

TERMS OF REFERENCE

Climate Resilient Connectivity for the Eastern Economic Corridor Project The Intercity Motorway No. 7 (Extension to Link with U-Tapao Airport)

A. BACKGROUND

The Kingdom of Thailand (“the Government”) has applied for a loan from the Asian Development Bank (“ADB”) towards the cost of financing the Climate Resilient Connectivity for the Eastern Economic Corridor Project: the Intercity Motorway No. 7 (Extension to Link with U-Tapao Airport) (“the Project”). The Executing Agency of the Project is the Department of Highways (“DOH”), and the Implementing Agency is the Bureau of International Highways Cooperation of DOH (“BIHC”). DOH intends to use the Loan proceeds to finance the following outputs (under discussion):

Output 1: Climate-resilient and safe roads infrastructure connecting to the U-Tapao International Airport provided. The project will provide key access roads to the U-Tapao International Airport by:

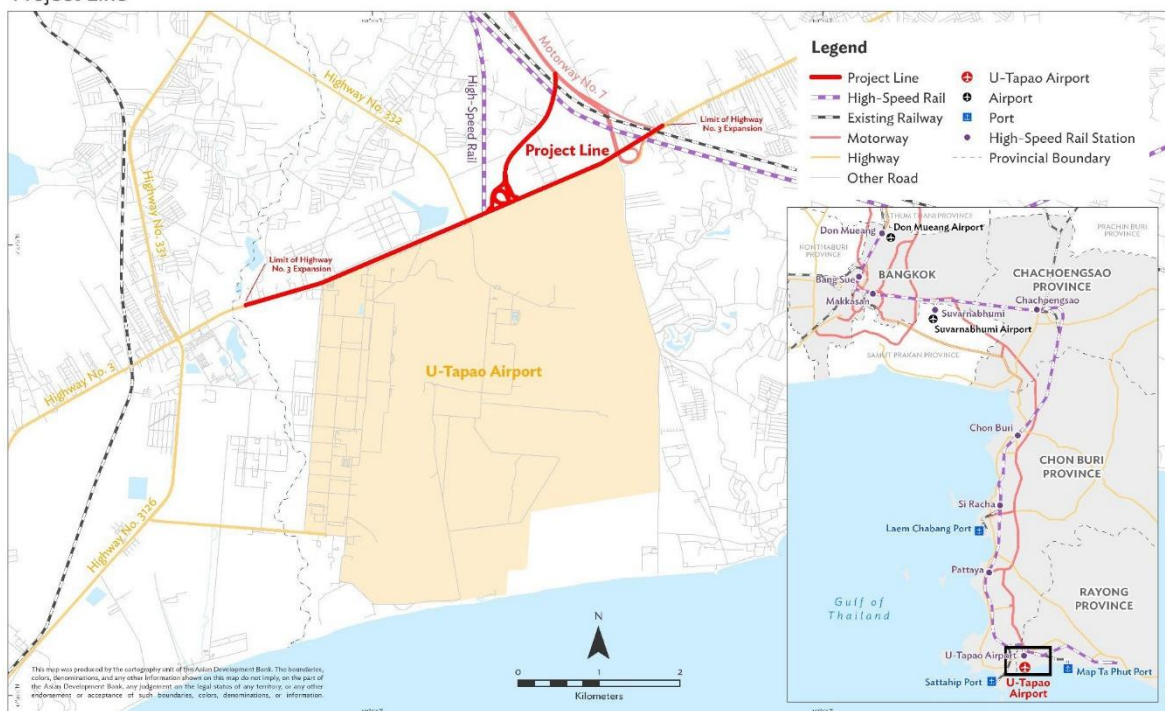
1. constructing a 1.92 kilometer extension of the motorway No.7, which connects to the U-Tapao International Airport, and
2. improving 5.65 kilometers of the national highway No.3.

The project roads will incorporate climate-resilient road design such as drainage to respond to storm surge and sea level rise in line with international standards and practices. The structural adaptation measures will be coupled with non-structural measures, the Adaptive Management Plan to ensure the road design is climate-resilient and to contribute to the land transport supporting the U-Tapao International Airport and the EEC in a sustainable manner. The project will also include significant considerations in road safety and gender, and GESI approach will be adopted.

Output 2: Institutional capacity for transition to low-carbon transport enhanced. Output 2 will support development of climate-impact monitoring systems for the projects managed by the Department of Highways and will contribute to the country’s transition to a low-carbon transport system by

1. developing gender responsive and socially inclusive Adaptive Management Plan;
2. developing climate proof road design guidelines;
3. designing and implementing a public awareness campaign to promote transition to e-mobility;
4. preparing a Low-carbon methodologies and approaches for design, construction, and operations of roads; and
5. developing guidelines on decarbonization of road transport under DOH.

THAILAND
**CLIMATE RESILIENT CONNECTIVITY FOR THE EASTERN ECONOMIC CORRIDOR PROJECT:
 THE INTERCITY MOTORWAY NO. 7 (EXTENSION TO LINK WITH U-TAPAO AIRPORT)**
 Project Line



A Construction Supervision Consultant (“the Consultant”) will be recruited to provide consultancy and construction supervision services for the project. The Consultant contract may be amended and extended to incorporate tasks related to the project as required. The recruitment of the Consultant will be in accordance with ADB Procurement Policy: *Goods, Works, Non-consulting and Consulting Services* (2017, as amended from time to time) and *Procurement Regulations for ADB Borrowers* (2017, as amended from time to time).

The Consultant is required to have substantial experience in construction supervision in the transport sector using the FIDIC Conditions of Contract for Construction for Building and Engineering Works Designed by the Employer, Multilateral Development Bank Harmonized Edition June 2010. The firm’s experience in the region is preferable.

B. OBJECTIVES OF THE ASSIGNMENT

The major objectives of the Consultant’s services are:

1. To function as “the Engineer” in administering all civil works contracts and ensuring completion of construction of Project components in accordance with all civil works contract provisions;
2. To assist DOH in the finalization and implementation of Road Safety and Climate Change for civil work contract under the Project and to ensure that all construction is undertaken in accordance with relevant and appropriate health and safety regulations and practices;
3. To plan and undertake road safety campaigns within local communities and carryout awareness training at both DOH Headquarters in Bangkok and at DOH district (and sub-district) level;

4. To collaborate with the Bureau of Highway Safety to strengthen DOH road safety policies, strategies, frameworks and capacities in support of the Government's 5th Master Plan for Road Safety;
5. To monitor compliance of the civil works contractor (Contractor) with the Government's environmental laws and with the ADB Safeguard Policy Statement (SPS), and the implementation of the Environmental Management Plan (EMP) of the Project;
6. To assist social development activities by DOH and support DOH in the implementation of Gender Equality and Social Inclusion Action Plan;
7. To assist DOH in implementation and facilitation of domestic and overseas trainings; and
8. To assist DOH in the finalization and implementation of the Due Diligence Report (DDR) Action Plan / Resettlement Plans (RPs) for all civil works contracts under the Project.

C. Role of Parties

Department of Highways (DOH) is the Owner of the Project and Employer of the Projects under the scope of this assignment.

The Consultant will administer the work contract as the "Engineer" and supervise the execution of the works. The Resident Engineers and other team members will act as Engineer's representative. The Team Leader shall be responsible for all actions taken by his team of professionals deployed for the assignment.

D. Detailed Scope of Assignment

The Services will be executed by the Consultant (a consulting firm) appointed by DOH. The Consultant shall manage the supervision of the construction as an agent of DOH. The Consultant shall function as "the Engineer" and exercise such powers vested in the Consultant's Project Manager by DOH under the terms of the civil works construction contract. The Consultant shall work directly under and shall report to the DOH Project Director.

The primary scope of the services under the Consultant's contract includes, but is not necessarily limited to:

1. Construction Supervision

Consultant will:

1. Supervise the civil work contracts and ensure that the civil works are implemented in accordance with the provisions of the civil works contracts.
2. Assume overall responsibility on behalf of DOH for the proper monitoring of the execution of the Works by undertaking inter alia the following tasks:
3. Represent the Employer in all interactions with the Contractor and any other consultants.
4. Assist the Employer in the consultation with any local or other Authority as and when required on any matter relating to the project and scope of services.
5. Organize the joint kick-off meeting with the Employer with the objective to present the full Consultant's Team for the project, confirming the project schedules and

roles and responsibilities, including communication channels & reporting formats / frequency.

6. Prepare a strategic master programme for the project detailing milestones for all aspects. The program is to be prepared taking into consideration the project procurement cycle and all interactions related to third party works, including construction of the High-Speed Rail tunnel in the vicinity of the M7 Motorway/Highway 3 interchange and removal/relocation of existing utility services and provision for future utility service needs.
7. Prepare a Programme Execution Plan (PEP), which inter alia, is to include how the following is to be addressed throughout all stages of the project:
 - a. Project strategy and brief
 - b. Project organization
 - c. Project control including Project Management systems.
 - d. Risk management
 - e. Value engineering and management
 - f. Planning and progress
 - g. Management of the design process
 - h. Cost and change management.
 - i. Management of Quality
 - j. Management of Health and Safety
 - k. Management of Social Safeguards requirements
 - l. Management of Environmental requirements and Monitoring of Environmental IEE Requirements and the Office of Natural Resources and Environmental Policy and Planning Requirements
 - m. Management of Public Road Safety
 - n. Management of Security requirements
 - o. Liaison with Local Authorities
 - p. Project practical completion and handover.
 - q. Defect and Liability Period
 - r. Project final completion
8. Immediately after civil works contract award:
 - a. Review the tender/contract documents
 - b. Inspect the project site, including, identification of possible construction, environmental, road safety and social hot spots to ensure proactive risk mitigation and efficient implementation of the project.
9. Review all project documents within 14 days after the commencement date (NTP) and submit a risk register to the Employer.
10. Approve and monitor the Contractor's construction program and method statements, verifying that they are consistent with civil works contracts and the implementation schedule for the Project.
11. Check the Contractor's setting-out of the works and survey data on vertical and horizontal alignment.
12. Approve all materials for inclusion in the Works including visiting quarries, material disposal sites, etc.
13. Plan and execute the construction supervision and contract administration (including effective and regular supervision of the works, maintenance of project records, correspondence, and quality control testing) to ensure that the Works are executed in accordance with civil works contracts.
14. Carry out independent audit and testing to the extent required to ensure the integrity of the Works and the methods of quality control.

15. Monitor the Contractor's construction equipment, installations, labor accommodation and medical facilities, and ensure that they are adequate and in accordance with relevant Government regulations and the terms and conditions specified in civil works contracts.
16. Monitor the Contractor's traffic and construction safety and appropriate management of traffic access and safety and dust control.
17. Review, confirm and maintain a permanent record of all measurements of work for which payment is to be made.
18. Maintain a permanent record of all quality control test results.
19. Certify payments for the Works based on relevant Bill of Quantities and issue the Engineer's Interim Payment Certificates, the Final Payment Certificate and other certificates, including the Taking-Over-Certificate, as required under civil works contract(s).
20. Where at any time, there is a reported increase in the Contractor's projected costs or cost to complete, provide all parties with detailed particulars of such increase and potential mitigation measures.
21. Where at any time, there is a reported delay to the Contractor's approved works program, provide all parties with detailed particulars of such delay and potential mitigation measures.
22. Evaluate claims, extensions of time, and similar contractual issues and make recommendations to the Employer.
23. The Consultant's Project Manager may exercise the authority attributable to the Engineer as specified in or necessarily to be implied from the Contract and shall obtain the approval of the Employer before exercising a specified authority if required in the Contract.
24. In the event of contractual disputes, assist the Employer in collating and preparing factual documentation and recommend a line of action. If required by the Employer, the Consultant will attend hearings.
25. Provide timely assistance to Contractors in matters related to interpretation of the Contract documents, ground survey controls, planning, quality control testing and other matters relating to the Project.
26. Ensure that:
 - a. Contractors execute the Works in accordance with the EMP and CEMP; and
 - b. the proposed construction methods are in line with sound environmental standards, including inspection of the Contractor's construction equipment and safety of the works, property, site personnel and the general public.
27. Assist the Client with formal handover of sites.
28. Review and approve all Contractor schedule submittals and comment on implementation periods.
29. Review and make recommendation to the Employer on the Contractor's proposed subcontractors.
30. Monitor the construction contract and compliance by the Contractors in relation to their construction contract obligations.
31. Attend all meetings as necessary in connection with the works including site progress meetings, project design meetings and Employer's meetings at the request and presence of the Employer.

32. Monitor the progress of all Works against the construction phase programmes and other agreed programmes and timetables. Formally report to the Employer on progress at monthly intervals and monitor that all programmes and timetables are adhered to
33. Provide the Employer with the anticipated cash flow to facilitate stage payments under the Contracts and the consultant appointments.
34. Receive instructions from the Employer and communicate these to the relevant entities for action.
35. Take leadership of the change management process and monitor the actual costs incurred against the contract sum (including any provisional sums and Prime cost) and advise the Employer at regular intervals thereon of any variance against approved budget.
36. Verify all Contractor's change requests and provide recommendations to the Employer.
37. Report to the Employer on the cost and programme implications of any variations and any delays in progress and advise the Employer on appropriate action to overcome delays and mitigate costs.
38. Monitor and report the Contractor's activities in the coordination of the work of statutory authorities and service providers with the project.
39. Manage the preparation of the Contractors "final accounts" including finalization of the Projects Preliminary Acceptance Certificate
40. Review, approve and monitor the Contractor's environmental management plan to ensure compliance with the project's IEE Requirements and the Office of Natural Resources and Environmental Policy and Planning Requirements
41. Monitor the approved LARP and report any deviations.
42. If applicable, notify the Employer in a timely manner of any planned service interruptions related to construction activities.
43. Establish and maintain an up-to-date inventory of on-site equipment and materials to be installed in the project.
44. Monitor the Contractor's staff, Contractor's labor and subcontractor on site to ensure that they are adequate and in accordance with the terms and conditions specified in civil works contracts.
45. Review and approve Contractor / sub-Contractor's quality plan and quality system and provision of recommendations on all quality issues.
46. Inspect equipment deliveries to ensure compliance with specifications.
47. Review the Contractor's schedule of personnel as stated in the contract and recommend changes in the Contractor's personnel where necessary.
48. Regularly inspect the records of the Contractor's site activities (site diaries) and ensure that they adequately document the progress and performance of the work. Recommend corrections/changes to the records as required.
49. After Employer approval, issue the completion and take-over certificates.
50. Ensure that the Contractors have submitted final as-built drawings, operation, and maintenance manuals as per the requirement and quantity specified in the contracts.
51. Review for adequacy and completeness the as-built drawings, operation and maintenance manuals provided by Contractors.

52. Ensure availability of hand-over requirements including manuals, drawings, spare parts, etc.
53. Ensure quality assurance of all equipment and material to be supplied under the contracts.
54. Ensure that equipment and materials delivered on site are in conformity with stipulated specifications and work schedules.
55. Inspect and monitor damages, defects and accordingly reject unacceptable materials, and ensure corresponding replacement of damaged equipment and materials and submit the defect report to DOH during the defects and liability period.
56. Monitor that Contractor has undertaken correct storage of materials and equipment as per the manufacturer's storage procedure and recommendation.
57. Check the quantities of equipment/materials supplied.
58. Witness and approve the Contractor on site tests and commissioning for each equipment, accessories and materials covered by the Project.
59. Carry out final inspection of the installation works, including deficiency lists, witness commissioning tests, perform acceptance procedures for any equipment, and issue the corresponding completion certificates in accordance with the relevant conditions of contract with prior consent of the Client.
60. Review and approve Contractor's commissioning plan and make comments to the Employer.
61. Monitor and report upon the progress in relation to the consultant's / Contractor's close outs.
62. Ensure that all the sites (if any) and support facilities (storage yards, etc.) are restored and decommissioned in line with the Contractors decommissioning plans.
63. Review and approval of the Post-Construction Documentation
64. Following practical completion of the works, provide assistance to the Employer during the initial transfer of the site to provide a seamless transfer of the Employer's operations.
65. Monitor and report upon the progress in relation to the Contractors close out defects and the monitoring of defects throughout the defects and liability period.
66. Manage the completion and agreement of all final accounts in relation to consultants' services and Contractors' works within a target 3-month period following occupation of the works.
67. At the completion of the works by the, the Consultant shall assist the Employer with all activities related to inspection, testing and commissioning of all equipment and installations and ensure that such installations and equipment are properly handed over to the Employer in acceptable and satisfactory conditions to the requirements of the respective contracts.
68. Create a handover procedure and checklist for proper documentation of the handed over facilities.
69. Upon completion of the project construction activities of all Contracts, the Consultant shall prepare a Project Completion Report (PCR) in concurrence with ADB's Guidelines, which will form a comprehensive record of the construction and installation works accomplished.

2. Safeguards & Environmental Activities

The Consultant will:

1. Monitor Contractor's compliance to all safeguard items outlined in the DDR / LARP.
2. Liaise with and monitor any third-party safeguards monitoring consultants (if any).
3. Ensure that the Contractors submit the pre-construction Environmental, Social Safeguards and H&S plans as per the relevant ADB Guidelines and Procedures. Review and approve the plans.
4. Ensure that all relevant Environmental, Social, Health and Safety measures are implemented by providing semi-annual reports and/or any other reports as per relevant ADB Guidelines.
5. Monitor Environmental, Social, Health and Safety related issues closely to ensure there is no impact on the program. Document any non-conformance of the Contractor.
6. Review and approve the Contractor's proposal for remedial safeguard or environmental actions and their timeframe for implementation. Monitor any remedial actions.
7. When necessary, Update the Environment Management Plan (EMP) detailing the environmental mitigation measures to address each identified impact, and recommend appropriate environmental mitigation measures.
8. Assisting DOH, where applicable with implementation of the DDR action plan / resettlement plans (RPs) for the Project
9. Assisting DOH in consultations pertaining to due diligence and disclosures; and if required, formulating and recommending courses of correction.
10. Assisting DOH in ensuring compliance with the Government's environmental laws, the ADB SPS, and the monitoring and reporting the implementation of the Contractor's Environmental Management Plan (EMP) of the Project.
11. Monitor Contractor's compliance to all Environmental item in the Initial Environmental Examination (IEE) Requirements and the Office of Natural Resources and Environmental Policy and Planning Requirements
12. Prepare and submit monthly monitoring reports to DOH and ADB and submit semi-annual monitoring reports to the Office of Natural Resources and Environmental Policy and Planning. The purpose is to monitor the Contractor implementation of Environmental Activities that need to comply with the Initial Environmental Examination Requirements (IEE) and the Office of Natural Resources and Environmental Policy and Planning Requirements.
13. Coordinate the annual Environmental Social Health and Safety compliance audits as required by the Office of Natural Resources and Environmental Policy and Planning and in accordance with the ADB's Environmental and Social Standards.

3. Contract Management Plan

The Consultant will:

1. Support the Employer in the creation of the Contract management Plan. Update the contract management plan (CMP) when necessary. Consultant should use the attached CMP template as a minimum requirement.

2. Prepare clarifications/amendments of Contract Documents and preparation of change order request for the different Project Components as and when needed for the Client.

4. Risk Management

The Consultant will identify, manage, and document, in consultation with the Contractor, risks to the Project in the form of a risk register (including risk weightings and potential financial impacts) and recommend mitigation measures in respect of Project risks. Lead monthly risk management meetings under the direction of the Employer and attended by the consultants (including the Contractor in the construction phase) throughout the duration of the projects as necessary at intervals not exceeding one month.

5. Health, Safety & Environment (HSE)

The Consultant will review the Contractor's comprehensive site-specific Health and Safety plan for the Projects and in consultation with the Employer approve the plan. Communicate the approved plan to all consultants and Contractors throughout all project stages. Request the Contractor to update the Health and Safety Plan if unforeseen events occur and obtain approval from the Employer for updated plan. Undertake formal monthly health & safety audits throughout all stages of the Project to provide the consultant and Contractor (s) with advice and observations for the improvement of health, safety, and tidiness on site.

6. Road Safety

Road Safety During Construction and Prior to Completion. The Consultant will review and authorize all traffic management arrangements undertaken during construction, including the standard and condition of all barriers, signs and other devices.

During construction the Consultant will:

1. undertake regular audits of the contractor's traffic management arrangements and ensure that all audit issues are rectified,
2. collaborate with DOH to monitor the worksite monitoring systems and address any safety related issues, and
3. investigate and prepare a brief report within 48 hours on any road safety incidents and ensure that adopted recommendations are implemented.

Prior to the opening of any road sections, the Consultant will undertake a pre-opening audit in conjunction with DOH and ensure that all adopted recommendations are implemented.

Road Safety Awareness Campaign. The Consultant will design and carry out road safety awareness campaigns, which need to be approved by DOH before implementation so that, among other issues, road users, including children and other vulnerable road users, have greater knowledge, awareness and understanding of road safety issues associated with the project and the general safe use of roads.

The campaign will reflect other road safety issues specific to the Project roads that are identified through community and stakeholder engagement. Campaign modules targeting specific road users are expected to include:

1. pedestrian safety, including the use of sidewalks and designated crossing points and visibility at night,

2. safety of non-motorized traffic and vulnerable motorized traffic, including the use of helmets and visibility at night, and
3. road rules, in particular speed limits.
4. modules tailored to particular groups such as school children, elderly and disabled persons and motorcyclists.

The Road Safety Awareness Campaign will support the goals and priorities of the Government's 5th Master Plan for improving road safety, including those applicable to DOH roads.

The Consultant will involve relevant DOH headquarters, district and sub-district staff in planning and implementing the Road Safety Awareness Program.

Road Safety Capacity Development. The Consultant will collaborate with DOH to improve DOH's institutional road safety capacity by developing:

1. road safety performance standards for all DOH roads and assessing existing road infrastructure to provide a baseline and quantified improvement needs, and
2. a road safety improvement strategy with key performance indicators and targets aligned with the Government's 5th Master Plan for Road Safety.

7. Gender Equality and Social Inclusion (GESI) Action Plan Implementation

The Consultant will:

1. Support DOH in the implementation of gender equality and social inclusion action plan (GAP).
2. Ensure specific provisions in the GESI AP are included in the contractor's contract documents.
3. Monitor and document the progress of implementation of EWCDT friendly features in Motorway 7 and Highway 3.
4. In collaboration with DOH, conduct training and capacity building on GESI for DOH-BIHC, PMO, PDMO and other project staff.
5. Conduct community awareness programs for elderly, women, children, persons with disability and transgender persons (EWCDT) on road safety, health, hygiene and sexually transmitted infections and trafficking.
6. Conduct orientation programs for contractors' personnel to sensitize them on GESI, GBV, promoting women's participation in construction work and on specific needs of EWCDT users.
7. Conduct training programs to orient the PMO and DOH-BIHC staff on GAP provisions and ADB's requirements on GAP implementation, monitoring, and reporting.
8. Collect, maintain and report gender/sex disaggregated database on project activities including labor employed by contractors.
9. Ensure timely implementation of GAP activities and submit bi-annual progress reports along with process documentation with supporting evidence as per the requirements.

Please see the details of gender equality and social inclusion action plan in **Appendix A**.

8. Meetings

Under the directions and the presence of the Employer, the Consultant will organize, chair, minute and participate in periodic meetings, throughout all project stages, which are required to perform these services, providing up to date management reports and advice on progress and any required risk mitigation measures. The meetings shall include, but not be limited to, the following:

1. Kick-off meeting with the Employer and Contractor
2. Monthly progress meetings with the Employer and consultants / Contractor
3. Value Engineering workshops during the concept and schematic design stages (if applicable).
4. Monthly Risk Management meetings
5. Further meetings as appropriate to discuss, review and monitor the progress of the project.

9. Training and Capacity Building

The Consultant shall be required to arrange for and to conduct the overseas or domestic training to the Employer's selected staff and other relevant organizations in respect of Road Safety Audit, Climate Change, Gender Equality and Social Inclusion, Environmental Measurement and Social Safeguards, Procurement, Contract / Financial and Project Management, and other related knowledge. The Training shall be in sufficient detail so that these selected Employer's staff and other relevant organizations can be able to appreciate, comprehend and monitor all aspects of

1. Road Safety Audit
2. Climate Change
3. Gender Equality and Social Inclusion
4. Environmental Measurement and Social Safeguards
5. Procurement, Contract / Financial and Project Management

On-the-job training shall be undertaken to enrich their experience and knowledge such that the selected Employer's staff can be able to appreciate, comprehend, monitor and perform all aspects of Road Safety Audit, Climate Change, Gender Equality and Social Inclusion, Environmental Measurement and Social Safeguards, Procurement, Contract / Financial and Project Management. All training courses will be conducted in English or Thai.

10. Accounting and Financial Program

The Consultant shall provide an off-the-shelf licensed accounting software to be used for the project. The number of licensed end-users expected to use the software is 6. The software should be capable of being customized to meet the financial reporting requirements of DOH and the project, and should include an audit trail of transactions.

In addition, the Consultant will require the software supplier to ensure the migration of data in the existing accounting software used by DOH to the new accounting software, if applicable.

The software to be procured has to be approved by DOH and it should be installed and activated within 60 days after contract award. The Consultant should require the software supplier to provide effective trainings and workshops to relevant DOH staff on the use of the software.

11. Additional Services

The consultant, if required by the employer, shall provide any additional service at rates or on person-month rates as per the contract, or as mutually agreed upon, as a variation order

E. Implementation Arrangements

DOH shall use its best efforts to ensure that the Government of Thailand (when applicable) will grant the Consultants whose names shall be communicated in advance, the following facilities and exemptions:

1. Visas and Work Permits
2. Provide access to relevant technical information.
3. Control the disbursement of project funds.
4. Liaise between the Consultants and relevant parties.

The Consultant shall bare all costs covering transportations, courier services, housing, airfares, overseas communications, and welfares. DOH will provide physical office space for the Consultant's offices at DOH Bangkok headquarters; however, the Consultant will bear the costs of remodeling or renovating these offices, please see DOH's requirements as shown in **Appendix B**. The site office, office furnishing, necessary equipment and supplies will be provided by the Contractor. The necessary equipment and supplies consist of 3 computers, 1 notebook computer along with licensed software required for contract construction work along with various accessories such as multifunction printer, projector, smart TV, etc. All project vehicles required by the Consultant shall be procured under the Consultant's Contract and be turned over only SUV Survey Vehicle and VAN Survey Vehicle to DOH at the conclusion of services under the Contract.

The Project Manager and certain specialists will be stationed in DOH Bangkok, but will be expected to visit the construction sites as deemed necessary to carry out their duties. The Area Engineers, and specific engineering specialists, such the Project Engineers, Soil Engineer, Structural Engineer, and Highway Engineer will be stationed at the Project Site. The approximate division of time between for Consultant's staff between DOH Bangkok and the Project Site, the Consultant will develop the Man-Month allocation plan to purpose DOH for approval after the project award.

DOH will provide the Consultant, free of charge, with all relevant data, information and documents which the Consultant may reasonably request. DOH will arrange and facilitate meetings with relevant institutions and authorities as required and will provide in such context where possible and requested by the Consultant translation services which will be at consultant's expense.

The recruitment of consultant will be in accordance with ADB's Guidelines on the Use of Consultants (2017), as amended from time to time, using the Quality- And Cost-Based Selection (QCBS) Method (90:10). The Proposal will be a Full Technical Proposal.

The consulting services will be engaged and administered by DOH. The consulting services will be carried out for a period of 60 months from commencement. Defects liability/notification period (DLP) for civil works is 24 months and 36 months for Utility Systems. The service period includes 36 months' construction and 24 months of DLP. The Construction occurred during the rest of the DLP will be supervised by the District Office of DOH. The service period may change depending upon actual completion time of road works contracts.

Expected commencement date of the consulting service is in September 2024. In addition, the consultants are required to coordinate their work closely with other consultants hired by ADB and DOH under the related projects.

F. Time Schedule and Personnel Inputs

DOH will require 69 person-months for key international consultants, 281 person-months for key national consultants, and 324 person-months for non-key national experts and support staff (Table 1). The consultants shall note that the distribution of the total person-months among the positions is indicative. However, the consultants should NOT revise the key expert positions.

For consultant selection, only the curriculum vitae of International Key Experts and National Key Experts will be evaluated.

Table 1: Summary of Consulting Services Requirements

Position	Number	Total Person-Months
International Experts (Key)		
Project Manager	1	36.00
Contract & Claim Specialist	1	9.00
Climate Change Specialist	1	4.00
Social Safeguards Specialist	1	4.00
Gender and Social Development Specialist	1	6.00
Road Safety Specialist	1	10.00
Subtotal		69.00
National Experts (Key)		
Project Engineer	1	38.00
Soil Engineer	1	12.00
Structural Engineer	1	30.00
Material Engineer	1	24.00
Highway Engineer	1	24.00
Survey Engineer	1	30.00
Electrical Engineer	1	12.00
Road Safety Officer	1	24.00
Environmental Specialist	1	15.00
Cost & Schedule Control Specialist	1	24.00
Document Control Specialist	1	24.00
Project Coordinator	1	24.00
Subtotal		281.00
Total (Key Experts)		350.00
National Experts (Non-Key)		
Office Engineer	2	72.00
Site Engineer	4	144.00
Safety Officer	1	36.00
Project Secretary	2	72.00
Subtotal		324.00
Total (Non-Key Experts)		324.00

G. Tasks, Responsibilities, and Qualification Requirements of Key and Non-Key Experts

S.N.	Position	Task Assignment
International		
1.	Project Manager	<p>Qualification requirements:</p> <ul style="list-style-type: none"> • Master's degree in engineering, project management or relevant field. • At least 25 years of experience in highway/road construction supervision including 5 years of experience as team leader in in construction supervision and management of highway construction projects as a project manager on the Employer side of projects. • PMP or similar certificate is desirable. • Must have experience on at least one elevated road project. • Strong proficiency in the Thai & English language. • Experience in Thailand is mandatory. <p>The main tasks of the expert include but are not limited to the following:</p> <ul style="list-style-type: none"> • Responsible for carrying out all other tasks listed in the TOR of their contract, meetings, and workshops. • Responsible for preparation and submission of all deliverables and for management and coordination of all team members and their inputs. • Maintaining contact and liaison to ensure that the services are conducted in accordance with the DOH's policies and objectives. • Supervision and guidance of the expatriate experts as well as local professionals on all aspects of the study, especially during periods of absence of other expatriate team members. • Close liaison with all team members in relation to the deployment and management of the domestic staffing resources.
2.	Contract & Claim Specialist	<p>Qualification requirements:</p> <ul style="list-style-type: none"> • Master's degree in a related field. • At least 20 years of experience in Contract & Claim Management including 10 years in the execution and administration of highway contracts. • Must have experience with FIDIC (or similar) contracts. • Experience in Arbitration/Dispute Resolution cases will be considered as beneficial. • Strong proficiency in the English language <p>The main tasks of the expert include but are not limited to the following:</p> <ul style="list-style-type: none"> • Overall responsible for Contract administration and the civil works contract • Review and ensure conformity of contractor's securities in approved formats and ensure timely renewal of securities. • Ensure requisite insurances furnished by the Contractor being Contract compliant • Responsible for coordinating of any activities concerned with contracts for the Project Construction by performing the following duties personally or through subordinate supervisors. They will check, review, request or approve amendments to or extensions of contracts. They will also advise planning and production departments of contractual rights and obligations. Perform overall control of assigned contracts, supervise the actions of project managers. • Ensure proper completion of contract requirements. • Manage and resolve any contractual issues, claims and disputes.

S.N.	Position	Task Assignment
3.	Climate Change Specialist	<p>Qualification requirements:</p> <ul style="list-style-type: none"> • Master's degree in environmental/civil engineering or in environmental science, climate change, disaster risk management or another relevant field. • Membership in professional institutions preferred. • Must have total experience at least 20 years. • Must have at least 10 years of relevant experience in the environmental field with extensive experience in design engineering working on climate change, disaster risk reduction aspects of infrastructure projects. • Good verbal and written communication skills in English is mandatory. <p>The main tasks of the expert include but are not limited to the following:</p> <ul style="list-style-type: none"> • Providing input during the development of the master plan, construction plan, and maintenance plan. • Assisting in setting up plans, surveys, data collection for conducting climate change action plan. • Assisting in training of climate change adaption in road asset. • Assisting and guiding the contractors in implementing the plans.
4.	Social Safeguards Specialist	<p>Qualification requirements:</p> <ul style="list-style-type: none"> • Master's degree in an applied social science, e.g. Sociology, Anthropology, Development Economics, Human Geography or related fields. • Must have total experience at least 20 years. • Must have at least 5 years of relevant experience in involuntary resettlement and undertaking of social assessments and social analysis. • Good verbal and written communication skills in English and Thai is mandatory. <p>The main tasks of the expert include but are not limited to the following:</p> <ul style="list-style-type: none"> • Coordinate and deliver the social safeguards related components including implementation of action plan. • Help to implement capacity building and training plans on social safeguards and maintain records on the social safeguards performance. • Review progress reports from contractor and prepare reports covering all social safeguards aspects of the project. • Carry out any other duties as assigned by the Project Manager.
5.	Gender and Social Development Specialist	<p>Qualification requirements:</p> <ul style="list-style-type: none"> • Master's degree in sociology, anthropology, gender/women studies, scientific land management or other related fields. • Must have total experience at least 20 years. • Must have at least 5 years of relevant experience in involuntary resettlement, undertaking of social assessments and social analysis, including experience in conducting social surveys, community consultations and monitoring of social development activities related to large linear infrastructure projects. • Good verbal and written communication skills in English and Thai is mandatory. <p>The main tasks of the expert include but are not limited to the following:</p> <ul style="list-style-type: none"> • Monitor the Contractor implementation of gender equality and social inclusion action plan (GAP). Ensure specific provisions for female employment and GESI responsive workers campsites, are included in the contractor's contract documents. • Monitor and document the progress of implementation of EWCDT friendly features in Motorway 7 and Highway 3.

S.N.	Position	Task Assignment
		<ul style="list-style-type: none"> • In collaboration with DOH, design and conduct training and capacity building on GESI for DOH-BIHC, PMO and other project staff. • Conduct community awareness programs for elderly, women, children, persons with disability and transgender persons (EWCDT) on road safety, health, hygiene and sexually transmitted infections and trafficking. • Conduct orientation for contractors' personnel to sensitize them on GESI, GBV, promoting women's participation in construction work and on specific needs of EWCDT users. • Orient the PMO and DOH-BIHC staff on the guidelines for gender mainstreaming categories of ADB projects, GAP provisions, monitoring, and reporting. • Coordinate the actions to ensure implementation of improving and enhancing the surroundings through green landscaping and increase resilience through trainings of EWCDT and management of the day care center, center for elderly care and productivity, the center/accommodation for persons with disability, and schools. • Ensure timely implementation of GAP activities and submit bi-annual progress reports along with process documentation with supporting evidence as per the requirements of the GAP.
6.	Road Safety Specialist	<p>Qualification requirements:</p> <ul style="list-style-type: none"> • Master's degree in civil or transport engineering or another relevant field. • Must have total experience at least 20 years. • Must have at least 10 years' experience in road safety, road safety audits, accident prevention, and similar activities • Must have at least 5 years' experience in designing and implementing road safety campaigns • Excellent verbal and written communication skills in English is mandatory. <p>The main tasks of the expert include but are not limited to the following:</p> <p>During construction:</p> <ul style="list-style-type: none"> • review and authorize all traffic management arrangements, • undertake regular audits of the contractor's traffic management arrangements and ensure that all audit issues are rectified, • collaborate with DOH to monitor the worksite monitoring systems and address any safety related issues, • investigate and prepare a brief report on any road safety incidents and ensure that adopted recommendations are implemented, and • undertake a pre-opening audit of any road sections in conjunction with DOH. <p>Road Safety Training and Campaign:</p> <ul style="list-style-type: none"> • design and carry out road safety awareness campaigns <p>Improve DOH road safety capacity: Collaborate with DOH to develop:</p> <ul style="list-style-type: none"> • road safety performance guideline for all DOH roads and a baseline of quantified improvement needs, and • a road safety improvement strategy with key performance indicators

S.N.	Position	Task Assignment
National		
1.	Project Engineer	<p>Qualification requirements:</p> <ul style="list-style-type: none"> • Bachelor's degree in engineering or a relevant field. • Must have total experience at least 20 years. • Preferably have 5 years' experience as a project engineer on construction projects. • The License for Professional Practice : Professional Engineer of Thailand Council of Engineers * <p>The main tasks of the expert include but are not limited to the following:</p> <ul style="list-style-type: none"> • Responsible for contract management and the overall assignment of supervision Consultant • Responsible for quality control and overall activities of team members • Review engineering design for completeness and consistency • Advice on overall project planning and logistics • Coordinate the input of consultants • Review and edit draft reports produced by consultants
2.	Soil Engineer	<p>Qualification requirements:</p> <ul style="list-style-type: none"> • Bachelor's degree in structural / civil engineering or a relevant field. • Must have total experience at least 20 years. • Preferably have 10 years' experience as a soil engineer on construction projects. • The License for Professional Practice : Associate Engineer of Thailand Council of Engineers or other international equivalent <p>The main tasks of the expert include but are not limited to the following:</p> <ul style="list-style-type: none"> • Check and review geotechnical reports for structures as per Project Report and verification at site and report to the Structural Engineer on this aspect to review design of highway. • Check founding strata for structures during execution and verify geotechnical reports prepared by the project preparation consultant and data received from contractor. • Respond to all technical issues of Contractors • Undertake quality control and verification of measurement bills • Advice on work deviations (modifications and additional works) • Monitor progress of work through field visits • Ensure smooth implementation of all project activities and provide support required to supervising engineers • Work in close coordination with the Project Management Team, experts and specialists • Report to and take instruction from the Team Leader/Deputy Team Leader.
3.	Structural Engineer	<p>Qualification requirements:</p> <ul style="list-style-type: none"> • Bachelor's degree in structural / civil engineering or a relevant field. • Must have total experience at least 20 years. • Preferably have 10 years' experience as a structural engineer on road/highway construction projects. • The License for Professional Practice : Professional Engineer of Thailand Council of Engineers * <p>The main tasks of the expert include but are not limited to the following:</p> <ul style="list-style-type: none"> • Responsible for overall supervision of all the structural works • Review structural design drawings for completeness or consistency before commencement of Contract works.

S.N.	Position	Task Assignment
		<ul style="list-style-type: none"> • Carry out measurements and review for structural works • Construction progress monitoring and evaluation • Material testing and certification of quality • Review and approve shop/fabrication drawings, construction methodology, temporary works, staging, etc. • Ensure safety working procedures and enforce them • Overall quality control and quality administration/ assurance
4.	Material Engineer	<p>Qualification requirements:</p> <ul style="list-style-type: none"> • Bachelor's degree in structural / civil engineering or a relevant field. • Must have total experience at least 20 years. • Preferably have 10 years' experience as a material engineer on road/highway construction projects. • The License for Professional Practice : Associate Engineer of Thailand Council of Engineers or other international equivalent <p>The main tasks of the expert include but are not limited to the following:</p> <ul style="list-style-type: none"> • Responsible to finalize sampling methods and criteria and acceptance criteria for quality control and assurance. • Examine Contractors preparation and completed portion of work as per "Request for Inspection" and advise Contractor promptly regarding the deficiency, if any. • Monitor closely and regularly the progress on materials procurement and quality. • Carry out inspection of Contractor's laboratory equipment. • Ensure and witness sampling and testing being carried out by staff of the Contractors and undertake additional tasks as necessary to ensure quality of works. • Scrutinize test results/certification of all construction materials and/or sources of materials and undertake additional tests if necessary. • Scrutinize mix design proposed by the Contractor. • Maintain a Permanent record of all tests carried out for monitoring the quality of works. • Monitor and maintain quality in all aspects. • Responsible for Quality Control of construction material and completed works.
5.	Highway Engineer	<p>Qualification requirements:</p> <ul style="list-style-type: none"> • Bachelor's degree in civil engineering, transport planning, transport engineering, or relevant fields but master's degree in relevant fields is preferred • Must have total experience at least 20 years. • At least 10 years of experience in highway design and/or transport planning and construction of roads and bridges, including 5 years of experience as deputy team leader in road design and planning projects • The License for Professional Practice : Associate Engineer of Thailand Council of Engineers or other international equivalent <p>The main tasks of the expert include but are not limited to the following:</p> <ul style="list-style-type: none"> • Undertake road safety audits, accompanied by road safety awareness sessions, during the construction process. • Recommend solution/way-forward to any issues developed in-order to enhance the progress of civil work.
6.	Survey Engineer	<p>Qualification requirements:</p> <ul style="list-style-type: none"> • Bachelor's degree in structural / civil engineering or a relevant field. • Must have total experience at least 10 years.

S.N.	Position	Task Assignment
		<ul style="list-style-type: none"> • Preferably have 5 years' experience as a survey engineer on construction projects. • The License for Professional Practice : Associate Engineer of Thailand Council of Engineers or other international equivalent <p>The main tasks of the expert include but are not limited to the following:</p> <ul style="list-style-type: none"> • Scrutinize topographic survey data, if any, in the contract drawings and associate and scrutinize the contractors updated topographic survey data. • Witness and Monitor survey and setting out operations and verify data and details. • Carry out detailed checking and verification of setting out data. • Carry out levels of different layers along with the surveyor of the contractor. • Responsible for maintaining the Horizontal and vertical profile of the road.
7.	Electrical Engineer	<p>Qualification requirements:</p> <ul style="list-style-type: none"> • Bachelor's degree in electrical engineering. • Must have total experience at least 20 years. • Preferably have 10 years' experience as an electrical engineer on construction projects. • The License for Professional Practice : Associate Engineer of Thailand Council of Engineers or other international equivalent <p>The main tasks of the expert include but are not limited to the following:</p> <ul style="list-style-type: none"> • Review the proposal of electrical lines, Poles & Transformer to be shifted and proposal of rising of electric lines crossing the road. • Review the BOQ quantities related with electrical utility shifting. • Assure that unnecessary shifting of Electrical utility shall not take place. • Assure the specification and quality of all the items of electrical utility shifting. • Certify the quantities of electrical utility shifting claimed by Contractor in each IPC. • Overall responsible for quality of electrical utility shifting material, work and correctness of quantity executed and payable to contractor.
8.	Road Safety Officer	<p>Qualification requirements:</p> <ul style="list-style-type: none"> • Bachelor of Science Degree in Occupation Health and Safety • Must have total experience at least 10 years. • Preferably have 5 years' experience in this position on construction projects. • Hold a valid certification of safety. • The License for Professional Practice : Safety Officer Professional Level or other international equivalent <p>The main tasks of the expert include but are not limited to the following:</p> <ul style="list-style-type: none"> • Review and evaluate contractor's safety program. • Maintain safety program and procedures. • Perform periodical auditing to evaluate personnel exposures and safety measures. • Perform accident investigations and work with contractors to correct safety hazards and develop preventative procedures. • Provide input to engineers for development/improvement of Safety Program. • Review Proof of Safety documentation prepared by relevant parties.

S.N.	Position	Task Assignment
9.	Environmental Specialist	<p>Qualification requirements:</p> <ul style="list-style-type: none"> • Bachelor's degree in physical, biological, or environmental sciences, engineering, or equivalent degree. • Must have total experience at least 20 years. • Must have at least 10 years of relevant experience in environmental management and in monitoring and supervising of environmental aspects during construction of road development or infrastructure projects. • Preferably be well versed with all relevant policies, handbooks, and guidelines of ADB and in particular Safeguard Policy Statement (SPS) of 2009 that governs the environmental safeguards of ADB's operations to avoid, or when avoidance is not possible, to minimize and mitigate adverse project impacts on the environment and affected people, and to help borrowers strengthen their safeguard systems and develop the capacity to manage environmental and social risks. • Good verbal and written communication skills in English and Thai is mandatory. <p>The main tasks of the expert include but are not limited to the following:</p> <ul style="list-style-type: none"> • Review and endorse site-specific (Contractor's) EMP, and submit it to DOH for approval. • Supervising and monitoring implementation of site-specific EMP(s) by Contractors. Ensure that environment impacts of the project are controlled through sound environmental management practices. Monitor and report of any environmental non-compliance during construction and undertake mitigation measures to correct it. • Preparing semi-annual environmental monitoring reports and inputs on environmental aspects to quarterly construction progress reports. • In case of unpredicted environmental impacts occurring during project implementation, update EMP to assess the potential impacts, evaluate alternatives, and outline mitigation measures to address those impacts. • Directly reporting on environmental management performance to the Project Manager. • In case of changes in project's design, review the updated Environmental Management Plan of Contractor and all related documentation.
10.	Cost & Schedule Control Specialist	<p>Qualification requirements:</p> <ul style="list-style-type: none"> • Bachelor's degree in engineering or a relevant field. • Must have total experience at least 20 years. • Preferably have 5 years' experience as a cost / scheduler on highway construction projects. <p>The main tasks of the expert include but are not limited to the following:</p> <ul style="list-style-type: none"> • Prepare and status project schedules in Primavera Project Planner/MS Project. • Estimate overall program cost relating to the master project implementation plan. • Review and verify schedule status based on project team and contractor inputs for actual progress, prepare Monthly Progress Reports and presentations that include descriptions of activities completed and analysis of updated schedules. • Reviews submitted Project Master Schedule produced by contractors including Work Breakdown Structure, Interface Schedules, Key Dates, etc. • Identify critical paths as well as trends to help project team stay on track. Interface and maintain communications with project management, field

S.N.	Position	Task Assignment
		<p>supervisors, and other project related parties on all planning and scheduling related items and functions including report requirements, progress status.</p> <ul style="list-style-type: none"> • Progress monitoring of each work against the approved program. • Review & analysis Interface Schedule of each contract work, especially interface between Civil Works and M&E Works. • Provide Project Management and Construction Supervision units with a periodical Planned vs Actual analysis measured against Baseline program, as well as possible drivers and actions of improvement. • Assist Project Team in estimating with quantity take-off, material cost research of structural works. • Monitor project cash-flow, cash position and monthly payments. • Monitor and check quantities of work and materials installed by location. • Review and check quantity and cost of submitted variations/changed orders. • Assist DOH in reviewing quantity and cost related matters/issues
11.	Document Control Specialist	<p>Qualification requirements:</p> <ul style="list-style-type: none"> • Bachelor's degree in engineering or a relevant field. • Must have total experience at least 20 years. • Preferably have 10 years' experience as a document control Specialist on construction projects. <p>The main tasks of the expert include but are not limited to the following:</p> <ul style="list-style-type: none"> • Set up and maintain the Management Information System - MIS suite for the project. • Establish and operate a document receipt system to be sure that all correspondences are efficiently dealt with and properly stored. • Set up and maintain a system for receiving, recording, distributing and storing all incoming and outgoing documents. • Receive, distribute and store incoming documents and file copies of outgoing correspondences. • Maintain a storage and retrieval system of records documenting information. • Coordinate and support for the preparation of project documentations; engineering documents and progress reports.
12.	Project Coordinator	<p>Qualification requirements:</p> <ul style="list-style-type: none"> • Bachelor's degree in engineering or a relevant field. • Must have total experience at least 10 years. • Preferably have 5 years' experience as a project officer on construction projects. • Strong proficiency in the Thai & English language. <p>The main tasks of the expert include but are not limited to the following:</p> <ul style="list-style-type: none"> • Support Resident Engineer/Project Manager with the preparation and maintenance of construction schedules. • Initiate, prepare, review, track, post and distribute RFI's and change orders. • Maintain organized and detailed construction files, project records and logs. • Oversee and review daily field inspector reports. • Track, document and manage project issues and conditions. • Attend project meetings and record meeting minutes. • Prepare monthly project status reports. • Assist Project Manager/Resident Engineer with payment requisition review.

S.N.	Position	Task Assignment
		<ul style="list-style-type: none"> • Assist in project close-out activities including the resolution of potential claims. • Prepare final documents. Ensuring project documentation is processed in timely manner and is retrievable.

* The qualification of the License for Professional Practice is based on The Council of Engineers Regulations in 2023 concerning the criteria and qualifications of controlled engineering professionals at each level for the Civil Engineering field of Thailand. (This regulation is part of Thai Government Gazette)

H. Reporting, Deliverables, and Training

The Consultant shall submit to DOH the following reports and documents, which shall include inter alia data for monitoring (i) project progress; (ii) expenditures and disbursements associated with the Project; (iii) updates of the quantities and cost estimates for construction and supervision; (iv) forecast of final costs; and (v) achievement of Project goals and objectives. In addition the Reports shall also identify actions, which can be taken by DOH and Contractors to safeguard the achievement of Project goals and objectives.

The report should contain photographs taken during the assignment along with an electronic copy of all the documents. All should be reported in English language only, however supporting documents can be attached in local language with translated summaries or versions in English where necessary. The details of documents to be submitted are given below:

Table 2 : Reports to be submitted by the Consultant

Type of Report	Timing	No. of Copies
Inception Report	1 month from the commencement date (NTP)	18
Programme Execution Plan	2 months from the commencement date (NTP)	18
Monthly Progress Report	Every month from the commencement date (NTP)	18
Quarterly Progress Report	Every quarter from the commencement date (NTP)	18
EMP Monitoring Report	Every month from commencement of construction works	18
Environmental Social Health and Safety Monitoring Report	Every month from commencement of construction works	18
IEE's Requirements Monitoring Report	Every month from commencement of construction works (For ADB) Every 6 month from commencement of construction works (For ONEP)	18
GESI Action Plan Progress Report	Every 6 month from commencement of construction works	18
Project Completion Report (PCR)	At the end of the Project	18
Consultant's Work Completion Report	At the end of the CSC Contract	18
Technical Report	As required or upon request	18
Topical Report	As required or upon request	18

1. **Inception Report** : The Consultant shall submit an Inception Report within 1 month from the commencement date (NTP) of the consultancy services. The report shall outline the work plan / schedule, strategy, methodology and organization of carrying out the construction supervision.
2. **Monthly Progress Reports** : The Consultant shall submit Monthly Progress Reports in the acceptable form to DOH and ADB, which will concisely describe all consulting and/or construction activities and progress of the previous month. Problems and delays encountered or anticipated shall be clearly stated, together with steps taken or recommendations for their correction. These reports will also indicate the work to be performed during the following month.
3. **Quarterly Reports** : The Consultant shall submit Quarterly Reports in the acceptable form to DOH and ADB, and shall include, but not be limited to:
 - General : A work program for the entire Project showing scheduled against actual progress; a review of the planning, progress and coordination of the civil works contracts; and a summary of progress made. The Quarter Reports will also include and specific information required by ADB regarding loan progress in a format acceptable to the ADB.
 - Work program for the road with a bar chart showing scheduled against actual financial/physical progress by major work item, illustrated by bars and percentage of accomplishment (total and by major work item); the work program and the bar chart (showing the critical path) shall be suitably updated in each Quarterly Report;
 - Financial data, updated as appropriate, giving time, cost and financial forecast, a schedule of certified payments, update of quantities and cost estimates for civil works construction contractors and for the services of the Consultant, including the arrival and departure dates of the Consultant's staff;
 - Summary of the progress of construction work performed, variations issued, payments certified including cost price adjustment (CPA), the equipment and manpower (skilled/unskilled by foreign/local categories in person-months) utilized by the Contractor during the reporting month, together with an outline of the work to be performed during the next reporting period; and, identifying the causes of possible delays and indicating the remedial measures taken or recommended;
4. **Environmental Management Plan Monitoring Report** : The Consultant shall submit the Environmental Management Plan Monitoring Report in the acceptable form to DOH and ADB. The report shall demonstrate the status of environmental mitigation and monitoring and details of any adverse impacts and the remedial measures being taken.
5. **Environmental Social Health and Safety Monitoring Report** : The Consultant shall submit the Environmental Social Health and Safety Monitoring Report in the acceptable form to DOH and ADB. The report shall summarize all environmental and social safeguard activities during and at the completion of the construction stage - including progress and other aspects related to safety, workers Occupational Health and Safety (OHS), employment, community health and safety, etc. The report shall also summarize the performance of the Consultant's staff in implementing their supervision responsibilities.
6. **IEE's Requirements Monitoring Reports** : The Consultant shall submit the IEE's Requirements Monitoring Report in the acceptable form to DOH and ADB. The report shall include the results of all monitor measures that comply with all Environmental item in the Initial Environmental Examination (IEE) Requirements

and the Office of Natural Resources and Environmental Policy and Planning Requirements. These reports will also indicate the Consultant's work to be performed during the month.

- 7. GESI Action Plan Progress Report :** The Consultant shall submit the GESI Action Plan Progress Report in the acceptable form to DOH and ADB. The report shall include the results of all monitor measures that comply with all Gender Equality and Social Inclusion Action Plan (GAP) Requirements and the progress of conducting training program on GESI and community awareness programs for EWCDT.
- 8. Project Completion Report (PCR) :** The Consultant shall prepare and submit a Project Completion Report (PCR) immediately prior to physical completion of the construction works on the road sections in a manner satisfactory to DOH and the ADB, including:
 - major project events, performance of the civil works Contractors, operation of the Project, actual and price inflated (to completion year), Project cost by implementation year, and labor employed by skilled/unskilled and foreign/local categories in person-years;
 - successes (and problems) and lessons learned in the implementation of each of the Project components for each Construction Package. This section of the PCR shall also contain an assessment of the impact of road improvement on the economy and social aspects for the project areas, the environmental aspects, the results of the project performance monitoring and evaluation; effect of contract changes, claims or disputes or any other substantial matter having an effect on the amount, cost and progress of the road construction work;
 - “as-built” drawings” (to be submitted to DOH Project Director). These “as-built” drawings will be provided by the civil works Contractors.
- 9. Consultant's Work Completion Report :** The Consultant shall submit the Consultant's Work Completion Report in accordance with the requirements of the Government Procurement and Supplies Management Act, B.E. 2560 (2017), and with applicable implementation requirements of the Ministry of Transport and DOH. A listing of the detailed requirements of this report shall be finalized and agree to during contract negotiations between DOH and the Consultant.

All deliverables will be submitted in the English language to ADB and DOH in electronic form, and with Five (5) printed copies to DOH. Before the final payment of the contract, all deliverables and records, including the final report, must be delivered on a USB drive to DOH.

Table 3 : Workshops and Meetings

No.	Description	Timeframe
1	Kick-Off meetings with each Consultant and Contractor	Within 28 days after contract award
2	Monthly progress meetings with the Employer and Consultants / Contractor	Every month
3	Monthly Risk Management meetings	Every month
4	Further meetings with each Contractor and the consultants as appropriate	Occasionally according to project situation

Table 4 : Trainings

No.	Description	Timeframe
1	Domestic and Overseas Trainings and Technology Transfer	The first training/technology transfer must be started within 3 months from NTP
2	Fields of Training and Technology Transfer: <ul style="list-style-type: none">• Road Safety Audit• Climate Change• Gender Equality and Social Inclusion• Environmental Measurement and Social Safeguards• Procurement, Contract/Financial and Project Management	