

**Discussion Paper**

**Road Rehabilitation & Maintenance Strategy  
in Solomon Islands**

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## **1. Introduction**

Solomon Islands is an archipelago with a land area of 28,000 square kilometers, inhabits six main Islands and most of its 900 small Islands stretch across 1,300 km in the South Pacific Ocean. Almost 60% of the main roads and secondary roads are on the Islands of Guadalcanal and Malaita and these roads cater to almost 90% of the traffic in the country.

Over the last decade, the transport infrastructure comprising of road, sea and air transport in the Solomon Islands, which was built over many decades by incurring huge investments has deteriorated to such an extent that the only option is to rebuild. Without a dynamic transport infrastructure, economic revival seems to be an uphill task in the national development. Failure to maintain the infrastructure is resulting in poor quality service and higher costs for users, producers and consumers.

## 2. Current Scenario - Road Infrastructure

### 2.1 General

The 1,391 km road network in Solomon Islands is spread on many Islands with almost 80 percent of the roads located in the Guadalcanal, Malaita and the Western Province. The road network in Solomon Islands is classified into three functional classes:

- Main Roads
- Secondary Roads
- Provincial Roads

The Main Roads are the most important roads connecting main villages / towns on the islands and serve highly populated areas. The Ministry of Infrastructure and Development is responsible for the construction and maintenance of the Main Roads (391 km) and Secondary Roads (455 km). The Secondary Roads are the low-density gravel roads.

The Provincial Roads ( 425 km) are the tertiary roads and are the responsibility of the Provincial Governments. The Honiara City Council is responsible for the maintenance of the city roads.

The distribution of road network in the country is shown in the Table as under:

Province	Main Roads	Secondary Roads	Provincial Roads	Town Roads	Total (km)
Guadalcanal	148	18	278	~120	564
Malaita	243	89	68		400
Western		53	62		115
Makira		120	6		126
Temotu		66			66
Isabel		22	5		27
Central		7	6		13
Choiseul		11			11
Rennel & Bellona		69			69
<b>Total</b>	<b>391</b>	<b>455</b>	<b>425</b>		<b>1391</b>

According to traffic surveys carried out in 1999 (FINNRA) more than 90% of the traffic volume in the country was found in Guadalcanal, Malaita and the balance was shared by rest of the Provinces. The ethnic conflict (1999-2003) resulted in concentration of all economic activities in Guadalcanal and due to continuous degradation of roads, the traffic patterns may have also changed.

Most areas in the Solomon Islands experience an annual rainfall ranging from 5000 - 7000 mm. Absolute neglect of the road network particularly over the past four years has had very adverse effect on the condition of the road network. According to a road condition survey carried out by FINNRA in 1998/99 only 4% of the Main Roads and Secondary Roads fell into *Good* category, 37% *Fair*, 39% *Poor* and 20% *Bad*.

It is estimated that over the past 4-5 years almost 90% of the road network has drifted to *Poor* category due to huge backlog of maintenance and requires reconstruction. The condition of bridges has also worsened considerably since the 1998/99 survey.

Expenditure on road maintenance in Solomon Islands has been grossly inadequate over the last decade. This situation further aggravated during 1999-2003 due to the ethnic conflict resulting in absolute neglect and destruction to all modes of transport infrastructure in the country. The road sector is starved of any meaningful funds from the government budget and most of the Ministry's meager budget is meant to cover the salaries of the skeleton staff. Some donor funded activities are contributing to some emergency spot improvements on certain roads in Guadalcanal and Malaita.

The security situation in the country has dramatically improved with the arrival of Australian led Regional Assistance Mission and now the country is looking forward to move to a longer term development phase. The Asian Development Bank has resumed its Loan Agreement under which US\$ 10.5 Million will be provided under the framework of Post Conflict Emergency Rehabilitation Project (PCERP). The European Union has also earmarked over US\$ 30 Million towards the development of transport infrastructure over the next 3-4 years.

## **2.2 Road Infrastructure - Constraints**

Solomon Islands is emerging out of the conflict situation and is heading towards economic recovery. A National Economic Recovery and Development Plan (NERDP) has been formulated and launched with the support from various donors countries and international funding institutions. Revival of transport infrastructure (road, sea, air) is one of the top priorities of the Government.

The revival of the road infrastructure presents a big challenge and is confronted with the following constraints:

### **2.2.1 Lack of Matching Funds from the Government:**

Most of the road rehabilitation and maintenance initiatives are donor driven with hardly any inputs from the government budget. This is not a sustainable option. Road infrastructure works warrants huge investments and all these investments will go down the drain if these assets are not maintained on sustainable basis from some committed government budget.

### **2.2.2 Lack of Capacity of Government Institutions**

The Ministry of Infrastructure and Development, Provincial Governments and Honiara City Council, who are primarily responsible for the upkeep of the road network, do not have the capacity to maintain the infrastructure. The Ministry of Infrastructure has very limited capacity in terms of technical and middle management staff to plan, design, execute and maintain their road network. The capacities of nine Provincial Governments to look after the Provincial roads are further restricted in terms of personnel, budget and construction capacity.

### **2.2.3 Lack of Road Construction Contractors**

Availability of local road construction contractors in the country is restricted to just 2-3 Honiara based contractors possessing very old and non-functional construction equipment.

### **3.0 Proposed Strategy for Road Rehabilitation and Maintenance**

The proposed strategy focus on labour-based and equipment supported approach with increased private sector involvement by devolution of responsibilities. This has some clear advantages in terms of obtaining more responsive and sustainable implementation. Local contractors can play an important role in the rehabilitation and maintenance of roads. This would require development of small-scale contractors, but also establishing an efficient contract administration with in the central and provincial governmental agencies. This will include development of appropriate procedures for planning, announcement of works, bidding, submission and evaluation of bids, contract award, inspection and payment of works and mechanism for resolution of disputes. The important features of the strategy are as under:

- Construction of new roads should not be undertaken at this stage until the existing road network is restored to a maintainable condition and maintenance carried out on sustainable basis.
- Establishment of a dedicated *Road Fund* to meet the routine and periodic maintenance of the road network. This *Road Fund* should be established by putting levy on the cost of fuel for vehicles and other taxes/fee received from the vehicle license fee etc
- Target employment creation through judicious blend of labour-based and equipment supported technology;
- Dispense with all Force-Account operations and carry out all the rehabilitation and maintenance through newly trained local contractors; The Ministry of Infrastructure should confine its task to policy, planning, design, monitoring and liaison with donor agencies;
- Institutional strengthening of Ministry of Infrastructure staff, Provincial Authorities and Honiara City Council staff;
- Training and development of small scale local road rehabilitation and maintenance contractors in the country;
- Establishment of an "Equipment Plant Pool" at central and provincial level for hiring of construction equipment to small scale contractors.

#### **3.1 Private Sector Involvement**

In Solomon Islands, the past practice of using "Force Account" for road works does not seem to work. It resulted in a large number of permanently recruited skilled and unskilled workers with very low level of productivity. As was the case in most developing countries, these workers just used to wait for the month-end to be get paid irrespective to their performance.

The other viable option is to promote private sector small-scale local contractors who have been found to be very energetic, hardworking and excellent managers. There have been numerous success stories about the efficiency and effectiveness of these contractors. The government Ministry and the departments should focus only on policy, planning, contracting and monitoring aspects and leave the actual execution to the private sector. In the case of Solomon Islands, the private sector is practically non-existent and shall have to be developed adopting appropriate strategies.

### **3.2 Development of Small Scale Contractors**

It is proposed that a cadre of small scale contractors be trained and developed to execute the labour-based and equipment supported road rehabilitation and maintenance activities in Guadalcanal and other five other identified provinces on a sustainable basis. A number of retrenched staff from the former Ministry of Transport, Works and Communication with some basic road construction skills are available who can be trained to become the contractors. A number of youth and former combatants could also be considered for such training. The Ministry of Infrastructure and Development could develop a "Selection Criteria" for identification of such potential contractors. The training of contractors shall mainly focus on the following:

- labour-based methods of road rehabilitation - theory and practical training
- role of light equipment in road rehabilitation and maintenance activities;
- contracting features and procedures, specifications for road works;
- tender documents;
- analysis of rates and preparation of tender documents for submission;
- accounting and book keeping;
- preparation of work-plan and cash-flow plans;
- preparation of progress reports and other miscellaneous business skills
- hiring and optimum utilisation of equipment from the "Plant Hire Pool"

### **3.3 Institutional Strengthening of Ministry & Provincial Agencies**

Devolution of responsibility provides the opportunity for greater involvement of local contractors. Therefore, the capacity building of the contractors to perform the tasks and the contract management capacity at appropriate levels in the local institutions is a pre-requisite for such an exercise. The first step in this process is to establish effective contracting procedures and appropriate contract documents. Without these the capacity can not be developed. The next steps are to provide support to the contractors both in terms of technical training but also in relation to business capacity. It is important to note that contract management also include the payment of the contractors. These responsibilities needs to be vested in an institution which not only have sufficient technical know how but also possess a financial management capacity. If these capacities are lacking, it is imperative that such skills are developed within the local authorities. The medium level and field supervisory level staff at Ministry level and Provincial Government level shall have to be trained in effective planning, designing, preparation of suitable contracts packages, specifications for labour based road works. They will also be exposed to the new simplified contract document and bidding procedures. The training will include clear understanding of guidelines and procedures for the proposed "Plant Hire Pool" to be used by the trained small-scale contractors.

### **3.4 Training Strategy**

A key concept in training programmes for rural infrastructure works is to provide training through a combination of formal class-room training and practical on-the-job sessions. Training for the various categories of staff needs to be carried out with

varying duration and through different approaches based on their training needs. Therefore, a training strategy shall have to be formulated in such a manner that the all the key players become fully conversant with, an capable of carrying out their respective tasks effectively based on clearly drawn performance requirements of each player.

### **3.5 Establishment of Equipment Hire Plant Pool**

Almost 60% of the main roads and secondary roads are on the Islands of Guladalcanal and Malaita and these roads cater to almost 90% of the traffic in the country. Other Islands have well low gravel road density. Therefore, it is proposed to establish a separate combined plant pool for these two provinces with minimum equipment.

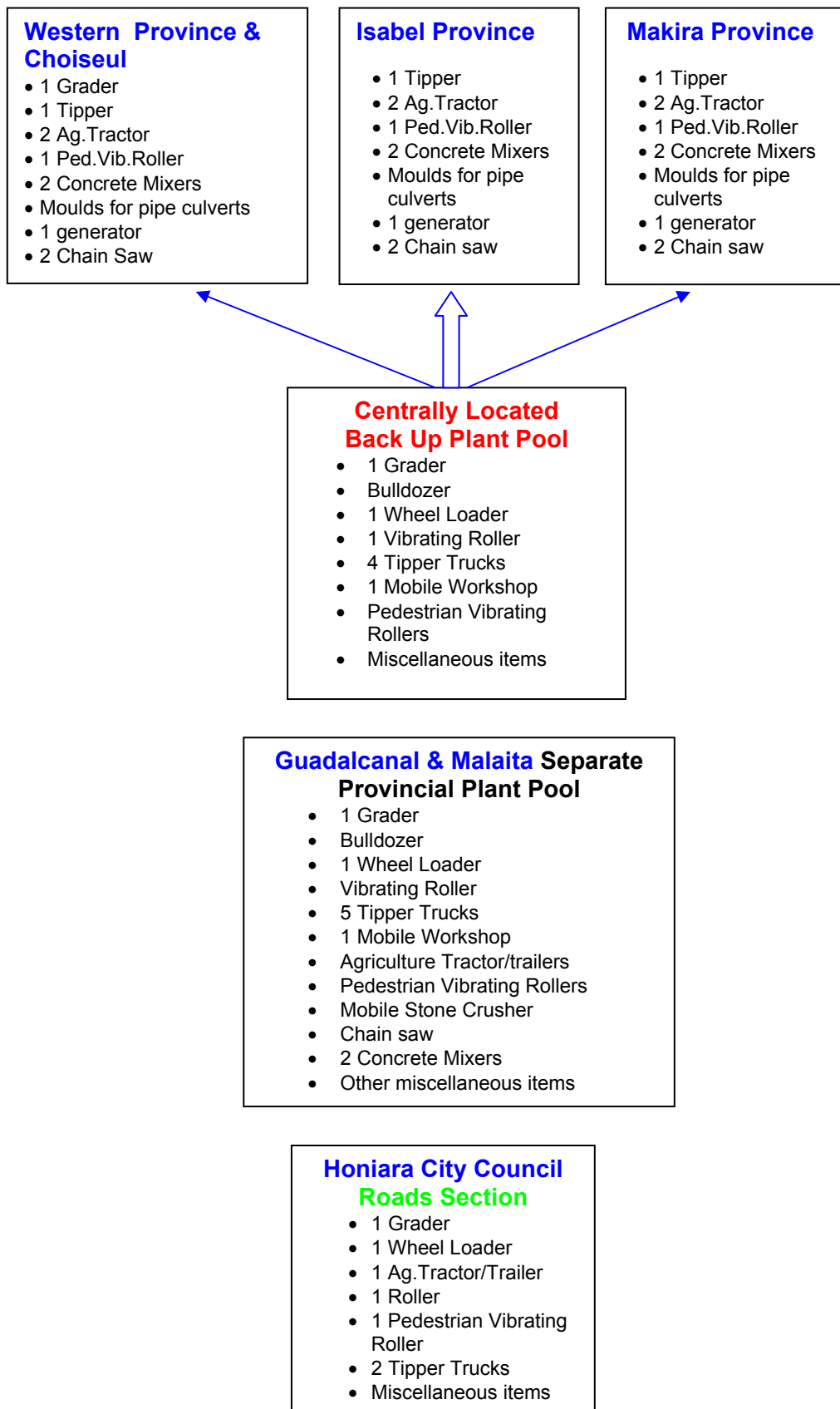
For other Provinces, it is proposed to establish an Equipment Hire Plant Pool at Provincial Level to provide equipment on hire to the contractors at appropriate rental rates. To carry out this task on an effective basis, the government may consider establishing an autonomous (self- sustaining) government company to run this entire management and operations of the plant pool. This would mean that at no point of time any free usage of equipment will be available even to the government agencies. Who so ever wish to use the equipment, whether it is private sector contractors or the government departments shall have to obtain the equipment on rental and pay to the company as per the established procedures and guidelines.

For other main Islands such as Western Province, Choiseul, Isabel and Makira Province, it is proposed to establish a joint centrally located equipment pool to provide backup to individual Provincial light equipment Plant Pools. Since most of the roads in these provinces are gravel/earth roads, most of the road maintenance activities could effectively be carried out using agricultural tractor-trailers and using labour-based methods. One motor grader back-up support will be available for periodic maintenance as and when needed. For optimum utilisation of the equipment and cost effectiveness, forward planning of road maintenance activities on all these provincial roads shall be a pre-requisite.

The small scale contractors who have no access to the appropriate road construction equipment shall have free access to the Plant Pool.



## Schematic Diagram Showing Proposed Plant Pool For Road Maintenance



The above mentioned equipment for the Plant Pool is estimated to cost about US\$ 3.0 Million. In addition to the equipment costs, the proposed Plant Pool shall require trained staff. There will be some additional costs in respect of the establishment, staffing and operational costs for the Plant Pool and are expected to be borne by the dedicated National Road Budget each year.

The above mentioned proposal is only an outline of the establishment of the Plant Pool but the details and other operational modalities shall have to be worked out in more details in consultation with various key stake holders.

### 3.6 Employment Creation Potential

Out of total 1391 km road network, more than 1,000 km are gravel / earth roads and are best suited for the labour-based and equipment supported methods of road rehabilitation. It is expected that these roads are rehabilitated to some maintainable standard first before they are subjected to any routine maintenance exercise. All this has to be done in a Phased manner depending upon the extent of funding and the time frame of the programme.

Item / Description	Year 1	Year2	Year3	Year4	Year5	Total
<b>Road Rehabilitation kms</b>	200	200	200	200	200	1,000 km
<b>Employment Potential @ 1,000 WD/km</b>	200,000 WD	200,000 WD	200,000 WD	200,000 WD	200,000 WD	1,000,000 WD
<b>Routine Maintenance</b>	100 km	200 km	400 k	600 k	800 km	1,000
<b>Employment Potential @ 150 WD/km</b>	15,000 WD	30,000 WD	60,000 WD	90,000 WD	120,000 WD	150,000 WD
<b>Total Employment Creation</b>	<b>215,000 WD</b>	<b>230,000 WD</b>	<b>260,000 WD</b>	<b>290,000 WD</b>	<b>320,000 WD</b>	<b>1,150,000 WD</b>

It would be seen from above that road rehabilitation could employ about 2,000 workers each year (100 work-days of employment in a year). Whereas, the routine road maintenance at the end of 5 years when the entire network is in a maintainable condition shall employ about 1,150 workers on any annual basis.