bored Piles
Abutment	Retaining Wall Type	Retaining Wall Type
Load	HA + HB 45	HA + HB 45

Bridge Layout Drawings

Bridge 1 – Sg. Besut



Bridge 2 – Sg. Jertih



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PROJECT COMPONENT

Road Design Criteria

No.	Item	Description
1.	Terrain	Rolling
2.	Design Standard	JKR U5 (two-way, two-lane)
3.	Design Speed	60 km/hr
4.	Lane Width	3.5 m
5.	Shoulder	2.5 m
6.	Marginal Strip	0.5 m
7.	Stopping Sight Distance	85 m
8.	Passing Sight Distance	410 m

No.	Item	Description
9.	Min. Radius	135 m
10.	Max. Super-elevation (e)	6% (0.06)
11.	Max. Grade	5%
12.	Min. Length of Spiral (L)	36 m
13.	k-value, Crest Vertical Curve	17
14.	k-value, Sag Vertical Curve	18
15.	Minimum ROW	65

Supplementary Work

Drainage System

- Toe drains (U-drains)
- Median drains
- Cross drains
- Bridge deck drainage

Road Furniture

- Street Lighting
- Traffic Signage
- Road Markings
- Safety Barriers and Guardrails

PROJECT ACTIVITIES

Pre-Construction	Construction Phase	Operational Phase	Project Closure or Project Abandonment (if any)
• Topographical survey • Soil investigation works • Road safety audits • Land acquisition • Utilities relocation • Access road • Demolition work	• Site preparation and temporary facilities • Traffic diversion – temporary Bridge 2 construction • Earthwork • Bridge construction • Road construction • Landscaping	• Road and bridge maintenance	• Decommissioning works • Environmental remediation works • Infrastructures • Closure and handover

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EXISTING ENVIRONMENT

Topography

- Topography of the Project site and its surrounding are flat

Slope Gradient

- Class I : 90.54%
- Class II : 4.85%
- Class III : 2.79%
- Class IV : 1.82%

Geology

Underlain by Quaternary marine and continental deposits of marine clay, silt, and sand

Soil

Dominant soil groups include gley soils and alluvial soils, which are located on recent riverine alluvium.

Climate & Meteorology

Meteorological Station: Gong Kedak, Besut
Data from 2015 to 2024

Temperature
Average between 26.0°C to 28.7 °C

Relative Humidity
Average between 79.3% to 87.6%

Rainfall and Rain Days
Months with highest rainfall and rain days: January, November and December
Highest rainfall: November 2024 (1702.2 mm)
Lowest rainfall and days: March 2020

Wind
Strongest winds: February
Wind speed ranging between 0.9 and 2.4 m/s
Predominantly from east (23.1%)

Hydrology & Drainage

- One main river: Sg. Besut
- Sg. Jertih, a tributary of Sg. Besut also flows within the site.
- Sg. Besut flows from northern to eastern direction
- The river discharges into South China Sea near Kuala Besut.
- Water Intake Point: 15.8 km upstream

Aquatic Ecology

- A total of 161 individuals of fish fauna caught
- 13 species of finfish from 6 families.
- Cyprinidae family was dominant (92.6%) due to :
  - Adaptability
  - Diverse diets
- 2 species of prawns from 1 family
- Most species were classified as “Least Concern” by the IUCN Red List.

Terrestrial Ecology

- Vegetation along riverbanks include wild and cultivated species such as Ficus, Acacia, durian, mango, bamboo and grasses.
- Fauna is limited to adaptable species like Long-tailed Macaques, Plantain Squirrels, and urban tolerant birds.

Survey Result:

- Avifauna : 19 species
- Mammals : 2 species
- Flora : 31 species

Socio-Economic

- The Project site is located within the Besut district.
- SEA methodologies:
  - Total of 1,204 units identified within a 500-meter radius of study area
  - Core Zone: 266 units
  - Buffer Zone: 938 units

Traffic

- The Project site is located along Federal Route 003 (FT003)
- Accessible via Jalan Kota Bahru – Kuala Terengganu
- Typical working hour : 7.00am to 8.00am and 5.00pm to 6.00pm

Public Health

- Besut has lower communicable diseases compared to the state and national level
- Some diseases remain significant concerns:
  - dysentery
  - dengue
  - AIDS
  - Leptospirosis
  - COVID-19
- No public health-sensitive premises (i.e: water treatment plants, aquaculture facilities) within 500m ZOS

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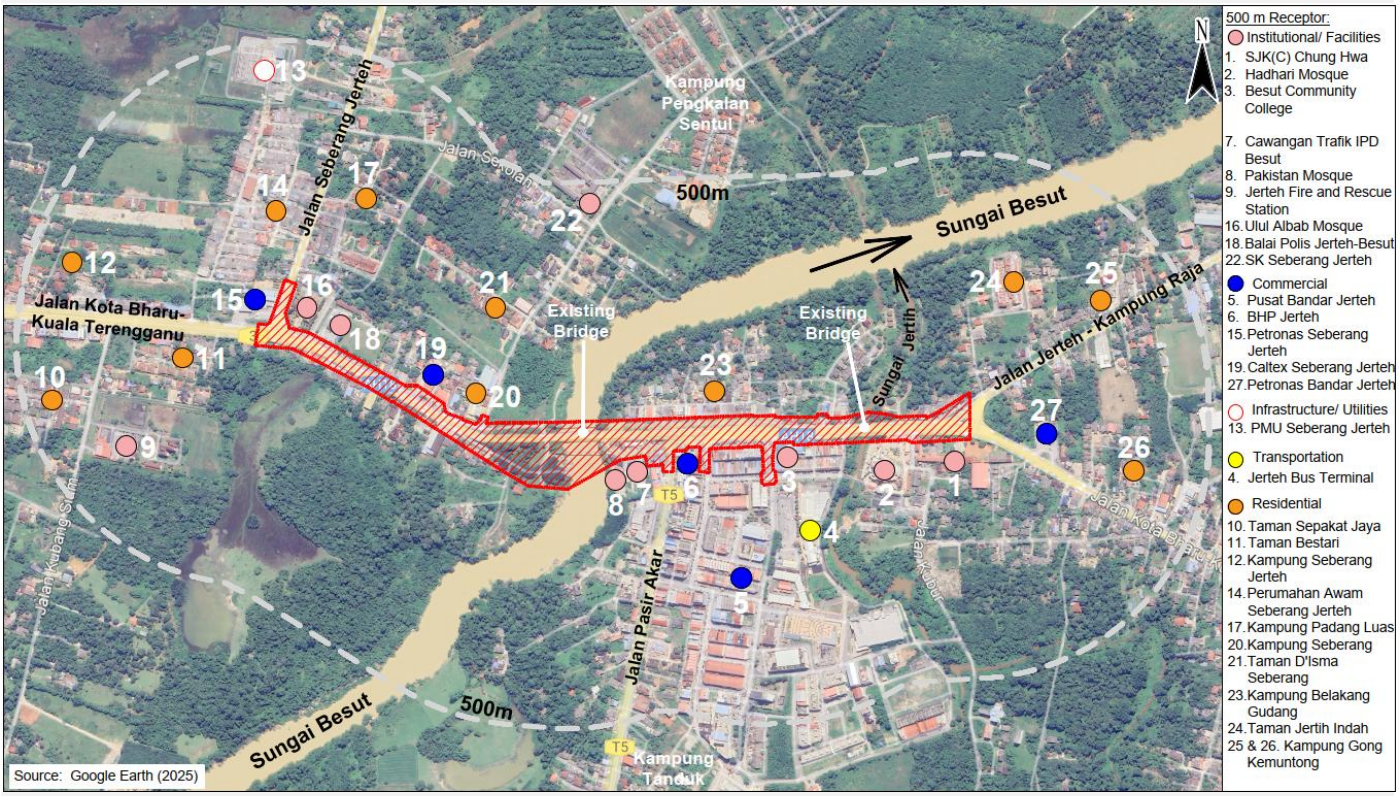
EXISTING ENVIRONMENT



LAND USE ZONING

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EXISTING ENVIRONMENT

Environmental Baseline Sampling

Water Quality

- 5 River Water Quality locations: Compared with Class IIA NWQS
  - DO were recorded **within** the NWQS Class IIA limits of 5 to 7 mg/L, for all samples.
  - BOD and COD levels at all stations exceeded the NWQS Class IIA limits of 3 mg/L and 25 mg/L, respectively.
  - Parameters including TSS, AN, Turbidity, Nitrate, Oil and Grease and heavy metals were within the NWQS Class IIA limits.
  - Overall water quality for all monitoring locations categorized as Clean (Clean II).

Ambient Air Quality

- Monitoring at 2 locations for 6 parameters
- All measured parameters complied with MAAQS (2020)
- CO, SO_2, NO_2, and O_3 were found at very low concentrations.

Parameter	Result		MAAQS 2020 (averaging time)
	A1	A2	
PM_{10} (µg/m³)	30	27	100 µg/m³ (24hr)
$PM_{2.5}$ (µg/m³)	18	15	35 µg/m³ (24hr)
SO_2 (µg/m³)	<10	<10	80 µg/m³ (24hr)
NO_2 (µg/m³)	<1	<1	70 µg/m³ (24hr)
CO (mg/m³)	0.1	0.1	10 µg/m³ (8hr)
O_3 (µg/m³)	<1	<1	100 µg/m³ (8hr)

Point	Average $L_{aeq,}$ dB(A)	
	Daytime	Night Time
	Limit: 65 dB(A)	Limit: 60 dB(A)
N1	63.5	56.0
N2	62.1	52.4

Noise Level

- Monitoring at 2 locations
- Noise levels are compared against the limit under Second Schedule, Guidelines for Environmental Noise Limits and Control, Third Edition 2019 (Reprint 2021).
- L_{Aeq} during daytime and night-time at all sampling locations complied with the respective limits.

Vibration Quality

- Monitoring at 2 locations
- The limits are stipulated under Second Schedule: Recommended Vibration Limits for Human Response and Annoyance from Steady State Continuous Vibration (Residential) in the Guidelines for Environmental Vibration Limits and Control, Third Edition 2021.

Station	Measurement Time	RMS Velocity (mm/s)	Second Schedule
V1	Day time	0.223	0.2 mm/s to 0.4 mm/s (R=2 to R=4)
	Night time	0.062	0.2 mm/s (R=2)
V2	Day time	0.191	0.2 mm/s to 0.4 mm/s (R=2 to R=4)
	Night time	0.095	0.2 mm/s (R=2)

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IMPACT ASSESSMENT

Soil Erosion & Sedimentation

Soil Erosion Modelling

- Assessment was conducted for 3 scenarios: Existing, Worst-case, With Mitigation Measures
- Soil Loss Rate:

Section (CH)	Soil Loss Rate (t/ha/yr)		
	Existing Condition	Worst Case	With Mitigation Measures
1 (0 to 675)	19.46	357.12	5.29
2 (750 to 1307)	17.44	101.19	2.91
3 (1325 to 1500)	13.10	87.34	2.18

Sediment Yield

- Existing Condition: 0.016 tonnes
- Worst-case: 0.025 tonnes
- With mitigation measures: 0.013 tonnes

Water Quality

PRE-CONSTRUCTION PHASE

- Demolition activities will release concrete debris, rusted metals and other contaminants into Sg. Jertih.

CONSTRUCTION PHASE

- Surface runoff that contains suspended solids, contaminated surface runoff with traces of oil and grease site and construction chemicals, and sewage generated from the temporary sanitary facilities.
- Water quality modelling is conducted using QUAL2K; Uncontrolled earthworks and land clearing will cause deterioration of water quality in Sg. Besut and Sg. Jertih for TSS content.

OPERATIONAL PHASE

- Expected to be non-significant due to the nature of the Project.
- Increase surface runoff and solid wastes are the main concerns during operational phase.

Geological Hazard

PRE-CONSTRUCTION, CONSTRUCTION, AND OPERATIONAL PHASES

- Potential geological hazards including landslides and erosion.
  - Landslide: A small scale landslide was identified. The presence of discernible scarps and on-going riverbank erosion suggest progressive toe retreat and residual instability, likely influenced by past flood events and sustained fluvial processes
  - Erosion: Major and minor signs of erosion were identified, with more pronounced effects along the riverbank and fluvial shoreline, primarily due to surface water runoff.
- Anthropogenic activities particularly sand mining activity may exacerbate geohazard risks, especially in geomorphically sensitive areas.

Hydrology

PRE-CONSTRUCTION PHASE

- No impacts are anticipated during this phase as no physical groundworks or site-clearing activities will be undertaken.

CONSTRUCTION PHASE

- Increase in turbidity and TSS levels during earthworks and construction works and degradation of river capacity.

OPERATIONAL PHASE

- Expected to be insignificant as proper roadside drain will be built to cater surface runoff.

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IMPACT ASSESSMENT

Air Quality

PRE-CONSTRUCTION PHASE
- Pre-construction activities are expected to generate air pollutants and particulate dust.

CONSTRUCTION PHASE
- Generated by site preparation and earthworks; wind-blown dust from exposed construction areas; and construction related activities.
- Air dispersion modelling: AERMOD air quality model for 2 identified ASRs.

OPERATIONAL PHASE
- Air quality assessment for traffic emission was predicted using CALINE4
- Air pollutants of major concern during operational phase do not exceed the MAAQS (Standard [2020])

Noise and Vibration

PRE-CONSTRUCTION PHASE
- Intermittent high-impact noise and vibration are expected to be generated during the pre-construction

CONSTRUCTION PHASE
- Main source to noise pollution is from intermittent vehicular movement along the Project site
- Identified sensitive receptors are not within the zone of influence, and the immediate proximity may experience perceived vibration level (<10 m/s) that can be tolerated if prior warning and explanation has been given to residents

OPERATIONAL PHASE
- Main source to noise pollution will be from human activities and traffic movement
- Vehicular movement generally does not cause significant vibration, except over potholes or uneven roads.
- Ground-borne vibration results from the interaction between vehicle tires and surface irregularities.

Waste

PRE-CONSTRUCTION PHASE
- Main source of waste will be generated from the demolition activities. Improper waste management will cause visual and odour nuisance to nearby residential areas

CONSTRUCTION PHASE
- Types of waste generated include biomass, excess/unsuitable earth materials and spoils, construction and demolition wastes, scheduled wastes, municipal solid waste, and sewage.
- Poor waste management can lead to drainage or waterway blockages, soil contamination, as well as odour issues and uncontrolled air emissions affecting the surrounding area

OPERATIONAL PHASE
- Municipal solid waste and scheduled waste is expected to be generated
- Improper management of wastes (Biomass and O&G) generated during landscaping and road maintenance may also cause water pollution.

Terrestrial Ecology

PRE-CONSTRUCTION PHASE
- Short term localized impacts are likely to occur, especially due to habitat disturbance, noise and dust

CONSTRUCTION PHASE
- Vegetation clearing will reduce nesting and foraging areas, but overall impact is low due to the site's already disturbed state.
- Macaques, squirrels, and birds may be temporarily affected by the loss of fruit trees and nesting sites, disturbed soil and equipment movement may introduce invasive species.

OPERATIONAL PHASE
- Impacts expected to be minimal, as the site is already disturbed, wildlife is adapted to human presence, and no major barriers to movement will be introduced.

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IMPACT ASSESSMENT

Aquatic Ecology

PRE-CONSTRUCTION PHASE
- Increase risk of sediment runoff, leading to increase turbidity which could disturb aquatic habitats and affect the respiration and feeding mechanisms of aquatic organisms

CONSTRUCTION PHASE
- High suspended sediment concentrations will affect the fish by clogging gills or causing gill abrasion, hindering the foraging activities and efficacy
- The usage of large equipment will cause vibration in the river and produce excessive noise levels., which will disturb the natural surroundings and may create unfavorable conditions for the aquatic organisms.

OPERATIONAL PHASE
- No significant impacts are anticipated

Socio-Economy

PRE-CONSTRUCTION PHASE
- Negative impacts are anticipated from the land acquisition and resettlement/relocation of the residents

CONSTRUCTION PHASE
- Will create temporary jobs for locals in areas like site prep, roadworks, machinery, and bridge work.
- Frequent heavy construction vehicles can cause road damage like cracking and rutting, worsened by material spills and increased traffic loads beyond the road's capacity.

OPERATIONAL PHASE
- Boost accessibility, attract customers, encourage new businesses, and stimulate local economic growth.
- Improved roads may increase traffic and noise, causing congestion and safety issues near key areas without proper management.

Public Health

PRE-CONSTRUCTION, CONSTRUCTION, AND OPERATIONAL PHASES
- Construction activities, particularly those lacking adequate dust suppression measures, could elevate particulate matter levels, posing health risks to nearby sensitive receptors
- Water bodies remain safe for both recreational use and as potential sources of raw water, with most associated HQs remaining below the level of concern
- Sensitive receptors at Kampung Seberang Jertih may experience mild noise nuisances during construction phase
- Vibration impacts were assessed and found to be negligible

Traffic

PRE-CONSTRUCTION PHASE
- Impacts from demolition activities may cause traffic congestion, particularly during peak hours due to partial road closure

CONSTRUCTION PHASE
- Carry over of mud and slit from the construction area onto the main road.
- Potentially will cause temporary air, noise and nuisance, as well as road safety risks to the surrounding.
- Traffic impedance especially during peak hours morning and evening, increase wear and tear of the road, leading to potholes and uneven road surface.

OPERATIONAL PHASE
- Future operational performance of existing road is expected to operate at LOS E in 2040 and 2050.

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MITIGATION MEASURES

Soil Erosion & Sedimentation

PRE-CONSTRUCTION PHASE
- Conducting soil investigation for design purposes, provide estimation calculation on soil loss and sediment yield to allow for planning the necessary BMPs

CONSTRUCTION PHASE
- Proper phasing, staging, and sequencing plan
- BMPs like construction markers, perimeter control, earth bund, silt trap, construction entrance, diversion drains; surface runoff management, stockpile soil management, temporary or permanent watercourse diversion, temporary stabilization, and management of spoil and solid waste.

OPERATIONAL PHASE
- Soil erosion is not a concern during operational phase.

Water Quality

PRE-CONSTRUCTION
- Installation of barriers (silt fences and sediment traps) around the demolition site to contain concrete debris and paint flakes, preventing them from being washed into the rivers.

CONSTRUCTION PHASE
- Implement soil erosion control measures as indicated in ESCP and LD-P2M2.
- Sediment basins or temporary drainage to be provided.

OPERATIONAL PHASE
- Regular drainage maintenance will help protect Sg. Besut and Sg. Jertih from contamination.

Geological Hazard

PRE-CONSTRUCTION, CONSTRUCTION AND OPERATIONAL PHASE
- Retaining Wall Type: Due to space and foundation constraints near watercourses or abutments, reinforced concrete cantilever or counterfort retaining walls are typically suitable.
- Slope and River Proximity: For walls near Sg. Besut, potential scouring and slope instability must be addressed.
- Settlement and Lateral Deformation: Retaining wall design must account for differential settlement and lateral movement.

Hydrology

PRE-CONSTRUCTION PHASE
- No mitigation measures are proposed as no significant impacts are anticipated.

CONSTRUCTION PHASE
- Project Implementer will ensure the Project does not disturb natural water flow, including rainwater, underground drainage, and nearby rivers.

OPERATIONAL PHASE
- Impacts on hydrology during operational phase are expected to be insignificant.
- Periodic maintenance of drainage system along road alignment will be carried out to ensure nearby waterways are not affected.

Air Quality

PRE-CONSTRUCTION PHASE
- Water should be sprayed regularly on the demolition site, especially during activities like concrete breaking.

CONSTRUCTION PHASE
- Water sprayed to reduce dust and fuel-efficient haulage trucks to minimize exhaust emissions. Smoke belching vehicles and equipment shall not be allowed removed from the Project Site.

OPERATIONAL PHASE
- Maintain the trees within the buffer areas.
- Impose speed limit especially near the rural settlement areas.

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MITIGATION MEASURES

Noise and Vibration

NOISE

PRE-CONSTRUCTION PHASE

- Pre-construction activities to be scheduled during off-peak hours and kept during the day.
- Install temporary noise barriers or acoustic shields around Project site.

CONSTRUCTION PHASE

- Construction activities to be carried out in phases to minimize the cumulative impact of noise.
- Work in high noise environment to be done in shifts.

OPERATIONAL PHASE

- PI to adopt BMPs where applicable, such as planting trees, shrubs, and other vegetation along roadways that act as a natural noise buffer.

VIBRATION

PRE-CONSTRUCTION PHASE

- Hydraulic breakers and jackhammers should be operated with care to minimise vibration.

CONSTRUCTION PHASE

- Use of vibration dampers for attenuation (damping) of vibration generated.
- Increase distance between vibration sources and sensitive receptors to reduce transmission.

OPERATIONAL PHASE

- No mitigation measures required as the impacts are foreseen to be insignificant.

Terrestrial Ecology

PRE-CONSTRUCTION PHASE

- Preserve key habitats that support native plants and wildlife.
- Create buffer zones around sensitive areas and limit clearing to only what is necessary.

CONSTRUCTION PHASE

- Conduct vegetation clearance ethically, ensure that all the BIPs and pollution control measures are consistently operated and well-maintained throughout the project duration.
- Train workers on safety protocols and appropriate actions in the event of wildlife encounters, including first aid procedures for incidents such as snake bites.
- Conduct site clearing and earthworks in stages to allow wildlife to move to nearby vegetated areas.

OPERATIONAL PHASE

- The Project site does not traverse through any ecologically sensitive areas, so impacts are very low to negligible.
- Maintain green buffers, prevent encroachment, and manage waste and pollution properly.

Waste Management

PRE-CONSTRUCTION PHASE

- Demolition waste and schedule waste are to be segregated, stored in designated areas and disposed according to regulations.
- Temporary stockpiles must be covered.

CONSTRUCTION PHASE

- Clear vegetation in phases and dispose of biomass daily at an approved site away from waterways.
- Provide waste and recycling bins on-site, and ensure daily disposal at an approved facility.
- Store scheduled waste in a concrete-based, secure area with proper labeling and containment.

OPERATIONAL PHASE

- Implementation of routine road and bridge maintenance by JKR Negeri Terengganu.
- Prompt cleaning of any scheduled waste spillage on the road.

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MITIGATION MEASURES

PRE-CONSTRUCTION PHASE
- Proper erosion and sediment control practices should be implemented, such as installing silt fences, sediment traps to capture sediment-laden runoff before it reaches nearby rivers

CONSTRUCTION PHASE
- Implementation of LD-P2M2 and Environmental Protection Works
- The usage of hydraulic hammer to reduce the sound pressure during the pilling activity
- Clear and prominent signages will be placed near the bridge construction site particularly at Sg. Besut to inform the fishermen on the on-going work

OPERATIONAL PHASE
- No mitigation measures required as no impacts foreseen during operational phase

Aquatic Ecology

PRE-CONSTRUCTION PHASE
- PP to engage with the local community, particularly those directly affected by land acquisition, relocation, and demolition

CONSTRUCTION PHASE
- Close liaison with the neighboring community/ business so that they are aware of the Project status
- Ensure that land acquisition follows all legal procedures and is conducted transparently in accordance with the Land Acquisition Act 1960
- Ensure that all workers wear appropriate PPE such as helmets, gloves, safety goggles, and boots to protect themselves from hazards

OPERATIONAL PHASE
- Encourage public awareness campaigns to promote road safety among residents and regular road users

Socio-Economy

PRE-CONSTRUCTION, CONSTRUCTION AND OPERATIONAL PHASE
- Ensure that all workers have continuous access to clean and safe drinking water to reduce the risk of dysentery and leptospirosis
- Conducting regular health education sessions for workers and nearby residents to raise awareness about the transmission and prevention of prevalent diseases such as AIDS, dysentery, and leptospirosis
- Routine health monitoring and screening programs should be implemented at the construction site to identify early symptoms of communicable diseases, particularly COVID-19 and dengue fever.

Public Health

PRE-CONSTRUCTION
- To reduce congestion, temporary traffic diversions should be clearly marked and planned ahead of time

CONSTRUCTION PHASE
- Implement traffic control by transporting materials during off-peak hours, limiting speed, and securing all loads with chains or ropes; cover dusty materials with tarpaulin.
- Appropriate road signage will be erected.

OPERATIONAL PHASE
- Enforce traffic control with clear signage, safety rules, speed limits, and regular monitoring.
- Conduct routine road maintenance through inspections and repairs to ensure safe traffic flow

Traffic

EXECUTIVE SUMMARY

FIRST SCHEDULE ENVIRONMENTAL IMPACT ASSESSMENT

MEMBINA JAMBATAN MERENTASI SG. BESUT DI JALAN (FT003), JERTIH, BESUT, TERENGGANU

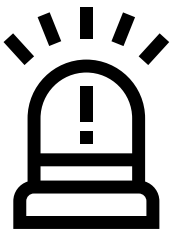
Proposed Environmental Monitoring Program

COMPLIANCE MONITORING (CM)

- Ensures EIA conditions of approval are complied with by the Project Proponent
- Carried out by Accredited Laboratory

ENVIRONMENTAL COMPLIANCE AUDIT

- Environmental Audit by a registered environmental auditor
- Possess Certified Erosion, Sediment and Storm Water Inspector (CESSWI) or Malaysian Certified Inspector of Sediment and Erosion Control (MY-CISEC) Qualifications
- Best Management Practices (BMPs) will be adopted



PERFORMANCE MONITORING (PM)

- Ensures effectiveness of pollution control systems and mitigation measures
- EO to carry out PM on site

BASELINE MONITORING

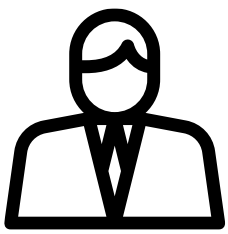
General indication of the baseline environmental conditions at the time of reporting

ENVIRONMENTAL MONITORING PROGRAM

- Provides database of environmental impacts
- Early indicator of environmental impacts

SELF-REGULATORY MONITORING

- Ensures effectiveness of mitigating measures and compliance towards environmental regulations
- Carried out by EO

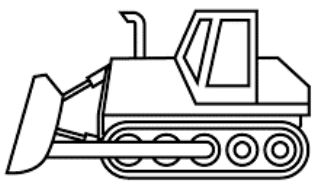


IMPACT MONITORING (IM)

- Ensures effectiveness of pollution control systems and mitigation measures
- EO to carry out PM on site

MONITORING	FREQUENCY
Performance Monitoring	
As per LD-P2M2 plan	• Monthly • After heavy rainfall (>12.55mm as measured by rain gauge)
Compliance Monitoring	
Discharge points of silt traps and sediment basins	Monthly
Impact Monitoring	
• River water quality (5 stations) • Air, noise, & vibration (2 stations each)	Monthly

ENVIRONMENTAL MONITORING PROGRAMME DURING CONSTRUTION PHASE



EXECUTIVE SUMMARY

FIRST SCHEDULE ENVIRONMENTAL IMPACT ASSESSMENT

MEMBINA JAMBATAN MERENTASI SG. BESUT DI JALAN (FT003), JERTIH, BESUT, TERENGGANU

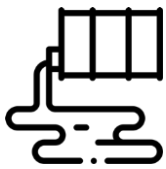
Emergency Response Plan

EMERGENCY RESPONSE TEAM

- A team of qualified individuals with specific roles and responsibilities to carry out during an emergency.
- Responsible for executing the following procedures:

FIRE EMERGENCY RESPONSE

Coordinating workers movement and communication with fire department



CHEMICAL SPILLAGE PROCEDURES

Mitigation methods and reporting process

ESCP FAILURE RESPONSE

Control and maintenance methods

CONCLUSION

EIA GUIDELINES

EIA Guidelines in Malaysia (EGIM), 2016

CONSTRUCTION PHASE IMPACTS

Soil Erosion and sedimentation, geohazard consideration, water quality, air quality, Noise and Vibration.

OPERATIONAL PHASE IMPACTS

Impacts are minor and can be controlled

All potential impacts can be reduced significantly with implementation of **ALL** recommended mitigation measures