TERMS OF REFERENCE FOR THE PRE-FEASIBILITY STUDY FOR A PUBLIC-PRIVATE PARTNERSHIP FOR THE CONCESSION OF THE HIGHWAY PRAIA – TARRAFAL, SANTIAGO ISLAND

1. INTRODUCTION

The *Estradas de Cabo Verde (Roads of Cabo Verde)*, E.P.E, within the scope of its study and planning mission for the national road network under its jurisdiction, launches the present procedure for the Public Tender to choose a Consultant with a view to provide pre-feasibility level analysis regarding the potential and possible options for a Public-Private Partnership (PPP) for the Concession of the HIGHWAY PRAIA – TARRAFAL, Santiago Island.

The analysis (technical, economic, financial) aims at providing the GoCV with elements that allow to take an informed decision regarding the viability, fiscal impact and elaboration of a PPP for a highway connecting Praia and Tarrafal, based on an early-stage identification and quantification of the concessionaire's potential sources of revenues, costs and risks, a "back-of-the-envelop" multicriteria cost-benefit analysis and a sizing of the potential fiscal impact for the GoCV. This analysis is really meant to provide initial orders of magnitude for decision making process, not to enter into detailed levels of technical studies and PPP-model feasibility. Once completed, this task should allow the GoD to decide on proceeding with a technical ("APD" level), economic, financial, environment and social feasibility study, and an eventual PPP-project structuring.

2. GOAL

The analyses should compare technical options and demonstrate whether the chosen alternative, in terms of layout and technical and operational characteristics, offers greater benefits than others in terms of costs; it should also confirm if / what the cost / benefit rationale is for the highway project, and provide estimates of the financial impact of the project in terms of fiscal impact (direct and indirect) for the Government of Cabo Verde.

3. TASKS

The assessment will consist of (i) a technical assessment, (ii) an economic analysis (cost-benefit analysis) of the highway project and (iii) a financial assessment of PPP options, including an estimate of the fiscal impact for each option.

3.1 –For the Technical and Economic assessments

For his or her technical assessment, the Consultant will factor in multiple aspects, including the below ones (non-exhaustive list):

3.1.1 Survey and Collection of Information

The survey and collection of information involves preliminary engineering studies carried out on the existing road and neighboring roads, such as traffic, geotechnical, hydraulic and cartographic studies.

In this activity, construction and rehabilitation costs will also be analyzed, as well as other information considered relevant from the ECV Road Database.

3.1.2 Complementary Analyzes

Complementary analyzes that may be necessary, such as additional topography to the cartography existing at the National Institute of Land Management, geotechnical analyzes, traffic studies, will be carried out by ECV technicians or requested by ECV to the competent authorities.

3.1.3 Determining Current and Future Traffic

In possession of the surveys and complementary research, the current traffic parameters must be determined, in each alternative by type of vehicle, as well as its O/D structure. With this information and with the traffic growth model, determined in the socioeconomic analysis, project the traffic for the concession period, with a breakdown by categories of traffic (existing traffic, re-assigned traffic, traffic growth, development traffic, induced traffic[1]).

The traffic allocation model must be presented, as well as the results of its calibration and validation. In the construction of the allocation model, software with international recognition must be used.

The traffic growth model must be duly explained and substantiated.

[1] See for instance **Report** and separate **Part 1**, **Part 2** and **Part 3** of Toll-Road PPPs: Identifying, Mitigating and Managing Traffic Risk, by Matt Bull with Anita Mauchan and Lauren Wilson, from PPIAF, GIF, World Bank Group

The following considerations should be taken into account, as much as possible: a) indication of the kth hour peak factor, with a view to road capacity studies; b) table of potential, current and future traffic volume, for each alternative, by section up to the concession period that is deemed adequate. The model should discriminate inputs by type of vehicle (cars, trucks and other motorized vehicles).If relevant, other elements such as the profile of the seasonal variation of traffic, or the average changes throughout the day, should be taken into account.

3.1.4 Assessing Capacity and Service Levels

This is one of the areas of work that may require narrow coordination between the economic-financial and the technical tasks, to ensure that the hypotheses that are taken remain compatible. Traffic bottlenecks could for instance be identified in certain sections of the roads. 3.1.5 Study of Alternative Layouts

The possible route alternatives to be considered in the study must be identified.
For this purpose, surveys, information and other data available regarding the region considered may be used, such as: maps, geographic charts, aerial or satellite images, aerial photogrammetric renderings, geological and geotechnical studies, data from volumetric counts, obtained in studies of traffic already carried out in the area of interest of the studies, and the estimated construction and maintenance costs; information on biodiversity; existing information regarding biological and indigenous reserves, conservation units, etc.

3.1.6 Previous Studies of Alternative Layouts

An analysis of alternative routes should be prepared to understand the difficulties and merits of the various possible solutions.
The Consultant will factor in the following aspects:

- Earthmoving;
- Drainage;
- Current works of art;
- Eventual special works of art;
- Paving;
- Relocation of local public services;
- Lighting;

- Signaling;
- Complementary works.

The following aspects will also be incorporated whenever relevant (considering a at pre-feasibility level of detail):

- Expropriation of the domain range and purchase of access rights;
- Environmental protection measures and recovery of Environmental Liabilities;
- Resettlement of the population affected by the project;
- Landscaping and urbanization;
- Temporary works to maintain traffic during construction;
- Cost of the road engineering project and supervision in the construction phase;
- Possible costs;
- Operation and maintenance costs for the useful life period (to be defined).

3.1.7 Cost-Benefit Analysis and Economic Evaluation Processes of Road Investment

Based on the potential of each alternative studied, and on the methodology adopted in the traffic projections, the benefits to users will be defined as indicated below:

a) Direct benefits: resulting from investments that imply the minimization of transport costs, considering the reduction of vehicle operating costs, as well as travel time, maintenance costs and the number of accidents. The benefits apply to normal, diverted and generated traffic.

b) Indirect benefits: resulting from the social and economic development of the region due to road investments made. The indirect benefits are expressed in terms of the net growth of local production, the real valuation of properties located in the area of influence of the highway, the greater tax collection, and above all the social evolution, income and adequate redistribution of the population residing in the region studied. When necessary, to better represent costs, the shadow-price theory should be adopted.

3.1.8 Environmental and Social Impact Considerations

In the selection of alternatives, and in the cost-benefit analysis as needed, the Consultant will identify and incorporate into the proposed approaches the environmental and social aspects that are considered relevant.

3.2. Financial Assessment - PPP options analysis

In addition to a traffic growth model, the Consultant will prepare a PPP financial model, both models being prepared to be easily used by others (public authority civil servants), using modeling international good practices. A demonstration session on how to use the models would be organized if requested by the public authority. The two models would have an easy-to-use interface between each other (if in excel, a well-structure one-sheet interface page could for instance be considered).

The PPP / financial model shall include good practice standard results such as economic internal rate of return, net economic present value, financial IRR and NPV, allowing for comparisons between the options under analysis.

The assessment will have to analyze the adequacy of the PPP options for the implementation of this investment project. It should be able to address the following questions:

- Operation model: with or without user toll. Whether in whole, or in part of the extent.

- What is the concessionaire's remuneration model?

- Whether tolls are paid by users and/or additional payments and in which mode (shadow toll). What is the availability?

The Consultant will include inputs such as (non-exhaustive list):

- 3.2.1 Economic and Financial Costs to be Calculated. the costs referred to in this topic are those related to implementation, conservation, maintenance, road operational infrastructure, and vehicle operational costs, including the costs of congestion and accidents.

3.2.2 Deployment Costs

- The cost estimates for each alternative will be based on average project values, considering the main characteristics of the proposed road sections. In this sense, the following basic characteristics will be considered: - Expansion of the highway from two to four traffic lanes; - Rehabilitation of the highway with two lanes; -

Rehabilitation of a four-lane highway; - New urban contours with two or four lanes; - Incorporation of specific or localized improvements (urban crossings, 3rd lanes, bridge widening, and others). The relief (flat, undulating or mountainous) will be taken into account, as well as preliminary expropriations values, as applicable.

3.2.3 Conservation Costs

Cost of all routine/preventive/periodic interventions aimed at keeping the highway within adequate technical-operational conditions, throughout each cycle of the useful life of the road (generally fixed at 10 or 15 years). The interventions to consider are: localized repairs, defects in the lanes or berms, regular preservation of the drainage system, replacement of the vegetation covering of slopes, signaling, and the right of way, among others.

3.2.4 Operation and Maintenance Costs

- Cost of the set of interventions, on a periodic basis, carried out at the end of each highway's useful life cycle, to provide structural support, compatible with the existing structure and expected traffic, and makes the highway capable of fulfilling a new life cycle. Such interventions include, in particular, the resurfacing of the runway and shoulders, as well as the restoration of other elements and accessories, based on the type of intervention for rehabilitation of the pavement with improvements. If the operating model of the future infrastructure involves toll collection and assistance to users, these costs should be evaluated over the life of the investment.

3.2.5 Highway Operational Infrastructure Costs

- Costs of investments that ensure standards of traffic flow and safety and effective provision of services to users. The average values adopted will be consistent with those practiced by the agency and/or the composite price based on the market study.

- 3.2.6 Vehicle Operating Cost

Vehicle operating costs will be those obtained through the methodology of the "Highway Design Maintenance" model, in current use in the road environment. The costs corresponding to these events must be obtained from the analysis of the traffic conditions of each alternative.

3.2.9 Financial and PPP Evaluation for the Chosen Solution

The objective of this component of the feasibility study is to determine whether the investment should be implemented through a PPP, or whether it should be implemented using a traditional model of public works. In case the PPP model comes to be considered as the best way to carry out the investment, this component of the study should establish the basic structure of the PPP.

A preliminary Value for Money (VfM) assessment should be prepared.

The Consultant will prepare a risk assignment matrix.

The list of scenarios and hypotheses will be agreed with the State before carrying out the analysis. A key result will be the identification of structuring options that would make the proposed solution attractive to the private sector, fulfill the requirements for public funding and minimize the financial costs of State contributions.

Estimated financial contributions will be compared with the maximum budget available for the road sector. If the solution is not assessed as affordable, the analysis will recommend realistic options for the State (such as selecting a less expensive solution).

c. Review of Public Expenditure

Given that the State will likely have to contribute financially to the project, the consultant will prepare a road sector public expenditure review to assess the fiscal space available over the life of the concession. This analysis will be essential to assess the suitability of any solution (PPP or with public funds).

4. REPORTS TO BE PRESENTED

The presentation of the works will be carried out in accordance with the recommendations of the Instructions for the Submission of Reports, of the ECV, EPE and will consist of the following reports:

4.1 Initial Report

The Initial Report containing the main findings and take-away elements from the field visit, together with an action plan, methodology and schedule for the proposed study, will be presented, after an initial review of relevant documents and information, to be sent within 2 (two) weeks after signing the contract. It will also contain the methodology and main hypotheses that the Consultant aims at applying to the economic assessment and traffic analysis to be done.

This Initial Report must be submitted to the ECV, EPE for approval and, once approved, will enable the continuation of the Consulting work.

4.2 Economic Assessment Report

The Economic Assessment Report will contain (i) traffic analysis and projections, (ii) the proposed technical options and alternatives (with a SWOT analysis of the pros and cons; strengths, weaknesses, opportunities and threats) and a technical recommendation, and (iii) the cost-benefit analysis and its conclusions for each alternative considered, to be submitted for ECV, EPE approval.

The Economic Assessment Report must be delivered 45 days after signing the contract.

4.3 PPP Assessment Report

The PPP Assessment Report should contain the result of the PPP analysis in terms of options and, above all, of fiscal impact for the Government of Cabo Verde. It should include a specific report on the financial model, describing the inputs and outputs, and should also include its operation manual (attached to the Report).

The PPP Assessment Report must be delivered 60 days after signing the contract.

4.4 Final presentation

The Consultant will participate (virtually or physically – To be confirmed with ECV) in the final restitution session. Summarized work (through slides) should be prepared for this session.

The Final Presentation should be done 70 days after signing the contract.

5. Duration of the Consultation

The consultancy is expected to last 80 (eighty) calendar days, after the award, except for the deadlines for additional studies to be carried out by ECV and delivered to the Consultant, such as topography, traffic counts, geotechnical tests, which may be necessary. Thus, the Consultant must adapt the work plan to provide the service, with the deadline set for the materialization of this Consultancy.

6. Consulting Firm Profile

The Consulting Company to be hired must have a minimum of 15 years of experience in road feasibility studies, and economic and / or financial assessments for infrastructure projects, with a track record in the road sector.

Among other technicians and human resources necessary for the provision of services, the Consultant must have the following specialists, corresponding to its key personnel:

- 1 (One) Civil Engineer (team leader), with a degree higher than a degree or a postgraduate course in Transport, with at least 15 (fifteen) years of experience in the road domain and in team coordination (proved through a declaration endorsement). Ideally, the Consultant should be able to manage and incorporate

concepts and elements related to tracing and cartographic reference systems, traffic counting and modeling, geotechnical, hydraulic.

- 1 (One) specialist in Transport Economics or PPP / Project Finance with 10 (ten) or more years of general experience, with a background in economics, finance or engineering and who has participated in at least 10 PPP studies, PPP cost/benefit analysis, PPP project financial modeling or structuring, or similar. The person will show evidence of his or her capacity to elaboration Excel / financial models for infrastructure projects.

The deliverables of the Consultant will be Portuguese and one executive summary in English of the PPP Assessment Report.

7. Payment Method

The Consultant will be remunerated according to the following distribution:

Products	***Percentage of remuneration after approval***
Delivery of the Initial Report	*15%*
Delivery of the Technical Report	*30%*
Delivery of the Economic Report	*15%*
Delivery of the PPP assessment Report	*20%*
Presentation of the results to the client	*20%*

8. Contract Types

A Lump-Sum form of Contract shall be signed, payments of the Consultant remuneration are linked to approval of deliverables, and the payment of reimbursable expenses are made upon presentation of the receipt of the expenses occurred at the real cost