

## TC Document

### I. Basic Information

▪ Country:	Belize/CID
▪ TC Name:	Capacity building to support preparation of a National Transportation Master Plan
▪ TC Number:	BL-T1065
▪ Team Leader and members:	Amado Crotte, Team Leader (TSP/CME); Sergio Deambrosi, Alejandro Taddia, Raúl Rodríguez, and Caterina Vecco (INE/TSP); Cassandra Rogers (RND/CBA); Sybille Nuenninghoff (RND/CBL); Ishmael Lucien Quiroz and John Primo (CID/CBL); Andres Suarez (FMP/CCR) and Taos Aliouat (LEG/SGO)
▪ Taxonomy:	Capacity Building and Client Support
▪ Reference to request:	Government request <a href="#">IDB docs #37707490</a>
▪ Date of TC abstract:	January 10 <sup>th</sup> , 2014
▪ Beneficiary:	Government of Belize (GoBL)
▪ Executing Agency:	Department of Public and Private Sector Dialogue, Office of the Prime Minister (DPPD-OPM)
▪ IDB funding requested:	US\$880,000 (80%) – Japanese Special Fund (JSF)
▪ Local counterpart funding:	US\$220,000 (20%)
▪ Disbursement period:	24 months disbursement, 18 months execution
▪ Required start date:	
▪ Types of consultants:	Firms and individual consultants
▪ Prepared by unit:	Transport Division (INE/TSP)
▪ Unit of disbursement responsibility:	Belize (CBL)
▪ Included in Country Strategy:	Yes
▪ TC included in CPD:	Yes
▪ GCI-9 Sector Priority:	Capacity Building for improved Infrastructure planning and Social Welfare as well as support to small and vulnerable countries

### II. Objectives and Justification

2.1 **Background.** Belize is a small country in terms of geographical size and population, with flatlands, waterways and an abundance of natural resources that provide significant potential for economic development if they were better connected to input factors. With a total surface area of 22,965<sup>1</sup> km<sup>2</sup>, and a population of 340,786<sup>2</sup>, Belize has a population density of 14.8 people per km<sup>2</sup>, one of the lowest in Latin America. Topographically, a significant portion of Belize consists of lowlands that are prone to recurrent flooding and other impacts of climate change as well as sea level rise. The country is also lies within the hurricane belt, and is on average affected by severe tropical depressions, storms and/or hurricanes once every three years.<sup>3</sup> These factors combine to make infrastructure investments in transport relatively expensive.

<sup>1</sup> World Travel and Tourism Council (WTTC) – Belize Economic Impact, 2013.

<sup>2</sup> IDB based on SIB Labor Force Surveys for April and September 2012.

<sup>3</sup> Belize National Meteorological Service.

- 2.2 Belize's high development potential, particularly in its headline sectors of agriculture and tourism, is not being realized, attributed in part to limitations in the country's transport system.<sup>4</sup> The agricultural sector, for example, must assume high costs to move goods to the ports due to substandard roads, operators, port services and infrastructure. Similarly, the tourism sector has had its growth impeded significantly due to the lack of access (or poor access) to key tourism attractions, many of which include natural capital and cultural assets which must be carefully taken into consideration in the future growth of public infrastructure.<sup>5</sup>
- 2.3 Much of these transportation limitations are rooted in the historically piecemeal and reactionary development of transportation services. This lack of a comprehensive long-term planning perspective aligned with national development goals has resulted in a disjointed transportation system misaligned with the country's current and future developmental objectives and which provides a deficient level of service in meeting the diverse demands for the movement of people and goods. These problems manifest themselves as structural inequalities with, on the one hand, natural resources not developed in a sustainable manner, and on the other, poverty, marginalization of some groups of the population, negative impacts on the environment, high logistics cost on the economy and discernible constraints to the country's productivity and national development.<sup>6</sup>
- 2.4 Robust investment planning and prioritization is required in order to optimize the roles of each transport mode and deliver affordable mobility and accessibility that responds to the national objectives of economic competitiveness, social equity, and environmental sustainability.
- 2.5 Attention is also required to support the sectors' institutions in transversal topics such as ensuring cohesiveness between the transport system and the requirements of the country's economy and population, resilience to natural disasters and climate change, multi-modal integration, regional integration, data collection, and innovative financing mechanisms.
- 2.6 The Government of Belize has recognized in its Medium-Term Development Strategy (2010 – 2013) the need for a National Transportation Policy and strengthening of existing legislation to improve governance, increase institutional capacity for managing the sector and to facilitate management of the process of modernizing and harmonizing all modes of transport in the country. This Policy should be consistent with national development plans and create a seamless systemic service providing higher quality mobility options.
- 2.7 **Justification.** The Government of Belize has acknowledged that the transportation system in Belize is not aligned to serve the development vision of the country. They are aware that each subsector has important challenges to be resolved and there is not yet a robust institutional framework or a coordinated approach to achieve this alignment. Accordingly by letter dated April 11, 2013 (Annex I) the Government of Belize requested assistance for a technical cooperation aimed at providing client support and capacity building to establish a comprehensive approach to sustainable transportation for improved mobility and competitiveness through the conduct of a national transportation plan, considering all modes of transport (roads, air, maritime) for freight and passengers, that (i) ensure the continuity of efforts and enforcement actions in transportation; (ii) provide effective coordination mechanisms between the different actors in the sector to achieve a strategy consistent with the Government of Belize's national development priorities; (iii) ensure accountability mechanisms and transparency with the community; (iv) harmonize all the disparate initiatives of IFIs, including the IDB (road rehabilitation for

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<sup>4</sup> Belize National Sustainable Development Report: Energy and transport represent the highest costs of industrial and agricultural production.

<sup>5</sup> National Sustainable Tourism Master Plan.

<sup>6</sup> Government of Belize Concept Paper Development of a National Transportation Master Plan March 8<sup>th</sup> 2013.

integration), CDB (road maintenance and safety), EU (road rehabilitation), the World Bank (climate resilient transport), OFID (rural roads), CABEL (roads for integration); and (v) form the basis and vision for future actions in the sector.<sup>7</sup>

- 2.8 **Objective:** The purpose of this Technical Cooperation (TC) is to develop a Comprehensive National Transportation Master Plan (CNTMP) that promotes a Belizean transport sector that contributes to sustainable economic and social development. Developed in close coordination with the relevant public authorities the plan will aim to: (i) promote economic growth, particularly in its headline sectors of agriculture and tourism, by reducing costs to market for the private sector, thus facilitating domestic and international trade; (ii) improve public mobility and access to markets, employment and social, health and leisure facilities; (iii) contribute to climate change mitigation and adaptation; and (iv) ensure the financial, environmental and institutional sustainability of transport services.
- 2.9 The development of this Comprehensive National Transportation Master Plan (CNTMP) will be executed by the DPPD-OPM in close cooperation with various government agencies, such as the Ministry of Finance and Economic Development, The Ministry of Works and Transport, the Ministry of Natural Resources and Agriculture, ) National Emergency Management Organization (NEMO), and the Ministry of Tourism and Civil Aviation, in order to develop the institutional understanding and capacity in data collection, analysis, needs diagnosis, public consultations, stakeholder workshops and the development of transport-planning knowledge instruments, most notably the Belize Transport Geographic Information System (BL-GIS). The CNTMP will provide ongoing incremental value as to not hinder ongoing or near future initiatives.
- 2.10 **Additionally,** the CNTMP will be structured following the principles of sustainable mobility (avoid-shift-improve), understood as a way to avoid unnecessary travel, shift trips to more sustainable modes and improve the efficiency of existing modes. The IDB promotes the sustainable mobility view under the work at the Transport Division and through the Regional Environmental Sustainable Transport initiative. The Bank's regional experience can translate into favorable spillovers for developing the CNTMP as a sustainable mobility project.
- 2.11 **Corporate alignment.** This CNTMP is in line with the objectives of the Ninth General Capital Increase (GCI-9) as the results will have co-benefits in mitigating the effects of natural disasters and climate change and will support the development of infrastructure for competitiveness and social welfare. It is also in line with Principle B of the Bank's Infrastructure Strategy as it adopts a multi-sector perspective for infrastructure planning. Similarly, the Plan is in accordance with the Transport Division's Regional Strategy for Sustainable Transport (REST) by following the principle of clean mobility. In addition, the TC is aligned with the Belize Country Strategy (2013 – 2017) as it contributes directly to the results of "Transport" one of the strategy's four priority area through the delivery of a Transportation Master Plan which will contribute to the objective of strengthening sector planning capacity in Belize. It also contributes indirectly to the other three strategy priority areas: education (by considering access to educational facilities); sustainable tourism (in which access is a constraint); and trade and tax (by examining transport infrastructure needs for trade, as well as the economic efficiency of public support and pricing).
- 2.12 Procurement of goods and services will be carried out by the executing agency according to the IDB Policies for the Selection and Contracting of Consultants Financed by the Inter-American

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<sup>7</sup> The Government of Korea sponsored a Transport Master Plan for Belize, which was completed in 2014. The Plan mainly focused on 10 arterial roads, and gave a brief overview of the current access to key tourist attractions, as well as access to the Port of Belize. The CNTMP will include all modes of transport (roads, airports, ports, and urban transport), and will consider a data collection process, crucial to determine current demand and supply of freight and passenger transport, analyze possible future forecasts, and make solid policy recommendations.

Development Bank (GN-2350-9) and for the Procurement of Goods and Works Financed by the Inter-American Development Bank (GN-2349-9).

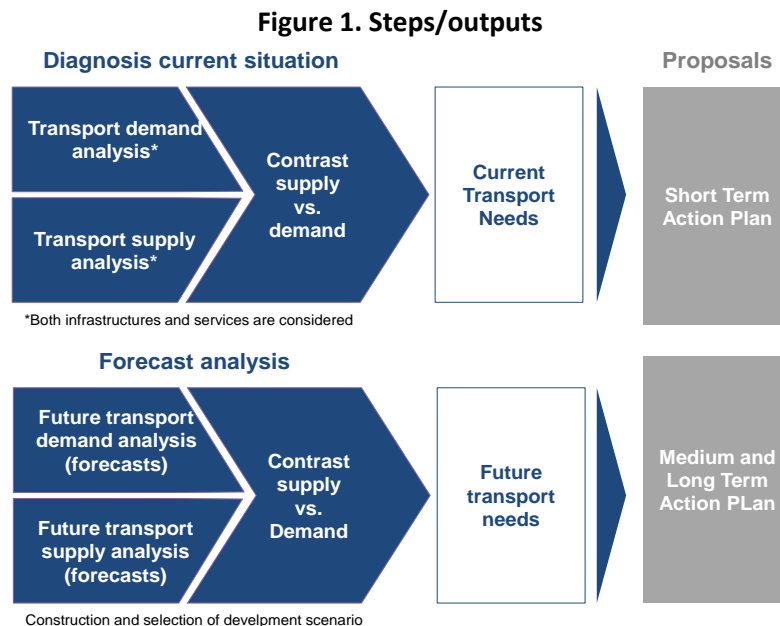
### III. Description of Activities/Components and Budget

- 3.1 This TC will support two main components. Component 1 will finance the CNTMP while Component 2 will strengthen the execution agency. Following is a description of both components:
- 3.2 **Component 1. Support for the development of a Comprehensive National Transportation Master Plan (CNTMP) (US\$880,000).** On the basis of the existing regional, national and local studies, this component will finance the consulting activities required to prepare the CNTMP. Due to the inter-disciplinary and complex nature in developing a transportation master plan, which entails actions in different domains and requires the participation of the different public sector institutions at all levels of Government and also from citizen organizations, local communities and interest groups<sup>8</sup>, the first activity to be conducted by a consultancy firm will be to ensure that the CNTMP is developed through a broad consultative and participatory process. A consultancy firm will therefore work with stakeholders and first prepare a methodology, unanimously agreed by all stakeholders, which ensures that all the proposals and recommendations pursuant to the preparation of the CNTMP will be presented and validated with all stakeholders.
- 3.3 Under Component 1, once a consultancy firm and the DPPD-OM have collective agreement on the modality of consultation and decision-making with stakeholders, other activities to be completed by the consultant towards the development of the CTMP will be a three phase analysis of all modes of transport in the country: (i) diagnostic phase, (ii) forecast phase; and (iii) recommendation phase as shown diagrammatically in Figure 1. A consultancy firm will examine the supply and demand-side of transport, under current and future environments for both passenger and freight transport, at urban, rural and inter-city level. To accomplish this approach, the following seven intermediate steps/outputs leading to the development of the CNTMP will have to be examined which are summarized in Figure 1, and detailed in the annexed terms of reference.
1. **Diagnosis of the current situation** will define the present transport supply (infrastructure) and its characteristics, for all modes of transport, as well as the transport demand for freight and passengers, at the rural, urban and intercity levels. It will involve information compilation, including primary data collection where necessary, such as location of production and consumption centres (agriculture, manufacture, etc.), production data, and traffic demand on main roads, ports and airports. It will also include an analysis of the existing institutional, legal and regulatory framework.
  2. **Short-term action plan** will consist of the elaboration and definition of short-term work objectives, responsibilities, budget and schedule.
  3. **Assessment and analysis** of rural, urban and intercity transport systems, its integration with urban mobility; development scenarios which will involve identification of zoning and time horizons; generation of a transport database; the proposal and analysis of future scenarios; assessment of all modes of transport (motorized and non-motorized); and analysis of relevant ecosystem services including biodiversity, regulating services such as climate change mitigation (carbon sequestration) and climate resilience.

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<sup>8</sup> Coordination with the tourism development plans will be facilitated through IDB's support to the tourism sector framework.

4. **Evaluation of Belize's logistics system** and potential development scenarios including the identification of trends, and the evaluation of alternatives, including possibilities for sustainable mobility (avoid-shift-improve) with a description of medium and long-term scenarios.
5. **Proposals for medium and long-term** will consist of the development of conceptual models for approval by the Government and the development of an action plan together with a conceptual proposal of institutional, legal and regulatory changes, if applicable. This will also consist of developing monitoring tools and a proposal for funding the action plan including consideration of innovative contractual and financing models.
6. **Establishing a set of IT tools** will include the creation and launch of the collaborative project website and a Geographic Information System (GIS) together with a data room where all the documents and information about the project are stored. The IT tools will also include a Belize investment prioritization tool with attendant manuals.
7. **Continuous coordination with stakeholders** will involve workshops and outreach communication for the socialization, consultation and dissemination of intermediate and final results.



- 3.4 The expected output is that this component will provide a comprehensive master plan of Belize's transportation system that will identify and substantiate the handicaps and constraints as well as provide the attendant recommendations for infrastructure and governance of the sector which contribute to transport policy, strategy and planning in Belize.
- 3.5 **Component 2. Institutional support General Administration and Supervision (US\$220,000).** This component will support the strengthening of the DPPD-OM, which is the Executing Agency for this TC. Accordingly the final products of Component 2 will be the support provided by experts and consultants to oversee the execution of studies and build institutional capacity in (OPM/DPPD). Experts will play key roles by providing the DPPD with the necessary expertise to address the additional technical and execution requirements generated by the CNTMP. This component will finance the contracting of consultants to provide expert support in specific areas and which will include: (i) an expert in transportation planning and policy analysis; (ii) a project manager to lead the supervision of the consultancy and to facilitate all the tasks corresponding to inter-institutional coordination and communication; and (iii) administrative assistant to execute the procurement process. The transportation planning expert and the project manager

must have good familiarity and prior experience in Disaster Risk Management and climate change. This component will also finance renting and furnishing office space for the PEU, if needed, and (iv) the acquisition of equipment for project execution and oversight, and (v) the financial audit of the TC.

**Table 1. Indicative Budget**

Component	Activity	Description	Funding (US\$)		
			JSF	Local (in kind)	Total
Component 1	Comprehensive National Transportation Plan	Consultancy (firm)	704, 000	176,000	880,000
Component 2	Institutional Strengthening General Administration and Supervision	Consultancy (individual)	176,000	44,000	220,000
<b>TOTAL</b>			<b>880,000</b>	<b>220,000</b>	<b>1,100,000</b>

**Table 2. Indicative Results Matrix**

Component	Deliverable	Intermediate Milestone	Milestone date	Expected completion date	Expected Result
Support for the elaboration of a Comprehensive National Transportation Master Plan	Contract	CNTMP is contracted	6 months after TC approval	6 months after TC approval	Consultancy firm contracted
	Strategy document	Strategy for coordination and communication	3 months after award of contract	9 months after TC approval	Coordination strategy agreed with OPM
	Study	Diagnosis of current situation	6 months after award of contract	12 months after TC approval	Relevant supply-demand data collected and validated
	Strategy document	Short term action plan	8 months after award of contract	14 months after TC approval	Action Plan for CNTMP
	Study	Assessment and modelling passenger transport	12 months after award of contract	18 months after TC approval	Estimation of future transport demand
	Study	Analysis of freight transport system			
	Policy document	Final Comprehensive National Transportation Master Plan	15 months after award of contract	21 months after TC approval	A transportation Strategy defined in the Transportation Master Plan to steer Belize's growth
Institutional Support General Administration and Supervision	Project Execution Unit Established	Signed Contract with individual consultants	3 months after TC approval	24 months after TC approval	Expert support during project execution

#### **IV. Conditions prior to the first disbursement**

- 4.1 As conditions prior to the first disbursement, the Executing Agency shall fulfill the following requirement to the Bank's satisfaction: (i) show evidence that an expert in transportation planning and policy analysis, a project manager, and an administrative assistant to execute the procurement process, indicated in Component 2, have been contracted, and (ii) show evidence that it has established a Steering Committee to lead coordination between all stakeholders involved in the National Comprehensive Transportation Master Plan.

#### **V. Execution Structure and fiduciary arrangements**

- 5.1 The Executing Agency for this technical cooperation will be the DPPD-OM, with the assistance of a Project Execution Unit (PEU) consisting of a: (i) an expert in transportation planning and policy analysis; (ii) a project manager to lead the supervision of the consultancy and to facilitate all the tasks corresponding to inter-institutional coordination and communication; and (iii) an administrative assistant to manage the procurement process. The transportation planning expert and the project manager must have good familiarity and prior experience in Disaster Risk Management and climate change. Work of the Master Plan consultant and the PEU will also be guided and supported by a Steering Committee, led by the DPPD-OM, which will be constituted by high level representatives of the Ministry of Finance and Economic Development, Ministry of Works and Transport, Ministry of Trade, Ministry of Tourism and Civil Aviation, Ministry of Natural Resources and Agriculture, National Emergency Management Organization, and other relevant agencies, as well as local authorities. The function and role of the Steering Committee and the communication mechanism will be defined and agreed through stakeholder consensus facilitated by the Master Plan consultant as a proviso prior to commencing technical work on the Master Plan itself. Accordingly, DPPD will be responsible for the finalization of Terms of Reference for the Master Plan and the selection of consultants. A Consultation Working Group will also be created with the participation of one or two young professionals from each relevant government agency to facilitate the day to day activities, provide available data, and will be trained by the PEU in all matters related to the Master Plan. This Group will also have the participation of private sector stakeholders in order to build a participative process.
- 5.2 The Executing Agency does not have prior experience with the IDB policies and procedures; therefore every procurement process will be supervised ex-ante. Procurement support to the execution agency will be provided through an administrative assistant/procurement officer. See the Procurement Plan ([Annex II](#)) for more details. A financial audit will be made towards the end of the TC's execution period.
- 5.3 With the consent of the Bank, up to the equivalent of US\$ 110,000 (10% of the total project cost) of the resources of the TC may be used to reimburse eligible expenditures incurred by the beneficiary for the hiring of a transport expert and a project manager, provided that requirements substantially similar to those set forth in the TC agreement have been fulfilled. Said expenditures shall have been incurred from January 2015, but in no event more than 18 months prior to the date of the approval of this TC.
- 5.4 This TC will be executed in accordance with the Bank's financial management policy OP-273-6.
- 5.5 The application of the exchange rate has been agreed with the Project Executing Agency as follows: (i) for reimbursement of expenses - the effective rate of exchange on the date of payment of each expenditure, as published by the Central Bank of Belize; (ii) Reporting on Accounts or justification of the Advance of Funds- the effective rate of exchange used in the

conversion of the currency of the operation to the local currency; and (iii) Disbursements in alternate currencies from the US Dollar and the Belize Dollar:-In cases of direct payment and reimbursement of a guarantee of letter of credit, the equivalent of the currency of the operation will be fixed in accordance with the amount effectively disbursed by the IDB.

## **VI. Major Issues**

- 6.1 Considering the complexity of Governance in the public sector's transport institutions created by the country's two levels of Government; which vest discretionary powers over services to city and towns, there is a risk that the Master Plan may not be acceptable to all stakeholders rendering the output unsustainable. To mitigate this, a mechanism for coordination and communication amongst stakeholders will be developed and agreed prior to commencing work on the Master Plan.
- 6.2 As with all Master Plans there is a risk that significant resources will be invested in a product which takes several months to complete, causing ongoing or imminent projects to be delayed, and once delivered fails to provide a clear and implementable pipeline of projects and actions. To mitigate this risk the Terms of Reference will consider interim deliverables and a firm chronogram.
- 6.3 To mitigate the potential risk of changes in the composition of the executing agency due to early elections, two parallel working groups will be created. First, a Steering Committee with high level public officials but also private sector stakeholders, and second, a Consultation Working Group with young professionals with a lower probability of being replaced due to political changes. These working groups will ensure that there is high coordination between government agencies, private stakeholders and a consultancy firm to complete the Master Plan according to the chronogram.

## **VII. Exceptions to Bank Policy**

- 7.1 No exceptions to the Bank's policies have been identified.

## **VIII. Environmental and Social Strategy**

- 8.1 Given that the focus of the TC is on the preparation of a National Transportation Plan this TC has no social or environmental impacts. The Safeguard Policy Filter Report and Safeguard Screening Form classify the project under category "C" which is saved under IDBDOCS No. [38712718](#) & [38712738](#).

### **Required Annexes:**

- Annex I. Request letter from the Ministry of Finance and Economic Development.
- Annex II. Procurement Plan.
- Annex III. Draft Terms of Reference for the Preparation of the CNTMP.





## GOVERNMENT OF BELIZE

### Ministry of Finance & Economic Development ECONOMIC DEVELOPMENT

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**Ref: IDB/23/2013 (30)**

Ms. Anneke Jessen,  
Country Representative  
Inter American Development Bank  
1024 Newtown Barracks  
Belize City, Belize

April 11, 2013

Dear Ms. Jessen,

**Re: Application for Technical and Financial assistance – National  
Transportation Master Plan**

Reference is made to your email of April 9, 2013 in which you outlined the bank's thinking with regard to the possibility of providing technical and financial assistance for the preparation of a national transportation strategy. We were very happy to note that such a request could be considered by the bank.

We are in agreement with the proposal for the way forward. Please therefore regard this letter as a formal request for financial and technical assistance in relation to the preparation of a National Transportation Master Plan as follows:-

- (a) To define the scope of such a document and to prepare a Terms of Reference for its preparation;
- (b) Preparation of a National Transportation Master Plan

Attached is a Concept Paper which sets out the essential aspects of the project. We look forward to the Bank's favourable consideration of this request.

With best wishes

  
Yvonne S. Hyde  
Chief Executive Officer

### Procurement Plan

<b>Country:</b>	Belize				
<b>Executing agency:</b>	Office of the Prime Minister through the Department of Public-Private Sector Dialogue				
<b>Project:</b>	Comprehensive National Transportation Master Plan for Belize				
<b>Project and loan contract numbers:</b>	BL-T1065				
<b>Brief description of the project's objectives and components:</b>	<p>The specific purpose of this Technical Cooperation (TC) is to help the Government of Belize strengthen its institutional capacity to facilitate management of the process of modernizing and harmonizing all modes of transport in the country into a seamless systemic service for mobility.</p> <p>Component 1: This component will finance all the necessary consulting activities to prepare the Comprehensive National Transportation Master Plan.</p> <p>Component 2: This component will strengthen transportation institutions by hiring individual technical consultants and administrative and supervision staff for the coordination of program execution.</p>				
<b>Estimated date of project approval:</b>	May 30, 2015				
<b>Estimated date of the final disbursement:</b>	May 30, 2017				
Description of the contract	Estimated cost of Procurement (US\$)	Procurement method <sup>1</sup>	Source of financing and percentage		Status
			IDB %	Local/other %	
Consulting Firm ( master plan)	694,000	QCBS	80	20	Preparation of expression of interest
Individual Consultants	176,000	IICQ	80	20	-
Financial Auditor Firm	10,000	LCS	80	20	-

**Consulting Firms:** **QCBS:** Quality- and cost-based selection **QBS:** Quality-based selection **FBS:** Selection under a fixed budget; **LCS:** Least-cost selection; **CQS:** Selection based on the consultants' qualifications; **SSS:** Single-source selection. **Individual Consultants:** **NICQ:** National Individual Consultant Selection based on Qualifications; **IICQ:** International Individual Consultant selection based on Qualifications.

## Terms of Reference

### Comprehensive National Transportation Master Plan (CNTMP)

#### I. Background

##### 1. Belize's competitiveness and its short-term challenges

- 1.1 Belize is a relatively small country in terms of geographical size and population, but it has abundant natural resources that provide significant potential for development. Belize has a total surface area of 22,965<sup>1</sup> km<sup>2</sup> and a population of 340,786<sup>2</sup> inhabitants, of which 48% live in rural areas. The country's population density is of 14.8 people per km<sup>2</sup>, one of the lowest in Latin America.
- 1.2 In socioeconomic terms, Belize has a high poverty ratio, with an average per capita income of US\$ 4,706<sup>3</sup> in 2012. According to the country poverty assessment (2009)<sup>4</sup>, 41% of the population were classified as poor, and an additional 14% faced risk of poverty. Although poverty remains high across the country, it mainly concentrates in rural areas, where it reaches a ratio of 57% (the ratio is 31% in urban areas).
- 1.3 Belize had a GDP of \$US1.64 billion in 2012. The economy is based on the country's wealth of natural resources, mainly: agriculture (which is export-oriented), tourism and -to a lesser extent- fishing. Agriculture accounts for 12% of the country's GDP and relies significantly on the export of agricultural commodities, although other higher added-value products are also traded. The country's main agricultural exports are: (i) sugar (produced in Orange Walk and Corozal); (ii) citrus fruits (in Cayo and Stann Creek District); and (iii) bananas. The export of agricultural production is highly concentrated in a short list of products, and relies heavily on maritime transport. Trade relationships with neighbouring countries (Mexico and Guatemala) are still weak, although trade with these countries is growing on a yearly basis, and there is also a thriving illegal trade with them.
- 1.4 Tourism, on the other hand, contributes directly to 12%<sup>1</sup> of the GDP, but its indirect contribution accounts for 32.2%<sup>1</sup>, which reflects the importance of the sector to the national economy. Belize is a highly-attractive tourist destination due to its unspoiled natural and archaeological environment, which the country aims to exploit by means of ecological and sustainable tourism activities.<sup>5</sup> The biggest tourism destinations in the country are located in the Cayo District and around the Cayes (The Belize District and the Stann Creek District).
- 1.5 The aforementioned economic sectors still have high development potential, but are currently facing limitations in the country's transport infrastructure network, which inhibits the improvement of performance. The agricultural sector, for example, must assume high costs to move goods to the ports due to poor services and infrastructure. At the same time, the tourism sector has identified in the National Sustainable Tourism Master Plan that the lack of access (or poor access) to key tourism attractions deters growth significantly.
- 1.6 The country has important infrastructural challenges due to limited public resources and the extension of the network, which needs to be maintained or even expanded. Despite having a small network if compared to neighbouring countries, it is nevertheless relatively extensive

<sup>1</sup> World Travel and Tourism Council (WTTC) – Belize Economic Impact, 2013.

<sup>2</sup> IDB based on SIB Labor Force Surveys for April and September 2012.

<sup>3</sup> UNCSD Belize National Sustainable Development Report.

<sup>4</sup> Caribbean Development Bank.

<sup>5</sup> See *Belize Tourism Sustainable Master Plan*.

given the population of the country and the scale of its economy (note that although the road or infrastructural density per km<sup>2</sup> is low, and the Belizean population density is very low, entailing considerable maintenance costs per inhabitant).

- 1.7 At present, Belize has 2,806.1<sup>6</sup> miles of roads, of which 374.8 miles are the arterial network, 486.5 miles from the distributor network (secondary), and 1,944.8 miles are feeder roads and village streets. The arterial network is composed of four two-lane highways (one per direction): (i) Philip Goldson Highway (formerly Northern Highway), that connects Belize City with Corozal and the Mexican border (Santa Elena); (ii) George Price Highway (Western Highway), that links Belize City with Belmopan, San Ignacio and the border with Guatemala (Benque Viejo); (iii) Hummingbird Highway, from Belmopan to Dangriga; and (iv) Southern Highway, from Dangriga to Punta Gorda in the Toledo District.
- 1.8 The road network will face significant challenges in the coming years if the aim is to ensure domestic transportation, reduce transportation costs, and improve the service conditions that enhance competitiveness of the country's agriculture and tourism sectors. The main challenges of the network are that: (i) a considerable part of it is unpaved (only 17.5%<sup>7</sup> is paved), which increases travel times, transportation costs and agricultural losses; (ii) its present condition is fair<sup>7</sup> (in 2010, 13% of the roads were in good conditions, 80% in fair conditions and 7% in bad conditions), and is degrading rapidly; (iii) the maintenance conditions of some structures and the physical conditions of the roads are poor, and require significant investment to meet international standards and to reduce vulnerability to natural disasters; and (iv) accident rates are high (28.9 fatalities per 100,000 inhabit.; higher than any other Central American Country) due to high traffic and low infrastructure specifications. Given the previous shortcomings, the Ministry of Works and Transport aims, through investing in roads, to reduce the vulnerability of the primary network, establish redundancy, improve connectivity, enhance road safety and ensure the sustainability of the network (in terms of maintenance).
- 1.9 The country has only two road accesses to neighbouring countries: one with Guatemala and one with Mexico. In the border with Guatemala, Benque Viejo Border gives access to the Guatemalan Petén area. The second border crossing is Santa Elena, in Corozal District. At the other side of this border is the city of Chetumal, which has a population of 151,000 inhabitants. Currently, a new connection with Guatemala is under construction on the south border. Finally, San Pedro Custom is working as an entrance point to the country, for cruises that go directly from Chetumal to San Pedro.
- 1.10 The border infrastructure is currently in good conditions if compared to other Central American borders, but could be improved. Additionally, there is a significant regulatory constraint at the border crossings. All foreign vehicles entering Belize are liable to pay a tax, which, at some times, encourages load transfers at the border without having the proper logistical infrastructure or conditions to do so. At present, the real demand for freight across the border is limited, especially so in the case of the border with Guatemala, given that the trade integration of Belize in Central America has so far been low. However, with the development of the Mesoamerica project and the further integration with Central America, an increase of trade and cargo flows is expected.
- 1.11 Belize relies on two main commercial ports: (i) Port of Belize; and (ii) Big Creek Port. Port of Belize is located in Belize City, and is the primary cargo entry port of the country, operating

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<sup>6</sup> Data from the Ministry of Works and Transport.

<sup>7</sup> Road Maintenance Strategy, MoWT.

mostly containers and manufacturing consumer products, as well as fuel. In 2011 it handled 218,000 tonnes and 34,700 TEUs.<sup>8</sup> The Port of Big Creek, located in Stan Creek District handles mostly export products (agricultural goods). There is also a bulk port that has certain necessities for attending the current and future levels of cargo (grains, sugar, dry food, etc.).

- 1.12 Belizean ports have low draughts, and generally suffer from infrastructural and equipment limitations that hinder productivity. Additionally, in both major ports there is a shortage of logistics infrastructure (especially for cold chain operations) to allow the storage of agricultural production, which hinders the international shipping of local production. A recent study of the local agriculture sector has shown that the greatest obstacle to the profitability and growth of the sector is the port infrastructure.<sup>9</sup> Low maritime connectivity<sup>10</sup> is another issue affecting competitiveness of exports.
- 1.13 The domestic air transport sector is composed of an international airport (Philip S.W. Goldson International Airport) and 14 public aerodromes or airstrips operating small domestic flights, which mainly serve the tourism sector. The concession of the international airport is held by a private company, and operates flights to Central America and the United States. At present, freight movement is reduced (limited to express cargo).
- 1.14 Finally, Belize has an extensive waterway network used in Corozal District to transport some cargo, such as sugar. Although the infrastructure is very limited at present, and its use is generally restricted to this commodity, the network has development potential. It's in the interest of civil society to achieve an efficient and competitive development in terms of cost and time of this transport mode.
- 1.15 The interurban passenger transportation sector has serious shortcomings in the form of poor quality of service, reliability, and profitability for operators. One of the limiting factors of service is the quality of vehicles, which do not offer optimum safety and comfort conditions to passengers. They are mainly second-hand vehicles imported from other countries, many of which are former school buses. Another major drawback is that buses don't respect the official bus stops. This situation is worse in urban areas, causing commercial speeds and the quality of service to be lower. The sector is currently regulated by the Ministry of Works and Transport, which issues individual operating licenses for a period of two years if the operation standards are met. This vehicle licence scheme has been found to encourage fierce competition amongst drivers of the same route, because every operator tries to catch as many passengers as possible by overtaking other vehicles or waiting for too long, leading to a negative impact on reliability and service frequencies. Regarding infrastructure, there is also a need to improve some terminals, and especially to build them in Toledo and Cayo District, where there is no terminal at the moment. Also water taxis services to the Cayes should be reorganized and improved, in order to accompany the tourism strategy that Belize is implementing.
- 1.16 All the identified problems and challenges that hinder the development and welfare of the country's transport sector are aggravated by the country natural conditions. Belize is highly vulnerable to natural hazards and to the impact of climate change. The same geographical and weather conditions that bestow the country with a great potential for development in some sectors also pose significant risks due to the low-lying coastal areas. Belize has often suffered the impact of tropical storms and hurricanes causing severe flooding. This situation damages the

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<sup>8</sup> Port of Belize, LDT.

<sup>9</sup> A Review of Agriculture in Belize.

<sup>10</sup> UNCTAD Liner Shipping Connectivity Index (LSCI) 2011: 3.9/150; Global ranking: position 139.

infrastructure network and restrains the development and expansion of the network. It also places significant financial burdens on the public treasury.

- 1.17 Based on the previous elements identified, the logistics and transport sectors in Belize face significant challenges that must be addressed with the development of a transport comprehensive master plan and a policy capable of enhancing transport productivity and reducing vulnerability to natural disasters, based on the resources available. This plan's development and execution must result in an improvement in the quality of life of citizens and must aim at benefitting the country's economy.

## **2. Institutional framework**

- 1.18 The institutional framework of the transportation sector in the country is broad and relatively complex, as there are a considerable number of public institutions involved in the development of transport policy and regulation, for both freight and passenger segments.

- 1.19 With regard to the public sector, Belize has two levels of government: a central government and a single-tier local government. At national level, different government institutions hold expertise and responsibility for various aspects within the transport sector; while at local level, municipal institutions are responsible for some aspects within their geographical mandate.

- 1.20 The public institutions that are most actively involved in the development of the transport sector are the ones listed below. Also included are other prominent public institutions that, given their own resources and areas of expertise, play an important role in the development of transport infrastructure within the country:

- Ministry of Works and Transport (MoWT), which includes the Department of Works, Department of Transport, and Belize Department of Civil Aviation; Belize Port Authority (BPA) and the Belize Airport Authority (BAA) also fall under the MoWT as decentralized agencies.
- Ministry of Trade, Investment Promotion, Private Sector Development and Customer Protection.
- Ministry of Tourism and Culture, which also includes the Border Management Agency and the Belize Tourist Board.
- Ministry of Finance and Economic Development and the Economic Development Council.
- Ministry of Labour, Local Government, Rural Development, NEMO and Immigration and Nationality.
- City and town councils.

- 1.21 The Ministry of Works and Transport (MoWT) concentrates most of the sector powers for both passenger and freight transport. The MoWT consists of three departments and several independent regulatory authorities. The departments are: Department of Works, Department of Transport, and Department of Civil Aviation.

- 1.22 The Department of Works has, among its main responsibilities, the construction and maintenance of bridges and highways, as well as public works for the national government.

- 1.23 The Department of Transport is responsible for public passenger transport. The main executive body of the department is the Transport Board, which is responsible for licensing public passenger transport services, organizing routes and ensuring that public transport complies with the necessary conditions set forth by the DoT.

- 1.24 Furthermore, the Department of Transport is responsible for maritime ports and harbours through an independent authority: the Belize Ports Authority (BPA). This body is the country's regulator in the maritime sector, and oversees the following areas: maritime safety, port security, licensing and registration of vessels, licensing of masters, port state control and regulatory oversight for ports, of which the most important ones tend to be privately operated.
- 1.25 The Civil Aviation Department has authority over airports, aerodromes and air traffic nationwide. It is the regulatory body for the sector, but also includes an independent airport authority, the Belize Airports Authority (BAA), that has administrative functions. This authority is responsible for the public management and administration of the 14 publically-owned airfields in the country (the Philip SW Goldson International Airport operates under a concession-model and is therefore operated by a private company and is not managed by the BAA).
- 1.26 The Ministry of Trade, Investment and Promotion, Private Sector Development and Customer Protection is also involved in a variety of aspects relating to transport regulation and planning. This ministry has very diverse areas of competency, but particularly important in this context are its responsibilities in foreign trade and international trade negotiations. Moreover, this ministry regulates the export processing zones and the commercial free zones, with the exception of the corozal free zone.
- 1.27 The Ministry of Tourism and Culture also plays a significant role, given that the policies it creates and which concern tourism has a major impact on the overall movement of people and goods. Therefore, this Ministry should be considered and consulted during the Consultancy. The Ministry of Tourism, through its Belize Tourist Board, also spearhead the development of industry minimum standards of operations, including the use of different transportation mediums for tourism services.
- 1.28 Additionally, the Ministry of Tourism's mandate also includes border protection, which is overseen by the independent Border Management Agency. This agency (created in 1999 when the construction of the new border-crossing facilities started) is primarily responsible for the management of Belize's Ports Of Entry (POE): Benque Viejo border (in the West, Guatemalan Border), Santa Elena Border (in the North, Mexican Border) and Punta Gorda Town in the Toledo District (maritime port of entry). The Border Management Agency is responsible for providing high quality and efficient administration, and control of the prescribed border points and related services, to provide and maintain such services and facilities, and works in collaboration with other affiliates, such as Customs, Immigration and Police.
- 1.29 The Ministry of Finance and Economic Development is the largest government ministry, and includes the Prime Minister's Office, the Department of Finance and the Department of Economic Development. This ministry is a key player in the development of the Corozal Free Zone, which has a strong impact on the country's transport activity. Furthermore, the Office of the Prime Minister includes the Economic Development Council (also called Business Forum), which is a public-private forum that constitutes an important stakeholder for the current Master Plan.
- 1.30 Finally, the Ministry of Local Government and Rural Development is responsible for local government legislation and regulation on all matters affecting local government, including the administration of Acts relating to city and town councils. The Ministry is responsible for town council legislation and the mayoral system. As detailed below, the mentioned local governments play a significant role in development transport infrastructure, although at local level.

- 1.31 At local level, the degree of involvement and responsibility over transport infrastructure varies amongst the towns. This primarily depends on whether they are urban or rural, on their size and on their resources. The urban authorities are responsible for street maintenance and lighting, drainage, and rubbish collection services. They also have discretionary powers over other services including infrastructure and the licensing of motor vehicles and trade (these areas affect most of the transport policy). The local registration of motor vehicles has resulted in the lack of a standard national registration system, and has made traffic control difficult for national authorities or, indeed, for any local authority.
- 1.32 Regarding the aforementioned responsibility for international trade, some town councils situated at border crossings impose their own taxes, which subsequently affect cross-border transport, such as Benque Viejo City Council and Corozal City Council.
- 1.33 Beyond the public sector, the private sector is particularly important in certain segments, especially in the operation of passenger and freight transport services, and in the management of some of the country's main infrastructure.
- 1.34 Amongst the most important stakeholders in the private sector, which must be considered during the preparation of the NTCMP, are:
- Port operators: Port of Belize Ltd. and Port of Big Creek Group.
  - Airport operators: Belize Airport Concession Company (Philip S.W. Goldson International Airport).
  - Bus operators: more than 150 bus operators run public transport services, according to the Transport Board's register, and also private bus operators, especially those that operate within the tourism industry as tour operators.
  - Water-taxi operators: several water-taxi operators run formal and informal maritime services, especially linked to tourism. Some of the biggest operators own their own terminals. The Port Authority is monitoring this activity.
  - Other important stakeholders are: the Belize Chamber of Commerce and Industry is an important private stakeholder in the economic development of the country, and the sector it represents could benefit greatly from a successful Master Plan. As well, trucking companies, shipping lines, shipping agents, tour operators, cruise lines and taxi operators must be considered.

### **3. System structure**

- 1.35 Following the reflections<sup>11</sup> received from the public and private sectors on key short-term challenges, Belize intends to focus on a comprehensive approach to the restructuring of the system.
- 1.36 At institutional and regulatory level, the overall conclusion was to focus on these primary areas:
- Out-dated regulatory framework in the transport sector.
  - Difficulties in terms of governance, especially with respect to the distribution of local versus national responsibility, and also related to the decentralization of national-level agencies.
  - Absence of a planning unit responsible for defining policy guidelines for planning, with a multi-sector and multi-modal vision.
  - Gaps in project execution, which perhaps could be overcome with the creation of a dedicated unit for this purpose.

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<sup>11</sup> Mission of the Inter-American Development Bank, August 2013.



- Financial difficulties and constraints that limit the ability of institutions to maintain the adequate quantity and level of professionals for the development of their functions.
- In relation to project finance, difficulties in structuring projects, including public-private options.
- Insufficient funds for infrastructure development and maintenance, which point to the need for a good investment prioritization scheme to maximize the social benefit of public investment.
- Lack of appropriate and integrated technology for the management of the regulatory agencies.

1.37 In order to make high-quality infrastructure and services available, several aspects need to be highlighted:

- Strengthen overall productivity in Belize by placing emphasis on: (i) the planning phase; (ii) passenger and freight transport; and (iii) re-designing the NTN.
- Support the provision of quality services, both for passenger and freight transport.
- Need to improve the conditions of passenger transport, in both intercity bus lines and waterways. This applies to both the daily use by Belize's residents, as well as, to tourists.
- Freight transport is currently perceived as a costly and inefficient system which hampers the competitiveness of the country. Therefore, the logistics system needs to be approached from a multimodal perspective, taking into account all priority segments.
- Expand the size of the market. In order to compete in international markets, many businesses follow a volume-based logic, which leaves Belize in a disadvantageous situation. Therefore, relationships with neighbouring countries (Mexico, Guatemala, etc.) need to be evaluated, specifically in relation to Belize's port infrastructure, CARICOM trade agreements, etc. Such analysis could potentially enlarge the immediate hinterland.
- Strengthen the public sector agencies through staffing and training, to enhance regulatory functions and through ICT, to gather and analyse data for planning and development across all relevant agencies, private and public.
- Develop business strategies and value-added logistics services to promote the access to markets.
- Reduce trade barriers to foster import and export, while also considering the regional integration perspective.
- Finally, it is essential that these challenges are addressed by inter-institutional relationships and include the private sector. This will ensure that the conclusions reached constitute a consensus of all parties and allow Belize to move forward and meet its development expectations for the coming years.

## **II. Consultancy Objectives**

### **1. General objective**

2.1 The general objective of the current Consultancy project is to prepare a national transportation master plan for Belize that facilitates a better sector planning and a more efficient and effective transport of freight and people within Belize, and between Belize and its main trading partners. It's an important aim of the National Transportation Comprehensive Master Plan (NTCMP) to be aligned with the institutional, environmental, human and financial resource capacities of the country, and to incorporate climate resilience issues into the core planning tools.

- 2.2 In accordance with this main objective, the NTCMP will allow the Government of Belize to redesign the National Transportation Network (NTN), applying a multimodal approach that will result in greater efficiency for the transport overall. This will include:
- Evaluation of the passenger transport system, including the intercity bus system, water-taxis (in rivers and servicing The Cayes), and air transportation; with emphasis on tourism services.
  - Analysis of Belizean freight transportation infrastructure and services, logistics costs, transit times, business logistics characteristics, border management and trade barriers, etc.
- 2.3 On one hand, regarding passenger transport, the objective is to improve overall conditions, with emphasis on the services associated with the tourism sector, given its importance as a key driver of the national economy.
- 2.4 On the other hand, in regard with freight transport, the ultimate objective is to improve the domestic distribution of goods in Belize, promote Belizean exports (especially agro industry products) and develop trade-oriented infrastructure (e.g. ports) to serve an extended hinterland, facilitating intra-regional and international trade.
- 2.5 The scope of the Consultancy should include all geographical areas within the country, as well as transportation networks that are shared with neighbouring countries. This includes road connections with Guatemala and Mexico, maritime links with other Caribbean and Central American ports (cargo and cruises liners), water taxi ferry service to Chetumal, Mexico and Puerto Barrios, Guatemala, and international air service connections.

## **2. Specific objectives**

- 2.6 The specific objectives of the consultancy assignment are to:
- 2.7 Make extensive diagnosis of the Belizean transport system, both for passenger (public and private) and freight. The transport system includes infrastructure, services, regulations and the institutional framework. Specifically, the detailed objectives are:
- Characterize the Belizean Transport System, both for passenger and freight. All elements of the system must be considered.
  - Analyse the infrastructure and service supply available in the country.
  - Evaluate and quantify transport demand, in terms of vehicles, passengers or tonnes of cargo
  - Identify constraints, costs, opportunities and design improvements in the NTN, with the goal to improve efficiency, quality, market access, standards, costs, and growth.
  - Diagnose the sea, river, land and air transport systems in order to: (i) determine the current and future needs of the export, distribution and service sectors; (ii) analyse access to domestic and international markets; and (iii) facilitate increased production, marketing, and export trade capacity.
  - Analyse the current and projected trends of passenger transport and the resulting impact on NTN. Focus should be placed on key areas, such as settlements and potential settlements, workers, service providers, commercial businesses, tourists, visitors, urbanization, disaster risk management, climate change, and information technology. Each area should consider costs, constraints, efficiency, environmental implications, opportunities and recommendations. The analysis should also consider Belize's links to the regional road networks.
  - Conduct a review of all legislation and institutional organization governing the various components of the NTN and recommend legislative changes and drafting instructions for

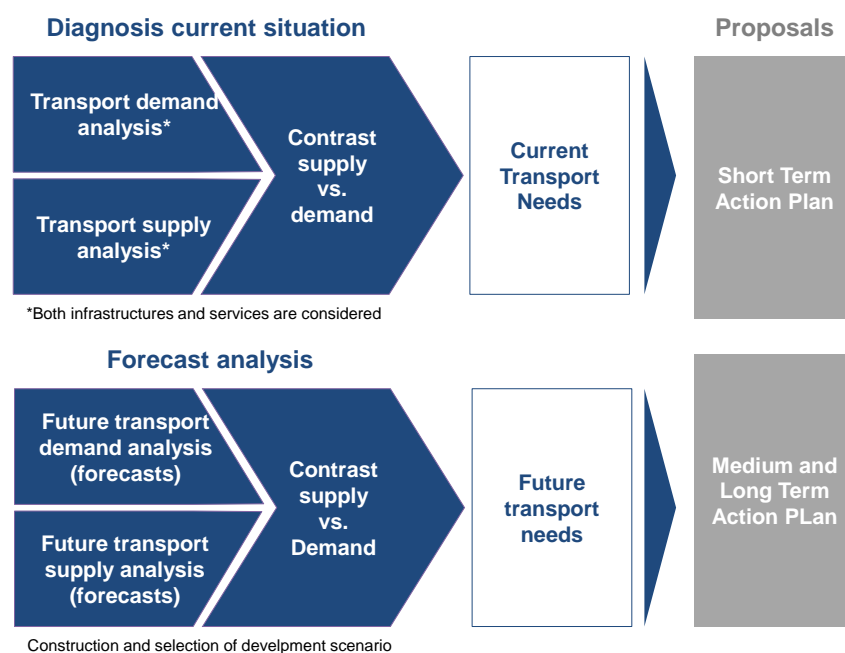
- the proposed changes. It includes a review of relevant sector policies, including the National Sustainable Tourism Master Plan, etc. It must also include a review of current processes such as the National Land Use Task Force works on the Land Use Policy of Belize, for instance.
- Evaluate the institutional capacity, including human, ICT and physical resources, to develop planning and execution of the regulatory functions.
- 2.8 Generate a Short-term action plan (1-2 years) that shall contain the immediate actions necessary to mitigate high priority problems within passenger and freight transport systems, based on current diagnosis of it. Specifically:
- Define a set of actions required in the short-term to address immediate and high priority limitations of the system.
  - Evaluate budget and time requirements, and define institutional holders of the proposed actions.
  - Prioritize actions in order to develop a detailed roadmap for the implementation.
- 2.9 Assess future needs of intercity passenger transport system in the medium and long term. Develop a model and evaluate projections and future scenarios. Detailed objectives are:
- 2.10 Develop a four-stage transport model for intercity road transport, propose future scenarios of development in terms of demand, infrastructure, services, regulations and institutional framework, and evaluate them.
- 2.11 Propose and evaluate development scenarios for water transport.
- 2.12 Propose and evaluate development scenarios for airway transport.
- 2.13 Analyse future needs of freight transport system in the medium and long term. Develop and evaluate projections and future scenarios. Scenarios should take into account previously planned projects, expected trends in the sector, and expectations of the different key sectors of the Belizean economy.
- 2.14 Generate a Medium and Long term action plan (3 – 20 years) that identify and prioritize required actions to generate a more efficient transport system (both for passenger and freight) in the medium and long term:
- Define required actions in the middle and long term to improve transport system. Actions may be infrastructural, regulatory or institutional. Make recommendations to the NTN that will enable Belize to take advantage of its unique geographic location and take advantage of market access opportunities, trade and trade facilitation between regions, sub-regions, and globally.
  - Evaluate cost and time of all actions and propose a comprehensive system to prioritize them.
  - Develop a roadmap to implement the recommendations of the NTCMP that will guide programmes, projects and activities through 2030 and that will address issues of efficiency, standards, costs, quality, resilience, market access and growth in line with national development goals.
  - Propose the legal, regulatory and institutional instruments to deploy the Medium and Long Term Action Plan.
  - Analyse and recommend the Government of Belize the most suitable way for funding the action plan, public, private and public-private partnerships (PPP) should be considered in the analysis.

- 2.15 Develop and establish a set of IT tools that should support and improve the planning process of the Government of Belize during and after the NTCMP execution:
- Create and launch a website of the National Transportation Comprehensive Master Plan that allows information dissemination and institutional following of the development.
  - Create a GIS for the Belize transport system with all the compiled information during the consultancy execution.
  - Create a Belize National Dataroom (digital) that consolidates all relevant information, plans and studies related to the transport sector.
  - Generate a national indicator database for the transport sector
  - Develop a consistent prioritization IT tool based on a multi-criteria analysis that allow the Government of Belize to select investments, actions, development scenarios or other elements.
  - Generate the mechanisms and transfer the required know-how to the Government of Belize in order to assure the continuity of all IT tools and their usage in the in-house planning process.
- 2.16 Ensure that the NTCMP is developed through a consultative and participatory process, while ensuring the government's sense of ownership of the various components and securing broad support of the stakeholders regarding the identified needs and priorities.

### III. Main Activities

- 3.1 The most successfully proven methodology for developing a NTCMP is structured in three phases, as shown in the following figure: diagnosis, forecast and recommendations.

**Figure 1. diagnosis, forecast and recommendations**



- 3.2 The methodology shown examines the supply and demand-side of transport, under current and future environments, for both passenger and freight transport. Even if the approach is the same,

the detailed activities and analysis required for passenger transport and freight transport may vary, as shown in the following list of activities.

- 3.3 For example, in the case of passenger transport, classic mobility analysis is performed taking into account the socioeconomic situation of the country (classification by trip type, primary origins and destinations, common mobility flows, modes of transport and services used). On the other hand, freight transport and logistics focus on additional elements such as trade facilitation and regulations, freight flows, origins or destinations.

- 3.4 To accomplish the objectives of this consulting assignment, the consultant will successfully carry out the seven primary components identified below.

## **1. Diagnosis of the current situation and preliminary approach to future scenarios**

- 3.5 The development of a plan of this nature is a complex task. This is compounded by the fact that there is a limited amount of relevant prior experience in country and a scarcity of international experience that is applicable or from similar contexts.

- 3.6 Within passenger transport, management by the public sector is common. However, only recently has there been recognition from the public sector of the need to improve the quality of logistics services in order to respond to challenges posed by international markets.

- 3.7 Consequently, the level of information available on logistics practices at the national level is scarce. As well, the limited development of logistics services in the country means that users have limited knowledge of international best practices that could be applied in the country. Thus, a diagnosis has to ensure that users are given an adequate depth of information in order to be able to draw valid conclusions from the analysis.

## **2. Information compilation**

- 3.8 The consultant will review all pertinent information that is available from previous studies and from the databases provided by the government.

- 3.9 At a minimum, the consultant will need to consult the following studies and plans (some are completed and others are under development):

- Belize Medium Term Development Strategy 2010–2013, Ministry of Economic Development, Commerce and Industry and Consumer Protection, 2010.
- Belize Development Framework 2030.
- IDB Transport Sector Note – Belize, IDB 2013.
- National Climate Resilience Investment Plan [NCRIP], Government of Belize, 2013.
- Road Maintenance Strategy, Belize. Ministry of Works & Transport.
- Global study to propose specific interventions to reduce the Belizean road network vulnerability to flooding events, TYPISA, 2007.
- Belize Cargo Port System (BCPS) Rapid Assessment and Recommendations, Ministry of Trade, Investment Promotion, Private Sector Development and Consumer Protection.
- Analysis, strategy and tools for the improvement of freight logistics and trade in Mesoamerica, funded by IDB, 2013.
- Road Freight Transport in Central America: performance analysis and policy recommendations. Belize Country Report funded by the IDB, 2012.
- Master Plan Project and Urban Development Strategy Project funded by the IDB.
- IDB Technical Note: A review of agriculture in Belize. Valdez and Foster 2013.
- National Sustainable Tourism Master Plan funded by the IDB.

- IDB Tourism Sector Note 2013.
- The Urban works documents being developed by the Municipal Development Project, funded by the World Bank.
- Belize National Sustainable Development Report, Ministry of Forestry, Fisheries, and Sustainable Development and United Nations Development Program, 2012.
- The National Transportation Master Plan in Belize. The Korea development Institute, University of Seoul, TESO Engineering. 2013-2014.
- Feasibility Study for the Development of Short Sea Shipping in Mesoamerica Cocatram.

3.10 Additionally, some other specific studies may be available in the Belize Chamber of Commerce. It's strongly recommended that the consultant arranges the required meetings during the first steps of the consultancy in order to obtain the available studies and plans.

3.11 All of this information will provide the basis for the consultant to consolidate the findings from previous works, for both freight and passenger intercity transport (public and private services), from the infrastructure or services perspectives. Furthermore, the previous studies should enable the analysis of the logistics families that are currently present in Belize, including their traffic volumes and growth trends.

### **3. Characterization of the private and passenger transport system**

3.12 In order to draft a diagnosis of the current status of interurban transport, whether private or public, the consultant will need to characterize the transport system by compiling all available information on infrastructure and services. The characterization will include road transport, air transport and domestic passenger maritime transport (water taxis).

3.13 As part of this activity, the consultant will gather all information available on the supply and demand of transport and the status of the infrastructure of the different modes, and will subsequently develop a characterization of the system.

3.14 In terms of infrastructure, the characterization must include a detailed inventory that will serve as input for Component C3 (which is associated to road infrastructure and the public space, and to sea and air terminals). These inventories will become an essential input for the characterization of the system.

3.15 Regarding public intercity transport services, the consultant will identify the intercity service providers working in collaboration with the Ministry of Works and Transport, and will present the findings from informational surveys conducted with bus operators and operators of other modes of transport.

3.16 All information compiled during the characterization must be included, as far as possible, in the Belize Transport Geographic Information System (BT-GIS, refer to activity 6.2).

3.17 The technical proposal must include information on the methodology used by the consultant in the characterization of the system.

3.18 **Characterization of the freight transport system.** In an effort to diagnose the current situation and to develop growth scenarios, the consultant will be required to characterize the current freight transport and logistics system. This activity will entail gathering all socioeconomic and transportation information available, as well as any other information deemed necessary.

3.19 Within the technical proposal, the consultant should indicate the procedure that will be used to obtain such characterization.

- 3.20 The information gathered through this activity will be systematized as far as possible, and will be inputted into the GIS (see activity 6.2). To do this, the consultant will need to take into account the information already gathered and geo-referenced in previous studies, and will complete this analysis based on the objectives of the NTCMP.
- 3.21 **Supply analysis of the passenger transport system.** This activity will include an in-depth analysis of the supply of the intercity transport system, relying on previous activities, specific informational surveys proposed in Component 3, and the methodology proposed by the consultant.
- 3.22 The analysis will include private and public transport, and will take into account the supply of both infrastructure and services.
- 3.23 **Infrastructure.** The consultant will need to analyse the transport infrastructure currently available for private and public transport passengers. This must include, but not be limited to, the analysis of:
- Interurban road network (examining the studies conducted by the Ministry of Works and Transport on the subject, developing the inventory in Activity 3, and estimating the capacity of the road network).
  - Public road transport terminal network. Analysis of the current status of the interurban bus station and terminal network.
  - Network of maritime and inland waterway passenger transport terminals (water-taxis).
  - Airport and aerodrome network devoted to domestic passenger transport.
- 3.24 The analysis must take into account the quantity and quality of infrastructure, the service conditions, the available ICTs and any other element that may be useful in the following phases of the project to identify the needs and opportunities for improvement.
- 3.25 A special focus should be given to disaster risk management and resilience to the impact of climate change when analysing transport networks. Belize has a vulnerable infrastructural network due to a limited maintenance of infrastructures, to the lack of redundancies and to its natural conditions (flood risk). Adverse weather and natural disasters can have a deep impact on passenger and freight transport, and therefore, the development of the National Transport Comprehensive Master Plan must specifically analyse it. Among others, the consultant will study what elements affect the vulnerability of the network in order to provide solutions in the Short and Long-term Plans and to effectively respond to current problems.
- 3.26 **Services.** The consultant will need to conduct an analysis of the existing transport supply for intercity passengers by modes: land, sea (water taxi) and air. Primarily, the consultant will analyse domestic transportation, however, if deemed necessary, the analysis could extend to the supply of international transport services linking neighbouring countries (Mexico, Guatemala and Honduras).
- 3.27 At a minimum, the consultant will identify and analyse the following supply aspects of the transport services:
- Organization and business structure.
  - Type of services available.
  - Conditions of service (quality).
  - Prices and costs.
  - Equipment and vehicles available (quantity, quality and characteristics).

- ICTs available.
  - Human resources and training.
  - Safety conditions.
  - Legal conditions, regulatory and institutional framework.
  - Mechanisms for controlling compliance with the operating conditions.
- 3.28 There will also be a need to identify the major stakeholders in each of the sectors. If possible, a historical growth analysis should be conducted to determine the actual growth of the sector.
- 3.29 Within the technical proposal, the consultant will identify the approach that will be used to ensure compliance with the objectives set out for this activity.
- 3.30 **Supply analysis of the freight transport system.** The consultant will conduct an analysis of the existing supply of infrastructure and services.
- 3.31 The consultant will draw on existing studies, such as "Analysis of Freight Logistics and Trade in Mesoamerica", and complement the information available with the collection of required primary data. As a minimum, the following aspects must be reviewed:
- 3.32 **Infrastructure:**
- Analysis and assessment of transport network serving freight flows. All modes must be taken into consideration, at least: road, maritime transport, inland waterway transport and airway transport.
  - Identification and inventory of existing logistics nodes: size, type and services offered, logistics segments/families, markets served and the area of influence. This inventory must include logistics nodes associated with all modes of transport.
  - Possibilities/constraints for a system of logistics nodes to operate as a network, given the current supply within transport networks.
  - Existing regulations (planning, transport, etc.) for the introduction of logistic infrastructure in the country.
  - Technology: typology of ICT and existing equipment. Level of use of ICT in the management of daily activities.
- 3.33 As a complement to the analysis of passenger transport infrastructure, the consultant will need to conduct a specific analysis of the vulnerability of the network and resilience of the country's freight transport to the impact of climate change.
- 3.34 **Services.** The consultant will be required to analyse the overall system of each of the transport sectors (roads, ports, airports and waterways).
- 3.35 The objective of the analysis will be to provide the elements required to strategically address the development of the sector. It is therefore desirable that the consultant's proposal is not limited to regulatory aspects.
- 3.36 As such, a process will first be carried out to identify all public and private operators and business units of major importance now operating in all transport sectors mentioned above. Specifically:
- Inventory of transport and logistics operators for all modes of transport. Inventory of available equipment and its characteristics.
  - Determination of operating costs: structure, composition, impact on price setting, market reference prices and margins, break-even points, sensitivity analysis based on criteria that



- reflect the efficiency of the logistics system (modal integration, reduction of empty returns, size of shipment, existence of long term contracts).
- Legal and regulatory framework: regulatory factors that inhibit the development of logistics, from the perspective of operators.
  - Funding options for private sector operators (including public investment); fiscal incentives for fleet upgrade.
  - Contracting and operational models: types of contracts in use (depending on product served and pricing mode), instrument used (contract, service order), contract period, loyalty incentives, management of seasonal peaks.
  - Contribution to value creation: Level of integration with the client, level of integration with the basic product offering.
  - Technology: level of use of information technologies, including New Vehicular Information and Communication Technologies, use of advance sales schemes, on-line sales, effect of vehicle technology on costs (type of unitization, loading and unloading methods), use of related services such as couriers and postal services for remittances.
- 3.37 In the case of public transport infrastructure, or that operating under a concession, it is necessary to distinguish between the main services provided within each business unit. For example, in the case of ports:
- Administrator and/or Operator of each Port Terminal.
  - Companies or shipping lines operating in the ports.
  - Owners of the cargo.
  - General agencies and/or shipping lines operating in the ports.
  - Pilotage and tug services.
  - Loading and unloading services, including stevedores.
  - Warehousing service for the storage of freight to be loaded or unloaded.
- 3.38 Additionally, the consultant will analyse the main characteristics of each sector's business, considering the number of players, market size, specific tariff system, level of competition, market challenges, existence of monopolistic characteristics (entry barriers, exit barriers, economies of scale, economies of scope, vertical integration), and will measure and characterize the essential facilities.
- 3.39 In its bid, the consultant will describe in detail the methodology for conducting the field surveys relating to the inventory of operators. This will include the number of interviews to be conducted to obtain the level of confidence proposed, the type of information sought, and the actors to be interviewed.
- 3.40 The information collected at this point, will be systematically analysed in the GIS.
- 3.41 **Demand analysis of the passenger transport system.** In order to complement the supply analysis, an analysis of the existing demand for the intercity transportation system (road, sea, inland waterway and air), will be conducted.
- 3.42 In the case of private road transport, the analysis must rely upon the information and statistics made available by the Ministry of Works in terms of vehicle counts, as well as from specific surveys under Component C3. Such information will be essential to obtain a detailed account of the current demand.
- 3.43 As for the intercity passenger public transport, the field surveys planned for Component C3 will serve as a core element, given the limited amount of information available in the country. The

consultant should choose how to complement the field surveys in order to obtain more detailed information of demand.

- 3.44 Regarding maritime, inland waterway and air passenger transport, the consultant will need to analyse and compile the available statistics and propose the most appropriate methodology for obtaining information on the current demand.
- 3.45 **Demand analysis of the freight transport system.** Based on the context analysis, the consultant will need to define a preliminary segmentation to allow for the detailed planning of the fieldwork. The aim of the fieldwork is to identify the patterns and trends of the major logistics families and chains and their aggregated demands. This, in turn, will permit identifying the natural "centres of gravity" for the location of the nodal infrastructure (unimodal or intermodal), the type of services required at the national level, the demand requirements for training services, etc.
- 3.46 **Identification of productive segments and selection of the logistics chains to be analysed.** The consultant will be required to identify the main productive chains and logistic chains associated with the key segments. It will differentiate, on one hand, those chains in which logistics services represent an important share of the cost structure in the final price, and on the other hand, those chains in which logistics is reduced mainly to transport (chains where there is no added value associated with product market positioning).
- 3.47 A segmentation of demand by logistics families will be conducted and based on criteria of: weight and volume, unitization practices, frequency of consignment, value and type of goods (solid or liquid bulk, general containerized or general cargo), storage density, number of references and frequency of consignments, use of storage and distribution centres, route distance, type and size of vehicles used, market location (domestic or international), etc.
- 3.48 Both foreign trade (imports and exports) and domestic trade products will be taken into account. The consultant will propose the analysis of a selection of logistic chains that serve the purposes of the Project.
- 3.49 **Analysis of logistics chains.** In the bid, the consultant will provide a detailed description of the methodology for conducting the field surveys, indicating the number of interviews to be conducted to obtain the level of confidence proposed, the type of information sought, and the actors to be interviewed. Taking into account the pre-existing studies, the consultant must make a proposal including an estimation of the dedication and effort put into this activity.
- 3.50 The analysis of the chains will include the location of production, preliminary identification of associated transport corridors, and identification of the areas of influence. The structure of the chain will also be evaluated, i.e. length, breadth, degree of specialization, value, etc.
- 3.51 As a result, the consultant will establish the maturity and level of performance of each one of the logistics families. The consultant will summarize the findings specifying the technology used and the degree of association throughout the chain. Furthermore, the potential to increase the degree of association will be examined by reviewing market characteristics, shared management, infrastructure used, level of externalization of activities, level of specialization achieved from outsourced activities (the adjustment of logistics supply, logistics costs, existence of return logistics, volume and management of inventory and impact on the business, relative integration of the service with the basic product offering), impact of the submerged costs on the possibility of increasing outsourcing and, finally, the opportunities for the generation of value added service proposals.

- 3.52 This analysis must be conducted per logistics family. Subsequently, a summary of the problems will be generated for domestic segments, export segments, and for imported goods and raw material, using a classification the consultant considers appropriate. Analysing the links with international markets, the consultant will need to identify which of the actions that facilitate trade and transport are most valued/desired by the users, in order to take into account their perspective.
- 3.53 In the proposal, the consultant should make mention of any other factors they deem worthy of including and analysing under this activity.
- 3.54 **Supply-demand relationship for the passenger transport system.** After analysing the supply and demand, the consultant will conduct a comparison of supply and demand in order to identify the needs of transport infrastructure and services. This activity will identify the major deficiencies, capacity constraints and bottlenecks of the transportation system for all the modes under analysis. The comparison will not only focus on standard operation of the network, but will include additionally a specific focus on the vulnerability of the network, and the impact that occasional natural risks may have on the transport network. As previous activities, the analysis will take into account all transport modes (i.e. road transport, maritime passenger transport (water taxis), inland waterway transport and air transport). In the analysis of road transport supply and demand, the consultant will be able to rely on the models used in Component C3.
- 3.55 Identifying the demand-supply relationship will contribute to the comprehensive diagnosis of the current situation of the transport system. The technical proposal will describe the methodology the consultant will use for each of the modes.
- 3.56 **Supply-demand relationship for the freight transport system.** In the case of freight transport, the consultant will follow a process similar to the one used for private passenger transport (i.e. contrasting the available freight and logistics supply with the current demand). This process will permit the identification of key gaps and needs.
- 3.57 The consultant will analyse all the modes (road, maritime, inland waterway and air transport), and will conduct a diagnosis of the current status of the transport and logistics system. The consultant will need to specify the planned methodology in the technical proposal.
- 3.58 Taking into account that this is one of the inputs for developing the future demand scenarios, the consultant must identify key considerations that could impact the demand growth hypothesis.
- 3.59 A specific analysis should be done at this point in order to understand the growth potential of alternative transport modes that could improve transport productivity and reduce costs; such rivers or inland waterways transport. Belize has a large river network that could potentially serve as a cost-efficient transport mode for freight, and the NTCMP shall take it into consideration.
- 3.60 **Institutional, legal and regulatory framework:**
- 3.61 **Legal framework.** The consultant will carry out a review of laws, regulations, decrees and, in general, all legal instruments that control the development, operation, installation, etc. of intercity passenger transport services and infrastructure as well as those relating to logistics. As part of this process, the institutions involved in regulatory enforcement must be noted.
- 3.62 The analysis will include the characterization of the current legal framework and the latest regulatory approvals, thus identifying the interrelations among the different government

agencies with responsibilities in transport systems and deciphering if intermodal coordination exists.

- 3.63 **Institutional framework.** The consultant will identify the institutions involved at all levels, their role and the legal instruments that establish their areas of responsibility (planning and control of infrastructure nodes and network, operational control of services, reinforcement programs, facilities management, administration of services, promotion of private investment).
- 3.64 The consultant will identify the areas of overlap (that may present conflicts) as well as the gaps. This will serve as the basis for proposing appropriate coordination schemes developed by the consultant.
- 3.65 Among the institutions to be analysed are those listed in the "Institutional Framework" section of the "Background" chapter at the beginning of these Terms of Reference, as well as the municipalities. Other institutions of importance should also be included.
- 3.66 **Recommendations.** Recommendations will be made on legal, regulatory, tax, and credit incentives, in order to promote the diversification of services and technological change.
- 3.67 The needs for technical assistance of operators and the design of long-term sustainable plans will also be evaluated.
- 3.68 **Summary of the diagnosis and preliminary proposal for short term action lines.** Based on the elements analysed, the consultant will prepare a summary of national trends in the demand for logistics services, and will compare this with the trends in size and diversification of value-added services that contribute to the competitiveness of the economy.
- 3.69 The objective is to identify the main restrictions that prevent the nation's systems from meeting market needs and which will be the basis for the development of the proposal. Specifically, the consultant will identify constraints of the following type: infrastructure, regulatory, financial, institutional, social, supply structure, market factors (competitors, clients, suppliers influence), among others.
- 3.70 This analysis must be carried out in relation to the entire system, both for chains in the domestic market as well as those serving the international market.
- 3.71 **Short-term action plan.** Based on the findings of Component C1, the short-term action plan will identify immediate opportunities (1-2 years) for change. The recommended actions should meet two criteria: (i) be able to be implemented quickly; and (ii) have high impact in addressing some of the major problems of the passenger and cargo transportation system in the short-term.
- 3.72 **Definition of short-term work objectives.** Based on the short-term actions proposed in section 1.11, and after presenting Component C1 to the Technical Supervision Committee, the consultant will finalize the short-term work objectives, justify the need for each, and indicate if the required actions for each objective will be implemented within a maximum period of two years.
- 3.73 Some of the objectives that will allow prioritising the actions are, among others, improving the efficiency and effectiveness of transport (both passenger and freight) and reducing the sector's vulnerability to natural disasters.
- 3.74 **Short-term action plan.** The purpose of the short-term action plan is to organize the system and prevent the emergence of an unplanned private service that is not entirely satisfactory in terms of quality, safety, etc.

- 3.75 The focus should be primarily on regulatory aspects, allowing enough flexibility to adapt to Component C5, which includes medium and long-term proposals. Other actions can be proposed in additional areas (infrastructure development, etc.), but only when they can be implemented in the short-term (1-2 years), following the completion of the NTCMP.
- 3.76 **Definition of responsibilities, budget and calendar.** To complete the short-term action plan, the consultant will identify the resources that are required for developing the proposed actions, i.e. the definition of the responsible institutions, the estimated budget and the schedule. The financial resources as well as the responsible entities may be public or private.
- 3.77 The action plan will need to be validated during a workshop with the stakeholders. It will also need to be adjusted based on its findings of the same workshop.
- 3.78 Similarly, the plan will be reviewed once it is included in the medium and long-term plan. Changes in the original assumptions (which motivated the original actions) during the course of the consultancy would motivate an adjustment in the plan. These adjustments would need to be validated in Component C5's workshop.
- 3.79 **Assessment and modelling of the intercity transport system and development scenarios.** Following the diagnosis and development of the short-term action plan, the consultant will analyse and prepare a model of possible scenarios for the development of national intercity transport, whether by road, sea or air. As specified below, intercity road transport should be analysed by one or more four-stage transport models. For domestic maritime transport (especially that related to tourism and to passenger transport between The Cays and the mainland - water-taxis) and domestic air transport (also closely linked to tourism), an effective methodology should be proposed to analyse and evaluate scenarios of development.
- 3.80 During the development of this activity, the consultant will coordinate with the Ministry of Tourism and the Belize Tourism Board, in order to align the proposals on the NTCMP with those considered in the National Sustainable Tourism Master Plan for Belize 2030, recently completed. It should be done for with the Land transport component, as well as the air and water transportation sectors.
- 3.81 The following activities 3.1, 3.2 and 3.3 specify tasks to be developed for road, sea and air transport modes respectively.
- 3.82 **Assessment and modelling of road intercity passenger transport.** The consultant will be required to create a transport model for Belize and plan for future scenarios of development. This work will allow evaluating the future infrastructure and service needs of the country. The aim of this activity is to develop and calibrate a reliable and complete transport model in 4 phases: generation and attraction, distribution, modal choice and assignment for road transport. The use of an intercity transport model largely responds to the following two objectives:
- Carry out an adequate process of priority setting, taking into account the limited resources available for the country's infrastructure development, based on current and future needs.
  - Improve and optimize intercity public passenger transport services based on the real demand of regional and national mobility.
- 3.83 Based on the above objectives, the consultant's technical proposal will need to propose the most suitable methodology for the development of the model (or models) with Transcad Software, based on the consultant's experience. Nevertheless, the creation of an intercity vehicle transport model that allows for capacity restrictions is recommended, as well as the development of a specific interurban public passenger transport model to tackle the issue of

public passenger services. Regarding the vehicle model, the consultant needs to state in its methodology how it intends to handle freight transport flows (how these will be included in the transport model and future development of scenarios).

- 3.84 **Identification of zoning and time horizons.** The first activity to be carried out is the definition of the area to be studied. The zoning of this area will need to be defined based on Urban Plans, Zoning Schemes, Land Use Policies, where and if available, and in accordance with the socioeconomic and production characteristics so that the areas are of a homogeneous nature and respond as correctly as possible to the real patterns of transport. This zoning will need to be based as much as possible on the diagnosis carried out and the statistical information available, as well as the fieldwork performed.
- 3.85 In relation to the base year, this will be defined as the year in which the field information on mobility is gathered, tentatively 2014. The ensuing time horizon will be five-yearly intervals until 2034.
- 3.86 **Generation of the Belize transport database.** For the generation and calibration of the models, a transport database will be necessary, and it will need to include all necessary inputs, such as:
  - Socioeconomic database.
  - Inventory of transport infrastructure.
  - Origin - destination transport study.
  - National public transport supply.
  - Management information system (DOT database).
- 3.87 The databases will be geo-referenced in all cases and will use the zoning defined. All the databases will be included in the Belize Transport Geographical Information System (BT-GIS).
- 3.88 Based on the above requirements and matching it with the information currently available in public institutions, the following information-gathering studies will be required:
  - Road and public space inventory oriented on model usage.
  - Detailed study counting vehicle journeys.
  - O/D study of passengers on public transport.
  - Inventory of the national public transport supply (not focussed on urban transport).
- 3.89 These results will also be inputted into the Belize Transport Geographical Information System.
- 3.90 **Composition of socioeconomic data base.** For each one of the transport zones, it will be necessary to gather socioeconomic information, since these are the variables that explain the travel behaviour of the population.
- 3.91 The following variables must be considered for each zone: total population and population by family income levels, level of education, family income, family vehicle ownership and location of employment. The consultant will be able to improve the methodology with additional variables considered most important for the characterization of intercity private and public transport.
- 3.92 For the socioeconomic and demographic information, the most trustworthy source is the Statistical Institute of Belize. The 2010 Population and Housing Census and the latest Labour Force Survey can be used as the bases for the data collection. The figures must be projected to the base year of the study.
- 3.93 **Inventory process for transport infrastructure.** It will be necessary to carry out a geo-referenced inventory of the Belize transport network with the objective of modelling the

transport demand based on the current supply. The geo-referenced inventory will need to contain the following infrastructure, at the least.

- 3.94 **Road network.** Network of public passenger transport terminals, including the Cruise Passenger Ports (proposed and actual).
- 3.95 The consultant will need to carry out an inventory of roads and public space at the national level with the aim of identifying the characteristics of national roads, their condition and current capacity and the infrastructure limitations or structural restrictions.
- 3.96 Additionally, but not related to this activity, the consultant will also have to do an inventory of other passenger and freight infrastructure such as ports, maritime passenger terminals, airports and airstrips.
- 3.97 **Origin - destination transport study.** The origin - destination study is intended to obtain current matrices for vehicles and passengers. The consultant's technical proposal will need to state the details of the proposed methodology as well as the sample size required, in accordance with the project objectives. In view the limited information available at present, the information gathering stage will need to include the following components, at the least:
  - Detailed and classified vehicle counts throughout the country's main interurban highways.
  - Interception O/D surveys of public transport services in passenger terminals.
  - The consultant's technical proposal must detail the methodology for the fieldwork, the vehicle classification to be used and the minimum interview sample size. Traffic counts must differentiate among private passenger vehicles, public transport vehicles and other types of freight vehicles, in order to appropriately segment the traffic categories.
- 3.98 **National public transport supply.** In order to perform the diagnostic and support the modelling and action plan, it will be necessary to carry out an inventory of public transport buses, based on operator surveys of the intercity passenger transport system registered with the Ministry of Transportation, Department of Transportation. This inventory will include, at the least, the characteristics of the operators and their vehicles, in terms of the capacity and main technical characteristics of the equipment.
- 3.99 **Calibration and baseline scenario modelling.** Based on the mobility information generated, the transport modelling tool to be used for the projections and future estimates will be built and calibrated. These models use the base year information of the analysis to help estimate the mobility indicators that are difficult to derive directly from the information gathered.
- 3.100 As part of the construction of the model, current matrices need to be constructed for both vehicles and passengers of intercity public transport services. All the matrices must be based on the proposed zoning and be a faithful representation of the current state of the demand for intercity transport.
- 3.101 Depending on the commercial modelling program used, these tools may help build complete travel matrices since very often the direct data which emerges from data collection and surveys fails to provide values for some origin - destination pairs.
- 3.102 **Proposal and modelling of future scenarios.** In order to identify the future transport infrastructure and service needs, various future scenarios will be considered and modelled, in accordance with the proposed time horizon of the study (2034). The scenarios must consider different projections for the socioeconomic and demographic context, for the infrastructural development in all modes and for the services or organizational structures of public and private

transport. A baseline scenario will be the starting point, based on current trends, without taking into consideration future infrastructure developments (or, at the most, considering only those developments already planned). This will be the foundation for incorporating other scenarios that include the different proposed actions on mobility and intercity transport development.

- 3.103 The scenarios adopted will allow for a comparative evaluation of courses of action or alternative action packages.
- 3.104 These evaluations will consider traditional indicators for the performance of the transport system: socioeconomic indicators associated with users, development and prosperity based indicators, and evaluations of externalities.
- 3.105 **Scenarios for economic and population growth.** The scenarios will consider socioeconomic and demographic projections, depending on the factors that affect the country's development. The proposed scenarios take into account the recent development of the country, the existing plans at different national levels, and the Central American and regional integration projects.
- 3.106 At the national level, Belize's Medium Term Development Strategy (MTDS) will be considered when developing the scenarios, as well as any other currently existing strategy or sector-based plans such as the National Sustainable Tourism Master Plan and the urban development plans of the country's major centres.
- 3.107 At the international level, consideration needs to be given to the expansion of regional economic integration under the Mesoamerica Project, which is making significant progress on some aspects related to transport and logistics. It is also important to consider socioeconomic scenarios that can be developed at the neighbour countries; an example would be the potential growth of the population in the Petén area due to immigration.
- 3.108 **Infrastructure development scenarios.** The proposed future infrastructure scenarios will offer several packages in line with specific prioritization objectives. They should consider infrastructure improvements for both passenger and private transport, and consider all the identified issues in the infrastructure diagnosis performed in chapter 2. Some of the criteria that at least should be considered are the increase of transport productivity and efficiency and network vulnerability reduction.
- 3.109 **Scenarios for improvement and optimization of public transport.** In the context of intercity public transport, the proposed scenarios should consider the different options to assess the following variables, at the minimum: reorganization of existing routes, fare pricing and institutional and business organization of the sector. All the scenarios proposed will be modelled with the tools prepared for this purpose.
- 3.110 **Selection of alternatives and description of the development scenario.** After the modelling stage, the results will be evaluated and a selection of alternatives will be made, allowing for the definition of the final scenario.
- 3.111 The evaluation of the scenarios/alternatives will be made via a multi-criteria tool that will include technical, institutional, financial, socio-economic and environmental perspectives. The detailed objectives and criteria to be used in the prioritization should be listed in the proposal methodology.
- 3.112 The selection will allow for the identification of the priority scenario for development, and this will be the basis for the construction of the Medium and Long Term Plan. In its technical proposal, the consultant will propose the detailed methodology for the selection of alternatives.



- 3.113 **Assessment of water-taxi passenger transport.** Regarding domestic maritime transport, the consultant will propose and evaluate development scenarios based on the diagnosis, following a similar procedure to that used for road transport but without considering the use a model.
- 3.114 Based on the diagnosis made in Component C1, the consultant will propose various scenarios for development of the sector in terms of its regulation and institutional structure, and infrastructural or services improvements. The proposed development scenarios will take into consideration all the needs identified in the sector and have a 2034 time horizon.
- 3.115 The scenarios should be evaluated using a multi-criteria methodology that selects the most suitable development scenario. This will then serve as the basis for the Medium and Long Term Action Plan in Component C4.
- 3.116 During the development of this activity, the consultant will coordinate with the Ministry of Tourism and the Belize Tourism Board, in order to align the proposals on the NTCMP with those considered in the National Sustainable Tourism Master Plan for Belize 2030, recently completed.
- 3.117 This activity should also include a geo-referenced inventory of maritime passenger terminals and infrastructure taken into consideration in the development scenarios. All previously mentioned infrastructure must be incorporated into the Belize Transport Geographical Information System. It is also necessary to evaluate the potential of developing services for river navigation.
- 3.118 **Assessment of airway passenger transport.** Domestic air transport must also be considered in the Master Plan, along similar lines to activity. Based on the diagnosis made in Component C1, the consultant will propose scenarios for the development of the sector in terms of its regulation, institutional structure, and infrastructural and/or services improvements. The proposed development scenarios will take into account all needs identified in the sector and will have a 2034 time horizon.
- 3.119 The scenarios should be evaluated using a multi-criteria methodology that selects the most suitable development scenario. This will then serve as the basis for the Medium and Long Term Action Plan in Component C4.
- 3.120 As with water-taxi transport, air transport is closely linked to the tourism sector. Therefore, during the development of this activity, it will be necessary to take into consideration the National Sustainable Tourism Master Plan for Belize 2030 and to coordinate with the Belize Tourism Board, so that the Master Plan recommendations respond to the needs of the tourism industry, among others.
- 3.121 This activity should also include a geo-referenced inventory of airports and airfields. All relevant infrastructure and characteristics of these will be included in the Belize Transport Geographical Information System.
- 3.122 **Evaluation of Belize's logistics system and potential development scenarios.** This fourth component focuses on proposing infrastructure development scenarios for the medium and long-term, including all modes nationwide. This will take into account planned projects, expected sector trends, and the expectations of different key sectors of the Belizean economy.
- 3.123 The task will require reviewing the country's key logistics sectors, evaluating the impact of the current environment on Belize's competitiveness in terms of transport of goods and services, and making recommendations to enable Belize to take advantage of its unique geographic location and to benefit from market access opportunities, trade and trade facilitation between regions, sub-regions, and globally.

- 3.124 In line with the specific objectives of the ToR, the consultant will seek to determine the constraints, costs, opportunities and modern design improvements in the NTN, aimed at improving efficiency, quality, market access, standards, costs, and growth, in line with the national development targets. The consultant must develop engineering concepts for identified physical infrastructure and related equipment components that will contribute to a redesigned and upgraded NTN.
- 3.125 **Identification of trends by logistics family.** The consultant will use the results of Component C1 to update and further develop the analysis initiated in the study “Analysis, strategy and tools for the improvement of freight logistics and trade in Mesoamerica”.
- 3.126 Given that the final objective of the Mesoamerica project was different from that of the NTCMP, an update of the relevant logistics families in Belize will be required. Once the logistic families have been selected, the consultant will describe the expected trends for the coming years, based on:
- Interviews with sector players, which will provide information on growth plans, planned projects, global market trends, competitors, etc.
  - Statistical information of the sector, trends published by professional associations in the sector, etc.
- 3.127 This kind of information is normally very scarce. The consultant, therefore, will need to rely on his own experience and on international case examples in order to make conclusion regarding the trends can be expected for each logistics family.
- 3.128 During the development of the methodology, the consultant will provide clear information about the working mechanisms to be used in this activity.
- 3.129 **Summary of expectations.** An examination of expectations will identify all aspects related to competitiveness that the country and its stakeholders consider to be challenges in the coming years. This approach will be made from a multi-sector and multi-modal perspective, including expectations concerning the commercial positioning, infrastructure development, provision of logistics services, switches of transport mode and any other aspects the consultant deems relevant.
- 3.130 The identification of expectations will then serve as the basis for obtaining a detailed description of these perspectives, learning what factors motivate them, etc.
- 3.131 To ensure consistency, expectations and trends, as well as the activities that follow them must be validated in a workshop with public and private stakeholders before the final version of the document is submitted to the Technical Supervision Committee.
- 3.132 **Comparison of expectations with trends.** Comparing expectations and trends, the consultant should identify next-step actions required to improve the freight logistics system in Belize.
- 3.133 It is recommended to use a SWOT analysis (or whichever tool the consultant deems appropriate) to work separately with each logistics family. By matching expectations with trends, it is possible to identify what weaknesses need to be addressed to achieve the expectations (also taking account the trends identified).
- 3.134 The development of this section requires the consultant to demonstrate his knowledge of the region's logistics dynamics. Previous understanding and experience will contribute to project success, such as ensuring that deadlines and project objectives are met. Various regional elements have an impact on Belize's future expectations. These include, for example:

- Modification of the service patterns of liner vessels in the Caribbean after the opening of the third set of locks of the Panama Canal.
  - Trade patterns between CARICOM and the Central American market.
  - Mexico's role as a region supplier.
  - Port hubs network serving the Caribbean.
  - Such regional factors must be taken into account in order to propose coherent scenarios.
- 3.135 Although proposals will be developed in Belize, the consultants' recommendations are supposed to go beyond Belize. The country intends to identify the extended hinterland, which will allow handling more important volumes of cargo and promoting economies of scale, development of new services, etc.
- 3.136 **Proposed scenarios.** Based on the analysis carried out in previous stages of this study (identification of weaknesses, trends, expectations, etc.), the consultant will define the different development scenarios.
- 3.137 These scenarios shall include roads and inland waterways, ports, airports, logistics platforms, border crossings, etc. related to freight transport, as well as all the associated logistics services. The proposals made in this chapter must be consistent with the conclusions obtained in Component C3 (passenger transport infrastructure and services -i.e. bus, cruise and water taxi services).
- 3.138 As part of the methodology, the consultant will propose the criteria that are required in the definition of scenarios, in order to ensure their suitability.
- 3.139 **Evaluation of alternatives and description of medium and long-term scenarios.** For the assessment of the different scenarios, the consultant will propose a methodology that takes into account the different criteria that are normally involved with such an exercise: demand, territorial impact, investment, socio-economic benefit, environmental impact, etc.
- 3.140 The evaluation must take into account all decision axes. The methodology must be robust enough to withstand different weights for each axis, if necessary. The evaluation exercise must provide stable solutions (i.e. minor modifications in the weights of the decision axes should not change the result of the evaluation).
- 3.141 These activities will serve as the basis upon which the consultant will be able to propose an overall transport and freight logistics strategy for Belize in the following Component. The strategy should be based on the main pillars of action, identifying the primary actions to be implemented.
- 3.142 The consultant will propose a methodology to formulate a robust strategy that responds to the current reality of the logistics system, to future and expected demand, and takes into account the relevant trends.
- 3.143 **Proposals for medium and long-term.** The main deliverable of the consultancy is the generation of recommendations that will allow the NTCMP to define the guidelines to improve the system in the medium and long term (3- 20 years). At a minimum, this phase will consider the following aspects:
- Actions to improve transport, both passenger and freight, public or private, including infrastructural and resources development.
  - Specifically, actions to improve passenger transport services and to promote diversification of freight transport and logistics services.

- Actions to reduce vulnerability of the transport network and improve resilience to the impact of climate change.
  - Legal and regulatory instruments and other incentives that support action (transport policies, strategies, legal and regulatory framework, etc.).
  - Institutional framework and the mechanics to monitor the system.
  - Development of strategic measures for environmental mitigation.
  - Costs and financing of the system.
  - System of institutional linkage.
  - Support in the development of a National Logistics Policy.
  - Detailed action plan and schedule for implementing these new transport sector policies and development programs, and their integration into other sector policies and development programs.
- 3.144 **Conceptual model.** The consultant will need to generate a conceptual model for the development of logistics services in Belize, taking into account the following:
- Location of the nodal logistics infrastructure at the national level.
  - Standards and service levels of the transport infrastructure provided to the nodal logistics infrastructure at the national level.
  - Development scenario considered most likely and the implications of this scenario in terms of the provision of infrastructure and services.
  - Guidelines for the promotion of private investment in logistics infrastructure.
  - Classification of infrastructure provided by the private sector or by local government initiatives, in order to maintain the overall consistency and efficiency of the system
  - Other aspects the consultant deems relevant.
- 3.145 This proposal must also characterize the nodal infrastructure system and the proposed support networks, including:
- Proposal for a domestic logistics node network at the national level including: port nodes (maritime and waterways), multifunctional nodes, land nodes, dry ports, logistics areas at border crossings, wholesale markets, etc., and any other infrastructure considered part of the national system.
  - Hierarchy and function of each logistics infrastructure: area of influence, transport modes, type of demand to serve, role in the international transport system, proposed role for logistics families.
  - Definition of the transport network (road, maritime/coastal, waterways) associated with the national and regional system, and identification of the criteria and minimum operating conditions that these connections must meet in order to ensure the efficiency of the system.
- 3.146 In addition, special attention should be placed on the diversification of logistics services. Although logistics has traditionally been considered a private sector initiative, recent trends show that governments are becoming involved not only in the strategic planning of the national system but also through a proactive provision of direct and indirect incentives.
- 3.147 In developing countries, the need to foster the qualitative improvement of the system is even more significant given the existence of deep-rooted structural weaknesses.
- 3.148 The consultant will propose operational models and actions aimed at reaching the desired scenario, as part of a comprehensive strategic reflection.

- 3.149 The consultant will end this assignment with the preparation of a National Logistics Policy.
- 3.150 Regarding passenger transport, the procedure will be the same and will develop a conceptual scheme for passenger interurban transportation. This will take into account the infrastructure network required to allow the system to function properly, in coordination with the services to be offered, and proposing an operation plan adapted to Belize's needs. The recommendation should respond to the concerns of current transport operators as to how the current system can be developed into an efficient operation.
- 3.151 The consultant will detail the methodology for evaluating operational alternatives, and propose an operational plan to determine: (i) the structure of the services; (ii) the operating mechanism for private stakeholders; (iii) the concession model; (iv) the tariff scheme and revenue distribution; (v) the service conditions governing the concession contracts; (vi) the institutional framework; and (vii) any adjustments to the regulatory framework to ensure its correct implementation.
- 3.152 **Action plan.** Three tasks will be required to facilitate the implementation of the strategy for both passenger and freight transportation: an estimate of the resources required, in both financial and institutional terms; an estimate of the expected benefits from the proposed actions; and a framework for monitoring and evaluation.
- 3.153 **Action Agenda.** The consultant will organize the major initiatives emanating from the strategy proposed in the form of an agenda, organized according to deadlines, responsible agencies/entities, financing mechanisms, national or regional character of the project, expected impact, and other dimensions that are thought to be relevant.
- 3.154 **Resource needs for implementation.** The resources necessary to carry out the programs and projects of the strategy will be identified. The resources will include the essential inputs for the implementation of projects, covering at least the financial and institutional resources.
- 3.155 Resource requirements will differentiate between those that come from private and public sources respectively, proposing implementation strategies for each action.
- 3.156 Institutional resources refer to the rules and capacities needed to implement the actions (regulatory frameworks, execution and monitoring capacity, inter-institutional coordination, etc.).
- 3.157 **Expected benefits.** An efficient economic evaluation will be performed, based on reasonable standards. This evaluation provides an estimate of the benefits associated with the strategy.
- 3.158 **Legal and regulatory instruments and other support incentives for the actions.** The instruments and incentives are tools to help implement the proposed actions effectively. In particular, the consultant will propose instruments designed to promote an immediate response from the private sector (such as laws or decrees regulating the logistics platform investment, or training programs for transport operators to promote their conversion into logistics operators); as well as passive instruments (such as recommended adjustments to the town planning regulations to ensure the emergence and/or control of logistics infrastructure investments, minimum conditions to be met by logistics operators, etc.).
- 3.159 Among the actions to be explored by the consultant, this will include:
- Legal instruments to promote the development of infrastructure to improve passenger and freight transport.

- Legal, regulatory, tax, financial incentives to promote the diversification of services and cross-sector integration.
- Rules aimed at ensuring the implementation of the conceptual model and the efficiency of the system.
- Financing programs for research and development, as well as technological innovation.
- Other elements that the consultant considers appropriate in the area of passenger and freight transport and services.

### 3.160 **Institutional organization and mechanisms for monitoring the system**

- 3.161 **Institutional organization.** In view of the multiplicity of agencies involved, it is critical for the long-term sustainability of the system to have an institutional model that coordinates the activities of all parties, while also ensuring an adequate level of responsibility during all phases of the planning process, from policy formulation and promotion, to monitoring and control.
- 3.162 Based on Belize's institutional framework and taking reference from the experiences of other countries, the consultant will propose a comprehensive framework integrating the appropriate actors at each level.
- 3.163 **Monitoring and evaluation of the system.** An important element for long-term monitoring is the creation of a logistics and passenger transport database, which includes indicators that measure the impact of the adopted changes. Such indicators will provide feedback during the policy-making and planning phases.
- 3.164 The consultant will propose a model for monitoring progress (outputs) of the proposed initiatives and their impacts (outcomes). This task should also include a protocol for updating data of the evaluation system.
- 3.165 **Funding of the system.** The consultant will propose options to finance the system in the medium and long-term, all of which should support the proposed actions. These may include public, private and mixed funding models that are applicable in order to ensure the system's sustainability.
- 3.166 Prior to this, the consultant will establish the overall investment costs for the selected development scenario, indicating the costs that correspond to the public sector and private sector respectively. This should be performed for the different development system phases proposed. The proposed financing options, or their combination, must be sustainable in the long-term.
- 3.167 The report prepared for Component C5 will contain an updated version of the Component C2 report, as an annex. Thus, if during the course of the Consultancy, any of the aspects that motivated the inclusion of a specific short-term action are modified; appropriate adjustments can be made in this version. The Technical Supervision Committee should validate these changes prior to the final presentation to the NTCMP.
- 3.168 **Establishing set of IT tools.** At this stage, the consultant will identify a set of IT tools that will support the NTCMP's objectives. The tools will permit the gathering, storage, management and dissemination of useful information for the consultant and the various stakeholders involved in the development process of the Master Plan. The NTCMP will have to consider the local resource capacity that will be needed to develop the proposed tools, but more importantly to manage them, and to provide the necessary monitoring of their effectiveness. The following IT tools are proposed:

- Website of the Belize Transport Master Plan.
  - Belize Transport Geographic Information System (BT-GIS).
  - Belize National Data room.
  - Belize Indicators Database.
  - Belize Investment Prioritization Tool (BIPT).
  - The tools will be, in all cases, the property of the Government of Belize (GoB), and will be transferred to the public bodies in charge of future maintenance and usage. On completion of the project, the consultant will need to ensure the transfer of the tools and their functionality to the systems of the designated body.
- 3.169 **Creation and launch of the project website.** The NTCMP aims to have open and fluid communication with its stakeholders, both public and private. In addition, implementation of the Master Plan may require a series of socialization and dissemination processes that allow stakeholders to track the project progress, as required by Component C7.
- 3.170 Therefore, and in order to facilitate communication and coordination with these agents, the consultant will develop the project website and launch it on-line. This Website should contain the following components, at the least:
- Basic information on the project and the stakeholders involved.
  - Calendar and list of project events, permitting a participatory approach and the coordination of activities.
  - Audio visual resources: photos, videos, and similar resources.
  - Quick links to other IT tools of the project: Belize Transport Geographic Information System and the Belize National Data room, for examples.
  - Main results and progress of the Transport Master Plan.
  - Links to other relevant websites (stakeholder sites, other tools or similar websites concerning the IDB or the region, etc.).
  - The consultant should include a detailed methodology and a proposed website structure in the technical proposal. The website should be fully accessible from the most recent versions of the standard commercial browsers (e.g. Internet Explorer, Google Chrome, Safari, Opera, Firefox, etc.).
- 3.171 **Belize Transport Geographic Information System (BT-GIS).** The consultant will develop a Geographic Information System for Belize Transport (henceforth BT-GIS), which will consolidate all the geo-referenced information that is gathered and generated during the preparation of the Master Plan. The BT-GIS should include the following types of geo-referenced information:
- Socio-economic and productive database used in the preparation of the transport models
  - Linear and nodal infrastructure networks and the characteristics identified during the inventory (road, river, port, and airport networks; border crossings and special economic zones).
  - Available information on transport demand: classified vehicle counts, O/D matrix data and other passenger and freight movement information.
  - Information related to the logistics chains analysed during the diagnostic phases.
  - Multimedia inventory of the Transport Master Plan (photographs and other media).

- In addition to the above, all geographic information gathered during the study will be included. The consultant will consider the existing Mesoamerican GIS<sup>12</sup> as a starting point in order to develop the BT-GIS.
  - The GIS platform must be compatible with the models used by national and regional organizations in Mesoamerica and Central America, and with the transportation planning models. The consultant will specify what tool will be used in their technical proposal.
- 3.172 **Belize National Data room.** The consultant will need to develop the Belize National Data room during the first stages of the project. A Data room is an online database that permits documentation to be managed, catalogued and stored in digital format, and allows access through a search engine. The Data room permits multiple user profiles to access online information, and has backup and preventive maintenance features to protect the information it contains.
- 3.173 The National Belize Data room must be developed using a solid architecture. Information should be defined by taxonomies, controlled vocabularies and metadata (classified by theme and category, type of document, geographic location, authors/stakeholders, projects, etc.). This will permit comprehensive and flexible document management, with a focus on the usability of the system.
- 3.174 To comply with these specifications, the consultant will need to: (i) design the information architecture and taxonomies/vocabularies to be used in the online database; (ii) define the data-entry processes and protocols in compliance with international documentation and interoperability standards; (iii) implement the tool; (iv) gather all the files in digital format and upload them onto the Data room; and (v) propose maintenance and administration mechanisms for the tool once it is transferred to the responsible organization, based on the nature of task 6.7 (Updating and maintenance plans).
- 3.175 During the development of the Master Plan, access to the Data room must be restricted with a login and password. However, once the project ends, there should be a discussion as to whether or not to make it accessible to the general public. Also, the tool should allow the entry of multiple users with different profiles and privileges (base user, user with edit permissions, manager, etc.).
- 3.176 **Belize Indicators Database.** The development of the Transport Master Plan will result in a large number of indicators associated with mobility and transportation, based on the analyses conducted in the proposed tasks.
- 3.177 These indicators must be gathered, stored, managed and published through a specific indicator management tool. This should be designed and implemented by the consultant. Some of the main indicators to be managed will include:
- Performance indicators obtained during the diagnosis phase.
  - Mobility indicators obtained from the public traffic and transport models.
  - Indicators for monitoring the short, medium and long-term action plans.
  - Other indicators related to the availability of information in all the phases and associated with the IT tools.

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<sup>12</sup> The Mesoamerican Project "Analysis, strategy and tools for the improvement of freight logistics and trade in Mesoamerica" funded by IDB generated a Regional Freight Transport Geographic Information System.



- 3.178 The Belize Indicators Database will rely on an IT tool that is capable of managing all the information, including current and historical figures of the proposed indicators (based on information availability). The tool should also disclose the methodology used for calculating and updating the indicators and the identified viable sources of information or inputs.
- 3.179 The objective of the Indicator Database is to generate a simple tool that allows the management of key transport indicators in order to carry out annual monitoring and control of the proposed policies. Therefore, in order to meet this objective, the technology tool should allow for the storage of multiple indicators grouped thematically and associated with different elements and/or geo-referenced. It will also need to store the time series of indicators and permit an annual data updating. Finally, functions such as data importing, creating new indicators, and exporting data reports, should be easy to perform at the user-level.
- 3.180 Regarding the system requirements, the Belize Indicator Database must use a free software or common office software program (MS Office tools or compatible) to facilitate the transfer and maintenance of the tool to the assigned institution at a limited cost. The consultant, in its technical proposal, must submit the detailed methodology to be used to build the tool.
- 3.181 In this activity, the consultant should consider and collect the information already developed in the Indicators Systems in the region, such as the Freight Transport Statistics Yearbook developed in the Mesoamerica Project “Analysis, strategy and tools for the improvement of freight logistics and trade in Mesoamerica”.
- 3.182 **Belize Investment Prioritization Tool (BIPT).** The consultant will need to design and implement the Belize Investment Prioritization Tool (BIPT). This digital tool will support the prioritization and selection of investments in the transport sector. The main objective is to allow for the institutions and ministries involved in transport planning having a simple and technically robust tool available to identify investment priorities that will help further the Master Plan. This tool should allow investment decisions to be made with the maximum possible objectivity.
- 3.183 The BIPT must be based on a multi-criteria analysis. At the minimum it should take into account: the cost of the investment, socio-economic and operational benefits, environmental impact, and alignment with public policies for the sector. In the methodology, the consultant will make a preliminary proposal for criteria to be considered in this analysis, which may be adjusted for use in the Master Plan. The multi-criteria methodology implemented in the BIPT must have technical and/or academic support in relevant and accepted industry reports and through proven international experience.
- 3.184 The tool needs to be implemented via a free software license or through a wide-accepted commercial software package (MS Office and other compatible software) for ease of use and aftercare.
- 3.185 **Manuals for the IT tools.** For each of the IT tools, necessary documentation must be prepared. As a minimum, the consultant will prepare a User Manual and a Technical Manual for maintenance and installation of the following tools: Project Website, Belize Transport Geographic Information System (BT-GIS), National Data room, Indicators Database and Belize Investment Prioritization Tool (BIPT).
- 3.186 The User Manual is intended to instruct the user how to use the tool in an easy fashion. To achieve this it must state the objectives that the tool has been designed for, its method of use, and a description of its functionalities.

- 3.187 The Technical Manual should include the technical characteristics of the system (element type, file, or tool), its structural design and the main relationships amongst its elements. The Technical Manual will also contain procedures for the updating, mobilizing and maintaining the tool. This will ensure that the technical staff of the ministries has guaranteed usability of the tool when the Master Plan is completed.
- 3.188 **Updating and maintenance plans.** For each tool, the consultant will propose an institutional framework for management, maintenance and updates to the Master Plan. The proposal must include: institutional location, operational schema, personnel and training, specifications for updating information (updating criteria, interval between updates), technical support mode, resources necessary for maintenance and other operations outside of regular use, and requirements/restrictions for interconnecting the different tools. The protocol for updating and maintenance should be prepared for each tool individually, therefore, responding to the specific maintenance and usability needs of each one.
- 3.189 **Training and transfer of know-how.** In order to provide continuity, it will be necessary to transfer the tools to the public institutions that will be responsible for them. To do this, the consultant will provide the necessary training to the staff (according to the proposal made in the task 6.7). The training will be carried out in Belize and will ensure that the responsible authorities acquire the necessary competencies for using and updating the tool. The consultant will indicate in the proposal the duration, type and intended beneficiaries of the training.
- 3.190 Additionally, and in order to facilitate the transfer of know-how, the consultant will develop a Glossary of Transport Terms. This Glossary will list and define all concepts related to passenger and freight transport. The Glossary should not be limited to the terms related to activity 6, but rather include all terms and definitions useful for the complete Master Plan.
- 3.191 **Coordination with stakeholders, socialization and dissemination of intermediate and final results.** The development of the NTCMP will include a program to disseminate the preliminary and final results, as well as a knowledge transfer program, aimed at the key actors that will be responsible for future implementation of the NTCMP.
- 3.192 **Plan for public-private dialogue and dissemination of intermediate results.** During the execution of the consultancy, there will be a minimum of 6 events to disseminate intermediate results, with the participation of public and private stakeholders. The objective will be to present conclusions reached thus far. They will serve as forums to raise issues related to the next steps of the project. The consultant will need to validate such issues in advance, generate discussion, and propose alternatives.
- 3.193 In the technical proposal, the consultant should propose a general agenda/outline for these events, linking its purpose to the performance of the activities included in the consultancy. This proposal may be subject to further negotiation with the Government, and will be subject to approval on the delivery of the work plan.
- 3.194 In addition, the consultant will need to submit a brief monthly administrative report indicating the progress in each activity, descriptions of the main results achieved, and explanation of the constraints encountered.
- 3.195 These reports will be of a managerial nature. It is not the purpose to garner detailed information on the activities, but rather to warn of possible problems that may arise and may affect compliance with the plan. In such cases, the reports should propose possible solutions. The reports should be concise and brief.

- 3.196 **Workshop to disseminate results and launch the IT tools.** The consultant must organize and coordinate a workshop to disseminate the main results of the project. The workshop will be aimed at officials of the relevant public bodies. At a minimum, the workshop should be for one full day.
- 3.197 The workshop will be carried out once feedback is available from the Technical Supervision Committee. The agenda of the workshop will be jointly agreed the by Technical Supervision Committee and the consultant. The Government of Belize will determine the number of participants.
- 3.198 The consultant will be responsible for organizing the technical agenda of the workshop, leading the presentations relating to the NTCMP, and developing the project promotional material (flyers, presentations, summary reports, etc.). The Government will be responsible for the event logistics (venue, food, printing of promotional materials, etc.).
- 3.199 **Drafting of final report: the National Transportation Comprehensive Master Plan.** After carrying out all the activities that make up the NTCMP, the consultant will draft the Word document which will be the final report of the National Transportation Comprehensive Master Plan. This document will summarise the main activities and components developed, and include as annexes the documents and digital files generated during the development of the Master Plan.
- 3.200 The report will require sufficient depth, specifically highlighting the main results from each activity and a detailed account of the recommendations proposed for Components C2 and C4. It shall have the following structure:
- Introduction and transport background characterization (synopsis of C1.1 to 1.7).
  - Freight and passenger transport diagnosis (synopsis of C1.8 to 1.11).
  - Freight and passenger future scenarios (synopsis of C3 and C4).
  - Short Term Action Plan (synopsis of C2).
  - Proposals for medium and long term action plan (synopsis of C5).
- 3.201 As Appendix 1 the NTCMP will attach the set of IT tools (digital files). In Appendix 2, the NTCMP will have an independent document containing the results of the socialization activities carried out in sections 7.1 and 7.2 (events held, attendees, main issues discussed, images, etc.). Finally, Appendix 3 and further on will have all other documents generated by the consultant during the development of activities C1 to C5. Finally, a light presentation in PowerPoint format containing the main results of the NTCMP shall be prepared.

#### **IV. Reports / Outputs**

- 4.1 The development of the National Transport Comprehensive Master Plan requires multiple activities and analysis to be performed in order to achieve the proposed objectives. For this reason, outputs structure proposed involves section-by-section validations of the work, with the consultant presenting the progress of the various activities to the Government of Belize and the Technical Supervision Committee for their approval. After the validation of all the intermediate outputs, the final report making up the NTCMP will be delivered. The following table summarizes the outputs and deadlines (the starting time period is the date of contract signing):

**Table 1. Outputs and deadlines**

Output	Content	Deadline
First Output	P0. Detailed work plan	By the end of week 2
Second Output	P1. Results of Component 1: Diagnosis of current situation	By the end of month 4
Third Output	P2. Results of Component 2: Short-term action plan	By the end of month 5
Fourth Output	P3. Results of Component 3: Assessment and modelling passenger transport	By the end of month 6
Fifth Output	P4. Results of Component 4: Analysis of the freight transport system	By the end of month 7
Sixth Output	P5. Results of Component 5: Proposals for medium and long term	By the end of month 8
Seventh Output	P6. Results of Component 6: Establishing set of IT tools	By the end of month 9
Eighth Output	P7. Final National Transportation Comprehensive Master Plan	By the end of month 10

4.2 Products 0 to 6 are conceived to allow the consultant to generate all intermediate results of the NTCMP and let them be validated by the Government of Belize, the Project Steering Committee and the Technical Supervision Committee. Their content is detailed following:

- By the end of the second week, a Project Start-up Report. The objective of the report is to define and tailor the work program based on introductory meetings with government officials and relevant agencies/groups. The report will include the work plan for execution of the consulting assignment, a summary of activities already begun, any items requiring clarification by the GoB, and a brief presentation, if necessary, of the factors that may impact the satisfactory execution of the consulting assignment within the timeframes provided.
- Within four (4) working months from the start of work, a report outlining the results from the diagnosis of the current situation and preliminary approach to future scenarios (activities contained in Component 1).
- Within five (5) working months from the start of work, a report corresponding to the short-term action plan (Component 2).
- Within six (6) working months from the start of work, a report on the assessment and modelling of the intercity transport system and development of scenarios. The content of the report will conform to the description provided in Component 3. All modelling and auxiliary analysis files will also be delivered as a CD or other digital format.
- Within seven (7) working months from the start of work, a report summarizing the analysis of the freight transport system and medium and long-term scenarios (Component 4).
- Within eight (8) working months from the start of work, proposals for the medium and long-term (Component 5).
- Within nine (9) working months from the start of work, a report outlining the results from the establishment of a set of IT tools (Component 6). The consultant will deliver the systems, auxiliary files and documentation and provide the training activities.

4.3 The following table details the components of each output from P0 to P6:

**Table 2. Details the components of each output**

Content	Activities included and main outputs
P0. Detailed work plan	<ul style="list-style-type: none"> <li>• Work plan</li> <li>• Firsts activities started</li> <li>• Clarification points and requests for information</li> </ul>
P1. Results of Component 1: Diagnosis of current situation	<p>Activities included in the report:</p> <ul style="list-style-type: none"> <li>• 1.1. Information compilation</li> <li>• 1.2.Characterization of the private and passenger transport system</li> <li>• 1.3.Characterization of the freight transport system</li> <li>• 1.4.Supply analysis of the passenger transport system</li> <li>• 1.5.Supply analysis of the freight transport system</li> <li>• 1.6.Demand analysis of the passenger transport system</li> <li>• 1.7.Demand analysis of the freight transport system</li> <li>• 1.8.Supply-demand relationship for the passenger transport system</li> <li>• 1.9.Supply-demand relationship for the freight transport system</li> <li>• 1.10.Institutional, legal and regulatory framework</li> <li>• 1.11.Summary of the diagnosis and preliminary proposal for short term action lines</li> </ul>
P2. Results of Component 2: Short-term action plan	<p>Activities included in the report:</p> <ul style="list-style-type: none"> <li>• 2.1. Definition of short-term work axes</li> <li>• 2.2. Short-term action proposal</li> <li>• 2.3. Definition of responsables, budget and calendar</li> </ul>
P3. Results of Component 3: Assessment and modelling passenger transport	<p>Activities included in the report:</p> <ul style="list-style-type: none"> <li>• 3.1. Assessment and modelling of road intercity passenger transport</li> <li>• 3.2 Assessment of water-taxi passenger transport</li> <li>• 3.3 Assessment of airway passenger transport</li> </ul> <p>The report must include all digital files and models used for the assessment</p>
P4. Results of Component 4: Analysis of the freight transport system	<p>Activities included in the report:</p> <ul style="list-style-type: none"> <li>• 4.1. Identification of trends by logistics family</li> <li>• 4.2. Summary of aspirations</li> <li>• 4.3. Comparison of aspirations with trends</li> <li>• 4.4. Proposed scenarios</li> <li>• 4.5. Evaluation of alternatives and description of medium and long term scenarios</li> </ul> <p>The report must include all digital files and models used for the assessment</p>
P5. Results of Component 5: Proposals for medium and long term	<p>Activities included in the report:</p> <ul style="list-style-type: none"> <li>• 5.1. Conceptual model</li> <li>• 5.2. Action plan</li> <li>• 5.3. Legal and regulatory instruments and other support incentives for the actions</li> <li>• 5.4. Institutional organization and mechanisms for monitoring of the system</li> </ul> <p>5.5. Funding of the system</p>
P6. Results of Component 6: Establishing set of IT tools	<p>Activities included in the product:</p> <ul style="list-style-type: none"> <li>• 6.1. Creation and launch of the project website</li> <li>• 6.2. Creation of the Belize Transport Geographic Information System (BT-</li> </ul>

GIS)

- 6.3. Creation of the Belize National Data room
- 6.4. Creation of the Belize Indicators Database
- 6.5. Belize Investment Prioritization Tool (BIPT)
- 6.6. Manuals for the IT tools
- 6.7. Updating and maintenance plans
- 6.8. Training and transfer of know-how

This product must include all documents, digital files, models and IT tools included in the Component

- 4.4 All reports must include a Word document and a PowerPoint presentation of the main results, which will be used for presenting each Component to the Technical Supervision Committee.
- 4.5 After the validation of the previous outputs, the development of the Final Report is proposed within the working month 10. This report will constitute the National Transportation Comprehensive Mater Plan and contain a summary of all components of the study, all digital files, IT tools developed and previous documents. The NTCMP will also include the results of the socialization activities (Component 7.1 and 7.2).
- 4.6 Once all the reports are validated, the consultant will submit three copies of the Final Report and all Appendixes, in English, and one electronic version. All reports must include a Word document and a PowerPoint presentation of the main results, which will be used for presenting each Component to the Technical Supervision Committee.
- 4.7 All Word documents will contain indices of the corresponding figures and tables, as well as a glossary of acronyms.
- 4.8 The consultant's work plan may propose a reporting structure different from that indicated above; however, the reporting structure will be consistent with the proposed work plan and with the objectives and timeframes of the study.

## V. Conduct of the Study

- 5.1 **Supervision.** The consultant will be supervised by the relevant teams from the Government of Belize.
- 5.2 The consultant will provide and bear the costs of all goods and services necessary to carry out the consulting assignment defined in these terms of reference, as established in the contract for consulting services.
- 5.3 The Government of Belize will provide the consultant with a paper copy, and/or an electronic copy if available, of all documentation required by the consultant, such as studies, databases, project documents, plans, reports, etc.
- 5.4 **Performance of activities and place of work.** The consultant will carry out his/her activities in Belize and the consultant's country of residence. The combination of local and international consultants and the activities conducted within and outside the region will serve as criteria for the evaluation of the technical proposal, and the financial bid will include an itemization of the resources allocated.
- 5.5 **Duration.** The timeframe established to conduct this consulting assignment is ten working months'; commencing on the date the contract is signed with the Government.

- 5.6 The Government of Belize will hire the consultant in accordance with its Policies for Selection and Contracting of consultants Financed by the IDB. The Transport Division (INE/TSP) will be the unit responsible for the contract, and will be in charge of the procurement process (pre-selection of firms, development of the shortlist, request for proposals, analysis and evaluation of proposals, and contract negotiation) based on the Policies for Selection and Contracting of consultants Financed by the IDB; and for administrative monitoring of the contract (authorization of requests for payment and management of funds).