Annex 1: Description of Services (“DoS”)

Procurement of Technical Partner for Bandung Intra Urban Toll Road Project (“BIUTR”)

Prepared by: PPF Team

Approved by: KIAT

13 September 2024

PPF Team is the Consultancy Firm selected by KIAT for the PPF Activity

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Acronyms

ANDAL	Environmental Impact Analysis (*Analisis Dampak Lingkungan Hidup*)
BIUTR	Bandung Intra Urban Toll Road Project
BKPM	Badan Koordinasi Penanaman Modal
BUMD	Regional-owned Enterprise
BUMN	State-owned Enterprises
CPR	Commonwealth Procurement Rules
CSO	Civil Society Organizations
DoS	Description of Service
DPPT	Dokumen Perencanaan Pengadaan Tanah
DPRD	Local Parliament
E&S	Environmental & Social
EOI	Expression of Interest
ESG	Environmental Social and Governance
ESIA/AMDAL	Environmental and Social Impact Assessment/Analisis Dampak Lingkungan
GAP	GEDSI Action Plan
GEDSI	Gender Equality Disability and Social Inclusion
GHG	Green House Gases
GoI	Government of Indonesia
IBE	Implementing Business Entity
KA-ANDAL	Terms of Reference for Environmental Impact Analysis (*Kerangka Acuan Analisis Dampak Lingkungan Hidup*)
KEQs	Key Evaluation Questions
KIAT	Kemitraan Indonesia Australia Untuk Infrastructure
KSPI	Kerja Sama Penyediaan Infrastruktur
LARP	Land Acquisition and Resettlement Plan
LKPP	Policy Institute for Procurement of Goods/Services
MBDs	Model Bidding Documents
MQs	Monitoring Questions
O&M	Operation & Maintenance
OPD	*Organisasi Perangkat Daerah*
PAP	Project Affected People
PMO	Project Management Office
PPF	Project Preparation Facility
PPPs	Public-Private Partnerships
PQ	Pre-qualification
Pre-FS	Pre-Feasibility Study
RfP	Request for Proposal
RfQ	Request for Qualification
RKL-RPL	Environmental Management Plan and Environmental Monitoring Plan
SDGs	Sustainable Development Goals
VfM	Value for Money
VGF	Viability Gap Funding

1 Background

Government of Indonesia ("GoI") has identified inclusive infrastructure development as a priority in its National Long-Term and Medium-Term Development Plans (RPJPN 2005-2025 and RPJMN 2020-2024, respectively). To achieve Indonesia's infrastructure development target by 2024, the state budget is expected to contribute approximately 37% of the total investment and the rest is expected to be contributed by State-Owned Enterprises ("SOE") approximately 21% and the private sector 42%.[1] Consequently, the GoI has endeavored to stimulate the private sector to fund development through various creative financing mechanisms, such as public-private partnerships ("PPPs") and other alternative financing mechanisms.

Kemitraan Indonesia Australia untuk Infrastruktur ("KIAT") is a partnership between the Government of Australia and Government of Indonesia to support sustainable and inclusive economic growth through improved access to infrastructure for all people in Indonesia. KIAT works with government partners, multilateral development banks ("MDBs") and civil society providing technical assistance to improve infrastructure policy, planning and delivery. KIAT also works with sub-national governments to improve the quality of infrastructure spending and planning.

Through its work with central and sub-national governments, KIAT is working towards 5 End-of-Facility Outcomes ("EOFOs"):

1. Improved policies and regulations for infrastructure development
2. High quality projects prepared for financing by GOI, MDBs or the private sector
3. High quality infrastructure delivery, management, and maintenance by GOI
4. Infrastructure policies, design and delivery are more inclusive for women and people with disabilities
5. Improved policy, planning and design results in lower-emission, more climate-resilient infrastructure

The focus of KIAT is on the following areas: Water and Sanitation; Transport; Gender Equality, Disability and Social Inclusion (GEDSI); Climate Change; and Infrastructure Funding and Financing ("IFF").

KIAT intends to assist GoI in bringing select projects to market which are assessed to be suitable for PPP procurement based on PPP suitability screening by KIAT using appropriate criteria, framework, and tools. The projects will be prepared based on international PPP project preparation best practices and aligned with the PPP project preparation requirements in the applicable PPP legal and regulatory framework in Indonesia, through this PPP Project Preparation Facility ("PPF") project ("activity").

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KIAT has appointed PT PricewaterhouseCoopers Indonesia Advisory ("PwC") as the Consultancy Firm ("PPF Team") which will be the lead sub-consultant to help KIAT deliver the activities, which may involve some or all of the following, depending on the stage at which the project is, in the project development lifecycle:

a. Preparation of pre-feasibility study ("Pre-FS").
b. Preparation of Environmental and Social Impact Assessment ("ESIA"/"AMDAL").
c. Preparation of Land Acquisition and Resettlement Plan ("LARP").

[1] Republic of Indonesia, Ministry of National Development Planning (Kementerian Perencanaan Pembangunan Nasional/Badan Perencanaan Pembangunan Nasional or "Bappenas"), Public Private Partnership: Infrastructure Projects Plan in Indonesia (PPP Book), 2023, p.i

d. Preparation of Readiness Criteria as required for the project to support the project preparation and procurement implementation.
e. Preparation of Environmental, Social, and Governance ("ESG") Report for the project.
f. Preparation of bidding documents for the project that can be used as a reference for other projects in the same sub-sector.
g. Preparation of other documents deemed complementary to the planning and preparation stage.
h. Relevant inputs/guidance to support the Transaction Adviser appointed by the GCA/under MoF's PDF for the project to be offered to the market.

Further details on the scope of work (tasks and sub-activities) are provided in Section 3 of this Description of Services ("DoS").

The PPF Team, along with the technical firm appointed for this project ("Technical Consultancy Firm"), is required to promote the inclusion of GEDSI principles in both the delivery of the activity and the development of the project preparation, readiness, and transaction documents to improve awareness, representation, and understanding of GEDSI issues within the relevant GCA. Concurrently, KIAT intends to introduce concepts adhering to inclusive, smart, green, and resilient infrastructure design practices which will support a wider range of potential project finance. KIAT anticipates that the relevant GCA will be able to model these ESG-based principles in future PPP projects to achieve better commercial and sustainability outcomes.

KIAT specifies that there are at least six pre-determined PPP projects that will be supported by the PPF, which are primarily expected to be from the infrastructure sectors elaborated in Australia's Southeast Asia Economic Strategy to 2040. The sectors could be those with the potentially highest investment needs in the next 15 years in Indonesia, including, among others, telecommunications, airports, ports, rail, roads, water, and renewable energy. One of the projects that has been selected by KIAT to be supported by the PPF activity is the Bandung Intra Urban Toll-Road ("BIUTR") project.

Bandung Intra Urban Toll Road Project ("Project")

Toll road development constitutes an essential part of regional development and economic improvement in Indonesia. Toll roads improve connectivity, reduce travel time, and promote economic development across Indonesia. They help address increasing traffic congestion in major urban centers, and if well planned can provide additional capacity to meet future connectivity needs. A significant number of new toll road projects are planned for the near future.

The BIUTR has been selected as one of the projects to be supported by the PPF activity. This project aims to address the critical need arising from the increase in population and urbanisation in Bandung City, which has led to an increase in road traffic demand and congestion on many parts of the road network, particularly on the east-west arterials. There are two feasibility study ("FS") documents that have been developed to assess the overall feasibility of the BIUTR, with the notable difference in the alignment, as explained below:

- **Japan International Cooperation Agency ("JICA") (2009)**: The FS document was prepared in 2009 with the toll road segmentation divided into two parts, which are Pasteur to Cileunyi (crossing Pasteur, Djund Junan, Pasir Kaliki, Sukaluyu, Cicaheum, Cibiru and Cileunyi with the total length of 20.6 km) and Ujung Berung to Gedebage (crossing Soekarno Hatta and Gedebage with the total length of 6.7 km). The initial plan can be seen in Figure 1. ;
- **Consortium of Marga Utama Nusantara, Wijaya Karya, and Mahkota Permata Perdana (2021)**: The BIUTR Project was categorised as unsolicited project. The FS was prepared in 2021 and consists of one segment, namely Pasteur to Summarecon Bandung (crossing Pasteur, Djund Junan, Pasir Kaliki, Gasibu, Arcamanik, Ujung Berung, Soekarno Hatta and Summarecon). The initial plan can be seen in Figure 1.

Figure 1. Initial BIUTR Plan Developed by JICA

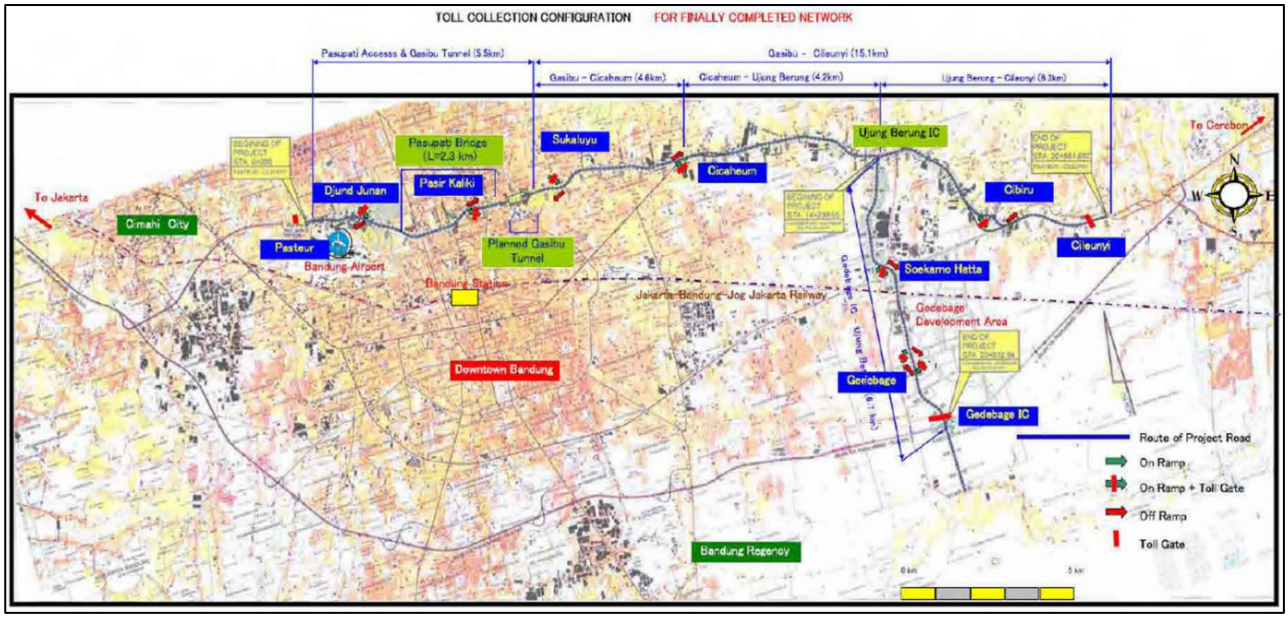
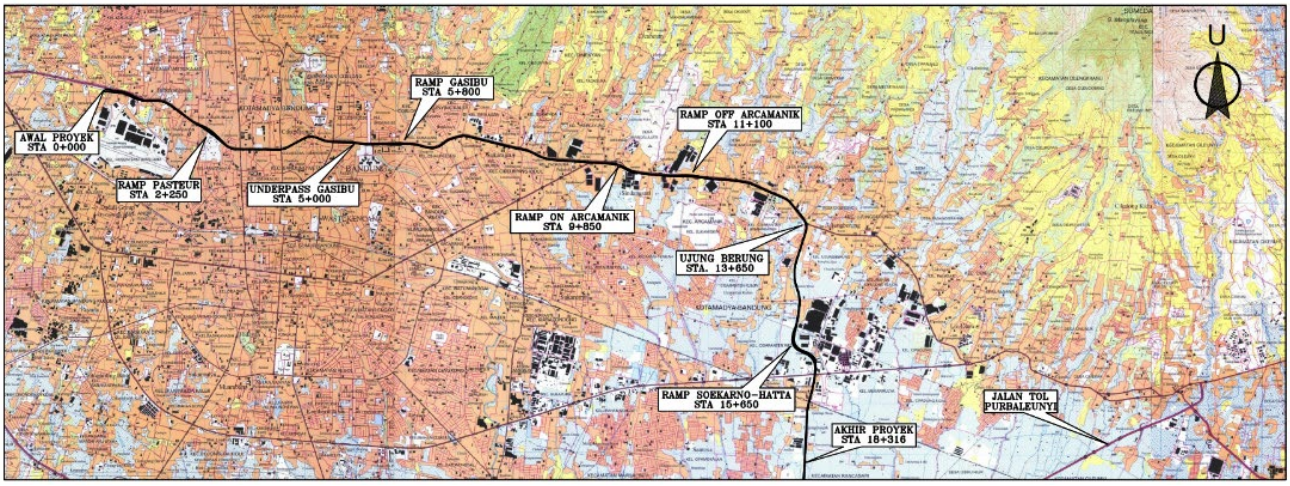
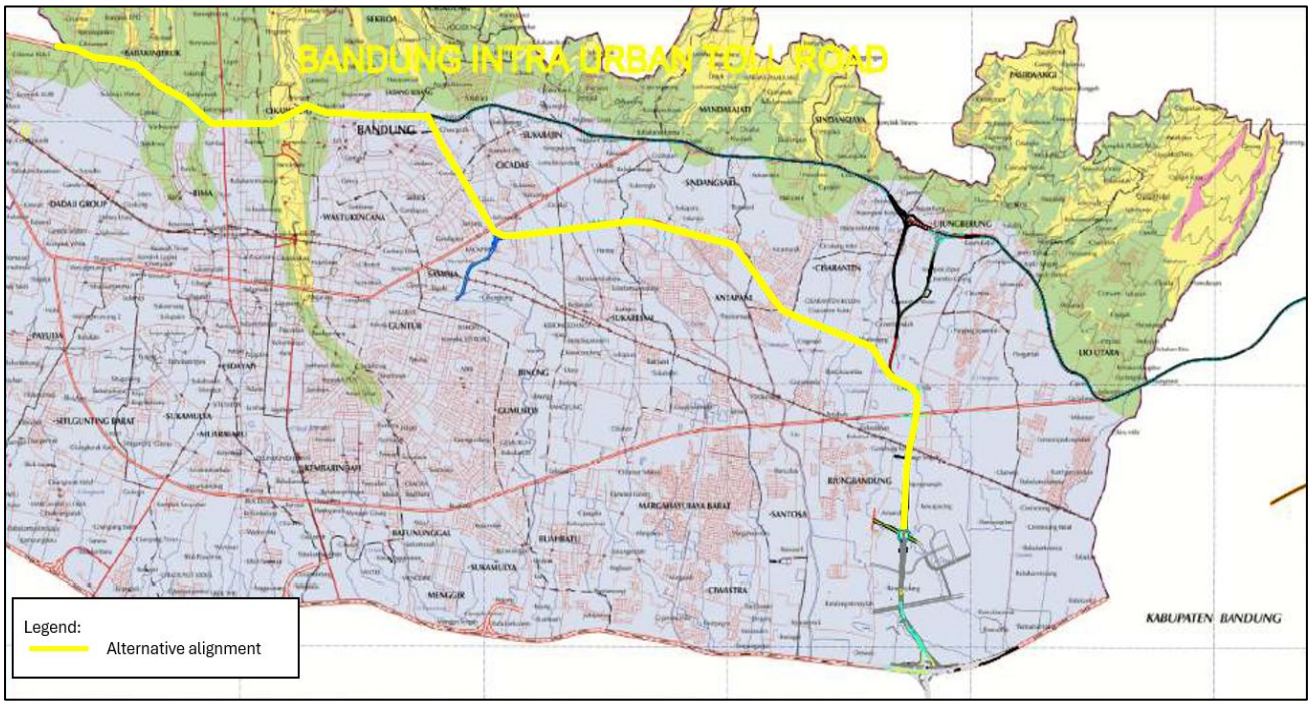


Figure 2. Initial Plan Developed by Consortium of Marga Utama Nusantara, Wijaya Karya, and Mahkota Permata Perdana



In addition to the existing FS documents mentioned above, Directorate General of Highways ("DGH") of the Ministry of Public Works and Housing ("MPWH") has appointed a technical advisor to assess the alignment and one of the outcomes of the assessment is to look at the possible alternative route alignment as shown in Figure 3. This additional possible alternative route alignment consists of one segment, namely Pasteur to Gedebage (crossing Pasteur, Djund Junan, Pasir Kaliki, Gasibu, Pusat Dakwah Islam ("PUSDAI"), Jakarta Street, Terusan Jakarta Street, Arcamanik, and Gedebage).

Figure 3. Indicative Alternative BIUTR Alignment from DGH



The BIUTR Project faces challenges regarding the land acquisition and budget as reported in the news published by the Communication and Informatics Office of West Java Province (*Dinas Komunikasi dan Informatika Provinsi Jawa Barat*/"*Diskominfo*").[2] As part of the government's plan to accelerate the development of the project, the BIUTR has recently been granted the status of a National Strategic Project (*Proyek Strategis Nasional*/"PSN"). In addition, the BIUTR is expected to involve private financing through a solicited PPP scheme. Therefore, KIAT has committed to support the preparation of a Pre-FS[3], the preparation of Readiness Criteria, and draft Tender documents for BIUTR project through this PPF activity.

Recognising a request from MPWH, and the importance to bring the project to market and commence development, KIAT is currently supporting MPWH in the BIUTR PPP project preparation stage. Parallel to this procurement process, the PPF Team has engaged and deployed a traffic surveyor to conduct traffic surveys based on the alternative alignments mentioned above and perform a high-level assessment on the alignment options study.

[2] Dinas Komunikasi dan Informatika Provinsi Jawa Barat (March 2024) (https://diskominfo.jabarprov.go.id/berita/persoalan-anggaran-dan-lahan-penyebab-tertundanya-pembangunan-biutr-12662)
[3] Bappenas Regulation No. 7/2023 regarding Operation Guideline for PPP In Infrastructure (https://peraturan.bpk.go.id/Details/271431/permen-ppnkepala-bappenas-no-7-tahun-2023)

2 Objectives

The PPF Team, along with the Technical Consultancy Firm, will assist KIAT and MPWH in project preparation and transaction documents preparation (e.g., draft Pre-Qualification ("PQ"), draft Request for Proposal ("RfP"), draft PPP Agreement, draft Procurement Plan, and draft Procurement Manual, etc.). The Technical Consultancy Firm will also provide support in developing other supporting reports and documents. Among these is the Readiness Criteria document such as the Environmental and Social Impact Assessment ("ESIA"), Land Acquisition and Resettlement Plan ("LARP"), and Land acquisition Planning Document (*Dokumen Perencanaan Pengadaan Tanah*/"DPPT"). The Technical Consultancy Firm will also assist the PPF Team with the requisite public consultation and market sounding of the BIUTR Project and provide capacity building to GoI stakeholders during the course of the assignment. The Technical Consultancy Firm is required to promote the inclusion of Gender Equality, Disability and Social Inclusion principles in both the delivery of the activity and the development of the Pre-FS. More broadly, ESG Principles, E&S Safeguards and climate change risk should be considered in the approach to Pre-FS development.

The support provided by the Technical Consultancy Firm for the PPF Team is expected to contribute to KIAT's approval of the Project Preparation deliverables by 18 weeks after contract signing (indicatively March 2025), as well as the PPP Transaction Preparation Documents, Capacity Development, and Public Consultation Reports by 34 weeks after contract signing (indicatively June 2025). Further details of the deliverables and their submission date can be found in Section 5 of this DoS.

3 Activity Description

3.1 Activity Scope

The Technical Consultancy Firm would be required to support the PPF team in developing the Pre-FS for the BIUTR project in accordance with Presidential Regulation No. 38/2015 regarding cooperation between government and business entity in infrastructure provisioning, Bappenas Regulation No. 7/2023 regarding operation guideline for PPP in infrastructure, Minister of Finance Regulation No. 260/2016 regarding Availability Payment on PPP in infrastructure provision, Minister of Finance Regulation No. 223/2012 regarding Viability Gap Funding ("VGF"), and Minister of Home Affairs Regulation No. 96/206 regarding Availability Payment of regional PPP in infrastructure provision. The Technical Consultancy Firm would also be required to support the PPF Team in developing the transaction documents by providing the required technical inputs in compliance with the most updated applicable PPP regulations including but not limited to Bappenas Regulation No. 7/2023 and LKPP Regulation No. 29/2018 (or its amendment).

Other allied documents such as ESIA, LARP, DPPT in support of the PPP must also be prepared by the Technical Consultancy Firm in accordance with the prevailing regulations for such documents and KIAT's internal guidance and requirements.

3.2 Task A - Preparation of Technical Assessment in the Pre-FS

The preparation of technical assessment in the Pre-FS including surveys for the development of the Basic Design document, at a minimum, shall comply with the guidelines outlined in the Guidelines for Preparing Toll Road Basic Design Document No. 05/P/BM/2024 developed by DGH of MPWH, where applicable.

a. Site Assessment: Undertake a site assessment (site visit, surveys, and stakeholder consultations) to understand site-related technical details such as site topography, area, human geography (including ownership and land acquisition requirements), connection with utilities, site connectivity through various modes of transport, compliance with the local spatial plan, conformity to the operational requirements (availability of raw materials and labour required), specialist studies and surveys required, and similar other technical details. The site assessment must include, at least the following:

- **Topographical Survey:** Undertake topographical surveys to accurately map the terrain, identify land features, as required to develop a reliable (basic) design in conformity with the requirements provided under the regulation of the DGH. The detailed survey specifications based on the Guidelines for Preparing Toll Road Basic Design Document No. 05/P/BM/2024 include:

Table 1. Survey Specifications for Topographical Survey

No	Survey Methodology	Target Survey Locations
1	Aerial photography	Entire study area
2	Aerial LiDAR Survey	• Every selected route/alignment • Sufficient GCP point distribution (up to 1000 khz pulse) to model the ground surface
3	Terrestrial (for verification) • long section – polygon • cross section - waterpass	• Mapping and drawing basis for situational measurements: o Site coordinates of the selected route/alignment corridor o Elevation of longitudinal sections o Preparation of basemap o Frequency 250 m o Bridge L > 50 m • Basic mapping and drawing for transverse measurements:

No	Survey Methodology	Target Survey Locations
		o Cross section of road axle plan o Preparation of basemap o Every 100 m • GPS Traverse - Control points determined at 5,000 m intervals using three (3) GPS units • A distance of 100 m is required between points along the centerline and on straight routes and 25 m on curves or mountainous terrain • Need to add at least 25 m from the road centerline or 25 m of right-of-way ("RoW") • Road intersections should extend for at least 50 m along the main road that intersects each other and must be sufficient to define the intersection profile for other roads • Pattern of water flow on both sides of the bridge at 10 m intervals in zones which may be potential abutment locations, at 15 m intervals in scour protection and at 25 m intervals to other upstream and downstream direction over a maximum length of 500 m • Information at 25 m intervals should be provided for zones requiring scour protection at each alternative position of the proposed bridge
4	Cross-section waterpass	Basis of mapping and drawing: • Cross-section of road axle plan • Prepare base map • Every 100 m
5	Visual observation	Every affected route/alignment
6	Planned building location survey	Specifically for areas identified as planned building location: • Horizontal and vertical control points measurement • Cross-sectional and situational measurement • When the toll road is planned to cross a river, measurements are taken along 1000 m from the toll road plan in the upstream-downstream direction along the river with a width of 50 m from the left and right of the river bank • When the toll road is planned to cross an existing road, measurements are taken along 500 m of the toll road plan to the left and right of the toll road axle, 50 m wide to the left and right of the existing toll road axle • When the toll road is planned to cross utilities and other buildings, measurements are taken according to requirements

The illustration of the detailed Topographical Survey specifications for toll roads crossing (i) rivers and (ii) existing road can be seen in the Guidelines for Preparing Toll Road Basic Design Document No. 05/P/BM/2024.

- **Geological Survey and Geotechnical Soil Investigation:** Undertake geological and geotechnical surveys to evaluate soil properties/conditions, bearing capacity, and potential settlement issues, as required for technical considerations in developing a reliable (basic) design in conformity with the requirements provided under regulation of the DGH. Laboratory tests should be in accordance with SNI 8460:2017. The detailed survey specifications based on the Guidelines for Preparing Toll Road Basic Design Document No. 05/P/BM/2024 include:

Table 2. Survey Specifications for Geological Survey and Geotechnical Soil Investigation

No.	Survey Methodology	Survey Location Target
1	Visual Observation	• Soil type distribution • Existence of geological faults. if the distance is less than 10 km then a geological survey will be carried out • Existence of areas prone to ground movement
2	Location Survey	• Determining the type and location of nearby materials • Estimated deposit volume
3	Geoelectric/ seismic Refraction	Carried out in remote locations, unsafe/difficult to access including the mobilization of survey equipment
4	Boring Test	• Minimum depth of 40 m or until existence of hard ground • Number of sample points: o Minimum of 1 boring point for every 1 km o At planned bridge/other toll road structure locations o At bridge structures, at least at the locations on both sides of the abutment o At locations that have the potential for soft soil and high embankment areas and deep excavations above 10 m • Specifically for areas where tunnels are indicated, it is necessary to carry out soil investigations at a depth of at least 40 meters or use geoelectric • All remaining laboratory samples are stored as survey evidence
5	Geotechnical Investigation	Identify along the selected route plan/alignment the tool used is a hammer or other tool
6	Sondir Test	• Minimum 1 sample point between boring test locations for every 500 m • At planned bridge/other toll road structure locations of less than 50 m • At locations that are identified to have the potential for soft soil
7	Visual Observation	• At every location of soil type change • At every bridge span of > 50 m

- **Hydrological Survey:** Undertake hydrological surveys to measure and map factual hydrological conditions, as required to develop a reliable (basic) design in conformity with the requirements provided under the regulation of the DGH.
- **Structural Survey:** Undertake structural surveys to identify the factual site conditions for toll road infrastructure needs, including bridge structure plans (considering traffic data and road geometric aspects) and paving design (for traffic lanes and roadside, load design, etc.) as required to develop a reliable (basic) design in conformity with the requirements provided under the regulation of the DGH.
- **Utility Survey:** Undertake underground utility surveys to identify the utilities (such as water pipeline, drainage, and fiber optic cables) that are potentially impacted and need to be relocated due to the construction of the BIUTR project.

b. Geometric Assessment: Undertake geometric assessments including the road sections on a typical cross-sectional plan, vertical alignment, horizontal alignment, etc. in compliance with the relevant guidelines as stipulated under the regulation of the DGH.

c. Preparation of Right of Way ("RoW") Plan Drawings: Identify boundaries and dimension of the RoW for main roads, interchanges, toll road access, etc. in compliance with the relevant guidelines as stipulated under the regulation of the DGH.

d. Technical Risk Assessment: Develop a technical risk assessment based on the site evaluation, evaluate the impact of these risks on project timelines and costs, and propose mitigation strategies to address them.

The technical assessment should also assess risks related to the integration of the toll road with existing infrastructure, and consider potential environmental, social, and climate concerns, as well as compliance with regulatory requirements. The technical risk assessment should also incorporate and consider risks for the whole project cycle (i.e. design, construction, Operation and Maintenance ("O&M"), and Asset hand over).

e. **Alignment Study:** Undertake assessment on the options of potential BIUTR alignment to provide input on the preferred route by analysing the current conditions and potential constraints of the project location. The alignment study should include a review of existing BIUTR documentations pertaining to design, alignment, and traffic data. Additionally, the Technical Consultancy Firm shall review and take into consideration the results and findings of a separate alignment study and traffic survey which will be conducted by a separate traffic surveyor prior to the start of the Alignment Study. This study should also identify the entry and exit points of the toll road, incorporating all relevant data, including the results of the primary survey.

f. **Climate and Disaster Risk Assessment:** Undertake a climate and disaster risk assessment for both the project (internal risks) and external risks including its related infrastructure (e.g., road access or feeder roads, local utilities networks) as well as local communities, to inform the development of the basic design. The assessment should begin from an analysis of existing disaster risk in the area, then using downscaled climate data from a credible source. The assessment should identify the potential change in physical climate risk from both acute and chronic hazards under at least two Shared Socioeconomic Pathways ("SSPs") and over two timeframes that align as closely as possible with the length of the PPP arrangement and the estimated life of the asset.

g. **Climate Resilience and Adaptation Assessment:** Identify measures to improve the climate resilience and adaptive capacity of the project or improve systemic resilience (including of local communities) by reducing exposure or vulnerability to climate and disaster risk. The assessment should also incorporate any measures that are expected to either have a beneficial, or not to have a substantial impact, on a project's life cycle costs. The Climate Resilience and Adaptation Assessment should be incorporated into the preliminary (basic) design.

h. **Basic Design:** Develop the basic design and drawings for the project based on the findings from the site assessment, surveys, geometric assessment, RoW plan drawings, BoQ and/or RAB, climate and disaster risk assessment, and other relevant technical studies in compliance with DGH standard and guidance, stipulated on the Guidelines for Preparing Toll Road Basic Design Document No. 05/P/BM/2024. The basic design should evaluate different toll-road specification and road design configurations and propose the most optimum solution for BIUTR.

i. **Project Cost Estimation:** Estimate the project's Capital Expenditure ("Capex") and O&M costs. This should include an independent estimation of the Capex and O&M costs based on various surveys and independent assessment. The Capex should be aligned with the output specifications from the preliminary design. In addition, the Technical Consultancy firm should also estimate the whole-of-lifecycle costs to deliver the project based on the development mix, including the potential impacts of natural disasters and climate change on operating costs and revenues. Communicate this cost estimation to the economic and financial specialist to be incorporated into the cost-benefit analysis and the financial model. From these project cost estimations, develop List of Quantities and Unit Prices (Bill of Quantity/"BoQ") and/or Cost Budget Plan (*Rencana Anggaran Biaya*/"RAB") that contains a list of quantities and types of work along with the unit price for each type of work used for the purpose of estimating toll road construction costs in compliance with the relevant guidelines as stipulated under the regulation of the DGH.

j. **Value Engineering:** Provide systematic analysis of project components to optimise the project design, functionality, and cost-efficiency.

k. **Performance Standards and Specifications:** Develop measurable or relevant performance standards and specifications to be met by the project during the construction, operations, and maintenance stages of the project lifecycle.
l. **Other Technical Requirements:** Identification of other technical requirements during the construction and post construction stage.
m. **Scheduling and Planning:** Develop an implementation schedule for the project highlighting the construction period, the construction schedule, the operations period, and the maintenance schedule.
n. **Maintenance Plan:** Develop and provide a detailed Maintenance Plan for the project facilities including the required staffing and skills requirement and considerations for promoting local capacity and opportunities to improve climate resilience and adaptation through maintenance.
o. **Coordination with Other Technical Consultant:** Coordinate with other technical consultant(s) during the BIUTR Pre-FS preparation stage, particularly on the transport survey activities, the analysis of traffic demand forecasts. Prior to the deployment of the Technical Consultancy Firm, the results of the traffic study are expected to be completed by a separate traffic consultancy firm appointed by the PPF Team and ready to be handed over to the Technical Consultancy Firm.

3.3 Task B – Preparation of Environmental and Social Assessment (with reference to GEDSI, Green House Gases ("GHG") emissions reduction and the environmental and social benefits of the project)

a. **Population Mapping:** mapping of population distribution for the purpose of identifying gender and relevant socioeconomic characteristics of the potentially affected and beneficiary populations, which would also support the economic analysis (e.g. social cost-benefit analysis). This would provide an up-to-date condition of the distribution and allow for high resolution analysis on specific relevant socioeconomic characteristics.
b. **GEDSI analysis**: GEDSI analysis including gender, disability, and social inclusion assessment of potential project affected people ("PAP") in the vicinity of the project. Analysis to include:
    - Decision-making structures including any cultural, social, legal, and other constraints limiting women's, people with disabilities, and other vulnerable groups' participation in decision making within the household and at community levels, as well as the use of resources and distribution of project benefits.
    - Institutions working directly with potential PAP, and their capability to implement GEDSI responsive projects.
    - Relocation plan and/or economic recovery and livelihood programs for PAP such as community, merchants/ traders, and workers as well as the vulnerable/marginal groups such as the poor female-headed households, people with disabilities, vulnerable ethnic groups that might be displaced, and identification of measures to recognize safeguarding risks associated with the plan and any interaction with GEDSI-differentiated needs and priorities of potential PAPs.
    - Action plan to resolve identified critical issues, including settlement strategy in accordance with the Australian Embassy's safeguard standards and responsible entity.
    - GEDSI-based constraints in access to and control of resources (e.g., land, forest, water, energy, technology, credit, education, training, markets, and information networks) resulting from proposed works.
    - Consideration of universal infrastructure design and delivery.
    - Consideration of GEDSI-responsive communication and socialisation activities.
    - Measures to confirm fair distribution of the project benefits (e.g., that the new infrastructure do not disproportionally benefit wealthier neighbourhoods or bypass poor ones).

c. **GHG emissions reduction assessment:** GHG emissions reduction assessment including baseline estimates of the emissions associated with the whole project lifecycle (constructions, operations, use and end-of-life). The estimates should be in accordance with a recognised emissions measurement standard, such as GHG *Protocol Corporate Accounting and Reporting Standard* or an infrastructure-specific standard. The assessment should also identify the most significant emissions reduction opportunities across the project lifecycle and provide a high-level estimate of costs associated with each opportunity and the impact on the project's economic/social cost-benefit analysis. Where a project may provide the opportunity to materially reduce emissions relative to existing conditions, then the assessment should provide a comparison of the project case scenario against an appropriate base case/existing case scenario. This would provide opportunities for climate-related funding for the project.

d. **Environmental and social ("E&S") benefits assessment:** Provide input on the various E&S benefits that the project is expected to generate, including any socio-economic benefits identified in the economic assessment, as well as E&S benefits identified in the GEDSI analysis and the GHG emissions assessment. The benefits should be mapped to the Sustainable Development Goals ("SDGs"). Technical Consultancy Firm should provide various E&S inputs such as E&S survey, risk analysis, mitigation strategies, action plan, and etc. in the Pre-FS stage to support the development of the project.

3.4 Task C - Preparation of Readiness Criteria Document

Please note that Task C is an optional scope of work; however, bidders who show capability in undertaking this scope will be considered to have an advantage

a. **Preparation of the Environmental and Social Impact Assessment ("ESIA/AMDAL"):** The ESIA/ AMDAL should be prepared in accordance with Bappenas PPP Regulation 7/2023, Government Regulation No. 22 of 2021 on Implementation of Environmental Protection and Management, and other applicable laws and regulations as well as best practice applicable to the specific sector. The ESIA/ AMDAL should be prepared as a part of the Readiness Criteria for the project for submission to the Ministry of Environment and Forestry. Based on Government Regulation No. 22 of 2021 for Implementation of Environmental Protection and Management, the AMDAL documents should include the Terms of Reference for Environmental Impact Analysis ("KA-ANDAL"), the Environmental Impact Analysis ("ANDAL"), and the Environmental Management Plan and Environmental Monitoring Plan ("RKL-RPL"), and should also include reference to how opportunities for improving outcomes in relation to gender equality, disability access and social inclusion would be assessed and addressed as relevant. Note that the scope of work for the Technical Consultancy Firm is limited to preparing the AMDAL document for MPWH to progress to the transaction stage, excluding the Technical Consultancy Firm involvement in the AMDAL approval process. This activity should also incorporate, to the extent its practical, the MOF's ESG Framework and Guidelines.

b. **Preparation of Land Acquisition and Resettlement Plan:** LARP should be prepared in line with the applicable Indonesian legal and regulatory framework (including but not limited to Bappenas PPP Regulation 7/2023) governing land acquisition and international safeguards and human rights standards, as well as best practice applicable to the specific sector, including making recommendations on consideration of matters related to land availability, land ownership, title deed endorsements, informal/traditional land tenure norms, land use and planning, land claim and lease interest, zoning rights, town planning requirements, compliance requirements for relevant development and/or spatial plans, and similar other legal and regulatory requirements. The LARP should include the Resettlement, Rehabilitation, and Relocation Plan for the PAPs. As one of the Readiness Criteria for the project, the LARP should reflect intersectional GEDSI considerations by considering the gender aspect and should be aligned with the approval process of the Ministry of Agrarian and Spatial Planning or the National Land Agency. The LARP

should consider how opportunities for improving outcomes in relation to gender equality, disability access and social inclusion would be assessed and addressed as relevant. Note that the scope of work for the Technical Consultancy Firm is limited to preparing the LARP document for MPWH to progress to the transaction stage, excluding the Technical Consultancy Firm involvement in the LARP approval process.

c. **Preparation of Land Acquisition Planning Document (*Dokumen Perencanaan Pengadaan Tanah*/"DPPT"):** This component would include preparation of the DPPT to be drafted pursuant to Regulation of the Minister of Agrarian and Spatial Planning/Head of National Land Agency No. 20 of 2020 on the Procedure for Collecting Land Procurement Planning Documents, as well as best practice applicable to the specific sector. The DPPT should include the Right of Way (RoW) Plan, and the Relocation Plan based on definite infrastructure footprint and site requirements. Note that the scope of work for the Technical Consultancy Firm is limited to preparing the DPPT document for MPWH to progress to the transaction stage, excluding the Technical Consultancy Firm involvement in the DPPT approval process.

d. **Preparation of Infrastructure Climate Resilience and Adaptation Report:** This component would include preparation of an Infrastructure Climate Resilience Report for the project in accordance with applicable international best practice and in consideration of Value for Money ("VfM"). The report should provide a summary of how climate resilience considerations have been incorporated into the project preparation process and the project itself, including the key findings of the climate and disaster risk assessment, the climate resilience measures incorporated into the preliminary (basic) design as specified in Task A, and the climate resilience project options identified in the technical assessment. The report should also summarise the economic analysis of climate resilience project options, and how they have been incorporated as appropriate into the commercial assessment.

   The Technical Consultancy Firm shall enhance the climate resilience measures by adopting sustainable design through the use of green materials while ensuring VfM and project applicability. Modern-day materials for toll road (e.g. cement and steel) are carbon intensive in terms of the raw materials and fuel required to produce them. Green building materials prioritise sustainability throughout their life cycle, generating fewer emissions from their production, construction, operation and end of life than traditional materials. However, the emissions produced throughout supply chains—including during the extraction, processing and transporting of raw ingredients such as limestone and iron ore—are often the most complex and costly to monitor and abate. This effort involves seeking out, certifying and collaborating with suppliers (often within business ecosystems) that are committed to sustainable practices and product innovation. Below is a framework for a sustainable procurement of green building materials as a reference, that can be considered by the Technical Consultancy Firm:

   1. **Strategy:** Incorporate low-carbon materials into the design, forming a detailed view of manufacturing, supply chains and the overall impact on emissions.
   2. **Feasibility:** Identify and certify green materials, then evaluate the feasibility of their use in the project, with reference to cost, quality, availability and abatement metrics.
   3. **Procurement:** Foster strong supplier relationships, exploring opportunities for innovation and cost efficiency in sourcing green materials.
   4. **Delivery:** Prioritise human resources training to ensure the proper handling of green materials.
   5. **Optimisation:** Operate in a state of continual improvement, set guidelines for future development to maintain sustainability.

e. **Preparation of ESG Report:** This component would include preparation of a comprehensive ESG Report for the project. The report should outline all material ESG risks identified through the various studies undertaken (e.g., Environmental and Social Assessment, Environmental and Social Impact Assessment (ESIA/AMDAL), Land Acquisition and Resettlement Plan) and any other assessment of ESG considerations and describe the proposed mitigations that have been identified to manage those risks. The report should

also describe how ESG risks would be monitored and reported through the construction and operation of the project. The standard used for ESG reporting should be the Ministry of Finance's ESG Framework, unless otherwise agreed by KIAT and MPWH.

f. **Preparation of GEDSI Action Plan for the Project:** This component would include preparation of a GEDSI Action Plan ("GAP") for the specific project. The Technical Consultancy Firm should develop a GAP which articulates activities and results to focus on GEDSI mainstreaming across the project lifecycle, and steps to ensure that the infrastructure benefits are shared appropriately, particularly with regards:
    - GEDSI analysis conducted as a part of the ESIA and the Environmental and Social Management Plan forming a part of the Pre-FS,
    - The preparation of the Land Acquisition and Resettlement Plan
    - The implementation of capacity building and public consultations through the project preparation process.

    The GAP should not repeat the content of these analyses, but instead set a high standard of socioeconomic research, transparency and downward accountability to the public, and inclusive processes and benefits regarding the infrastructure investment that would be applied systematically across the relevant aspects of the project preparation. The GAP should cover the policy and operating context, approach, list of activities, risk matrix and safeguarding considerations, performance monitoring aspects, and indicative budget resourcing for implementation. KIAT's GEDSI team would provide the required GAP template. The GAP should be written in English and should include the following components:
    - Analysis on the key GEDSI issues (including, where relevant, engagement with civil society and potential disadvantaged stakeholders) related to the project and the formulation of key entry points for consideration of those issues during the project preparation and implementation.
    - Performance monitoring and reporting on progress of GEDSI related consultations, capacity building or other actions during the preparation and implementation of the project.
    - Proposed allocation of roles and responsibilities related to the implementation of the GEDSI-related consultations, capacity building or other actions during the preparation and implementation of the project, noting that these should be positioned as 'everyone's business' and not the sole responsibility of the GEDSI consultant or GEDSI staff.
    - Standards and expectations regarding socio-economic analysis that are sensitive to disadvantaged populations.

g. **Preparation of such other documents as required for the Pre-FS:** The Technical Consultancy Firm should inform KIAT and MPWH on other documents or reports which will need to be developed in conjunction with the Pre-FS preparation. Upon KIAT's instruction, the Technical Consultancy Firm should prepare such other documents in accordance with Bappenas PPP Regulation 7/2023 and other applicable laws and regulations as well as best practice applicable to the toll-road sector. This component would include preparation of supporting studies, and the request letter and supporting documents for additional government support or guarantees.

3.5 Task D - Support in Preparation of PPP Transaction Document

The Technical Consultancy Firm should provide support for the preparation of the required transaction documents such as PQ, RfP, Procurement Plan for the IBE, Procurement Manuals, Market Sounding Report, and Basic Design Report. The support in preparing these documents should be prepared in accordance with applicable laws and regulations as well as best practice in the toll-road sector. The preparation of PPP transaction documents would include several components as outlined below. The existing LKPP Model Bidding Documents

("MBDs") for Procurement of Implementing Business Entity ("IBE") (Solicited Projects) through Tender[4] as well as procedure for procurement of IBE for toll roads[5], which has been developed by MPWH, could be used as the basis, and be modified to fit for the purpose;

a. **Support for the Preparation of Pre-qualification documents:** Provide required technical input in preparing the PQ documents in compliance with the applicable PPP regulations including but not limited to Bappenas Regulation No. 7/2023 and LKPP Regulation No. 29/2018 (or its amendment).
b. **Support for the Preparation of Request for Proposal documents:** Provide technical input in preparing the RfP documents for the Project in compliance with the applicable PPP regulations.
c. **Support for the Procurement Plan and Preparation of the Procurement Manual:** Support in preparing the Procurement Plan and Procurement Manual for the Project in compliance with the applicable PPP regulations.
d. **Support during the Market Sounding:** Support MPWH and/or Indonesia's Investment Coordinating Board or *Badan Koordinasi Penanaman Modal* ("BKPM") to conduct a Market Sounding exercise.
e. **Preparation of Basic Design:** Preparing the basic design for the project conforming to all criteria determined by the technical directorate of MPWH including the Guideline on Developing Basic Design Document for Toll Roads No. 05/P/BM/2024 developed by DGH, and other technical ministries as relevant to the project. Based on the Guideline on Developing Basic Design Document for Toll Roads No. 05/P/BM/2024, the Basic Design document development consists of the following scopes of work:
    1. Technical assessment;
        i. Topographical assessment
        ii. Geological and Geotechnical assessment
        iii. Hydrological assessment
        iv. Geometric assessment
        v. Structural assessment
        vi. Transportation, Road Network and Traffic assessments
        vii. Paving assessment
    2. Preparation RoW plan drawings;
    3. Preparation of Basic Design drawings; and
    4. Preparation of construction RAB estimation.

3.6 Task E - Capacity Building and Public Consultation

Capacity building exercise will be required to be undertaken for MPWH, the Local Government of West Java, and other relevant GoI stakeholders. The Technical Consultancy Firm, together with the PPF team, will work in direct collaboration with GoI counterparts to undertake all tasks and to build individual, team and organisational understanding, skills, and ability to undertake relevant PPP Planning and Preparation Stage activities for this and future PPP projects. Beyond direct collaboration, the Technical Consultancy Firm should deliver knowledge transfer and capacity building for identified GoI counterparts through relevant training, presentations, and documentation to support MPWH to undertake similar tasks for PPP projects. The capacity building should also cover GEDSI and ESG considerations in the project implementation phase, and best practices on safeguarding, in line with KIAT's and the Australian Embassy's requirements.

As a part of the Knowledge Transfer Plan, the Technical Consultancy Firm is expected to provide details on the proposed Training Curriculum and the Training Material to be developed covering the topics, the proposed

[4] Regulated by Circular Letter of the Head of LKPP No. 15/2022 (https://jdih.lkpp.go.id/regulation/suratedaran-kepala-lkpp/surat-edaran-kepala-lkpp-nomor-15-tahun-2022)
[5] Regulated by MPWH Regulation No. 3/2021 (https://peraturan.bpk.go.id/Details/216852/permen-pupr-no-3-tahun-2021)

Training Strategy to deliver the Training Curriculum, the number of Training Workshops to be conducted and similar other details to demonstrate how the objective of effective capacity building of GoI counterparts would be achieved.

The Technical Consultancy Firm is required to deliver a two-day capacity building workshop by considering GEDSI and ESG, covering the following topics:

- Technical Assessment (such as Geotechnical Soil Investigation, Topographical Survey, Technical Risk Assessment, Climate and Disaster Risk Assessment, and all required topics and respond to the briefs in Section 3.2)
- Environmental and Social Assessment of PPPs (such as Population Mapping, GHG and climate change resilience assessments)

The Technical Consultancy Firm should also provide support to the PPF Team to deliver other capacity building workshops, if any technical aspects are needed to be considered in the following topics:

- Market Demand, Economic, and Financial Assessment of PPPs
- PPP Institutional and Legal Assessment, and PPP Risk Assessment and PPP Structuring (including VfM Analysis)
- PPP Transaction Documentation Best Practices (including PQ stage, RfP stage, PPP Agreement, KSPI Agreement, PPP Procurement Plan, and PPP Procurement Manual)
- Best Practices for PPP Procurement and Management (including Bid Process Management, Contract Negotiations, Commercial Close, Financial Close, and PPP Contract Management)

The Public Consultation should be conducted by taking into account the safeguarding and GEDSI considerations whereby at least 30% of participants are women, people with disabilities, and/or from other disadvantaged populations. Public Consultation should involve (as a minimum) the Local Parliament ("DPRD"), affected communities, State-Owned Enterprise/Regional-Owned Enterprise ("BUMN"/"BUMD"), related ministries/agencies/institutions, and other relevant stakeholders. Engagement with Civil Society Organizations ("CSO") and *Organisasi Perangkat Daerah* ("OPD") is encouraged as an effective way to reach groups of people that are often excluded from broader public consultations. Consultation and outreach should be meaningful and structured in way as to elicit diverse and potentially dissenting viewpoints for consideration, including further broad-based outreach and feedback approaches to include disadvantaged peoples. Furthermore, through PPF Team, the Technical Consultancy Firm should also support MPWH during the Public Consultation process on defining the TOR for AMDAL document (KA-ANDAL), that is part of the draft ESIA Report and Public Consultation with DPRD. Public Consultation is expected to be conducted after the project site is selected and confirmed. The Public Consultation Report should reflect the findings from the Public Consultation proceedings conducted in accordance with Bappenas PPP Regulation No. 7/2023, those conducted in accordance with the AMDAL process, and other applicable laws and regulations.

As part of the PPF Team, the Technical Consultancy Firm will also be required to work closely with the transaction advisers appointed by MPWH. If the transaction stage of the project is being supported through MoF's PDF, the Technical Consultancy Firm, as part of the PPF team, will be required to work closely with the transaction advisers appointed by the PDF implementer, including the Indonesia Infrastructure Guarantee Fund ("IIGF") or PT Sarana Multi Infrastruktur ("PT SMI"). This is to ensure that the project transitions smoothly from the preparation stage to the transaction stage without any delays and/or duplication of project preparation costs towards revising the Pre-FS. The coordination would include seeking feedback and inputs from MPWH/MPWH's appointed transaction advisers or MoF's PDF implementer appointed transaction advisers, as well as incorporating the relevant feedback and inputs in the Technical Consultancy Firm's outputs and deliverables.

4 Expected Activity Results

In line with activity scope described in the section above, the indicators for the successful completion of the activity are as follows:

1. Acceptance of the Pre-FS documents including Technical Assessment report covering results of Site Assessment (i.e. Topographical Survey, Geological Surveys and Geotechnical Soil Investigation, Hydrological Survey, Structural Survey, and Utility Survey), Geometric Assessment, Preparation of RoW Plan Drawings, Technical Risk Assessment, Alignment Study, Climate and Disaster Risk Assessment, Project Cost Estimation (including Preparation of BoQ and/or RAB), Population Mapping, GEDSI and ESG mainstreaming considerations adopting climate-focused technology for each project, and all required topics and respond to the briefs in Section 3.2, by KIAT and MPWH.
2. Acceptance of Readiness Criteria including the ESIA Report, the LARP Report (including Relocation Plan), the Basic Design Report, and the DPPT by KIAT and MPWH.
3. Acceptance of the Infrastructure Climate Resilience Report for the selected project by KIAT and MPWH.
4. Acceptance of the ESG Report by KIAT and MPWH.
5. Acceptance of the transaction/tender documents including the PQ documents, RfP documents, Procurement Plan (reflecting GEDSI, 'Do no harm', safeguarding, ESG principles, considerations of bankability for investors, and VfM considerations for MPWH), Procurement Manual, and draft PPP Agreement, by KIAT and MPWH.
6. Public Consultation and Market Sounding in accordance with project preparation and procurement requirements and generating productive input for the tender process.
7. Capacity building of MPWH and other relevant GoI counterparts, mainstreaming GEDSI and ESG considerations and increasing knowledge and understanding in the areas of bankable climate resilient infrastructure, sustainable infrastructure design, best practice in PPP project preparation and innovative financing within the respective MPWH and other relevant GoI counterparts.

To ensure that the Technical Consultancy Firm produces high quality results, the PPF team would conduct weekly meetings to regularly monitor the progress of key findings and/or challenges the firm faces for each deliverable.

5 Deliverables

Over the activity period, the Technical Consultancy Firm will submit and report to the PPF Team for all deliverables stipulated in Sub-section 5.1 in 'draft' and 'final' versions. Feedback will be provided on each output and deliverable within fifteen (15) working days, and the Technical Consultancy Firm is expected to incorporate such feedback and submit the updated outputs and deliverables for approval in fifteen (15) working days, or such other reasonable time as agreed mutually between KIAT and PPF Team. The deliverables will have to be approved by and agreed with the PPF Team prior submission to KIAT for approval. Any discussion with or delivery of technical works to MPWH and other relevant GoI counterparts must be under the consent of or accompanied by the PPF Team and must obtain approval from KIAT prior to such discussion.

Additionally, the Technical Consultancy Firm will agree the deadlines for specific tasks, outputs, and deliverables as a part of the Monthly Snapshots and Six-Monthly Report

- **Monthly Snapshot:** Monthly Snapshots should provide a summary of the work progress during the previous month, any key challenges requiring attention from KIAT, a summary of the work program for the next month, and the updated expenditure forecasts. Monthly snapshots should be developed in English and Bahasa Indonesia.
- **Six-Monthly Progress Report:** Progress Reports (every 6 months) (in a format to be agreed by KIAT) should outline the tasks which have been completed in the last six months; results presented to GoI counterparts and responses provided by GoI counterparts; progress against the GAP and agreed activity outcomes; and any proposed actions to be taken to improve the effectiveness or efficiency of implementation over the next six-month period. Progress reports should be developed in English and Bahasa Indonesia.

The PPF Team will lead the delivery of the Monthly Snapshots, Six-Monthly Progress Reports and Activity Completion Report as part of the Monitoring & Evaluation ('M&E") Framework, with the support from the Technical Consultancy Firm.

5.1 Timing

The indicative timeline for the submission of various deliverables expected to be produced through this activity for the BIUTR project is provided in the table below.

Table 3. Indicative Timeline and Language of Deliverables for the BIUTR Project

No.	Deliverable	Indicative Final Submission Timelines to KIAT* *BIUTR Project*	Language
Preparation of Technical Assessment in the Pre-FS and Preparation of Environmental and Social Assessment (corresponding to Tasks A and B)			
1	Draft Pre-FS Report, in which relevant scope of work for Technical Consultancy Firm are as follows: 1.1 Site Assessments 1.2 Geometric Assessment 1.3 Preparation of RoW Plan Drawings 1.4 Technical Risk Assessment 1.5 Alignment Study 1.6 Climate and Disaster Risk	10 weeks after contract signing	Bahasa Indonesia and English

No.	Deliverable	Indicative Final Submission Timelines to KIAT* *BIUTR Project*	Language
	Assessment 1.7 Climate Resilience and Adaptation Assessment 1.8 Preliminary Basic Design 1.9 Capex and O&M Costs Estimation 1.10 Project Cost Estimation (including Preparation of BoQ and/or RAB) 1.11 Value Engineering 1.12 Performance Standards and Specification 1.13 Other Technical Requirements 1.14 Scheduling and Planning 1.15 Maintenance Plan 1.16 Coordination with Other Technical Consultant 1.17 Population Mapping 1.18 GEDSI Analysis 1.19 GHG Emissions Reduction Assessment 1.20 Environmental and Social ("E&S") Benefits Assessment		
2	Final Pre-FS Report	8 weeks after Draft Pre-FS Report	Bahasa Indonesia and English
Preparation of Readiness Criteria Document (corresponding to Task C)			
1	Gender Equality, Disability, and Social Inclusion ("GEDSI") Action Plan	3 weeks after contract signing	English
2	Environmental and Social Impact Assessment ("ESIA") Report	18 weeks after contract signing	Bahasa Indonesia and English
3	Land Acquisition and Resettlement Plan ("LARP") Report	18 weeks after contract signing	Bahasa Indonesia and English
4	*Dokumen Perencanaan Pengadaan Tanah* or Land Acquisition Planning Document ("DPPT") Report	18 weeks after contract signing	Bahasa Indonesia and English
5	Infrastructure Climate Resilience and Adaptation Report	14 weeks after contract signing	Bahasa Indonesia and English
6	Environmental Social and Governance ("ESG") Report	18 weeks after contract signing	Bahasa Indonesia and English
7	Other Pre-FS documents (if any)	18 weeks after contract signing	Bahasa Indonesia and English
Support for PPP Transaction Preparation Deliverables (corresponding to Task D)			
1	Pre-Qualification document	30 weeks after contract signing	Bahasa Indonesia and English
2	Request for Proposal document	34 weeks after contract signing	Bahasa Indonesia and English
3	Procurement Plan for Implementing Business Entity	34 weeks after contract signing	Bahasa Indonesia and English
4	Procurement Manual	34 weeks after contract	Bahasa Indonesia and English

No.	Deliverable	Indicative Final Submission Timelines to KIAT* *BIUTR Project*	Language
		signing	
5	Market Sounding Report	30 weeks after contract signing	Bahasa Indonesia and English
6	Basic Design Report	18 weeks after contract signing	Bahasa Indonesia and English
Capacity Building and Public Consultation (corresponding to Task E)			
1	Capacity Building Report6	6 weeks after contract signing	Bahasa Indonesia and English
2	Knowledge Transfer Plan	4 weeks after contract signing	Bahasa Indonesia and English
3	Public Consultation Report	6 weeks after contract signing	Bahasa Indonesia and English

**Note: The dates stipulated in the table above are indicative and subject to change*

6 Resourcing, Personnel, and Organisational Arrangement

The selected Technical Consultancy Firm will be responsible for the completion of the activity and should submit the details on their proposed resourcing, personnel to be deployed, and their organisation/team structure in their Technical and Financial proposals. The Technical Consultancy Firm should include experts with appropriate experience and expertise in leading a team of international and national specialists/advisers to carry out the required services and take responsibility for the preparation of all outputs, reports, deliverables, and technical documents as per the list of deliverables provided in this DoS. The Technical Consultancy Firm should make the most cost-effective allocation of resources to achieve the objectives of the activity. This may involve proposing a suitable number and blend of experts for the positions provided below. It may be noted that the below expert positions are indicative, and the Technical Consultancy Firm may propose additional expert positions, reduce positions, or combine positions to effectively deliver the services based on VfM principles.

It is anticipated that the Technical Consultancy Firm's team will comprise of experts from the fields of PPPs, engineering, environmental and social science, health and safety, and similar other disciplines. These experts, as part of PPF Team, will work closely with KIAT, MPWH, and other relevant counterparts to ensure that all the tasks and outputs are evidence-based and aligned with GoI's policy and regulatory frameworks. An indicative list and description of experts to be proposed on the Technical Consultancy Firm are as follows:

Table 4. Role and Requirements for Technical Consultancy Firm

No.	Role	Requirements
1.	Technical Team Leader	• International expert, with international PPP project preparation experiences, would be an advantage. • Post-graduate (Masters) degree in civil engineering, project management, or other related fields. • At least 15 years of experience in providing technical analysis for planning, preparation, procurement, and/or management of infrastructure PPP projects in developing countries. • Experience of managing a team of experts with diverse backgrounds as a Technical Team Leader/Project Manager for infrastructure PPP project preparation, procurement, and/or management. • Demonstrated experience in conducting technical assessment in the toll-road sector. • Demonstrated experience of working on PPP projects in Indonesia, especially in project preparation and procurement, and technical knowledge of the Indonesian PPP institutional, policy, and legal and regulatory framework is desirable. • Prior experience with international development programs including familiarity with their operations would be an advantage. • Provide systematic analysis of project components to optimise the project design, functionality, and cost-efficiency. • Develop measurable or relevant performance standards and specifications to be met by the project during the construction, operations, and maintenance stages of the project lifecycle. • Experience in delivering knowledge transfer and capacity building exercise to GoI stakeholders.

No.	Role	Requirements
		• Fluency in verbal and written English and Bahasa Indonesia is desirable.
2.	Project Management Office ("PMO") Specialist	• Post-graduate (Masters) degree in project management, civil engineering, or other related fields. • At least 10 years of experience in project management, especially in managing the complexities of PPP infrastructure projects in a technical consultancy context. • Proficiency in the technical aspects of infrastructure projects. • Expertise in project planning, scheduling, budgeting, and risk management. • Evaluate the impact of technical risks on project timelines and costs, and propose mitigation strategies to address them. • Robust understanding of any technical requirement and compliance standards in PPP projects. • Facilitate communication between PPF Team and technical specialists within Technical Consultancy Firm. • Ensure accurate and timely documentation of project activities and outcomes. • Implement and maintain quality control procedures to ensure project deliverables meet the required standards. • Project Management Professional ("PMP") certification(s) is desirable. • Fluency in verbal and written English and Bahasa Indonesia is desirable.
3.	Land Acquisition/ Resettlement Specialist	• Extensive knowledge and experience on the strategy of land acquisition or resettlement especially in the toll road development issues in the Indonesia context. • Experience in preparing LARP in line with the applicable Indonesian legal and regulatory framework. • Experience in preparing DPPT in line with the applicable Indonesian legal and regulatory framework. • Strong knowledge on the appraisal process to determine property value on the area where the toll roads are to be built and provide analysis that can be used by the relevant stakeholders (e.g., Ministry of Agrarian and Spatial Planning) to determine compensation level for any modes of land acquisition or resettlement. *Please note that the inclusion of a Land Acquisition/Resettlement Specialist is optional; however, it will be considered an advantage if included*
4.	Highway Engineer	• Post-graduate (Masters) degree in civil engineering, transportation engineering, traffic engineering or other related fields. • At least 10 years of experience in the design, construction, and management of toll road development, including demonstrated expertise in developing and modelling road networking and traffic. • Demonstrated experience of working on PPP projects in Indonesia, especially in project preparation and procurement, and technical knowledge of the Indonesian PPP institutional, policy, and legal and regulatory framework is desirable. • Experience in estimating the whole-of-lifecycle costs to deliver the project based on the development mix and the preliminary (basic) design, including

No.	Role	Requirements
		the potential impacts of natural disasters and climate change on operating costs and revenues. • Experience in assessing options and design toll-road alignment. • Familiarity with the permitting processes required for toll road projects, including coordinating with regulatory agencies and ensuring compliance with environmental and safety regulations. • Experience in evaluating various technical configurations to deliver the identified technical solution option(s) for the project including the most optimal development mix (project assets to be created) and the ancillary infrastructure to be created • Fluency in verbal and written English and Bahasa Indonesia would be an advantage.
5.	Traffic Modeler	• Bachelor's degree in economics, urban planning, or other related fields. • 10+ years of experience in designing and implementing ATP and WTP surveys, including developing questionnaires, sampling methods, and data collection techniques. • Advanced knowledge and demonstrated experience in conducting ATP and WTP analysis in various toll-roads in Indonesia. • Experience in preparing detailed reports and visualisations that effectively communicate the survey findings to diverse audiences. • Proficiency in data analysis software and tools to analyse and interpret survey data. • Proficiency in operating VISUM software for modelling, analysing and interpreting survey data • Prior experience with international development programs, including familiarity with their operations would be an advantage. • Fluency in verbal and written English and Bahasa Indonesia is desirable
6.	Environmental Specialist(s)	• Post-graduate (Masters) degree in environmental engineering, environmental sciences, or other related fields. • At least 10 years of experience in undertaking environmental and social impact assessment, developing environmental management plans, undertaking public consultations, developing resettlement action plans, and other related activities for infrastructure PPP projects in developing countries. • Robust understanding of various environmental risks associated with infrastructure program and project initiatives and be able to propose appropriate mitigation measures for such risks. • Familiarity with the legal and regulatory framework governing environmental and social impact assessments in Indonesia (such as AMDAL and others) and the ESG Framework and Manual of GoI is highly desirable. • An understanding of the environmental and social safeguard standards of multilateral agencies such as the World Bank, the International Finance Corporation, the Asian Development Bank, and others would be an advantage. • Prior experience international development programs including familiarity with their operations would be an advantage. • Experience in conducting GHG emissions reduction assessment including baseline estimates of the emissions associated with the whole project lifecycle in accordance with recognised emission measurement standards.

No.	Role	Requirements
		• Experience in identifying environmental benefits and mapping to the SDGs • Fluency in verbal and written English and Bahasa Indonesia would be an advantage.
7.	Social Specialist(s)	• Post-graduate (Masters) degree in social sciences, economics, or other related fields. • At least 10 years of experience in undertaking social impact assessment, public consultations with affected parties, community outreach, developing social management plans, addressing resettlement and compensation, and other related activities for infrastructure PPP projects in developing countries. • High level of expertise on social safeguarding, social science research methods, ideally within public administration/ finance, urban planning, and infrastructure contexts. • Robust understanding of various social risks associated with infrastructure program and project initiatives and be able to propose appropriate measures to mitigate risks, ensure that infrastructure benefits are shared appropriately by disadvantaged populations. • Experience in identifying social benefits including socio-economic benefits and mapping to the SDGs. • Experience in population mapping (including gender and relevant socioeconomic characteristics of the potential affected and beneficiary populations). • Familiarity with the legal and regulatory framework governing environmental and social impact assessments in Indonesia (such as AMDAL and others) and the ESG Framework and Manual of GoI is highly desirable. • Robust understanding of the environmental and social safeguard standards of multilateral agencies such as the World Bank, the International Finance Corporation, the Asian Development Bank, and others would be an advantage. • Prior experience with international development programs including familiarity with their operations would be an advantage. • Fluency in verbal and written English and Bahasa Indonesia would be an advantage.
8.	GEDSI Specialist(s)	• Post-graduate (Masters) degree in social sciences, economics, or other related fields. • At least 10 years of experience in undertaking social impact assessment, public consultations with affected parties, community outreach, developing social management plans, addressing resettlement and compensation, and other related activities for infrastructure PPP projects in developing countries. • High level of expertise on social safeguarding, social science research methods, and on GEDSI mainstreaming and prioritising, ideally within public administration/ finance, urban planning, and infrastructure contexts. • Robust understanding of various social risks associated with infrastructure program and project initiatives and be able to propose appropriate measures to mitigate risks, ensure that infrastructure benefits are shared appropriately by disadvantaged populations, and that GEDSI considerations and populations are present across the initiative.

No.	Role	Requirements
		• Demonstrated experience in designing and implementing strategies related to GEDSI in PPP and/or infrastructure projects. • Experience in preparing GEDSI Action Plan. • Strong knowledge and understanding of inclusive issues in PPP projects. • Familiarity with the legal and regulatory framework governing environmental and social impact assessments in Indonesia (such as AMDAL and others) and the ESG Framework and Manual of GoI is highly desirable. • Robust understanding of the environmental and social safeguard standards of multilateral agencies such as the World Bank, the International Finance Corporation, the Asian Development Bank, and others would be an advantage. • Prior experience with international development programs including familiarity with their operations would be an advantage. • Fluency in verbal and written English and Bahasa Indonesia would be an advantage.
9.	Civil/Structural Engineering Specialist(s)	• University degree in civil or structural engineering or other related fields. • At least 10 years of experience in technical options analysis, firming up the development mix (civil structures and their performance standards and specifications), developing engineering designs for civil structures, capital and maintenance cost estimates, construction planning and scheduling, construction supervision and project management, and similar other activities for infrastructure projects. • Advanced knowledge and demonstrated experience in conducting technical assessment in the toll-road sector both elevated, at grade and sub grade road structure. • Demonstrated experience of working on PPP projects in Indonesia would be an advantage. • Prior experience with international development programs including familiarity with their operations would be an advantage. • Fluency in verbal and written English and Bahasa Indonesia would be an advantage. • Familiarity with Indonesian toll road design standard and SNI for structural design would be an advantage.
10.	Geotechnical Engineering Specialist(s)	• University degree in geotechnical engineering, civil engineering, or other related fields. • At least 10 years of experience in technical options analysis, interpret and analyse the geotechnical survey result, topographical survey result, development of foundation and substructure designs, technical risk assessments, capital and maintenance cost estimates for substructure components (such as wall, culvert, soil improvement, and etc.), construction planning and scheduling, construction supervision and project management, and similar other activities for infrastructure projects. • Conduct geotechnical and topographical surveys needed by the Project, including cost estimation. • Advanced knowledge and demonstrated experience in conducting technical assessments in the toll-road sector.

No.	Role	Requirements
		• Demonstrated experience working on PPP projects in Indonesia would be an advantage. • Prior experience with international development programs, including familiarity with their operations, would be an advantage. • Fluency in verbal and written English and Bahasa Indonesia would be an advantage. • Experience in conducting topographical surveys.
11.	Utility and Services Engineering Specialist(s)	• University degree in electrical or mechanical engineering, civil engineering, or other related fields. • At least 10 years of experience in technical options analysis, firming up the development mix (electrical and mechanical equipment and their performance standards and specifications), developing engineering designs for electrical and mechanical works, capital and maintenance cost estimates, electrical and mechanical works installation planning and scheduling, construction supervision and project management, and similar other activities for infrastructure projects. • Conduct utility survey and utility diversion needed by the Project, including cost estimation. • Advanced knowledge and demonstrated experience in conducting technical assessment in the toll-road sector. • Demonstrated experience of working on PPP projects in Indonesia would be an advantage. • Prior experience with international development programs including familiarity with their operations would be an advantage. • Fluency in verbal and written English and Bahasa Indonesia would be an advantage.
12.	Quantity Surveyor(s)	• University degree in building economics, survey and photogrammetry, civil engineering, or any other related field. • Should be registered with the relevant institute of surveyors in Indonesia or other countries. • At least 10 years of experience preparing bills and schedules of quantities of materials, labor, and services required in construction and equipping of infrastructure projects. • Demonstrated experience of providing post occupancy advice on facility management services and life cycle costing for infrastructure projects. • Advanced knowledge and demonstrated experience in the toll road sector. • Demonstrated experience of working on PPP projects in Indonesia would be an advantage. • Prior experience with international development programs including familiarity with their operations would be an advantage. • Fluency in verbal and written English and Bahasa Indonesia would be an advantage.
13.	Spatial Planning/ Urban Planning Specialist(s)	• University degree in urban planning, architecture, or other relevant fields. • At least 10 years of experience in developing spatial plans, master planning for regions, cities, and infrastructure projects, developing engineering designs,

No.	Role	Requirements
		capital and maintenance cost estimation, and similar other activities for infrastructure projects. • Advanced knowledge and demonstrated experience in conducting technical assessment in the toll-road sector. • Demonstrated experience of working on PPP projects in Indonesia would be an advantage. • Prior experience with international development programs including familiarity with their operations would be an advantage. • Fluency in verbal and written English and Bahasa Indonesia would be an advantage.
14.	Climate Specialist(s)	• Post-graduate (Masters) degree in climate, environmental engineering, environmental sciences, or equivalent experience in climate-related fields. • Strong knowledge and demonstrated experience of introducing climate resilience and climate change management principles in infrastructure project design, preparation, procurement, implementation, and/ or operations. • Strong knowledge and demonstrated experience in conducting climate and disaster risk/vulnerability assessment, which would feed into the climate resilience and adaptation assessment. • Robust understanding of how climate finance could be tapped as a financing source for infrastructure projects. • Demonstrated experience on the above aspects in a developing country context would be an advantage. • Understanding of the PPP and infrastructure development landscape in Indonesia would be a significant advantage. • Prior experience with international development programs including familiarity with their operations would be an advantage. • Fluency in verbal and written English and Bahasa Indonesia would be an advantage.
15.	Hydrologist and Drainage Engineer Specialists	• University degree in hydrology, civil engineering, water resources engineering, or equivalent experience in related fields. • At least 10 years of experience in hydrology and drainage engineering for large-scale infrastructure projects, including capital and maintenance cost estimation regarding the drainage and flood mitigation strategies, and similar activities. • Advanced knowledge and demonstrated experience in conducting technical assessments, which are; (1) analysing the hydrological condition of the project area and translating it into flood design period by taking into account climate change impact; (2) designing drainage strategy for the toll-road and analysing the runoff and toll-road impact to the existing drainage facilities and water body (this includes drainage strategy for tunnel/underground part of the toll-road). • Fluency in verbal and written English and Bahasa Indonesia would be an advantage.
16.	Other Engineering (Technical)	• University degree in the respective field.

No.	Role	Requirements
	Specialists such as Geology Engineer, as stipulated in the Guidelines for Preparing Toll Road Basic Design Document No. 05/P/BM/2024	• Advanced experience in the design, construction, and management of infrastructure development, including demonstrated expertise in developing and modelling requisite qualitative data for related infrastructure projects. • Extensive experience and knowledge in geotechnic, geology, infrastructure engineering, hydrology, natural resources management and other fields as may be required for the project. • Prior experience with international development programs including familiarity with their operations would be an advantage. • Fluency in verbal and written English and Bahasa Indonesia would be an advantage. *The Other Engineer Specialist(s) should be provided by the Technical Consultancy Firm only on a call basis depending on the requirements of the project. The bidder can propose other specialist and support staff as required.*

Total indicative input for experts above is 92 man-months for nine (9) months of implementation period.

It may be noted that the above expert positions are indicative, and the Technical Consultancy Firm may propose additional expert positions including analytical staff or combine some of these provided expert positions to effectively deliver the services based on VfM principles. Positions can be filled by appropriately qualified and experienced international and/or national candidates as determined by the Technical Consultancy Firm. Where required, the Technical Consultancy Firm will be required to conduct site visits to the project location.

All the experts and team members proposed on the Technical Consultancy Team are to maintain high standards of probity as expected by KIAT and avoid all real or perceived conflicts of interest.