

The Project for the Study of

NATIONAL TRANSPORT PLAN

in the Republic of Nicaragua

PROJECT DIGEST



June 2014



Japan International
Cooperation Agency



Ministry of Transport
and Infrastructure

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CURRENT ISSUES AND DEVELOPMENT

General Transport Issues

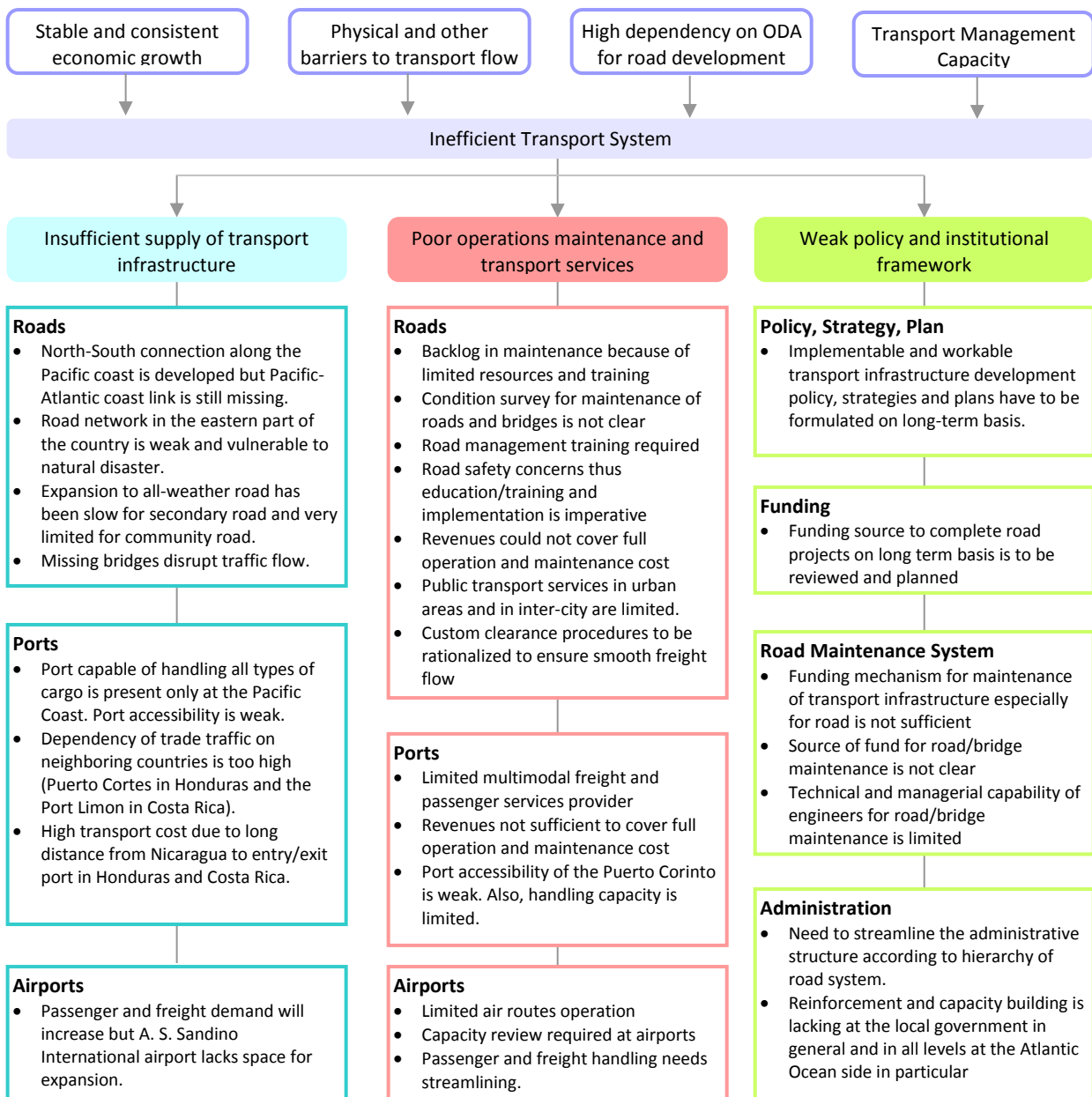
Nicaragua's transport sector is currently experiencing various issues and deficiencies that affect the transport system's performance. The main features of these deficiencies include the following:

- Poor quality of transport network and services
- Poor maintenance of road network
- Not competitive logistic performance
- Lack of strategic international transport corridors
- Lack of inter-modal integration

- High vulnerability of transport infrastructure to natural calamities
- Irrational international freight movement
- Shortage of future transport capacity
- Institutional deficiencies
- Lack of funds for development and maintenance

Problem Tree

The problems and issues described above are illustrated in a problem tree in the figure below.



Problem Tree of Transport Sector of Nicaragua

LONG TERM DEVELOPMENT VISION

Formulation of Long-term Development Vision

A long-term development vision is established to serve as edifice to anchor vision, policy, and strategy of the NTP. In establishing the said vision, considerations into the following were made: (i) policy analysis of the PNDH, (ii) analysis of socio-economic condition of the country and existing sector development strategy and (iii) analysis of inter and intra-regional spatial structure.

Vision Statement

The vision statement towards 2033 is as follows:

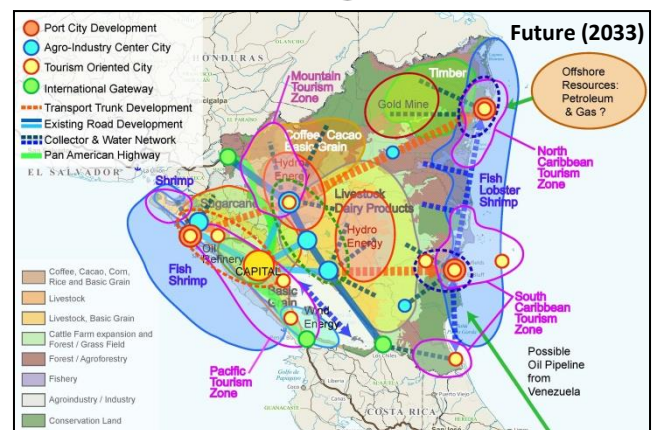
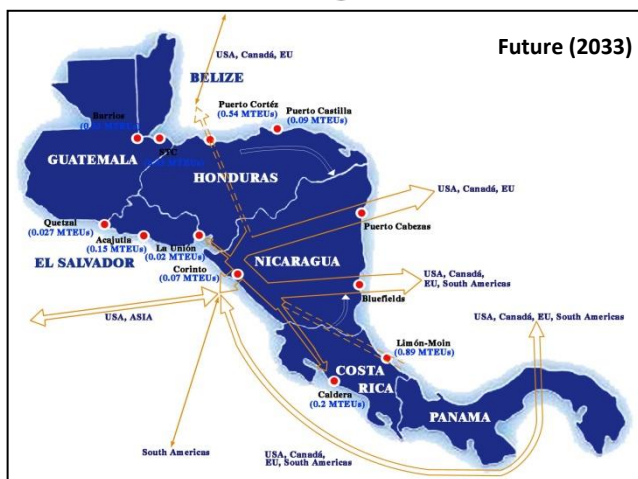
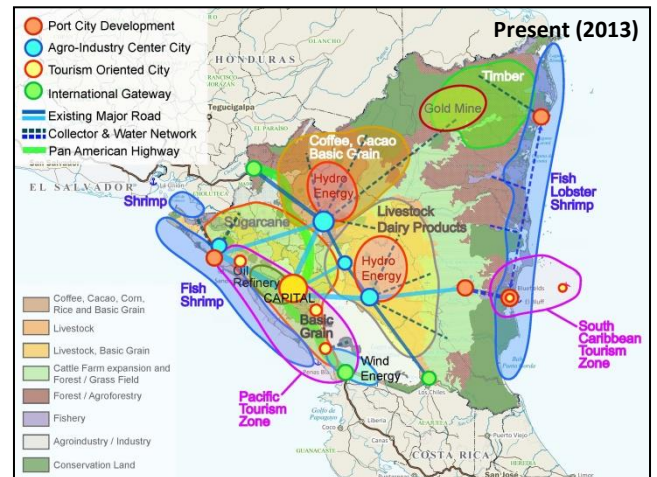
“Contribute to the achievement of National Human Development Plan of Nicaragua through the regional and spatial development vision in order to achieve poverty reduction and correction of regional disparity, while protecting basic human rights, utilize existing resources to the utmost extent for creating a better nation, reduce transport cost based on better strategies, and ensure well-balanced socioeconomic activities, authorities and identities of all regions and people’s safety.”

Regional and Spatial Structure

The transformation of country’s spatial diagram from present to 2033 is illustrated in the two figures below. The future diagrams (2033) are configured by placing spatially the policies of long-term development vision.

The future spatial diagram within Central America envisioned a radical shift to the flow of trade traffic where the Atlantic Coast of the country (Bluefields and Bilwi ports) handles substantial trade traffic. At present, due to lack of international port at Atlantic Coast, trade traffic from/to Nicaragua depends to its neighboring countries and Corinto Port located at Pacific side of the country.

Similarly, the future spatial diagram of Nicaragua laid out needed to develop corridors and infrastructure to realize potential of the different sectors such as tourism, agro-industry, power, minerals, etc. Increased contribution of these sectors to the economy is greatly needed to support the government’s plan of eradicating poverty and balancing regional development which are currently some of the serious challenges facing the government.



Spatial Diagram in Nicaragua

Spatial Diagram within Central America

TRANSPORT SECTOR DEVELOPMENT STRATEGY

Transport Sector Development Vision

The development vision for transport sector of Nicaragua towards 2033 is as follows:

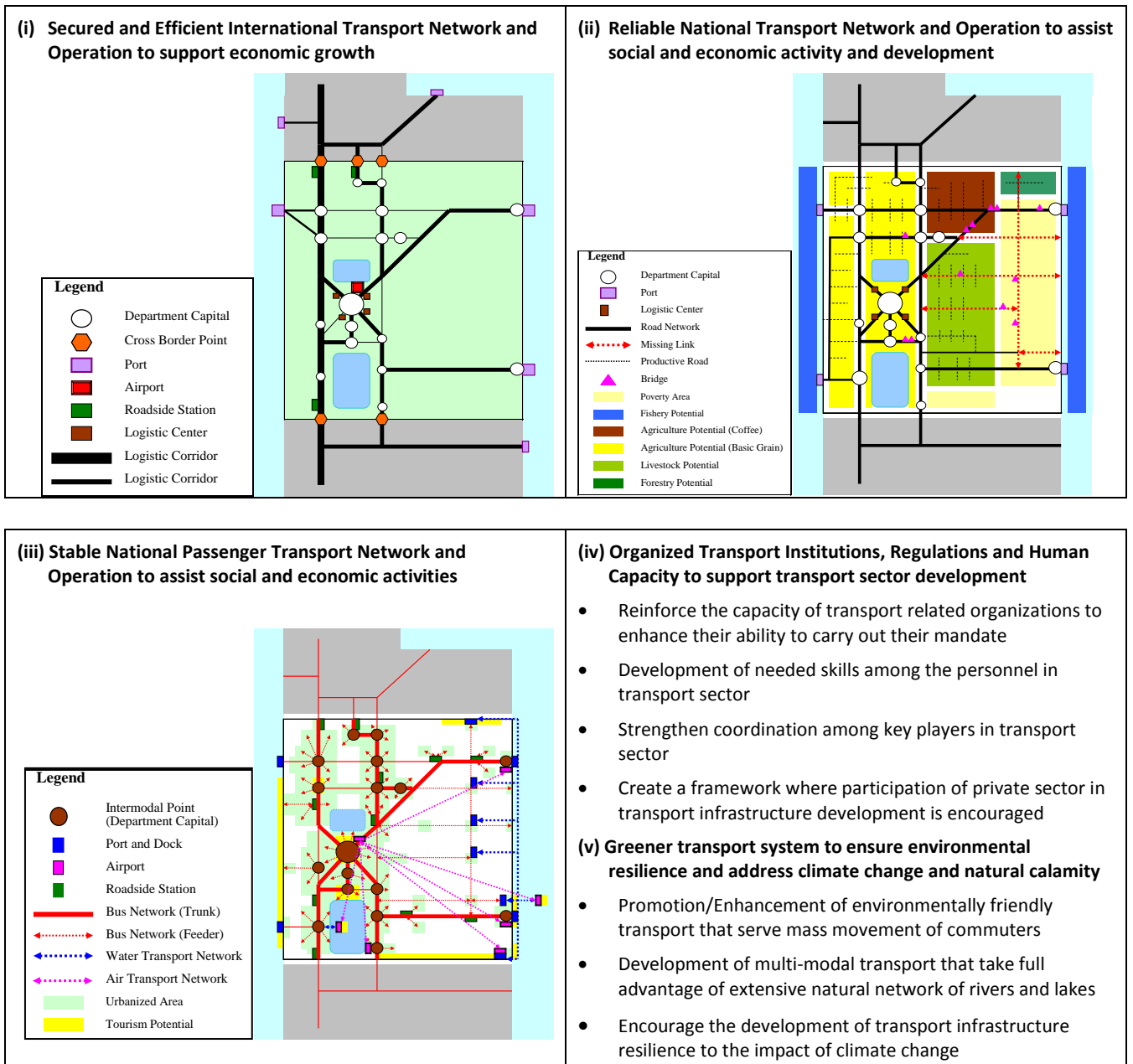
Growing and Greener Transport for Nicaragua

“Provide effective, reliable, stable and fully integrated transport network and level of service, which will assist sustainable economic growth; contribute to reduce poverty and regional disparity; improve accessibility, mobility and safety; ensure environment sustainability.”

Transport Sector Development Policy

The formulated five policies are designed to respond to key challenges related to transport infrastructure planning, development and management, legal, institutional and regulatory framework, safety and security, funding, and environmental considerations including climate change, among others.

After establishing these policies, **Transport Sector Development Strategy** for each transport mode (road - including logistics, road transport facilities and passenger transport- ,water transport, and air transport) was then formulated. Transport Sector Development Strategy served as basis for **Development Plan**.



Conceptual Image of the Transport Policies

ROAD DEVELOPMENT PLAN

Road Network Improvement Plan

The proposed improvement works are the following:

- Development of new roads
- Improvement of existing roads
- Rehabilitation of existing roads
- Surface improvement of other roads
- Provision of new bridges
- Replacement of damaged and temporary bridges
- Measures against road disasters



Proposed Road Network Improvement Plan



Proposed New Bridges

TRANSPORT CORRIDOR AND LOGISTICS DEVELOPMENT PLAN

Transport Corridor Development Plan

The identified four corridors shall be developed. The stage-wise development of the four corridors may follow the following:

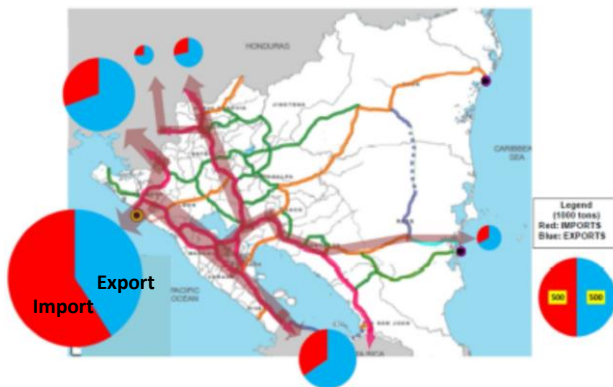
- **Stage-1 Transport Corridor:** Provision of physical link between areas or regions
- **Stage-2 Multimodal Transport Corridor:** Integration of various modes of transport along the corridor (land, maritime, inland water, air transport, railway transport, etc.)
- **Stage-3 Logistic Corridor:** Harmonization of the institutional framework of multimodal transport
- **Stage-4 Economic Corridor:** Promotion of direct investment to various economic sectors such as agriculture sector, industrial sector, tourism sector, etc.

Logistics Infrastructure Development Plan

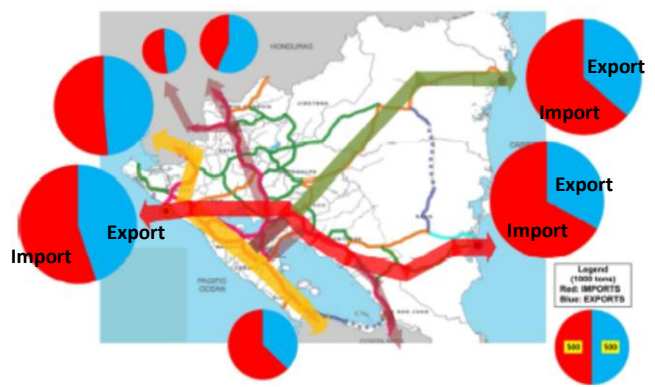
Logistics Parks should be established along the identified transport corridors. The area of one logistic park is around 45,000 m² with warehouse, truck parking area, utility delivery system, administration buildings, etc.

Similarly, agro-processing parks (APP) should also be established at strategic locations along the transport corridor. Raw materials to be processed at each APP should be major agricultural products cultivated in the respective department and their surrounding departments.

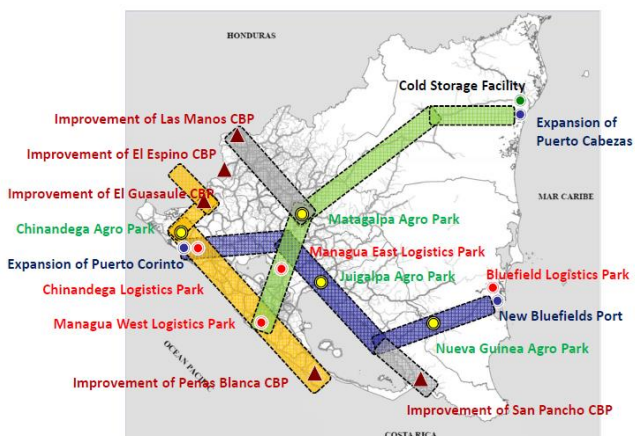
Comparison of trade traffic in 2033 with improvement of logistics corridors including port and without improvement is depicted in the two figures below.



2033 Trade Traffic without Ports at Atlantic



2033 Trade Traffic with Ports at Atlantic



Logistics Corridor and Logistics Development Plan



Image of Typical Logistics Park

Key Components of each Corridor

Component Corridor	Trunk Road		Sea Port		Airport	Logistic Park	Agro-processing Park
	From	To	Pacific	Atlantic			
1. Pacific Corridor	Guasaule CBP	Penas Blancas CBP			A.C. Sandino	Managua West LP	Chinandega APP
2. Atlantic Corridor	El Espino CBP	Los Ranchos CBP	Puerto Corinto		A.C. Sandino	Managua East LP	Matagalpa APP
3. Central Corridor	Puerto Corinto Port	Bluefields Port	Puerto Corinto	Bluefields Port	Bluefields Airport	Bluefields LP	Bluefields APP Nueva Guinea APP
4. Northern Corridor	Managua	Puerto Cabezas		Bilwi Port	Bilwi Airport	Puerto Cabezas LP	Puerto Cabezas APP

PUBLIC PASSENGER DEVELOPMENT PLAN

Hub and Spoke Bus Network System

To restructure the existing inter-urban bus network for efficient operation, Hub and Spoke Bus Network System is proposed.

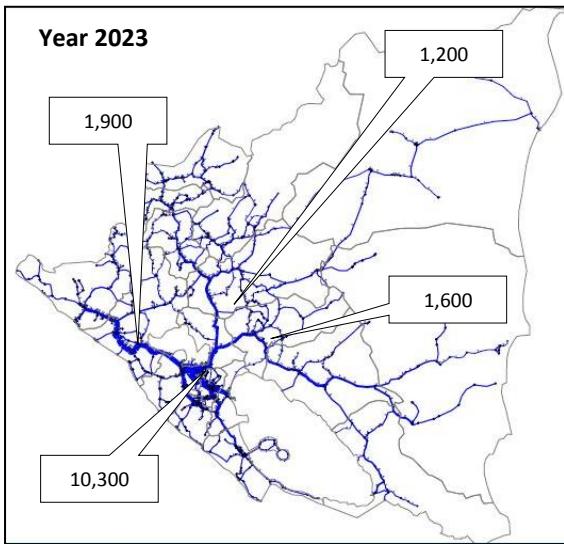
Introduction of High Capacity Bus

Future daily passenger demand is shown in the two figures below. To reduce operating cost and to promote higher service reliability, a high capacity bus should be introduced.

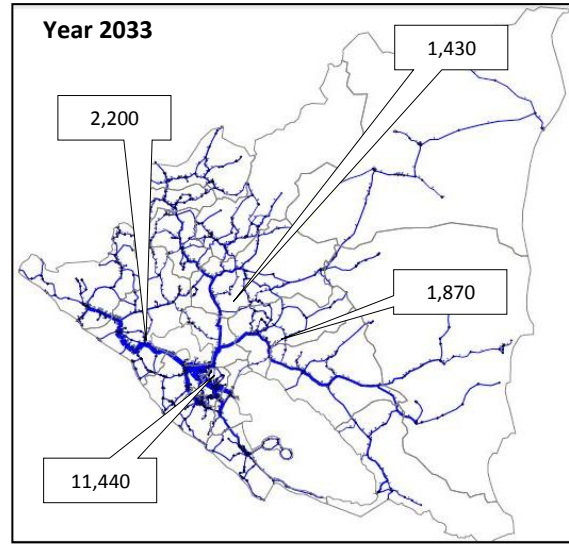
Improvement of Bus Terminal and Construction of Roadside Station

The objective of bus terminal plan is to improve the existing poor condition of bus terminal to ensure efficient and comfortable services. In terms of cost, total project cost for 17 bus terminals is estimated at USD 12.21 million.

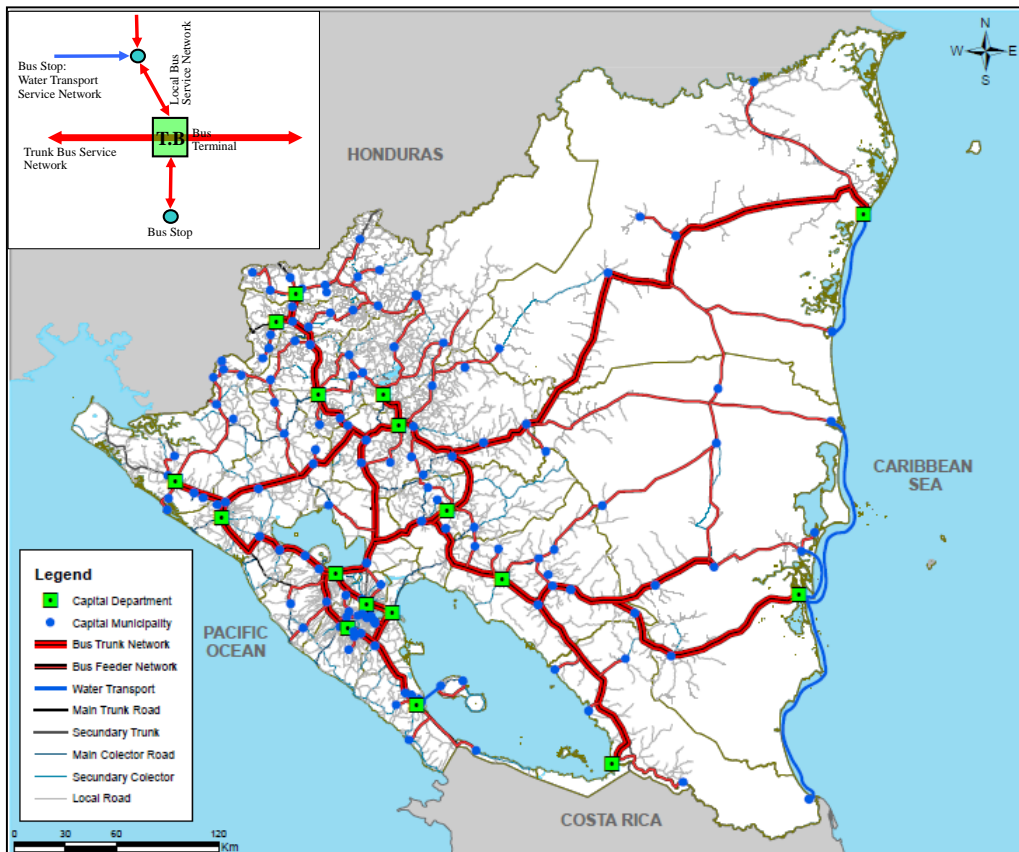
Similarly, construction of roadside station is promoted for safe driving and comfortable journey. This service facility promotes tourism and support local economy.



Daily Bus Passenger Demand (2023)



Daily Bus Passenger Demand (2033)



Concept of Future Public Passenger Transport Network (Hub and Spoke Network)

WATER TRANSPORT DEVELOPMENT PLAN

Expansion and Improvement of Sea Ports

- Expansion and modernization of Puerto Corinto by introducing EDI (Electronic Data Interchange), improvement of access road, and reinforcement of cargo and container handling equipment.
- Expansion and improvement of Bilwi Port as well as development of New Bluefields Port is essential. This will support socioeconomic development of Atlantic Coast's communities and will reduce reliance to neighboring countries on trade traffic thus enhance the country's national security.

Development of Inland Water Transport

- Development and rehabilitation of inner coastal canal network for water transport located at Atlantic Coast is necessary to facilitate communities' mobility. The total length is about 98 km distributed in 13 sections. Estimated cost is about USD 15.8 Million.
- To realize the above, there's a need to acquire fleets for canal dredging (1 dredger with excavator, 2 barges, 1 long arm hydraulic excavator, 1 tug boat, 1 motor boat).
- Similarly, provision of 3 units of water bus with capacity of 30-40 passengers will greatly improve mobility of several communities.



Corinto Port Area Development Plan of Multi-purpose Berths



Alternative 1 for New Bluefields Port

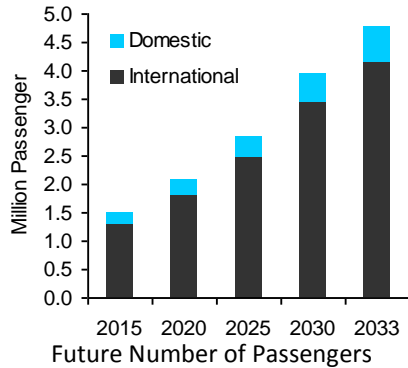


Alternative 2 for New Bluefields Port

AIR TRANSPORT DEVELOPMENT PLAN

Development Plan for A.C. Sandino Airport

This airport is the only international gateway and a hub airport for domestic flights. Improvement of the airport is the most important undertakings in aviation sector. Below graph shows the forecasted passenger demand while the figure below shows the development plan for the airport.



Development Plan for Puerto Cabezas Airport

- **Short Term Plan** Construction of a new passenger building and construction of a new fuel storage
- **Medium Term Plan** Construction of a new cargo terminal
- **Long Term Plan** Extension of the runway



Perspective View of Puerto Cabezas Expansion Plan

Development Plan for Bluefields Airport

- **Short Term Plan** Rehabilitation of runway pavement, construction of a new fuel storage
- **Medium Term Plan** Construction of a new passenger building in new terminal area
- **Long Term Plan** Construction of a new cargo terminal, extension of the runway



Development Plan for Bluefields Airport

Development Plan for Corn Island Airport

The two islands are popular destination of both domestic and international tourists and have potential to further contribute to the economy. The basic plan for expansion of Corn Island Airport is:

Short Term Plan

- Installation of airfield lighting system
- Rehabilitation of airfield pavement
- Installation of new fence

Medium Term Plan

- Construction of a new control tower
- Construction of a new passenger building

Long Term Plan

- Expansion of the runway strip



Expansion Plan for Augusto C. Sandino International Airport

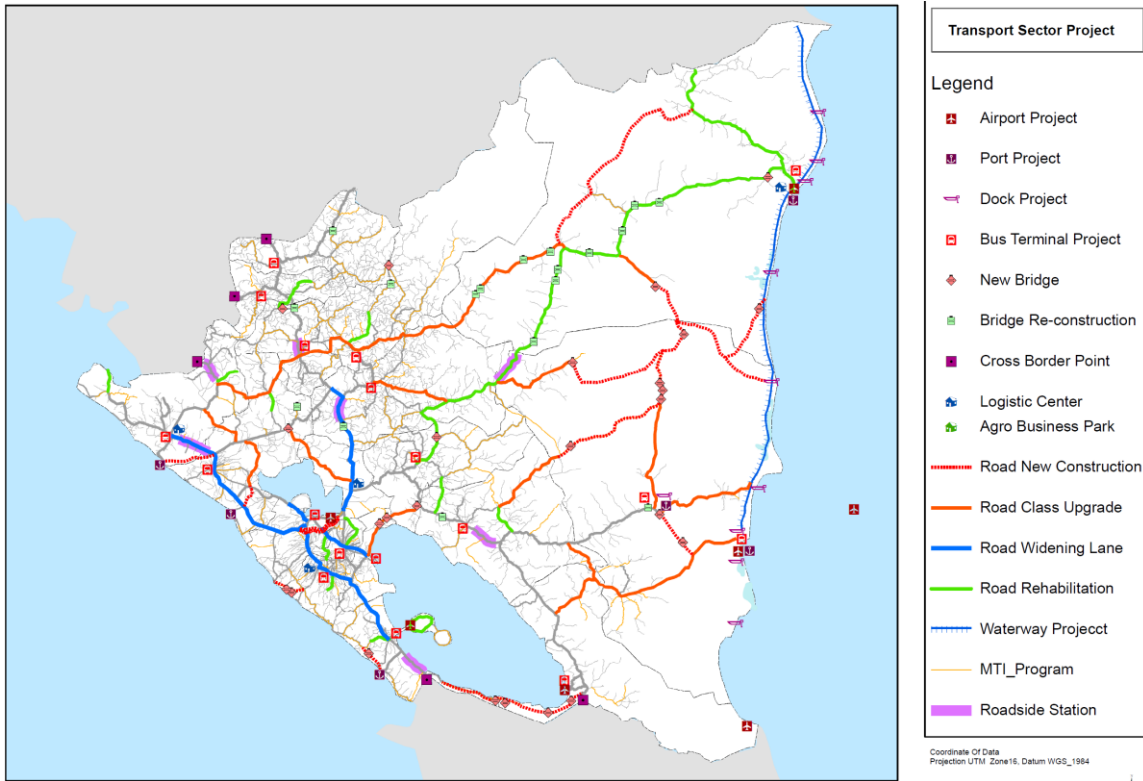
PROJECT PRIORITIZATION AND IMPLEMENTATION PROGRAM

Projects Prioritization

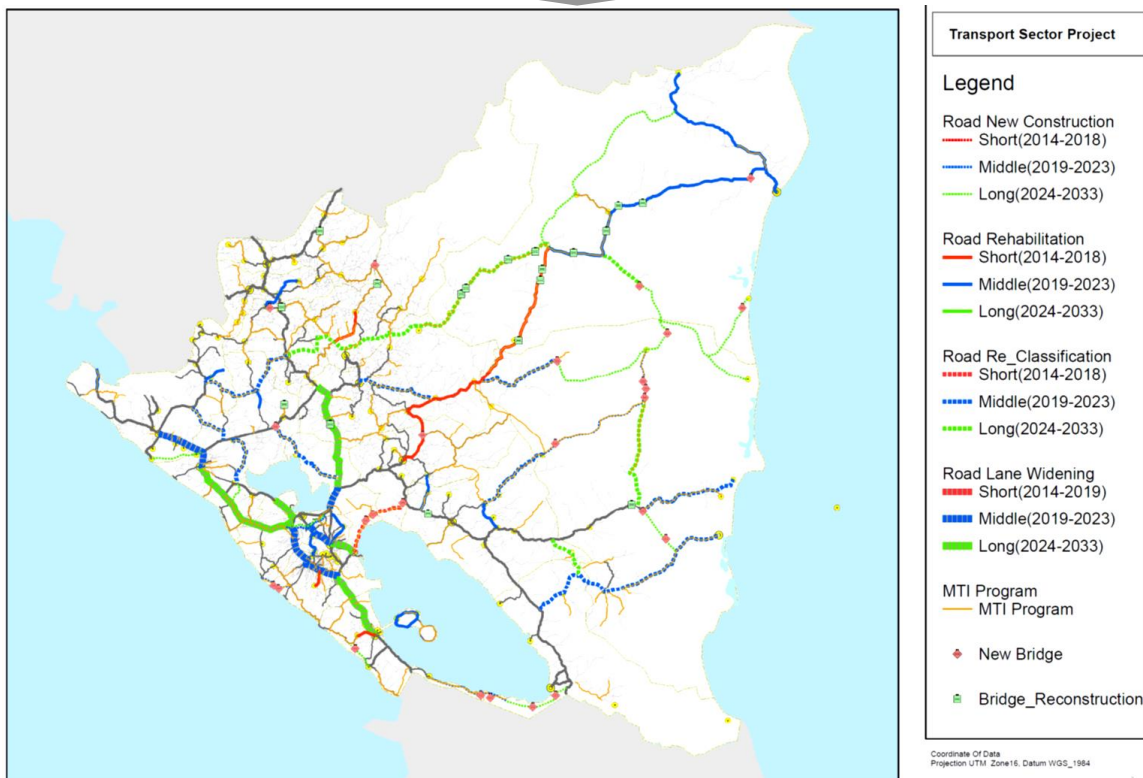
The total cost of proposed projects is USD 8,826.00 Million. Land transport has the highest share (89% of the total cost). The remaining 11% is distributed among the other sectors of which Maritime Sector has the highest share (USD 381.00 Million).

Implementation Program

The staging plan was result of project priority evaluation carried out by MTI and JICA Study Team. The projects are classified into short-term (2014-2018), medium-term (2019-2023) and long-term program (2024-2033).



Proposed Projects in the NTP



Project Staging Plan (Implementation Schedule)

RECOMMENDATIONS

Recommendations

To facilitate early realization of the NTP and to ensure that long term recommended projects are still effective and justifiable in the coming years, the following are recommended:

- The National Transport Plan should be authorized by the Government as the country's national transport plan.
- The proposed transport sector development vision and strategy should be kept and maintained while implementation timing is flexible.
- Green transport oriented, which is a harmonization of the development with environment to address climate change and vulnerability to disaster, must be observed during the implementation of the projects.
- Only 67% of the required investment budget for transport sector is covered over the next 20 years. This means that 33% are budgeted after 2034. The transport sector development, along with the other sectors such as energy, water and others, is an important sector for economic and social development of Nicaragua. Recognizing this, flexible public investment allocation for the transport sector should be considered.
- Private sector investment to transport sector development through PPP should be introduced. Organizational and institutional environment for private sector investment should be formulated immediately.
- This study proposes a step-wise development plan composed of short, medium and long term plan. As far as medium and long term plan is concerned, implementation schedule should be made flexible depending on the future changed of social and economic condition.
- The long-term development vision and socioeconomic framework which are the foundation of the NTP have to be adjusted depending on the future economic and social circumstances of Nicaragua. Periodic update by MTI is necessary to reflect changed in social and economic conditions.
- Nicaragua Grand Canal is not considered in the NTP due to lack of details (engineering, financial and environmental considerations). However, once the Grand Canal is built, its impact on the transport sector and economy of the country is very huge. Thus, when firm plan for Grand Canal is committed, the NTP should be updated.

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