

Дархост барои изҳори тавачҷӯх

(Хизматрасонии машваратӣ - интихоби ширкатҳо)

Мамлакат: Ҳукумати Ҷумҳурии Тоҷикистон

Номи лоиҳа: Лоиҳаи роҳи Обигарм-Нуробод Қисмати 3, Пули дароз ва даромадгоҳи суи он

Рақами грант: Фонди махсуси S0309A

Номгӯи супориш: Хидматҳои машваратӣ оид ба омӯзиши вариантҳо, асосноккунии техникӣ-иқтисодӣ, пеш аз тарҳрезӣ ва ҳуҷҷатҳои тендерӣ оид ба тарҳрезии сохтмон ва шартномаи сохтмон.

Рақами ҳуҷҷат: MOTRT-АПВ-000309-002

Ҳукумати Ҷумҳурии Тоҷикистон барои дастгирии омодаسازی лоиҳаи роҳи Обигарм-Нуробод аз Бонки сармоягузории инфрасохтори Осие (БОСИ) грант дарёфт кард. БОСИ ният дорад, ки қисмати 3-ро маблағгузорӣ кунад, ки як пули дарозии тақрибан 800 метр дар болои обанбори сарбанди Роғун ва 640 метр роҳи мошингардро дар наздикиҳои пул дар бар мегирад. Ҳадафи лоиҳа нигоҳдорӣ ва беҳбуди робита байни Душанбе, минтақаи шимолу шарқи Тоҷикистон ва Ҷумҳурии Қирғизистон тавассути шоҳроҳи М41 мебошад.

БОСИ ният дорад, ки як қисми маблағҳои грантиро барои пардохти хизматрасонии машваратӣ истифода намояд. Ин хидматҳои машваратиро ("Хизматҳо") дар бар мегиранд, вале бо онҳо маҳдуд нестанд:

- Омодаسازی бастаи 3, пули дароз ва равишҳо ба он, барои маблағгузорӣ ва татбиқи он бо истифода аз тарҳрезӣ ва пудрати сохтмонӣ (D&B) корҳои сохтмонӣ дар асоси меъёрҳои дақиқи иҷро ва самаранокии марҳилаҳои таҳияшуда.

- Ҳаҷми кор иборат аст аз (i) таҳияи вариантҳои пул ва асосҳои техникӣ-иқтисодӣ, аз ҷумла таҳияи тарҳҳои концептуалӣ ва муқоисаи ҳадди ақал се алтернативаи пул, тавсияҳо оид ба концепсияи афзалиятнок дар асоси арзиш барои пул (VfM) ва арзиши давраи ҳаёт; (ii) тарҳҳои пешакии муҳандисии концепсияи афзалиятнок, ҳамоҳангсозӣ бо арзёбии таъсир ба муҳити зист ва иҷтимоӣ (ESIA) ва (iii) таҳияи ҳуҷҷатҳои техникӣ ва ҳуҷҷатҳои тендерӣ барои сохтмони пули дароз ва равишҳои он, ки барои хариди байналмилалӣ давлатӣ мувофиқанд бо истифода аз шартномаи корҳои шаҳрвандӣ намуди Л&С дар асоси натиҷаҳои дақиқ муайяншуда ва меъёрҳои иҷроӣ ва модели пардохти алоқаманд.

- Хизматрасониҳо бояд ба ду (2) марҳила тақсим карда шаванд. Марҳилаи 1 имконпазирии вариантҳои пулро арзёбӣ мекунад ва алтернативаҳои техникӣ/молиявӣ ва экологӣ/иҷтимоиро муқоиса мекунад. Дар ин марҳила тарҳҳои концептуалӣ то дараҷае таҳия карда мешаванд, ки барои арзёбии имконпазирии техникӣ ва экологӣ ва муқоисаи арзишманди хароҷоти иқтисодӣ ва ғайраи ҳар як вариант кофӣ мебошанд. Натиҷаҳои таҳқиқоти таърихӣ геотехникии саҳро баррасӣ ва арзёбӣ ва корҳои иловагии саҳроӣ анҷом дода мешаванд. Машваратчӣ варианти бехтарини купрукро, ки ба мақсад мувофиқ ва аз ҷиҳати VfM оптималӣ аст, тавсия мекунад. Дар доираи Марҳилаи 1, Машваратчӣ тамоми тадқиқоти саҳроии заруриро барои тасдиқи вариантҳои пешниҳодшудаи пул мегузаронад ва дар ниҳоят варианти мувофиқро интихоб мекунад. Илова бар ин машваратчӣ тамоми ҳуҷҷатҳои техникӣ заруриро барои тадқиқоти муфассали саҳроӣ ва озмоишҳо дар марҳилаи 2, ки барои тарҳрезии пешакӣ ва тендер барои шартномаи тарҳрезӣ-сохт барои варианти афзалиятноки пули бехатар ва устувор заруранд, омода мекунад.

- Машваратчӣ танҳо пас аз гирифтани ризоияти Вазорати нақлиёт (ВН) ва мувофиқат оид ба варианти афзалиятноки пули дар гузориши вариантҳо ва асосноккунии техникӣ-иқтисодӣ пешниҳодшуда ба марҳилаи 2, лоиҳаи тарҳ мегузарад. Лоиҳаи пешакӣ бояд дар сатҳе омода карда шавад, ки барои дохил кардан ба озмуни лоиҳакашӣ ва сохтмонӣ мувофиқи расмиёти байналмилалӣ харида давлатӣ гузаронида мешавад, то довталабон метавонанд нархи тарҳи муфассал ва сохтмони купрукро дақиқ муайян кунанд ва тендерҳо метавонанд мустақиман бо ҳамдигар ба таври пурмазмун муқоиса карда шаванд. Дар доираи марҳилаи 2-юми ин супориш, мушовир лоиҳаи омӯзиши хокро таҳия мекунад, корхоро назорат мекунад ва натиҷаҳои воқеии омӯзиши муфассали хокро, ки тибқи шартномаи алоҳида бо Фармоишгар анҷом дода мешавад, анҷом медиҳад, тамоми тадқиқоти саҳроӣ ва озмоишҳо барои боварӣ ҳосил кардани варианти афзалиятнок, ки лоиҳаҳои пешакӣ ва ҳуҷҷатҳои тендерӣ ба ҳадаф ва варианти VfM мувофиқанд. Машваратчӣ бояд Талаботи муфассали муштарӣ, нақшаҳо, мушаххасот ва дигар ҳуҷҷатҳои техникӣ, шартномавӣ ва маъмуриро тавре таҳия кунад, ки маҷмӯи пурраи тендер барои тендери кушодаи байналмилалӣ бо истифода аз шартномаи сохтмони навъи D&B дар асоси натиҷаҳо ва нишондиҳандаҳои кор, аз ҷумла пардохти намунавӣ барои марҳилаҳои анҷомшуда, мувофиқи қоидаҳои харида БОСИ .

- Давомнокии марҳилаи 1 4 моҳ аст. Марҳилаи 2 барои 5 моҳ ба нақша гирифта шудааст, бинобар ин, давомнокии умумии лоиҳа 9 моҳро ташкил медиҳад.

- Харочоти ҳадди ақали тахминии лоиҳа барои коршиносони асосӣ 48 нафар-моҳ, барои коршиносони асосӣ 81 нафар-моҳа, инчунин харочоти иловагӣ барои кормандони маъмурӣ ва тарҷумонҳо мебошад.

Шартҳои муфассали техникӣ (ШМТ) барои супориш ба ин дархост барои изҳори тавачҷӯҳ замима карда мешаванд.

Шӯъбаи татбиқи лоиҳаҳои Вазорати нақлиёт (ВН) оид ба барқарорсозии роҳҳо варақаҳои машваратии мувофиқро («Мушовирҳо») даъват менамояд, ки ҳавасмандии худро дар пешниҳоди ҳадамот изҳор намоянд. Машваратчиёни ҳавасманд бояд маълумотеро пешниҳод кунанд, ки онҳо дорои таҳассус ва таҷрибаи зарурӣ барои иҷрои хидматҳо мебошанд.

Меъёрҳои интихоб инҳоянд:

- Таҷрибаи ширкат дар на камтар аз ду лоиҳа дар тӯли 10 соли охир дар таҳияи асосҳои техникӣ-иқтисодӣ ва тарҳҳои пешакӣ / муфассали иншооти пулҳои калон (дарозии зиёда аз 400 метр) дар доираи шартномаҳои Л&С бо иҷроиш аз рӯи натиҷаҳо ва самаранокӣ;

- Таҷрибаи ширкат дар на камтар аз ду лоиҳа дар тӯли 10 соли охир дар таҳияи ҳуҷҷатҳои тендерӣ ва дастгирӣ ба фармоишгар дар харидаи лоиҳаҳои калони пулӣ барои бастанӣ шартномаҳои D&B бо нишондиҳандаҳои истеҳсолот ва самаранокӣ.

Машваратчиён бояд дархостҳои худро бо пешниҳоди тафсилоти бақайдгирии онҳо, фаъолияти асосӣ ва таҷрибаи солҳои зиёд, тафсилоти таҷрибаи дахлдори лоиҳа (аз ҷумла тавсифи лоиҳа, манбаҳои маблағгузорӣ, маблағи шартнома ва ғайра) дастгирӣ кунанд. Шаклҳои стандартӣ пешниҳоди маълумот ба ин огоҳинома замима карда мешаванд.

Диққати мушовирони манфиатдор ба фасли II, банди 4.4 ва банди 4.9-и “Дастур оид ба харидаи БОСИ” аз 2 июни соли 2016 ҷалб карда мешавад, ки бархӯрди манфиатҳо ва сиёсати мутобиқати БОСИ-ро муайян мекунад.

Машваратчиён метавонанд бо дигар ширкатҳо барои баланд бардоштани таҳассуси худ ҳамкорӣ кунанд, аммо бояд возеҳ нишон диҳанд, ки оё иттиҳодия дар шакли корхонаи муштарак ва/ё

зермушовир хоҳад буд. Дар мавриди корхонаи муштарак, тамоми шарикони корхонаи муштарак бояд дар сурати интихобшуда барои тамоми шартнома масъулияти муштарак дошта бошанд.

Машваратчӣ мувофиқи усули интихоби сифат ва арзиш (QCBS), ки дар Дастурамал оид ба харид барои гиранда пешбинӣ шудааст, интихоб карда мешавад.

Изҳороти манфиатдор бояд дар шакли хаттӣ ба суроғи зерин тавассути почта ё почтаи электронӣ то 5 январи соли 2022 расонида шавад.

Нуралӣ Арабзода

Раёсати татбиқи лоиҳаҳои барқарорсозии роҳҳо

Вазорати нақлиёти Ҷумҳурии Тоҷикистон

кӯчаи Айни, 14, ошёнаи 4, хучраи 407

Душанбе, 734042, Тоҷикистон

Почтаи электронӣ: piurr@bk.ru

Намунаҳои дархостҳои электронӣ

{Мушовир бояд почтаи электронии худро бо истифода аз варақаҳои намунавии почтаи электронӣ бо ҳама гуна иловаҳо ва тағйироти зарурӣ омода созад}.

Дархости электронӣ бояд ҳадди аққал маълумоти зеринро дар бар гирад:

ФОРМА 1 - Варақаи иттилоотии мушовир

ФОРМА 2 — Ташкил ва бо штат таъмин намудани мушовир

FORM 3 - Тафсилоти таҷрибаи лоиҳа

ФОРМА 1- Варакаи иттилоотии мушовир (барои ҳар як шарики корхонаи муштарак ё зерпудратчии номбаршуда пур карда мешавад)

Номи пурраи ҳуқуқии ташкилот	
Кишвари бақайдгирӣ	
Суроғай идораи ба қайд гирифташуда	
Рақами иҷозатномаи тичоратӣ	
Санаи офариниш	
Соҳаи фаъолият	
Намояндаи ваколатдор (Ном, рақами телефон ва суроғай почтаи электронӣ)	
Алоқай асосӣ барои ин изҳори тавачҷӯх (Ном, рақами телефон ва суроғай почтаи электронӣ)	
Вебсайти ташкилот	

Нусхаи бақайдгирии ширкат бо тарҷумаи англисӣ замима карда мешавад.

ФОРМА 2- Ташкилоти мушовир ва ҳайати кормандон (барои ҳар як шарики корхонаи муштарак ё зерпудратчии номбаршуда пур карда мешавад)

Лутфан тавсифи мухтасари таърихи ширкат, созмон ва чадвали штатии худро дар ин ҷо пешниҳод кунед.

ФОРМА 3- Тафсилоти тачрибаи лоиҳа

Лутфан тафсилоти лоиҳаҳои шабеҳи қаблӣ, ки дар 10 соли охир бомуваффақият анҷом дода шудаанд, бо истифода аз шакли зер пешниҳод кунед.

Танҳо он супоришхоро номбар кунед, ки Мушовир барои иҷрои онҳо аз ҷониби Мизоч ҳамчун ширкат ба таври қонунӣ ҷалб шуда буд ё яке аз шарикони корхонаи муштарак буд. Машваратчӣ бояд омода бошад, ки тачрибаи зикршударо тавассути пешниҳоди нусхаҳои ҳуҷҷатҳои дахлдор ва маълумотномаҳо дар ҳолати дархост дастгирӣ намояд. **Лутфан на бештар аз 10 истинод пешниҳод кунед, на бештар аз як саҳифа дар як истинод.**

Номи кор:	Арзиши тахминии шартнома (бо доллари ИМА):
Кишвар: Ҷойгиршавӣ дар кишвар:	Давомнокии таъинот (моҳҳо):

Ном ва суроғаи муштарӣ:	Арзиши тахминии хизматрасоние, ки фирмаи шумо тибқи шартнома пешниҳод мекунад (бо доллари ИМА):
Санаи оғоз (моҳ / сол):	Санаи анҷомёбӣ (моҳ / сол):
Номи мушовирони шарик, агар мавҷуд бошад:	Арзиши тахминии хизматрасониҳои мушовирони шарик
Тавсифи мухтасари лоиҳа:	
Тавсифи хидматҳои воқеие, ки кормандони шумо ҳамчун як қисми супориш пешниҳод мекунад:	

**Terms of Reference
For**

Preparation of Options Study, Feasibility Study, Preliminary Design, and Tender Documents for Output and Performance-based Design and Build Civil Works Contract

1. BACKGROUND

The Asian Infrastructure Investment Bank (the “AIIB” or the “Bank”) has provided a Special Fund grant to the Government of Tajikistan (GoT) for preparation of the Obigarm - Nurobod Road Project, Section 3. Sections 1 and 2 of the road are funded by the Asian Development Bank (ADB) and the European Bank for Reconstruction and Development (EBRD).

The Executing Agency for the Project is the Ministry of Transport (the “MoT”), and the Implementing Agency is the Project Implementation Unit for Road Rehabilitation (the “PIURR”) of the Ministry of Transport.

The overall project “Obigarm - Nurobod Road Project” involves construction of an alternative alignment (the “Project Road”) for the existing M41 highway connecting the northeast region of Tajikistan and the Kyrgyz Republic between Obigarm (Km 72) and Nurobod (Km 158), which will be inundated by the reservoir of the Rogun Hydro-Power Project (HPP) that is currently under construction.

Development of the feasibility study and the project documentation of this road commenced under the Soviet Union in 1975. In 1984 the project was approved, and road construction began, but was suspended in the early 1990’s.

The original alignment of the 1984 project has been now adopted as the starting point for the design of the new road. The design category for the new road has been upgraded to Category III from the earlier design.

The detailed design of the road, except for the long bridge and its approaches, has been completed by a national design consultant appointed by the MoT. The design did not include the design of the required long bridge over the reservoir at the eastern end of the Project.

1.1. Project Packages

The Project Road is divided into three civil works contract packages:

Package No.	Description	Financier
1	Km 0+000 to Km 30+217 Obigarm – Tagikamar section approximately 30 km long and includes 2 tunnels of 1.6km and 1.7 km, and construction of 6 short span bridges	ADB/OFID
2	Km 30+217 to Km 75+600 Tagikamar-Nurobod section approximately 44 km long and includes 1 tunnel of 2.6 km and construction of 7 short span bridges and 1 temporary bridge, excluding Package 3 which runs from Km 72+900 to Km 74+303	EBRD
3	Km 72+900 to Km 74+303 Permanent Long Bridge about 760 m long and its approaches, as a permanent replacement for the temporary bridge to be provided in Package 2. The total length of Package 3 including the road approaches is about 1.4 kilometers.	AIIB

Construction of contract Packages 1 and 2 using input type of contracts have been procured separately through open competitive bidding under ADB or EBRD funding under their respective Procurement Policies and Rules (PP&R).

Design and Procurement under Package 3 (The Project), applying Output and Performance-based Design and Build (D&B) type of contract, will be conducted in accordance with AIIB's Procurement Policy and AIIB's Interim Operational Directive on Procurement Instructions for Recipients, June 2016.



Map 1 - Project Area

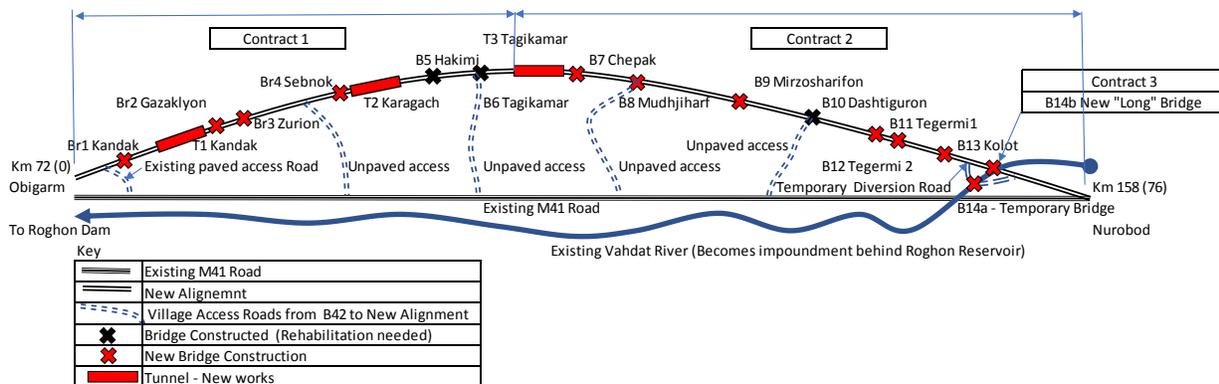


Figure 1 - Schematic of the Alignment showing location of bridges, tunnels and access points

1.2. Special Considerations

It is intended to engage a consultant (the “Consultant”), to assist in the preparation of the Project. The provision of services by the Consultant is the subject of this Terms of Reference. There are some specific issues that the Consultant should be cognizant of relating to the Long Bridge site:

- The Long Bridge and approaches will be located from Km 729+00.00 and Km 743+03.18, within the Package 2 site. Total length of Package 3 is about 1,403.18 meters.
- The detailed horizontal and vertical alignment of the road have been designed over the full length of the Package 3 site, determining the beginning and end of the Long Bridge, hence, the design of the road is available up to the assumed location of the bridge at Km 732+00 and & Km 743+00 within Package 3 site. The roadworks detailed design will be available for assessment by the Consultant and its incorporation into the Long Bridge approach designs. Further details follow below in Section 2.4 (Detailed Tasks).
- The Project is designated as Category A for environmental and social impacts, and the ADB/EBRD has commissioned and disclosed an Environmental and Social Impact Assessment (ESIA) for the entire alignment, and associated E&S Management Plans (ESMP). These are available at the following link: <https://www.adb.org/projects/documents/taj-52042-001-eia>. As the design of the Long Bridge was not available when the ADB ESIA was conducted in 2018-19, the AIIB is undertaking an Addendum to the ADB ESIA specifically for the Long Bridge site. AIIB is preparing this ESIA Addendum with its own consultants. The additional ESIA studies will take place in two stages, in parallel with the two stages under the preparation of the Options and Feasibility Study and the Preliminary Design/Works Tender Documents. The Consultant will therefore not be required to conduct additional ESIA studies directly, but will be required to co-ordinate, liaise with and take into consideration any findings and/or requirement arising from the Long Bridge ESIA Addendum assignment. The ESMP produced as part of such ESIA studies needs to be fully incorporated in the works procurement documentation by the Consultant. However, the Consultant will define, prepare and incorporate requirements of Occupational Health and Road Safety (OHS) aspects in his Study and in the Tender Documents.
- An ADB review dated February 2019 of the geotechnical and seismic investigations conducted in the 1980s makes recommendations for further studies using more recent seismic techniques in order to validate the 1980s investigations. These will lead to the requirement for further boreholes and geophysical testing at assumed foundation sites and in other locations, as necessary. The Consultant shall review the investigations, methodology and results from the previous investigations as a reference point and be responsible for defining and managing additional investigations necessary to provide sufficient factual information for the **Options Study, Feasibility Study and Preliminary Design**, as well as for tendering of the eventual Design and Build Works Contract.
- It is envisaged that the geotechnical and seismic investigations will be carried out in two phases, corresponding to the two Phases of the assignment. A detailed desk study of existing information supplemented with a preliminary investigation of near surface conditions using trial pits and/or augers will provide inputs into the **Options and Feasibility Study**. This will be followed by a detailed physical ground investigation for the preferred option. In that light, and based on the results of the desk study, the Consultant shall prepare the Scope of Works, Technical Specifications and other technical documentation for the detailed geotechnical and geophysical investigations to be carried out at the beginning of Phase 2, sufficient to provide the necessary factual information for the Preliminary Design and for tendering for the Design-Build Works Contract For such required field investigations, the Consultant shall also prepare associated procurement documentation, administer, and supervise the necessary fieldwork, review, and endorse the results of the ground investigation and laboratory testing, and prepare an interpretive report on ground conditions at the site. The direct cost of the physical investigation works, laboratory testing, and preparation of the associated factual report will be paid for from a separate, direct contact between the Client and the ground investigation company. The cost of the other activities associated with the geotechnical surveys, including definition of scope, procurement support, supervision and preparation of the

interpretive report, shall be included in the Consultant's lump sum remuneration. The Consultant's lump sum remuneration shall also cover the cost of the desk study and preliminary trial pit/auger surveys in Phase 1.

- As the area of the Long Bridge site has significant ground condition risks due to landslips, potential weak underlying geological layers and is in a high-risk seismic zone, the Consultant will also carry out the recommended seismic modelling, including taking into account hydrodynamic forces generated in the proposed reservoir, climate changes and wind effects.
- The Tender Documents will be based on the FIDIC Plant and Design Build Contract 2nd Edition (2017 Yellow Book), suitable for public international procurement, using a D&B approach and adapted as necessary to include the milestones, performance indicators, and payment model. **The incorporation of well-defined output and performance criteria and an associated payment model, is of critical importance, and should be addressed in detail in the Consultant's technical proposal.**

2. OBJECTIVE, SCOPE, AND DETAILED TASKS OF THE CONSULTANCY

The Obigarm–Nurobod road section is located on the CAREC corridors 2, 3, and 5 will be inundated once the HPP reservoir has filled to operating levels. The Project Road will maintain uninterrupted and improved connectivity between Dushanbe, the northeast region of Tajikistan and the Kyrgyz Republic via the M41 highway, which is located on Central Asia Regional Economic Cooperation (CAREC) corridors 2, 3, and 5.

2.1. Objective

The objective of the assignment is to ready Package 3, the Long Bridge and its approaches, for financing and implementation using a design-build approach based on well-defined output and performance criteria for designated milestones.

2.2. Scope

The scope includes:

- (i) **Preparing the bridge Options and Feasibility Study**, based on preparation of conceptual designs, feasibility studies and comparison of at least three bridge alternatives, preferred concept recommendations based on Value for Money (VfM) and life-cycle costs;
- (ii) **Defining, managing, supervising and interpreting detailed physical ground investigations** to be carried out, to provide the necessary information for Preparation of the Preliminary Design and for tendering of the Design-Build Works Contract.
- (iii) **Preparing Preliminary Engineering Designs, Employer's Requirements and technical specifications for the preferred Option**, coordination with Environmental and Social Impact Assessment (ESIA); and
- (iv) Preparing **Technical Documentation and Tender Documents** for the Long Bridge construction suitable for public international procurement using a design-build approach based on well-defined output and performance criteria and an associated milestone payment model.

2.3. Implementation Arrangements

The Ministry of Finance (MoF) is the Grant Recipient and the Ministry of Transport (MoT) is the Executing Agency (the Client), PIURR is the Implementing Agency. The Consultant will also coordinate with other concerned government agencies and local authorities, with the assistance of MoT / PIURR, and with the consultant for the ESIA studies in carrying out selected activities of the assignment. The MoT will establish a steering committee to assess the Consultant's performance.

2.4. Detailed Tasks

The consultancy work shall be divided into two (2) separate phases. In **Phase 1**, the Options and Feasibility Studies for the bridge options and technical/financial/economic and environmental/social comparison of these alternatives will be completed. During this stage, conceptual design alternatives will be developed to a sufficient level to assess the technical and environmental feasibility of each and to enable meaningful comparisons of the economic costs and benefits of each option. Since this project will be carried out by using an output and performance-based D&B contract model, performance indicators will be developed and justified, including logical milestones for completion of the bridge and approaches. The results from historic field investigations will be assessed and investigations of near-surface soils will

be carried out to confirm ground conditions. The Consultant will recommend a best fit to purpose and best value for money bridge option. In this **Phase 1**, the Consultant will carry out the necessary field investigations and surveys so as to justify the proposed bridge options and eventually a preferred option. Moreover, the consultant will prepare all required technical and procurement documentation for carrying out the detailed geotechnical and seismic investigations and testing to be carried out in Phase 2, required for Preliminary Design and tendering for the Design-Build Works Contract for a safe and sustainable preferred bridge option. **Phase 1** has a scheduled duration of 4 months.

The consultant will proceed with **Phase 2**, Preliminary Design, detailed geotechnical investigations and preparation of Tender Documentation, only after receiving the consent of MoT, following agreement on the preferred bridge option presented in the Options and Feasibility Study and report. The Preliminary Design shall be prepared to a level suitable for inclusion in a D&B tender to be carried out under international public procurement procedures, such that tenderers for the works are able to accurately price the detailed design and construction of the bridge and that individual tenders can be directly compared against each other in a meaningful manner. In this **Phase 2** of the assignment, the consultant will complete all detailed geotechnical and seismic investigations and testing making sure that the preferred option for which the Preliminary Designs and Tender Documents will be prepared is the best fit for purpose and value for money option. **Phase 2** has a scheduled duration of 5 months, providing a total duration for the assignment of 9 months.

2.4.1. Task 1. Traffic Analysis and Forecasts (Phase 1)

- (i) Review and endorse the traffic studies carried out in the ADB Due Diligence study, dated February 2019 and carry out additional traffic studies as may be required. Determine the road category at the Long Bridge, taking account of a 100-year design life for the bridge. The remainder of the Project Road is designated as Category III. Due to the design-life, and the scope of the bridge aspect, Package 3 could possibly be designated as a Category II road, which has differing cross section standards under the design standards used in Tajikistan. This shall be assessed by the Consultant as part of the Options and Feasibility Study. The traffic studies will differentiate between various groups and modes of traffic (motorized and non-motorized) and will provide the suggested traffic generation model for review by the client. The traffic model will include three scenarios: pessimistic, optimistic and recommended.
- (ii) Analyze the potential pedestrian demand at the bridge including access for disabled people. It is anticipated that the reservoir will become a local tourist destination and will carry considerable amount of pedestrian and other non-motorized traffic.

2.4.2. Task 2. Identification, Analysis and Comparison of Bridge Options (Phase 1)

- (i) Conduct a study of the ADB and EBRD documents relating to the Project Road, and relevant Rogun HPP documents to identify relevant information influencing the Long Bridge site.
- (ii) Prepare a schedule of design criteria, standards and design methodologies to be used in the design of the bridge after due consultation with the PIURR regarding National Standards and requirements, incorporating other international standards as appropriate, taking into account statutory procedures in Tajikistan for design review and approvals.
- (iii) Study and propose technical solutions and alternatives for the Long Bridge, adopting the given horizontal and vertical alignments from the Package 2 termination points at Km 72+900 and Km 74+303. The studies shall consider at least three long bridge options (balanced cantilever, cable-stay, extra dose etc.) and a series of relevant sub-options for each (deck materials, span arrangements, foundation types, pylon height, road category etc.). Any change to the given horizontal and vertical alignments would require prior PIURR approval. The studies and field investigations to be carried out by the Consultant in Phase 1 should include, but are not limited to as assessment of ground and seismic conditions based on previous studies supplemented by trial pit/auger investigations, hydrostatic and hydrodynamic conditions, the type of bridge structure, construction method and associated implementation program, the landscape, street lighting, constructability, reservoir impoundment schedule, potential impacts of climate change on the long-term sustainability of the bridge and operational maintenance. The assessment of constructability/method of

construction shall define the specific equipment needs for each solution and assess the feasibility of transporting such equipment along narrow mountain roads to a remote site area. Particular attention should be made to the capacity of the proposed temporary bridge to be constructed under Section 2 and if it will have sufficient capacity for use by the works contractor for Section 3.

- (iv) Consult with the AIIB Environmental and Social (E&S) Consultant over potential impacts and their mitigation, to be included in the Options Study decision matrix, including OHS and Road Safety standard and requirements.
- (v) Consult with stakeholders regarding engineering solutions and address the findings of consultation into the design as appropriate. This should include design and construction standards, specifications and design methodologies that would be acceptable in Tajikistan (local and international) and compatible with the State Expertise compliance that is required.
- (vi) Review the need for additional seismic testing to be carried out in Phase 2 and subsequent modelling considering the ADB Due Diligence report recommendations.
- (vii) Carry out a detailed study of the other available surveys, investigations and test results, assess the requirements for any gaps. Prepare all required scope of works and associated documentation required for carrying out detailed geotechnical and seismic investigations in Phase 2. Carry out the necessary field surveys that may be required, including but not limited to topographic, traffic, hydrological, materials surveys and trial pits/augers. The surveys and investigations carried out by the Consultant should be sufficient for all aspects of the Options and Feasibility Study. The surveys required in Phase 1 for the Options and Feasibility Study will be supplemented with more detailed geotechnical and seismic surveys in Phase 2 for the preparation of the Preliminary Design and to provide information for the tender of the Design-Build Works Contract. The cost of all surveys and fieldwork other than the detailed physical geotechnical and seismic investigations to be carried out in Phase 2 shall be included in the Consultant's lump sum remuneration.

A proposed list of additional fieldwork surveys, their scope and levels shall be included in the Consultant's Technical Proposal and be expanded upon in the Inception Report. The Inception Report shall also include a procurement strategy for the detailed ground investigation works to be carried out in Phase 2. The Consultant shall also propose any additional specialized studies required for the later detailed design stage, such as wind tunnel testing. Any finding or information imported/ adopted from the different studies and information, will be checked by the Consultant and he will take ownership of the adopted results/concepts.

- (viii) Investigate the suitability of local construction materials, and materials that may need to be imported to Tajikistan. Where necessary, assess the quality and quantity of materials and hauling distances for each option.
- (ix) Prepare conceptual designs and a framework of all options studied for technical solutions and alternatives for the Long Bridge and prepare Feasibility Studies and cost estimates of at least three main options in line with Client requirements and in enough detail to allow the Client to select a preferred option for development into Preliminary Design and procurement documentation. The comparison of the alternatives shall include consideration of the construction methods and schedule, economic, financial, environmental, social, cost benefit and other relevant factors in the decision matrix.
- (x) Prepare the Options and Feasibility Study Report to present the analyses, findings, and recommendations. This will also include a recommended bridge option and its benefits and advantages, including well-defined output and performance criteria and an associated milestone payment model. The climate change and resilience standards and specifications will be applied and clearly indicated in the Study.

2.4.3. Task 3. Preliminary Engineering Design and Employer's Requirements (Phase 2) for the adopted option of the bridge and its approaches

- (i) In the following section, a "Preliminary Design" is the design that is developed in sufficient detail such that it is suitable for inclusion in a design-build tender to be carried out under

international public procurement procedures; such that tenderers for the works are able to accurately estimate the cost of the D&B of the bridge; and such that individual tenders can be directly compared with each other in a transparent way. This will require definition of all the essential elements of the project, including general bridge layout, span length, pier position, general dimensions, materials quality etc. The engineering layout of the bridge will be clearly defined, as will the required design standards and material specifications to be adopted, besides the technical/structural calculations and other technical requirements and parameters necessary for stability and sustainability of this major 100 years investment.

- (ii) Upon the approval of recommendations of the Options and Feasibility Study and conceptual design, plan, manage, supervise and interpret the factual results from further geotechnical and seismic field investigations as identified during the preparation of the Options and Feasibility Study, necessary for solid and safe design of this major structure and agreed with the PIURR. Interpret the results from a detailed geotechnical investigation using international standards and MoT's guidelines. These surveys are for the purpose of preliminary engineering design as well as to provide the necessary inputs for the eventual Design-Build tender documents. The scope of the geotechnical investigations must fulfill the requirements of the Client and provide sufficient factual information to allow tenderers for the works contract to provide accurate prices for the detailed design and construction of the bridge. Based on the results of the desk study and any preliminary investigations carried out during Phase 1 the Consultant shall design a detailed geotechnical and geophysical investigation sufficient to provide factual information for both the Preliminary Design and Design-Build Tender Documents, administer and supervise the necessary fieldwork, review and endorse the results of the ground investigation and laboratory test results, and prepare an interpretive report on ground conditions at the site. The direct costs of the detailed geotechnical and geophysical investigation in Phase 2 will be paid through a separate contract concluded between the Client and the ground investigation contractor. The Consultant will prepare all procurement documentation and provide the necessary level of support for the management and technical supervision of this contract.
- (iii) Prepare Preliminary Designs and Employer's Requirements using agreed standards, specifications and design methodologies, and sound engineering practices, giving due regard to environmental aspects as indicated in the ESIA Addendum report. The MoT will engage a consultant to prepare an ESIA Addendum for the project, who will be also involved during the preparation of the Phase 1 Options and Feasibility Study. The GoT and AIIB "Environmental and Social Framework" policies should be followed. As part of the design process, the Consultant shall assess the potential impacts of long-term climate change and incorporate climate resilient elements of the bridge and its approaches in the design.
- (iv) Study the hydrological regime in detail, based on an analysis of rainfall and flood records, supplemented by field investigations including the planned inundation schedule for Rogun HPP reservoir. Use the findings to establish the adequacy and economics of bridge and road embankment levels, culverts, side drainage, and design of the roadbed and slope protection for the approaches including taking account the potential side flows and dam level drawdowns near the bridge site, especially in the spring snow-melt period, as well as the potential for hydrodynamic forces in the reservoir resulting from seismic events.
- (v) Assess any need for cross drainage on the approach lengths.
- (vi) Review the pavement structure both on the approaches (compared to Package 2 design), and on the Long Bridge. Design life for new pavements shall be in accordance with Client requirements, as used on Package 2, including allowing for maintenance overlays.
- (vii) Prepare preliminary engineering drawings and design and Employer's Requirements for road and bridge works, incorporating output and performance-based criteria for acceptance and payment of the finished works against defined milestones. Drawings shall be to the scales of international standards for the Long Bridge structure and approaches, as well as other requirements of the government, to be agreed with the MoT / PIURR. Given the fitness for purpose requirements under Design-Build forms of contract and the emphasis on tests on completion at each milestone as well as upon overall completion, the **Employer's Requirements should identify suitable performance indicators for the**

works. The defined payment schedule will be linked to fulfilment of the designed performance requirements.

- (viii) Liaise with the State Review Committee throughout the preparation of the Preliminary Design and obtain any necessary approvals. Any fees payable to the State Review Committee shall be paid by the Client using the proceeds of the grant.
- (ix) Prepare landscape drawings and Employer's Requirements for the project area with relevant plans, which will be aesthetically/ architecturally pleasing and compatible with the surrounding environment. This should include plans and Employer's Requirements for picnic/recreation area on at least one side of the bridge, in accordance with the Client's requirements as well as for the emergency situations.
- (x) Prepare Preliminary Designs and Employer's Requirements for street lighting for the project area, along with a Preliminary Design and Employer's Requirements for decorative lighting for the main bridge structure and approaches.
- (xi) Review and finalize the design-build contract package including output and performance-based acceptance criteria and a payment model for completed milestones, together with the measurement and testing requirements and associated equipment, in consultation with the Client and other relevant stakeholders.
- (xii) Prepare a project implementation schedule for Package 3 showing planned physical and financial progress. The schedule should be prepared based on a review of recent bridge projects in the area, and the schedule should also reflect seasonal climatic impacts to the works. The implementation schedule will be based on the designed aspects, required professional and other work force, and estimated cash income/expenditure requirements.
- (xiii) Prepare Price Schedules based on specified performance milestones, and engineering estimates of the civil works, and the cost of relocating existing utility services, if any. The cost estimates should be broken down into foreign (direct and indirect), local currency, and tax and duty components. Prepare an overall Price Schedule/Bill of Quantities (BoQ) with cost estimates. The Price Schedule/BoQ will include the required E&S aspects coming from the Addendum to EIA and SIA and also include detailed Occupational Health and Safety (OHS) requirements during the construction and maintenance works. Prepare for the recommended option the output and performance-based indicators for finished milestones eligible for prorated payment out of the total lump sum cost of the project. This includes preparation of the logical and implementable milestones of the bridge completion. The output and performance-based indicators for finished milestones of the bridge approaches eligible for prorated payments out of the total lump sum cost of the project will be also prepared.
- (xiv) Prepare detailed Employer's Requirements incorporating output and performance-based criteria and associated engineering technical specifications for the design and each work item, considering relevant specifications being used in the country or elsewhere for similar works.
- (xv) Prepare an overall implementation schedule and cost estimates for each project component, including the preconstruction activities, such as land acquisition and resettlement (if any), environment clearance, procurement, construction, construction supervision, and monitoring and evaluation activities.
- (xvi) Prepare and present types and size of guarantees for performance during the design and construction phases, including penalties for violating the conditions of contract, timetables and/or failure to meet performance indicators.
- (xvii) Review and update the Feasibility Study for the preferred option, including an updated cost benefit and sensitivity analysis, conforming the findings of the Phase 1 - Options Study.
- (xviii) Prepare a **Project Risks Matrix**, including who is best fit to solve and mitigate the risk, parties involved, mitigation measures and other general information related to risk, their appropriateness and sharing.
- (xix) Propose the outline of the Contract 3 Procurement Package allowing for (a) the location of the project, size of contract, and any other project-specific factors, (b) the capacity and

experience of Client in managing similar contracts, (c) the capacity of domestic contracting and manufacturing industries. AIIB's "Procurement Policy" and "Interim Operational Directive on Procurement Instructions for Recipients" will be followed.

- (xx) Prepare the Preliminary Design report to present the analyses, findings, and recommendations.
- (xxi) Throughout the preparation of the Preliminary Design, the Consultant shall liaise and cooperate with the designated state expertise of the project.

2.4.4. Task 4. Road Safety Audit (Phase 1 and Phase 2)

- (i) Review the Road Safety Audit conducted by ADB's Due Diligence report and confer with the AIIB E&S specialists over relevant findings during the Feasibility Study and conceptual design options phase, and the Preliminary Design phase.
- (ii) Conduct appropriate road safety audits during the conceptual design options phase and the Preliminary Design phase, addressing construction and operation, in accordance with procedures acceptable to the Client and to international standards and requirements. The road safety audit should cover all items in checklists and include any other necessary and relevant aspects.
- (iii) Ensure that all road safety measures have been incorporated in the tender documents for the Design-Build Works Contract.
- (iv) Prepare the **Road Safety Audit Report** to present the analyses, findings, and recommendations, to be included in the Preliminary Design Report.

2.4.5. Task 5. Economic and Financial Assessment – (Phase 1 and Phase 2)

- (i) Activities under this task will take place over both Phase 1 and Phase 2. In Phase 1, the economic and financial analyses for the conceptual design options will be incorporated into the Options and Feasibility Study. In Phase 2, a final Feasibility Study for the preferred option developed in the Phase 1 Options Study will be confirmed and presented.
- (ii) Review the economic analysis in the ADB Due Diligence Report and update this for the Options and Feasibility Study and Preliminary Design phases of the Long Bridge using the appropriate models for the project. The economic analysis should follow Multilateral Development Banks' standard guideline for the economic analysis of investment projects.
- (iii) Review, identify and analyze economic benefits and costs of options for the Long Bridge project and quantify economic benefits and costs to the extent possible. Economic benefits to be quantified shall include but not limited to time savings, VOC savings, road safety (reduction in accidents and fatalities/injuries), and environmental benefits. Other economic benefits should be further identified and quantified by the Consultant. All economic costs shall be included including but not limited to capital costs, O&M costs, environmental and mitigation measures.
- (iv) Conduct cost-benefit analysis to calculate the economic internal rate of return (EIRR) and Net Present Value (NPV).
- (v) Undertake sensitivity analysis on the risk factor basis for various scenarios such as changes to the capacity costs, operation and maintenance costs, traffic volume, and construction period. Identify key risks to economic returns and provide recommendations to mitigate such risks.
- (vi) Develop a **monitoring and evaluation framework** in accordance with standard MDBs' practices. Appropriate indicators with baseline data and targets should be included in the framework.
- (vii) Prepare relevant chapters of the Options and Feasibility Study Report (Phase 1), and of the Preliminary Design Report (Phase 2).

2.4.6. Task 6. Environmental, Social, and Gender (Phase 1 and Phase 2)

- (i) Co-ordinate with the AIIB E&S specialist throughout the Options and Feasibility Study, Preliminary Design and preparation of Tender Documents, taking into account the findings arising in the preparation of the options and designs for the Long Bridge and its approaches.
- (ii) Prepare base line indicators enabling monitoring of the implementation and expected results.
- (iii) Include the Package 3 E&S Management Plan (ESMP), to be prepared by the E&S consultant in co-ordination with the Consultant, in the works procurement documentation.
- (iv) Co-ordination is to be conducted through the MoT / PIURR.
- (v) Prepare relevant chapters of the Options and Feasibility Study Report, the Preliminary Design Report and the Tender Documents for the design-build works contract.

2.4.7. Task 7. Tender Documents (Phase 2)

- (i) Prepare the draft project delivery strategy (**PDS**) and the procurement plan (**PP**).
- (ii) Prepare full Tender Documents for Package 3 based on the FIDIC Plant and Design Build Contract 2nd Edition (2017 Yellow Book), suitable for public international procurement, using a design-build approach incorporating well-defined output and performance criteria, milestones and an associated payment model, in accordance with AIIB procurement requirements.
- (iii) Prepare detailed Employer's Requirements, drawings, specifications and other technical and administrative documentation such that there is a complete tender package suitable for open international tendering using a design-build approach under AIIB procurement rules.

2.4.8. Task 8. Capacity Building (Phase 1 and 2)

- (i) Conduct workshops for the client on the main outputs of the projects in Phases 1 and 2, to present and explain the results from the assignment.
- (ii) Identify, organize, manage and deliver suitable overseas capacity building visits for staff of the Client (including the Ministry of Finance, Ministry of Transport and the PIURR), focused on orientation with the design concepts of infrastructure, planning and formulation of projects, maintenance activities, intelligent public transport systems, road safety issues etc. All such trips shall be agreed with the Client in advance. Direct costs for the travel, accommodation and subsistence of the Client's staff shall not be the responsibility of the Consultant. All other costs associated with the visits, including any travel, accommodation and subsistence for the Consultant's staff, shall be included in the Consultant's lump sum remuneration.

3. SCHEDULE

The assignment will be carried out over a period of nine (9) months from the date of commencement and shall be completed by September 2022. A period of 4 months is allocated to Phase 1 and a period of 5 months to Phase 2.

4. STAFFING

The Consultant shall propose staffing arrangements required to complete the assignment and to meet the output and reporting requirements of the project.

The Consultant shall be responsible for the provision of suitably qualified engineers, technicians and other professional staff with the proven experience in similar assignments in comparable climatic and geological conditions.

The Consultant's expert team is expected to include the following Key Experts. CVs will be evaluated in the respective technical proposals:

- KE1 - Team Leader
- KE2 - Senior Bridge Design Engineer
- KE3 - Senior Geotechnical Engineer
- KE4 - Senior Highway Design Engineer
- KE5 - Transport Economist
- KE6 - Procurement and Contract Preparation Expert
- KE7- OHS Roadworks Safety Expert

The estimated minimum input for Key Experts is 48 months.

The Consultant's expert team is also expected to include Non-Key Experts as follows:

- NKE1 - Deputy Team Leader/Bridge Engineer
- NKE2 - Bridge/Structural Design Engineer
- NKE3 - Highway Engineer
- NKE4 - Geotechnical/Foundation Engineer
- NKE5 - Landscape Architect
- NKE6 - Road Safety Specialist
- NKE7 - Construction Cost specialist
- NKE8 - Hydrologist
- NKE9 - Environmental, Social and Gender Coordinator
- NKE10 - Senior CAD Engineer
- NKE11 - Structures CAD Engineer
- NKE12 - Highways CAD Engineer
- NKE13 - Street Light Engineer
- NKE14 - Other Non-Key Experts (including for surveys and fieldwork included within the lump sum remuneration).

The estimated minimum input for Key Experts is 81 months.

In addition to the above inputs, the Consultant shall provide the necessary administrative, secretarial, translation and interpretation staff to fully support the project.

The above staffing levels are considered to be the minimum necessary. The Consultant shall supplement the team with additional staff as necessary to meet their obligations under the assignment, including for fieldwork included with the lump sum remuneration. The Consultant shall provide a clear allocation and description of inputs as an integral part of their Technical Proposal.

The table below sets out the minimum qualifications of the Key and Non-Key Experts to be assigned to the project.

Table 1: Required Experts

No.	Title	Relevant Experience and Qualification
Key Experts		
KE1	Team Leader	<ul style="list-style-type: none"> • BSc/BEng in civil or structural engineering required • Post graduate degree in relevant subject preferred • Minimum 20 years of relevant professional experiences • Minimum 15 years of experience in the planning, preparation and design of major highway and bridge projects • Minimum 5 years of experience as Team Leader or equivalent on projects of similar nature and scope. • Experienced in the management of Multinational Development Bank (MDB) funded projects. • Fluent in the English language
KE2	Senior Bridge Design Engineer	<ul style="list-style-type: none"> • BSc/BEng in civil or structural engineering required • Post graduate degree in relevant subject preferred

		<ul style="list-style-type: none"> • Minimum of 15 years of relevant professional experience • Minimum of 10 years of experience in major bridge design • Working knowledge of the English language
KE3	Senior Geotechnical Engineer	<ul style="list-style-type: none"> • BSc/BEng in civil engineering or geology required • Post graduate degree in relevant subject preferred • Minimum of 15 years of relevant professional experience • Minimum of 10 years of experience in foundation design and geotechnical engineering • Working knowledge of the English language
KE4	Senior Highway Design Engineer	<ul style="list-style-type: none"> • BSc/BEng in civil engineering required • Post graduate degree in relevant subject preferred • Minimum of 15 years of relevant professional experience • Minimum of 10 years of experience in highway design • Working knowledge of the English language
KE5	Transport Economist	<ul style="list-style-type: none"> • BSc/BEng in engineering or economics required • Post-graduate degree in relevant subject preferred • Minimum of 15 years of relevant professional experience • Minimum of 10 years of experience in economic and financial analysis of transport/infrastructure projects, including specific experience of the economic and financial analysis of major bridge projects • Fluent in the English language
KE6	Procurement and Contract Preparation Expert	<ul style="list-style-type: none"> • BSc/BEng in civil engineering required • Post graduate degree in relevant subject preferred • Minimum of 15 years of relevant professional experience • Minimum of 10 years of experience in the procurement and preparation of construction contracts, including specific experience in the preparation of Design-Build Contracts for MDB financed projects. • Fluent in the English language
KE7	OHS and Road Safety Expert	<ul style="list-style-type: none"> • Certificate issued by recognized OHS qualification, such as NEBOSH / IOSH / OSHA or other regionally recognized qualification or degree in OHS, public health or related field. • Minimum 10 years of relevant professional experience • Minimum 5 years of experience as an OHS practitioner and preparation of construction contracts • Experience in OHS of bridge project preferred • Fluent in the English language
Non-Key Experts		
NKE1	Deputy Team Leader / Bridge Engineer	<ul style="list-style-type: none"> • BSc/BEng in civil or structural engineering required • Post graduate degree in relevant subject preferred • Minimum of 15 years of relevant professional experience • Minimum of 10 years of experience in the planning, preparation and design of highway and bridge projects • Fluent in the Russian and English languages
NKE2	Bridge / Structural Design Engineer	<ul style="list-style-type: none"> • BSc/BEng in civil or structural engineering required • Minimum of 10 years of relevant professional experience • Minimum of 8 years of experience in the design of bridges and structures
NKE3	Highway Engineer	<ul style="list-style-type: none"> • BSc/BEng in civil engineering required • Minimum of 10 years of relevant professional experience • Minimum of 8 years of experience in highway design
NKE4	Geotechnical Engineer	<ul style="list-style-type: none"> • BSc/BEng in civil engineering or geology required • Minimum of 10 years of relevant professional experience

		<ul style="list-style-type: none"> • Minimum of 8 years of experience in foundation design and geotechnical engineering
NKE5	Landscape Architect	<ul style="list-style-type: none"> • BSc in a relevant field • Minimum of 10 years of relevant professional experience • Minimum of 8 years of experience in landscaping for infrastructure projects
NKE6	Road Safety Specialist	<ul style="list-style-type: none"> • BSc/BEng in civil engineering required • Minimum of 10 years of relevant professional experience • Minimum of 8 years of experience in road safety design/audit
NKE7	Construction Cost Specialist	<ul style="list-style-type: none"> • BSc in a relevant field • Minimum of 10 years of relevant professional experience • Minimum of 8 years of experience in construction cost estimation
NKE8	Hydrologist	<ul style="list-style-type: none"> • BSc/BEng in civil engineering required • Minimum of 10 years of relevant professional experience • Minimum of 8 years of experience in hydrologic/hydraulic design
NKE9	Environmental, Social and Gender Coordinator	<ul style="list-style-type: none"> • BSc in a relevant field • Minimum of 10 years of relevant professional experience • Minimum of 8 years of experience in environment and social impact assessment for IFI financed bridge/road/infrastructure projects.
NKE10	Senior CAD Engineer	<ul style="list-style-type: none"> • BSc/BEng in civil engineering required • Minimum of 10 years of relevant professional experience • Minimum of 8 years of experience in preparing major bridge structure designs, geometric road designs and engineering drawings including plans, profiles, cross sections • Minimum of at least 5 years of experience in the management of CAD engineering teams
NKE 11	Structures CAD Engineer	<ul style="list-style-type: none"> • BSc/BEng in civil engineering required • Minimum of 5 years of experience in preparing bridge structure designs and engineering drawings including plans, profiles, cross sections
NKE 12	Highways CAD Engineer	<ul style="list-style-type: none"> • BSc/BEng in civil engineering required • Minimum of 5 years of experience in preparing geometric highway designs and engineering drawings including plans, profiles, cross sections
NKE13	Street Lighting Engineer	<ul style="list-style-type: none"> • BSc/BEng in electrical engineering required • Minimum of 10 years of relevant professional experience • Minimum of 8 years of experience in preparing street lighting and public structure designs
NKE14	Other Non-Key Experts	<ul style="list-style-type: none"> • BSc/BEng in relevant field • Relevant professional experience as required • Specific professional experience as required

The Consultant shall propose a team structure and inputs per experts based on their experience in implementation of similar assignments and include a detailed monthly staffing plan as well as the task designation, as part of their methodology.

CVs for non-key experts should not be submitted in the tender but the tenderer will have to demonstrate in their offer that they have access to experts with the required profiles.

It is expected that the Consultant will engage a sufficient number of local experts who are familiar with the local working environment.

5. CONTRACT ARRANGEMENTS

The Consultant will be responsible for providing an office in Dushanbe as required by his planning, including technical and administrative support staff, transportation for carrying out the assignment, accommodation in Dushanbe as required, and international flights to / from Dushanbe. The cost of these items will be included in the Consultant's lump sum remuneration.

No equipment is to be purchased on behalf of the Client as part of the Contract or transferred to the Client at the end of the Contract. The costs of any equipment required by the Consultant shall be included in their lump sum remuneration.

The direct cost of the detailed physical geotechnical and geophysical studies to be carried out in Phase 2, including laboratory testing and preparation of factual reports on ground conditions, will be paid through a separate contract between the Client and the ground investigation company. The costs of all other surveys and fieldwork shall be included within the Consultant's lump sum remuneration.

The direct travel, accommodation and subsistence costs for the Client's personnel associated with the Overseas Exposure Visits shall not be the responsibility of the Consultant. All other costs associated with the visits, including any travel, accommodation and subsistence for the Consultant's staff, shall be included in the Consultant's lump sum remuneration.

6. REPORTING

The Consultant will carry out activities according to the following time schedule and submit reports about the activities and outputs. Adjustments to the outlines may be proposed by the Consultant according to the field situation and will be subject to the Client's approval.

6.1. Reporting Considerations

The Consultant will submit all reports / deliverables in English and Russian languages in both hard and electronic copy along with all raw data to the MoT / PIURR for their review and comment.

The Preliminary Design will adhere, at minimum, to the requirements of Tajikistan, including completion of State Expertise review. Any fees payable to the review committee for the State Expertise review shall be paid by the Client using the proceeds of the grant.

6.2. Reporting Requirements

Report	Description/Technical Accomplishments	Submission Deadline (months after commencement)
1. Inception Report (6 hard copies in the English and Russian languages along with electronic copy and raw data)	Description of proposed methodology, works and staffing schedules; comments on the ToR for this contract / package and comment and observation on issues which may have technical or financial implications or which may affect the progress of the works; proposals for field surveys; preliminary proposals for capacity building activities.	1.0
2. Draft Bridge Options and Feasibility Study Report (3 hard copies in the English and Russian languages)	Options study for at least three main bridge alternatives and a series of sub-options for each, incorporating the results of fieldwork, performance indicators and logical milestones for completion, project programmes, technical solutions, cost estimates, environmental and social factors.	3.00

Report	Description/Technical Accomplishments	Submission Deadline (months after commencement)
<p>along with electronic copy and raw data)</p>	<p>Traffic analyses and forecasts.</p> <p>Schedule of design criteria, standards and design methodologies to be applied.</p> <p>Materials survey.</p> <p>Preliminary Road Safety Audit Report</p> <p>Feasibility Studies for the bridge options, incorporating economic and financial analyses, cost benefit analyses, sensitivity analyses, a monitoring and evaluation framework.</p> <p>Options Study decision matrix incorporating technical, financial, economic, environmental, social and OHS factors.</p> <p>Options and Feasibility Study Report, including recommendations on the preferred bridge option, incorporating well defined output and performance criteria and an associated milestone payment model.</p> <p>Technical and administrative documentation for procurement of the detailed ground investigation surveys to be carried out in Phase 2.</p>	
<p>3.Final Bridge Options and Feasibility Study Report (6 hard copies in the English and Russian languages along with electronic copy and raw data)</p>	<p>Revised Bridge Options and Feasibility Study Report and other documentation incorporating the comments received from the Client.</p>	<p>4.00 (or 3 weeks after receiving comments, whichever is later)</p>
<p>4.Draft Preliminary Design Report, Employer's Requirements and Tender Documents (3 hard copies in the English and Russian languages along with electronic copy and raw data)</p>	<p>Factual and interpretive reports on geotechnical and seismic conditions.</p> <p>Preliminary Design for the selected bridge option and approaches, landscaping, lighting,</p> <p>Final Feasibility Study for the selected bridge option.</p> <p>Project implementation schedule and overall cost estimate.</p>	<p>8.00</p>

Report	Description/Technical Accomplishments	Submission Deadline (months after commencement)
	<p>Package 3 Environmental and Social Management Plan (ESMP)</p> <p>Price schedules.</p> <p>Project Risk Matrix.</p> <p>Road Safety Audit Report</p> <p>Project Delivery Strategy (PDS) and Procurement Plan (PP).</p> <p>Employer's Requirements, drawings and complete technical documentation for the construction of the bridge, approaches and ancillary works, incorporating output and performance based criteria.</p> <p>Complete package of tender documentation for the procurement of the design and build works contract, based on the FIDIC Conditions of Contract for Design Build, 2nd Edition (2017), incorporating output and performance based criteria for acceptance of the finished works against defined milestones.</p> <p>Preliminary Design Report, presenting analysis, findings and recommendations.</p>	
<p>5. Final Preliminary Design Report Employer's Requirements and Tender Documents (6 hard copies in the English and Russian languages along with electronic copy and raw data)</p>	<p>Revised Preliminary Design Report, Employer's Requirements, Tender Documents and other documentation incorporating the comments received from the Client.</p>	<p>9.00</p>

In addition to the reports, the Consultant should also organize the following workshops and training for the Client.

Workshop	Objective	Timing
<p>1. Inception</p>	<p>Description of proposed methodology, works and staffing schedules; comments on the TOR for this contract/package and comment and observation on issues which may have</p>	<p>End of month 1</p>

Workshop	Objective	Timing
	technical or financial implications or which may affect the progress of the works; proposals for field surveys.	
2. Draft Options and Feasibility Study	Description of activities, documentation of data analyses, and recommendations developed under the terms of reference, co-ordination over stake-holder assessment (social and environmental data); assessment of the effectiveness of the activities undertaken.	End of month 3
3. Interim Preliminary Design Progress	Progress of activities	End of month 6
4. Preliminary Design, Employer's Requirements and Tender Documents	Description of activities, documentation of data analyses, and recommendations developed under the terms of reference; stakeholder assessment (social and environments data); assessment of the effectiveness of the activities undertaken and conclusion. (In conjunction with AIIB E&S consultant) Description of activities, documentation of all data, analyses, and design developed under the task; Land Acquisition Documents, Tender Documents, including drawings and Price Schedules; Procurement Plan; and any other necessary documents. (In conjunction with AIIB E&S consultant)	End of month 8
5. Overseas Exposure Visit	Orientation with the design concepts of infrastructure, planning and formulation of projects, maintenance activities, intelligent public transport systems, road safety issues etc. (For officials from MoF and MoT, PIURR).	Any convenient time within the contract period

7. PAYMENT SCHEDULE

The payment of the remuneration elements of the lump-sum fixed-price contract will be as follows:

Payment No.	Payment % of Contract Price	Payment Description
1	15%	Submission of Inception Report duly accepted by the Client
2	15%	Submission of Draft Bridge Options and Feasibility Study Report
3	20%	submission of Final Bridge Options and Feasibility Study Report duly accepted by the Client
4	20%	Submission of Draft Preliminary Design Report, Employer's Requirements and Tender Documents including all designs, specifications, typical drawings, draft BOQ, performance and payment aspects.
5	30%	Submission of Final Preliminary Design Report, Employer's Requirements and Tender Documents duly accepted by the Client.

8. CLIENT SUPPORT TO BE PROVIDED TO THE CONSULTANT

The Client will provide a senior member of staff to oversee, monitor and co-ordinate all activities under the assignment. This will include ensuring that the Consultant will receive the necessary co-operation from all stakeholders.

The Client shall assist the Consultant in obtaining entry visas and working permits (if needed) although the cost shall be borne by the Consultant as part of their lump sum remuneration.

The Client shall make available to the Consultant all information, agreements, documents etc. pertaining to the Consultant's mandate both in hard copy (where available) and in electronic copy (where available). All documents so provided are and will remain the property of the Client. The Consultant may not dispose of or otherwise make use of such documents without the prior written approval of the Client.

The Consultant shall be responsible for the following costs which shall be included in their lump sum remuneration:

- Renting and maintaining a project office in Dushanbe;
- Arranging its own living accommodation;
- Temporary accommodation upon arrival in Tajikistan;
- Per diems and general living expenses;
- Arranging for local transportation, including to and from MoT's premises and the project site;
- Duties and taxes payable under Tajikistan law;
- Computer, printer, fax, telephone and other office equipment;
- Communications expenses;
- Translations (including written ones) related to the project;
- Insurances
- Any other miscellaneous expenditures related to the performance of the assignment by the Consultant, including all necessary fieldwork and surveys with the exception of the detailed geotechnical and geophysical surveys to be carried out in Phase 2.