

## REQUEST FOR EXPRESSIONS OF INTEREST CONSULTING SERVICES

Selection #: RG-T3026-P002 Case study from Asia on Operation and Risk Management

Selection Method: Simplified Competitive Selection (SCS)

Country: Regional

Sector: INE/TSP

Funding – TC #: ATN/KR-16649-RG

Project #: RG-T3026

TC name: Study for Tunnel Operation and Risk Management

Description of Services: The goal of this Consultancy is to conduct case studies and recommendations on Operation and Risk Management from experiences of Asia. The case studies will analyze the experience on mega tunnel operations of at least three Asian countries such as Inje (10km, in Korea), Zhongnanshan (18km, in China), Kanetsu (11km, in Japan). The main goal of this project is to get information and experiences from each case and recommendations on future tunnel projects in LAC to support LAC countries with operational and technical knowledge on Tunnel Operation & Risk Management during operational stage of Tunnel projects.

Link to TC document: <https://www.iadb.org/en/project/RG-T3026>

The Inter-American Development Bank (IDB) is executing the above-mentioned operation. For this operation, the IDB intends to contract consulting services described in this Request for Expressions of Interest. Expressions of interest must be delivered using the IDB Portal for Bank Executed Operations (<http://beo-procurement.iadb.org/home>) by: July 18th 5:00 P.M. (Washington D.C. Time).

The consulting services (“the Services”) include

- (i) General information of the tunnel and procurement information as below, but not limited to;
  - a. Summary of Tunnel: length, construction cost, construction period, construction method, cross section of tunnel, composition of lanes, features including vertical and horizontal slope, pavement method, clearance, traffic volume forecast and real, and other information needs for operation & risk management
  - b. Procurement: Procurement procedure and duration, Evaluation method, Special conditions on Cost overrun and Construction delay
- (ii) Technical feature of facilities for routine operation & risk management, and organizational structure for operation and maintenance as below, but not limited to;
  - a. Facilities for routine operation & risk Management
    - Facility lists: workers path, escape gate(path), ventilation, fire extinguish, communication, imagery sensing, snow melting system before & after tunnel, traffic control facility, traffic control room, and other information needs for operation & risk management
    - Features: installation space, capacity or specification, size, and other information needs for operation & risk management
  - b. Organizational structure for operation & maintenance
    - Organizational structure chart, number of staffs, role of each staff,
    - Facility list for Operation and Maintenance such as vehicles

- Annual budget for Operation and Maintenance
- c. Performance criteria of operation & maintenance
- Performance criteria of routine maintenance including pavement, light, ventilation, signs, etc.
  - Tunnel availability during the year except emergency.
- (iii) Roles and responsibilities of agencies in case of emergency
- Roles and responsibilities of each agency in case of emergency among operation agency, police, fire fighter, hospital, etc.
  - Emergency procedures in cases such of traffic accident and/or fire accidents, etc.
- (iv) Recommendation on below components for Agua Negra Tunnel.
- On Facilities for Risk Management
  - On Organizational structure for Operation & Maintenance
  - On Role & Responsibility of each agency in case of Emergency

The estimated timeframe for completion is 12 months.

Eligible consulting firms will be selected in accordance with the procedures set out in the Inter-American Development Bank: [Policy for the Selection and Contracting of Consulting firms for Bank-executed Operational Work](#) - GN-2765-1. All eligible consulting firms, as defined in the Policy may express an interest. If the Consulting Firm is presented in a Consortium, it will designate one of them as a representative, and the latter will be responsible for the communications, the registration in the portal and for submitting the corresponding documents.

The IDB now invites eligible consulting firms to indicate their interest in providing the services described below in the [draft summary](#) of the intended Terms of Reference for the assignment. Interested consulting firms must provide information establishing that they are qualified to perform the Services (brochures, description of similar assignments, experience in similar conditions, availability of appropriate skills among staff, etc.). Eligible consulting firms may associate in a form of a Joint Venture or a sub-consultancy agreement to enhance their qualifications. Such association or Joint Venture shall appoint one of the firms as the representative.

a) Publications, seminars and workshops financed by the KPC should clearly indicate that activities have received funding from the government of Korea. b) The Korean national flag beside the IDB logo should be used to recognize the contribution of KPC in the process of project implementation. The logo should be inserted into all printing materials, presentations, banners and any other materials financed by the KPC

Interested eligible consulting firms may obtain further information during office hours, 09:00 AM to 05:00 PM, (Washington D.C. Time) by sending an email to: Juan Manuel Leano ([juanml@iadb.org](mailto:juanml@iadb.org))

Inter-American Development Bank

Division: INE/TSP

Attn: Juan Manuel Leano ([juanml@iadb.org](mailto:juanml@iadb.org))

Calle Esmeralda 130 pisos 19 y 20 pisos 19 y 20, Buenos Aires, Argentina

Tel: (5411) 4320-1841

Fax: (5411) 4320-1830  
E-mail: [juanml@iadb.org](mailto:juanml@iadb.org)  
Web site: [www.iadb.org](http://www.iadb.org)

## Draft Summary of Terms of Reference

### TERMS OF REFERENCE

#### CASE STUDY FROM ASIA ON OPERATION AND RISK MANAGEMENT (RG-T3026)

##### I. BACKGROUND

- 1.1 Transportation is one of the essential pillars for economic development of every country in the region. Currently, megaprojects is one the main strategic areas in TSP together with ITS, Urban transport, Road safety and Logistics. There are mainly two types of projects in megaprojects: Mega Bridge projects and Mega Tunnel projects.
- 1.2 Latin-American (LA) countries have numerous mountain chains. This orography constrains transport among countries in the region. As an example, just between Chile and Argentina there are 26 level crossings through the Andes. This slows down the transport and impedes permanent communication between countries. As a result, production rates for LA countries decrease, which has a direct effect on poverty levels.
- 1.3 Mega tunnels have been an effective solution for this kind of context in which orography limit transport services and compromises the quality of infrastructure. These conditions have pushed Latin America to develop a strong interest in mega tunnels to be built in the coming years: some countries in the region have already started to define this approach to solve infrastructure problems (eg. Agua Negra Tunnel). So, this TC pursues to prepare and support coming Megaprojects in the region such as "Agua Negra International Project" (RG-L1074).
- 1.4 There are many essential factors in Megaprojects including cost overrun, future traffic volume, public benefit, etc. There have been many studies performed and currently performing to control the cost overrun, forecast traffic volume more accurately, calculate the benefit without missing, etc. However, additionally, there are some other operational and risk management factors that we must consider during the post preparation and construction stage. These factors need actual experience not only on routine operation but also on disaster management, which is sometimes not prepared in depth.

##### II. OBJECTIVE

- 2.1 The main objective of this project is to support LAC countries with operational and technical knowledge on Tunnel Operation & Risk Management during operational stage of Tunnel projects. In addition, this study will include the information that all technical staff and policy makers should consider before the final setting of the technical design and financial structure of the projects.

### III. SCOPE AND ACTIVITIES

3.1 This project will perform case studies and recommendations on Operation and Risk Management from experiences of **Asia**. The case studies will analyze the experience on mega tunnel operations of **at least three Asian countries** such as **Inje (10km, in Korea), Zhongnanshan (18km, in China), Kanetsu (11km, in Japan)**. The main goal of this project is to get information and experiences from each case and recommendations on future tunnel projects in LAC. This project includes four components: (i) General information including technical feature of the tunnel and procurement information that will be referred to future tunnel projects in LAC; (ii) Facilities for risk management such as escape gate, ventilation, fire extinguish systems and organizational structure for operation and maintenance including staff, facilities and budget; (iii) Roles and responsibilities of each agency among operation agency, police, fire fighter, hospital in case of emergency; and (iv) Recommendation on Risk Management for Agua Negra Tunnel. The details are as follows:

- (i) General information of the tunnel and procurement information as below, but not limited to;
  - a. Summary of Tunnel: length, construction cost, construction period, construction method, cross section of tunnel, composition of lanes, features including vertical and horizontal slope, pavement method, clearance, traffic volume forecast and real, and other information needs for operation & risk management
  - b. Procurement: Procurement procedure and duration, Evaluation method, Special conditions on Cost overrun and Construction delay
  
- (ii) Technical feature of facilities for routine operation & risk management, and organizational structure for operation and maintenance as below, but not limited to;
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    - Annual budget for Operation and Maintenance
  - c. Performance criteria of operation & maintenance
    - Performance criteria of routine maintenance including pavement, light, ventilation, signs, etc.
    - Tunnel availability during the year except emergency.
  
- (iii) Roles and responsibilities of agencies in case of emergency

- Roles and responsibilities of each agency in case of emergency among operation agency, police, fire fighter, hospital, etc.
- Emergency procedures in cases such of traffic accident and/or fire accidents, etc.

(iv) Recommendation on below components for Agua Negra Tunnel.

- On Facilities for Risk Management
- On Organizational structure for Operation & Maintenance
- On Role & Responsibility of each agency in case of Emergency

3.2 Before the case study of 3 European countries' mega tunnel, the consulting firm should report tunnel lists, at least 10 mega tunnels in Europe, through literature review. Then finalize the 3 mega tunnels from different countries.

3.3 The consulting firm will make a presentation on the final report at IDB headquarters in USA and EBITAN in Chile and Argentina.

3.4 To undertake the activities described above, the consulting firm will interact with the project team at the Bank, and with government officials who may be engaged in this project.

#### IV. DURATION

4.1 The whole duration of this project will be 12 months.

#### V. DELIVERABLES AND PAYMENTS

5.1 The deliverables expected from the consultancy are summarized below:

Deliverable	Description
Working plan and methodological approach	3.1 & 3.2
Final report	3.1
Presentation at IDB Headquarters and EBITAN	3.3

5.2 The Consultant will be remunerated according to the following schedule of product deliveries.

- 30% at the delivery of a working plan and methodological approach
- 40% at the delivery of the draft report
- 30% at the approval of the final report

5.3 The report should be English and Spanish.

## **VII. COORDINATION**

6.1 This consultancy will be coordinated and supervised by the team leader, Leano, Juan Manuel (INE/TSP), of the operation RG-T3026.