SOLOMON ISLANDS
NATIONAL INFRASTRUCTURE INVESTMENT PLAN

Solomon Islands Government
Ministry of Development Planning and Aid Coordination

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Abbreviations

ADB	Asian Development Bank
AUD	Australian Dollar
AusAID	Australian Agency for International Development
CIA	Central Intelligence Agency
DAD	Development Assistance Database
DMS	Debt Management Strategy
DMSP	Domestic Maritime Support Project
DRM	Disaster Risk Management
EC	European Commission
EDF	European Development Fund
EHD	Environmental Health Division
EIB	European Investment Bank
ERU	Economic Reform Unit
EU	European Union
GDP	Gross Domestic Product
GEF	Global Environment Facility
HCC	Honiara City Council
ICT	Information and Communication Technologies
IDA	International Development Association
IEE	Initial Environmental Evaluation
IFC	International Finance Corporation (of the World Bank Group)
IPCC	Intergovernmental Panel on Climate Change
IUCN	International Union for the Conservation of Nature
JICA	Japan International Cooperation Agency
MCA	Multi-Criteria Analysis
MCA	Ministry of Communications and Aviation
MDGs	Millennium Development Goals
MDPAC	Ministry of Development Planning and Aid Coordination
MECCDM	Ministry of Environment, Climate Change, Disaster Management and Meteorology
MID	Ministry of Infrastructure and Development
MLHS	Ministry of Lands, Housing and Survey
MMERE	Ministry of Mines, Energy and Rural Electrification
MoFT	Ministry of Finance and Treasury
MoHMS	Ministry of Health and Medical Services
MPGIS	Ministry of Provincial Government and Institutional Strengthening
MRD	Ministry of Rural Development
NAPA	National Adaptation Programme of Action
NCRA	National Coalition for Reform and Advancement
NDMO	National Disaster Management Office
NDS	National Development Strategy
NGO	Non-Government Organisation
NPF	National Provident Fund
NRW	Non-Revenue Water
NSWMS	National Solid Waste Management Strategy
NTF	National Transport Fund
NTP	National Transport Plan
NZ MFAT	New Zealand Ministry of Foreign Affairs and Trade
NZD	New Zealand Dollar
OCHA	Office for the Coordination of Humanitarian Affairs
ODA	Official Development Assistance
PACCSAP	Pacific-Australia Climate Change Science and Adaptation Planning Programme
PASAP	Pacific Adaptation Strategy Assistance Programme
PCCSP	Pacific Climate Change Science Programme
PCDF	Provincial Capacity Development Fund
PCERP	Post Conflict Emergency Reconstruction Project
PCRAFI	Pacific Catastrophe Risk Assessment and Financing Initiative
PGSP	Provincial Government Strengthening Programme
PIAC	Pacific Infrastructure Advisory Centre
PRIF	Pacific Region Infrastructure Facility
PS	Permanent Secretary or Provincial Secretary
PWD	Provincial Works Division
RAMSI	Regional Assistance Mission to Solomon Islands
RRP	Report and Recommendations to the President
SBD	Solomon Islands Dollar
SI NIIP	Solomon Islands National Infrastructure Investment Plan
SIEA	Solomon Islands Energy Authority
SIEAP	Solomon Islands Emergency Assistance Project

SIG	Solomon Islands Government
SIISLAP	Solomon Islands Institutional Strengthening of Land Administration Project
SIPA	Solomon Islands Ports Authority
SIRIP	Solomon Islands Road Improvement Projects
SISEP	Solomon Islands Sustainable Energy Project
SIWA	Solomon Islands Water Authority
SOE	State-Owned Enterprise
SOPAC	Applied Geoscience and Technology Division (of SPC)
SPC	Secretariat of the Pacific Community
t	Tonnes
TA	Technical Assistance
TCSI	Telecommunications Commission Solomon Islands
TEUs	Twenty-Foot Equivalent Unit
TSAP	Transport Sector Action Plan
TSDP	Transport Sector Development Project
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNJP	UN Joint Presence
USD	US Dollar
WB	World Bank Group
WSS	Water Supply and Sanitation
WHO	World Health Organisation

Notes

The exchange rate used in this report is: USD1 = SBD7.0

MINISTER'S FOREWORD

I am pleased to present to you the Solomon Island's National Infrastructure Investment Plan (SI NIIP) which presents the priorities of the Government and the strategic direction for major initiatives in economic infrastructure over the next 5-10 years. This is the first attempt to compile in one document the development needs in the various components of economic infrastructure, including energy, land, sea and air transport, water and sanitation, telecommunications and solid waste management.

The SI NIIP is closely linked to the National Development Strategy (NDS) of Solomon Islands and its vision of "a United and Vibrant Solomon Islands". Infrastructure plays a critical role in achieving the goals of the NDS, because there is a clear and positive linkage between infrastructure, social development, community wellbeing and economic growth. That is why it is critical for Solomon Islands to invest in infrastructure and ensure that infrastructure facilities are efficiently operated and adequately maintained.

The priority investments contained in the SI NIIP set the direction for infrastructure development in Solomon Islands and are the core of this document. But Solomon Islands also faces challenges to better manage and maintain new and existing infrastructure. The Government recognizes the importance of maintenance and that in the past, insufficient attention has been given to provide adequate management of the assets. The Government is therefore committed to improving the delivery and funding of maintenance and the SI NIIP outlines a number of strategies and initiatives for that purpose.

It will be very difficult with the limited resources available to meet all demands for infrastructure for the next 5-10 years. Therefore priorities have to be set. These priorities were developed through a process of consultation and analysis, with the aim of identifying key strategic development directions, infrastructure investments and complementary initiatives (planning studies, sector reforms, capacity building) that align strongly with national goals and would deliver substantial community benefits. As a result, the SI NIIP is much more than a list of investment priorities - it is an integrated program of new investments and supporting initiatives reflecting the Governments' aspirations for the economic infrastructure sector, including a funding strategy to meet capital and recurrent budget requirements.

The Plan was developed in close consultation with infrastructure service providers, representatives of national and provincial governments and of the community, the private sector, and development partners.It is therefore a country owned and led document.

It is important to recognize the SINIIP as a living document that must respond to a continuously changing environment. The Government therefore has the intention to monitor and regularly update the SINIIP to align it with the latest planning and budget priorities.

Finally I commend this document to all national stakeholders and development partners and again reiterate my hope that it will help lift the quality of life of all Solomon Islanders.

Hon. Connelly Sandakabatu, MP
Minister for Development Planning and Aid Coordination

Executive Summary

The Solomon Islands National Infrastructure Investment Plan (SI NIIP) outlines the Solomon Islands' priorities and plans for major economic infrastructure[1] over the next five to 10 years. The plan focuses on strategic investments important to the future of the Solomon Islands. The SI NIIP was prepared through a consultative process involving a wide range of stakeholders, including government agencies, state owned enterprises (SOEs), development partners, civil society, and the private sector. It covers the following infrastructure sub-sectors:

- Transport - Land
- Transport - Aviation
- Transport - Shipping
- Water Supply and Sanitation
- Solid Waste Management
- Energy and Power
- Telecommunications and Information Technology

The aim of the SI NIIP is to identify and prioritise the package of infrastructure investments which best meets the needs of the Solomon Islands in coming years, and to plan for the funding and implementation of these investments. The SI NIIP also recommends actions for consideration by the Solomon Islands Government (SIG) regarding the long-term sustainability of infrastructure assets, and identifies the implications of climate change and disaster risk for these types of infrastructure.

The Need for the SI NIIP

The National Vision is 'A United and Vibrant Solomon Islands', and as set out in The *National Development Strategy* (NDS), the national mission is to:

- *"Create a modern, united and vibrant Solomon Islands founded on mutual respect, trust and peaceful co-existence in a diverse yet secure and prosperous community where tolerance and gender equality are encouraged and natural resources are sustainably managed; and*
- *Enable all Solomon Islanders to achieve better quality of life and standard of living for themselves and their families through constructive partnership for social, economic, political and spiritual development."*

The NDS identifies eight strategic objectives. One of these (Objective No.6) relates specifically to the provision of infrastructure – *"to build and upgrade physical infrastructure and utilities to ensure that all Solomon Islanders have access to essential services and to markets."*

The SI NIIP responds to this call for infrastructure. At the same time, the provision of infrastructure also responds in various ways to the other seven objectives of the NDS, for instance by improving access to social services, facilitating economic development and ensuring sustainable development.

The population is youthful and growing rapidly, placing severe stress on service provision and pressure to create sufficient employment opportunities. The population is drifting from rural to urban areas. The Solomon Islands is vulnerable to natural disasters and is likely to become more vulnerable as a result of climate change. The Solomon Islands faces many challenges in the provision of infrastructure. In particular, the country's geography with more than 300 islands stretched over a distance of some 1,100 km presents enormous problems for meeting the population's demands for urban services. Well-chosen infrastructure will also support greater competition in goods and services, further enhancing the country's development, including growth of the private sector.

In the light of these challenges, there is a clear need for a systematic, rational, and strategic approach to the prioritisation, planning, implementation, and management of infrastructure. The Solomon Islands

[1] The type of infrastructure included is commonly termed 'Economic Infrastructure'. This refers to infrastructure that facilitates and enables business and economic activity. This includes transport systems, utilities, and communications networks. It generally does not cover buildings for government, health, education and social welfare.

National Infrastructure Investment Plan (SI NIIP) is the Government's response to this need. As mentioned above, the SI NIIP builds on the Government's existing policy and planning agenda established in its *National Development Strategy*. It also takes account of other SIG planning documents such as sector plans, corporate plans, and the national budget.

Methodology

The preparation of SI NIIP has involved six key activities:

1. Review of the current state of infrastructure in the various sub-sectors
2. Analysis of demand and future needs for infrastructure.
3. Development of a long list of newly proposed projects in each sub-sector (in addition to on-going and committed projects).
4. Establishing a list of priority projects, through participatory multi-criteria analysis.
5. Preparing a potential funding strategy for SI NIIP.
6. Consideration of the means by which climate change/resilience planning can be integrated into the SI NIIP process.

SUB-SECTOR ANALYSES

The SI NIIP process entailed the analysis of issues, demand, and priorities by infrastructure sub-sector. The process was made easier in those few sectors and sub-sectors in which sector plans or other studies had already been prepared. There is an urgent need for the preparation of plans for all infrastructure sub-sectors in order to provide a more even and comprehensive basis for project prioritisation. The key issues and priorities in each of the sub-sectors are summarised in Table ES.1 below.

Table ES.1: Summary of Infrastructure Issues by Sub-Sector

Sub-sector	Issues
Transport - Land	▪ Poor and delayed maintenance on existing unsealed and sealed roads. ▪ Roads in poor state hinder trade and access to local markets. ▪ Recurrent budget for government to maintain all roads and to build new ones is inadequate. ▪ Existing Transport Act needs review to ensure it encompasses all infrastructure and has clear demarcation of functions and responsibilities ▪ Limited capacity to execute works both in government and private sector ▪ Significant traffic management problems in Honiara
Transport – Aviation	▪ Absence of comprehensive investment planning for the sector as a whole ▪ Poor airfield surface runway and taxiways and associated facilities. ▪ Land issues affect operations of the airfields. ▪ Poor condition of International apron. ▪ Lack of safety equipment at most airfields except Henderson. ▪ Public ownership of airline brings many challenges.
Transport - Shipping	▪ Vessels not able to travel to remote islands because it is uneconomical. ▪ Some wharves located on isolated island or not connected to any road and airports. ▪ Growth in trade causes International Port at Point Cruz to experience vessel long dwelling time, vessel queues unscheduled arrivals. Other issues faced include late submission of clearance documents, limited operating time, congested roads and inadequate storage space. ▪ Domestic wharves in Honiara Point Cruz experience increase in vessel calls and is becoming congested.
Water Supply and Sanitation	▪ The Solomon Islands Water Authority (SIWA) only serves 9% of the population in 4 urban centres and still needs to serve seven others. ▪ SIWA's systems experience around 50% non-revenue water. ▪ Overall nationally only 74% of the population has access to 'clean' water. ▪ Only 12% of the population has access to proper sanitation.

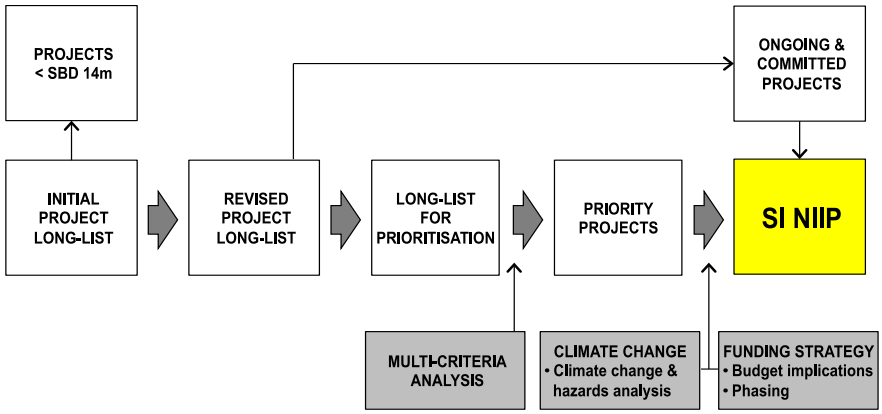
Sub-sector	Issues
Solid Waste Management	▪ Lack of an overall solid waste policy and legislative framework to effectively manage and control the collection and disposal of waste. ▪ Lack of land availability for landfills ▪ Lack of waste segregation and recycling ▪ Poor enforcement of existing legislation. ▪ Poor management and control of landfills.
Energy/Power	▪ Very high cost of energy and poor reliability. ▪ Dependency on imported fuel. ▪ Only 12% of the population has access to the grid. In rural areas less than 22% have some form of energy.
ICT	▪ Gap of over 30% that needs to be covered in terms of ICT coverage nationwide. ▪ Internet access gap is 96%. ▪ Fixed line gap is 98.4% ▪ Expensive fixed and wireless broadband costs due to limited competition and spread and remoteness of some communities. ▪ Shortage in skilled ICT personnel.

PREPARATION OF THE PROJECT LONG-LIST

Through consultations with a wide range and large number of stakeholders, a long-list of projects was assembled. The list included all projects that were either ongoing, committed, or being considered within each sub-sector and amounted to close to ninety projects. Many of these projects are important and would contribute to the national economic and social objectives. However, it is very unlikely that they can all be funded and implemented in the five to 10 year time frame of SI NIIP.[2] It was therefore necessary to establish the higher priority projects.

Prior to prioritisation, the list of projects was reduced by eliminating those projects with a value of less than SBD14 million (these were not considered to be 'strategic'), and those that are already ongoing, or are committed with funding in place. The project identification and prioritisation process is summarised in Figure ES.1.

Figure ES.1 Project Identification and Prioritisation Process



PRIORITISATION

A multi-criteria analysis was used for the prioritisation. It was agreed with SIG and other stakeholders that the criteria should be closely aligned to the eight criteria in the NDS (see Table ES.2). The criteria and the percentages thereby attributed to each of the NDS objectives were discussed several times with stakeholders before being finalised.

[2] Note: A target date of 2020 has been used by the SI NIIP. This aligns with other SIG strategies and also allows for some slippage so that all projects should fall within the ten-year time frame.

Table ES.2 NDS and SI NIIP Criteria

NDS Objectives (abbreviated)	No. of SI NIIP Criteria	%
1 To alleviate poverty	2	14%
2 To provide support to the vulnerable	1	7%
3,4 Access to health facilities, Access to education facilities	1	7%
5 Equitable economic growth	3	21%
6 Build and upgrade infrastructure	3	21%
7 Manage and protect the environment	3	21%
8 Improve governance	1	7%

The SI NIIP team undertook the initial scoring, with guidance from the NDS Task Force members. Stakeholders at a Prioritisation Workshop then reviewed these scores (using only a descriptive scale). The scores were then adjusted on the basis of comments and suggested amendments by participants. The outcome of the prioritisation was an overall ranking of all the proposed projects.

Table ES.3 SI NIIP Criteria Scoring Framework

Score	Explanation	Value
No effect	The project would not contribute to the criteria	1
Minor positive	The project would contribute only very little to the criteria	2
Moderate positive	The project would have some moderate but limited supportive effects	3
Positive	The project would provide support to the criteria	4
Major positive	The project would provide major support to the criteria	5

In view of the very low access rate to electricity in rural areas, a lump sum allocation for Rural Electrification was included in the priority list and will be assessed in further detail in sector master plans which are currently under preparation.

The intention of the prioritisation process was to identify a package of projects that could be implemented in a reasonable timescale, given existing funding and capacity constraints. The assessment of funding and capacity resulted in a package of around 20 projects. An iterative process was used to look at the funding implications of various cut-off points above and below 20th position. Based on evaluations of overall SIG funding and implementation capacity, the cut-off was made at the 19th ranked project.

A summary of the results for the top twenty-nine projects is shown in Table ES.4 below. The 29 projects represent the 19 high priority projects, plus the next 10.

Table ES.4 Results of Prioritisation

Top 19 Projects	Next 10 Projects
Henderson Apron Upgrade	
Resealing of Urban Roads	
Provincial Runways Upgrade	
Honiara Main Roads	
Honiara Port Remedial Works	Gizo Water Supply
Malaita North Road	Mberande - Aola Road
Honiara Urban Devt	Malaita Main Roads
Tina Hydropower	Remote Communities ICT
Provincial Sanitary Landfills	Choiseul Township
Honiara SIEA Genset Upgrade	Guadalcanal Feeder Roads Tranche 3
2013 Replacement (Domestic) Wharves	Guadalcanal Feeder Roads Tranche 4
New (domestic) Wharves Tranche 2	Malaita Feeder Roads Tranche 2
Rural WASH Projects	Choiseul Bay Connectivity Road
Guadalcanal Feeder Roads Tranche 2	Malaita Industrial Parks
Malaita Feeder Roads Tranche 1	
Water Supply 2 Year Plan	
Naro Hill - Lambi Road	
Honiara Port Extension (new wharf)	
Rural Electrification	

FUNDING STRATEGY

The strategy for financing economic infrastructure priority projects in the SI NIIP has been developed in close cooperation with the Ministry of Finance and Treasury (MoFT). This entailed the analysis of SIG's own funding projections and potential contributions from the private sector and development partners. The funding strategy is guided by the following principles:

a. Ensure that the available funding for economic infrastructure from SIG and its development partners roughly matches the total capital and maintenance expenditures for the proposed investments in the SI NIIP.

b. Encourage the private sector to invest in economic infrastructure and bring together public and private funding for infrastructure.

c. Ensure that funds are available for adequate operation and maintenance of new infrastructure and that analysis of proposed projects is based on the 'whole of life costs' of infrastructure assets.

d. Stimulate state owned utilities to operate in a financially sustainable manner and recover at least the costs of operation and maintenance of economic infrastructure service delivery from user fees, allowing for lifeline tariffs for vulnerable groups and stimulating the economic use of infrastructure services;

e. Stimulate the use of Community Service Obligations (CSOs) as an instrument to achieve the social and community objectives of the government in such a way that it will not negatively impact on the financial performance of SOE's;

f. Adhere to the principles of the Debt Management Strategy with the aim of ensuring that debt distress as experienced in the past will not return and use loans only for investments that will enhance the productive capacity of the country and for high priority projects and infrastructure identified in the NDS.

In assessing the funding strategy to support the SI NIIP, the timing and programming of the priority projects needed to be identified, alongside ongoing and committed projects. In part, this was an iterative process as the timing of investments could be affected by funding availability, technical issues, or changing project development programmes. The resulting scheme implementation profile is summarised in Table ES.5 resulting in a total funding requirement of about SBD3.2 billion for the period up to 2020.

Table ES.5 Programming of Priority Projects (2013-2020)
(Includes ongoing and committed projects)

Project	SBD m	Status	2013	2014	2015	2016	2017	2018	2019	2020
Noro - Munda Road	41	O	25							
Malaita North Road	22	O	11							
Munda Airfield Upgrade	39	O	30							
Nusatupe Airfield	26	O	26							
Lomlom Airfield	10	O								
DMSP Wharves Lot 1	52	O	35							
DMSP Wharves Lot 2	73	O	36.5	36.5						
Honiara and Auki Water Supply	175	O	100							
SIWA RAP Project	14	O	7							
Honiara Non Revenue Water	15	O	7.5							
Submarine Cable	542	C	271	271						
Outer Islands Renewable Energy	40	C		20	20					
Rural Electrification Program	100	P				20[3]	20	20	20	20
Honiara Main Road	110	P			22	22	22	22	22	
Henderson Apron Upgrade	14	P	14							

[3] The amounts from 2016 onwards reflect an annual lump sum allocation for rural electrification programs to increase rural access to electricity, to be worked out in detail in sector master plans which are currently under preparation.

Project	SBD m	Status	2013	2014	2015	2016	2017	2018	2019	2020
Resealing of Urban Roads	100	P	20	20	20	20	20			
Provincial Airfield Upgrading	192	P		38.4	38.4	38.4	38.4	38.4		
Malaita North Road Further Phase	90	P	30	30	30					
Honiara Port Remedial Works	40	P		40						
Honiara SIEA Genset Renewal	150	P	50	50	50					
Honiara Urban Development	140	P		10	22	22	22	22	22	22
Tina Hydropower	770	P			154	154	154	154	154	
Provincial Sanitary Landfills	15	P			5	5	5			
WASH Projects	142	P		20	20	20	20	20	20	20
2013 Replacement Wharves	25	P		12.5	12.5					
Water Supply - 2 Year Plan	42	P	21	21						
Honiara Port Extension (new wharf)	180	P		90	90					
New Wharves Tranche 2	68	P			34	34				
Guadalcanal Feeder Roads Tranche 2	50	P			25	25				
Malaita Feeder Roads Tranche 1	29	P			29					
Naro Hill - Lambi Road	85	P				42.5	42.5			
Annual Total			684	660	672	403	344	276	238	62

Key to status: O - Ongoing, C - Committed, P – Proposed
Note: some projects have incurred expenditure prior to 2013, hence the figures in each row may not sum.

Based on an estimate of available funding from various sources (detailed in Chapter 6), an estimated SBD3.3 billion in funding will be available for investments in economic infrastructure for the period up to 2020, of which SBD1.9 billion is already committed and SBD1.4 billion is not yet committed. It should be noted that this estimate includes approximately SBD300 million of private sector funding which could be made available to suitable projects. This means that the above investment program is likely to fit into the available funding envelope.

Based on the principles outlined in the funding strategy, a decision tree was developed and each of the top 19 projects was taken through a step-by-step analysis to identify those which might be commercially viable and require little SIG support, those which could provide a public-private partnership (PPP) opportunity, those which might be suitable for concessional loan financing, those which could be funded from grants, and those which are unlikely to be fundable. For one project, Malaita Industrial Parks, it was not possible to identify likely funding sources. This was partly caused by the state of preparedness and unresolved land issues. Therefore, this project has not been appraised in further detail and has been deferred to the second category of priority projects.

Based on the analysis, it is expected that development partner grants will comprise around 40 per cent of the funding required, slightly less than 45 per cent would be private sector funding, and 13 per cent concessional loan financing. It is expected that SIG Development funds would cover around four per cent of the total funding envelope. Notably, SIG development funds are mostly used for investments in smaller projects which fall below the SBD14 million threshold applied in the SI NIIP.

THE IMPORTANCE OF MAINTENANCE

For a number of reasons, expenditure on operations and maintenance (O&M) of infrastructure assets in the Solomon Islands has been low for many years. This has led to a situation where a large proportion of the country's existing infrastructure has fallen into disrepair. Rehabilitation and ongoing maintenance are therefore a fundamental part of future infrastructure investment and of this SI NIIP.

To emphasise the importance of maintenance, the project prioritisation process includes criteria relating to:

i. the ability of projects to meet on-going costs of maintenance O&M; and
ii. the optimal utilisation of existing infrastructure.

This partly explains the fact that most of the projects in the SI NIIP are not new construction, but involve the repair and rehabilitation of existing infrastructure facilities.

The SI NIIP is intended to be a sustainable infrastructure investment plan. It should therefore include appropriate allowances for ongoing costs as well as initial capital costs. Accordingly, the SI NIIP includes estimates of these 'whole of life costs' within the plan period up to 2023. Based on this analysis it is estimated that the SI NIIP will result in additional maintenance costs of about SBD290 million over the next 10 years, eventually building up to an annual maintenance burden of some SBD50 million per year.

Projects managed by the private sector, PPPs, or SOEs should not require maintenance funding support and arranging for adequate funding for maintenance should be an important consideration in project design. For sectors under SIG responsibility such as roads, the government will need to take steps in the coming years to allocate sufficient funds in the national budget.

PROVINCIAL EQUITY

Provincial equity is extremely important for the SIG and a key element in building national identity and cohesion. For this reason the SI NIIP promotes a fairly equitable spread of investment projects. The distribution of priority projects by province is shown in Table ES.6 below. This shows that the priority projects cover all provinces at some level, with a broadly appropriate spread being seen for the smaller provinces. When considering provincial balance it should also be noted that if the picture would include infrastructure projects below the SBD14 million cut-off, the distribution would be more even.

Table ES.6 Top Priority Projects by Province*
(Not including ongoing and committed projects)

Project	Sector	Cho	Wes	Isa	Cen	Ren	Gua	Mal	Mak	Tem
Henderson Apron Upgrade	Aviation									
Resealing of Urban Roads	Roads									
Provincial Runways Upgrade	Aviation									
Honiara Main Roads	Roads									
Honiara Port Remedial Works	Maritime									
Malaita North Road	Roads									
Honiara Urban Devt	Multi-sector									
Tina Hydropower	Energy									
Provincial Sanitary Landfills	Solid Waste									
Honiara SIEA Genset Upgrade	Energy									
2013 Replacement Wharves	Maritime									
New Wharves Tranche 2	Maritime									
WASH Projects	Water									
Guadalcanal Feeder Roads Tranche 2	Roads									
Malaita Feeder Roads Tranche 1	Roads									
Water Supply 2 Year Plan	Water									
Naro Hill - Lambi Road	Roads									
Rural Electrification	Energy	To be determined								
Honiara Port Extension (new wharf)	Maritime									

Notes: Colours for illustrative purposes only – separate colours for each province and grey for projects that will benefit all users
* For the purposes of SI NIIP analyses Honiara has been included in Guadalcanal Province.

CLIMATE CHANGE AND DISASTER RISK MANAGEMENT

The Solomon Islands are exposed to a wide range of geological, hydrological, and climatic hazards, including tropical cyclones, landslides, floods, and droughts. Between 1980 and 2009, for example, the country experienced 17 major disaster events, costing over USD20 million and affecting almost 300,000 people. Of these events, there were six major natural disasters – two earthquakes and four tropical cyclones, as well as associated floods and storms, directly impacting over 100,000 people resulting in more than 100 deaths.

Most of the existing infrastructure essential to development in the Solomon Islands, such as roads, bridges, airstrips, and wharves, as well as economic activities such as cash crops, are located on the coast and thus exposed to climate driven extremes such as intense storms, tropical cyclones, and flash floods. Moreover, as a mountainous country, increased floods are also a concern.

In terms of climate change, fairly clear projections suggest that temperature in the Solomon Islands has been steadily rising and is expected to increase by 0.4-1.0°C by 2030. Increases in extreme rainfall days are expected in terms of both frequency and duration. Changes to drought incidence are uncertain but may decrease. Sea level rise recorded in Honiara from 1994 to 2009 shows an increase of 7.7mm/year, which may or may not be due to climate change, but is nevertheless an issue that needs to be considered in long-term infrastructure development. Sea-surface temperatures have also gradually risen around the Solomon Islands since the 1950s and ocean acidification has increased which puts the health of coral reefs at risk. These are important because coral reefs protect the shoreline from the impacts of storms and support the vital tourism and fishing industries.

Against this background, an important aspect of the SI NIIP involved an assessment of the potential impacts of climate change and natural hazards on the infrastructure sub-sectors. The process included:

- Carrying out a high level climate and natural disaster risk assessment to collect baseline information on risks posed to economic infrastructure. A provincial and a sector analysis were prepared to identify the possible range of adaptation measures for the SI NIIP sectors.
- The development of and discussion with the task force to agree to climate change adaptation (CCA) and disaster risk management (DRM) criteria to be included in the Multi-Criteria Analysis for project prioritisation.
- Application of the CCA/DRM criteria to the long-list of projects and sensitivity testing of the results to confirm a logical influence of the criteria on the overall priorities.
- The proposed priority projects most susceptible to climate change and natural hazards were examined in more detail in order to identify potential measures (and costs of integrating them) to increasing their resilience. The following projects were identified:
    - Henderson Airport Apron Upgrade
    - Provincial Airfields Upgrade
    - Malaita North Road
    - Honiara Urban Development
    - Provincial Sanitary Landfills
    - Water Supply 2 Year Plan and WASH Projects
    - 2013 Replacement Wharves
    - New Wharves Tranche 2
- Identify projects with potential eligibility for additional financing for CCA/DRM and develop project concept sheets for these projects to be used for accessing such funds.
- As part of the funding strategy, an assessment of CCA/DRM funding options to support resilience building and infrastructure adaptation.

SI NIIP INSTITUTIONAL AND PLANNING FRAMEWORK

The SI NIIP is envisioned as a Strategic Plan for the (Economic) Infrastructure Sector as defined in Chapter 8 of the NDS. Formulating and endorsing the SI NIIP is one of the measures taken by the government in implementing objective No. 6 of the NDS. A wide spectrum of stakeholders will view the SI NIIP as the key guide to infrastructure investment.

The approval, promotion, and management of SI NIIP will require a clear and coordinated strategy by the SIG. In order to gain widespread official acceptance, it is foreseen that the SI NIIP will be ratified and approved by Cabinet. The Ministry for Development Planning and Aid Coordination (MDPAC) will be the agency responsible for taking the SI NIIP forward and as such will have ownership of the plan. The MDPAC will work in close consultation with the MoFT and with the other sector ministries involved in preparing, implementing, and monitoring the plan.

The MDPAC will oversee the preparation of short annual monitoring reports on the implementation of the SI NIIP and will share these reports with key national level stakeholders and development partners. The monitoring reports will be used to update the document on a regular basis to align it with the latest planning and budget priorities, and report progress on implementation. A major review and update of

the SI NIIP is anticipated every three to four years, per the Government's objective to adopt a more programmatic approach to planning.

Undertaking this major programme of investments in infrastructure will stretch the capabilities of Government. A number of areas in planning, implementation, and management will require capacity building. These complementary activities include a variety of supporting mechanisms varying from technical outputs such as plans and regulations, to institutional strengthening, particularly in portfolio and project management. The needs and opportunities for institutional strengthening are highlighted in the SI NIIP, particularly at the strategic level. A summary of the complementary activities is shown in Table ES.7, alongside indications of which SIG agencies will be involved, and whether or not the activity would require (or benefit from) external technical assistance.

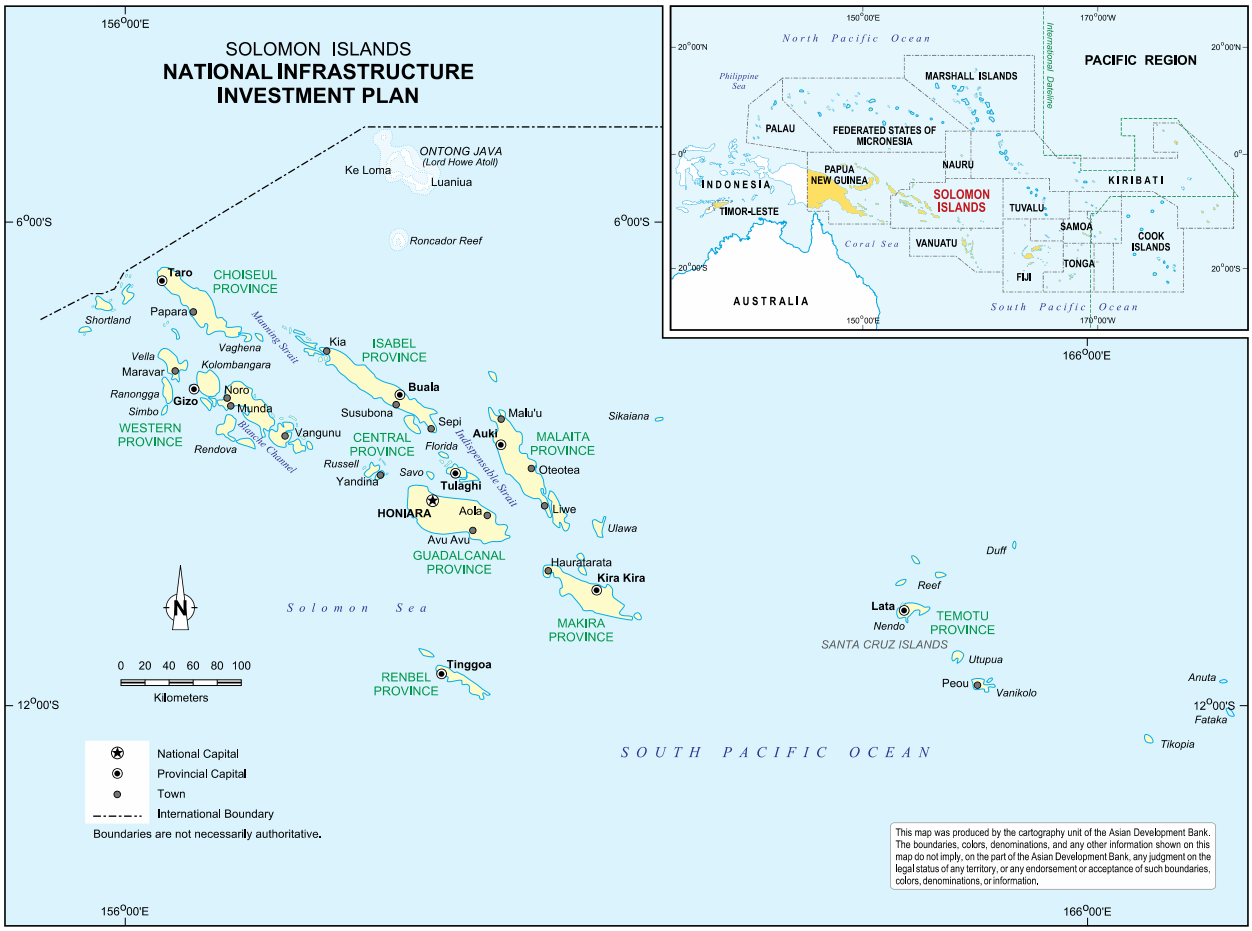
Table ES.7 Capacity Building and Other Complementary Activities

Sector	Complementary Activities	SIG	TA
General	▪ Prepare National Spatial Development Plan to provide guidance on locational priorities and linkages across all sector	MLHS, MDPAC	Yes
	▪ Prepare Provincial Spatial Development Plans	MLHS	Yes
	▪ Support to MDPAC for management of SI NIIP	MDPAC	Yes
	▪ Establish mechanisms for technical exchanges with other Pacific NIIP countries	MDPAC	
	▪ Support to MoFT to enable the implementation of the SI NIIP within the Debt Management Strategy and to enable the extension of the prioritisation methodology to all infrastructure	MoFT	Yes
	▪ Prepare an integrated land use and transportation master plan for Greater Honiara to guide future development and management of infrastructure	MLHS, HCC	Yes
	▪ Green infrastructure study. Starting with greater Honiara area assess current green infrastructure components and measures required to protect them.	MECCDM, HCC	Yes
Transport - Land	▪ Develop road standards and publish national Road Standards Manual	MID	Yes
	▪ Undertake traffic management study in Honiara	MID, HCC	Yes
	▪ Undertake studies into options for raising revenue (such as fuel levies) to help pay for maintenance costs	MoFT, MID	Yes
Transport - Aviation	▪ Consider privatisation of Solomon Airlines - in line with SIG policy - with the aim of allowing it to take on responsibility for airfield management	MoFT, MCA, CAASI	
	▪ Implement proposals to outsource the development and management of international and domestic airfields	MoFT, MCA, CAASI	
	▪ Undertake scoping study for all provincial airfields including introduction of airfield classification system	MCA, MID, CAASI	Yes
	▪ A detailed flood protection strategy developed for Henderson Airfield, including over the short-term, medium-term and long-term	MCA, MID	Yes
	▪ Undertake studies into options for raising revenue (such as fuel levies) to help pay for maintenance costs	MoFT, MCA	
Transport - Shipping	▪ Consider privatisation of SIPA to enable it to access alternative financing streams and bring in international management and operating skills	MoFT, SIPA	
	▪ Undertake a study for the best possible location of a new Port for Honiara to assess the feasibility in the longer term of relocating the current port at Santa Cruz, which is in the centre of town.	MID, SIPA	Yes
	▪ Develop in integrated coastal zone management and zoning plan to minimise ecological damage to surrounding area, which would further exacerbate the vulnerability of other user groups along the coastline.	MECCDM, SIPA	Yes
	▪ Undertake studies into options for raising revenue (such as fuel levies) to help pay for maintenance costs	MoFT, MID	
Water Supply & Sanitation	▪ Prepare water supply and sanitation national sub-sector plan	MMERE, SIWA	Yes
	▪ Assess alternative corporate structures for water supply outside Honiara and Auki, with a view to establishing sustainable management mechanisms for other urban centres	MoFT, SIPA	
	▪ Develop and implement a plan to increase alternative water sources and capture and storage methods such as rainwater harvesting as well as assess whether current storage capacity is adequate	MMERE	
	▪ Establishment of independent regulator to monitor and uphold service standards	MMERE	
	▪ Identify the long term sustainability of water resources, including under a climate change scenario, and potential pressures on water demand, and include these in the design of water supply and sanitation infrastructure and management.	MMERE	Yes
Solid Waste Manageme	▪ Prepare SWM sub-sector plan based on the National Solid Waste Management Strategy	MMERE	
	▪ Capacity building support to Honiara City Council for SWM	HCC	Yes

Sector	Complementary Activities	SIG	TA
nt	▪ Undertake assessment of potential for developing commercial recycling and opportunities for PPP	MMERE, HCC	Yes
	▪ Review the electricity market structure and regulation to establish the need for and feasibility of de-regulation to allow entry of private generators and retail suppliers, particularly outside Honiara	MMERE, SIEA	Yes
Energy & Power	▪ Establishment of independent regulator to monitor and uphold service standards	MMERE	
	▪ Undertake national assessment of renewable energy options starting with the study commissioned by SIEA	MMERE, SIEA	
	▪ Prepare energy sub-sector plan based on the National Energy Framework	MMERE	Yes
ICT	▪ Prepare Telecommunications/ICT Sector Plan setting out needs and priorities by island and province	MCA, TCSI	

Key to Agencies: MLHS – Ministry of Lands, Housing and Survey, MDPAC – Ministry of Development Planning and Aid Coordination, MoFT – Ministry of Finance and Treasury, HCC – Honiara City Council, MECCDM – Ministry of Environment, Climate Change, Disaster Management and Meteorology, MID – Ministry of Infrastructure and Development, MCA – Ministry of Communications and Aviation, CAASI – Civil Aviation Authority of Solomon Islands, SIPA – Solomon Islands Port Authority, MMERE – Ministry of Mines, Energy and Rural Electrification, SIWA – Solomon Islands Water Authority, SIEA – Solomon Islands Electricity Authority, TCSI – Telecommunications Commission Solomon Islands.

Figure ES.2: Map of the Solomon Islands



1 Introduction

1.1. Purpose and Scope of the Report

The preparation of the SI NIIP has been coordinated by the Ministry of Development Planning and Aid Coordination (MDPAC) and is supported by the Pacific Region Infrastructure Facility (PRIF).[4] The report analyses the current status and demand for economic infrastructure and describes the proposed priority investments for the Solomon Islands for the next five to 10 years, along with a funding strategy. It also provides a background analysis of the infrastructure sub-sectors covered by the SI NIIP, an assessment of climate change and disaster risks for infrastructure, and a description of the methodology used for prioritisation.

1.2. About the SI NIIP

1.2.1 PURPOSE AND SCOPE

The SI NIIP outlines Solomon Islands' priorities and plans for major infrastructure over the next five to 10 years. The plan focuses on strategic investments important to the country's future. The type of infrastructure included is commonly termed 'economic infrastructure'. This refers to infrastructure that facilitates business and economic activity generally, as well as important public services. This encompasses transport systems, utilities, and communications networks. It generally does not cover buildings for government and social welfare.

The SI NIIP covers the following infrastructure sub-sectors:

- Transport - Land
- Transport - Aviation
- Transport - Shipping
- Water Supply and Sanitation
- Solid Waste Management
- Energy and Power
- Information and Communications Technology (ICT)

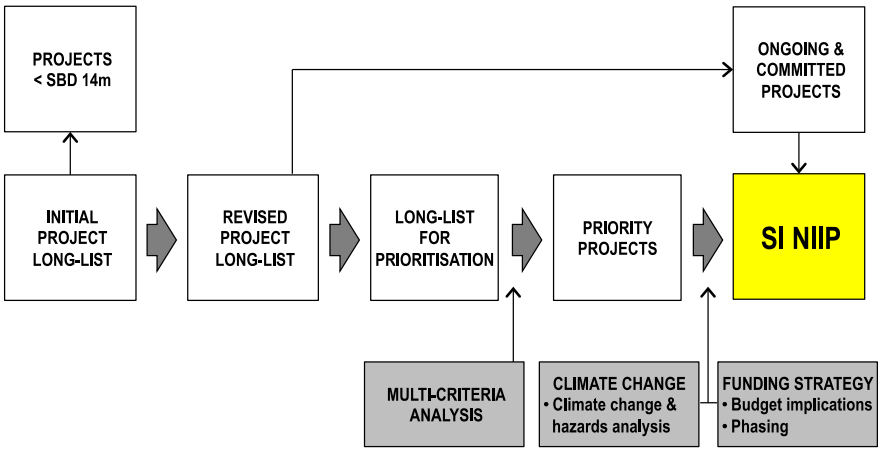
1.2.2. THE SI NIIP PROCESS

The preparation of SI NIIP has involved five key activities:

- Review of the current state of infrastructure in the various sub-sectors, and an analysis of future needs.
- Listing of proposed investment projects in each sub-sector, together with on-going and committed projects.
- Assessing priority projects, through a participatory multi-criteria analysis process.
- Preparing a potential funding strategy for SI NIIP.
- Consideration of the means by which climate change/resilience planning can be integrated into the SI NIIP process.

[4] PRIF is a partnership between the Asian Development Bank, Australian Aid, EC/EIB, New Zealand Aid Programme, and the World Bank Group. The Japan International Coorperation Agency (JICA) joined PRIF in Novemeber 2013.

Figure 1.1 SI NIIP Process



1.2.3. CONSULTATION AND PARTICIPATION

The SI NIIP has been prepared with extensive consultation and the participation of stakeholders in Government, State Owned Enterprises (SOEs), development partners, the private sector, and civil society. This included over 50 individual meetings, several working groups, a major workshop, and a number of meetings with the *National Development Strategy* (NDS) Task Force, the steering group for the SI NIIP. More than 100 people were involved in the process.

The consultation process is summarised in Table 1.1 below, and a list of people consulted is provided in Appendix E.

Table 1.1 Summary of Consultation Programme

Project Stage	Consultations
Inception	Inception meetings with key SIG agencies Data collection and project identification meetings with SIG, private sector, development partners, SOEs & others Presentation to Provincial Premiers NDS Task Force meeting
Interim	Continuation of data collection and project identification meetings Criteria working group – criteria development Criteria working group – initial prioritisation scoring Funding strategy meetings with the MoFT NDS Task Force meeting
Draft Final	Prioritisation workshop – ratification of scoring Funding strategy meetings with the MoFT NDS Task Force meeting Briefing Prime Minister
Final	Comments from all stakeholders NDS Task Force Meeting

2 Infrastructure Provision

2.1. Physical and Demographic Context

2.1.1 GEOGRAPHY

The Solomon Islands faces many challenges in the provision of infrastructure. In particular, the country's geography with more than 300 islands stretched over a distance of some 1,100 km presents enormous problems for meeting the population's demands for urban services. Moreover, the need for achieving some sort of 'provincial equity' in infrastructure development is a key issue. A summary of provincial characteristics is shown in Table 2.1.

Table 2.1 Provincial Characteristics

Province*	Land Area km^2 (% of total)	Population (% of total)	Characteristics
Choiseul	3,837 (13.5)	26,372 (5.1)	Capital: Taro (492 km from Honiara) No other urban areas One major island, many small islands Nickel mining, logging Very close to Papua New Guinea - frequent trading Arnavon Islands important conservation zone
Western	5,475 (19.3)	76,649 (14.9)	Capital: Gizo (366 km from Honiara) Other urban areas: Munda, Seghe Several islands of differing size Primary tourist destination in SI Province with highest revenue Major logging area Tuna processing - SolTuna
Isabel	4,136 (14.6)	26,158 (5.1)	Capital: Buala (152 km from Honiara) No other urban areas One large island, many small islands Logging, mining, fisheries, agriculture Tourism growing in north
Central	615 (2.2)	26,051 (5.0)	Capital: Tulagi (37 km from Honiara) (Tulagi was old capital of SI) No other urban areas Two groups of small islands - Florida and Russell Big copra operation in Russell Islands Logging Tourist resorts in Florida Islands Slipway in Tulagi
Rennell-Bellona	671 (2.4)	3,041 (0.6)	Capital: Tinggoa (232 km from Honiara) No other urban areas Two small islands Tourist resorts Logging Famous for carvings
Guadalcanal**	5,358 (18.5)	158,222 (30.7)	Main urban area: Honiara*** Many small urban settlements along north coast One large island, a few small ones Main government and commercial centre Important agricultural area in eastern part of island Major gold mining and palm oil operations
Malaita	4,225 (14.9)	137,596 (26.7)	Capital: Auki (102 km from Honiara) Other urban areas: Maluu, Apio One large island, a few small ones Major copra and cocoa areas Palm oil
Makira-Ulawa	3,188 (11.2)	40,419 (7.8)	Capital: Kirakira (235 km from Honiara) No other urban areas One large island, a few small ones

Province*	Land Area km^2 (% of total)	Population (% of total)	Characteristics
			Cocoa, logging
Temotu	895 (3.2)	21,362 (4.1)	Capital: Lata (664 km from Honiara) No other urban areas A few small islands Very remote - nearer to Vanuatu than Guadalcanal
Total	**28,400**	**515,870**	

Notes:
* The order of the provinces in the table follows that used in the National Census (which is west to east).
** Although the National Census presents data for Honiara City separately, for the purposes of this analysis Honiara is included in Guadalcanal province.
*** Guadalcanal Province does not have an official capital but provincial offices are in Honiara.

2.1.2 POPULATION

As shown in Table 2.1 above, the population of the Solomon Islands at the time of the National Census in 2009 was 515,870, with 264,455 male and 251,415 females. The average growth rate over the intercensal period was 2.3 per cent. The National Statistics Office does not undertake or publish annual estimates, but the CIA estimates that recent national growth is around 2.17 per cent. Based on these numbers, the current population is about 550,000.

Population density is low at approximately 20 people/km^2. Urban population is around 20 per cent of the total, while urban growth was 4.7 per cent from 1999 to 2009. At the time of the Census, the average household size was 5.5. The Census figures clearly reveal a shift from rural to urban areas. This is reflected in provincial growth with the fastest growing population being in Guadalcanal province at 4.4 per cent per annum. Many of these people live in the areas surrounding Honiara, with 'Greater Honiara' spreading significantly in recent years. There is no official record of the population of the wider urban area. However, the Solomon Islands Water Authority (SIWA) carried out its own survey of properties from satellite imagery and used it to estimate the urban population at around 100,000. By contrast, population growth in Malaita province was only 1.2 per cent per annum.

A national average population growth rate of 2.17 per cent is significant and ranks 40th of 231 countries internationally. If this rate continues, it would result in a total population of over 650,000 in 2020, i.e. another 100,000 people in eight years. The Solomon Islands has a relatively young population and this could result in increasing growth rates. The median age for the country is now 19.7 years, the age at which many Solomon Islanders are likely to start a family. Honiara has the highest sex ratio in the country, with 112 men to every 100 women. At the same time Honiara also has the highest median age, at 22.6 years. This suggests a large group of single men and professionals in the capital.

Rural to urban migration is likely to continue resulting in an increasing proportion of the population requiring urban services. While there are plans to develop provincial centres these are unlikely to slow the rural to urban shift significantly over the next 10 years.

Poverty in the Solomon Islands is widespread and characterised by a lack of access to essential services and income-earning opportunities, rather than hunger or severe destitution. The Solomon Islands has the second lowest average income in the region, with an estimated gross domestic product (GDP) per capita of USD1,347 in 2010 (current prices). Income distribution is inequitable, with rural expenditure levels significantly below expenditure levels in urban areas. Similarly, social indicators, although improving, are among the worst in the region.

Rates of employment and unemployment are not entirely clear. The census shows a rate of only 2.0 per cent unemployment. However under the census definition the 'employed' include subsistence workers which make up more than 50 per cent of the workforce. In the Millennium Development Goals (MDGs) progress report[5] United Nations Development Programme (UNDP) quote a figure of 10.8 per cent based on its own *Human Development Report 2009*.[6]

[5] United Nations Development Programme (UNDP), *Millennium Development Goals Progress Report for the Solomon Islands* (2011).
[6] United Nations Development Programme (UNDP), *Human Development Report 2009* (New York: 2009).

2.2. Demand for Infrastructure

2.2.1 ECONOMIC GROWTH

Since the ethnic tensions between 1998 and 2003, the Solomon Islands economy has exhibited steady growth, albeit from a low base. However, this growth has resulted from generally unsustainable sources, such as logging and donor inflows. This dependence on a very few sources has led to significant volatility, most notably in 2009 when the economy contracted by five per cent mainly due to falls in the export price of logs. At the same time, because of inadequate infrastructure, the Solomon Islands are unusually highly exposed to changes in the import prices of basic commodities, such as fuel and raw materials. This leads to significant price volatility, which can impact on Government finances and economic growth alike.

While the country has exhibited much stronger growth than many neighbouring countries, this growth is concentrated is a relatively small number of areas. In particular, once outside Honiara, socio-economic conditions do not reflect a buoyant economy, with living standards for the majority of the population still below standard. An important issue for the SIG is therefore to identify ways in which the success of the economy can be translated to the rest of the country. That many Solomon Islanders still live in deprived conditions highlights that current distribution mechanisms are not working. As such, a key policy goal for the SIG is to enhance economic opportunities for the majority of the population.

The situation is exacerbated by the Solomon Islands' location as an island nation remote from its main markets. This renders imports expensive as long distance transport costs need to be accounted for and exports relatively uncompetitive once these transport costs are taken into account. These are problems which are common to all Pacific developing countries. Real GDP growth is forecast to be around four per cent over the period to 2017.

In response to these issues, in 2011 the SIG published the NDS. The NDS has wide ranging objectives, all of which will contribute to the overarching aims of improving security, prosperity, and the sustainable use of resources. Key elements of the NDS include careful management of Government finances, improvements in service delivery, investment in sustainable and efficient infrastructure, and providing improved employment opportunities for all Solomon Islanders. The NDS includes a number of specific interventions aimed at fostering economic growth, including the development of growth centres, investments in major industries, and improvements in the regulatory environment for small businesses. The NDS has received broad domestic and development partner support.

The NDS highlights the restrictions placed on economic growth by infrastructure, across all sectors. The SI NIIP will consequently operate as a key tool in implementing the NDS, as it provides a strategic framework against which investment priorities can be identified.

2.2.2 LOCATION OF DEMAND

The most direct and tangible method of achieving the objective of increasing opportunities for all Solomon Islanders is by pursuing a vigorous public sector investment programme throughout the country. This needs to provide major physical and economic infrastructure throughout the provinces, with the SIG taking the lead in the delivery of infrastructure and a deliberate policy decision to provide investment funds to the infrastructure sector.

A focus on infrastructure away from Honiara requires a new policy direction for development towards the rural sectors. Re-directing economic activity away from Honiara is likely to benefit all Solomon Islanders as it will relieve social tensions, ease pressure on social and security services, and enhance economic conditions throughout the country, resulting in a reduction in the drift of population towards Honiara.

In the absence of existing spatial plans, the analysis of the geographic demand for infrastructure has to be somewhat ad-hoc. While development programmes appear to be largely uncoordinated with separate initiatives and investments, there is some geographic coincidence between the different

proposals. For example, there are significant investments proposed for northwest Guadalcanal, including a new provincial capital at Doma, fish processing plant at Doma, and agricultural sector investments in the same area. Similarly, investments in west Malaita would combine food processing and oil palm production with a new international port.

The key industrial and agricultural locations that are likely to create additional infrastructure needs include:

- Guadalcanal Plains Palm Oil Ltd – expansion of plantations and production facilities in northeast Guadalcanal;
- Gold Ridge Mining Ltd – continued increases in gold production and possible new mine sites in Guadalcanal and elsewhere;
- Russell Islands – re-invigoration of palm oil production, possibly through smallholder utilisation of existing unused plantations;
- Nickel Mines – new mine sites in Isabel and Choiseul;
- Soltuna – continued increases in tuna production in Noro, including both processed tinned tuna and fresh tuna steaks;
- New tuna processing facilities at Doma and/or Tenaru in north Guadalcanal;
- Expansion of the Kolombangara Forestry plantations in Western province;
- East Makira – including areas suitable for expansion of cocoa growing and cattle industries;
- Pacific Plantations Ltd (New Georgia) – new palm oil plantations in Western province; and
- New tourism sector investments including a new Honiara Casino, Anuha Island, Isabel Gold Coast Resort, and Tambea Resorts.

There is a range of integrated development proposals that could be considered to represent growth centres. These include a mix of industrial developments, relocation of existing population centres, and completely new town proposals. Key amongst these are:

- Buala – a new town with industrial development alongside the existing Isabel provincial capital;
- Taro – relocation of the Choiseul provincial capital to a mainland location together with expansion of agricultural activity in the northern part of the island;
- Suava Bay, Malaita – a new mixed industrial area and domestic port, including a range of agricultural processing and small industrial facilities;
- Bina Harbour, Malaita – a new industrial area linked to a new international port on the west coast of Malaita, linked to inland oil palm plantations;
- Doma – a new Guadalcanal Province capital on a greenfield site west of Honiara, linked to a proposed tuna cannery, international port and University of the South Pacific campus; and
- Tenaru – a new town linked to a proposed tuna cannery.

2.2.3 IDENTIFICATION OF INFRASTRUCTURE NEEDS

The identification of specific infrastructure needs is difficult without a clear sector strategy or master plans for key developments. In the Solomon Islands, beyond the transport sector, this level of documentation does not currently exist. However, some broad principles can be established, mainly from within the NDS, against which some needs can be identified. The following extracts from the NDS provide some general development goals:

- Rural Infrastructure - “Facilitate infrastructure development for an efficient, effective and quality service delivery to rural communities in water supply and sanitation, electricity, transport and communications – extending coverage of mobile telecommunications networks to all rural areas and facilitating affordable access by rural dwellers”.
- Mainstream Private Sector Economic Leadership – “To reduce the operating costs of the private sector and facilitate efficient provision of goods and services, prioritise the provision and maintenance of production related infrastructure – including through development of PPP models for management and ownership”.
- Development of Economic Growth Centres – “To improve trade opportunities and enhance trade performance, establish physical infrastructure to support productive sectors, and seek Aid

for Trade for such infrastructure development with existing and potential development and trade partners".

- Develop Physical Infrastructure – "Water supply and sanitation was considered in consultations to be the highest priority need in rural areas and with also urgent need for improvement of both water supply and sanitation in Honiara and urban centres. Energy is in short supply in rural areas and high cost in relation to people's ability to pay, requiring affordable energy development, including renewables. Telecommunications needs better, more efficient and cost effective services with a wider coverage. Shipping is the major domestic transport mode and strategies will strengthen services and infrastructure to support market access and development. Aviation policy aims to reduce costs and increase quality of services whilst improving infrastructure".
- Water Supply and Sanitation – "Ensure clean water and proper sanitation is available in all communities, ensuring the water resources are sufficient and chemically safe for all communities".
- Electricity – "Ensure reliable and affordable power supply in all urban centres by promoting use of renewable energy, opening the market to independent power providers".

To be useful for the analysis of infrastructure needs, these policy statements need to be translated into a series of more practical targets. Suggested targets (discussed in more detail in Chapter 3) are as follows:

- Reliable sources of clean drinking water should be available to the whole population, regardless of where they live. Currently around 60 per cent of urban residents and 45 per cent of rural residents have regular access to clean water.
- All residents should be provided with an appropriate system of sanitation. Outside Honiara the incidence of proper sanitation is very low.
- Affordable energy supply is crucial to improving the productivity of industry. Currently only those industries located in the main urban areas have access to electricity, although a small number have their own power generation capability.
- The backbone of the transport network is inter-island shipping services. For this to be effective two things are required: (i) reliable, well planned, demand responsive shipping services; and (ii) appropriate, accessible wharf infrastructure.
- In those areas where reliable shipping services cannot be provided, road links should be provided to provide access to main economic centres. Currently, areas such as the Guadalcanal, Choiseul, and the Makira weather coasts, have neither an all-year-round reliable shipping service nor road access to the nearest major centre.
- Efficient international and domestic air services are critical for the continued economic development of the Solomon Islands. Improved and upgraded airport infrastructure is required along with convenient and affordable flight operations to key locations in all provinces.
- The current telecommunications policy is that all Solomon Islanders should be covered by a reliable mobile phone signal. Currently coverage is around 67 per cent, but is rising quickly.
- Environmentally-acceptable solid waste management facilities are required in all main population centres. Currently, the main areas have insanitary facilities with minimal collection and treatment of runoff or leachate.

2.3. Recent Donor Support for Infrastructure

Over the last two decades the Asian Development Bank (ADB), World Bank Group (WB), European Commission (EU), Japan International Cooperation Agency (JICA), Australian Agency for International Development (AusAID), and New Zealand Ministry of Foreign Affairs and Trade (NZMFAT) have been the major contributors to the infrastructure sector. Other development partners active in infrastructure in the Solomon Islands are the Government of Taiwan, UNDP, International Finance Corporation (IFC), and the Global Environment Facility (GEF). A summary of recent donor support is shown in Table 2.2.

Table 2.2 Recent Donor Support for Economic Infrastructure

Agency	Recent Projects and Areas of Support
AusAID	▪ Water and sanitation ▪ Transport - roads, shipping and aviation through National Transport Fund, SIRIP and DMSP
ADB	▪ Transport - o PCERP - Post Conflict. Repair and maintenance of roads in Malaita. o SIEAP - Response to the earthquake and Tsunami in the Western and Choiseul Province. Includes wharf, road, footbridge rehabilitation works. o SIRIP 1 - Makira road and bridges project. o SIRIP 2 - West Guadalcanal roads and bridges in response to flooding. o TSDP - Sector wide approach. Maintenance and rehabilitation of roads, airports, wharves, navigational aids. o DMSP - domestic maritime support for rehabilitation of wharves and franchise shipping scheme ▪ Strategic national planning - support for preparation of National Development Strategy ▪ Energy/Power - Tina River Project - hydropower ▪ ICT - Undersea cable project
World Bank	▪ Energy/Power - rural electrification, support to SIEA, Tina Hydro Project ▪ ICT - support for TCSI and universal access ▪ Climate change (regional)
IFC	▪ Support to tourism sector ▪ Support to mining communities ▪ Energy/Power – Tina Hydro Project
NZMFAT	▪ Munda Runway, Nusatupe Runway ▪ Road upgrading (SIRIP, PCERP), Noro – Munda ▪ Domestic Maritime Support Project ▪ Airport improvements – Munda, Nusatupe
EIB[1]	▪ Energy/Power – Tina Hydro Project – sustainable energy
EU	▪ Climate change adaptation ▪ Rural water supply and sanitation - RWSS ▪ Support for wharves and shipping ▪ Road improvements in Guadalcanal and Malaita (SIRIP, DMSP)
JICA	▪ Solid waste management - support to Honiara City and Gizo ▪ Improvement of water supply for Honiara and Auki ▪ Non-revenue water support for Honiara and Auki ▪ Jetty construction Auki (as part of market upgrade in Auki) ▪ Honiara airport upgrade ▪ ICT – radio broadcasting network improvement ▪ Study and design for a new wharf for Honiara Port
Taiwan	▪ Rural development
GEF	▪ Sustainable energy ▪ Sustainable integrated water resource and wastewater management
UNDP	▪ Provincial development ▪ Disaster management and recovery
PRIF[2]	▪ Water supply - support to SIWA ▪ Honiara Port Scoping Study ▪ Infrastructure Planning (SI NIIP)

Key to programmes/projects: DMSP – Domestic Maritime Support Project, PCERP – Post Conflict Emergency Reconstruction Project, SIEAP – Solomon Islands Emergency Assistance Project, SIRIP – Solomon Islands Roads Improvement Project, TCSI – Telecommunications Commission Solomon Islands. TSDP – Transport Sector Development Project,
Notes: [1] European Investment Bank. [2]PRIF – Pacific Regional Infrastructure Facility (partnership between the ADB, WB, AusAID, NZMFAT, and EU).

2.4. National Planning

In its policy document,[7] the present Government, The National Coalition for Rural Advancement (NCRA), recognises that economic infrastructure is a driver of economic activity, provides a link to markets, and enables access to trade. The policy states that "efficient, effective and quality infrastructure and support services are important inputs into production and [a] major determinant of viability of investment". The policy was further elaborated in the NCRA Policy Translation Document in

[7] National Coalition for Rural Advancement (NCRA), *Policy Statement* (October 2010).

2011.[8] The emphasis is on enhancing economic growth, advancing rural livelihoods, and improving service delivery in rural areas.

The Government's development policy is now set out in the NDS, 2011–2020.[9] The NDS states that the National Mission is to:

- create a modern, united, and vibrant Solomon Islands founded on mutual respect, trust, and peaceful co-existence in a diverse yet secure and prosperous community where tolerance and gender equality are encouraged and natural resources are sustainably managed; and
- enable all Solomon Islanders to achieve better quality of life and standard of living for themselves and their families through constructive partnership for social, economic, political, and spiritual development.

The NDS sets out eight objectives to achieve this. These are shown in Table 2.3 below.

Table 2.3 The Eight Objectives of the National Development Strategy

Objective 1	To alleviate poverty and provide greater benefits and opportunities to improve the lives of Solomon Islanders in a peaceful and stable society
Objective 2	To provide support to the vulnerable
Objective 3	To ensure that all Solomon Islanders have access to quality health care and to combat malaria, HIV, non-communicable and other diseases
Objective 4	To ensure that all Solomon Islanders have access to quality education and for the country to adequately and sustainably meet its manpower needs.
Objective 5	To increase the rate of economic growth and equitably distribute the benefits of employment and higher incomes amongst all the provinces and people of Solomon Islands
Objective 6	To build and upgrade physical infrastructure and utilities to ensure that all Solomon Islanders have access to essential services and to markets.
Objective 7	To effectively manage and protect the environment and eco-systems and protect Solomon Islanders from natural disasters
Objective 8	To improve governance and order at national, provincial and community levels and strengthen links between them

While Objective 6 refers specifically to physical infrastructure, the development and improvement of economic infrastructure will also contribute to achievement of the other objectives. In the area of economic infrastructure, the Government's current emphasis is placed on implementing the new National Transport Plan (NTF), rehabilitating selected wharfs and jetties, upgrading provincial airfields, developing a national information and communication technology (ICT) system, strengthening the management and commercial performance of SOEs, and establishing clean energy sources.

The government envisions a growth process that is private-sector-led, encourages rural development, and reduces the country's dependence on foreign aid and income from the export of logs. The government proposes to promote the geographical spread of growth and foster diversification of economic activity by developing growth centres throughout the provinces. The government hopes to achieve this by providing sufficient transport, power, and other infrastructure to those growth centres; developing local industries; and developing financial markets.

2.4.1 IDENTIFICATION OF INFRASTRUCTURE NEEDS

Whilst the NDS clearly sets out the national policy framework for the country's development, it does not provide any geographic guidance on the location of development. In fact there is an acute absence of spatial planning in Solomon Islands.

The effectiveness of infrastructure planning will be hindered until national, provincial, and urban spatial development plans have been prepared. These would highlight such things as focal points for urban growth, key areas for commercial and industrial activities, productive agricultural areas, tourism zones

[8] National Coalition for Rural Advancement (NCRA), *Policy Translation Document* (2011).
[9] Ministry of Development Planning and Aid Coordination (MDPAC), *National Development Strategy* (Government of the Solomon Islands, 2011).

and ecologically sensitive areas to be protected. Such plans would enable infrastructure planners to identify high priority areas where investment will bring rapid and widespread results. They would also facilitate the assessment of opportunities for integrated infrastructure provision, or 'connectivity' – locations where multi-sector investments will complement each other and increase the effectiveness of the individual facilities. In addition, properly planned and coordinated infrastructure development outside the urban areas will go some way to checking rural to urban migration.

2.5. Sector Planning

There is little or no consistency across the infrastructure sub-sectors in the level of sector and sub-sector planning that has been undertaken and documented. A summary of existing plans is shown in Table 2.4.

While all ministries are supposed to prepare Corporate Plans and Three-Year Plans, the scope and content of these vary and some are out of date. The transport sub-sectors now have the benefit of the NTP and the Transport Sector Action Plan (TSAP). These provide comprehensive data on the needs and priorities for transport infrastructure (although the aviation sub-sector is not as comprehensively covered as land and shipping). They also highlight the absence of such comprehensive information for other sub-sectors.

Table 2.4 Existing Sector Plans and Studies

Sector/Sub-sector	Sector Plans and Studies
Transport - Land	▪ National Transport Plan (NTP) 2011- 2030 outlines sector policy, strategies, financing plans and prioritisation methodology. ▪ Transport Sector Action Plan (TSAP) 2011-2013 (from NTP) outlines priority roads for maintenance, repair, and rehabilitation works. ▪ NTF Annual Work Plans ▪ MID Corporate Plan
Transport – Aviation	▪ NTP 2011- 2030 outlines sector policy, strategies, financing plans and prioritisation methodology. Safety equipment not prioritised. ▪ NTP-TSAP 2011-2013 includes plans to maintain and upgrade existing airstrips. No construction of new airports mentioned. ▪ Ministry of Communication and Aviation Corporate Plan and Three-Year Plan
Transport – Shipping	▪ NTP 2011- 2030 outlines sector policy, strategies, financing plans and prioritisation methodology. ▪ NTP-TSAP 2011-2013 includes plans to maintain and upgrade existing wharves and jetties. ▪ Ongoing reforms under Domestic Maritime Support Project include setting up of SI Maritime Safety Authority (SIMSA) and new maritime regulations. ▪ SIPA Scoping Study-outlines port improvement strategy in the areas of business, management, land and traffic management, condition survey of all port assets. ▪ MID Corporate Plan
Water Supply and Sanitation	▪ Solomon Islands Water Authority (SIWA) Corporate Objectives 2012-2014 outlines SIWA's overall intentions and objectives for the 3 years. ▪ SIWA currently working towards end of the Rapid Recovery and Action Plan (RAP) 2011 (funded by AusAID $2.2M). This to be later expanded into a 2 year and 5 year plans with ongoing funding from AusAID. ▪ Rural Water Supply and Sanitation Policy 2012 - National policy document with objective to ensure rural communities has access to sustainable water and sanitation facilities. ▪ No policy documents or strategies relating to drainage.
Solid Waste Management	▪ National Solid Waste Management Strategy and Action Plans – outlines priority areas, key objectives and it set the way forward. Also sets the mechanism from which waste can be managed in the future. ▪ Corporate Plan Ministry of Environment, Climate Change, National Disaster Management and Meteorology Corporate Plan 2011-2013 – includes development of a Waste Management Policy and the Legislative Framework to management and control waste.
Energy/Power[10]	▪ National Energy Policy Framework 2007 - outlines 12 Strategic areas which include: Energy Sector Planning, coordination and Management; Petroleum Sector, Transport Sector, Electricity Sector (urban), Electricity Sector (Rural), Renewable Energy, Environment, Environment Conservation and Efficiency, Capacity Building and Information, Legislation and Regulations, Financing and Gender. ▪ SIEA Act 1969 sets out operational rules for the Authority. ▪ SIEA Business Plan 2012 - objectives and targets.
ICT	▪ Telecommunications Commission of Solomon Islands (TCSI) established under the Telecommunications Act

[10] At the time of preparing this report, the *National Energy Policy* was being reviewed with the help of the Secretariat of the Pacific Community (SPC). Also several sub-sector plans were in preparation with assistance from the SPC and other agencies, including: Petroleum Long-term Strategic Plan (SPC), Energy Efficiency Strategic Plan (SPC), Renewable Energy Investment Plan (ADB, WB & IFC), and small hydro-power development framework for rural areas (International Union for Conservation of Nature).

Sector/Sub-sector	Sector Plans and Studies
	2009. ▪ The Act includes Universal Access Policy and lays foundation for establishing Universal Access Fund (but not yet set up). ▪ TCSI regulates the sector. Developing the ICT policy - but not finished. ▪ Solomon Telekom following its mission statement 'Unity Bilong Community' - from 2009

2.6. Institutional Responsibilities

The following sections describe the institutional setting in the infrastructure sub-sectors, along with the legislative background and existing planning documentation.

2.6.1. TRANSPORT

The Ministry of Infrastructure Development (MID) is the body responsible for planning and policy development for the transport sector. It is also has a regulatory function. It is understood that the Ministry has drafted a new Infrastructure Bill that is yet to go through Parliament for enactment. The bill will also incorporate the National Building Code that is also currently under review.

Two new laws were recently enacted, the *National Transport Fund Act 2009* (NTFA) and the *Maritime Safety Administration Act* (MSAA). The NTFA establishes the National Transport Fund Board (NTFB) which is an advisory body that manages the funds and a financing facility to fund the development and maintenance of the country's transport system. It supports improved shipping services between islands, and also includes the rehabilitation of roads and bridges: "the National Transport Fund will provide a long term, sustainable mechanism for funding the maintenance of transport infrastructure in Solomon Islands."

The MSAA paves the way for a series of maritime reforms, including the establishment of the maritime safety administration and the regulation of shipping franchise projects. The new Maritime Act helps provide more reliable and safer shipping services to the Solomon Islands.

All transport projects under the TSDP are contracted out to private contractors in compliance with the MID procurement guidelines, and part of the supervisory role has been contracted out to private engineering firms. The MID's role is that of regulation and monitoring, and upholding national construction and quality standards.

The aviation sector comes under the jurisdiction of the Ministry of Communications and Aviation (MCA). The *Civil Aviation Act 2008* established the Civil Aviation Authority of Solomon Islands (CAASI). The CAASI is a member of the International Civil Aviation Organisation (ICAO) and regulates safety, security, and personnel licensing within the aviation sector. The MCA retains the responsibility of overseeing the provision of aviation services and gives policy advice to government.

Solomon Airlines, a SOE, is the sole airline operator in the country and operates both domestic and international flights. The privatisation of the company remains a medium-term option for the government. This is largely in response to the needs of the tourism sector where growth is dependent on the improved management and delivery of air services.

The management of the upper airspace is carried out under a contract with the Air Services Australia (ASA) set to lapse in 2013.The government is looking at tendering out the provision of this service when the contract expires.

The Solomon Islands Maritime Safety Authority (SIMSA) is a new entity within the MID, that regulates and controls all marine safety and shipping operations within Solomon Islands waters. The MSAA has just been enacted and it grants powers to the SIMSA to carry out its prescribed mandates and responsibilities, and also those outlined under the *Shipping Act 1998.*

The franchise shipping scheme, supported by the Asian Development Bank (ADB) and SIG through the Domestic Maritime Support Project (DMSP), is designed to provide support to shipping operators who provide shipping services to remote areas. The Solomon Islands Ports Authority's (SIPA) operations

are governed by the *Ports Authority Act* Cap 161. Its jurisdiction is restricted to declare Ports such as the Honiara and Noro International Ports. The Act also gives the SIPA power to manage and operate the ports.

In recent years, the preparation and implementation of the TSDP has allowed the MID to considerably strengthen its capacity to plan, manage, and oversee the implementation of road maintenance and rehabilitation programs throughout the country.

2.6.2. WATER AND SANITATION

The water and sanitation sub-sector falls under the jurisdiction of two ministries. The Water Resources Division of the Ministry of Energy Mines and Rural Electrification (MEMRE) looks after the national water sector policy, while the Ministry of Health and Medical Services (MoHMS) is in charge of water quality standards and policy relating to rural water supply and sanitation. Within the MoHMS, the Division of Rural Water Supply and Sanitation (RWSS) provides funds for the planning, coordination, and implementation of rural water supply and sanitation. This area of infrastructure provision is also well-supported by non-government organisations (NGOs) such as World Vision and Adventist Development and Relief Agency (ADRA).

The SIWA is the main urban operator and oversees urban water and sanitation services in the main city of Honiara and three other Provincial centres, namely Auki, Tulagi, and Noro. However, the *SIWA Act 1993* requires the SIWA to operate concurrently in the other remaining five urban centres: Gizo, Taro, Kirakira, Munda, and Lata. Due to the SIWA's financial position and current capacity, there is a general reluctance to take on these other centres. These water supplies will continue to be managed by the Provincial Works Divisions (PWD).

There is a draft national water policy and a draft water bill waiting for submission to parliament for approval and gazetting. Other relevant legislations which govern this sector include:

- *Environmental Act 1996*
- *Rivers Waters Act 1967*
- *Environmental Health Act 1996*

The national water and wastewater quality standards currently used are World Health Organisation (WHO) standards. There was some attempt by the MoHMS to develop national standards but these are yet to be formalised and approved for use. The design and construction standards used by the SIWA comply with Australian and New Zealand design standards as there are no national standards. The Rural Water Supply and Sanitation Division has its own construction standards manual.

Discussions with the MoHMS suggest that the Ministry struggles with its responsibilities for rural water supply and sanitation infrastructure, and would prefer to focus on its core tasks. Capacity for planning and implementation of rural water and sanitation programs is limited and very much dependent on external assistance. In urban water supply and sewerage, the capacity and financial capacity of the SIWA in recent years has strengthened considerably. However, the organisation relies to a large extent on foreign aid and management assistance, and remains vulnerable.

2.6.3. SOLID WASTE MANAGEMENT

The Ministry of Environment, Climate Change, Disaster Management and Meteorology (MECCDM) is responsible for regulatory and policy issues relating to Solid Waste Management in the Solomon Islands. The MoHMS coordinates the development of waste strategies, polices and regulations with the MECCDM. At the same time, the MoHMS through its Environmental Health Division is responsible for waste management operations and monitors the impact of wastes on the health of the population and provides advice to the MECCDM. Honiara City Council, through its Environmental Health Division, manages the collection and disposal of waste in Honiara, while in other urban centres, the PWDs work with the Provincial Environmental Health Divisions to collect, dispose waste and manage waste disposal at landfill sites.

In 2009, the MECCDM developed a *National Waste Management Strategy*. This was produced in consultation and collaboration with key stakeholders. The document outlines the challenges the country is facing in terms of waste management and highlight strategies to deal with the issues. The challenges faced in this sector include: land tenure problems, lack of land for landfill, improper waste receptacles, lack of waste segregation and recycling, unreliable waste collection schedules, poor roads to residential houses, lack of data, human attitudes, lack of coordination and consultation between key stakeholders to tackle issues, lack of legislation, poor enforcement, and lack of policy direction.

There is no comprehensive waste policy in place. However, a number of statutes include waste management and control, and these need review for consistency and clarity. These include:

- *Environmental Health Act 1990*
- *Environment Act 1998*
- *Shipping Act 1998*
- *Ports Act 1990*
- *Agricultural Quarantine order 1995*
- *Honiara Bylaw (Refuse Disposal) 1994*
- *Honiara Letter Bylaw 1994*
- *Western and Isabel Waste Ordinances*

2.6.4. ENERGY/POWER

The energy sector is the responsibility of the MEMRE. The energy sector policy is very clear in its endeavours to reduce dependency on imported fuel and increase use of alternative green energy sources such as hydro, solar, wind, and thermal power.

The Government's energy policy is set out in the *National Energy Policy Framework*.[11] The Framework identifies three broad groups of issues:

- **Supply issues**: The provision of adequate, secure, and cost-effective energy supplies through the promotion of indigenous energy resources (specifically, renewable energy resources) using the least cost options, and to diversify the energy dependence among several types of sources and suppliers are critical. Diversifying the supply sources will require the Solomon Islands to develop strategic partnerships locally and abroad.
- **Utilisation issues:** The efficient utilisation of energy and discouragement of wasteful and non-productive patterns of energy consumption is vital for a country that is so dependent on imported energy sources.
- **Environmental issues:** Like most Pacific Island countries, the Solomon Islands have a fragile environment and government always places environmental issues high on its agenda. Therefore it is important that the energy policies are targeted at minimising the negative impacts of energy production, transportation, conversion, utilisation, and consumption on the environment.

The Framework sets out broad policies for the following:

- **Petroleum:** The provision of a secure, reliable, and affordable fuel supply to both urban and rural areas. Ensure storage facilities and fuel supply infrastructure meet international and national safety standards. Development of a national fuel standard.

- **Transport:** Ensure that the transport sector functions efficiently. Reduce imported fuel consumption in the transport sector through research in alternative sources of fuel. Encouragement of fuel-efficient vehicles through regulation.

- **Electricity (urban):** With assistance from strategic partners such as WB and the Japanese Government, the Solomon Islands Electricity Authority (SIEA) has emerged out of its predicament to improve the power situation in Honiara through increased generation capacity, improved operational efficiency with a regular scheduled maintenance programme, upgraded

[11] Ministry of Mines, Energy and Rural Electrification (MMERE), *National Energy Policy Framework* (Government of the Solomon Islands, 2007).

distribution system, and improved billing system. Training has been provided by the Japanese Government to enhance the skill levels of SIEA Engineers in both technical and management areas. This improvement in operational efficiency and capacity building will enhance the SIEA's capability to perform its functions effectively. The SIEA also maintains responsibility for operating and managing some outer islands power supply systems. These are mainly provincial centres where power demand is usually negligible, forcing most of the systems to operate intermittently. The restructuring of the urban power sector to allow Independent Power Producers (IPPs) and encouraging competition in the delivery of power services is a prudent policy measure.

- **Electricity (rural):** Encouragement of private investor involvement and development of strategic partnerships with NGOs and donors in order to accelerate the provision of electricity into the rural areas.

- **Renewable energy:** The cost associated with operating a renewable energy project is only a fraction of the cost of operating a conventional energy technology such as a diesel generator used in a similar situation and application. Solar photovoltaic (PV) technology is used widely in the Pacific and there is capacity to handle design, installation, repairs, and maintenance work in the Solomon Islands.

- **Environment:** Energy programmes to be designed in such a way that they do not contribute further to the degradation of the environment. Establish regulations to avoid any adverse impact on fragile environments.

- **Energy conservation:** Improve energy efficiency in order to reduce energy costs to consumers, enhance environmental quality, maintain and enhance the standard of living, increase energy security, and promote a strong economy.

The institutional capacity for planning and implementing rural electrification within the Ministry is limited and strongly depends on external assistance. The SIEA is responsible for power supply in urban areas and has received considerable assistance in recent years in building up its management and financial capacity, which has showed strong improvements.

2.6.5. ICT

The ICT sub-sector comes under the supervision of the MCA. The MCA is responsible for policy and legislative planning and coordination, while the regulation and control of telecommunication activities is the responsibility of the Telecommunications Commission of Solomon Islands (TCSI).

The policy framework adopted in June 2008 was established to modernise and expand the telecommunications network and services, and allow the private sector to take the lead in service provision. The general objectives were to enhance economic and social development, and to integrate the country internally, within the region, and internationally. The key elements of the policy include:

- Increased competition
- Strengthening regulatory capacity
- Expanded rural access to communications services and internet applications.

In line with the policy, the *Telecommunications Act 2009* ended the previous monopoly of Solomon Telekom, opening up the market to other service providers. The legislation promotes inclusiveness, fairness, and improvement in the wellbeing of Solomon Islanders by ensuring there is variety, availability, affordability, and quality of telecommunication services throughout. The goal of the TCSI is to ensure there is a commitment to market-driven Telecommunications services.

The current capacity of the MCA in the ICT sub-sector is extremely limited and plans are in place to improve this situation. The TCSI will also be expanding its capacity as the sector grows. The involvement of private sector service providers has considerably enhanced capacity in the sector to implement and expand coverage and services in the sector.

3 Infrastructure Sub-Sector Analysis

3.1. Background

This Chapter provides a review and assessment of the current situation in the various infrastructure sub-sectors. A summary of key infrastructure by sub-sector is shown in Table 3.1. The results of an inventory and conditions assessment of transport infrastructure carried out for the TSDP is shown in Appendix G.

Table 3.1 Overview of Key Infrastructure

Sub-sector	Brief Description of Key Infrastructure
Transport - Land	Total road network 1,694 km, 126 km sealed Honiara - 152 km Guadalcanal Province - 489 km Western Province - 150 km Choiseul Province -123 km Isabel Province - 34 km Central Province - 21 km Malaita – 403 km Makira/Ulawa Province -150 km Temotu province - 101 km
Transport - Aviation	1 x Henderson International Airport 35 x Domestic Airports – 24 Operational: Choiseul - Taro, Kaghau, Western - Mono, Balalae, Nusatupe, Munda, Seghe, Ramata, Batuna Isabel - Fera Island, Suavanao Central - Yandina Renbell - Tinggoa, Anua Guadalcanal - Henderson, Avuavu, Babanakira, Marau Malaita - Gwanaru, Atoifi, Makira/Ulawa - Kirakira, Santa Ana, Arona Temotu - Lata
Transport - Shipping	2 International Ports at Noro and Honiara Honiara also has 10 domestic wharves/landings at Point Cruz, 30-35m length. Storage area 3 hectares. Honiara main wharf 120m, depth 9m. Ship calls to Honiara Port in 2011: Total 598, berthing at main wharf 211, worked at main wharf 143 Domestic shipping calls to Honiara (all wharves) 3,500/annum. Rest of the Country 136 wharves, anchorages, jetties (119 wharves and jetties, 17 anchorages). By Province: Temotu 9, Makira/Ulawa 20, Malaita 30, Guadalcanal 10, Renbell 2, Central 8, Isabel 9, Western 29, Choiseul 19.

Sub-sector	Brief Description of Key Infrastructure
Water supply & sanitation	SIWA provides water and sanitation services to urban centres, currently Honiara, Noro, Auki and Tulagi: ***Honiara*** Total population of Honiara 92,000 (includes population on periphery of the town boundary). SIWA served population 64,000+, coverage ratio 70%, daily average production 27,000 m^3/day, average supply duration 10 hours, no. of connections 7,051 Non-revenue water 50% ***Auki*** Population served 58%, total pipeline 16 km, water production 1,296 m^3/day Non-revenue water 49% ***Noro*** Population served 61% Total pipeline 17.1km, water production 2,678 m^3/day, demand 1,238 m^3/day Non-revenue water 54% ***Tulagi*** Population served 90% (approx. – based on 2009 population) Total pipeline 13 km, production 520m^3/day, consumption 45,132 KL/year, Total production 192,000KL/year Non-revenue water 77% ***Honiara Sewerage*** 2 x Pump Stations (Point Cruz and King George) and 16 sewage outfalls. Household coverage: 5% sewer, 71% septic tanks and 24% latrines and others. Rural Areas are managed by the Ministry of Health and Medical Services, Rural Water Supply and Sanitation Division. Overall rural water and sanitation coverage: Water Supply 65% of population Sanitation 18% of population
Solid Waste Management	Honiara City Council provides waste collection services and manages the Ranadi landfill. Dump sites at Gizo, Munda, Lata, Kirakira, Auki, Taro, Tulagi, Buala - managed by the Works Division and Environment Health Division of the Provincial Governments.
Energy/Power	1 x SOE energy service provider (Solomon Islands Electricity Authority). Operate 2 main power stations at Lungga and Mbokona Stations. Total Capacity 20MW, Peak Demand 16MW. Tariffs: Domestic USD0.85/kWhr, Commercial US$0.89/kWhr, Business USD0.91/kWhr. Provincial station capacities: Auki 1000kW, Noro 700kW, Gizo 1,030kW, Munda 200kW, Lata 412kW, Kirakira 200kW, Buala 253kW, Malu'u 85kW, Tulagi 103kW. National access to electricity only 15% of population. Variety of small-scale projects in rural areas: Solar, mini hydro, kerosene lamps. No service providers.
ICT	2 Private Operators – Solomon Telekom and BeMobile. Mobile subscribers 53% of population Coverage 67% of the country Fixed Line 1.6% Internet coverage 4% Technologies Deployed GSM, 2.5G (GPRS, EDGE), 3G (UMTS).

Sources of data: SIWA, SIEA, NTP, Rural Water Supply and Sanitation Draft Policy 2012, PRIF Pacific Infrastructure Challenge Report, 2006, TCSI Annual Report 2011, Honiara Port Scoping Study Nov. 2011.

3.2. Issues and Priorities by Sub-Sector

The current situation for each of the infrastructure sectors and sub-sectors covered by the SI NIIP is described in the sections below. Ongoing, committed, and proposed projects are included. A more detailed list of projects is provided in Appendix C. The timing of projects is specified only where this is known. Indicative timing for proposed projects is given in the section of phasing in Chapter 6. The

analysis is based on information gathered from a number of sources, including meetings with Government and other agencies, field visits, sector reports, and project reports.[12]

3.3. Transport - Land

3.3.1 CURRENT SITUATION

Based on the latest estimates by the TSDP consultants, the total road network in the Solomon Islands is approximately 1,694km of which 126km are sealed (this excludes logging roads). The vast majority of the sealed roads are on Guadalcanal and Malaita, with very few kilometres of sealed roads in other provinces/islands. These two provinces also account for around 62 per cent of the country's total length of roads. Only 20 per cent of the population in the Solomon Islands has access to road networks and most of these roads are along the coastline. There are about 185 crossings over watercourses most of which have log bridges and a few steel and reinforced concrete structures. The majority of the reinforced concrete and steel bridges are in Honiara, Makira and Malaita.

Table 3.2 Summary of Roads by Class, Surface, and Province

Province	Class	Sealed	Unsealed	Subtotals
Choiseul	Main			23.0
	Feeder			100.0
	Access			0.0
	Subtotal	0.0	123.0	123.0
Western	Main		74.8	74.8
	Feeder	1.3	67.3	68.6
	Access		7.0	7.0
	Subtotal	1.3	149.0	150.3
Isabel	Main			10.0
	Feeder			13.0
	Access			11.0
	Subtotal	0.0	34.0	34.0
Central	Main			7.5
	Feeder			12.2
	Access			1.3
	Subtotal	0.0	21.0	21.0
Renbell	Main		59.8	59.8
	Feeder		9.0	9.0
	Access		2.3	2.3
	Subtotal	0.0	71.1	71.1
Guadalcanal	Main	58.0	74.4	132.4
	Feeder	3.7	312.6	316.3
	Access		40.0	40.0
	Subtotal	61.7	427.0	489.0
Malaita	Main	7.5	181.4	188.9
	Feeder	5.7	165.0	170.6
	Access		44.0	44.0
	Subtotal	13.2	390.3	403.5
Makira-Ullawa	Main		147.0	147.0
	Feeder		3.0	3.0
	Access		0.0	0.0
	Subtotal	0.0	150.0	150.0
Temotu	Main			45.5
	Feeder			55.3
	Access			
	Subtotal	0.0	101.0	101.0
Honiara	Main	12.0	0.0	12.0

[12] Primary sector research and analysis was not within the scope of the SI NIIP so secondary data sources were a significant source of information.

Province	Class	Sealed	Unsealed	Subtotals
	Feeder	34.3	29.5	63.8
	Access	3.4	72.4	75.8
	Subtotal	49.7	101.9	152.0
Total		125.8	1568.4	1694.1

Source: TSDP consultants.
Note: Disaggregated data not available for all provinces.

For a number of years there was little or no maintenance of road infrastructure by the Government due to ethnic tensions and a lack of funds. The standard of unpaved roads in the country is still generally very low. From 1990 to 2009, annual road maintenance funding averaged USD0.5 million, with a temporary drop to almost zero during the years of ethnic tensions and conflict. This resulted in widespread land transport asset deterioration, as the level of expenditure was below that necessary to sustain current assets.

More recently, from 2004, several projects have addressed the need for the rehabilitation and maintenance of the road system. These include the AusAID funded Community Sector Programme (CSP), the ADB's Road Improvement Project (SIRIP), and the TSDP.

The NTP identified the need to limit further road construction in the short term and focus on maintaining the existing network (and improving maritime and aviation services), given the geography and low population density of the country. The labour-based equipment-supported (LBES) method for road maintenance is the approach currently pursued by development partners in the Solomon Islands.

As a result of the NTP, a National Transport Fund (NTF) has been established and is a line item in the national budget. With assistance through the TSDP, the MID has produced a three-year Transport Sector Action Plan that includes a programme of road repair and maintenance covering 95 roads throughout the country. The work will be funded through the NTF at a cost of around USD13.7 million. Included in the programme component is the goal to increase private sector and community participation in the maintenance and rehabilitation of civil works.

The NTP includes a methodology for the prioritisation of projects within the sub-sector. It is intended that the three-year programme will be reviewed annually on a rolling programme basis.

Whilst the NTP was intended to encompass all road projects for the foreseeable future, additional proposals have arisen. These include:

- Doma 2km diversion road which will link Honiara to the Doma development site. Doma is currently being earmarked for a cannery, an international port, a university campus and also a tourism destination.
- New road and associated civil works associated with the establishment of the township of Choiseul Province.
- A corniche road along the foreshore of Honiara running from Point Cruz wharf in front of the Hyundai Mall and Main Market to Guso Point (Kukum). This option is being considered with the possible aims of reducing traffic congestion in the town centre, improving access to the port area and creating new public open space and leisure opportunities in Honiara.

3.3.2 EXISTING STRATEGIES, PLANS, AND PROJECTS

The MID has identified a total of just over 1,000km of roads requiring rehabilitation. These are summarised in Table 3.3.

Table 3.3 Roads to be Rehabilitated under the TSDP

Province	Length of Roads for Rehabilitation (km)	% of total km to be rehabilitated (%)
Choiseul	100	81
Western	59	32

Province	Length of Roads for Rehabilitation (km)	% of total km to be rehabilitated (%)
Isabel	16	41
Central	7	49
Renbell	61	78
Guadalcanal	421	37
Malaita	129	32
Makira/Ulawa	132	88
Temotu	51	51
Honiara	105	85

Source: TSDP, 2012

The Rapid Employment Project (REP) is also contributing to road maintenance. This involves Honiara City Council and the MID and is funded by WB, Asian Development Fund (ADF), and AusAID at the value of USD7.16 million with a timeframe of five years (2010-2015). The project was designed to provide a rapid response to address the increasing unemployment, under-employment, and poverty in Honiara by encouraging a labour intensive workforce approach as a pre-requisite to peace building and sustainable development. It is reported that those who participated are mainly women (57 per cent) and Youth (age 16-29) (51 per cent). Over 2,800 people have been employed through the MID on a short term basis on the project, totalling over 14,000 person days to date. The majority of the work involves the maintenance of tertiary roads, and the improvement and maintenance of walking tracks.

3.3.3 DEMANDS AND TARGETS

In a country like the Solomon Islands, comprising hundreds of small islands, the demand for roads cannot be justified simply by using traffic figures. Although no official data is available, it is evident that traffic volumes are low. The one exception is the central part of Honiara where queues are common, and there is a clear need for measures to deal with this – probably via the provision of alternative routes, coupled with improved traffic management. However, even here the flows are low by international standards.

Elsewhere roads provide essential communication links between settlements, agricultural areas, wharves, and airfields. The overriding need in the Solomon Islands is the maintenance of the existing infrastructure through rehabilitation and regular upkeep. In addition there is demand for new links to improve access, particularly on the larger, more populated islands such as Guadalcanal and Malaita. Currently, areas such as the Guadalcanal, Choiseul, and Makira weather coasts, have neither an all-year-round reliable shipping service nor road access to the nearest major centre.

The NTP has established a set of targets:

- 20 per cent decrease in travel time by 2015.
- 85 per cent of road system in maintainable condition by 2015.
- 100 per cent of maintainable road system receiving regular maintenance by 2015.

To meet this challenge the MID has plans to maintain and rehabilitate 64 per cent (1,083km) of the roads in the next five to 10 years.

Table 3.4 Issues and Strategies, Transport - Land

Sub-sector	Issues	Strategies
Transport - Land	▪ Poor maintenance on existing unsealed and sealed roads. ▪ Roads in poor state hinder trade and access to local markets. ▪ Recurrent budget for government to maintain all roads and to build new ones is inadequate. ▪ Institutional capacity of MID is weak and needs to be further strengthened. ▪ Existing Transport Act needs review to ensure it encompasses all infrastructure and has clear demarcation of functions and responsibilities. ▪ Limited capacity to execute works both in	▪ Repair and rehabilitation of the road network. ▪ Improve operation and maintenance systems and standards. ▪ Improve resilience of the transport network to the effects of climate change by improving design and protecting networks and inhabited areas. ▪ Improve linkage of roads to existing infrastructure such as wharves and airports.

Sub-sector	Issues	Strategies
	government and private sector ▪ Significant traffic management problems in Honiara	

Table 3.5 Ongoing and Proposed Projects, Transport - Land

No.	Project	Estimated Cost (SBDm)	Status	Estimated timing
R1	Noro Munda Road (Western Province)	40.9	O	2012 -
R2	Malaita North Road	22.0	O	2012 -
R3	Honiara Feeder Roads	28.0	O	2012 -
R4	Honiara Highway Improvements	18.0	O	2012 -
R5	Guadalcanal Feeder Roads	48.9	O	2012-13
R6	Naro Hill - Lambi Road (Guadalcanal)	84.7	C	2013
R7	Berande - Aola Road (Guadalcanal)	41.0	C	2013
R8	East Guadalcanal Bridges	19.9	C	2013
R9	Malaita North Road - Further phase	87.3	C	2013
R10	Afio Road (Small Malaita)	111.5	C	2013
R11	Radesifolomoe Road (Malaita)	8.7	C	2013
R12	Temotu Roads	59.2	P	2013
R13	Ndoma Road (Guadalcanal)	103.0	P	2014-2020
R14a	Honiara Main Road Upgrade Project	110.0	P	2014-2020
R14b	Honiara City Centre Relief Road	100.0	P	2014-2020
R15	Guadalcanal Route Planning Studies	121.8	P	2013-2020
R16	Rennell Road	128.4	P	2014
R17	Guadalcanal Feeder Roads - Tranche 2	49.4	P	2014
R18	Malaita Main Roads	24.5	P	2014
R19	Honiara Feeder Roads - Tranche 2	18.9	P	2014
R20	Choiseul Bay Connectivity Road	175.4	P	2014
R21	Kolobangara - Koloni Road	22.9	P	2014
R22	Guadalcanal Feeder Roads - Tranche 3	38.5	P	2015
R23	Malaita Feeder Roads - Tranche 1	28.9	P	2015
R24	Honiara Feeder Roads	8.4	P	2015
R25	Tulagi Road	10.4	P	2015
R26	Rendova Roads	14.7	P	2015
R27	Bellona Roads	2.5	P	2015
R28	Honiara Feeder Roads - Tranche 3	100.0	P	2015-2020
R29	Guadalcanal Feeder roads - Tranche 4	120.0	P	2015
R30	Gizo Island Roads	60.0	P	2015
R31	Malaita feeder roads - Tranche 2	70.0	P	2015
R32	East Malaita New Roads	100.0	P	2015
R33	Guadalcanal West Roads	350.0	P	2015
R34	Guadalcanal East Roads	150.0	P	2015
R35	West Makira Roads	50.0	P	2015
R36	East Makira Roads	100.0	P	2015
R37	Choiseul South Roads	30.0	P	2015
R38	Nendo Roads	25.0	P	2015
R39	Resealing of Urban Roads	100.0	P	2015

Key to status: O - Ongoing, C - Committed, P – Proposed

3.4. Transport - Aviation

3.4.1. CURRENT SITUATION

The Solomon Islands has just one paved airport – Henderson Airport in Honiara. Munda Airport is in the process of being upgraded to an international airport, to be used as an emergency alternate international airport, with funding from NZMFAT. Nusatupe Airport in Gizo is also being upgraded under NZMFAT funding. The maintenance and upgrading of airport runways are outstanding issues and there

are ongoing concerns about meeting international standards in navigation, security, and safety associated with the aviation sector.

Competition has been introduced in the provision of international air services, which has resulted in reductions in the cost of airfares and better air services. However, there is only one domestic carrier.

Honiara's Henderson International Airport has one asphalt runway 2,363m long. In 2005 a 100mm asphalt overlay was applied to the main runway. The depth is estimated at 580mm. An old runway 900m long sits to the west of the main runaway but is no longer used. The average life of the upper surface of the asphalt is estimated at 12.5 years, the lower bases are expected to last more than 60 years. The International taxi way and apron are in need of repair. Early discussions have taken place regarding the need to extend the existing runway, but this is not yet a firm proposal.

There are a total of 34 domestic airports in the Solomon Islands. Seven are fully owned by the SIG. The others are all on privately-owned land, of which 17 are leased by the SIG. Of these airports, 24 are operational. Gwanaru at Auki, Malaita Province has just been recently reopened after landowners closed down the airport. Ten airports are currently not operational. All of the domestic airports currently have unsealed runways (see Tables 3.6 and 3.7).

Table 3.6 Airports in the Solomon Islands

Airport	Code	Province	Ownership
Munda	MUA	Western Province	SIG
Seghe	EGM	Western Province	SIG
Nusa Tupe	GZO	Western Province	SIG
Ramata	RBV	Western Province	Private
Batuna	BPF	Western Province	Private
Ringi Cove (Idle for long time)		Western Province	Private
Sterling Island (Mono)	MNY	Western Province	SIG (leased)
Balalae	BAS	Western Province	SIG
Taro	CHY	Choiseul Province	SIG
Kaghau	KGE	Choiseul Province	Private Owner
Yandina	XYA	Central Province	Private
Avuavu	AVU	Guadalcanal Province	SIG (leased)
Babanakira	MBU	Guadalcanal Province	SIG (leased)
Marau	RUS	Guadalcanal Province	SIG (leased)
Kirakira	IRA	Makira and Ulawa Province	SIG (leased)
Santa Ana	NNB	Makira and Ulawa Province	SIG (leased)
Arona	RNA	Makira and Ulawa Province	SIG (leased)
Gwanaru		Malaita Province	SIG (leased)
Afutara (closed)	AFT	Malaita Province	Private
Atoifi	ATD	Malaita Province	Private
Lata	SCZ	Temotu Province	SIG
Fera	FRE	Isabel Province	SIG
Suavanao	VAO	Isabel Province	SIG (leased)
Tinggoa	RNL	Renbell Province	SIG (leased)
Anua	BNY	Renbell Province	SIG (leased)
Barakoma (closed)		Western Province (Vella la Vella)	SIG (leased)
Ontong Java (closed)		Malaita Province	SIG (leased)
Kwaleibesi (Idle for long time)		Malaita Province	Private
Nana (Closed)	NNA	Makira and Ulawa Province	SIG (leased)
Parasi (Closed)		Malaita Province (Small Malaita)	SIG (leased)
Viru Harbour (Idle for long time)		Western Province	Private
Geva (Idle for long time)		Western Province (Vella la Vella)	Private
Gatokae (Idle for long time)	GTA	Western Province	Private
Kukudu		Western Province (Kolobangara)	Private

Table 3.7 Government Airports - Facilities and Condition

Airport	Description	Length (m)	Width (m)	Area (m^2)
Munda	Sealed runway, however in poor condition. Has a small terminal building. RWY 07/25. Major rebuild of runway and associated infrastructure underway to create international all weather divert for Honiara Airport.	1400	30	42000
Seghe	Crushed coral/grass runway. RWY 10/28.	915	30	27450
Gizo/Nusatupe	Crushed Coral. RWY 14/32. Runway rehabilitation and sealing of existing crushed coral strip under way.	1100	25	27500
Taro	Crushed coral runway lengthened and upgraded in 2011. RWY 13/31.	900	25	22500
Ballalae	Coral/sand. RWY05/23.	1650	25	41250
Fera	Coral. RWY 18/36	565	25	14125
Lata	Coral. RWY 06/24	914	24	2936

Source: Ministry of Communications and Aviation, EOI for Private Sector Operation and Management of Solomon Islands Airports and Airfields, 2012.

The Aviation Special Fund (ASF) was established under the Civil Aviation Act 1986-Cap 47 2005 amendment, for the purpose of operating, developing and maintaining aviation infrastructure and facilities in Solomon Islands in accordance to international safety standards. This fund, which also covers operational funding for CAASI, is not adequate to fund all the infrastructure maintenance and development needs of the aviation sector.

3.4.2. AIRLINE OPERATIONS

Solomon Airlines celebrates 50 years of operation this year.

The number of passengers travelling in and out of the Solomon Islands and domestically is forecasted to increase from current figures. International, domestic, and transit passengers in 2011 were reported to equal 155,244 on 7,904 scheduled flights. This represents a significant increase since 2002 when total passengers numbered 71,696. This figure is estimated to grow to 161,541 this year. Introduction of additional aircraft capacity and tourism growth are expected to result in a continuous steady increase in traffic for the future.

The current international and domestic flight operations are shown in Tables 3.8 and 3.9 below.

Table 3.8 Current International Flight Operations

International	
Airline	**Operations**
Solomon Airlines	4 return services per week to and from Brisbane utilising an Airbus A320-211 with a capacity of 136 passengers 1 weekly return service to Port Moresby - A320 1 return service to Nadi utilising - A320
Virgin Australia	2 return services a week from Brisbane utilising a Boeing 737-800 aircraft with a capacity of 180 passengers
Air Pacific	1 return service per week from Nadi via Port Vila utilising a Boeing 737-800 aircraft with a capacity of 180 passengers
Air Niugini	3 return flights per week originating in Port Moresby to Nadi with a transit stop in Honiara utilising a Fokker 100 aircraft with a capacity of 98 passengers

Table 3.9 Domestic Flight Passenger Numbers

Province	Airfield	Passengers 2011	Passengers 2012 (Jan to Sept)
Choiseul	Taro	3700	3136
	Kaghau	1318	1139
Western	Mono	88	42
	Balalae	309	476
	Gizo	16474	11730
	Munda	12548	11120
	Ramata	648	677
	Seghe	4821	3638
	Gatokae	696	456
	Batuna	83	0
Isabel	Fera	2337	2399
	Suavanao	1999	1613
Central	Yandina	703	683
Guadalcanal	Avuavu	0	0
		0	0
Malaita	Auki	2306	349
	Afutara	82	82
	Atoifi	774	774
Makira and Ulawa	Arona	372	638
	Santa Ana	1015	541
	Kirakira	5320	4479
Renbell	Anua	1321	1252
	Tingoa	2109	1414
Temotu	Lata	3546	2731

Solomon Airlines operates around 6,700 domestic flights a year servicing 24 airfields including Henderson with three aircraft types:

- De Havilland Corporation Dash 8-102 aircraft with a capacity of 36 passengers.
- De Havilland Twin Otter 6-300 aircraft with a capacity of 18 passengers.
- Britten Normand Islander BN-2A with a capacity of 8 passengers.

3.4.3. DEMANDS AND TARGETS

The fact that there are 34 airfields (although reportedly only 24 operational) in a country with a population of under 600,000 illustrates the importance of air communications to an island nation. Efficient and affordable domestic air services are critical for the movement of people and goods, and essential for the continued economic development of the Solomon Islands.

Data shows that Solomon Airlines carried just over 62,500 passengers in 2011 using just three aircraft. This, and the frequent occurrence of fully booked flights, suggests a latent demand for increased travel by air. The rehabilitation and maintenance of existing airfields will be critical in meeting this demand.

The increase in international passengers also suggests that provisions should be made to accommodate additional flights and possibly larger planes in the future.

The NTP has set the following targets for aviation:

- 10 per cent increase in inter-island cargo by air by 2015.
- 10 per cent increase in inter-island air passenger numbers by 2015.
- 100 per cent of airstrips receiving scheduled traffic having routine maintenance by 2015.

3.4.4. EXISTING STRATEGIES, PLANS, AND PROJECTS

A number of options are being considered for the future of airport operations. These include:

- Corporatisation of all SIG-owned airports which would simplify ownership and administration of rural airports.
- Privatisation of Solomon Airlines.
- Contracting out upper airspace management.

A private concession holder would manage and operate the airports under a long term commercial arrangement in which it would manage:

- The operations of air traffic services and navigational systems;
- Fire fighting and rescue;
- Airport Security Services;
- Airport and airfield maintenance;
- Ground Handling Services;
- VIP and business airline lounge; and
- Retail concessions within the airport facilities.

It is contemplated that the concession holder would generate its income from base fees for services. In principle, the NTF would cover infrastructure maintenance and rehabilitation, but with significant calls on the fund for urgent repairs and maintenance from the road sub-sector, it is unlikely that there will be sufficient funds to meet airfield maintenance needs. The SIG would be expected to continue to invest in capital projects.

The improvement of domestic services is a priority for the SIG. Solomon Airlines is planning to purchase three DASH 8 aircraft in total and it has recently taken delivery of the first of these. Key airports for upgrading are Munda, Nusatupe (Gizo), Seghe (Marovo), Kirakira (Makira), Lata (Temotu), Tinggoa (Rennell), Anua (Bellona), and Manaeba (North Malaita).

The upgrading of Munda Airfield is being funded by the NZMFAT. The improved airport will cater for larger aircraft and will improve aviation safety standards. The runway upgrade will facilitate the operation of DASH 8 and equivalent aircraft, and provide runway infrastructure sufficient to declare the airfield as a ‘weather alternate’ airport to Honiara for regional international operations by aircraft up to B737-800/A320 size. Regular operations by this larger size of aircraft are not envisaged at this time.

The scope of works associated with Munda Airport will include the reconstruction and extension of the existing runway from 1,400m to 1,800m in length, the construction of a new taxiway, and reconstruction and enlargement of the aircraft parking apron. Works will also include other ancillary civil construction.

The project will concurrently include improvement works at Nusatupe Airport. The existing runway will be upgraded through the expansion works which will see the runway sealed and upgraded to 1,400m. This will improve safety standards and ensure all-weather operation for current DHC6 Twin Otter and DASH 8-100/200 ventures. Improvements will also be made to the taxiway and parking facilities.

Under the Civil Aviation Development Plan, two new airports are being constructed at Manaoba, Malaita Province, and at Lomlom, Temotu Province. It is understood that construction is underway on these two airports by two separate contractors, with funding from the SIG.

Under the NTP, fourteen airports are proposed for maintenance and eight for rehabilitation in the next 10 years. Lata and Kirakira Airports will be upgraded in 2013 and 2014 respectively under the NTF budget. There are also plans to improve the apron at Henderson Airport to elevate it to international standards.

The Solomon Islands may benefit from a WB programme to support the development of civil aviation in the Pacific Region. Called the Pacific Aviation Investment Program (PAIP), it is focused on improving aviation infrastructure, management, and operations in the Pacific Region. The Programme will be implemented in four phases over a five to 10 year period based on projected country demand, readiness to meet eligibility criteria, and overall reform progress. The first phase of the project includes

Kiribati, Tonga, and Tuvalu Aviation Investment Projects. Subsequent phases may include Samoa, the Solomon Islands, and Vanuatu, should the countries be interested and meet the project participation criteria.

Initial discussions indicate that PAIP support might cover a range of improvements at Henderson Airport, including the apron upgrading, extension of the runway, new offices, very small aperture terminal (VSAT), and replacement operations buildings.

Table 3.10 Issues and Strategies, Transport - Aviation

Sub-sector	Issues	Strategies
Transport – Aviation	▪ Absence of comprehensive investment planning for sector as a whole ▪ Poor airfield surface runway and taxiways and associated facilities. ▪ Land issues affect operations of the airfields. ▪ Poor condition of International Apron. ▪ Lack of safety equipment at most airfields except Henderson. ▪ Public ownership of airline brings with many challenges.	▪ Development of alternate international airport ▪ Improvement of key provincial airports ▪ Privatisation of Solomon Airways.

Table 3.11 Ongoing and Proposed Projects, Transport - Aviation

No.	Project	Estimated Cost (SBDm)	Status	Estimated timing
A1	Munda Airfield Upgrade	38.5	O	2012-2014
A2	Nusatupe Airfield Upgrade	26.1	O	2012-2014
A3	Henderson Airport Apron Upgrade	14.0	P	2013
A4	Provincial Airfields upgrade	192.0	P	2013-2020
A5	Isabel Airfields	20.0	P	
A6	Lata Airfield	24.0	P	2013
A7	Kirakira Airfield	24.0	P	2014
A8	Lomlom Airfield	10.0	P	2012 -
A9	Parasi Airfield	12.0	P	2013

Key to status: O - Ongoing, C - Committed, P – Proposed.

3.5. Transport - Shipping

3.5.1. CURRENT SITUATION

There are two international ports in the Solomon Islands: Point Cruz in Honiara, and at Noro, New Georgia in the Western Province, both managed by the SIPA. About 90 per cent of the international freight management takes place in Honiara. Transhipping to provinces and outer islands is carried out by local vessels. Inter-island shipping and local transport by outboard are generally very expensive and mostly intermittent, and there are many uneconomic routes. Land facilities for shipping (wharves and jetties) are generally inadequate, in a poor state of repair, and lacking in many areas.

The International Port at Honiara is experiencing annual growth of five per cent per annum and is expected to grow at that rate for the next 10 years. This growth is posing storage and wharf capacity problems. The location of the port in the centre of Honiara is also the cause of significant traffic congestion.

SIPA records show the following trade volumes in 2010:

- 8,600 containers (TEUs) imported;
- 78,200 revenue tonnes of fuels imported;
- 42,600 revenue tonnes of break bulk cargo imported; 6,300 containers (TEUs) exported;

- 17,800 revenue tonnes of copra exported;
- 25,700 revenue tonnes of crude palm oil exported; and
- 122,700 revenue tonnes of transhipment fish exported.

International shipping services at Honiara have returned to the capacity and frequency prior to the period of civil unrest. There are currently seven separate and competing providers of container and break-bulk services that schedule regular direct calling vessels to Honiara. The largest vessel calling at Honiara is 185m long with a total deadweight of 23,000t. It is considered that the maximum sized vessel capable of safely berthing at the 120m main wharf in Honiara, is less than 200m. Fuel oil tankers, LPG gas tankers, bulk crude palm oil tanker charters, and bulk copra charters also feature as regular calling vessels at Honiara which use a combination of dedicated mooring buoys and the main wharf for cargo operations.

It is estimated that coastal shipping accounts for 3,500 calls at the Honiara local jetties per annum.

Table 3.12 Ship Arrivals at Honiara Port

Vessel Arrivals	2008	2009	2010
International vessel arrivals	577	617	503
Vessels berthed main wharf	188	196	197
Vessels worked main wharf	107	103	108
Tanker vessels	43	37	38
Fisheries related vessels	362	388	295
Cruise ship arrivals	7	6	6
War ship arrivals	2	7	1
Other	56	75	55

There are in total 100 wharves and jetties throughout the Solomon Islands - see Table 3.13.

Table 3.13 Number of Wharves and Jetties by Province

Province	No. of Wharves and Jetties
Choiseul	14
Western	26
Isabel	7
Central	5
Renbell	2
Guadalcanal (including Honiara)	10
Malaita	29
Makira and Ulawa	17
Temotu	9
Total	**119**

Source: NTP 2011-2030.

The majority of the wharves and jetties suffer from a lack of maintenance, and some are no longer being used. The condition of these facilities is described in the inventory in Appendix G.

The Marine Infrastructure Project (MIP) and Solomon Islands Emergency Assistance Programme (SIEAP) have recently improved some wharves, and the JICA have constructed a new wharf at Auki. The Domestic Maritime Support Programme (DMSP) is also undertaking wharf rehabilitation and some new construction. In addition, this programme is supporting the franchise shipping scheme aimed at supporting uneconomic routes.

There are currently two slipways in the country, namely Sasape and Taroniara slipways both located at Ngella, Central Province. The Sasape Slipway was recently sold to a private company, Sasape Marina International Ltd (Joint Venture between Silent World Shipping and Logistics Ltd and the Solomon Islands National Provident Fund). The company recently opened a slipway capable of taking up to 500t

vessels. An additional slipway capable of carrying 100t is being constructed. The other slipway at Taroniara, Ngella is owned by the Church of Melanesia. The slipway used to provide maintenance and repair services to vessels in Vanuatu as well. Prior to the reopening of Sasape Slipway this year, Taroniara was providing maintenance and repair services to 90 per cent of the vessels locally. With the reopening of the slipway at Sasape, it is expected that the number of vessels operating in the region will increase because of improved vessel safety.

Previous studies by the Noro City Council identified a possible slipway to be located there. The status of this project is unknown at this stage.

3.5.2. DEMANDS AND TARGETS

The Solomon Islands rely heavily on international shipping for the import and export of goods, and the domestic shipping services for the distribution of goods and movement of people. In many locations throughout the country access is only possible by boat.

Significant growth is forecast in international vessel arrivals. Between 2011 and 2020, visits by container vessels are expected to rise by 20 per cent, copra bulk charter vessel arrivals are expected to rise by 60 per cent, and tanker vessel arrivals are forecasted to increase by 33 per cent.[13] Honiara port is struggling to cope with existing throughput of vessels and cargo and it is generally agreed that additional capacity for international shipping is urgently required.

Continued and expanded domestic shipping requires reliable, well planned, demand responsive shipping services, along with appropriate, accessible, wharf infrastructure. The NTP has established a number of targets for domestic shipping:

- 20 per cent increase in inter-island cargo by sea by 2015.
- 20 per cent increase in inter-island passenger numbers by 2015.
- 24 per cent of wharves in maintainable condition by 2015.
- 19 per cent of wharves repaired by 2015.
- 37 per cent of wharves replaced by 2020.
- 20 per cent new wharves (anchorages) by 2020.
- 100 per cent of wharves in maintainable condition receiving regular maintenance by 2015.

3.5.3. EXISTING PLANS AND STRATEGIES

Options for Honiara Port are under active discussion. While the Port Scoping Study[14] recommended studying options for expanding the port either in its current location or in a new location, the MID and SIPA, with assistance from JICA, have proposed fairly extensive improvements and expansion of the facilities in its current location.

Doma and Tenaru have been suggested as possible alternative sites for port development. Both wharves are linked to proposed fish processing centres. These are pending further land negotiations and feasibility studies. There are also proposed international ports for Bina and Suava Bay. Feasibility studies have been conducted on these two sites but both have been delayed by land issues.

The NTP has identified 23 wharves as requiring repair, 42 needing maintenance, and 46 in want of rehabilitation or replacement.

[13] Pacific Infrastructure Advisory Center (PIAC), *Honiara Port Scoping Study* (2012).
[14] PIAC, *Honiara Port Scoping Study*.

Table 3.14 Issues and Strategies, Transport - Shipping

Sub-sector	Issues	Strategies
Transport – Shipping	▪ Vessels not able to travel to remote islands because it is uneconomical. ▪ Some wharves located on isolated island or not connected to any road and airports. ▪ Growth in trade causes International Port at Point Cruz to experience vessel long dwelling time, vessel queues unscheduled arrivals. Other issues faced include late submission of clearance documents, limited operating time, congested roads and inadequate storage space. ▪ Domestic wharves in Honiara Point Cruz experience increase in vessel calls and is becoming congested.	▪ Support for uneconomic local shipping routes ▪ Improving capacity of Honiara International Port to meet the demand of International Trade Traffic. ▪ Improve connectivity of wharves.

Table 3.15 Ongoing and Proposed Projects, Transport - Shipping

No.	Project	Estimated Cost (SBDm)	Status	Estimated timing
S1	Honiara Port - Remedial works	40.0	P	
S2	Honiara Port Extension (new wharf)	180.0	P	2014-2015
S3	Honiara New Greenfield Port	300.0	P	
S4	2013 Replacement Wharves	25.0	C	2013
S5	Yandina Wharf	10.0	P	
S6	Construction of Buala Seawall (this could go with Buala Wharf project)	5.0	C	
S7	DMSP Wharves Lot 1	52.0	O	2012 -
S8	DMSP Wharves Lot 2	73.0	C	2013
S9	Replacement Wharves Tranche 2	360.0	P	2015-2020
S10	Isabel Wharf (new)	5.0	P	
S11	Choiseul Wharf (new)	5.0	P	
S12	New Wharves - Tranche 1	160.0	P	2015-2020
S13	New wharves - Tranche 2	68.0	P	2015
S14	New wharves - Tranche 3	40.0	P	2015
S15	Maritime Navigation Aids	56.0	P	2013-2016

Key to status: O - Ongoing, C - Committed, P – Proposed

3.6. Water and Sanitation

3.6.1. CURRENT SITUATION

Access to improved water and sanitation sources in the Solomon Islands is generally low, relative to the average for Pacific Island Countries (PICs). Access to improved water and sanitation services in the rural areas is also below average for PICs despite the availability of water sources. Urban water systems exist in Honiara and until recently, a few provincial centres have been poorly managed and maintained. However, with the support of AusAID, management in the SIWA has been strengthened through the appointment of expatriates in the senior positions. Political support for water charges has also improved with Cabinet agreeing to major tariff reforms in 2012.

Urban sanitation is also a major concern. There is no centralised sewerage system in Honiara and other provincial centres. The widespread use of septic tanks is a problem due to poor construction and limited resources to monitor and enforce construction and operating standards. As the town grows, the current system will become increasingly deficient and may adversely affect public health and urban amenity. Poor hygiene, lack of on-site waste treatment, and poor access to sewerage are the main issues affecting the sanitation sector, particularly in rural areas.

Data from the 2009 Census shows that most people access water for drinking through communal standpipes (35 per cent) and water tanks (25 per cent). Only nine per cent of the population have access to SIWA metered water. According to the Census, in Honiara more than 75 per cent of the population had access to reticulated metered piped water for drinking purposes in 2009 (see Table 3.16).

A recent house survey conducted by the SIWA estimated the current population of its service area to be over 90,000. According to the survey data, the total number of households in greater Honiara is around 12,200, with 37 per cent metered, 20 per cent unmetered, four per cent with illegal connections, and 39 per cent un-served.[15] The population served therefore is around 69 per cent.

Table 3.16 Households' Main Source of Drinking Water

Province	Metered SIWA	Communal Standpipe	HH tank	Communal Tank	Well-protected	Well-unprotected	River/ Stream	Bottled Water	Other
Choiseul	0%	30%	24%	18%	0%	0%	25%	0%	2%
Western	0%	30%	33%	18%	0%	0%	14%	1%	3%
Isabel	0%	64%	10%	11%	1%	0%	11%	0%	2%
Central	1%	39%	19%	18%	1%	0%	18%	2%	2%
Renbell	0%	0%	80%	13%	1%	1%	0%	3%	2%
Guadalcanal	6%	27%	5%	7%	7%	6%	38%	0%	4%
Malaita	2%	45%	5%	8%	2%	0%	33%	1%	4%
Makira	0%	50%	3%	8%	1%	0%	34%	0%	3%
Temotu	0%	38%	10%	24%	2%	6%	8%	0%	11%
Honiara	75%	4%	10%	1%	0%	3%	5%	1%	1%
Total	9%	35%	12%	11%	2%	2%	25%	1%	4%

Source: Solomon Islands Census 2009.

In terms of access to water for washing, around 61 per cent of residents in Honiara have access to piped water. People in most of the provinces use water from common standpipes and rivers or streams for washing as shown by the figures in Table 3.17 below.

Table 3.17 Households' Main Source of Water for Washing

Province	Piped-private	Piped Shared	Common Standpipe	Well protected	Well-unprotected	HH Tank	Common Tank	Sea	River/Lake /Stream	Other
Choiseul	2%	6%	39%	4%	6%	5%	1%	0%	34%	1%
Western	8%	8%	36%	8%	2%	11%	1%	0%	26%	1%
Isabel	8%	17%	48%	1%	1%	1%	0%	0%	24%	1%
Central	6%	16%	24%	10%	27%	2%	1%	0%	13%	1%
Renbell	0%	0%	0%	1%	4%	67%	3%	0%	22%	3%
Guadalcanal	5%	12%	15%	8%	5%	1%	1%	0%	52%	1%
Malaita	7%	11%	31%	5%	4%	1%	1%	0%	38%	2%
Makira	7%	11%	35%	1%	4%	0%	0%	0%	41%	2%
Temotu	1%	3%	34%	4%	20%	7%	5%	9%	13%	3%
Honiara	61%	26%	2%	1%	2%	2%	0%	0%	5%	1%

Source: Solomon Islands Census 2009.

While 54 per cent of households in Honiara have proper flush toilets, access to sanitation in the rest of the country is low. The central area of Honiara has a sewerage system, but in the remainder of the urban area, households and other properties use septic tanks. In the poorer parts of the urban areas, particularly the areas of informal housing, poor sanitation is causing soil pollution and threatens to contaminate water sources.

[15] AusAID and the Solomon Islands Water Authority (SIWA), *Concept Note: Solomon Islands Urban Water and Sanitation* (August 2012).

Table 3.18 Household Sanitation

Province	Flush Private	Flash shared	Water Sealed (Private)	Water Sealed (Shared)	Pit latrine (Private)	Pit latrine (Shared)	Other	None
Choiseul	4%	1%	5%	1%	3%	1%	13%	72%
Western	11%	2%	12%	2%	3%	1%	25%	44%
Isabel	3%	0%	7%	5%	23%	3%	57%	1%
Central	6%	1%	2%	1%	0%	1%	27%	62%
Renbell	2%	0%	22%	1%	58%	15%	2%	0%
Guadalcanal	5%	4%	7%	2%	20%	5%	25%	31%
Malaita	4%	0%	5%	1%	16%	27%	26%	21%
Makira	3%	1%	3%	4%	2%	1%	37%	49%
Temotu	2%	1%	2%	2%	1%	0%	11%	80%
Honiara	54%	9%	13%	6%	11%	3%	2%	1%
Total	10%	2%	7%	2%	12%	9%	24%	33%

Source: Solomon Islands Census 2009.

3.6.2. SIWA PERFORMANCE REVIEW

The only service provider of water and sanitation is the SIWA. SIWA was established under the *SIWA Act 1993* with a mandate to provide water and sanitation services mainly to urban centres. Currently, it serves only Honiara and three other provincial urban centres as described in Chapter 2.

The SIWA is a SOE that has experienced financial mismanagement, poor organisational management, and lack of leadership to drive required changes. In 2011, there was a change in the Board and Management and it received financial assistance from the PRIF for the appointment of a General Manager and a Financial Controller. A key aspect of their terms of reference was the preparation of a Short Term Recovery Action Plan.

The Short Term Recovery Action Plan was approved by the Board and most of the activities were funded by AusAID at a value of AUD2.2 million. Activities include the improvement to the Water Quality Division's laboratory facilities and chlorination pumps, the procurement and installation of new pumps, refurbishment of pump stations and associated electrical components, improvement to customer care, betterment and strengthening of financial procedures and controls, and further institutional strengthening exercises. Apart from AusAID support, the SIG has also given support to the SIWA, through the CSO programme and the settlement of the SIEA debt. The settlement of the debt ensures the SIWA can now focus on current services and start planning for the future. The government has also approved tariff adjustments of which 78 per cent in total are to be implemented in three phases, quarterly adjustments linked to SIEA fuel price adjustment and Consumer Price Index (CPI), and has awarded tax exemptions for the procurement of overseas goods.

Discussions are ongoing between the SIWA and AusAID for further funding support. This has resulted in the preparation of a concept paper for the SIWA's two-year plan. This paper once approved will see SIWA get additional financial support of around AUD1-2 million per year for the next two years which will be used to further improve and strengthen its operations and service delivery. It is also noted that within the two-year plan, there will be an allocation for the development of a five-year plan (2015-2020). This plan will set clear key strategic directions for the SIWA in all its areas of operations. The five-year plan is expected to focus on areas such as: a Sewerage Master Plan, Risk Assessment on Water Sources, Extension of Operations to other Urban Centres, Alternative Energy, Gravity Systems, and so on.

This transition period will be another key critical milestone in the SIWA's journey to achieving self reliance and financial independence from the government and donor partners. Similar to other SOEs, the SIWA has much to do in order to improve service delivery and extend its services to other declared areas.

3.6.3. EFFICIENCY

80 per cent of SIWA's water is pumped. The remaining 20 per cent is supplied via gravity systems. Water produced per day is around 27,000m^3/day and water demand is estimated around 23,000m^3/day. Given high non-revenue water (NRW) (54 per cent), most of the water produced does not generate any revenue and the high NRW necessitates rationing. It is estimated that the demand for water in Honiara by 2020 will be around 32,000m^3/day. This will be achieved with the current projects funded by the Japanese government under the JICA, namely the Honiara improvement project and the NRW project 2012-2014.

A NRW programme for 2013-2015 in Honiara and Auki funded by the JICA will go a long way in assisting the SIWA to address this issue. Data shows that NRW is comprised of leakage and overflow from storage tanks (3.9 per cent), leakage on service line connections (12.4 per cent), metering inaccuracies and data handling errors (17.1 per cent), unauthorised consumption (16.7 per cent), unbilled and unmetered consumption (0.7 per cent), and billed unmetered connections (6.7 per cent).

Table 3.19 Number of Staff per 1000 connections

Location	Number of Active Connections	Number of Staff	Staff Ratio to 1000 Connection
Honiara	7060	91	13
Auki	425	3	7
Noro	355	3	8
Tulagi	162	2	12

Many water companies are able to operate efficiently on less than four staff per 1,000 connections. SIWA data shows that current operations are still not very efficient.[16] The Pacific benchmark is eight per 1,000 connections and the SIWA's average is approximately 10.

3.6.4. TARIFF AND COST RECOVERY

Recent tariff adjustments of 66 per cent (June 2012) have improved the SIWA's financial position. Additional adjustments will occur in 2013 (13 per cent), an automatic fuel adjustment has been granted, and a five-year tax exemption has also been awarded to the SIWA by the government. The focus of the SIWA is not to continue tariff increases, but to look at options or alternative means to improve efficiency in its service delivery while extending its operations to new customers.

It is estimated that 67 per cent of current SIWA income is used to pay for power bills. As such, there is a need for the SIWA to explore ways to reduce its energy costs through the use of alternative energy or gravity systems. This percentage was a drop from the 75 per cent figure estimated for 2011. It reduced to 67 per cent in 2012 – a reflection of improvements to revenue generation and system efficiency.

3.6.5. WATER SUPPLY IN NORO

The Western Province has a population of 76,649 with an urban population of 12.7 per cent.[17] The population of Noro is approximately four per cent of the population of Western Province, while that of Munda is around 3.4 per cent.

Located on the island of New Georgia in the Western Province, Noro is an important urban centre for the Western Province and the national government as it houses the Soltuna Ltd Cannery Plants, the second international port, and it also has important business such as the National Fisheries Development (NFD) and other small commercial businesses. Noro is also linked to the Munda Airport which is currently being upgraded to international status via the 23km Noro-Munda road. Munda is a sub-station with a growing tourism sector.

[16] Pacific Region Infrastructure Facility (PRIF), *Solomon Islands Stocktake Draft Report*, Infrastructure Working Group (2009).
[17] Solomon Islands National Statistics Office, "Report on 2009 Population and Housing Census: Basic Table and Census Description," *Statistical Bulletin 06/2011Solomon Islands Census 2009* (Government of the Solomon Islands, 2009).

Water supply at Noro is provided by the SIWA, while Munda water supply is managed through the PWD of the Western Province.

The water source for Noro is extracted from the Ziata River with a capacity of around 10,000m^3/day, while water for Munda is extracted from a well using a bore pump. The estimated served population in Noro is 61 per cent, with 355 active connected customers. The total Noro mains pipeline network is 17.1km. The population with access to water in Munda is not known, but most would use water standpipes, Iriri (seaside freshwater pools), or water tanks.

Data collection for Noro is very poor and the figures provided in terms of production and consumption are estimates. Current production is estimated to be 1,555m^3/day; however, the system is designed to deliver 2,678m^3/day. Current demand is 1,238m^3/day, while NRW is around 54 per cent. The SIWA under the RAP project is in the process of addressing NRW and improvement of the system operations. Litres/capita/day (LCD) figures for Noro is estimated at 193, which is very high compared to 120LCD at Honiara.[18]

3.6.6. WATER SUPPLY IN AUKI

Auki town is the Provincial capital of Malaita Province. Similar to Honiara and Noro, the town has been suffering from high leakage (47 per cent) and rationing of water (sometimes five hours a day). The income generated is also insufficient to cover its operating costs. Revenue as low as 36 per cent has been reported and this is inadequate to cover pumping costs.

The LCD value for Auki domestic (including and not including leakage) as estimated by the JICA, are (commercial) 104LCD and (domestic) 63LCD respectively. The SIWA serves 58 per cent of the population.

Water production is 1296 m^3/day, while consumption is around 660 m^3/day. NRW is estimated at 49 per cent. The total mains pipeline network for Auki is approximately 16km.

3.6.7. WATER SUPPLY IN TULAGI

Tulagi is the capital town of the Central Province. The former capital of the Solomon Islands, Tulagi has experienced a reduction in the demand for water, mainly due to the relocation of the Solomon Taiyo Cannery to Noro in the Western Province. The relocation was partly motivated by the inadequacy of available water for expansion of the cannery.

Tulagi has a population of 1,251 and 90 per cent of the population is served by SIWA metered water. The total mains pipeline is 13km. Production figures are 520m^3/day and consumption stands at 125m^3/day. NRW is reported to be as high as 77 per cent. This figure is very high as the system is old and in urgent need of replacement.

3.6.8. OVERALL PERFORMANCE OF THE SIWA

A report provided by the Pacific Water and Wastewater Association (PWWA) shows that the SIWA must undertake significant work terms of its service delivery. The report ranks the Solomon Islands amongst the lower group of Pacific Island Water Authorities in terms of its performance. Key areas needing greater attention include: data collection and reporting, billing and metering, NRW, sewerage, debt management, water quality, and sewerage connection and treatment. Table 3.20 summarises its performance against the set Pacific Benchmarks.

[18] Japan International Cooperation Agency (JICA), *JICA Water Supply Project Preparation Studies* (2006).

Table 3.20 SIWA Performance Indicators vs. Pacific Benchmarks

	Performance Indicators	Unit	SIWA	Pacific Benchmark
1	Deaths /100,000 inhabitants of diarrhoea	Nr/100,000	15	18
2	Volume of Water Produced	KL/Capita/day	260	250
3	Volume of Water Sold	KL/Capita/day	120	150
4	Volume of Sewerage Produced	KL/Capita/day		200
5	Average Supply Hours	Hrs	8	24
6	Production Loss Estimated	%	52	25
7	Apparent Loss Estimated	%	10	0
8	Lost Revenue USD$ per connection	USD$	270	
9	Non Revenue Water	KL/Connection/day	1.7	1
10	Physical Loss KL/Connection/day	Nr	1.6	0.75
11	Physical Loss KL/Main km/day	%	65	21
12	Water Quality	%	84	100
13	Sewerage Connections	%	11	100
14	Sewerage Treated	%	0.15	100
15	Connections/km sewer main	Nr	30	
16	Staff / 1000 Connections	Nr	10.5	8
17	Staff Turnover	%	30	0
18	Operating Cost Recovery Ratio (Excl depreciation)	%	95	120
19	Collection Ratio	%	56	95
20	Accounts Receivable	days	280	90
24	Average Operating Cost	$/KL	0.42	

Source: PWWA Benchmarking Report 2011.

3.6.9. RURAL WATER AND SANITATION

All areas located outside urban centres come under the jurisdiction of the MoHMS. There are no service providers in rural villages; however, the RWSS Division of the Environmental Health Department of the MoHMS oversees the planning, coordination, and implementation of rural water supply and sanitation projects and work activities within Provincial centres and rural areas. There are also other NGO organisations such as World Vision and the ADRA which implement projects in rural areas. These NGOs at most times implement the projects without input from the Ministry. The MoHMS has drafted an RWSS Policy for submission to Cabinet, which aims to improve coordination and consultation between the various players so that activities do not duplicate or overlap. However, the timing of the submission to Cabinet is uncertain.

Some attempt has been made to develop a database to collect, collate, and consolidate data. However, consultation with RWSS indicates that this is yet to be fully realised. Some data is being collected but these are yet to be analysed. The data presented below are extracted from the Australian Water Research Facility's *Situational Analysis Report*, 2006.

Water supply in Isabel for example has exceeded the 80 per cent national target but there are other Provinces that still need to reduce that coverage gap. The quality of water collected from rivers, wells, and even piped water remains an issue. There is no monitoring which exposes the health of the rural population.

3.6.10. DEMANDS AND TARGETS

The NDS strategies seek to "ensure clean water and proper sanitation is available in all communities, [and] ensur[e] the water resources are sufficient and chemically safe for all communities."

Currently around 60 per cent of urban residents and 45 per cent of rural residents have regular access to clean water. Only 12 per cent has access to proper sanitation.

As part of its commitment to achieving the MDGs, the SIG is aiming for a 20 per cent increase in coverage of water supply by 2015, a 20 per cent increase in coverage of sanitation by 2015, and a further 20 per cent increase in coverage for sanitation by 2020.

The SIWA has its own set of targets:

- 20 per cent reduction in NRW in all SIWA networks by 2015.
- 80 per cent of urban population connected to the SIWA network by 2015.
- >20 hrs supply for all SIWA operations by 2015.
- 100 per cent compliance with WHO Standards for clean water with no *E. coli* or Total Coliform.
- Urban water supply (Gizo) taken over by the SIWA or privatised by 2017.

3.6.11. EXISTING PLANS AND STRATEGIES

The SIWA two-year plan is more or less a continuation of the SIWA Short Term Recovery and Action Plan, but at the same time it will fund studies with a long-term vision.

In the medium term, the SIWA will continue to implement the following:

- Upgrade distribution networks to improve flow and pressure and hence delivery to its customers.
- Improve customer care as a 'public front' to Solomon Water.
- Continue with the implementation of the NRW reduction programme.
- Continue to strengthen organisational systems and processes, and develop the capacity of the SIWA's human resources.

The longer term plan is to investigate through detail feasibility studies the following:

- Investigate municipal sewerage and treatment/disposal.
- Diversification of services to other population centres and reduction in the reliance on electricity for water supply and security of water sources.

Table 3.21 Issues and Strategies, Water Supply, and Sanitation

Sub-sector	Issues	Strategies
Water Supply and Sanitation	▪ SIWA provides its services only to 9% of the population. Serves only four urban centres and still needs to serve seven others. ▪ SIWA system experience around 50% NRW which needs to be addressed. ▪ Overall nationally only 74% has access to 'clean' water. ▪ Only 12% of the population has access to proper sanitation. ▪ There is a need for overall planning, coordination and implementation of rural water supply and sanitation projects. ▪ Only 65% of rural population which makes up 86% of the overall population has access to water.	▪ Reliable, safe and good quality drinking water for all Solomon Islanders. ▪ Improve wastewater management in urban centres. ▪ Improve water and sanitation facilities in rural communities. ▪ Reduce NRW.

Table 3.22 Ongoing and Proposed Projects, Water Supply and Sanitation

No.	Project	Estimated Cost (SBDm)	Status	Estimated timing
WS1	Malu'u and Afio Water Supply	10.0	P	
WS2	Honiara and Auki Water Supply Improvement Project	175.0	O	2012-2014
WS3	Honiara and Auki NRW Project	15.0	O	2013
WS4	Solomon Islands Water Authority RAP Project	14.0	O	2012 -
WS5	Gizo Water Supply	16.0	P	
WS6	Water Supply 2 Year Plan	42.0	P	2013-2015
WS7	WASH projects-Water Supply and Sanitation	142.2	P	2014-2020
WS8	Tingoa Water Supply	2.5	P	

Key to status: O - Ongoing, C - Committed, P – Proposed

3.7. Solid Waste Management

According to the census data from 2009, 57 per cent of household rubbish is dumped, burnt, or buried in the backyard of residential houses; 18 per cent is dumped into the ocean. The collection of waste by private contractors procured by the Honiara City Council covers only 36 per cent of the Honiara population. It is also evident that quite a number of people collect and dump their own rubbish at the Ranadi dump due to the unreliable and inconsistent collection of rubbish by contracted service providers. In provincial urban centres rubbish collection by the government is less than three per cent and service is often poor due to lack of necessary resources. In the rural areas there are no service providers for the collection of waste.

Table 3.23 Household Solid Waste Disposal

Province	Govt Waste Collection	Bury	Burn	River/ Stream	Sea	Backyard	Other
Choiseul	0%	2%	2%	1%	1%	17%	77%
Western	3%	3%	9%	1%	24%	58%	2%
Isabel	1%	3%	1%	2%	22%	69%	1%
Central	0%	1%	3%	0%	48%	47%	1%
Renbell	0%	5%	63%	0%	0%	31%	0%
Guadalcanal	2%	7%	11%	3%	3%	73%	1%
Malaita	1%	1%	2%	3%	17%	74%	1%
Makira	1%	3%	3%	10%	30%	50%	3%
Temotu	2%	3%	14%	1%	57%	22%	1%
Honiara	36%	8%	23%	10%	3%	18%	3%
Total	5%	4%	8%	3%	18%	57%	6%

Source: SI Census 2009.

The *Pacific Solid Waste Management Strategy* reported that the Solomon Islands produce around 0.62 kg/capita/day of waste. The majority is in fact kitchen and yard waste which is organic and can be composted.

Table 3.24 Solomon Islands Waste Composition

Waste Type	Weight %
Kitchen and Yard Wastes	64.6
Plastics	16.8
Paper	5.9
Metals	6.1
Glass and ceramics	4.5
Textiles	1.8
Construction Waste	0.1
Potentially Hazardous	0.1
Others	0
Bulk density kg/m3	209
Generation Rate (kg/capita/day)	0.62

Source: Pacific RSWMS 2010-2015

The Honiara City Council (HCC) currently operates the Ranadi dump site. The site is located on flat reclaimed land adjacent to mangrove swamps, 6km from town, with a gate but with no gate house. It is a partially-fenced, open dump with no provision for daily cover. All waste collected by rubbish collectors is dumped at Ranadi. Waste is not sorted. There is also no separation of toxic and hazardous wastes. Security and policing at the landfill are not tight, and scavengers and private vehicles have almost unrestricted access to the site.

Table 3.25 Honiara Waste Composition

Waste Type	Weight % (2009)	Weight % (2012)
Vegetables/Putrescible Material	16.7	43.72
Paper	2.2	28.35
Metals	8.2	-
Glass/Ceramics	1.9	0.32
Textile	0.1	1.35
Plastics	3.9	11.81
Bones	0.7	-
Tin	-	5.54
Pet Bottles	-	2.31
Aluminium Cans	-	2.15
Used Sanitary Pads	-	1.03
Shells	-	1.59
Battery	-	0.02
Others	66.3	0.68
Bulk Density kg/m3	270	
Generation per capita per day	0.38	

Limited recycling is taking place. One or two private companies and NGOs are participating in the purchase and export of aluminium cans, scrap metal, and recycling of bottles. However these activities are not at an adequate scale to account for the existing waste being generated. There are no private companies currently composting organic waste. There is very little detail of the composition of waste in the outlying provinces.

According to the *National Solid Waste Management Strategy*, there are a number of outstanding issues which the sector needs to address and these include the following:

- Lack of information and data on waste being disposed contributes to the inability to design appropriate collection, treatment, and disposal methodologies.
- Currently, the budget allocated for waste management is below one to two per cent of the National Gross Domestic Product (GDP).
- An initiative has been taken by the MECCDM to develop the Waste Management Communication Strategy for the 3Rs (recycle, reduce, reuse). The objective is to promote and enhance through education of all sectors of the community on issues relating to waste and promoting the 3R principles. There is an apparent lack of awareness evident in the way people dispose waste.
- One of the weaknesses within the MECCDM is the lack of an adequate, well-trained capacity to develop, manage, implement, and monitor activities relating to solid waste. Currently, there are only five staff members within the Ministry and they concurrently manage other tasks.
- There is still a gap in terms of a comprehensive waste management policy and legislation. The existing laws need consolidation as they are currently varied, lacked enforcement, and often not well coordinated. There is also a need to develop a medical waste strategy.

3.7.1. DEMANDS AND TARGETS

There is a clear need for environmentally acceptable solid waste management facilities in all main population centres. Currently, the main areas have insanitary facilities with minimal collection and no treatment of runoff or leachate.

The following targets are drawn from the *National Waste Management Strategy* and from discussions with the MECCDM:

- urban centres (Gizo and Honiara) have better managed and controlled sanitary landfills by 2015;
- urban centres have better controlled and managed sanitary landfills by 2017;
- 70 per cent of rubbish collected and sorted at all landfill sites by 2017; and

- 50 per cent of urban population educated on waste management by 2017.

3.7.2. EXISTING STRATEGIES AND PLANS

There are current programmes designed to address some of the problems mentioned above. The JICA J-prism, a five-year Pacific Waste Management programme, is currently working with Ministry of Environment, Honiara City Council, and Western Provincial Government to rehabilitate and improve the existing landfills in both Honiara and Gizo. The project at Gizo is progressing while the one in Honiara is yet to be implemented. These landfills are to be rehabilitated using the Japanese Fukuoka Method. However, this programme will not be extended to other provincial urban centres.

Also as part of the J-Prism project, the Ministry has developed a Communications Strategy paper and simultaneously implementing school programmes that focus on educating school kids on the principles of the 4Rs (Refuse, Recycle, Reuse, Reduction).

Table 3.26 Issues and Strategies, Solid Waste Management

Sub-sector	Issues	Strategies
Solid Waste Management	▪ Lack of an overall broad all encompassing solid waste policy and legislative framework to effective manage and control disposal of waste. ▪ Lack of land availability for landfill. ▪ Lack of waste segregation and recycling ▪ Improper waste receptacles ▪ Poor roads to residential houses for trucks to collect rubbish. ▪ Lack of information on types of waste and volume. ▪ Lack of coordination and consultation between key stakeholders ▪ Poor enforcement of existing legislations. ▪ Poor management and control of landfills.	▪ Develop a comprehensive solid waste policy and legislative framework to effectively manage and control waste. ▪ Improve and strengthen institutional capacity and systems. ▪ Improve solid waste management in all urban centres. ▪ Develop sanitary landfill sites in all main urban centres

Table 3.27 Ongoing and Proposed Projects, Solid Waste Management

No.	Project	Estimated Cost (SBDm)	Status	Estimated timing
SW1	Gizo and Honiara Solid waste management	5m	P	2011-2015
SW2	Landfill in urban centres : Auki, Lata, Munda, Noro, Kirakira, Buala, Tulagi	15m	P	2015-2020

Key to status: P – Proposed

3.8. Energy/Power

Among the PICs, the Solomon Islands has one of the lowest levels of energy coverage and the highest cost. This is largely due to the geographical spread of the country and high dependency on imported fossil fuel. Use of imported fuel exposes the country to fluctuations in world market prices and risk in continuous supply.

Table 3.22 Household Sources of Lighting

Province	No Access to Power	Access to Main Grid	Use Genset	Solar	Gas	Kerosene	Lamp	Wood	Other
Choiseul	0%	4%	1%	10%	0%	82%	0%	0%	2%
Western	0%	12%	1%	8%	0%	76%	0%	1%	2%
Isabel	0%	6%	1%	17%	0%	74%	0%	0%	1%
Central	0%	4%	1%	4%	0%	91%	0%	0%	0%
Renbell	2%	0%	0%	75%	0%	21%	0%	0%	2%
Guadalcanal	0%	8%	1%	3%	0%	83%	0%	2%	1%
Malaita	0%	3%	0%	12%	0%	79%	0%	1%	4%

Province	No Access to Power	Access to Main Grid	Use Genset	Solar	Gas	Kerosene	Lamp	Wood	Other
Makira	1%	4%	1%	6%	0%	80%	1%	1%	7%
Temotu	0%	3%	0%	12%	0%	80%	1%	2%	3%
Honiara	0%	64%	0%	2%	0%	32%	0%	0%	1%
Total	**0%**	**12%**	**1%**	**9%**	**0%**	**75%**	**0%**	**1%**	**2%**

Source: Solomon Islands Census 2009.

According to the National Census 2009, around 75 per cent of the population uses imported kerosene lighting, while only 12 per cent has access to power from the main grid. At the time of the Census, only nine per cent of households used alternative energy such as solar. Although there is no more recent comprehensive data, it is thought that the incidence of solar power use has increased significantly in recent years.

It is reported that 80 per cent of total energy produced by the SIEA is in Honiara, and 20 per cent (2.5MW) in the other urban centres.[19] Figures from the SIEA show that in 2011, 14 per cent of households had access to electricity, a slight increase from 12 per cent in 2009. Outside urban centres less than five per cent of the rural population have access to electricity, mostly through a small number of off-grid and individual household solar systems.

Table 3.29 Household Source of Cooking

Province	Electricity-main grid	Kerosene	Wood	Charcoal	Gas	Other
Choiseul	0%	0%	97%	2%	2%	0%
Western	0%	1%	94%	3%	3%	0%
Isabel	0%	1%	94%	2%	2%	0%
Central	0%	0%	98%	2%	2%	0%
Renbell	0%	1%	97%	3%	3%	0%
Guadalcanal	0%	0%	96%	4%	4%	0%
Malaita	0%	0%	98%	1%	1%	0%
Makira	0%	0%	99%	1%	1%	0%
Temotu	0%	0%	99%	1%	1%	0%
Honiara	4%	3%	53%	37%	37%	2%
Total	**1%**	**1%**	**93%**	**5%**	**5%**	**0%**

Census data shows that around 93 per cent of the population use wood as the source of energy for cooking, and even in the main urban area the figure is over 50 per cent. While 87 per cent of the installed power generation is located in Honiara, Guadalcanal accounts for only 12 per cent of the population. Electricity in the SIEA outstations is 100 per cent diesel generated. The mini-hydropower operated in Malu'u (0.04MW) and Buala (0.15MW)[20] have been disbanded due to land issues.

Table 3.30 Generation Capacity and Peak Demands at SIEA Generator Locations

Location	Generator Capacity (Kw)	Peak Demand (Kw)
Honiara	19000	13800
Auki	1045	380
Noro	600	400
Gizo	1030	410
Munda	200	100
KiraKira	153	70
Buala	205	80
Malu'u	80	35
Tulagi	237	70

[19] World Bank, *Project Appraisal Document on a Proposed Grant in the Amount of SDR2.5 Million to Solomon Islands for a Sustainable Energy Project* (June 2008).
[20] Asian Development Bank (ABD), *Draft Concept Paper: Solomon Islands Outer Island Renewable Energy Project* (June 2012).

The overall situation is summarised in Table 3.31 which shows that outside the two most developed provinces (Guadalcanal and Western), less than four per cent of the population has access to electricity.

Table 3.31 Provincial Access to Electricity

Province	Access to Electricity 2011
Choiseul	2%
Western	17%
Isabel	<1%
Central	<1%
Renbell	<1%
Guadalcanal (+Honiara)	20%
Malaita	3%
Makira and Ulawa	<1%
Temotu	3%

Source: ADB 2012 Report

Through the Solomon Islands Sustainable Energy Project (SISEP), the SIEA is working on a number of initiatives and these include:

- Improved metering and independent auditing of meter readings
- Reductions in electrical theft through disconnections and other legal remedies
- Improved billing processes and controls
- Collection of arrears
- Energy efficiency improvements
- Operating commercial basis

The SIEA is targeting a 20 per cent reduction in price which would be similar to the current Vanuatu UNELCO energy prices. Already, energy costs have dropped by seven per cent and further reductions are envisaged as improvements are being made to overall operations system efficiency.

3.8.1. DEMANDS AND TARGETS

The NDS seeks to “ensure reliable and affordable power supply in all urban centres by promoting use of renewable energy [and] opening the market to independent power providers”.

With only 12 per cent of households having access to mains electricity, and only about four per cent in rural areas having any form of power source, the rolling out of electricity to unserved communities is a national priority. Affordable energy supply is also crucial to improving the productivity of industry. Currently, only those industries located in the main urban areas have access to electricity, although a small number have their own power generating capability.

The SIEA estimates that the demand for power in Honiara is growing by six per cent per annum, and by 2020 (in eight years time) peak demand will be around 25.5MW (a 36 per cent increase in capacity). In response to this growing demand, the SIEA is in the process of procuring two new 1.5MW skid mounted generators which will supplement the current energy demand. It is also acquiring its first 5MW generator which should be installed and commission by 2013 and the second is scheduled to follow thereafter. Part of the strategy would be also to phase out some of the old polluting generators.

The following targets are based on SIEA’s Annual Report and on discussions with senior representatives of the SIEA:

- 20 per cent reduction in current cost of electricity provided by SIEA by 2018.
- 18 per cent increase in energy demand for Honiara by 2015.
- Six per cent increase in energy demand for Malu’u, Buala, Taro, Lata, Kirakira, Munda by 2015.
- 12 per cent increase in energy demand for Auki, Noro, and Gizo by 2015.
- 50 per cent of the rural population have access to some form of energy by 2015.

3.8.2. EXISTING PLANS AND STRATEGIES

Access to affordable, reliable energy for the rural populace remains a huge challenge for the country, given the spread of islands and high cost of diesel fuel The MEMRE in its Energy Policy (2007) document strongly emphasises the need to develop alternative clean energy sources such as solar, hydro, wind, and thermal power in the rural areas,

A 2006 consultant study[21] made a number of recommendations:

- Develop a rural electrification energy policy.
- Establish and strength the institutional capacity of the Ministry Staff.
- Define the administrative structure of how land tenure and water rights.
- Develop the framework for the administration of licences.
- Define the institutional roles of the various players in this sector.
- Set the Technical Standards and its framework.
- Develop the commercial framework whereby the pricing and subsidies will fit in.
- Restructure the legislative and regulatory framework.

All of the above proposed actions are yet to be implemented, although, work in developing alternative energy is starting to move forward. There is a clear need for a national development strategy (or master plan) for the energy sub-sector that would include major projects as well as smaller-scale rural electrification schemes.

The SIEA has just recently completed a strategic workshop resulting in the development of the *SIEA Strategic Plan 2013-2018*. In the medium-term, the SIEA is looking at achieving the following:

- Improve technical operational efficiency. Significant effort has already been invested in improved scheduled maintenance, reduction in system losses, and amplification works in the networks around Honiara.
- Resolve outstanding land issues.
- Implement the procurement and installation of the new generators.
- Investigate developing and introducing alternative economic energy sources such as solar and biofuel. The Auki biofuel project will set the model for other areas where coconut is plentiful.
- Continue with the development of its customer care and organisational capacity.
- Continue with the improvement made in their financial, technical and organisation performance overall.

As part of the *SI-Outer Island Renewable Energy Project*, the ADB is collaborating with the national government to implement the project preparation technical assistance (TA) and preparing the renewable energy investment plan. The TA component was tendered out in October 2012. The scope of work for the contracted TA's will include:

- Conduct a project preparation which will include the screening of five mini hydro sites located at Auki, Ringi/Munda/Noro, Lata ,and Kirakira and prioritise three projects out of the five.
- Prepare the *National Alternative Energy Investment Plan* in collaboration with the Solomon Islands government.

These projects are geared towards promoting economic growth and reducing dependency on fuel for some of those mentioned areas. These projects are located in either closed-to-urban and semi-urban areas and existing economic growth centres such as Noro (where the Soltuna is located), and Ringi which is located close to the Kolobangara Forest Plantation Ltd (KFPL). It is hoped that provision of affordable and reliable energy will further boost the expansion of existing areas that already has some economic activities.

The Tina River Hydropower Development Project is a government initiative, supported primarily by the WB The scheme, to be located in East Guadalcanal, is expected to generate a peak load of 12MW power and feed 53gWh per annum to the grid. If constructed, it is expected to come online in 2016; by that time Honiara demand would have reached 100 GWh with a peak demand of 19MW. The scheme

[21] Maunsell Limited, *Review of Solomon Islands Electricity Act and Rural Electrification Framework* (September 2006).

will therefore act as a supplementary source but it is not seen by the SIEA to be a substitute for its generators primarily because it is likely to be affected by dry seasons when it can only produce an output of 5MW.

The first phase feasibility study (funded by the EIB) is complete and included an examination of possible dam sites, financial and economic analysis of different options, and technical and engineering analysis. A second phase will undertake an in-depth exploration of a preferred option. The WB is coordinating donor funding to the project, including from Australia (through the PRIF) and the EIB. The IFC is providing transaction advisory services to identify and negotiate a contract with the IPP who will build and run the scheme. The WB intends to offer a partial risk guarantee to encourage private sector interest in the project.

Another potential major project in this sub-sector was identified shortly before completion of this report. A private consortium is investigating the possibility of harnessing geothermal power on the island of Savo that lies about 14km off the northwest corner of Guadalcanal. The project has just completed feasibility stage.

In view of the low rate of access to electricity in rural areas, the NDS Taskforce agreed to add a rural electrification program to the long list of projects, with lump sum allocations from 2016 onwards. The details of the program are to be developed under ongoing sector studies and master planning.

In 2012, SIEA commissioned Sinclair Knights Mertz (SKM) to produce a Power Master Plan that will map out the various options for energy sources (including alternative green energy sources) and their possible capacities in relation to SIEA service areas. The outcome of the study will help the SIEA plan its energy supply and demand strategies for the next 10 years.

Table 3.32 Issues and Strategies, Energy/Power

Sub-sector	Issues	Strategies
Energy/Power	▪ Absence of a clear national development strategy for the energy sub-sector ▪ Very high cost of energy and poor reliability. ▪ Dependency on imported fuel. ▪ Very low accessibility to electricity by population. Access only 12% nationally. In rural areas less than 22% have some form of energy. ▪ SIEA's poor financial and operational management needs to be addressed. ▪ Need to review the energy policy 2007 to ensure its relevance to the current energy needs of the country. ▪ Lack of service delivery mechanism and institutional setup in rural areas.	▪ To provide safe, reliable and affordable supply of energy ▪ Invest in alternative energy sources and energy efficiency. ▪ Develop energy institution and mechanism to effectively deliver energy services to rural communities.

Table 3.33 Ongoing and Proposed Projects, Energy/Power

No.	Project	Estimated Cost (SBDm)	Status	Estimated timing
E1	Auki Bio-fuel Energy Studies	3.0	P	2013-2015
E2	Outer Islands Renewable Energy	39.0	P	2012-2015
E3	Gizo, Solar Photovoltaic System	1.9	P	2013-2015
E4	Honiara SIEA Genset Upgrade	150.0	P	2013-2015
E5	Tina Hydro Project (Guadalcanal)	770.0	P	2011-2016
E6	Paraiso thermal power (feasibility)	1.6	P	2015-2020
E7	Choiseul Province Solar Projects (including Taro Solar Project)	14.0	P	2013-2020
E8	Buala and Malu'u Hydro-Plants	6.0	P	2013-2020
E9	Nafinua and Ladeabu Mini-Hydro	6.0	P	2013-2020
E10	Tingoa Solar, Rennell	3.6	P	2013-2020
E11	Savo Geothermal	1,050.0	P	?
E12	Rural Electrification Program	100.0	P	2016-2020

Key to status: O - Ongoing, C - Committed, P – Proposed

3.9. ICT

The Solomon Islands has the second lowest teledensity of all PICs in the PRIF, but there are signs of improvement attributable to recent initiatives. High calling costs, limited coverage, and service inefficiencies in telecommunications were major constraints to the country's economic development prior to the liberalisation of telecommunications in late 2009.

There are also 9,000 fixed telephone line owners in Honiara and other urban areas. Although most internet access is through dial-up, there are around 1,000 internet subscribers across the country. A mobile banking platform will soon be launched by the Australia-New Zealand (ANZ) Bank.

The current operators with individual licence to provide mobile services in the Global System for Mobile (GSM) communications radio spectrum band in the telecommunication sectors are:

- Solomon Telekom Ltd – services includes: landlines, mobile GSM, 3G, Super G, Internet.
- Bemobile – services provided includes: mobile GMS, 3G, Internet.

The second type of license is referred to as a Class Licence. The current Class License holders are:

- Point Cruz Communications Ltd
- Solomon Islands Postal Corporation
- Pacific Vaizeds Company and Associates
- Tadezad Technologies Ltd
- Smile Ltd

It is understood that Solomon Telekom has recently constructed thirteen mobile towers and is in the process of building another 28. There are 64 already operating as shown in Table 3.34.

Table 3.34 Solomon Telekom and Bemobile – Number of Mobile Towers

Province	Solomon Telekom	Bemobile
Choiseul	5	-
Western	16	11
Isabel	8	-
Central	1	3
Renbell	1	-
Guadalcanal	16	11
Malaita	9	24
Makira and Ulawa	5	-
Temotu	3	-
Total	**64**	**49**

Bemobile is the second GSM network operator in Solomon Islands and the first entrant in the liberalised telecommunications markets. Its service was launched in August 2010 after the tender was let out in 2009 and Bemobile won the bid for the operation of a second mobile license operator.

Currently Bemobile has a total of 49 towers as shown in Table 3.34 and there are three others proposed in the pipeline at Lord Howe, Sikiana and Eastern Outer Islands. This would bring the total number of towers to 52. It is reported that Bemobile has a total of around 100,000 subscribers with coverage of around 50-60 per cent. Their targeted coverage is 80 per cent.

Earlier this year Bemobile signed an agreement with the Marshall Islands National Telecommunications Authority (NTA) to access the excess Satellite bandwidth Capacity after the Marshall Islands were serviced with the new submarine fibre optic cable system that runs from Guam to Sydney.

The recent inclusion of Bemobile has helped extend coverage of mobile phones usage from 25 per cent in 2009 to 53 per cent in 2011 and is continuing to grow. Mobile subscription is noted to have increased from 115,500 to 274,872 over the same period. The national coverage is reported as 67 per cent of the

population, leaving 33 per cent of the population yet to be covered. Internet access, however, is confined mainly to Honiara and Provincial urban centres and coverage is only around four per cent (21,333). Fixed lines penetration is around 1.6 per cent (8,375). Current technology used is GSM, 2.5G; and 3G. Overall costs in mobile phone calls have dropped by 29 per cent (TCSI, 2011).

TCSI has also opened up competition by issuing class license to five companies with the aim to improve service level and quality of service thus entertaining competition at the retail level. Two of the businesses will be looking at providing internet service.

Table 3.35 Prepaid Mobile Tariffs for Solomon Islands (November 2012) (USD)

Country	Mobile to Mobile Peak	Mobile to Fixed Line	SMS Local	SMS International	Mobile-Pacific	Mobile-International	SIM Card
SI Telekom	0.14	0.10	0.07	0.07	0.93	1.01	6.74
SI Bemobile	0.16	0.22	0.12	0.14	0.93	1.14	6.74

Source: Solomon Telekom and Bemobile.

As shown in Table 3.35, Solomon Telekom rates are cheaper than Bemobile, however, the difference is relatively small. Solomon Telekom SMS rates, for example, decreased by more than 50 per cent (from $0.14 to $0.067) between 2010 and November 2012.

Despite the ongoing reforms and improvements, a number of challenges remain and these include:

- Despite major improvements in terms of reduction in the cost of mobile calls, prices for fixed and wireless broadband have remained expensive mainly due to limited choices for international connectivity and lack of competition.
- The remoteness, spread of population (low population concentration), and population living on multiple island locations means the cost of construction and operations is very expensive and a significant constraint.
- Telekom still has monopoly over fixed lines.
- High upfront investment costs due to lack of supporting infrastructure such as electricity and access roads.
- High transaction costs for business and consumers.
- High opportunity costs associated with alternative modes of communications (travel on poor roads and boats).
- 33 per cent of the population is yet to be covered by mobile network.
- 96 per cent of the population is yet to be covered by Internet access. But it is anticipated that the application of 3G networks via the mobile network will enable 67 per cent of the population to have access to the Internet.

3.9.1. DEMAND AND TARGETS

The current telecommunications policy is that all Solomon Islanders should be covered by a reliable mobile phone signal. Currently coverage stands at approximately 67 per cent. This figure has been rising quickly in recent years, but is likely to slow as coverage tries to reach the more remote parts of the nation.

On the basis of the TCSI Annual Report and discussions with Solomon Telekom, the following targets have been identified:

- 90 per cent of the population will have access to mobile communications (either through Telekom or Bemobile) by 2015.
- 10 per cent of the remaining remote population will have communications access by 2020, through the use of the universal access fund.
- 20 per cent of other urban and rural populations will have Internet access via 3G and 4G mobile networks by 2015.
- 30 per cent of the population (Honiara, Auki and Noro/Munda) will have access to the Internet access via fibre-optic cable by 2015.

3.9.2. EXISTING PLANS AND STRATEGIES

The ongoing reform currently taking place within the ICT sub-sector is focused on three outcomes:

- Increase competition by opening up all segments of telecommunications market.
- Strengthening regulatory capacity.
- Expanding rural access to communications service and internet applications.

To meet these goals, a programme is being rendered by the WB comprising three technical components:

- Sector Policy Development – this will involve the provision of TA to the MCA to develop a policy capability for telecommunications and ICT in the broader sense.
- Regulatory Support – this will include assistance for operational and capacity building for the TCSI.
- Technical Assistance for Universal Access – this will commence once the commercial rollout of telecommunications infrastructure and services is more clearly established. This program is to be supported with the two per cent Universal Access Levy established under the *Telecommunications Act 2009*. It will be activated in 2014.

The other major project set to have a significant impact on the future of the Solomon Islands economy and social wellbeing, is the ADB supported submarine fibre-optic communication cable system (SCS). The SCS will link the Solomon Islands to an existing international submarine cable network that runs between Guam and Sydney. There will be an international line into Guadalcanal (landing in Honiara) and two domestic spurs linking Guadalcanal with Malaita (landing in Auki) and the Western Province (landing in Noro). These three Provinces cover roughly 72 per cent of the total population. Microwave and satellite links will be extended to Choiseul and Isabel, with the potential for substantial additional economic and social benefits.

The project hopes to enliven the Government's policy of enhancing internet communications and reducing the cost of telecommunications services which will have positive impact on business operating costs and yield consumer savings. Negotiations and arrangements are underway and the government will know by the end of this year if the project will proceed.

The project will also have positive spin-off effects where satellite broadband capacity currently used by the service providers (Telekom and Bemobile) for Honiara, Malaita, and New Georgia will be released and made available for other locations that are not covered by the fibre optic project.

Table 3.36 Issues and Strategies, ICT

Sub-sector	Issues	Strategies
ICT	▪ There is a gap of 20% that needs to be covered in terms of ICT coverage nationwide. This relates specifically to remote rural scattered communities. ▪ Internet access gap is 96%. ▪ Fixed line gap is 98.4% ▪ Expensive fixed and wireless broadband costs due to limited competition and spread and remoteness of some communities. ▪ Monopoly over fixed lines by Solomon Telekom. ▪ Shortage in skilled ICT personnel. ▪ High upfront investment and transaction costs. ▪ Foregone economic opportunities.	▪ ICT universal access for all. ▪ Support for extension of ICT services into remote uneconomic areas

Table 3.37 Ongoing and Proposed Projects, ICT

No.	Project	Estimated Cost (SBDm)	Status	Estimated timing
ICT1	Submarine fibre optic cable (Honiara, Noro and Auki)	546.0	C	2013-2015
ICT2	Remote communities ICT	75.0	P	2013-2020

Key to status: C - Committed, P – Proposed

4 Infrastructure, Climate Change & Disaster Risk Management

4.1 Background and Introduction

The risks of both climate change and natural hazards were considered in the preparation of this plan. Climate, as opposed to weather, refers to the long-term characteristics of weather, often averaged over 30 years or more. It includes averages as well as extreme events. Ecosystems, agriculture, and settlements, are dependent on climate.[22] Climate change is specifically concerned with changes in these 30+ year characteristics of the climate system, including things such as increases in average temperatures, changes to average rainfall, and changes to the intensity and frequency of extreme events such as cyclones. In working towards adapting to these changes, also referred to here as building resilience, one has to consider how these changes will impact natural systems such as hydrologic systems, geological process, agricultural systems, the ecosystem equilibrium, and the built environment. Because these systems vary enormously from place to place, adaptation solutions are highly local in nature.

Limited information exists in the Solomon Islands related to hazard and disaster risk priorities, let alone those specific to changes in climate. Much of the information that exists is too coarse, mostly country level assessments, which do not highlight specific needs and challenges. More detailed assessments have been done for Honiara and Malaita but are scarce for the rest of the country. This exercise therefore can only provide broad-level support to decision making and more detailed assessments will be required at the project level. A pragmatic approach is suggested here for specific prioritised projects in the SI NIIP, centred on uncertainty management approaches. Addressing climate change adaptation and disasters risk management (CCA/DRM) needs as part of the development of the SI NIIP were integrated into the overall process to avoid the marginalisation of the issue from core decision making processes.

The process followed for integrating CCA/DRM into the SI-NIIP development process included:

- The development of and discussion with the task force to agree to CCA/DRM criteria to be included in the Multi-Criteria Analysis (see section 5.2.2)
- Application of criteria, including CCA/DRM, to the long-list of projects and sensitivity testing of the results to confirm a logical influence of the criteria on the overall priorities (see section 5.3.2)
- A Provincial (see section 4.2) and a sector analysis (see section 4.3) were prepared to identify the possible range of adaptation measures for the SI NIIP sectors. A review of existing studies was undertaken to understand impacts and vulnerability.
- A dedicated focus group on CCA/DRM reviewed the criteria and discussed scoring during a one day national consultation including the Provincial Premiers and other stakeholders. Regular consultations and discussions with the Task Force also took place.
- A decision tree analysis was applied to the initial list of priority projects to identify those with more evident CCA/DRM needs (see section 5.4), in order to identify projects which could potentially be eligible for additional financing for CCA/DRM.
- Project concept sheets were developed for these projects which could be used to access dedicated resources for increasing the resilience of the projects (Appendix B).

[22] International Strategy for Disaster Reduction, *Climate Change and Disaster Risk Reduction,* Briefing Note 01 (2008), http://www.unisdr.org/files/4146_ClimateChangeDRR.pdf.

4.1.1 NATURAL HAZARDS

The Solomon Islands is exposed to a wide range of geological, hydrological, and climatic hazards, including tropical cyclones, landslides, floods, and droughts. Between 1980 and 2009, for example, the country experienced 17 major disaster events affecting almost 300,000 people with and economic cost of over USD20 million. Of these events, six were major natural disasters – two earthquakes and four tropical cyclones, and associated floods and storms, directly impacting over 100,000 people with over 100 deaths. Climate-related events, including floods, landslides, and storms, dominated the disaster events in terms of number of incidents, number of people affected, and damage and losses experienced.[23]

The country lies in a seismically active region located just to the north of the fault between the Australian and Pacific tectonic plates. This means that earthquakes and tsunamis are likely to affect the area and therefore the relative sea level. For example, the April 2007 tsunami generated a peak change of nearly 0.4m in sea level.

4.1.2 CLIMATE CHANGES

Fairly clear projections exist which suggest that temperature has been steadily rising and is expected to increase by 0.4-1.0°C by 2030 in the Solomon Islands.

Projections for rainfall changes are less consistent and climate change models are unable to resolve many of the physical processes involved in producing extreme rainfall.[24] However, increases in extreme rainfall days are expected in terms of both frequency and duration.[25] Changes to drought incidence are also uncertain but may decrease. For most infrastructure, peak rainfall is more important that annual average rainfall and this data is more difficult to come by. Acceptable assumptions based on risk tolerance often need to be made at the project level.

Sea level rise recorded in Honiara from 1994 to 2009 shows an increase of 7.7mm/year, which may or may not be due to climate change, but is nevertheless an issue that needs to be considered in long-term infrastructure development. Sea-level changes across the country will vary but is assumed to increase in general, along with its associated storm surges and wind strength.

Sea-surface temperatures have also gradually risen around the Solomon Islands since the 1950s and ocean acidification has increased[26] which puts the health of coral reefs at risk. These are important because coral reefs protect the shoreline from impacts from storms, and support the tourism and fishing industries which are important to the country.

4.2 Infrastructure and Provincial Exposure

Most of the existing infrastructure essential to development, such as roads, bridges, clinics, schools, airstrips, and wharves, as well as economic activities such as cash crops, are located on the coast and thus exposed to climate driven extremes such as intense storms, tropical cyclones, and flash floods. A report by the Office for the Coordination of Humanitarian Affairs (OCHA) Regional Office for Asia Pacific stated that gulfs, estuaries, and bays in the Solomon Islands are most exposed to storm surges.[27] Many wharves and airfields are located or planned in estuaries and bays.

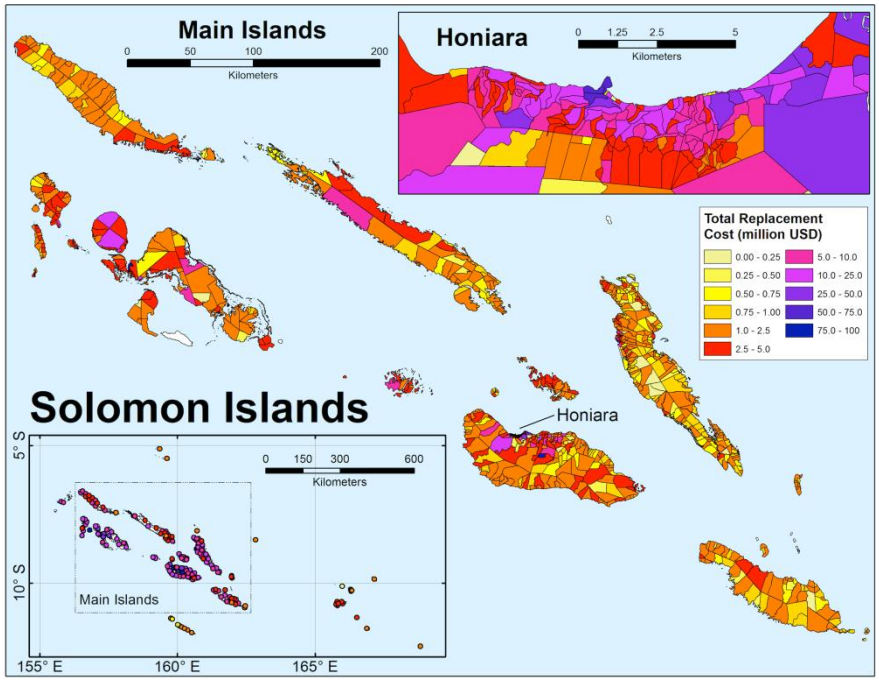
The Solomon Islands is expected to incur, on average, USD20.5 million per year in losses due to earthquakes and tropical cyclones. In the next 50 years, the Solomon Islands have a 50 per cent chance of experiencing a loss exceeding USD240 million and casualties larger than 1,650 people, and

[23] Padma Lal and Valentine Thurairajah, *Making Informed Adaptation Choices: A Case Study of Climate Proofing Road Infrastructure in the Solomon Islands* (International Union for Conservation of Nature (IUCN), Draft 2011).
[24] Pacific Climate Change Science Program (PCCSP), *Current and Future Climate of Solomon Islands* (Ministry of Meteorological Service, Australian Bureau of Meteorology and the Commonwealth Scientific and Industrial Research Organisation (CSIRO), (2011).
[25] Ministry of Environment, Climate Change, Disaster Management and Meteorology (MECCDMM), *National Climate Change Policy* (Government of the Solomon Islands, 2012).
[26] PCCSP, *Current and Future Climate of Solomon Islands*.
[27] Office for the Coordination of Humanitarian Affairs (OCHA) Regional Office for Asia Pacific, *Solomon Islands: Natural Hazard Risks* (2011).

a 10 per cent chance of experiencing a loss exceeding USD527 million and casualties larger than 4,600 people.[28]

Figure 4.1[29] illustrates the total replacement costs of existing infrastructure across the country, including of agriculture and forestry assets. The larger economic centres of Honiara (ranging from USD2.5 million up to USD75 million in the Port Area) and Gizo (USD10-25 million) feature as high loss areas. However, it is unclear why other areas of the country, such as the southern coast of Isabel, feature as high loss areas.

Figure 4.1 Total Replacement Cost (USDm)



A 2011 Natural Hazard Risk Mapping prepared by the OCHA identified the southern part of the country as being more exposed to tropical storms, with Rennell and the Santa Cruz Islands being at highest risk, followed by Guadalcanal, San Cristobal, and Southern Malaita. Climate change is expected to alter patterns for tropical storms. Generally there is a projected decrease in the number of events, but an increase in their intensity or severity (i.e. category 4 and 5 being the highest),[30] Windstorms, including cyclones, tidal surges, and storms are already the leading hazard cause of losses of life and assets across the Pacific.[31] Earthquakes are the main hazard for building damage.[32]

The highest risk areas of the country in terms of climate change are those where there is a coincidence of the existence of infrastructure and regions particularly susceptible to hazard events. Figure 4.2 below illustrates the highest risk areas. San Cristobal, Guadalcanal, New Georgia and Kolombangara, Vella Lavella, and parts of the Choiseul Province will experience the highest average relative annual losses due to its high exposure to cyclones.

It should be noted however that these assessment do not include risks from sea level rise and associated storms, increased temperatures and land based flooding. This type of hazard assessment does not exist on a country scale though detailed studies have been undertaken for Honiara and Malaita North, which support concerns regarding climate change. These studies have been summarised in the Appendix B project profiles.

[28] World Bank (WB), Asian Development Bank (ADB), International Monetary Fund (IMF), and the Secretariat of the Pacific Community (SPC). *Pacific Catastrophe Risk Assessment and Financing Initiative* (September 2011), http://pcrafi.sopac.org/.
[29] Provided by J Papao, SOPAC.
[30] PCCSP, *Current and Future Climate of Solomon Islands*.
[31] Not if But When: Adapting to Natural Hazards in the Pacific Islands Region. World Bank Policy Note, 2006
[32] WB, ADB, IMF and SPC, *Pacific Catastrophe Risk Assessment and Financing Initiative*.

Figure 4.2 Average Annual Loss by Ward

Contribution from the different wards to the tropical cyclone and earthquake (ground shaking and tsunami) average annual loss divided by the replacement cost of the assets in each ward.

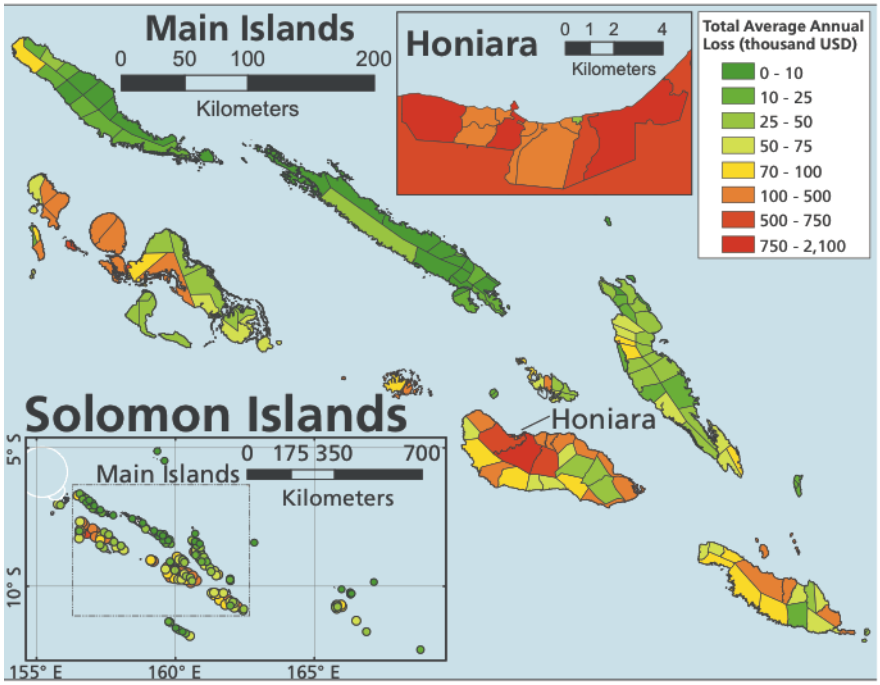


Table 4.1 below highlights some of the challenges to the population and economy in each Province. The southern facing part of the country is more exposed to tropical storms as well as earthquake risks. Sea level rise will boost exposure where elevations are lower and floods may increase in more mountainous areas. At the same time, infrastructure assets and populations are also less concentrated in these areas. Careful consideration of risks is needed in developing these areas. Flood risk maps across the country do not exist which makes it difficult to identify where this may be a challenge. The 2007 tsunami affected Choiseul and Western province but this is not necessarily an indicator of the pattern for future potential tsunami events.

Table 4.1 Overview of Provincial Challenges related to Climate Change & Natural Disasters

Province*	Characteristics
Choiseul	The northern tip and southern coast of Choiseul are more exposed to hazards from strong winds and earthquakes. The capital area near the northern tip has a higher level of asset losses due to hazard events than the rest of the Province. Its large size provides a wider range of adaptation options as sea level rises. However, mining and logging activities must be controlled to minimise risks of landslides and floods.
Western	Gizo, Vella la Vella, and Kolombangara experience high levels of loss due to cyclones and earthquakes, their small size increasing their exposure. Gizo is also a popular tourist destination, a sector that puts pressure on demand for fresh water, the supply of which is under pressure. Development is taking place without an overview of the sustainability of water resources. Changes in rainfall patterns and sea level rise would reduce water availability. Intense logging also reduces water availability and increases erosion and sedimentation, reducing the ability of the ecosystem to respond to changes in climate. Tuna stocks are also expected to decrease[33] with warming of ocean temperatures and acidification, putting at risk an important economic activity in the Province.
Isabel	Isabel experiences lower exposure to cyclones and earthquakes and due to its large size, has more options for development in more protected areas, as long as mining and agricultural activities are regulated to protect the integrity of the mountainous systems, which are more sensitive to changes in climate. Otherwise, increased floods, landslides, and droughts will increase the vulnerability of the population and assets. The fishing industry may also be at risk because of recorded ocean acidification, which reduces coral reef.

[33] P Lehodey, I Senina, J Sibert and others, "Preliminary Forecasts of Population Trends for Pacific Bigeye Tuna under the A2 IPCC Scenario," *Progress in Oceanography* 86 (2010), pp. 302-315.

Province*	Characteristics
Central	Average annual losses due to cyclones and earthquakes on Russell and Florida Islands are high because of the presence of tourism facilities, copra and logging industries. The population is relatively concentrated compared to other islands (5% of the population on 2.2% of the land area), which can be a concern during crises. The small sizes of the islands also mean that sea-level rise and associated impacts such as salinity; storms and coastal emersion are a concern. These will also negatively impact the economic activities.
Rennell-Bellona	Average annual losses due to cyclones and earthquakes are very high, primarily due to its small size and exposure. Its remoteness makes its population highly vulnerable to all hazards. Due to its small size, sea-level rise and storm surges are a concern, though the islands elevation may help protect it. Increases in salinity from sea-level rise could increase salinity of drinking water, potentially damaging the tourism sector. Logging is exacerbating landslides, erosion, floods, and droughts.
Guadalcanal	As the main economic centre in the country, reducing the risks in the city of Honiara is strategically important. As a hub for international shipping and air travel, ensuring that these services are protected from damages from hazards is critical. The southern coast, named the weathercoast because of the high incidence of weather affected hazards such as strong winds, storm surges, and landslides, is highly exposed and populations vulnerable. Asset losses due to cyclones and earthquakes are also high in the eastern part of the island where important agriculture is concentrated.
Malaita	Southern Malaita, exposed to strong winds, storm surges and cyclones, experiences high losses of infrastructure due to cyclones and earthquakes, though the population and buildings are concentrated in the northern end of the island. Cash crops such as copra, cocoa, and palm oil expansions will increase water demand, the supply of which may become increasingly variable and soil salinity may reduce productivity. Some salt water communities of Fanalei and Walande, including all coastal communities in Asimeuri of Small Malaita Constituency are highly vulnerable.
Makira-Ulawa	Experiences the most pervasive infrastructure losses due to high winds (cyclones, storm surges) and earthquakes. The southern coast is more highly exposed to strong winds than the north. The logging industry exacerbates the island's vulnerability by increasing environmental degradation. Climate change may threaten the cocoa industry with temperature increases, unpredictable rainfall and changes to pests that occur with these changes.
Temotu	Average annual losses due to cyclones and earthquakes are also very high in Temotu, primarily due to its small size and exposure. Its remoteness makes its population highly vulnerable to all hazards. Due to its small size, sea-level rise and storm surges are an extreme concern. Increases in salinity from sea-level rise would render most agriculture unproductive and fresh water scarce.

Notes: *For the purposes of this analysis Honiara is included in Guadalcanal Province.

The analysis summarised in Table 4.1 implies that future-planning exercises should consider some more strategic issues, including:

- The long-term implications of climate change and natural hazards on infrastructure planning. This includes assessing whether and how development should be directed towards areas with lower exposure. Low risk development is more cost effective than retrofitting. Also, the increasing costs of upgrading and maintaining infrastructure in highly exposed area will increase the burden on the national budget. This would go hand in hand with spatial planning across the country (also recommended in this NIIP).
- Because all risks cannot be avoided, protective measures for existing strategic economic areas should be identified. Because of the uncertainty surrounding future changes and hazards, flexibility should be sought, such as recognising the protective function a well-managed environment serves.
- Consider that all losses cannot be prevented, especially for low frequency and very high intensity events, but that effective emergency response mechanisms by communities and institutions are critical to minimising losses during inevitable hazard events.
- Economic diversification could reduce the economic vulnerability of the population by providing options should natural resource based income fall. Climate change will challenge the agriculture and fisheries sectors as well as put pressure on fresh water resources and coastal infrastructure.
- Review potential strategies for retreating from high-risk areas where islands are being washed away and relocations of populations may be needed.

4.3 Sub-Sector Analysis of Climate Change, Disaster Impacts and Resiliency Options

The level of data for hazard risk mapping, such as sea level rise and flood risks which would allow for comparisons between projects and their prioritisation, is undeveloped in the Solomon Islands. Some experience with regional downscaling of climate change models, which would allow for more detailed

climate change projections in the country, suggest that it is infeasible to undertake for the purpose of national planning for reasons of cost and accuracy. Instead, identifying approaches that can reduce risks to uncertain events, such as earthquakes or future sea level rise, is more pragmatic and appropriate.

A number of infrastructure adaptation strategies are being tested in the Pacific Islands. These include both engineering and non-engineering solutions such as:

- **'Hardening'** infrastructure such as increasing the height of a wharf for sea-level rise. Some early experience suggests that considering these solutions alone are ineffective when, for example, a wharf is built too high for current water levels when designed for future sea level rise.
- **Relocating** infrastructure away from high-risk areas, such as high cyclone regions. This can be complex due to land tenure and other social issues.
- Considering **flexible alternatives**, for example, where land-based transport can be replaced by ferries for crossing streams in high flood areas.
- Building **natural buffers**, such as improved upstream watershed management for reducing flood risks for downstream infrastructure.

Some of the identified risks posed by climate change and natural hazards in the Pacific in the sectors under consideration are described in the tables below. These draw from the ADB Transport Sector Development Project (RRP SOL 41171); *Infrastructure and Climate Change in the Pacific* (Draft report) prepared by the Australian Government's Pacific Adaptation Strategy Assistance Program (PASAP); and the ADB *Climate Risks and Adaptation* report in the Power sector.

The SI NIIP sub-sectors most at risk are Transport, Water Supply and Sanitation, and Energy followed by less wide ranging risks in ICT and Solid Waste Management.

The tables below should be read as a menu of options rather than a definitive list of solutions, as these will be context specific. There may appear to be contradictions in options, such as the choice to either strengthen a wharf or to make more temporary and flexible structures that can either be removed or easily replaced. This is because these are two valid approaches to increasing resilience: hardening or finding more flexibility to handle a hazard. The choice will depend on factors such as local conditions, social acceptability, maintenance requirements, lifetime of the given infrastructure, the level of risk, and costs and benefits over the lifetime of the project.

4.3.1 TRANSPORT

According to the National Adaptation Program of Action (NAPA), one of the priority concerns for the country in infrastructure is damage to roads and bridges from floods. The areas identified as most affected are on Guadalcanal, Makira, and Malaita.

Furthermore, storm surges are likely to have negative impacts on the inter-island shipping sector. Currently most ships operating in the country were all bought as second hand ships and are aging. For example, two old ships (Ramos III and Western Queen at Ranadi) were grounded due to storm surges. It is expected that tropical cyclones and sea level rise will destroy ships and wharves, and that communications and civil aviation will be disrupted.

Table 4.2 Summary of Impacts and Adaptation on Transport - Land Infrastructure

Climate change/hazard	Potential Impacts	Potential Infrastructural Adaptation Strategies	Complementary Measures
Temperature increases resulting in very hot days and heat waves	Deterioration of pavement e.g., softening, rutting, migration of liquid asphalt for bitumen roads and loss of pavement binding materials for gravelled pavements.	Substitute materials for higher temperature thresholds	Create roadside shading through wide canopy trees
Sea level rises	Damage to roads and bridges due to flooding, inundation in coastal areas, and coastal erosion. Severe damage	Re-alignment, raising the height of roads/bridges, alternative mode of transport such as ferry crossings	Coastal zone ecosystems management to reduce impacts on coast

Climate change/hazard	Potential Impacts	Potential Infrastructural Adaptation Strategies	Complementary Measures
	due to landslides and subsidence.	and boats, coastal reinforcement protection measures, accept temporary road closures, rapid rehabilitation/ construction contingency resources	
Increase in rainfall/land based flooding	Severe damage to road pavements due to increase in soil moisture content and inadequate drainage provision to cope with increase in precipitation.	Reduce slope gradients to reduce landslides onto roads, substitute materials for higher moisture contents, increase drainage capacity	Increase water retention capacity and slow infiltration through natural or bio-engineered systems Increase land cover
Cyclones/hurricanes and frequent strong storms	Increase probability of road failures due to inadequate design provisions to withstand changes. Increased threat to stability of bridge decks and to bridge approaches by washing away embankments.	Increase maintenance schedule preceding cyclone season, increase return period design standard	Early warning systems and road closure, alternate routes, rapid-post disaster reconstruction
Increase in wind speeds	Fallen trees and other structures onto roads causing safety risks to vehicles and pedestrians and possible road closures.	Strengthen roadside structures, weak remove roadside trees	Local maintenance crews equipped with removal equipment, remove trees and other
Earthquakes	Uplift and destruction of asset	Flexible bridges, realignment, apply earthquake design standards	Early warning systems

Source: Adapted from "Infrastructure and Climate Change in the Pacific" (Draft report) prepared by the Australian Government's Pacific Adaptation Strategy Assistance Program (PASAP).

Table 4.3 Summary of Impacts and Adaptation on Transport - Aviation Infrastructure

Climate change/hazard	Potential Impacts	Potential Adaptation Strategies	Complementary Measures
Temperature increases resulting in very hot days and heat waves	Deterioration of pavement e.g., softening, rutting, migration of liquid asphalt for bitumen	Ensure temperature thresholds for materials used are appropriate to rising maximum temperature	
Sea level rises and associated storms	Damage to runways and buildings by storms, gradual erosion of coastal landing areas, landslides and subsidence, airport closures, flooding from underneath for coastal airstrips	Relocate airstrips to higher ground, airport closures during storms for safety, plan for salt water intrusion into the water table beneath airstrips	Coastal protection measures
Increase in rainfall	Severe damage to airstrips due to increase in soil moisture content and inadequate drainage provision to cope with increase in precipitation.	Substitute materials used, improve drainage	Increase sheltered areas
Cyclones/hurricanes and frequent strong storms	Increased flooding of airstrips, increased safety concerns	Design airstrips for increased flooding, increase maintenance budget	Improved early warning systems
Increase in wind speeds	Fallen trees and other items obstructing runway.	Timely maintenance, ensure unsafe items are cleared from area	
Earthquakes	Uplift and destruction of asset	Design to earthquake standards, accept losses and provide rapid rehabilitation	Ensure alternate sources of transport available to maintain economic activities, insurance against losses

Table 4.4 Summary of Impacts and Adaptation on Transport - Shipping Infrastructure

Climate change/hazard	Potential Impacts	Potential Adaptation Strategies	Complementary Measures
Temperature increases resulting in very hot days and heat waves	Corrosion of reinforced concrete sub-structures due to increase in salt levels, cracking of deck surface.	Substitute with less corrosive materials	
Sea level rises and associated storm surges	Damage to wharf deck and sub-structure due to prolonged submergence in salt water and increase in salt levels, shipping lanes experiencing sea level rise may be able to accommodate larger ships, changes in the rate and	Substitute with less corrosive materials, increase the height of the deck, increase the strength of the pillars to allow for height increase in the future, use small scale removable/floating decks with can be removed during storms	Positively, may begin planning for larger ships

Climate change/hazard	Potential Impacts	Potential Adaptation Strategies	Complementary Measures
	pattern of sedimentation of bays[34]		
Increase in rainfall	In land flooding and landslides may reduce access to routes from wharf – inland.		Multi-modal transport planning to ensure transition from sea to land
Cyclones/hurricanes and frequent strong storms	Increase probability of structural failures due to inadequate design provisions to withstand changes.	Increase design standard to withstand greater storm intensity	Sea navigation systems to improve safety during extreme events
Increase in wind speeds	Structural damage to wharf/jetty structures which have not been designed to withstand severe wind loads.	Increase design standard for stronger winds, use wind blocks on landing decks	Use coastal protection measures to reduce/deflect wave strength reaching wharves
Earthquakes	Uplift and destruction of asset	Use cheaper wharves that can be quickly and easily replaced, increase design standard for earthquakes, use floating wharves	
Ocean acidification	Increased rate of deterioration of concrete and supportive structures	Utilise reinforced concrete and substitute materials, increase maintenance frequency	

4.3.2 WATER SUPPLY AND SANITATION

Water resource variability and vulnerability are major concerns throughout the country as a result of changing weather patterns, which may be linked to climate change.

Table 4.5 Summary of Impacts and Adaptation on Water Supply Infrastructure

Climate change/hazard	Potential Impact	Potential Resilience Measure	Complementary Measures
Sea-level rise	Rising sea levels /coastal erosion causes damage to water supply infrastructure, saltwater intrusion into groundwater lens on low-lying and atoll islands.	Use non-corrosive materials, use pumps to prevent salt water intrusion, find alternate and diverse sources of water to those coastal, desalinisation	Demand side management, reduce pressure on coastal groundwater sources, undertake regular water quality assessments
Increase/decrease in rainfall	Water shortages, i.e. Water supplies were compromised severely during 1997/1998 drought in Honiara by 30-40%. Drought has also been felt for the first time in Reef Islands in Temotu Province. Water demand patterns may increase. Competition and conflict between different water users, increased runoff can decrease water supplies by reduced infiltration into the groundwater. Excess water to the system can overflow and damage infrastructure, floods, and contamination and result in overall poor distribution into the dry season if storage is inadequate.	There is a need to greatly improve both natural and artificial water storage, with an emphasis on smaller and more dispersed infrastructure; improve water efficiency and water loss measures; increase available resources	Long-term demand side management, Long-term water availability studies and planning, integrated multi-user assessment of supply needs, intersectoral management of water resources, ensuring groundwater recharge zones
Cyclones/hurricanes and frequent strong storms	Damage to water infrastructure could undermine the quality and quantity of water.	Design critical supply infrastructure for hazards	Contingency planning
Earthquakes	Damage to water infrastructure could undermine the quality and quantity of water.	Design critical supply infrastructure for hazards	Emergency water supplies planned for

Table 4.6 Summary of Impacts and Adaptation on Sanitation Infrastructure

Climate change/hazard	Potential Impact	Potential Resilience Measure	Complementary Measures
Sea-level rise	The reliance on septic tanks and soak away systems are vulnerable	Adjust pumping capacity for larger volumes of water as well as longer	Utility management of centralised sanitation systems

[34] United States Environmental Protection Agency, "Transportation Impacts & Adaptation," *Climate Change,* http://www.epa.gov/climatechange/impacts-adaptation/transportation.html#airtransportation,

Climate change/hazard	Potential Impact	Potential Resilience Measure	Complementary Measures
	close to the shore. Storm surge can result in waste from the coast being deposited inland or to coastal access routes; groundwater levels may rise and disrupt natural purification processes	drought periods; reduce reliance on water intensive sanitation systems, locate new septic systems away from coastline	are more resilient to changes in climate than that localised sewerage systems. Centralise management of
Increase/decrease in rainfall	Health impacts as result of shortages of water to manage liquid waste; floods can result in sewerage overflows and additional solid and liquid- overflows, putting human health at risk, interruption in service	Back-up systems in place to manage shortage/excess in water; design system for higher variability in water availability; increase water efficiency; low-flush septic systems Modified sewerage systems typically use lower volumes of water and are less prone to blockage if flows are unreliable	Monitor effects of energy interruptions in the safe operation on WSS systems; long-term planning and water source sustainability to plan for changes in water volumes and effects on infrastructure needs; intersectoral management of water resources
Cyclones/hurricanes and frequent strong storms	Damage to near shore septic tanks resulting in serious pollution. Storm surge can also result in an accumulation of debris and waste in sewerage pipes, creating backups.	Systems which link multiple communities and multiple sources spread risk and are more resilient, since failure, deficiency or flood damage to one source or component are unlikely to cause catastrophic failure; Separation of storm water from sewage is highly advisable to minimise the risk of overwhelming collection systems and treatment facilities, and the associated pollution impacts	Extreme institutional decentralisation – as in rural community-managed systems – is associated with a high rate of failure. This can be reduced by ensuring access to (centralised) technical and management support, which is likely to be critical in increasing resilience (WHO, 2012).
Temperature increase	Higher incidence of water borne diseases, new diseases	Adjust sanitation processes for emergence of new and higher levels of warmer weather diseases	Monitor incidences of new disease types and levels and develop response plans
Earthquakes	Uplift and destruction of asset	Same as above, design systems to earthquake design codes, tubewells are more resilient technologies; ensure high levels of maintenance to minimise risks	Sewerage system and treatment utilities should develop emergency response plans to minimise health and environmental risk

4.3.3 ENERGY AND POWER

Energy production, utilisation, conversion and transportation have and will be affected by most natural weather phenomena such as droughts, floods, fires, storm surge and cyclones.

Table 4.7 Summary of Impacts and Adaptation on Hydroelectricity Infrastructure

Climate change/hazard	Potential Impact	Potential Resilience Measure	Complementary Measures
Sea-level rise	Most hydro is located inland and not directly affected by sea-level rise, possibly increased rate of deterioration of concrete structures due to increased salinity from sea-level penetration upstream	Materials substitution for less corrosive materials	Coastal zone protection to protect estuaries and watersheds
Increase/decrease in rainfall	Energy from hydropower relies on rainfall and reduced river flow over a period of time could reduce or disrupt entirely energy generation.	Where flow is expected to increase, increase dam height and/or build small dams upstream construct or augment water storage reservoirs, modify the number and type of turbines that are better suited for expected water flow rates, reduce expected turbine lifetime due to higher suspended sediment loads, modify canals or tunnels to better handle changes in water flows, modify spillway capacities and install controllable spillway gates to flush silted reservoirs	Develop improved hydrological forecasting techniques and adaptive management operating rules; develop basin-wide management strategies that take into account the full range of downstream environmental and human water uses; restore and better manage upstream land including afforestation to reduce floods, erosion, silting, and mudslides. Improved watershed modeling to inform better management

Climate change/hazard	Potential Impact	Potential Resilience Measure	Complementary Measures
Cyclones/hurricanes and frequent strong storms	Flooding of riverbanks could adversely affect stream flow particularly where hydropower is generated. Transmission lines and towers are damaged.	Design more robust dams and infrastructure for heavier flooding and extreme events	
Increased temperatures	Higher evaporation rates, reduced turbine efficiency	Water cooling systems in turbines	
Earthquakes	Damage to infrastructure, oil spills and fire hazards.	Design more robust dams and infrastructure for heavier flooding and extreme events	

4.3.4 ICT

Potential climate change impacts on ICT include damage to communication towers by extreme storms. Also, any sensitive equipment used in the ICT system will be susceptible to the corrosive environment already existing in the Pacific which will likely increase as a result of climate change. This sector is not commonly identified as a priority in light of climate change and natural hazards and there is a paucity of information on the subject.

4.3.5 SOLID WASTE MANAGEMENT

Waste management facilities are vulnerable to damages from earthquakes, causing serious pollution when located near water sources in particular. Flooding can also transport dangerous materials and pollution into the water and soils, causing widespread health problems. The only identified adaptation option to consider is related to locating such facilities safely away from important water sources and flood areas, including coastal areas and floodplains.

5 Priority Infrastructure Investments & Sector Programmes

5.1 Prioritisation of Investments

There are over 80 proposed projects (not including on-going and committed projects) listed in Chapter 3. All of these projects are important and should be considered priorities. However, it is very unlikely that they can all be funded and implemented in the five to 10 year time frame of the SI NIIP. It was therefore necessary to establish the higher priority projects. This was done through stakeholder consultations and the use of a multi-criteria analysis (MCA) process. The methodology for prioritisation is described in this Chapter.

The outcome of the MCA was a list of 19 priority projects. The methodology for getting from 80 projects to 19 is described in this chapter. Details on each of the proposed priority projects are given in the project sheets in Appendix A. They are also listed by sub-sector at the end of in this chapter. The level of information available for the projects varies depending upon the status of the project identification and scoping. On the whole, projects were not 'disqualified' from inclusion in the SI NIIP simply due to lack of details. When looking at a 10-year horizon it is always likely that some projects will be at a very early stage of definition. Also, the absence of a rigorous procedure for project formulation has been identified as a key weakness in the planning process in the Solomon Islands. It would therefore be unfair to omit projects due to a failure in the system rather than the validity of the projects themselves.

Maximising the value of the available investment funding is key for the SIG. Given funding constraints, it is inevitable that Government cannot invest in everything. It must therefore prioritise investments to ensure that maximum value is achieved. This SI NIIP presents the Government's assessment of those priorities. The NDS presents a wide ranging view of future priorities, but these need to be translated into practical guidance for policy and decision makers. Highlighting those sectors and projects which offer greatest value to the country, is a key stage in the Government's process of producing an informed and strategic investment plan.

5.1.1 PRE-SCREENING

A number of processes have been undertaken to develop the long list of projects to be prioritised. Key amongst these are a series of pre-screens aimed at removing projects which have no possibility of being delivered within the timescale adopted for the SI NIIP. This screen includes:

- Projects which do not fit with overall socio-economic development strategies;
- Projects which are clearly not affordable within the timescale; and
- Projects which are unlikely to be ready for implementation within the next five to seven years, either because they require primary legislation, face major land ownership issues, or are only at a very early stage of development.

These pre-screens have been used by the SIG to focus the long list of projects that can be delivered, and therefore offer realistic opportunities to foster development.

5.1.2 PROJECT SIZE THRESHOLD

It should be remembered that this investment plan is a strategic document. As such, the long list is made up only of strategic projects – those which will either have an impact on the SIG budget, or which

will have a significant impact over a significant proportion of the country. For the purposes of the SI NIIP, only projects with a value of more than SBD14 million have been included. This does not mean that other projects cannot or will not be implemented, but that they are not considered to be sufficiently strategic to warrant inclusion in a national plan. In some cases, such as rural water and sanitation, provincial sanitary landfills and rural electrification, multiple smaller projects have been grouped in a single project or in a kind of lump sum allocation.

5.1.3 THE MULTI-CRITERIA ANALYSIS FRAMEWORK

MCA frameworks are an established method for prioritising a wide range of projects, such as those considered by the SI NIIP. Such a framework tests the likely contribution of each scheme in delivering a series of agreed objectives. MCA frameworks can incorporate a mix of quantified and non-quantified criteria, depending upon the availability of data. Generally a straightforward scale is then used to determine the performance of each scheme against each criterion.

For the purposes of the SI NIIP, a framework similar to that utilised for Solomon Islands National Transport Plan has been used. The NTP and SI NIIP share a number of characteristics, which mean that consistency between the two documents is important. While the precise criteria used are different, the scoring mechanism is similar, as is the style of presentation.

5.2 SI NIIP Prioritisation Methodology

5.2.1 PRIORITISATION CRITERIA

A key aspect in the selection and refinement of the criteria used in the SI NIIP was the desire to maintain close compatibility with the NDS. The NDS is the key document driving SIG policies and is used by the Government to guide negotiations with development partners and stakeholders.

The NDS presents eight clear high-level objectives, as shown in Table 5.1.

Table 5.1 NDS Objectives

No.	Objective
1	To alleviate poverty and provide greater benefits and opportunities to improve the lives of Solomon Islanders in a peaceful and stable society
2	To provide support to the vulnerable
3	To ensure that all Solomon Islanders have access to quality health care and to combat malaria, HIV, non-communicable and other diseases
4	To ensure that all Solomon Islanders have access to quality education and for the Country to adequately and sustainably meet its manpower needs
5	To increase the rate of economic growth and equitably distribute the benefits of employment and higher incomes amongst all the provinces and people of Solomon Islands
6	To build and upgrade physical infrastructure and utilities to ensure that all Solomon Islanders have access to essential services and to markets
7	To effectively manage and protect the environment and eco-systems and protect Solomon Islanders from natural disasters
8	To improve governance and order at national, provincial and community levels and strengthen links between them

These objectives have been used to build a set of 14 criteria that form the basis of the prioritisation framework for the SI NIIP. Due to the data poverty of the Solomon Islands, only one of these criteria can be considered to be quantitative: the population served by a scheme. The other 13 are qualitative criteria for which judgements have to be made on the basis of non-quantifiable factors. The criteria selected, and how they relate to the NDS objectives, are shown in Table 5.2 below.

The criteria include:

- two criteria related to poverty, with the aim of prioritising projects which will enable rural income generation and socio-economic development;

- one related to vulnerable people, specifically looking at how projects will benefit women, children, and disabled people;
- one regarding healthcare and education, concentrating upon improving access to quality healthcare and education and to providing the infrastructure to improve that quality;
- three with respect to finance and the economy, looking at how well projects will support key investments aimed at improving the economy of the country, or which remove or reduce barriers to economic development;
- three concerning infrastructure, particularly to highlight projects which are considered to be more sustainable and appropriate, and which have strong links to existing infrastructure;
- three related to environment and climate change, including two climate change and hazards and one environmental criteria, with the objective of prioritising projects which could improve the overall resilience of Solomon Islands and protect the environment; and
- one regarding governance, aiming to identify project developers with a good record of project delivery, or with existing support mechanisms.

Table 5.2 Prioritisation Criteria

NDS Objectives	SI NIIP Criteria
1. To alleviate poverty and provide greater benefits and opportunities to improve the lives of Solomon islanders in a peaceful and stable society	▪ Will the scheme provide affordable transport, energy, water supply and sanitation infrastructure to support socio-economic development and income generation? ▪ What is the total population served by the scheme?
2. To provide support to the vulnerable.	▪ Will the scheme specifically support the household and income generation activities of women, reducing the burden for basic tasks, whilst improving women's and children's health and nutrition?
3. To ensure that all Solomon Islanders have access to quality health care and to combat malaria, HIV, non-communicable and other diseases	▪ Will the scheme assist in improving access to and delivery of healthcare and education?
4. To ensure that all Solomon Islanders have access to quality education and for the country to adequately and sustainably meet its manpower needs.	
5. To increase the rate of economic growth and equitably distribute the benefits of employment and higher incomes amongst all the provinces and people of Solomon Islands	▪ Is the scheme likely to support identified areas of investment and growth, providing infrastructure to unlock key elements of these projects? ▪ Will the scheme help to remove barriers to trade, by removing infrastructure constraints such as transport, communications and reliable power supplies? ▪ Does the scheme have the potential to support expansion of the tourism industry?
6. To build and upgrade physical infrastructure and utilities to ensure that all Solomon islanders have access to essential services and to markets.	▪ Does the scheme utilise or connect well with existing infrastructure? ▪ Does the scheme use appropriate technology for Solomon Islands? ▪ Are the ongoing maintenance and operational costs of the scheme affordable either through scheme generated revenues or SIG support?
7. To effectively manage and protect the environment and eco-systems and protect Solomon islanders from natural disasters	▪ Can the scheme improve Solomon Islands resilience to the effects of climate change and natural hazards? ▪ Will the scheme improve the environment or enable actions to protect the environment, reduce pollution and damage to the environment, or improve sustainability? ▪ Is the scheme robust against the effects of climate change and natural hazards?
8. To improve governance and order at national, provincial and community levels and strengthen links between them	▪ Does the scheme promoter have the capacity to manage the implementation of the scheme, to budget and programme, and is there a clear and approved sector strategy?

5.2.2 CLIMATE CHANGE AND DRM CRITERIA JUSTIFICATION

Considerations of climate change impacts and disasters were included in the prioritisation framework through the inclusion of the two criteria associated with NDS Objective No.7 as shown in Table 5.2 above. These are: 'can the project contribute to increasing the country's resilience to climate change and disasters?', and 'is the project robust to the effects of climate change and natural disasters?'.

In developing these indicators, two main assumptions were made:

- Projects should not be penalised if they do not already consider risks from climate change and natural hazards. The objective of the process should be to draw out those which can contribute to increasing resilience, though they may not have done so at this stage.
- The MCA process is not detailed enough to determine whether favouring investment in a particular geographic area, which is highly vulnerable, is justified. This decision requires further study as part of overall feasibility studies, to determine whether investments are economically and politically justified.

This is a judgement which is too important to be determined through an MCA process. However, projects that require attention because they are in highly vulnerable areas need to flagged and further examined. At this point, a decision whether to climate-proof them, or to recommend reconsidering their impact on the country's vulnerability needs to be made. This process is described further in Section 5.4.

5.2.3 SCORING SYSTEM

The next stage in implementing the prioritisation criteria was to apply scores to show how each project would be expected to contribute to each criterion. For this, a straightforward five point scale was used. This simple system reflects the fact that all but one of the criteria are qualitative in nature. There will always be a significant degree of subjectivity in the scoring, and a finer scale would be inappropriate and would imply a level of detail and certainty inconsistent with the information available. The scoring system, together with the description of each score, is shown in Table 5.3.

Table 5.3 Prioritisation Framework Scoring

Score	Explanation
No effect	The project would not contribute to the criteria
Minor positive	The project would contribute only very little to the criteria
Moderate positive	The project would have some moderate but limited supportive effects
Positive	The project would provide support to the criteria
Major positive	The project would provide major support to the criteria

5.2.4 STAKEHOLDER INVOLVEMENT

During the early stages of the SI NIIP's preparation, the consultant team met with a large number of SIG officials from various Ministries, development partners, and other key stakeholders. During these meetings, the overall objective of the SI NIIP was discussed. At the same time, each consultee was asked to provide details of any current plans and strategies, particularly with respect to infrastructure investment. From the documentation provided and discussions held, detailed sector assessments were completed, which in turn led to the long list of projects to be considered. This method ensured that, as far as possible, the long list represents a realistic view of sector priorities, with all strategically important projects marked for inclusion.

The process of developing the prioritisation criteria was informed by a number of discussions. The draft criteria were presented at meetings of the NDS Steering Committee, a special meeting of development partners, further meetings with officials from key ministries, and a working group with membership from the Prime Minister's Office, MoFT, and MDPAC. The initial results of the prioritisation were also presented to representatives of the NDS Task Force prior to the prioritisation workshop for their ratification.

This culminated in a prioritisation workshop held on 21st November 2012. At this workshop, 41 representatives of key ministries, provincial governments, the private sector, NGOs, and development partners gathered to discuss both the prioritisation criteria and the scoring produced by the consultant team. This workshop examined the criteria proposed for the prioritisation, testing each one for effectiveness and relevance. The criteria relating to environmental protection were re-assessed to ensure that it was effective. In the end, although the wording of the criteria remained unaltered, the way in which the scoring was determined was adjusted.

During breakout sessions, stakeholders were asked to review the draft scoring produced by the consultants with reference to each of the criteria. During this process the scores given were amended, either on a case by case basis, particularly where stakeholders had better local knowledge of a scheme, or systematically, where it was considered that the initial scoring had not given sufficient weight to a particular aspect. Following this workshop the scoring methodology and results of the prioritisation were reviewed by the SI NIIP Steering Committee and by all stakeholders as part of their comments on the draft NIIP.

5.2.5 IDENTIFYING PRIORITY PROJECTS

The aim of the prioritisation framework was to identify the highest priority projects that would make the greatest contribution to delivering the NDS objectives. During the prioritisation process it was emphasised that, while the scoring framework naturally results in a ranking of the projects, the precise rankings are not important. Rather, the emphasis was on the identification of a group of the highest-scoring projects. Adjustments to the individual scores might change individual project rankings, but there is confidence that the groups of highest, and next-highest projects, are fairly robust.

The intention of the process was to identify a package of projects that could be implemented in a reasonable timescale, given the existing funding and capacity constraints. The assessment of funding and capacity suggested a package of around 20 projects would be most appropriate. An iterative process was used to look at the funding implications of various cut-off points above and below 20th position. The cut-off was made at the 19th ranked project based on assessments of overall SIG funding and implementation capacity. For example, in the roads sector, funding has come under increasing pressure particularly as high priority maintenance activities absorb large proportions of the funding.

The results of the prioritisation process are provided below in Table 5.4 for the top 19 and next best 10 projects. This shows the performance of these against the seven categories of criteria described in Table 5.2. Each question scores between 0 and 4 points and the number of questions for each criterion determines the final score. These have been aggregated here for clarity, with full details of the assessment of each project against each criterion given in Appendix H.

After completing the priority list of projects, many stakeholders commented that more needed to be done to increase the very low rate of access to electricity in rural areas. This argument was endorsed by the NDS Taskforce and in view of the fact that an energy sector master plan is currently under preparation. A lump sum allocation for a rural electrification program was added to the list of priority projects, from 2016 onwards.

Table 5.4 Prioritisation Results Summarised by NDS Objectives (top 29)

NDS Objectives		1	2	3&4	5	6	7	8
Project	Rank	Poverty	Vulnerable people	Health & education	Economy	Infrastructure	Environmen	Capacity
Top19								
Henderson Apron Upgrade	1	5	2	1	10	12	9	4
Resealing of Urban Roads	1	6	2	1	7	13	10	4
Provincial Runways Upgrade	1	5	1	2	10	12	9	4
Honiara Main Roads	4	7	2	4	7	11	8	4
Honiara Port Remedial Works	5	6	1	1	7	14	9	4
Malaita North Road	6	8	2	3	6	12	7	4
Honiara Urban Devt	6	8	2	3	6	11	9	3
Tina Hydropower	6	8	3	4	7	9	8	3
Honiara SIEA Genset Upgrade	9	6	3	4	6	10	7	3

NDS Objectives		1	2	3&4	5	6	7	8
Project	Rank	Poverty	Vulnerable people	Health & education	Economy	Infrastructure	Environmen	Capacity
2013 Replacement Wharves	11	7	3	2	5	11	9	3
New Wharves Tranche 2	11	7	3	2	7	10	8	3
WASH Projects	11	8	4	3	4	10	10	1
Guadalcanal Feeder Roads Tranche 2	14	7	3	4	3	12	7	4
Malaita Feeder Roads Tranche 1	14	7	4	3	3	12	7	4
Water Supply 2 Year Plan	14	7	3	3	4	11	8	4
Naro Hill - Lambi Road	18	5	2	3	3	12	10	4
Honiara Port Extension (New Wharf)	18	7	1	1	9	10	7	4
Rural Electrification Program	Based on stakeholders' comments this project was added to the priority list							
Next 10								
Gizo Water Supply	20	6	3	4	5	9	9	3
Mberande - Aola Road	20	6	2	3	4	12	8	4
Malaita Main Roads	20	7	4	2	3	12	7	4
Remote Communities ICT	20	7	2	2	6	11	7	4
Choiseul Township	24	6	2	4	7	9	9	2
Guadalcanal Feeder Roads Tranche 3	24	6	4	3	3	12	7	4
Guadalcanal Feeder Roads Tranche 4	24	6	4	3	3	12	7	4
Malaita Feeder Roads Tranche 2	24	6	4	3	3	12	7	4
Choiseul Bay Connectivity Road	28	5	2	4	5	12	6	4
Malaita Industrial Parks*	28	5	2	2	10	9	10	2

***Note:** Malaita Industrial Parks has been ranked lower after assessing the level of project readiness.

Table 5.5 reveals that a few notable projects did not get into the group of priority projects. It should be noted that this does not necessarily mean that these are not worthwhile projects. The SI NIIP specifically prioritises projects against achieving the NDS objectives, and there may be valid reasons why projects fall outside this set of judgements. Equally, these projects should be at the top of the list for future updates of the SI NIIP as changing circumstances could affect prioritisation results. Discussions and explanations for some of these are set out in Table 5.5 below.

Table 5.5 Key Projects Not in the Top Priorities

Project	Stage at Which Project did Not Qualify	Notes
MS3 - Development of Economic Growth Centres	Revised long-list	The Government's initiative for investments in all constituencies was included on the long-list as it is likely to include some infrastructure, and the overall budget is significant at SBD145m. However, it was decided that this initiative is more a policy than a project, and the details and scope of the investments are not clear enough for it to be considered as a project for SI NIIP.
MS5 - Malaita Industrial Parks	Top 19	Although this project reached the top priority group, it did not satisfy the check on project readiness as there are unresolved institutional and land issues. Because of this and difficulties in identifying potential funding, the project was deferred and put into the second category of priority projects.
S3 – Honiara Greenfield Port	Top 29	Development of the main international port at Honiara has been studied through a PRIF sponsored feasibility study. This study recommended remedial works (project S1) for the Port of Honiara in combination with a feasibility study to identify a possible alternative location for the Port, as it currently is located in the centre of Honiara. However SIG, with the support of JICA, have gone ahead with the detailed design for a new wharf at the current location (S2). As this project is likely to go ahead, a new Greenfield Port for Honiara is not a likely to be implemented in the medium term and has been deleted from the list of priority projects. A study to identify a possible new location for Honiara Port is included in the list of complementary studies.

The passage of projects through the SI NIIP process from long list to priorities is summarised in Table 5.6. This table shows that a number of projects in the energy sector were too small to be included on their own. After reviewing the priority list and in view of the low access to electricity in rural areas, the NDS Taskforce decided to adopt a more programmatic approach and add rural electrification as a

priority project to the list with lump sum allocations for projects to be identified in detail in sectoral master plans that are currently under preparation.

Table 5.6 From Long-list to Priorities

Key to symbols: □ - included and taken forward, ✖ - removed from active list, □ - carried forward for later inclusion

No.	Original Long-list	Revised List minus ongoing/ committed	Revised List >$14m	Prioritised Top 29	Top 19	Top 19 + ongoing/ committed
MS1	Isabel and Choiseul Infrastructure Development	□	□	✖		
MS2	Choiseul Township Urban Development	□	□	□	✖	
MS3	Development of 50 Economic Growth Centres	✖				
MS4	Honiara Urban Development	□	□	□	□	□
MS5	Malaita- Industrial Parks	□	□	□	□	✖
R1	Noro Munda Road (Western Province)	□				□
R2	Malaita North Road	□				□
R3	Honiara Feeder Roads	✖[1]				
R4	Honiara Highway Improvements	✖[1]				
R5	Guadalcanal Feeder Roads	✖[1]				
R6	Naro Hill –Lambi	□	□	□	□	□
R7	Berande-Aola Road (Guadalcanal)	□	□	□	✖	
R8	East Guadalcanal Bridges	□	□	✖		
R9	Malaita North Road - Further Phase	□	□	□	□	□
R10	Afio Road (Small Malaita)	□	□	✖		
R11	Radesifolomoe Road (Malaita)	□	✖			
R12	Temotu Roads	□	□	✖		
R13	DOMA Roads	□	□	✖		
R14a	Honiara Main Road Upgrade	□	□	□	□	□
R14b	Honiara City Centre Relief Road	□	□	✖		
R15	Guadalcanal Route Planning Studies	□	□	✖		
R16	Rennell Road	□	□	✖		
R17	Guadalcanal Feeder Roads Tranche 2	□	□	□	□	□
R18	Malaita Main Roads	□	□	□	✖	
R19	Honiara Feeder Roads	□	□	✖		
R20	Choiseul Bay Connectivity Road	□	□	□	✖	
R21	Kolobangara	□	□	✖		
R22	Guadalcanal Feeder Roads Tranche 3	□	□	□	✖	
R23	Malaita Feeder Roads Tranche 1	□	□	□	□	□
R24	Honiara Feeder Roads Tranche 2	□	✖			
R25	Tulagi Road	□	✖			
R26	Rendova Roads	□	□	✖		
R27	Bellona Roads	□	✖			
R28	Honiara City Roads post 2015	□	□	✖		
R29	Guadalcanal Feeder roads Tranche 4	□	□	□	✖	
R30	Gizo Island Roads	□	□	✖		
R31	Malaita feeder roads Tranche 2	□	□	□	✖	
R32	East Malaita New Roads	□	□	✖		
R33	Guadalcanal West Roads	□	□	✖		
R34	Guadalcanal East Roads	□	□	✖		
R35	West Makira Roads	□	□	✖		
R36	East Makira Roads	□	□	✖		
R37	Choiseul South Coast Roads	□	□	✖		
R38	Nendo Roads	□	□	✖		
R39	Resealing of Urban Roads	□	□	□	□	□
A1	Munda Airport Upgrade	□				□

No.	Original Long-list	Revised List minus ongoing/ committed	Revised List >$14m	Prioritised Top 29	Top 19	Top 19 + ongoing/ committed
A2	Nusatupe Airport Upgrade	□				□
A3	Henderson Airport Apron Upgrade	□	□	□	□	□
A4	Provincial Airfields upgrade	□	□	□	□	□
A5	Isabel Airfields	□	□	✖		
A6	Lata Airfield	□	□	[2]		
A7	Kirakira Airfield	□	□	[2]		
A8	Lomlom Airfield	□[1]				
A9	Parasi Airfield	□aras				
S1	Honiara Port - remedial works	□	□	□	□	□
S3	Honiara New Greenfield Port	□	□	□	✖	
S2	Honiara Port Extension (new wharf)	□	□	□	□	□
S4	2013 Replacement Wharves	□	□	□	□	□
S5	Yandina Wharf	□	✖			
S6	Construction of Buala Seawall	□	✖			
S7	DMSP Wharves Lot 1	□				□
S8	DMSP Wharves Lot 2	□				□
S9	Replacement Wharves Tranche 2	□	□	✖		
S10	Isabel Wharf (new)	□	✖			
S11	Choiseul Wharf (new)	□	✖			
S12	New Wharves Tranche 1	□	□	✖		
S13	New Wharves Tranche 2	□	□	□	□	□
S14	New Wharves Tranche 3	□	□	✖		
S15	Maritime Navigation Aids	□ar	✖			
WS1	Malu'u and Afio Water Supply	□	✖			
WS2	Honiara and Auki Water Supply Improvement	□				□
WS3	Honiara NRW	□				□
WS4	Solomon Islands Water Authority RAP Project	□				□
WS5	Gizo Water Supply	□	□	□	✖	
WS7	Water Supply 2 Year Plan	□	□	□	□	□
WS9	WASH projects	□	□	□	□	□
WS10	Tingoa Water Supply	□	✖			
SW1	Gizo and Honiara Solid waste management	□	✖			
SW2	Provincial Sanitary Landfills	□	□	□	□	□
E1	Auki Bio-fuel Energy Studies	□	✖			
E2	Outer Island Renewable Energy	□				□
E3	Gizo Solar Photovoltaic System	□	✖			
E4	Honiara SIEA Genset Upgrade	□	□	□	□	□
E5	Tina Hydro Project (Guadalcanal)	□	□	□	□	□
E6	Paraiso Thermal Power	□	□	✖		
E7	Choiseul Province Solar Project	□	✖			
E8	Buala and Malu'u -Hydro-Plants	□	✖			
E9	Nafinua and Ladeabu Mini-Hydro	□	✖			
E10	Rennell Solar Power	□	✖			
E11	Savo Geothermal	□av	✖			
E12	Rural Electrification Program					□u
ICT1	Submarine fibre optic cable (Honiara, Noro, Auki)	□				□
ICT2	Remote Communities ICT	□	□	□	✖	

Notes: [1] Work started on some roads. [2] Included in Provincial Runways

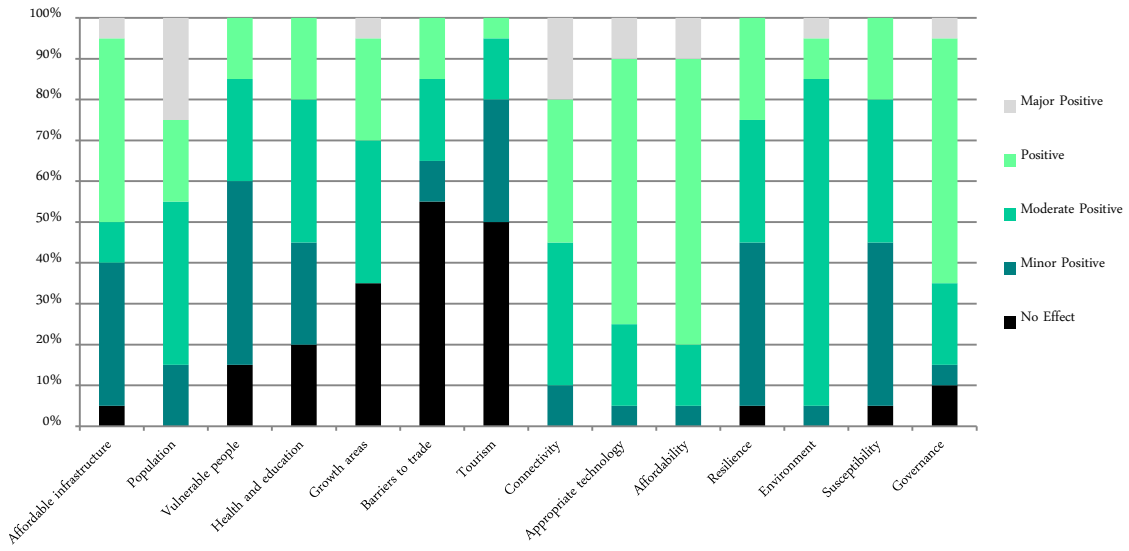
5.3 Analysis of Priority Projects

5.3.1 RESPONDING TO NDS OBJECTIVES AND PROVINCIAL AND SUB-SECTOR BALANCE

Figure 5.1 below summarises the performance of the projects as a whole in meeting the 14 criteria used in the prioritisation framework. It is evident that the only criteria where the majority of responses are poor are removing barriers to trade and promoting tourism. This is expected, as the issues facing the Solomon Islands in relation to these criteria are wide ranging, not just related to infrastructure.

Overall, this data shows that the top 19 projects, if implemented as currently planned, would make a significant contribution to delivering the NDS objectives. While it is impossible to say, with any certainty, to what extent the NDS objectives would be achieved by delivering these 19 projects, it is clear that without them, it will be difficult to achieve any.

Figure 5.1 Performance of Projects against Criteria



The range of projects within the list of top priorities, cover all provinces and infrastructure sectors. There are also a number of projects that have nationwide benefits, such as the Honiara Port projects and the Henderson International airfield.

While it was not a specific criterion within the prioritisation framework, it is important that the SI NIIP priorities reflect the need to ensure provincial equity between investment decisions. In purely economic terms, it is likely that the highest priorities for investment will be concentrated around existing population and economic centres such as Honiara, Auki, and Gizo. As set out in the NDS, the SIG wants to see development that ensures an appropriate spread of investment between:

- urban and rural areas;
- provinces;
- sectors; and
- the main objectives of the NDS.

The SIG considers provincial equity extremely important as this is a key element in building national identity and cohesion. Table 5.7 below summarises the impact of the top 18 priority projects by province. This shows that in general terms, the priority projects cover all provinces at some level with a broadly appropriate spread for the smaller provinces. When considering provincial balance it should also be noted that if the picture was completed with projects below the SBD14 million cut-off, and also

with other types of infrastructure such as education and health facilities, the distribution would be more even.

Table 5.7 Priority Projects by Province

Project	Sector	Cho	Wes	Isa	Cen	Ren	Gua	Mal	Mak	Tem
Henderson Apron Upgrade	Aviation									
Resealing of Urban Roads	Roads									
Provincial Runways Upgrade	Aviation									
Honiara Main Roads	Roads									
Honiara Port Remedial Works	Maritime									
Malaita North Road	Roads									
Honiara Urban Devt	Multi-sector									
Tina Hydropower	Energy									
Provincial Sanitary Landfills	Solid Waste									
Honiara SIEA Genset Upgrade	Energy									
2013 Replacement Wharves	Maritime									
New Wharves Tranche 2	Maritime									
WASH Projects	Water									
Guadalcanal Feeder Roads Tranche 2	Roads									
Malaita Feeder Roads Tranche 1	Roads									
Water Supply 2 Year Plan	Water									
Naro Hill - Lambi Road	Roads									
Rural Electrification Program	Energy	To be determined								
Honiara Port Extension (new wharf)	Maritime									

Notes: Colours for illustrative purposes only – separate colours for each province and grey for projects that will benefit all users
* For the purposes of SI NIIP analyses Honiara has been included in Guadalcanal Province.

5.3.2 SENSITIVITY TESTS

Given the potentially high degree of subjectivity in the assessment of the scoring, and in the weights that should be applied, it was considered important to assess the robustness of the prioritisation results. To do this, the prioritisation was re-visited as follows:

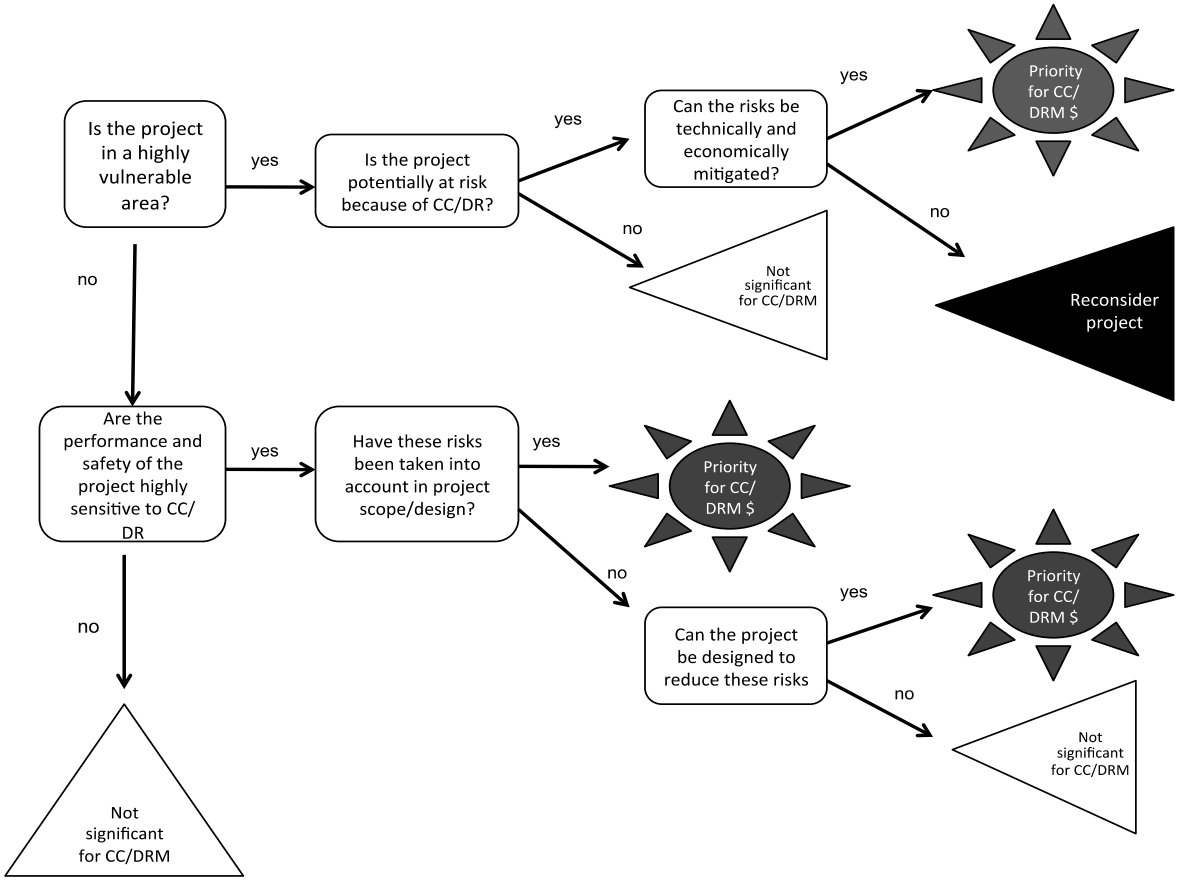
- Removing the environment and climate change criteria:
  - This resulted in higher priorities for a number of road projects, while projects relating to water supply, waste management, and integrated development tended to fall down the priority list.
- Increasing the score given to the 'major positive' category from 5 to 7:
  - This had minimal impact on the relative priorities, although the national scale projects and integrated development projects rose up the priority list a little.
- Including only the economy and infrastructure criteria:
  - This tends to result in large increases in the priority given to road projects, with water supply, waste management, and energy projects falling down the priority list.

5.4 Climate Change and Disaster Risk Management Analysis of Priority Projects

A decision tree analysis was used to identify 10 projects requiring further analysis related to climate change. Project briefs for these ten projects can be found in Appendix B. The performance of these projects can be affected because: (i) they have some sensitivity to climate and disasters (for example, hydropower projects are more highly dependent on rainfall patterns than the installation of GenSets); and (ii) they are located in more highly exposed areas, such as earthquake zones and cyclone prone areas.

Figure 5.2 below illustrates the decision making process in identifying which projects to select.

Figure 5.2 Climate Change and Disaster Risk Management Decision Tree



Using the decision tree analysis described above, the priority projects to be given further consideration for climate change and disasters are as follows:

- Honiara Urban Development
- Malaita North Road Further Phase
- Henderson Airport Apron Upgrade
- Provincial Airfields Upgrade
- 2013 Replacement Wharves
- New Wharves Tranche 2
- Honiara Port Extension (new wharf)
- Water Supply Two-Year Plan
- WASH Projects
- Provincial Sanitary Landfills
- Tina Hydropower

These projects are located in highly vulnerable areas, where their performance is dependent on changes in climate and for which solutions and technically and economically feasible.

The secondary priorities are projects located in highly vulnerable areas, but their performance is not highly dependent on changes in climate.

- Honiara Port Remedial Works
- Remote Communities ICT

The third set of priorities are those where the locations that are not highly vulnerable nor is performance highly dependent of changes in climate:

- Honiara Main Roads
- Resealing of Urban Roads

- Honiara SIEA Genset Upgrade

5.5 Priority Programmes and Complementary Activities

In each sub-sector the priority programmes are the combination of on-going projects and programmes, proposed projects, along with complementary activities. These are summarised in the tables below.

It is important to stress that the lists of priority projects reflect the results of the prioritisation process based on currently available information. There is considerable uncertainty as to the context of each project due to the lack of spatial planning (as explained elsewhere in the report) and also the lack of a consistent level of sector planning. Note also that there are inconsistent levels of information on each project, and that projects are in different stages of preparation.

Complementary activities are the measures that should be undertaken alongside the implementation of the projects. These include a variety of supporting mechanisms varying from technical outputs such as plans and regulations, to institutional strengthening, particularly capacity building in management. These complementary programmes only include those that are directly related to the planning, management, and use of the economic infrastructure assets covered by the SI NIIP. They do not include other indirect measures such as resolution of land issues, hygiene education programmes, road safety training etc.

Table 5.8 Multi-sector, Sector Priority Programme

	No.	Project	Estimated Cost (SBDm)	Estimated timing
Proposed Priority Projects	MS4	Honiara Urban Development	140	2014-2020
Ongoing/Committed Projects		-		
Complementary Activities		Prepare National Spatial Development Plan to provide guidance on locational priorities and linkages across all sectors		
		Prepare Provincial Spatial Development Plans		
		Provide TA support to MDPAC for management of SI NIIP		
		Provide TA support to MoFT to enable the implementation of the SI NIIP within the Debt Management Strategy and to enable the extension of the prioritisation methodology to all infrastructure		
		Prepare an integrated land use and transportation master plan for Greater Honiara to guide future development and management of infrastructure		
		Green infrastructure study. Starting with greater Honiara area assess current green infrastructure components and measures required to protect them.		

Table 5.9 Transport - Land, Sector Priority Programme

	No.	Project	Estimated Cost (SBDm)	Estimated timing
Proposed Priority Projects	R6	Naro Hill - Lambi Road	84.7	2013
	R9	Malaita North Road - Further Phase	87.3	2013
	R14a	Honiara Main Road Upgrade Project	110.0	2014-2020
	R17	Guadalcanal Feeder Roads Tranche 2	49.4	2014-2020
	R23	Malaita Feeder Roads Tranche 1	28.9	2015
	R39	Resealing of Urban Roads	100.0	2015
Ongoing/Committed Projects	R1	Noro Munda Road (Western Province)	40.9	2012 -
	R2	Malaita North Road	22.0	2012 -
Complementary Activities		Develop road standards and publish national Road Standards Manual		
		Undertake traffic management study in Honiara		
		Undertake studies into options for raising revenue (such as fuel levies) to help pay for maintenance costs		

Table 5.10 Transport - Aviation, Sub-sector Priority Programme

	No.	Project	Estimated Cost (SBDm)	Estimated timing
Proposed Priority Projects	A3	Henderson Airport Apron Upgrade	14.0	2013
	A4	Provincial Airfields Upgrade	192.0	2013-2020
Ongoing/Committed Projects	A1	Munda Airfield Upgrade	38.5	2012-2014
	A2	Nusatupe Airfield Upgrade	26.1	2012-2014
Complementary Activities		Consider privatisation of Solomon Airlines - in line with SIG policy - with the aim of allowing it to take on responsibility for airfield management		
		Implement proposals to outsource the development and management of international and domestic airfields		
		A detailed flood protection strategy developed for Henderson Airfield, including over the short-term, medium-term and long-term		
		Undertake scoping study for all provincial airfields including introduction of airfield classification system		
		Undertake studies into options for raising revenue (such as fuel levies) to help pay for maintenance costs		

Table 5.11 Transport - Shipping, Sector Priority Programme

	No.	Project	Estimated Cost (SBDm)	Estimated timing
Proposed Priority Projects	S1	Honiara Port - Remedial works	40.0	2014
	S2	Honiara Port Extension (new wharf)	180.0	2014-2015
	S4	2013 Replacement wharves	25.0	2013
	S13	New wharves - tranche 2	68.0	2015
Ongoing/Committed Projects	S7	DMSP Wharves Lot 1	52.0	2012 – 2013
	S8	DMSP Wharves Lot 2	73.0	2013 - 2014
Complementary Activities		Consider privatisation of SIPA to enable it to access alternative financing streams and bring in international management and operating skills		
		Implement a planning/feasibility study to identify a possible alternative location for the port of Honiara		
		Develop in integrated coastal zone management and zoning plan to minimise ecological damage to surrounding area, which would further exacerbate the vulnerability of other user groups along the coastline.		
		Undertake studies into options for raising revenue (such as fuel levies) to help pay for maintenance costs		

Table 5.12 Water and Sanitation, Sector Priority Programme

	No.	Project	Estimated Cost (SBDm)	Estimated timing
Proposed Priority Projects	WS6	Water Supply 2 Year Plan	42.0	2013 - 2014
	WS7	WASH projects	142.2	2014-2020
Ongoing/Committed Projects	WS2	Honiara and Auki Water Supply Improvement Project	175.0	2012-2014
	WS3	Honiara NRW Project	15.0	2013
	WS4	Solomon Islands Water Authority RAP Project	14.0	2012 - 2013
Complementary Activities		Prepare water supply and sanitation national sub-sector plan		
		Assess alternative corporate structures for water supply outside Honiara and Auki, with a view to establishing sustainable management mechanisms for other urban centres		
		Establishment of independent regulator to monitor and uphold service standards		

	No.	Project	Estimated Cost (SBDm)	Estimated timing
		Develop and implement a plan to increase alternative water sources and capture and storage methods such as rainwater harvesting as well as assess whether current storage capacity is adequate Identify the long term sustainabilty of water resources, including under a climate change scenario, and potential pressures on water demand, and include these in the design of water supply and sanitation infrastructure and management.		

Table 5.13 Solid Waste Management, Sector Priority Programme

	No.	Project	Estimated Cost (SBDm)	Estimated timing
Proposed Priority Projects	SW2	Provincial Sanitary Landfills	15.0	2015-2020
Ongoing/Committed Projects		-		
Complementary Activities		Prepare SWM sub-sector plan based on the National Solid Waste Management Strategy Capacity building support to Honiara City Council for SWM TA support to undertake assessment of potential for developing commercial recycling and opportunities for PPP		

Table 5.14 Energy/Power, Sector Priority Programme

	No.	Project	Estimated Cost (SBDm)	Estimated timing
Proposed Priority Projects	E4	Honiara SIEA Genset Upgrade	150.0	2013-2015
	E5	Tina Hydropower Project	770.0	2015 - 2019
	E12	Rural Electrification	100.0	2016 - 2020
Ongoing/Committed Projects	E2	Outer Islands Renewable Energy	39.0	2012-2015
Complementary Activities		Review the electricity market structure and regulation to establish the need for and feasibility of de-regulation to allow entry of private generators and retail suppliers, particularly outside Honiara Establishment of independent regulator to monitor and uphold service standards Undertake national assessment of renewable energy options starting with the study commissioned by SIEA Prepare energy sub-sector plan based on the National Energy Framework and work out details of the proposed rural electrification program.		

Table 5.15 ICT, Sector Priority Programme

	No.	Project	Estimated Cost (SBDm)	Estimated timing
Proposed Priority Projects		-		
Ongoing/ Committed Projects	ICT1	Submarine fibre optic cable (Honiara, Noro and Auki)	546.0	2013-2015
Complementary Activities		Prepare Telecommunications/ICT Sector Plan setting out needs and priorities by island and province		

5.6 Summary of Priority Projects

The proposed priority projects identified through the SI NIIP prioritisation process are summarised below by sub-sector and by type. This demonstrates that a high proportion of the projects include rehabilitation and upgrading, rather than being new construction.

Table 5.16 Consolidated List of Proposed Priority Projects
(not including ongoing and committed projects)

Sub-sector	Project Name	Type	Estimated Cost SBDm	Estimated Timing
Multi-sector				
MS4	Honiara Urban Development	R,U,N	140.0	2014-2020
			140.0	
Transport - Land				
R6	Naro Hill - Lambi Road	R,U	84.7	2013
R9	Malaita North Road - Further Phase	R,U	87.3	2013
R14a	Honiara Main Road Upgrade Project	R,U	110.0	2014-2020
R17	Guadalcanal Feeder Roads Tranche 2	R,U	49.4	2014-2020
R23	Malaita Feeder Roads Tranche 1	R,U	28.9	2015
R39	Resealing of Urban Roads	R,U	100.0	2015
			460.3	
Transport - Aviation				
A3	Henderson Airport Apron Upgrade	R,U	14.0	2013
A4	Provincial Airfields Upgrade	R,U	192.0	2013-2020
			206.0	
Transport - Shipping				
S1	Honiara Port - Remedial works	R,U	40.0	2014
S2	Honiara Port Extension – new wharf	N	180.0	2014-2015
S4	2013 Replacement wharves	N	25.0	2013
S13	New wharves - tranche 2	N	68.0	2015
			433.0	
Water and Sanitation				
WS6	Water Supply 2 Year Plan	R,U,N	42.0	2013 - 2014
WS7	WASH projects	U,N	142.2	2014-2020
			184.2	
Solid Waste Mgt				
SW2	Provincial sanitary landfills	U,N	15.0	2015-2020
			15.0	
Energy/Power				
E4	Honiara SIEA Genset Upgrade	U,N	150.0	2013-2015
E5	Tina Hydropower	N	770.0	2015 - 2019
E12	Rural Electrification Program	U,N	100.0	2016 - 2020
			1,020.0	

Key to project type: R-Rehabilitation, U-Upgrade, N-New

6 Funding Strategy

6.1. Medium Term Financial Strategy

The Medium Term Financial Strategy (MTFS) is a five-year rolling fiscal strategy document produced by the SIG each year to inform the budget process. The document outlines progress made in meeting its' two main objectives:

- structural reform to make the Solomon Islands an easy and reliable place to do business and invest; and
- an affordable and sustainable Government budget, which limits debts to a manageable level, improves Government decision making processes, and focuses on achieving the country's development goals.

In pursuing this second aim, the MTFS commits the SIG to a series of actions, ensuring that Government expenditure growth is limited to the rate of revenue growth, committing 10 per cent of revenue to debt servicing, limiting borrowing where debt sustainability targets are not achieved, and adopting fiscal measures that aim to manage demand to a level which is consistent with external viability.

The MTFS is supported by the Core Economic Working Group's (CEWG) Economic and Financial Reform Programme. The CEWG is a partnership between the SIG and key development partners to guide the implementation of high level policy and technical assistance. The Economic and Financial Reform Programme has a number of elements relating to different aspects of policy development and implementation, financial management, and budgeting. The reform programme commits SIG and development partners to:

- establish a process for the prioritisation of projects in the NDS with a three to five year pipeline;
- operate within the principles of the Debt Management Strategy;
- ensure that expenditure on infrastructure maintenance remains at the level budgeted for 2012; and
- limit fiscal support to SOEs to funding allocated under the CSO framework and ensuring that these businesses are managed sustainably.

6.2. SI NIIP Funding Strategy

In line with the MTFS, the strategy for financing economic infrastructure priority projects in the SI NIIP has been developed in close cooperation with MoFT. This has entailed analysis of the SIG's own funding projections and potential contributions from SOEs, the private sector, and development partners. The funding strategy is guided by the following principles:

a. Ensure that the available funding for economic infrastructure from the SIG and its development partners roughly matches the total capital and maintenance expenditures for the proposed investments in the SI NIIP.

b. Encourage the private sector to invest in economic infrastructure and bring together public and private funding for infrastructure.

c. Ensure that funds are available for the adequate operation and maintenance of new infrastructure and that analyses of proposed projects is based on the 'whole of life costs' of infrastructure assets.

d. Stimulate state owned utilities to operate in a financially sustainable manner and recover at least the costs of operation and maintenance of economic infrastructure service delivery from user fees, allowing for lifeline tariffs for vulnerable groups and stimulating the economic use of infrastructure services.

e. Stimulate the use of CSOs as an instrument to achieve the social and community objectives of the government in a way that will not negatively impact on the financial performance of SOEs.

f. Adhere to the principles of the Debt Management Strategy with the aim of ensuring that debt distress as experienced in the past will not return; use loans only for investments that will enhance the productive capacity of the country and for high priority projects and infrastructure identified in the NDS.

The next sections of this chapter explore the total funding requirements for implementing the SI NIIP including the costs of maintenance and the various potential sources of funds resulting in an estimated funding envelope for the SI NIIP. Subsequently, a decision tree presents the above principles and a set of recommendations for the funding of each high priority project will be advanced.

6.3. Funding Requirements

6.3.1 ESTIMATING ANNUAL CAPITAL COSTS

In assessing the funding requirements to support the SI NIIP, the timing and programming of the priority projects needed to be identified. This has been an iterative process and the resulting implementation schedule is summarised in the table below.

Table 6.1 Programming of Priority Projects
(including ongoing and committed projects)

Project	SBDm	Status	2013	2014	2015	2016	2017	2018	2019	2020
Noro - Munda Road	41	O	25							
Malaita North Road	22	O	11							
Munda Airfield Upgrade	39	O	30							
Nusatupe Airfield	26	O	26							
Lomlom Airfield	10	O								
DMSP Wharves Lot 1	52	O	35							
DMSP Wharves Lot 2	73	O	36.5	36.5						
Honiara and Auki Water Supply	175	O	100							
Honiara Non Revenue Water	15	O	7.5							
SIWA RAP Project	14	C	7							
Outer Islands Renewable Energy	40	C		20	20					
Submarine Cable	542	C	271	271						
Rural Electrification Program	100	P				20	20	20	20	20
Honiara Main Road	110	P			22	22	22	22	22	
Henderson Apron Upgrade	14	P	14							
Resealing of Urban Roads	100	P	20	20	20	20	20			
Provincial Airfield Upgrading	192	P		38.4	38.4	38.4	38.4	38.4		
Malaita North Road Further Phase	90	P	30	30	30					
Honiara Port Remedial Works	40	P		40						
Honiara SIEA Genset Renewal	150	P	50	50	50					
Honiara Urban Development	140	P		10	22	22	22	22	22	22
Tina Hydropower	770	P			154	154	154	154	154	
Provincial Sanitary Landfills	15	P			5	5	5			
WASH Projects	142	P		20	20	20	20	20	20	20
2013 Replacement Wharves	25	P		12.5	12.5					
Water Supply 2 Year Plan	42	P	21	21						
Honiara Port Extension (new wharf)	180	P		90	90					
New Wharves Tranche 2	68	P			34	34				
Guadalcanal Feeder Roads Tranche 2	50	P			25	25				
Malaita Feeder Roads Tranche 1	29	P			29					
Naro Hill - Lambi Road	85	P				42.5	42.5			
Annual Total			684	660	572	403	344	276	238	62

Key to status: O - Ongoing, C - Committed, P – Proposed
Note: some projects have incurred expenditure prior to 2013, hence the figures in each row may not add up.

The table shows that the programme for 2013 is already well defined, as would be expected. The majority of funding for these projects has been committed, particularly with the recent approval of the transport sector programme by the NTF Board. In future years the degree of definition falls significantly. Projects to be implemented in these years are yet to be fully scoped, or are at the feasibility study stage, with key details still be to be resolved. The total funding requirement for capital costs for ongoing and proposed projects amounts to about SBD3.2 billion over the next eight years.

Many of the projects identified as priorities in the SI NIIP are expected to be implemented over a number of years because of their scale and complexity. At present, this creates a number of issues relating to the budgeting and accounting systems within the SIG, which currently make multi-year projects difficult to implement. While the government expects to remove this restriction as part of upcoming financial administration legislation, at the time of writing, it will be necessary to identify alternative methods of scheme delivery.

This multi-year packaging is essential, as many projects will be unaffordable within a single year's investment budget, particularly where a significant amount of the SIG or concessional loan funding is required. It is therefore necessary to utilise more special funds or special purpose vehicles to enable the delivery of the projects. The NTF is a good example of such a fund, where annual budget constraints are partially overcome by applying specific regulations which enable the implementation of multi-year projects.

6.3.2 ESTIMATING THE WHOLE OF LIFE COSTS

Existing SIG funding is heavily constrained, which has meant that over many years, budgets for operating and maintenance costs have not always been available. At the same time, even when funding has potentially been available, maintenance in particular has not been prioritised. This has led to a situation where a large proportion of the country's existing infrastructure has fallen into disrepair as maintenance has been delayed.

A key objective of the SI NIIP is to identify a sustainable infrastructure investment plan. This should make appropriate allowances for ongoing costs as well as initial capital costs. The SI NIIP must therefore incorporate these 'whole of life costs'.

For the purposes of the SI NIIP whole of life costs have been assumed to include:

a. Concept development and planning – the cost of planning studies, developing the design concept, and associated studies such as environmental impact assessments.
b. Detailed design and documentation – the cost of detailed designs and specifications, and contract documentation.
c. Construction or supply – construction or supply cost of the infrastructure, including allowance for escalation and contingencies.
d. Contract supervision – the cost of ensuring that the work is done to the required standard in accordance with contract requirements.
e. Operation and maintenance – the cost of operating the infrastructure over its useful life, and the cost of maintaining the infrastructure in good condition (this includes both routine maintenance involving small-scale activities undertaken regularly, and periodic maintenance involving larger scale activities undertaken at longer intervals).
f. Disposal or decommissioning – the cost of disposal of the asset which can include the cost of decommissioning, removal and clean-up.

Project costs have been provided from a variety of sources for the SI NIIP and it has been assumed that the figures include items (a) to (d) above, but that they do not include (e) and (f).

In order to derive estimates of maintenance costs previous NIIPs for other PICs[35] have applied annual rates based on a percentage of the initial project cost. These are three per cent for rural roads and two

[35] See the NIIPs for Tonga and Vanuatu.

per cent for other infrastructure. It is thought that these rules of thumb are applicable to the Solomon Islands also.

Based on the rates suggested above, Table 6.2 provides a summary of the maintenance implications of the priority projects. The table presents a snapshot of the annual maintenance task (in financial terms) assuming all projects are implemented.

Table 6.2 Estimated Maintenance Costs to 2023 for Priority Projects

Sub-sector	Project	Project Type	Estimated Timing	Maintenance Rate p.a.	Estimated Project Cost SBDm	Maintenance Cost p.a. SBDm	Up to 2023 SBDm
Multi-sector							
MS4	Honiara Urban Development	R,U,N	2014-2020	2%	140.0	2.8	8.4
	Sub total						**8.4**
Transport - Land							
R6	Naro Hill - Lambi Road	R,U	2013	3%	84.7	2.5	25.4
R9	Malaita North Road - Further Phase	R,U	2013	3%	87.3	2.6	26.2
R14a	Honiara Main Road Upgrade Project	R,U	2014-2020	2%	110.0	2.2	6.6
R17	Guadalcanal Feeder Roads Tranche 2	R,U	2014-2020	3%	49.4	1.5	4.4
R23	Malaita Feeder Roads Tranche 1	R,U	2015	3%	28.9	0.9	6.9
R39	Resealing of Urban Roads	R,U	2015	2%	100.0	2.0	16.0
	Sub total						**60.2**
Transport - Aviation							
A3	Henderson Airport Apron Upgrade	R,U	2013	2%	14.0	0.3	2.8
A4	Provincial Airfields Upgrade	R,U	2013-2020	2%	192.0	3.8	11.5
	Sub total						**14.3**
Transport - Shipping							
S1	Honiara Port - Remedial works	R,U	2014	2%	40.0	0.8	7.2
S2	Honiara Port Extension (new wharf)	N	2016	2%	180.0	3.6	21.6
S4	2013 Replacement wharves	N	2013	2%	25.0	0.5	5.0
S13	New wharves - tranche 2	N	2015	2%	68.0	1.4	10.9
	Sub total						**44.7**
Water Supply and Sanitation							
WS6	Water Supply 2 Year Plan	R,U,N	2013-2015	2%	70.0	1.4	11.2
WS7	WASH projects	U,N	2014-2020	2%	142.2	2.8	8.5
	Sub total						**19.7**
Solid Waste Management							
SW2	Provincial sanitary landfills	U,N	2015-2020	2%	15.0	0.3	0.9
	Sub total						**15.0**
Energy/Power							
E4	Honiara SIEA Genset Upgrade	U,N	2013-2015	2%	150.0	3.0	24.0
E5	Tina Hydropower	N	2013-2016	2%	770.0	15.4	107.8
E12	Rural Electrification Program	U,N	2016-2020	2%	100.0	2.0	5.0
	Sub total						**136.8**
						TOTAL	**299.1**

Key: Potential PPP or private sector funding

As can be seen from Table 6.2, the total addition to the maintenance costs as a result of SI NIIP implementation (to the end of the plan period, 2023) amounts to around SBD295.5 million and eventually (once all projects are completed) an amount of some SBD50 million per year. About half of this amount relates to potential PPPs and private sector projects. It is SIG policy that projects involving

private investment, PPPs, or SOEs should not require support in relation to funding of operation and maintenance.

This leaves an amount of SBD130 million in additional maintenance expenditure over the next 10 years to be financed by the national budget. It should be noted that the size of this figure to some extent understates the maintenance burden. This is because the maintenance costs for the priority projects have been assumed to start when the projects are completed. With several projects due for completion around 2020, they incur only three years worth of annual maintenance costs to 2023.

6.3.3 FUNDING FOR MAINTENANCE

There is a substantial maintenance task in relation to existing infrastructure and this will increase as the SI NIIP is implemented. However, many SI NIIP projects involve deferred maintenance and/or upgrading of existing infrastructure. In theory, this should mean that the resulting maintenance task replaces the pre-project maintenance task, with little net addition to maintenance requirements (or savings in some cases). However, in practise, very little is currently being spent on maintenance and hence maintenance savings will be limited.

While the immediate constraint is the capacity to plan and implement maintenance, there will also be a funding constraint given the size of the maintenance task. It is important to secure sufficient funding for adequate operation and maintenance in the design of new projects. The following sources for funding of maintenance are recommended for the various sub sectors:

Sub Sector	Sources for funding of Maintenance
Roads	National Transport Fund (NTF)
Aviation (international) Aviation (domestic)	User fees User fees/NTF
Ports (International) Ports (domestic)	User fees User fees/NTF
Water Supply & Sanitation (Urban) Water Supply & Sanitation (Rural)	User fees User fees, community schemes, subsidies
Solid Waste Management	User fees, community schemes, subsidies
Urban Power Supply Rural Electrification Programs	User fees User fees, community schemes, subsidies

Those sectors that are managed by the private sector or by SOEs such as the SIWA, SIPA, and SIEA will be encouraged to charge user fees that adequately cover for O&M costs. The NTF could become a vehicle for channelling funds for maintenance of domestic roads, wharves or airports, collected from fuel taxes, road taxes, or by other means. These systems still need to be developed. For Rural Water and Sanitation, Solid Waste Management, and Electrification, a combination of user fees, community based maintenance schemes, and subsidies will need to be incorporated in project design.

Infrastructure maintenance could compete more successfully for funding in the budget process if the entities responsible could better demonstrate efficiency and effectiveness in the use of budget funding. As the capacity to plan and manage maintenance improves, the Government has a range of options available to boost maintenance funding through reallocation within the budget, new revenue measures to increase the overall size of the budget, and perhaps building the need for enhanced maintenance funding into planning and negotiating budget support for the Solomon Islands.

6.4. Recent Infrastructure Funding

6.4.1 2011/2012 BUDGETS

Table 6.3 below summarises expenditure on infrastructure development projects in the Solomon Islands from all sources, including SIG and development partners. The breakdown by Ministry shows that nine different Ministries have been involved in economic infrastructure provision during the past two years. While some of this expenditure is related scheme development, land purchase, or enabling works, it is important to identify the full level of funding. Total budgeted expenditure for 2012 was expected to be SBD775 million, a rise of 23 per cent from the 2011 budget.

Table 6.3 2011 and 2012 Economic Infrastructure Project Funding (SBD million)

Ministry	Title	Source	2011 budget	2011 actual	2012
Health	Water and Sanitation Program Development	Australia	12.2	12.2	12.2
Health	Provincial Rural Water Supply & San. Prog.	SIG	2.5	2.5	5.0
Infrastructure	Solomon Islands Road Improvement Programme (SIRIP)	Australia	32.6	32.6	16.3
Infrastructure	Rapid Employment Project	World Bank	16.1	15.6	17.9
Infrastructure	Solomon Islands Transport Sector Based Approach	Australia	70.9	70.9	59.3
Infrastructure	Solomon Islands Road Rehabilitation Project	EU(EDF10)	0	0	11.1
Infrastructure	PCERP (completed), SIRIP (active), Transport Sector Development	NZ (Bilateral)	44.9	9.9	55.5
Infrastructure	SI Road Improvement Program I (SIRIP I)	ADB	0.5	0.6	0.1
Infrastructure	SIRoad Improvement Program II (SIRIP II)	ADB	46.2	43.4	58.6
Infrastructure	Transport Sector Development Program	ADB	11.7	11.0	28.8
Infrastructure	Domestic maritime support project and technical support programme	ADB	7.4	2.6	35.5
Infrastructure	Emergency Assistance Project	ADB	7.2	3.8	0
Infrastructure	Construction of Auki Market and Jetty	Japan	37.5	101.2	0
Infrastructure	Buala-Garana River Road Project	SIG	0	0	4.0
Infrastructure	Support to Eco Growth Centres - Malaita	SIG	0	0	4.0
Infrastructure	Rural Transport Infra Policy Program	SIG	0	0	1.6
Infrastructure	National Transport Fund Program	SIG	0	0	32.0
Infrastructure	Provincial Mkts & Jetties Program - Auki	SIG	0.88	0.3	1.8
Infrastructure	SIG Rural Transport Infrastructure	SIG	14.5	11.6	15.5
Infrastructure	Green Terrace Redevelopment Program	SIG	1.5	0	6.0
Office of PM	Improvement of radio Broadcasting network on SIBC	Japan	28.5	28.5	37.1
Provincial	Doma Township Project	SIG	0	0	2.0
Provincial	Choiseul Township Development Project	SIG	3.5	3.5	8.0
ICT	Renovation of Honiara International Airport Terminal	Japan	1.7	1.7	0
ICT	Pacific Regional ICT Connectivity	ADB	0	0	7.6
ICT	Telecom & ICT Development Project	World Bank	10.8	9.4	11.8
ICT	Rehabilitation & Construction of Provincial Airfields Program	SIG	10.0	12.7	25.0
ICT	Rehab of Marau, Avu Avu & Babanakira Airstrips Proj	SIG	7.6	3.1	0
Commerce	Bina Industrial and Harbour Development Project	SIG	1.0	0.1	5.0
Commerce	Suava Bay Economic Growth Centre	SIG	6.0	0.1	4.0
Commerce	Noro Industrial Development Project	SIG	6.0	1.3	1.0
Mines, Energy	Improvement of Water Supply System in Honiara and Auki Proj	Japan	58.8	145.0	117.6
Mines, Energy	Promoting Renewable Energy Prog	ADB	4.0	30.5	0
Mines, Energy	Solomon Islands Sustainable Energy Prog	World Bank	12.1	11.7	9.4
Mines, Energy	Urban Water Support Prog	Australia	0.7	0.7	1.4
Mines, Energy	Solomon Islands Urban Water Supply	Australia	0	0	3.3
Mines, Energy	Community Micro Hydro Feas. Studies Prog	SIG	0	0	0.6
Mines, Energy	Water supply systems in Honiara and Auki	SIG	8.0	0	6.0
Mines, Energy	Constituency Renewable Rural Electricity Prog	SIG	5.0	0	10.0
Rural Devt	Constituency water supply & san.Program	SIG	0	0	15.0
Rural Devt	ROC Constituency Micro-Project Fund	ROC	10.0	5.2	10.0
Rural Devt	Millennium Development Fund	ROC	20.0	20.8	20.0
Rural Devt	ROC support to Constituency Development	ROC	20.0	18.3	20.0
	Total		**608.8**	**629.3**	**775.4**

Source: Ministry of Finance and Treasury

The amount for infrastructure funding from various sources is difficult to estimate, as a significant proportion of the funding is provided through general or sector support. However, the SIG budget sets out a series of specific project budget headings which have been used to produce Table 6.3 above. From this data, it has been possible to estimate the amounts provided by the SIG and the main development partners. This data shows that for 2011 and 2012 the funding budgets were:

Source		SBD Million
Solomon Island Government	182	
Asian Development Bank	227	
AusAID	323	
European Union	11	
JICA		431
New Zealand Aid Programme	65	
Republic of China	94	
World Bank		76
Total		1,409

This translates into an average of about SBD 700 million per year for economic infrastructure.

6.5. Leverage Private Sector Involvement

A key aspect of SIG policy is the aim of encouraging private sector investment in economic infrastructure. Bringing together public and private funding for infrastructure is a relatively new concept in the Solomon Islands, but one which has been utilised in a number of recent investments. There are projects which are not only better implemented by the private sector, because of wider skill bases, access to alternative funding streams, improved efficiency in service delivery or freedom in decision making, but which also require no SIG funding. Recent examples include the establishment of a second mobile phone network, which is regulated by the SIG has been funded by BeMobile.

Bringing in the private sector will also assist the SIG to meet the extensive infrastructure requirements, set out in this and other documents. The estimates in the SI NIIP demonstrate that the infrastructure requirement is many times larger than the available funding could cover. At present, it is estimated that private sector organisations could have more than SBD100 million available to be invested, a significant proportion of which could be used for infrastructure.

Discussions with private sector organisations have identified a sector which is currently cash rich and looking for investment opportunities. Organisations such as the SI National Provident Fund and ANZ Bank have recently been active in infrastructure investment through projects such as the Submarine Cable and new aircraft for Solomon Airlines. A key element in the SI NIIP has been to identify further opportunities for this type of involvement. Further details of the SIG's approach to attracting the private sector is addressed below.

6.5.1 PUBLIC PRIVATE PARTNERSHIPS

A Public Private Partnership is an umbrella term for Government projects involving the private sector in public sector projects. PPP is a method of providing public services rather than just providing infrastructure. By definition, a PPP project should include an expectation of service improvement, a commitment to transparency, the dismantling of monopolies, and the reform of public services. A PPP is a contractual arrangement between a government entity and a private firm which incentivises the private firm to effectively and efficiently design, build, maintain, and finance public infrastructure.

There are two main types:

- User-pay PPP where the private firm takes revenue and/or demand risk - usually called a concession.
- Annuity based PPP where the government retains those risks - usually called a DBFO.

The private sector is likely to be interested in only certain types of schemes. While these may be spread across a number of sectors, projects of interest will generally have these common characteristics:

- appropriate primary legislation and a clear and independent regulatory structure;
- a clear user revenue stream and reliable and tested revenue collection mechanisms;
- an understanding of the public sector costs incurred in the delivery of a particular service;
- an understanding of which risks should be passed to the private sector and which retained by the SIG, including potentially SIG sponsored risk reducing guarantees;
- the opportunity for the private sector to take the lead in scheme development and operation; and
- a strong SIG partner organisation, which can enable a project by resolving land disputes and other issues.

In the Solomon Islands, it is likely that the private sector will be most interested in projects in the maritime sector, aviation, telecommunications, and urban water and energy supply, where the above requirements can generally be met. On the other hand, it is unlikely that the private sector will be interested in projects in roads, rural water supply and sanitation, and domestic wharfs.

The private sector can invest in infrastructure projects in a number of ways, including both loan finance and equity. The Debt Management Strategy includes a presumption against private sector loan financing, unless concessional terms can be negotiated. It is therefore more likely that financing will be provided on the basis of equity investment in a scheme, or loan financing to a private sector operator, such as in the mix of financing provided for the submarine cable.

6.5.2 PPP REQUIREMENTS

There are a number of important issues that SIG needs to consider when setting up a PPP scheme. Some of these are a pre-requisite for private sector involvement as they remove uncertainty, whilst some would be considered essential from a government point of view, as they protect vulnerable consumers.

PPPs can follow a range of models, but they all incorporate three key elements:

- A contractual agreement between government and the private sector operators, setting out the roles and responsibilities of all parties;
- Sensible risk sharing between the public and private sectors, recognising which party is best able to mitigate a particular risk;
- Financial rewards to the private sector based upon the delivery of specific, pre-specified outputs.

It is important that clear sector and scheme assessments are undertaken at an early stage so that the issues outlined above can be properly structured. Specific issues that need to be reviewed include regulatory, statutory, and policy frameworks; institutional and capacity constraints; technical feasibility; and economic, financial, and commercial issues. For the Solomon Islands, key issues are likely to include:

- the limited nature of sector and spatial planning which leads to uncertainty about strategic direction;
- the need for reform of market structures, including regulatory structures, which may preclude the involvement of the private sector;
- land and resource compensation issues, which continue to delay a number of infrastructure projects;
- restricted institutional capacity, leaving the SIG unable to support scheme development except where it has specific responsibilities;
- current procurement rules and financial instructions, which may deter the private sector;
- the resulting need for primary legislation in some cases; and
- the need for additional studies of the application of new technologies.

In most cases, the Solomon Islands will need to set up new commercial regulation structures, similar to the TCSI. Additionally, for some types of infrastructure new safety regulators will be required, similar to the Civil Aviation Authority of the Solomon Islands. In most cases, these regulatory systems require primary legislation.

Given the relatively recent adoption of the PPP model in the Solomon Islands, and the low level of development in the country, investment in infrastructure is likely to be perceived as risky by the private sector. It will therefore be necessary to structure deals to reduce the risk exposure of the private sector. This can be done in a number of ways, but is probably best achieved through the provision of a SIG or development partner loan guarantee. This has been provided for recent infrastructure investments, which has not only attracted the private sector to invest, but also reduced scheme financing costs by lessening the risk premium on investment.

6.6. Solomon Islands Government Budget

6.6.1 CONSOLIDATED FUND

The SIG Consolidated Fund is broken down into two sections: revenue and development. Infrastructure funding would expectedly be part of the development budget. The SIG determines its budget on an annual basis, in line with the prevailing financial instructions. The process is generally led by the MDPAC, which coordinates bids from line ministries for development budget funding. Each bid is must be supported by standardised documentation, setting out the rationale for the project.

All of the line ministry bids are collated by the MDPAC for submission to Cabinet, which identifies priorities for funding. Where development partner funding is allocated to a scheme, this is identified and required match funding set aside in the budget. The SIG will then approach development partners regarding projects which have not yet attracted development partner support.

The total SIG development budget is determined annually based on estimates of SIG revenues and development partner support. Based upon this available funding, decisions are made regarding the highest priorities for funding and the development budget allocated as appropriate. The SIG has confirmed that development funding for infrastructure for the duration of this plan is expected to be similar to current levels. For the purpose of developing this plan, a figure of SBD85 million per year has been adopted as available for economic infrastructure. This includes funding for larger (strategic) projects included in the SI NIIP, but a large part of the SIG's development budget will be used for smaller projects.

6.6.2 NATIONAL TRANSPORT FUND

The NTF was established in 2009 to assist in the delivery of the NTP priority programme. A Special Fund under the Constitution, the NTF is directed by a Board appointed by regulation. The NTF has assisted in the implementation of the transport sector programme by providing a facility which can be used to consolidate development partner and SIG funds. This has facilitated a sector based approach to network planning and management.

Each year the NTF Board is required to approve an annual works plan, produced by the MID. This includes maintenance and rehabilitation works, as well as priority new infrastructure. In developing the works plan, maintenance funding is generally given priority, in line with policy statements in the NTP and elsewhere. NTF funds are managed, on behalf of the Board, by the MID, against a series of agreed budget items. Requests for payment are prepared by the MID and forwarded to MoFT, which manages the accounts.

At the time of writing both AusAID and the SIG are contributing to the NTF, with other development partners using alternative mechanisms. The SIG would encourage all contributions to the transport sector to utilise the NTF mechanism, enabling all projects to harmonise and align with SIG systems, particularly those relating to safeguards, land acquisition, and procurement.

6.6.3 BUDGET SUPPORT

One significant change relating to SIG funding is the approach being taken by a number of development partners, which is moving from a project based funding process, to general or sector specific forms of budget support. Sector-specific or general budget support will be matched with formal agreements relating to the delivery of key policies, projects, or deliverables. Within this process, projects will be delivered using SIG approved processes and regulations.

6.6.4 COMMUNITY SERVICE OBLIGATIONS

The CSO was developed by the SIG as part of its SOE Governance Strengthening Program which is supported by RAMSI as a mechanism to provide support to SOEs operating loss-making services to rural communities. The key objectives of the CSO policy framework are to ensure that:

- the SIG understands the true costs and benefits of providing a CSO and therefore make better decisions about using SOEs to achieve policy objectives;
- delivery of CSOs does not negatively impact the performances incentives of SOEs or their commercial results; and
- CSOs are efficiently provided and their social goals are effectively identified. That is, CSO outputs are delivered at least cost while also meeting the appropriate products/service standards and measured through outcomes.

The CSO's policy framework overall objective supports the SIG's requirements that SOEs operate as sound profit-making entities. The significant provision of the policy is the principle that Government can pay other public sector-like local government entities, privately-owned business entities, and church groups to deliver non-commercial products and services as CSOs.

6.7. State Owned Enterprises

The four main SOEs operating in the economic infrastructure sector have experienced differing fortunes in recent years, with the SIWA and SIEA suffering extensive losses and managerial problems. On the other hand Solomon Airlines and the SIPA have been much more stable for some time. In the last year or two, the SIG has ensured that both the SIWA and SIEA have received considerable technical assistance and investment, with the aim of making them both stable financially and sustainable in the medium term. At the time of writing, neither is profitable, but they are expected to become so in the near future, at least in terms of being able to cover their operating and maintenance costs. However, the ability of the SOEs to fund investment is extremely limited. Current investments in new aircraft, generating sets, and improvements in water supply are being funded either through donor support, or with the backing of SIG guarantees. It should be noted that these guarantees are restricted, as they must be included as liabilities on the SIG's balance sheet. Therefore, they affect the overall financial situation of the SIG.

The recent history of each SOE, reflecting a range of efforts to improve the management of these organisations, is summarised in Table 6.4, together with an assessment of the likely capacity to fund and implement investment projects.

Table 6.4 Summary Analysis of SOE Performance

Agency	Performance	Planned/Ongoing Investment Activities	Funding Sources	Impacting factors on Agencies Performances.
Solomon Islands Electricity Authority (SIEA)	2010 –Net loss SBD69.9m 2011-Net Profit SBD53.1m	*Internal Funding:* Two 1.5Mw skid mounted generators and two 5Mw generators; *External funding:* TA Support, Generator rehab, IT system, system upgrade and capacity building	Commercial loan. World Bank and SIG Grant	Longer periods of blackouts due to overworked Generators-impacting on; • Level of sales • Ability to determine level of actual energy demand for strategic planning. Thievery.

Agency	Performance	Planned/Ongoing Investment Activities	Funding Sources	Impacting factors on Agencies Performances.
Solomon Islands Water Authority (SIWA)	2010 Loss of: SBD13.2m 2011 Loss of: SBD22.9m Ca. 55% non-revenue water. 29% physical losses. 24% unauthorised consumption	*Own funding:* Minor maintenances *External funding*: Recovery Action Plan(RAP), JICA Medium Term water Supply Improvement Strategy Project and Non-Revenue water project.	Internal revenue AusAID JICA	Aged & poorly designed network. Land issues at main sources: ▪ Kongulai ▪ Auki c.80% compliances to WHO water safety standards.
Solomon Islands Ports Authority (SIPA)	2010-Net Loss SBD0.9m 2011-Net Profit SBD17.2m	*Own funding :* • Four jetties along coastline. ▪ New wharf for copra industry. ▪ Dedicated wharf and sheds for copra & cocoa exporters. *External funding:* ▪ Rehab of wharves and building of new wharves throughout the country. ▪ Grant aid project to provide an additional wharf alongside the existing port.	Internal revenues. ADB/NZAid/ADF/AusAID JICA	Increasing demand in combination with operational capacity constraints
Solomon Airlines Ltd	2010- Net Profit SBD19.1m 2011-Net Profit SBD12.0m No dividend declared. 32 Airlines network (including 4 countries) 150 flights per week-domestic.	*Own funding:* Airbus A320 Refurbishing work -Modern cargo handling facilities. - New office complexes - Extension of the hanger complex - company owned housing New Dash 8.	5 year Leased 100% fully funded commercial loan	Tough competition on international routes. Uneconomical domestic routes. Poor domestic airports

6.8. Debt Management Strategy

In 2011, the Solomon Islands' financial rating became more favourable, mainly as a result of ongoing efforts to reduce indebtedness under the Honiara Club Agreement. These efforts involved strict controls on debt, which in effect meant that there were several years where no additional sovereign debt was taken on by the SIG. During this period, total SIG debt fell from a maximum of SBD1.7 billion in 2004, to SBD 1.3 billion at the end of 2011. Consequently, the Solomon Islands has now become eligible for new concessional loans, but also ineligible for 100 per cent grant financing from the main multi-lateral agencies.

In order to manage this situation, the SIG has put in place a new Debt Management Strategy (DMS), with the intention of providing clear guidelines on how debt should be used. The DMS places strict controls on how and why new sovereign loans can be entered into. The DMS is managed by a new Debt Management Advisory Committee (DMAC) constituted by officials from the MoFT, the Central Bank of Solomon Islands, and the MDP.

The DMS sets key responsibility guidelines; that new borrowing must be:

- for a fit purpose, which is defined as:
  - investing in the productive capacity of the Solomon Islands;
  - funding priority core infrastructure and development initiatives; or
  - specific purposes (projects) identified as a high priority in the SIG's National Development Strategy; and

- from an acceptable source, defined as one of the multi or bilateral agencies stated in the SIG Financial Instructions and with favourable terms and conditions:
    - with a high proportion of grant funding;
    - avoidance of unsustainable debt
    - minimised foreign exchange risk; and
    - longer grace periods.

A key task for the DMAC is to identify and set the level of new debt that is considered to be sustainable on an annual basis. The funding ceiling is set based upon expectations of Government receipts for the following years and is therefore likely to vary significantly from year to year. The funding ceiling identified for 2013 is SBD160 million. It is expected that this ceiling will be somewhat lower in upcoming years before rising again in later years. The MoFT has advised to assume that about half of this amount will be available for projects under the SI NIIP.

6.9. Development Partner Priorities

6.9.1. LIKELY FUNDING MECHANISMS

In developing this SI NIIP, the SIG has continued discussions with development partners about future funding mechanisms and the amounts that may be available. These have revealed that a number of development partners are working towards alternative funding mechanisms. In particular, key development partners are moving away from project support towards a sector support approach. At the same time, other development partners are moving away from country based allocations towards contestable pots of funding, shared amongst a number of countries and projects.

Both of these have implications for the Solomon Islands, as in future, project specific funding will either compete against other national priorities within the SIG annual budget process, or compete with priorities identified in other recipient countries. A key aspect of these competitions will be the need to show strong policy compliance and strong value for money within project feasibility assessments.

6.9.2. SECTOR PRIORITIES

Generally it is not expected that the priorities of development partners will change significantly from recent trends. These are summarised below:

- ADB – roads and maritime transport, sustainable energy, and public sector management.
- AusAID – roads and maritime transport (NTF), urban water supply, rural water supply, and climate change adaptation.
- European Union – water supply and sanitation, climate change adaptation, and possibly energy.
- JICA – urban water supply, roads, Honiara port, and solid waste management.
- New Zealand – roads and maritime transport, and fisheries.
- UNDP – climate change adaptation, and rural services delivery.
- World Bank – Rural Development Programme, energy, climate change adaptation and disaster risk management, urban planning and infrastructure, marine environment, and civil aviation through the Pacific regional programme.

6.10.Overall Funding Envelope

6.10.1. SIG OWN RESOURCES

The first element of funding available for this plan is that which can be made available from the SIG's own resources. This includes funding that can be secured from tax revenues and natural resource charges, as distinct from funding from grant or budget support sources. The SIG has confirmed that development funding for infrastructure for the duration of this plan is expected to be similar to current levels. For the purposes of developing this plan, a figure of SBD85 million per annum has been assumed as being available to fund economic infrastructure.

6.10.2. DMS DEBT CEILING

The method of calculation of the SIG debt ceiling is set out in detail in the DMS. The available ceiling is a function of current debt levels, SIG receipts for the previous year, and estimates of receipts for future years. The aim of the DMS is to ensure that the Solomon Islands does not breach existing IMF borrowing thresholds. This calculation will therefore be reviewed annually as part of the SIG budget process. For 2013, the ceiling has been set at SBD160 million. For the purposes of this plan, it has been assumed that this ceiling will be the same for the life of this plan, although it is likely that it will reduce slightly in upcoming years, before rising again in later years.

It should be noted that the available loan funding for the SIG will need to cover a range of uses, including economic infrastructure investment, social infrastructure investment, and a number of other tasks. For example, the 2013 allocation has been used for the submarine cable and the purchase of a new DASH 8 aircraft. The infrastructure identified in this plan will therefore, not be able to call upon the full allocation in any particular year. The MoFT advises that it is sensible to assume that around half of the annual allocation could be used for projects in this plan.

6.10.3. GRANT FUNDING

The SIG DMS sets out a series of stringent requirements for debt financing as discussed earlier. One of the key requirements is that concessional loan funding must be matched by development partner grant funding. The DMS sets a threshold that grant funding of at least 40 per cent of scheme value should be available. While there is no requirement that the grant and loan financing must come from the same source, the grant funding will need to be acquired to support concessional loan financing.

It has been assumed that in order for the SBD80 million concessional loan financing to be utilised, grant funding of at least SBD60 million will be needed. Current indications are that this will easily be achieved.

6.10.4. PRIVATE SECTOR FUNDING

The size of available funding from the private sector is difficult to assess, as there are many organisations in this sector and many would consider this information confidential. However, discussions with the NPF Board and others indicate that the private sector is relatively cash rich and has substantial funds available for infrastructure investments. For the purposes of developing this plan, it has been assumed that the amount of funding available will be a minimum of SBD35 million per annum, but it is expected that substantially more funding would be available.

6.10.5. SUMMARY

Table 6.5 below summarises the infrastructure funding likely to be available to the SIG from the various sources described above. It is estimated that about SBD3.3 billion in funding will be available during the next eight years, of which SBD1.9 billion is already committed and SBD1.4 billion uncommitted. It should be noted that this estimate includes around SBD300 million of private sector funding which could be made available to suitable projects.

Table 6.5 shows a total of about SBD3.3 billion in funding available for economic infrastructure against a total funding requirement of SBD3.2 billion in capital costs, and SBD300 million to cover maintenance

costs. The estimates of available funding are relatively conservative but if additional funding would become available, these could be utilised for projects that have been ranked in the second category of priority projects.

Table 6.5 Forecast SIG Infrastructure Funding

Source	Fund	Amount per annum (SBD million)								Notes
		2013	2014	2015	2016	2017	2018	2019	2020	
SIG Development Funds		85	85	85	85	85	85	85	85	Based upon 2012 budget for economic infrastructure - assumes stable funding with 50% of budget available
SIG Concessional Loans		78	80	80	80	80	80	80	80	2013 already committed - assumes that 50% of ceiling is available for NIIP
AusAID	NTF	59	59	59	59	59	59	59	59	2013 - 15 committed Post 2015 not yet agreed
	Rural Water Supply Support to MOH	14	18	18	21	20	20	20	20	Already committed Indicative allocation, no yet committed
EU	EDF10 WASH	0	20	20	20	20	20	20	20	150m committed
	EDF11		20	20	20	20	20	20	20	To be confirmed - will be through budget support
New Zealand Aid Programme	Unallocated funding			25						Leftover from Munda Airfield
JICA	Honiara/ Auki Water Supply	75								Already committed - started in 2012
	Honiara Non Revenue Water	8								Already committed - started in 2012
	Honiara Port Extension		90	90						Being discussed, no formal commitment yet
World Bank	IDA SI	70	70	70	70	70	70	70	70	Grant element only - beyond 2014 not yet agreed -
	IDA Regional									Dependent upon IDA SI being taken up - no specific commitment so excluded could be 140m per annum
ADB	Outer Islands Hydropower	7								Grant element only - dependent upon loans being taken up
NPF	Annual growth in fund	35	35	35	35	35	35	35	35	Could be used for investment in infrastructure - assumes about 25% of NPF Funds
Total		521	477	412	390	389	389	389	389	3,356
Of which uncommitted		0	212	218	200	200	200	200	200	1,350

Source: Consultants Estimates
Notes: Potential concessional loans from development partners are included within the SIG concessional loans category, rather than under each development partner.

6.11.Recommendations for Funding of High Priority Projects

6.11.1. APPROACH

In order to provide clarity on the decisions taken in developing the SI NIIP, the decision tree shown in Figure 6.1 below was utilised. This creates a series of gateways that each project would need to pass through in order to be retained in the SI NIIP funding programme.

The decision tree has been applied to each of the 19 priority projects to identify those which:

- might be commercially viable and require little SIG support;
- could provide a PPP opportunity;
- might be suitable for concessional loan financing;

- could be funded from grants; and
- are unlikely to be fundable.

Table 6.6 summarises the decision tree process for each project, setting out the key considerations at each gateway.

Figure 6.1 Funding Strategy Methodology

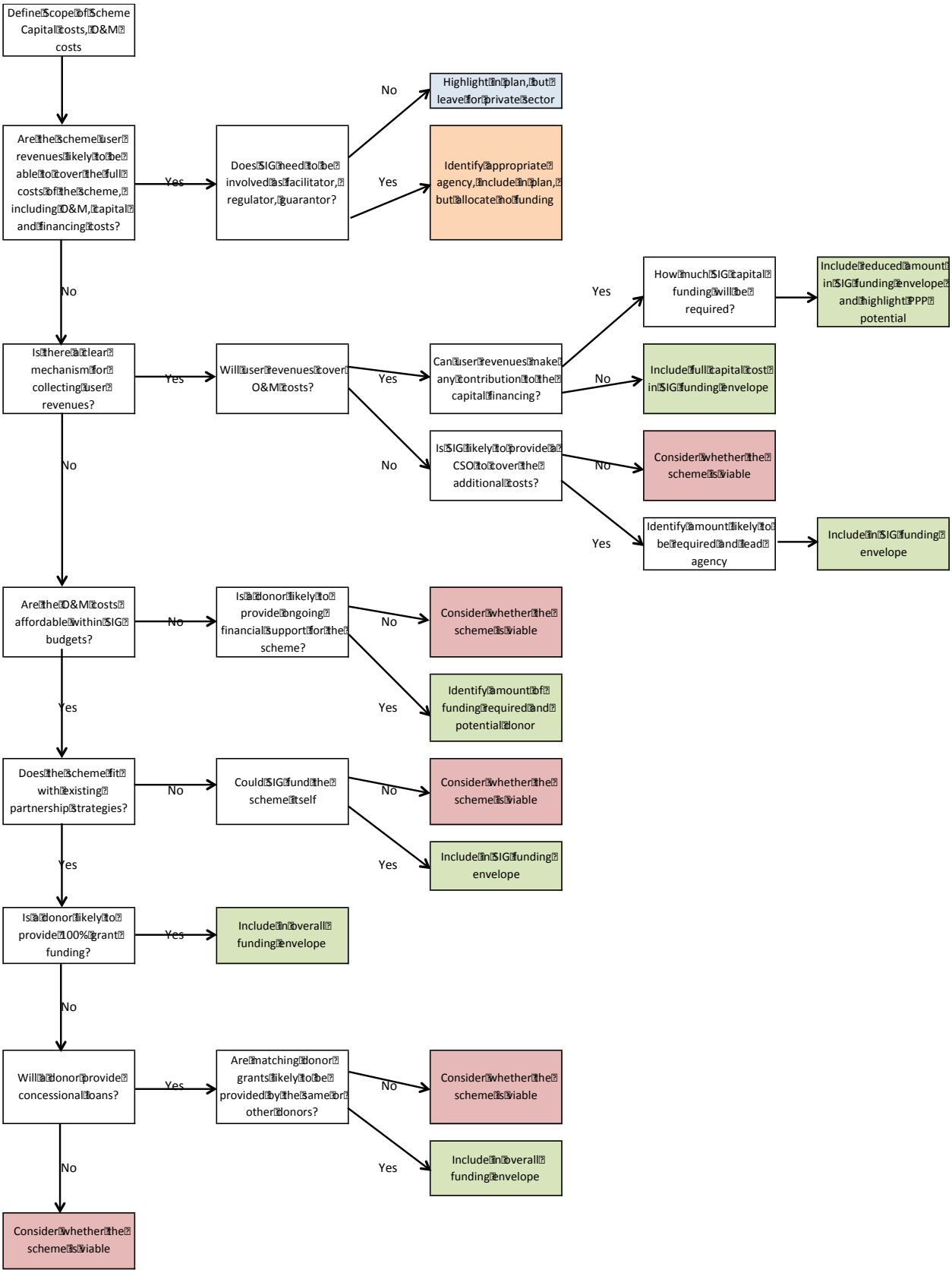


Table 6.6 Funding Decision Tree Results
(Grouped by similar results)

Project Name	Is the Project likely to be commercially viable?	Does SIG need to be involved? - How?	Conclusion				
Honiara SIEA Genset Upgrade	Yes - Project should provide additional power for sale and help to reduce generation costs	Yes - to provide guarantees to attract private sector funding	Include in programme with SIG providing revenue guarantee with financing coming from private sector				
Project Name	**Is the Project likely to be commercially viable?**	**Is there a clear mechanism for collecting user revenues?**	**Will revenues cover O&M costs?**	**Can revenues make a contribution to capital?**	**How much SIG capital will be required? SBD millions**	**Is this a PPP opportunity**	**Conclusion**
Henderson Airport Apron Upgrade	No - would need subsidy support to cover full costs	Yes - revenues should come from international airlines	Yes - should result in minimal costs	Yes - O&M costs should be minimal	10 - will need up front funding to cover capital costs	Yes - likely to be implemented by new operator	Include in programme to be financed by private sector, with some donor support
Provincial Airfield Upgrading	No - provincial air services are insufficiently profitable	Yes - SolAir should be paying landing fees	Yes - O&M costs will be minimal	No - feasibility studies assume no contribution	192 - estimated by asset valuation study	Yes - likely to be implemented by new operator	Include in programme to be financed by private sector, with some donor support
Honiara Port Remedial Works	No - SIPA does not have sufficient resources to fund capital	Yes - from port users and lessees	Yes - works will reduce medium term costs and provide opportunities for further revenues	Yes - but not significant	40	Yes - SIPA is stable and private sector would be interested in funding and delivery	Include in programme as a PPP project with SIG providing some capital funding
Tina Hydropower Project	No - Project requires significant capital investment	Yes - revenues should come from energy users	Yes - using similar mechanisms and charging structures as SIEA	Yes - but only a small contribution	None - but SIG will be required to guarantee repayments	Yes - not necessarily deliverable by SIEA	Include in programme, based upon ongoing work to identify feasibility and a private sector delivery partner
Water Supply 2 Year Plan	No – Project requires significant capital investment as part of a business improvement programme	Yes – revenues should come from water users	Yes – O&M costs will be small	No – Project requires major investment	42 – to be funded by donors	No – Project is targeted at SIWA	Include in programme to be delivered by SIWA
Honiara Port Extension (new wharf)	No - available revenues will not cover full costs	Yes - from port users and lessees	Yes - but possibly with some lag in early years	Yes – but only limited contribution	180 – estimate of cost of new wharf	Yes - privatisation of SIPA should be considered, to provide closer working relationship with private sector	Include in programme with capital funding provided by devt partners
Project Name	**Is the Project likely to be commercially viable?**	**Is there a clear mechanism for collecting user revenues?**	**Are the O&M costs affordable?**	**Does the Project fit with partnership strategy?**	**Is a donor likely to provide 100% grant funding?**	**Conclusion**	
Resealing of Urban Roads	No - no charging mechanism exists	No	Yes - Project should reduce medium term costs	Yes - in line with NTP	Yes - funded from AusAID NTF allocations	Include in NTF funded programme - will probably start in 2013	
Honiara Main Road	No	No	Yes - should reduce medium term costs	Yes - urban road rehabilitation fits with NTP	Yes - funded alongside NTF by NZ/JICA?	Include in programme to be financed by a suitable donor alongside NTF programme	
Malaita North Road - Further Phase	No - no charging mechanism exists	No	Yes - maintenance costs will be around SBD 250,000 per annum	Yes - in line with NTP	Yes - funded from AusAID NTF allocations	Include in NTF funded programme - will probably start in 2013	

Project Name	Is the Project likely to be commercially viable?	Does SIG need to be involved? - How?	Conclusion				
WASH Projects	No - needs support for infrastructure provision	No - need to establish mechanism in rural areas	Yes - O&M costs should be minimal - need to confirm size of royalties	Yes - particularly EU and UNDP	Yes - EU are arranging	Include in programme with EU leading. Need to identify suitable implementing agency	
Guadalcanal Feeder Roads Tranche 2	No - charging mechanisms are not clear	No	Yes - maintenance costs will be around SBD100,000 per annum	Yes - in line with NTP	Yes - funded from AusAID NTF allocations	Include in programme for implementation depending upon availability of funding	
Malaita Feeder Roads Tranche 1	No - charging mechanisms are not clear	No	Yes - maintenance costs will be around SBD100,000 per annum	Yes - in line with NTP	Yes - funded alongside NTF	Include in programme for implementation depending upon availability of funding	
Naro Hill - Lambi Road	No - charging mechanisms are not clear	No	Yes - maintenance costs will be around SBD 60,000 per annum	Yes - in line with NTP	Yes - funded alongside NTF	Include in programme for implementation depending upon availability of funding	
Project Name	**Is the Project likely to be commercially viable?**	**Is there a clear mechanism for collecting user revenues?**	**Are the O&M costs affordable?**	**Does the Project fit with partnership strategy?**	**Is a donor likely to provide 100% grant funding?**	**Will a donor provide concessional loans?**	**Are matching donor grants likely to be provided?**
2013 Replacement Wharves	No - charging mechanisms are not clear	No - loading charges impractical	Yes - Projects will not lead to substantial additional costs	Yes - in line with NTP	No	Yes - would fit with NTP priorities	Yes - AusAID and NZ would be interested
New Wharves Tranche 2	No - charging mechanisms are not clear	No - loading charges are impractical	Yes - Projects will not result in significantly higher costs	Yes - in line with NTP	No	Yes - would fit with NTP priorities	Yes - AusAID and NZ would be interested
Project Name	**Is the Project likely to be commercially viable?**	**Is there a clear mechanism for collecting user revenues?**	**Are the O&M costs affordable?**	**Is a donor likely to provide ongoing financial support?**	**Conclusion**		
Malaita Industrial Parks	No - revenues are unlikely to cover capital costs	No - this is a complex Project with many aspects, some of which have obvious revenue streams	Need to establish the likely infrastructure owner	No - there is no obvious mechanism	Need to consider an appropriate mechanism for delivery, before including in the programme - these are badly delayed and have little donor support - so deliverability must be questionable		
Honiara Urban Development	No - revenue streams not clear	No - early stages are planning only. Infrastructure costs currently covered by rates	No - no revenues in early stages	Yes - master planning studies are being considered by NZ and World Bank	Include initial master plan studies in programme, funded by donor support (World Bank, NZ?). Resulting developments will need to be re-assessed for feasibility and priority		
Provincial Sanitary Landfills	No - charging mechanisms are not clear	No - costs are currently covered by rates in Honiara - other locations are not clear	No - at least not in early years	Need to ask the question - JICA?	Need to establish whether donor funding for O&M costs in early years is likely to be available		

The above analysis has highlighted three projects which are unlikely to fundable, or at least where further discussions on funding will be required. The projects which are highlighted as requiring further discussions relating to funding are:

- Malaita Industrial Parks – mainly due to large uncertainties about the institutional arrangements, the level of preparedness and the availability of funding and the ability of the SIG to fund this itself. It is also unclear how O&M costs could be recovered from users. This project has therefore been deferred to the second category of priority projects, pending further project scoping and preparation.
- Provincial Sanitary Landfills – particularly with regard to questions about how operating and maintenance costs could be recovered. This requires further discussion with development partners to assess whether these costs could be met from a non-SIG source. While there is some uncertainty, this scheme has been retained in the priority programme.
- Water Supply and Sanitation Projects – the only area of uncertainty relating to this project is the issue of royalty payments that will need to be made to resource owners. This project has been retained in the priority programme.
- Honiara Urban Development – while the early stages of this scheme are relatively certain, the future stages of the scheme are tentative, in particular the question of which infrastructure elements will need to be delivered, their cost, and delivery mechanism. The early stages of this scheme have been retained in the priority programme.

6.11.2. FUNDING REQUIREMENT PROFILE

Based on priority ongoing and committed projects identified in the SI NIIP, the breakdown of funding is shown in the Table below. It shows the likely source of funding for each project, whether SIG Development Funding, concessional loans, development partner grants or the private sector. Based on the assumptions made, it is expected that development partner grants will make up around 40 per cent of the funding required, slightly less than 45 per cent would be private sector funding, and 13 per cent concessional loan financing. It is expected that SIG Development funds would cover around four per cent of the total funding envelope. This reflects the fact that most of the investment included under the SIG development budget are donor funded grants, and that the majority of the available SIG funding is used on non-strategic level projects, most of which fall well below the minimum size threshold applied in this plan.

Table 6.7 Project Funding Breakdown 2013 - 2023

Project	Status	Est Cost SBDm	SIG Funding	Concessional Loans	Grants	Private Funding
Multi-Sector						
Honiara Urban Development	Proposed	140				
Transport - Land						
Malaita North Road	Ongoing	22				
Noro - Munda Road	Ongoing	41				
Honiara Feeder Roads	Ongoing	28				
Honiara Highway Improvements	Ongoing	18				
Honiara Main Road	Proposed	110				
Resealing of Urban Roads	Proposed	100				
Malaita North Road Further Phase	Proposed	87				
Guadalcanal Feeder Roads Tranche 2	Proposed	50				
Malaita Feeder Roads Tranche 1	Proposed	29				
Naro Hill - Lambi Road	Proposed	85				
Transport - Aviation						
Munda Airfield Upgrade	Ongoing	39				
Nusatupe Airfield Upgrade	Ongoing	26				
Henderson Apron Upgrade	Proposed	14				
Provincial Airfield Upgrading	Proposed	192				
Transport - Maritime						
DMSP Wharves Lot 1	Ongoing	52				
Honiara Port Remedial Works	Proposed	40				
2013 Replacement Wharves	Proposed	25				
Honiara Port Extension	Proposed	180				
DMSP Wharves Lot 2	Committed	73				
New Wharves Tranche 2	Proposed	68				
Water Supply						
Honiara and Auki Water Supply	Ongoing	175				

Project	Status	Est Cost SBDm	SIG Funding	Concessional Loans	Grants	Private Funding
Improvement						
Honiara Non Revenue Water	Committed	15				
SIWA RAP Project	Ongoing	14				
Water Supply 2 Year Plan	Proposed	42				
Water Supply and Sanitation Projects	Proposed	142				
Solid Waste Management						
Provincial Sanitary Landfills	Proposed	15				
Energy						
Honiara SIEA Genset Renewal	Proposed	150				
Tina Hydropower Project	Proposed	770				
Outer Islands Renewable Energy	Committed	39				
Rural Electrification Program	Proposed	100				
Telecommunications/ICT						
Submarine Cable	Committed	546				
Total[36]		3427	133	427	1354	1513

6.11.3. FINANCING CLIMATE CHANGE ADAPTATION AND DISASTER RISK MANAGEMENT

Few examples exist of investments in climate-proofing infrastructure in the Solomon Islands other than three roads upgrading projects. These are phases I and II of the Solomon Islands Road Investment Projects (SIRIP I and II), and the Malaita North Road Project. The estimated investment in CCA through these projects is USD6.72 million or approximately 18 per cent of the total project budgets.[37] The percentage of financing going towards climate change adaptation ranged from three per cent to 90 per cent, suggesting that a clear definition of what can be considered CCA in investment projects does not yet exist.

A number of assessments of the vulnerability of existing infrastructure to climate change and natural disasters are underway, or being planned which should help in the future with more strategic decisions on priority infrastructure, both existing and new. These include:

- An update of the existing 2011 Study: Pacific Catastrophe Risk Assessment and Financing Initiative, which was financed by the WB. This assessment identifies areas and infrastructure at risk across the country due to cyclones and earthquakes.
- Through the European Union Budget support (SBD3 million) to the MECCDM, a countrywide vulnerability assessment of infrastructure across the country was to begin in 2011 but has not yet commenced.
- The National Disaster Management Office (NDMO) has begun to develop a historical disasters inventory from 1964 to 2010. The data does not exist in a disaggregated form, for example by hazard type and only at the level of constituency. Lack of reliable and consistent data collection is also a challenge.
- Capacity support to be provided to the MOI by the Pacific-Australia Climate Change Science and Adaptation Planning Program (PACCSAP) which, according to the Terms of Reference draft, will "assess, identify, and map priority risk areas of the national infrastructure network for selected sub-sectors at an island/provincial scale, in relation to both current and future climate for 2030 and 2055 time periods."

The investments in CCA and DRM through the SI NIIP should build on and complement these existing efforts. Coordination through the country's Climate Change Working Group during implementation will be necessary. The following Table provides a general estimate of costs for activities suggested in the project summaries found in Annex B.

The activities suggested have been primarily in the form of technical assistance. However, the results of these usually have cost implications on the overall investment envelope that should be discussed with potential financiers at the start of each project. As the example with the road sector demonstrates, the

[36] Please note that this total amount refers to the period 2013 – 2023 and is therefore higher as compared to those given in section 6.10 above, which only covered the first eight years of the SI NIIP.
[37] Discussion with SIRIP Team Leader.

range of incremental financing required varies significantly. Budget support for adaptation investments through the SI NIIP may be a practical way to overcome this.

Table 6.8 Financing Overview by Project for Integrating Climate Change Adaptation and Disaster Risk Management into SI NIIP Priorities

Project	Activity	Technical Assistance USD (estimates)
MS4. Honiara Urban Development	Activity 1. Assist the Honiara City Council integrate hazard and climate change information into its short, medium, and long term urban planning. Activity 2. Together with the National Disaster Management Office and it's network, identify and protect infrastructure critical to emergency response, such as main access roads, the port, hospitals and access to safe areas. Activity 3. Identify new infrastructure which can serve to protect the city's most vulnerable areas to damages during hazard events. Activity 4. Undertake an assessment of the impacts of climate change, including increased temperatures, change in rainfall, and salt water intrusion on sustainable water supply and sanitation systems. Identify rehabilitation needs of existing systems to reduce impacts during storms and droughts.	160,000
R9. Malaita North Road Further Phase	Activity 1. Undertake a comprehensive integrated risk (hazard and vulnerability) assessment to inform responses to the current disaster risks, as well as climate proofing of road infrastructure in the light of projected increases in risks due to climate change Activity 2. Undertake an assessment of ecosystem dynamics affecting the road system, including coastal zone degradation, off-shore protective measures, upstream defforestation, debris and sedimentation Activity 3. Identify appropriate expertise and terms of reference for the project design team. This may include an environmental economist to work with the transport economist to undertake a more comprehensive assessment of costs and benefits of non-engineering adaptation solutions. An economist with expertise in risk and probability analysis should also be considered. Activity 4. Develop and implement a monitoring and evaluation system for existing road sector projects to collect information that can feed into the development of more evidence based adaptation strategies in the transport sector Activity 5. Develop a long-term transport and resiliency strategy including short-term, medium-term and long term resilince measures for coastal infrastructure in northern Malaita. Apply integrated coastal management principles and ridge to reef review of infrastructure resilience challenges and needs. Activity 6. Pre-allocate additional financial resources for climate resiliency investments.	60,000
A3. Henderson Airport Apron Upgrade	Activity 1. Review of records for previous damages caused by past hazard events and maintenance needs due to climate related deterioration. Identify causes, historical costs of damages and recommendations for future upgrade. Activity 2. A detailed flood protection strategy is developed for Henderson Airfield, including over the short-term, medium-term and long-term[38]. Activity 3. Identify the best technologies to ensure apron integrity under a scenario of higher temperatures, higher salinity more intense rainfall and flooding events and higher intensity cyclones. Activity 4. Integrate options into project design and budget.	180,000

[38] Noel A. Trustrum, Ian E. Whitehouse and Paul M. Blaschke, *Flood and Landslide Hazard Northern Guadalcanal, Solomon Islands* (New York: United Nations Technical Cooperation for Development,1989).

Project	Activity	Technical Assistance USD (estimates)
A4. Provincial Airfields Upgrade	Activity 1. Undertake an integrated vulnerability and impacts assessment of runways to damages and safety concerns due to natural hazards and climate changes. These include coastal erosion, impacts of sea-level rise, earthquake risks, impact of changes in rainfall patterns to maintenance needs. Activity 2. Identify measures to reduce vulnerability of runways and integrate these into project planning and design. Activity 3. Identify safety concerns and response plans during hazard events such as earthquakes and typhoons.	200,000
S2. Honiara Port Extension (new Wharf)	Activity 1. Incorporate a thorough assessment of risks due to climate change and storms into the feasibility study and site identification. This should include vulnerability to the adjacent infrastructure needs, such as access routes and storage facilities. Activity 2. Incorporate measures to reduce losses and increase security of port operations during extreme events. Activity 3. Develop and implement improved safety and navigation measures for reducing risks during extreme events. Activity 4. Identify and put in place measures to minimise potential pollution that may occur due to damages to port and associated facilities, such as oil tankers, chemical spills, during hazard events.	200,000
S13. New Wharves Tranche 2/ S4. 2013 Replacement Wharves	Activity 1. Identify adequacy of design of wharves given sea-level rise, increased storm surges and wave action and impact of increased salinity on corrosion. Provide recommendations on improving structural measures given lessons learned to date, including considering using different wharf types such as floating and retractable wharves. Activity 2. Identify resiliency measures to protect wharf area from impacts, such as mangrove and coral protection, and sand berms. Activity 3. Identify risks and contingency plans in case of wharf failure during extreme events.	180,000
WS6 Water Supply 2 Year Plan and WS7. WASH Projects	Activity 1. Identify the long term sustainabilty of water resources, including under a climate change scenario, and potential pressures on water demand, and include these in the design of water supply and sanitation infrastructure and management. Activity 2. Identify risks to public health during flooding and drought events and establish risk management systems and emergency contingency plans during and following hazard events. Coordinate with disaster management networks in place.	600,000
SW2. Provincial Sanitary Landfills	Activity 1. Identify risk areas for avoiding locating sanitary landfills in terms of exposure to natural hazards as well as future changes in sea-level, flooding and moisture content, as possible. Use these to inform siting decisions. Activity 2. Identify landfill designs and management plans which are safest in preventing leachate runoff into the surrounding environment, such as bottom liners, intermediary and final covers, slope stability measures, hydraulic barriers, drainage and maintenance needs.	50,000
Project E5. Tina Hydropower	Activity 1. Design and incorporate measures to ensure adequate water supplies for populations whose current water supplies will diminish or flood due to the change in the local hydrology. Activity 2. Implement long-term rainfall, hydrological and geological monitoring and modelling to increase understanding of the flow regime and to allow for early warning of future changes and risks to the system and populations in the basin. Activity 3. Build land-use management arrangements into the construction and operations of the project to reduce sedimentation, landslides, flooding and droughts.	600,000
TOTAL		2,230,000

There are three potential sources of financing for adaptation measures: The government of Solomon Islands, bilateral and multilateral donors, and international dedicated climate change financing. The following table summarises potential for accessing funding sources that provide financing for infrastructure investment. There is a high potential for accessing the Adaptation Fund as other sources have been exhausted. Many of these funds are replenished on a rolling basis however, and so access may increase in the future. The focal point for access to these resources is through the Ministry of Environment. To date, these funds have not been accessed for infrastructure projects. Further coordination across government may improve the prioritisation of infrastructure projects.

An overview conducted by the WB of current adaptation projects in the country identified 29 projects being undertaken by a multitude of organisations including NGOs, universities, and the United Nations. Coordination on financing CCA and DRM in the country is insufficient. A multi-donor fund for the incremental costs of adaptation in the SI NIIP may improve this.

Incorporating CCA/DRM measures in sector activities and objectives from the outset of negotiations of various country strategies, and agreements between the SIG and financiers, may help ensure that CCA/DRM is fully integrated as part of the planning and implementation of infrastructure.

Table 6.9 Potential Sources of Financing for Climate Change Adaptation and Disaster Risk Management

Fund Name	Current Access by Solomon Islands	Potential for accessing resources for SI NIIP
Adaptation Fund	None to date.	Eligible activities include institutional, community and infrastructure vulnerability reduction measures. Potential source of future financing for both climate proofing of infrastructure and enabling environment improvements. Solomon Islands was one of four countries to be endorsed for adaptation funding at the tenth meeting of the Adaptation Fund Board and the project will focus on dealing with the impacts of climate change on agriculture and food security. The project budget is USD$ 5,100,000.00.
Least Developed Countries Fund (LDCF)	Has exhausted allocation with current proposals but fund is replenished regularly	The Fund is established to support the implementation of the National Adaptation Programmes of Action (NAPAs) and Solomon Islands has been actively submitting projects. The Solomon Islands NAPA prioritises agriculture and food security, water supply and sanitation, human settlements and human health.
Special Climate Change Fund (SCCF)	Through the Regional Pacific Adaptation to Climate Change Program	The Solomon Islands is participating in The Pacific Adaptation to Climate Change is one of the flagship adaptation projects which have been financed by the Special Climate Change Fund. The objective of the project to increase adaptive capacities to address climate change risks in water resource management.
Green Climate Fund	None	Established under auspices of United Nations Framework Convention on Climate Change (UNFCCC) as a major international adaptation fund but is not yet operational. Expected to be operational post 2020.
Asian Development Bank	CCA integrated to Transport Sector activities	ADB has allocated agreed resources under the Country Operations Strategy to 2014 and has piloted and financed climate adaptation measures through its investments in the transport sector. Further, In achieving this sustained and resilient development in the region, climate change adaptation as well as mitigation are stated change drivers and as such is a high priority for ADB's Pacific program. Maintaining this approach can result in continued integration of CCA/DRM into ADB investments in the country, including to the SI NIIP.
EU	€2,800,000.00 through Government budgetary support until 2015. Climate proofing infrastructure is a priority of the new 2014-20 European Development Fund.	Solomon Island Adaptation Project (SICAP) is addressing (1) Political dialogue between EU and SIG (2) Mainstreaming of CCA (3) Capacity building (4) Resettlement. It is a pilot initiative and the future direction of the EU for climate change following this project is not yet known.
Australian Government	Australia is active in supporting climate change in the Pacific.	The government is funding a number of adaptation programs such as the Pacific Climate Change Science Program in 14 countries to strengthen scientific research and information. They also provided support to the Nature Conservancy for "Building the resilience of communities and their ecosystems to the impacts of climate change" in the amount of Aus$750,000.

Note: JICA, New Zealand Aid and the WB have indicated that CCA/DRM and infrastructure is not currently part of their country strategy.

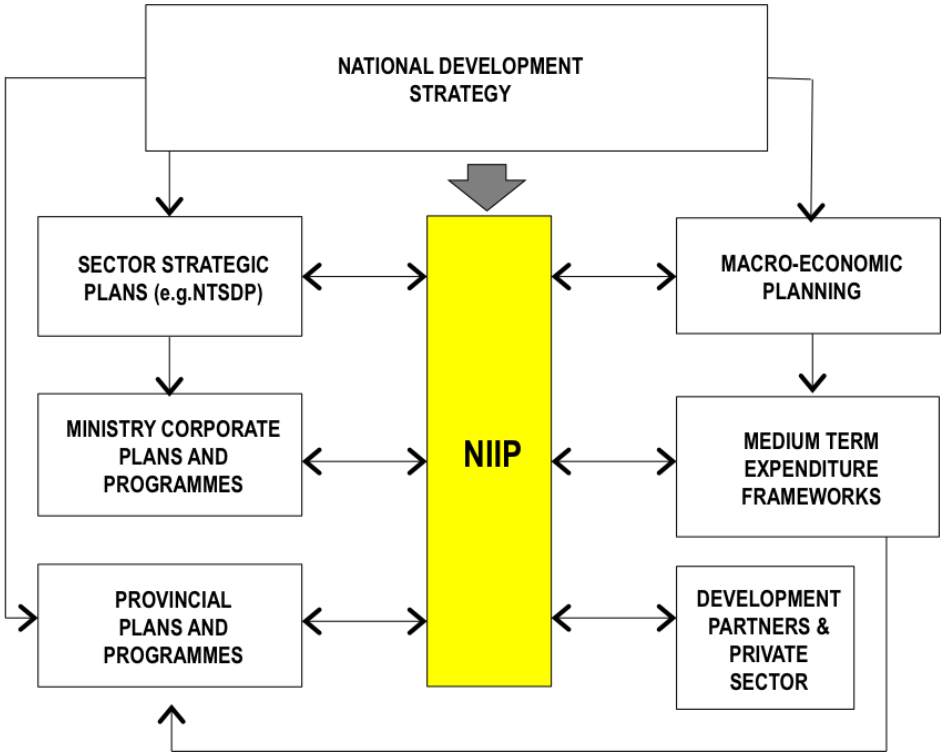
7 Managing the SI NIIP

7.1. Institutional and Planning Framework for the SI NIIP

The approval, promotion, and management of the SI NIIP will require a clear and coordinated strategy by the SIG. In order to gain widespread official acceptance, it is foreseen that the SI NIIP will be ratified and approved by Cabinet. The MDPAC will be the agency responsible for taking SI NIIP forward and as such will have ownership of the plan. The MDPAC will work in close consultation with the MoFT and with the other sector ministries involved in preparing, implementing, and monitoring the plan.

The SI NIIP is classified as a Strategic Plan for the (Economic) Infrastructure Sector as defined in Chapter 8 of the NDS. Formulating and endorsing the SI NIIP is one of the measures taken by the government in implementing objective No. 6 of the NDS. A wide spectrum of stakeholders will view the SI NIIP as the key guide to infrastructure investment.

Figure 7.1 Positioning of SI NIIP



7.2. Monitoring and Review

The MDPAC will oversee the preparation of short annual monitoring reports on the implementation of the SI NIIP and share these with key national level stakeholders and development partners. The monitoring reports will be used to update the document on a regular basis to align it with the latest planning and budget priorities, and report progress on implementation. It is anticipated that a major review and update of the SI NIIP will be implemented every three to four years in line with the wish of the government to adopt a more programmatic approach to planning.

In addition to reviews at regular intervals, there may be occasions to undertake intermediate updates. The triggers for this would include developments such as major amendments to the NDS, publication of

new sector or sub-sector plans, significant changes in development partner programmes, or the identification of major new projects.

7.3. Measuring Progress of SI NIIP

Measuring the progress of the SI NIIP will require qualitative and quantitative monitoring and evaluation (M&E) methods. It will also take place at a number of levels – project, sector, and the NDS. Each project should have a simple results framework to focus on and measure project outcomes. These results can be assimilated into to sector level assessments, and then be compared with national development goals. An overall SI NIIP design and monitoring framework could be a suitable tool for managing this assessment.

Project indicators should be simple, meaningful, and able to inform practical decision-making during project implementation. Initial screening criteria for strategic alignment, readiness, and return on investment, as well as financial, social, environmental, and institutional prioritisation criteria used for project selection should continue to gauge whether a project is on track to deliver intended results. Where possible, projects should collect comparable data.

At the higher level, the indicators developed by the PRIF could be used to assess the impact of the SI NIIP on overall infrastructure performance. A role for the PRIF in the SI NIIP development should also be considered. The PRIF has now assembled an invaluable resource in the form of NIIPs for a number of countries including follow-up reviews of earlier ones.

7.4. Lessons Learned

Several other PICs have prepared NIIPs over the past two years or so. While all countries vary in terms of size, geography, population, existing infrastructure, administration etc. There are lessons that can be learned from the experiences of these other NIIPs. Great value would therefore be added by key SIG officials seeking feedback from some of their fellow Pacific governments. This could be achieved either through study tours or an international workshop.

Beyond the immediate objective of lessons learned, there is also merit in looking at a more long-term arrangement for exchange of knowledge for the management of the SI NIIP. This might include the following:

- a Pacific Infrastructure Helpdesk through Pacific-based institutions helping staff work through practical questions and challenges;
- peer learning groups across Pacific countries to support change, sharing successes, and strategies;
- reviving policy circles led by Pacific expert practitioners, this time organised around issues more responsive to current government needs and demands.

7.5. Land Issues

Most infrastructure development involves the use of land. The availability of land will therefore be a key precondition for the realisation of the investments set out in the SI NIIP. Issues regarding traditional land customs and their impact on development in PICs have been extensively documented. Typically, vague unmapped boundaries, disputes over ownership, and lengthy resolution procedures present a significant hurdle for land development. The Solomon Islands is no exception. A study by the WB in 2010[39] identified 18 factors limiting economic growth. Two related to land:

- Lack of appropriate regulation and administration of existing registered land limits availability of land and raises costs for urban business.
- Contestability of rights and agreements involving customary property increases risks and costs for large scale investors and dissuades international investment.

[39] World Bank, *Solomon Islands Growth Prospects, Constraints and Policy Priorities*, Discussion Note (October 2010).

In consultations for the SI NIIP, costs and delays caused by land disputes were mentioned several times, particularly by utility companies. For major projects requiring extensive land acquisition, land issues can become huge obstacles. In the Tina Hydro scheme, for instance, land negotiations have already taken several years.

It is estimated that in the Solomon Islands 87 per cent of land is under customary ownership. The Solomon Islands Institutional Strengthening of Land Administration Project (SIISLAP), supported by AusAID (2000 – 2007), addressed issues of customary land. According to a review of SIISLAP[40] the project resulted in institutional improvements (e.g. the establishment of a Land Reform Unit in MHLS) agency, with good functioning systems and improved institutional morale. However, the report also highlighted the fact that the sustainability of the improvements is not guaranteed and that ongoing support is needed.

The SIG recognises the need to address the subject of land ownership and usage. In its Policy Statement, the NCRA identifies the reform and codification of customary land as key elements of its programme. The resolution of customary land issues also figures prominently in the NDS.

There are also issues relating to public land and these are particularly relevant to urban areas. In a study undertaken for Justice for the Poor, a collaboration between the WB and AusAID, it was estimated that as much as 10 per cent of Solomon Islands' GDP could be affected by effective government of public land.[41] A lack of land use planning, poor administration, and low levels of rent and tax collection all contribute to inefficient and uneconomic land management.

For the implementation of the SI NIIP it is therefore a high priority that the SIG moves forward to reduce the potential obstacles presented by land issues in the provision of essential economic infrastructure.

7.6. Building Capacity

SI NIIP implementation requires new government-initiated capacity development. This should encompass the capacities of institutions and individuals from stakeholders in government, the private sector, civil society, and donors. Selected capacity building efforts should occur from central to agency levels across sub-sectors. For certain investments to begin, Government will need stronger high-level skills for portfolio management in the MDPAC/MoFT and large project management in line agencies.

In adopting a program of capacity building, the Government will need to decide where it is practicable to build on existing capacity, hire new capacity, and outsource capacity from contractors, consultants, or advisors. The typical approach to capacity building has been project-driven not portfolio-based. This must change and the MDPAC is probably the agency to champion capacity building in strategic infrastructure planning and management. Efforts will be needed to raise the profile of infrastructure in high-level decision-making bodies. These major cross-agency and representative groups should receive regular information.

The SI NIIP's investment portfolio is demanding and capacity development must complement the 10-year portfolio, beyond individual projects. Many donors express long-term commitments to infrastructure – a systemic approach to capacity development should match this.

7.7. Institutional Strengthening within Sub-Sectors

In addition to the central coordination described above, the successful management and implementation of the SI NIIP will rely on improved capacities within the various infrastructure sub-sectors tasked with delivering the components of the SI NIIP.

Some specific and some more general capacity-building issues have been identified under the sub-sectors in Chapter 5. Initiatives to address these are suggested under complementary activities in each section. These are summarised in Table 7.1 below, along with indications of which SIG agencies should be involved, and whether or not the activity would require (or benefit from) external technical assistance. As mentioned in Chapter 5, these complementary programmes only include those that are

[40] AusAID, *Making Land Work,* Volume 2 (2008).
[41] Shaun Williams, *Public Land Governance in the Solomon Islands* (Justice for the Poor, 2011).

directly related to the planning, management, and use of the economic infrastructure assets covered by the SI NIIP. They do not include other indirect measures such as the resolution of land issues, hygiene education programmes, or road safety training etc.

Table 7.1 Complementary Activities and other Capacity Building

Sector	Complementary Activities	SIG	TA Required
General	▪ Prepare National Spatial Development Plan to provide guidance on locational priorities and linkages across all sectors	MLHS, MDPAC	Yes
	▪ Prepare Provincial Spatial Development Plans	MLHS	Yes
	▪ Support to MDPAC for management of SI NIIP	MDPAC	Yes
	▪ Establish mechanisms for technical exchanges with other Pacific NIIP countries	MDPAC	
	▪ Support to MoFT to enable the implementation of the SI NIIP within the Debt Management Strategy and to enable the extension of the prioritisation methodology to all infrastructure	MoFT	Yes
	▪ Prepare an integrated land use and transportation master plan for Greater Honiara to guide future development and management of infrastructure.	MLHS, HCC	Yes
	▪ Green infrastructure study. Starting with greater Honiara area assess current green infrastructure components and measures required to protect them. Demonstration project for integration of green infrastructure in strategic development planning.	MECCDM, HCC	Yes
	▪ Develop planning and decision support tools to improve the capacity of SIG to manage CCA/DRM risks	MECCDM	Yes
	▪ Undertake institutional analysis to identify gaps and needs to institute CCA/DRM throughout all development activities	MECCDM	Yes
	▪ Develop policies that guide investments towards resilient development.	MECCDM	
Transport - Land	▪ Develop road standards and publish national Road Standards Manual	MID	Yes
	▪ Undertake traffic management study in Honiara	MID, HCC	Yes
	▪ Undertake studies into options for raising revenue (such as fuel levies) to help pay for maintenance costs	MoFT, MID	Yes
Transport - Aviation	▪ Consider privatisation of Solomon Airlines - in line with SIG policy - with the aim of allowing it to take on responsibility for airfield management	MoFT, MCA, CAASI	
	▪ Implement proposals to outsource the development and management of international and domestic airfields	MoFT, MCA, CAASI	
	▪ Undertake scoping study for all provincial airfields including introduction of airfield classification system	MCA, MID, CAASI	Yes
	▪ A detailed flood protection strategy developed for Henderson Airfield, including over the short-term, medium-term and long-term	MCA, MID	Yes
	▪ Undertake studies into options for raising revenue (such as fuel levies) to help pay for maintenance costs	MoFT, MCA	
Transport - Shipping	▪ Consider privatisation of SIPA to enable it to access alternative financing streams and bring in international management and operating skills	MoFT, SIPA	
	▪ Undertake a study for the best possible location of a new Greenfield Port for Honiara to assess the feasibility of relocating the current port at Santa Cruz, which is in the centre of town.	MID, SIPA	Yes
	▪ Develop in integrated coastal zone management and zoning plan to minimise ecological damage to surrounding area, which would further exacerbate the vulnerability of other user groups along the coastline.	MECCDM, SIPA	Yes
	▪ Undertake studies into options for raising revenue (such as fuel levies) to help pay for maintenance costs	MoFT, MID	
Water Supply & Sanitation	▪ Prepare water supply and sanitation national sub-sector plan	MMERE, SIWA	Yes
	▪ Assess alternative corporate structures for water supply outside Honiara and Auki, with a view to establishing sustainable management mechanisms for other urban centres	MoFT, SIPA	
	▪ Develop and implement a plan to increase alternative water sources and capture and storage methods such as rainwater harvesting as well as assess whether current storage capacity is adequate	MMERE	

Sector	Complementary Activities	SIG	TA Required
	▪ Establishment of independent regulator to monitor and uphold service standards	MMERE	
	▪ Identify the long term sustainability of water resources, including under a climate change scenario, and potential pressures on water demand, and include these in the design of water supply and sanitation infrastructure and management.	MMERE	Yes
Solid Waste Management	▪ Prepare SWM sub-sector plan based on the National Solid Waste Management Strategy	MMERE	
	▪ Capacity building support to Honiara City Council for SWM	HCC	Yes
	▪ Undertake assessment of potential for developing commercial recycling and opportunities for PPP	MMERE, HCC	Yes
Energy & Power	▪ Review the electricity market structure and regulation to establish the need for and feasibility of de-regulation to allow entry of private generators and retail suppliers, particularly outside Honiara	MMERE, SIEA	Yes
	▪ Establishment of independent regulator to monitor and uphold service standards	MMERE	
	▪ Undertake national assessment of renewable energy options starting with the study commissioned by SIEA	MMERE, SIEA	
	▪ Prepare energy sub-sector plan based on the National Energy Framework	MMERE	Yes
ICT	▪ Prepare Telecommunications/ICT Sector Plan setting out needs and priorities by island and province	MCA, TCSI	

Key to agencies: MLHS – Ministry of Lands, Housing and Survey, MDPAC – Ministry of Development Planning and Aid Coordination, MoFT – Ministry of Finance and Treasury, HCC – Honiara City Council, MECCDM – Ministry of Environment, Climate Change, Disaster Management and Meteorology, MID – Ministry of Infrastructure and Development, MCA – Ministry of Communications and Aviation, CAASI – Civil Aviation Authority of Solomon Islands, SIPA – Solomon Islands Port Authority, MMERE – Ministry of Mines, Energy and Rural Electrification, SIWA – Solomon Islands Water Authority, SIEA – Solomon Islands Electricity Authority, TCSI – Telecommunications Commission Solomon Islands.

Appendices

Appendix A: Project Sheets

MS4	Honiara Urban Development
R9	Malaita North Road - Further Phase
R6	Naro Hill - Lambi Road
R14a	Honiara Main Road Upgrade Project
R17	Guadalcanal Feeder Roads Tranche 2
R23	Malaita Feeder Roads Tranche 1
R39	Resealing of Urban Roads
A3	Henderson Airport Apron Upgrade
A4	Provincial Airfields Upgrade
S1	Honiara Port - Remedial works
S4	2013 Replacement wharves
S2	Honiara Port Extension (new wharf)
S13	New wharves - tranche 2
WS6	Water Supply 2-Year Plan
WS7	WASH projects
SW2	Provincial sanitary landfills
E4	Honiara SIEA Genset Upgrade
E5	Tina Hydropower

MS4 Honiara Urban Development

Project Scope:

The initial phase of this project will undertake an integrated transport and urban development plan for the greater Honiara urban area. The scope of the proposed project is not yet defined and will depend to some extent on the outcome of the Plan. It is expected that it will deliver a range of outputs, probably including: (i) improvement of urban roads and drainage, (iii) protection of riverbanks, (iv) development of green infrastructure, and (v) strengthening of institutional capacity. The urban roads and drainage improvement will (i) construct or upgrade local distributor roads and drainage, (ii) install drainage pumps, (iii) construct flap gates, and (iv) pilot extended sanitation systems.

The green infrastructure development will improve the urban environment by (i) upgrading of pedestrian access, (ii) planting and landscaping of urban roads, (iii) improving access to the seafront, and (iv) rehabilitation and development of parks. Options for private sector participation in infrastructure development and management will be determined. The institutional capacity strengthening will help (i) increase efficiency and management capacity of the relevant local government agencies, and (ii) raise public awareness on environmental protection. In addition to the above proposed outputs, possible inclusion of economic infrastructure to promote regional trade activities will be reviewed.

This work will be integrated with ongoing projects being undertaken by Honiara City Council and the UN Habitat with the Ministry of Lands and Honiara City.

Agencies Responsible:	Ministry of Lands and Housing Honiara City Council, Guadalcanal Provincial Government
Project Benefits/Outcomes:	▪ Available detail spatial plans that shows the concentration and linkages of the various infrastructure and services. ▪ Improvements in the environment in areas where informal housing is concentrated and ensure better services are delivered so that those populations can lift themselves out of poverty. ▪ Proper zoning and control of urban land development. ▪ Improved healthy urban environment ▪ More coordinated and integrated urban development.
Alignment with National Development Strategy Objectives:	Will contribute positively to NDS Objectives 1, 3, 4, 6, 7 Better planning and integration of urban infrastructure will: ▪ Protect the vulnerable and poor people. ▪ Improve health conditions and environment. ▪ Improve to access market and essential services such as water and power and reduce poverty for all. ▪ Reduce vulnerability to climate change by reducing flooding and strengthening buildings and structures against earthquake.
Susceptibility to Climate Change and Natural Disasters:	See separate analysis in Appendix B ▪ As the largest urban area in the country and the national capital, adverse climatic and other natural events are potentially critical in Honiara. ▪ Increase temperature and rainfall can also increase exposure of population to diseases.
Project Status: (Including risks/obstacles)	This project is proposed to start in 2014 and will be implemented for the next 7 years up to 2020. The first stage is to produce a Master Plan which will define and set the projects to be implemented in the coming years.
Estimated Cost:	SBD140 million
Estimated maintenance cost:	SBD8.4 million
Implementation period:	2014-2020
Potential Funding:	Concession loans/grants

R6 Naro Hill - Lambi Road

Project Scope:

Naro Hill is some 2 km from Selwyn College (Secondary School owned by the Church of Melanesian) and 12 km to Lambi Bay. From Honiara to Lambi is around 79km in total. The current bridge and road rehabilitation stops at Naro Hill and the next section is up to Lambi. The majority of the people living in South Guadalcanal (known as the weather coast) normally travel to Lambi by boat and then catch a vehicle to Honiara. A lot of the agricultural products are transported from these communities by sea and then by truck from Lambi to Honiara. Population from Tangarare, Wanderer Bay, Marasa, and Mbabanakira all used this route. Shipping services are not very reliable and intermittent, therefore, the road network will further improve access for these areas.

Agencies Responsible:	Ministry of Infrastructure Development
Project Benefits/Outcomes:	▪ Improve road network for agricultural products to be transported to Honiara markets. ▪ Promote participation of rural population in economic and trade activities therefore increasing their chances of improving their income level therefore increase their ability to improve their livelihood. ▪ Improve service delivery to rural population around the weather coast of Guadalcanal. Note that these populations were most affected by the “ethnic crisis”, therefore social integration and better access to services will improve peace and reduce vulnerability to conflict.
Alignment with National Development Strategy Objectives:	Will contribute positively to NDS Objectives 3, 4, 6, 7 8. ▪ Provision of better road network to Lambi will promote peace building and social integration of the people of weather coast of Guadalcanal. Women and children will also have better access to education and health services because of better access to services in Honiara. ▪ Naro-Lambi road connects to Honiara, will promote economic activities and hence the generation of income by rural dwellers through their market produce and other business activities. Increased income reduces poverty and improve livelihood. ▪ Improved road conditions will reduce travel time and increase the logistic businesses the opportunity to improve their services as business profit increases. This applies to both truck and boat operators in that area. ▪ Education and Health service providers will be able to travel more frequently to deliver services to these vulnerable and remote rural communities.
Susceptibility to Climate Change and Natural Disasters:	▪ Naro-Lambi road runs along the coast and will be susceptible to sea level rise in the future. The road is also exposed to increase rainfall intensity; therefore, road construction specifications and techniques should ensure better resilience. Other response strategies should also be put in place to quickly repair roads once damage is incurred.
Project Status: (Including risks/obstacles)	This project is scheduled for 2016-2017 and is a continuation of the current road construction funded under SIRIP 2 which stops at Naro Hill.
Estimated Cost:	SBD84.7 million
Estimated maintenance cost:	SBD25.4 million
Implementation period:	2016-2017
Potential Funding:	National Transport Fund

R9 Malaita North Road Further Phase

Project Scope:

Rehabilitation of the existing 86-170km gravel roads running from Auki to Baegu in the North. This road runs along the coastline. The North road is linked to large agricultural plantations of cocoa and coconut and also other agricultural food products which are normally transported by truck to Auki and then transshipped to Honiara. Besides Auki wharf, there are no other wharves along this coastline up to Malu'u sub-station. Malu'u is the sub-station for the Northern region and has some of the essential services such as the Malu'u area health clinic (mini-hospital), SIEA power, water, and Telekom/Bemobile telecommunication towers. Adaua Provincial Secondary school is also located in this region. This road will also link the proposed Suava Bay economic growth centre and wharf and the recently constructed Manaoba airport.

Malaita Province produces around 1,025 tonnes of cocoa per year (2007), this is about 25% of national production of 4,006 tonnes in 2007. While it produces 3,844 tonnes of copra (2007), 13.8% of national 27,904 tonnes.

The population accessing this road exceeds 30,000, serving the following wards: Fauabu, Mandalau/Folotana, Fo'ondo/Qwaiau, Malu'u, Matakwalao, Fouenda and East Baegu.

Agencies Responsible:	Ministry of Infrastructure Development
Project Benefits/Outcomes:	▪ Better roads for trucks transporting goods down to Auki for shipment to Honiara. ▪ Better roads for cocoa, copra and agricultural farmers. ▪ Longevity for vehicles and reduction in maintenance costs. ▪ Improve trade and economic activity. ▪ Improve service delivery.
Alignment with National Development Strategy Objectives:	Will contribute positively to NDS Objectives 1, 3, 4, 6, 8. ▪ Improve road access for agricultural products in the North of Malaita will increase rural income and reduce poverty. ▪ Improve roads in North will improve access to education and health facilities by the rural populace and those that are vulnerable. ▪ Better roads will promote increase cocoa and copra production plus other agricultural products, as population strive to earn an income to meet various needs such as school fees, and other essential family needs. Trade in fishery products will also likely to increase as better roads and shorter delivery time to deliver products to Auki and Honiara is realised.
Susceptibility to Climate Change and Natural Disasters:	See separate analysis in Appendix B ▪ The majority of the North road runs along the northern coast of Malaita Island and these roads have often been affected mainly by heavy rainfall. There are some road sections close to Malu'u that sea wave action have eroded. Increase sea level rise and wave action will further affect the roads. Better seawall protection or relocation of these road sections might be considered. Roads affected by increase rainfall should have better planned catchment drainage systems. The technology and design should also be improved to ensure longevity.
Project Status: (Including risks/obstacles)	This project is scheduled for 2013 and is a continuation of the current SIRIP 2 North Malaita road project will be completed this year, 2012.
Estimated Cost:	SBD87.3 million
Estimated maintenance cost:	SBD26.2 million
Implementation period:	2013
Potential Funding:	National Transport Fund

R14a Honiara Main Road Upgrade

Project Scope:

This project includes rehabilitation of some sections of the Honiara main road (Mendana Avenue, R420, Chung Wah Rd, Kwang Tung Rd, Kukum Hwy, Mud Alley, TSILM ST, Fox St, Hibiscus Ave and Savo St) which have deteriorated, upgrade junctions/sections where congestion is common, and upgrade Mataniko and Chinatown bridges into 4 lanes. It will also improve associated drainage.

Agencies Responsible:	Ministry of Infrastructure Development
Project Benefits/Outcomes:	▪ Improve flow of traffic, reduce congestion and reduce travel time. ▪ Improve longevity of vehicles and reduce associated maintenance costs. ▪ Improve business environment and business profits.
Alignment with National Development Strategy Objectives:	Will contribute positively to NDS Objectives 1, 3, 4, 6, 8. ▪ Provision of improved roads which supports business and other economic activities. ▪ Improve access to education and health facilities within Honiara by the population.
Susceptibility to Climate Change and Natural Disasters:	▪ Quite a number of the roads are located along the coastline of Honiara city and these are exposed to sea level rise. Increase sea level rise will increase the likelihood of salt water intrusion and hence salinity level in the surrounding soil. Increase salinity will have an impact of the type of technology utilised. ▪ Road located up on the ridges are vulnerable to earthquake and therefore landslip. Similarly earthquake will also damage bridges. ▪ Increase rainfall will continue to affect the roads through flooding. Better road and drainage design must be considered in order to prolong life of the roads and reduce maintenance cost associated.
Project Status: (Including risks/obstacles)	This project is scheduled to start in 2015 when funds are available and should be completed by 2019.
Estimated Cost:	SBD210 million
Estimated maintenance cost:	SBD9.9 million
Implementation period:	2015-2019
Potential Funding:	National Transport Fund

R17 Guadalcanal Feeder Roads Tranche 2

Project Scope:

This project includes the maintenance of the following roads in East Guadalcanal: Gesa, Tumurora, Pitukoli, Sali 2, and Ghavangha road. Gold Ridge mining, GPPOL, major cocoa and copra plantations are located in east Guadalcanal and are linked to these feeder roads. Guadalcanal is the highest producer of cocoa and copra in Solomon Islands. These roads also link communities that normally bring their market produce into the main Honiara market.

Agencies Responsible:	Ministry of Infrastructure Development
Project Benefits/Outcomes:	▪ Improve trade of goods to Honiara. ▪ Improve service delivery to rural communities. ▪ Reduce maintenance costs to vehicles using the road. ▪ Increase revenue and delivery time.
Alignment with National Development Strategy Objectives:	Will contribute positively to NDS Objectives 1, 2, 3, 4, 6, 8. ▪ East Guadalcanal road is an important link to a number of critical economic industries such as: Gold Ridge mining, GPPOL, major cocoa and copra production areas, timber milling and logging activities, and productive agricultural areas. Maintenance of roads, to ensure they are in good condition, will improve market accessibility and income for both businesses and rural communities. ▪ Good roads open up areas for future economic development, in sectors such as mining, forestry and agriculture. ▪ Increase access to Honiara improves social integration and ongoing peace building process. This is good for national cohesion and nation building. ▪ Improved service delivery.
Susceptibility to Climate Change and Natural Disasters:	▪ These graveled roads are much more vulnerable to heavy rainfall and flooding by rivers. Increase rainfall intensity in the future will impact on the road longevity, therefore design specifications in future must take this into consideration.
Project Status: (Including risks/obstacles)	Project is scheduled to be implemented in 2015 -2016.
Estimated Cost:	SBD49.4 million
Estimated maintenance cost:	SBD4.4 million
Implementation period:	2015-2016
Potential Funding:	National Transport Fund

R23 Malaita Feeder Roads Tranche 1

Project Scope:

The Maliata Feeder Roads project includes Busurata, Alisisiu-Aesi, Gwandingali and Talakali roads, located south of Auki. All these roads are linked to Auki the Provincial Capital of Malaita Province. They are linked to key airport and ports in Auki.

Busurata road runs inland east of Auki covering communities inland. These are communities with agricultural products such as pineapple, cocoa and vegetables, and pigs.

Alisisiu road to Aesi connects from the East Road close to Atori and running through Auluta Basin to Manu in the Susubenu/Burianiasi ward. Auluta Basin is the location for the proposed Palm Oil Plantation.

Gwandingali and Talakali roads are connected to Auki road via the South Road. These communities earn their income from agricultural products and fisheries products. Communities within Talakali are well known boat builders and have been prominent seamen and fishermen for generations.

Agencies Responsible:	Ministry of Infrastructure Development
Project Benefits/Outcomes:	▪ Integration of road networks and communities. ▪ Promote and improve road conditions for vehicles transporting agricultural products to Auki. ▪ Reduce maintenance costs for vehicles. ▪ Road improvements around Auki and adjoining communities ensures improved service delivery and access to important services such as Kiluifi hospital, banks and businesses in Auki and the number of surrounding secondary and primary schools by the population. ▪ Promote trade and economic activities.
Alignment with National Development Strategy Objectives:	Will positively contribute to NDS objectives 1, 2, 3, 4, 6, 8. ▪ Peace building and social integration. ▪ Promotion of economic development and improvement in living of standards. ▪ Improve physical infrastructure. ▪ Improve access to social services and reduction in vulnerability.
Susceptibility to Climate Change and Natural Disasters:	▪ The majority of these roads are located on land that is not so susceptible to sea level rise. They are more vulnerable to intense rainfall which can cause flooding and inundation of roads for several hours. Better drainage and road design to ensure roads are not flooded is important. Gravel base must also be designed better to withstand the increase intensity of the rainfall.
Project Status: (Including risks/obstacles)	▪ Project is to be implemented in 2015. Roads have been shortlisted for confirmation and scoping studies to be carried out to prepare for implementation.
Estimated Cost:	SBD28.9 million
Estimated maintenance cost:	SBD6.9 million
Implementation period:	2015
Potential Funding:	National Transport Fund

R39 Resealing of Urban Roads

Project Scope:

This project includes the resealing of all urban roads in Honiara up to the required specified standard which will be beneficial to both businesses and the traveling public.

Honiara urban roads includes those located within the following areas: Tasahe, Ngossi, Rove, Tavio, Tandai-White River, Lengakiki-Mbumbumru, Skyline-Mobokonavera 2,3,4,5, Vavaya-Mbokonavera1, Bahai-Kukum, Vura, Naha, Kombito to East Kola, West Kola, Kolaridge, Panatina, Tanakake, and Tanuli. Project will also include improvement to adjoining culverts and drainage.

Agencies Responsible:	Ministry of Infrastructure Development
Project Benefits/Outcomes:	▪ Sealed roads will reduce travel time to access schools, hospitals, clinics and businesses. Less time spent on roads means more time for other activities. ▪ Improved drainage within adjoining catchments. ▪ Sealed roads will reduce the costs associated with vehicles and equipment. ▪ Sealed roads also boost investment confidence and are good for the tourism sector.
Alignment with National Development Strategy Objectives:	Will contribute to NDS Objectives 1, 6, 7, 8. ▪ Good physical road infrastructure in Honiara should continue to support economic and business activities. ▪ Good roads improve social services delivery and improve access to the education and health sector by population. ▪ Adopting better designed roads should improve resilience to climate change impacts such as flooding and increased temperatures.
Susceptibility to Climate Change and Natural Disasters:	▪ Honiara urban roads are exposed to flooding, landslips, and increasing temperatures. Good design to adjoining catchment drainage, improved roadside hills reinforcement, and improves type of bitumen and gravel for sealing used should improve resilience.
Project Status: (Including risks/obstacles)	▪ The project is expected to be implemented in 2013. All scoping works have been done by MID and preparatory work for tendering should be released in early 2013.
Estimated Cost:	SBD20 million per year
Estimated Maintenance Cost:	SBD16.0 million
Implementation period:	2013
Potential Funding:	National Transport Fund

A3 Henderson Airport Apron Upgrade

Project Scope:

The international apron is 70m in length and 126m wide with an area of 8,820m^2. It currently has a large concrete patch repair. This apron was constructed in 1997 as part of the international airport development funded by the Japanese Government. The depth of the apron is 1050mm. The current condition of the apron is mentioned as poor, needing urgent renewal or overlay.

It is recommended that concrete can be used for renewal but this should only be applied areas where fuel spillage is envisaged, as fuel damages bitumen based materials. Concrete provides superior strength to high lateral wheel loads and could also be used at each end of the runway.

The parking area can only hold two aircraft and it needs to be upgraded to hold three aircraft. If an aircraft has technical problems and become unserviceable for a length of time, the situation will become a constraint to normal international flight operations. Expansion is also required for meeting the demands of increasing flight frequencies. Expansion of apron is to be on the western side of the existing site.

Proposed Action for funding

- Construction of a new taxiway to the international apron including lighting.
- Construction of the new apron including lighting
- Resurface the existing apron
- Marking both aprons and taxiway

Agencies Responsible:	Ministry of Communications and Aviation Civil Aviation Authority
Project Benefits/Outcomes:	▪ Upgrade apron and taxiway to international standard. ▪ Meet International Civil Aviation Safety obligations. ▪ Meet demand of increase International Traffic. ▪ Provision of additional parking area for a third aircraft.
Alignment with National Development Strategy Objectives:	Will contribute positively to NDS Objectives 5, 6, 7, 8. ▪ Provision of better infrastructure promotes trade and economic activities and increase economic growth and employment opportunities. ▪ The international airport is the gateway for International visitors and the tourism sector especially relies heavily on its existence. An efficient airport benefits the whole country.
Susceptibility to Climate Change and Natural Disasters:	See separate analysis in Appendix B ▪ The international airport is located in a flood prone area given its location within the Lunga river basin. Increase intensity in rainfall could be catastrophic for the airport, therefore, improved catchment drainage and controlled use of Lunga river by gravel extraction companies must be controlled.
Project Status: (Including risks/obstacles)	▪ Project is of critical importance and is already in a poor condition, therefore implementation is envisaged for 2013
Estimated Cost:	SDB44 million (Construction) +SBD30 million (Maintenance) = Total SBD74 million
Estimated Maintenance Cost:	SBD32.8 million
Implementation period:	2013
Potential Funding:	PAIP (World Bank)

A4 Provincial Airfields Upgrade

Project Scope:

This project will require the sealing of all existing coral based runways in provincial urban centres, and improvements of the coral surface for some of the minor airfields in order to meet the Dash 8 landing requirements and aviation safety standards.

Proposed runways include:

Priority#	Location	Province	Length (m)	Width (m)	Area (m2)
1	Kirakira	Makira/Ulawa	1210	30	36300
2	Taro	Choiseul	900	25	22500
3	Lata	Temotu	914	24	2936
4	Seghe	Western	915	30	27450
5	Qwanaru (Auki)	Malaita	945	30	28350
6	Tingoa	Renbell	720	20	14400
7	Anua	Renbell	695	18	12510
8	Balalae	Western	1650	25	41250
9	Manaoba	Malaita (new-built 2012)	?	?	?

Agencies Responsible:	Ministry of Communications and Aviation Civil Aviation Authority Solomon Airlines
Project Benefits/Outcomes:	▪ Support tourism. ▪ Increase traffic flow to and from the provinces. ▪ Improve efficiency of Solomon Airlines operations.
Alignment with National Development Strategy Objectives:	Will contribute positively to NDS Objectives 5, 6, 7, 8. ▪ Development of good quality infrastructure will ensure access to better market opportunities. ▪ Improved aviation travel will boost investor confidence and promote more investment in tourism in the provinces.
Susceptibility to Climate Change and Natural Disasters:	See separate analysis in Appendix B ▪ The majority of airfields are located close to the coast (except for Tingoa and Anua). Sea level rise is an imminent threat to their existence. Provision of future seawall protection or other means of protecting the runways needs consideration.
Project Status: (Including risks/obstacles)	▪ Project scheduled to be implemented in 2014, to be implemented over 5 years. This project will probably involve upgrading of 2 runways per year depending on budget allocation and availability. ▪ Potential land ownership/leasing issues to be resolved.
Estimated Cost:	SBD216 million
Estimated maintenance cost:	SBD11.5 million
Implementation period:	2014-2018
Potential Funding:	Concessional loan/grant

S1 Honiara Port Remedial Works

Project Scope:

This project is designed to address the current congestion at the main Honiara Port. The scope includes operational improvements as well as physical upgrading. It is intended to improve efficiency of vehicle traffic, and improve management of the overall operation of the Port. This strategy is designed to deal with the current issues experienced and posed by the current situation within the Ports and buy time for the identification of the new site and development of the new international port.

Agencies Responsible:	Ministry of Infrastructure Development Solomon Islands Ports Authority
Project Benefits/Outcomes:	▪ Improved efficiency in the short term will allow time for the proper study of options for the long-term.
Alignment with National Development Strategy Objectives:	Will contribute positively to NDS Objectives 1, 6, 7, 8. ▪ The international port in Honiara is the gateway to international trade. Cargo, fish, timber, copra and cocoa, palm oil leaving this port generate major revenue for the country. Incoming cargo is also received here before it is transhipped to other parts of the country. ▪ International tourist boats and visiting warships also use the Port. ▪ Improved infrastructure will not only meet increasing economic demand/traffic but also provide further employment for people in Honiara both directly and indirectly.
Susceptibility to Climate Change and Natural Disasters:	▪ Honiara Port is vulnerable to sea level rise and increase cyclone intensity. Any future design must be able to withstand strong wind and waves, and consideration to future sea level rise.
Project Status: (Including risks/obstacles)	▪ Project is urgent and is scheduled for action in 2014, depending availability of funds. ▪ The project will to some extent be dependent on reaching general agreement on the forward strategy for Honiara Port.
Estimated Cost:	SBD40 million
Estimated Maintenance Cost:	SBD7.2 million
Implementation period:	2014
Potential Funding:	Private

S2 Honiara Port Extension (new wharf)

Project Scope:

This project proposes the development of a new wharf at the current port location that will enable the port of Honiara to meet demand over the coming 20-25 years.

This project will require studies to identify the most suitable design for the new wharf, which would then be followed by design and implementation.

Agencies Responsible:	Ministry of Infrastructure Development Solomon Islands Ports Authority
Project Benefits/Outcomes:	▪ Will meet future trade traffic, and do away with delays and congestion at the port.
Alignment with National Development Strategy Objectives:	Will contribute positively to NDS Objectives 1, 5, 6, 8. ▪ Increased international trade through provision of better facilities. This will increase economic growth in the longer term. ▪ Increased employment opportunities.
Susceptibility to Climate Change and Natural Disasters:	▪ The new wharf will be exposed to sea level rise and strong cyclonic conditions as the intensity of wind increases as predicted.
Project Status: (Including risks/obstacles)	▪ Study and design currently ongoing with support of JICA. Project provisionally scheduled to be implemented in 2015-2016, depending on confirmation of funding by the Japanese Government.
Estimated Cost:	SBD180 million
Estimated Maintenance Cost:	SBD18 million
Implementation period:	2014-2015
Potential Funding:	Donor

S4 2013 Replacement Wharves

Project Scope:

This project will include the construction of new wharf structures to replace dilapidated ones. The following wharves have been identified: Buala (Isabel), Viru (New Georgia), Vuranggo (West Choiseul), Lambulambu, Legana (Vella la Vella) and Koriovuku (Ranongga).

Structural design of wharves to be similar to those implemented under SIEAP-reinforced cast in-situ piles, precast slabs, reinforced cast insitu adjoining embankments.

1. Vurrango Port is linked to Chirovanga and Taro (Capital of Choiseul Province) by road. The location is sheltered from sea state by reefs close offshore but open to wind from the NE. Access is less than favourable due to the offshore reefs. Depth of 4m is found at the end of the existing causeway – 30m offshore. Normally, copra collection is about 100 bags/month. Timber export is 100 cu.m./month at a price of SBD 1400/cu.m. There is a school and a church at the location.

2. Buala port is located at Buala the Capital of Isabel Province and is linked by road to Gojururu and Karana both provincial areas with great future development potential for cattle farming, copra, cocoa, and other business developments. The wharf was constructed in 1987 and needs to be raised, placed with new precast concrete slabs and piles reinforced to cater for the larger vessels such as MV Otega. This is the busiest port in Isabel Province.

3. Viru port is located close to Arara forestry area operated by Sylvania Forest Ltd. The port at Viru is not connected in any way to Munda by a road network except by sea. A new location is required for the new structure. Population at Viru is around 4000.

4. Lambulambu and Legana are all wharves located on the Island of Vella la Vella. The island does not have any effective road network that links all the communities. The only access to markets at Gizo and Honiara is by sea.

5. Lambulambu wharf was built in the mid 70s and the original structure has sunk into the water. The population of that area is around 1400. The population accessing wharf could easily exceed 2000 if neighboring communities use it. High tide also inundates the existing road and buildings next to the wharf.

6. Legana wharf was built in 1994 in a sheltered bay but was destroyed during the tsunami in 2007. The wharf structure has settled by 2m due to ground liquefaction. The wharf is located close to Clinic, School and copra shed. Population is >3000. Cargo handled at wharf is around 16t/month.

7. Koriovuku wharf was built around 1989 and is located on the north west end of the island of Ranongga, Western Province. The wharf is close to a Copra Shed possibly owned by the CEMA. Population is >8000. Copra, cocoa and trochus is exported from this island. 8 tonnes/month of cargo handled on this site.

Agencies Responsible:	Ministry of Infrastructure Development
Project Benefits/Outcomes:	▪ Promote and improve trade and access to markets. ▪ Provide better ports for vessels to berth. ▪ Provide safe embarkation and disembarkation for population. ▪ Improve service delivery to rural population.
Alignment with National Development Strategy Objectives:	Will contribute positively to NDS Objectives 1, 2, 6, 7, 8. ▪ Improvement to wharves will improve and increase trade between the various communities with the main urban centres. Increase in incomes from goods traded will improve livelihoods. Existence of wharves will create employment. ▪ The infrastructure will ensure vulnerable people are better able to embark and disembark safely and increasing their chances to access better education and health services. ▪ Wharves will further integrate and link communities to a network of shipping services that will deliver and move people and goods more regularly.
Susceptibility to Climate Change and Natural Disasters:	See separate analysis in Appendix B ▪ Wharves, due to their location, are vulnerable to sea level rise and intensity of cyclones. Future design must take into consideration impacts from wave action, wind strength and sea level.

Project Status: (Including risks/obstacles)	▪ Project scheduled to be implemented in 2014 for the next 2 years. This will follow from the DMSP Phase 2 Lot 2 wharves scheduled for 2013.
Estimated Cost:	SBD25 million
Estimated Maintenance Cost:	SBD5.0 million
Implementation period:	2014-2015
Potential Funding:	National Transport Fund

S13 New Wharves Tranche 2

Project Scope:

The Tranche 2 project will include the construction of new, replacement or rehabilitation of wharves at Bina Harbour, Suava Bay, Santa Ana, Tulagi, Pepesal and Taroniara.

Bina Harbour has been a site proposed for an International Port but land dispute has continued to affect the proposed project. The ongoing land dispute resulted in the proposal to construct a smaller wharf which could be extended in the future should land matters are solved. Bina is 20 km away from Auki township (Capital of Malaita Province) and is linked via a road network heading South to Su'u Secondary School and Afutara airfield and RTC.

Suava Bay is located in Matakwalao, and was identified for a proposed economic growth centre and a fish processing plant. This project is also linked to the proposed Suava Bay Industrial park. There is no wharf there at the moment as boats use Malu'u as their anchorage. Suava is linked by road to Malu'u and Auki, and Gwantolo in the Lau Lagoon. Adaua Provincial Secondary School is also linked to Malu'u and Suava by road. The newly built Manaoba is only 10 minutes ride by boat to the island of Manaoba. Population within that vicinity who could likely to use the infrastructure >15,000.

Santa Ana wharf is located on the Island of Santa Ana, East of the main island of Makira. The only means of access is by boat. There are no roads linking the island. The closest existing wharf is at Namunga on the island of Makira which is >60 minutes ride by motorised canoe.

Tulagi wharf is located on the island of Tulagi in Central Province. The existing wharf has collapsed and need replacement. Tulagi is the Provincial capital of Central Provincial with all the administration buildings there. Sasape Slipway which is newly revamped is located at the capital.

Taroniara wharf is located at the Anglican Church mission station on Main Ngella Island. There is a church, school, clinic, and slipway there. The slipway used to service boats as far as Vanuatu in the early 50s and 60s. It is well located in the sheltered passage of Mboromole passage which connects to Siota wharf in the south east end of the passage, is a stopover for vessels on their way to Auki, Malaita Province. Vessels leaving this wharf would normally stop at Tulagi wharf on their way to Honiara.

Pepesal is located on west side of Pavuvu Island, in the Russell Islands, which is part of the Central Province. No details are available on this particular wharf. A condition survey on this wharf will be conducted in 2013. This wharf is located close to the old hospital and used mainly for loading fish, copra, cocoa, general cargo, timber plus passengers.

Agencies Responsible:	Ministry of Infrastructure Development
Project Benefits/Outcomes:	▪ Safe embarkation and disembarkation facilities especially for the vulnerable. ▪ Improve rural trade and access to market will increase income and reduce poverty. ▪ Integration of communities through improved linked shipping routes and services. ▪ Improve service delivery especially in education and health.
Alignment with National Development Strategy Objectives:	Will positively contribute to NDS Objectives 1, 2, 6, 8. ▪ Improve physical wharves will improve and increase trade between the various communities with the main urban centres. Increase in incomes from goods traded will improve livelihoods. Existence of wharves will create employment for men looking for casual work loading and offloading goods. ▪ The infrastructure will ensure vulnerable people are better able to embark and disembark safely and increasing their chances to access better education and health services. ▪ Wharves will further integrate and link communities to a network of shipping services that will deliver and move people and goods more regularly.
Susceptibility to Climate Change and Natural Disasters:	See separate analysis in Appendix B ▪ Wharves, due to their location, are vulnerable to sea level rise and intensity of cyclones. Future design must take into consideration impacts

	from location, wave action, wind strength and sea level which can easily destroy the infrastructure if it is not designed to meet climate change impacts.
Project Status: (Including risks/obstacles)	▪ Project to be implemented between 2015 and 2016. This should follow after the 2013 Replacement wharves project is nearing completion. ▪ Potential land ownership/leasing issues to be resolved.
Estimated Cost:	SBD68 million
Estimated maintenance cost:	SBD10.9 million
Implementation period:	2015-2016
Potential Funding:	National Transport Fund

WS6 Water Supply 2-Year Plan, 2013-2015

Project Scope:

The Solomon Water Development Plan 2013-2015 is an extension of the current AusAID grant aid funded Short Term Recovery Strategy and Action Plan 2012. This plan also complements the current JICA grant aid water improvement programmes to Solomon Water.

The overall objective of the development plan is to move Solomon Water forward to a position where its infrastructures is capable of supporting an acceptable quality of service to the population and is based on a firm financial position.

Agencies Responsible:	Solomon Islands Water Authority
Project Benefits/Outcomes:	▪ Improve coverage, reliability, water quality of water and sanitation (Honiara, Tulagi, Noro and Auki) ▪ Improve health conditions in urban centres (Honiara, Tulagi, Noro and Auki) ▪ Support the Business and commercial sector ▪ Support the Tourism Sector.
Alignment with National Development Strategy Objectives:	Will contribute positively to NDS Objectives 1, 2, 3, 4, 6, 7, and 8. ▪ Improve physical infrastructure such as a water supply will improve health of population, improve business environment, and supports industries such as tourism. ▪ A healthy population will more likely participate in employment and economic activities such as farming, animal husbandry, fisheries and so on. More people employed, living standards will improve. ▪ Improve water supply will serve the most vulnerable by bringing water closer to homes, create better school learning environment and reducing incidences of health diseases.
Susceptibility to Climate Change and Natural Disasters:	▪ Water level and quality is susceptible to changing rainfall. ▪ Increase in sea level rise may result in salt water intrusion to some of the water sources.
Project Status: (Including risks/obstacles)	▪ The SIWA Two-Year Plan proposal document has been recently approved for funding starting mid 2013 to mid 2015.
Estimated Cost:	SBD 76 million (AusAID 10 million)
Estimated Maintenance Cost:	SBD11.2 million
Implementation period:	2013-2015
Potential Funding:	AusAID

WS7 WASH Projects

Project Scope:

This project includes the provision of water supply and sanitation facilities and services to the rural population throughout Solomon Islands. Project will include: (a) institutional strengthening of the Rural Water Supply and Sanitation Division in the Ministry of Health and Medical Services, strengthening Provincial Health and Works Division, and improving coordination with other NGO organisations providing same (b) identify gaps and demands in rural area for WASH and implement WASH projects that would improve situation on the ground (c) develop database and improve existing information management system (d) improve monitoring.

Agencies Responsible:	Ministry of Health and Medical Services Rural Water Supply Division Provincial Health and Works Divisions.
Project Benefits/Outcomes:	▪ Improve coverage of water and sanitation in rural areas. ▪ Improve health conditions in rural areas and reduce incidences of water borne diseases. ▪ Improve learning environment for school children and students. ▪ Support the Tourism Sector.
Alignment with National Development Strategy Objectives:	Will contribute positively to NDS Objectives 1, 2, 3, 4, 6, 7. ▪ Improve access to water and sanitation will promote healthy environment for rural communities and improve conditions for the vulnerable people. Schools will have better learning environment for the children. ▪ Improve water supply and sanitation will promote the tourism sector as more and more rural people participate in providing services to the tourism industry in one way or another. Promoting their participation will increase job creation and employment opportunities.
Susceptibility to Climate Change and Natural Disasters:	See separate analysis in Appendix B ▪ Depending on location (at this stage locations are not specified), WASH projects will be affected by either increased evaporation due to increased temperature, increase salinity due to salt water intrusion, or damage caused by earthquakes to pipelines, storage tanks and dams.
Project Status: (Including risks/obstacles)	▪ Project implementation is scheduled for 2014-2020. Note that some preparatory works will start in 2013 specifically in institutional strengthening of RWSS Division of the MEHMS.
Estimated Cost:	SBD214.2 million
Estimated Maintenance Cost:	SBD8.5 million
Implementation period:	2013-2020
Potential Funding:	European Union, AusAID, Solomon Islands Government

SW2 Provincial Sanitary Landfills

Project Scope:

Development of sanitary landfills, and strengthening provincial Health Divisions and Works Department to collect, sort and control waste.

The lessons learnt from the current JICA funded solid waste management pilot projects in Gizo and Honiara to be translated to the other Provincial Urban Centres. The current JICA funded project (2011-2015) is currently looking at: (a) improving capacity in the ministry responsible, (b) developing communications strategy, (c) collecting information of waste, (d) developing a landfill rehabilitation plan and (e) rehabilitating existing landfills through sorting of waste and putting more control in disposal.

Urban Centers: Auki, Noro/Munda, Lata, Kirakira, Tulagi, Taro, and Tingoa

Agencies Responsible:	Ministry of Environment, Climate Change, Disaster Management and Meteorology (Department of Environment). Ministry of Health and Medical Services. Provincial Health Divisions Provincial Works Divisions
Project Benefits/Outcomes:	▪ Controlled and well managed waste sanitary landfills. ▪ Reduce uncontrolled informal waste disposal. ▪ Better monitoring of waste and information on waste. ▪ Improved health conditions for urban population. ▪ Improved communications – awareness on waste management amongst the population.
Alignment with National Development Strategy Objectives:	Will contribute positively to NDS Objectives 1, 2, 3, 4, 6, 7. ▪ Improved sanitary landfills will help promote resilience of waste management against climate change impacts. ▪ Better management of waste provides a healthy environment for all urban populations. ▪ Good management of waste promotes good businesses and trade environment. Waste can also create business opportunities and employment opportunities.
Susceptibility to Climate Change and Natural Disasters:	See separate analysis in Appendix B ▪ Sanitary landfills are vulnerable to increases in intense rainfall or cyclonic conditions. Poor disposal can cause pollution to underground water source and/or surrounding land and aquatic environment.
Project Status: (Including risks/obstacles)	▪ This project is scheduled to start in for 2015-2017 and should be implemented straight after the J Prism project funded by JICA for Honiara and Gizo is completed.
Estimated Cost:	SBD15 million
Estimated Maintenance Cost:	SBD0.9 million
Implementation period:	2014-2020
Potential Funding:	Concessional loan/grant

E4 Honiara SIEA Genset Upgrade

Project Scope:

Replacement of old generator sets with two (2) x 5MW Genset and 2 x 'skid mounted' 1.5MW Genset at Lungga Power Station. The upgrade will be conducted in 2 stages: (a) 2 x 1.5MW -2012/2013 and (b) 2 x 5MW-2013/2014. The energy demand in Honiara is growing by 6% per annum and by 2020 (8 years time) energy consumption demand will be 25.5MW. The upgrade is designed to cater for demand in energy in the coming years.

Agencies Responsible:	Ministry of Mines, Energy and Rural Electrification. Solomon Islands Electricity Authority.
Project Benefits/Outcomes:	▪ Stabilise power supply in Honiara. ▪ Replace old Gensets. ▪ Allow for flexibility in SIEA's maintenance of Gensets without disrupting power supply. ▪ No more load shedding. ▪ Reduction in privately owned Gensets as businesses has more confidence in SIEA.
Alignment with National Development Strategy Objectives:	Will contribute positively to NDS Objectives 1, 2, 3, 4, 6, 8. ▪ Improved energy/power infrastructure in Honiara will support economic growth and business environment. Businesses that rely heavily on power will benefit if supply is reliable and affordable. ▪ Support vulnerable people to have access to affordable power for their lighting, storage and cooking. ▪ Improved affordable and reliable energy will improve support to schools, clinics and residences in general.
Susceptibility to Climate Change and Natural Disasters:	▪ The impact of climate change will be minimal.
Project Status: (Including risks/obstacles)	▪ Project scheduled to start in 2013 and completed by 2015 in accordance with SIEAs plan of action.
Estimated Cost:	SBD150 million
Estimated maintenance cost:	SBD24.0 million
Implementation period:	2013-2015
Potential Funding:	Solomon Island Electricity Authority (own resources plus loan) Solomon Islands Government (Loan guarantee only)

E5 Tina Hydropower

Project Scope:

Tina Hydro is now in its final phase of preparation before an Independent Power Producer is contracted to commence construction. The scope of the development shall include: (a) rock filled dam of 80-90 m high, (b) three turbines with combined capacity of 18-21MW, (c) Scheme to supply Honiara with roughly 72-75 GWh, and (d) construction to start 2015 and complete 2017.

It is expected that SIEA will sign a Power Purchase Agreement (PPA) which will repay the construction cost over 25 years; SIG will guarantee the performance of SIEA in paying this PPA.

Agencies Responsible:	Ministry of Energy Mines and Rural Electrification (MEMRE). Solomon Islands Electricity Authority (SIEA)
Project Benefits/Outcomes:	▪ Reduce cost of energy. ▪ Provide affordable and reliable energy to businesses and communities. ▪ Reduce expenditure and dependency on imported fuel. ▪ Improve SIG's goal to meet CO_2 reduction targets. ▪ Improve Solomon Islands Green Image.
Alignment with National Development Strategy Objectives:	Will contribute positively to NDS Objectives 1, 2, 3, 4, 6, 8. ▪ Affordable and improved energy supply in Honiara will support economic growth and business environment. Businesses that rely heavily on power will benefit if supply is reliable and affordable. ▪ Support vulnerable people to have access to affordable power for their lighting, storage and cooking. ▪ Improved affordable and reliable energy will improve support to schools, clinics and residences in general.
Susceptibility to Climate Change and Natural Disasters:	▪ Water level at the dam is susceptible to changing rainfall patterns, and increasing temperature.
Project Status: (Including risks/obstacles)	▪ Project will start first quarter 2015 and complete by 2017.
Estimated Cost:	SBD770 million
Estimated Maintenance Cost:	SBD107.8 million
Implementation period:	2015-2017
Potential Funding:	World Bank

E12 Rural Electrification Program

Project Scope:

Increase access to electricity in rural areas through a variety of technologies that are most appropriate to a specific situation.

Agencies Responsible:	Ministry of Energy Mines and Rural Electrification (MEMRE). Solomon Islands Electricity Authority (SIEA)
Project Benefits/Outcomes:	▪ Increase access to electricity to rural population ▪ Improved access to energy for small enterprises in rural areas ▪ Provide affordable and reliable energy to businesses and communities. ▪ Reduce cost of energy.
Alignment with National Development Strategy Objectives:	Will contribute positively to NDS Objectives 1, 2, 3, 4, 6, 8. ▪ Affordable and improved energy supply in rural areas will support access to energy and economic growth and business environment. Businesses that rely heavily on power will benefit if supply is reliable and affordable. ▪ Support vulnerable people to have access to affordable power for their lighting, storage and cooking. ▪ Improved affordable and reliable energy will improve support to schools, clinics and residences in general.
Susceptibility to Climate Change and Natural Disasters:	▪ To be determined and depending on local conditions
Project Status: (Including risks/obstacles)	▪ Program and projects to be formulated based on current sector studies and analysis. Program is expected to start in 2016, to be continued with annual allocations up to 2020.
Estimated Cost:	SBD100 million
Estimated Maintenance Cost:	SBD5 million
Implementation period:	2016-2020
Potential Funding:	To be determined

Appendix B: Climate Change Project Assessments

MS4	Honiara Urban Development
R9	Malaita North Road Further Phase
A3	Henderson Airport
A4	Provincial Runways
S2	Honiara Port Extension (new wharf)
S4 & S13	2013 Replacement Wharves & New Wharves Tranche 2
WS6&7	Water Supply 2 Year Plan and WASH Projects
SW2	Provincial Sanitary Landfills
E4	Tina Hydropower

Project MS4. Honiara Urban Development

Climate Change and Disaster Risk Management Strategy

1. Climate Change and Disasters Threats

Honiara city bears the highest potential losses from earthquakes and tsunamis in the Solomon Islands, owing to its population and infrastructure concentration.[1] The city falls outside the main risk area of the Lungga river catchement flood risk area and is more protected from large scale floods from the Lungga River due to a slight elevation compared to surrounding areas. Honiara is nevertheless exposed to strong winds/cyclones, sea-level rise and flooding, tsunamis and earthquakes, according to a recent UN-Habitat vulnerability assessment.[2] Other climate related hazards which have not been assessed in detail include drought, groundwater depletion, salt water intrusion, and coral bleaching, all of which would have an impact on the ability to residents to maintain their health and livelihoods.

The coastal areas of Honiara are zoned for mixed use including industrial, commercial, and residential. In these areas, including unplanned residential areas, the main concerns include flooding, storm surges, and sea-level rise. Populations have adapted by raising houses on stilts and building stronger buildings. However, a lack of sanitation services, coastal erosion, and drastically falling fish stocks put people at risk. Further inland in the hilly areas, residential areas dominate land-use, including residents holding temporary occupied licenses, where poverty rates are also the highest in Honiara. These areas experience soil erosion, flooding from flash floods, river runoff, and runoff from roofs of buildings. Infrastructure is markedly lacking, including transportation and proper water and sanitation. Floods result in spread of diseases and loss of assets.

Figure B.1 highlights identified hotspots for hazard exposure in Honiara, including vital infrastructure such as Henderson Airport, the main Port of Point Cruz, the National Referral Hospital, and the Marine Training base, all of which are critical for supporting evacuations and emergency relief operations during disaster events. A review of historical hazard events show that areas damaged in the past include Henderson Airport, Point Cruz wharf, Lungga River bridge, and the Main road in Kukum and Rove.The following illustrations, kindly provided by the UN-Habitat Vulnerability Assessment of Honiara identify some hot spots for transport, water supply, and sanitation

2. Adaptation Strategies

A number of underlying challenges, unrelated to climate change and natural disasters, must clearly be addressed as part of the climate change solution. Upgrading Temporary Housing Areas (THAs) to formal settlements with access to infrastructure services is critical. Integrated and long-term urban planning, including spatial planning and specific straegies to protect the poorest populations, need reinforcements.

In terms of reducing vulnerability to climate change and disasters, a number of activities are proposed:

Activity 1. Assist the Honiara City Council integrate hazard and climate change information into its short, medium, and long term urban planning.

Activity 2. Together with the National Disaster Management Office and its network, identify and protect infrastructure critical to emergency response, such as main access roads, the port, hospitals, and access to safe areas.

Activity 3. Identify new infrastructure which can serve to protect the city's most vulnerable areas to damages during hazard events.

Activity 4. Undertake an assessment of the impacts of climate change, including increased temperatures, changes in rainfall, and salt water intrusion on sustainable water supply and sanitation systems. Identify rehabilitation needs of existing systems to reduce impacts during storms and droughts.

[1] World Bank (WB), Asian Development Bank (ADB), International Monetary Fund (IMF), and the Secretariat of the Pacific Community (SPC). *Pacific Catastrophe Risk Assessment and Financing Initiative* (September 2011), http://pcrafi.sopac.org/.
[2] The research for the summary is based on the presentation of Ms. Amillah Rodil, UN-Habitat Consultant.

Figure B.1 Exposure of Transportation Infrastructure to Hazards

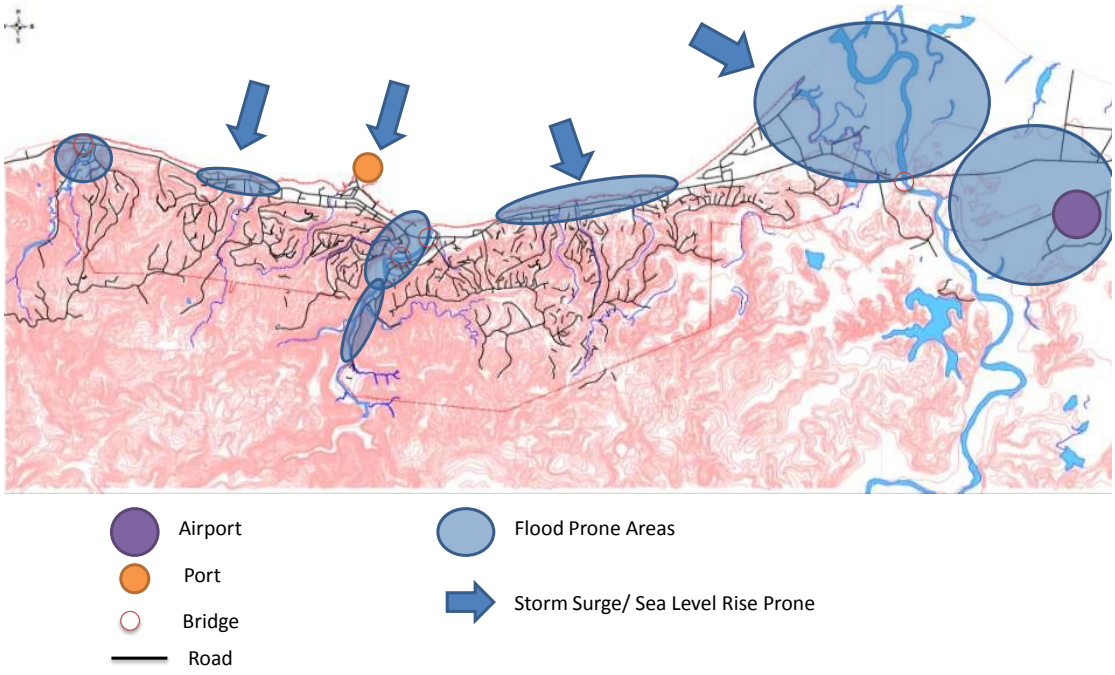
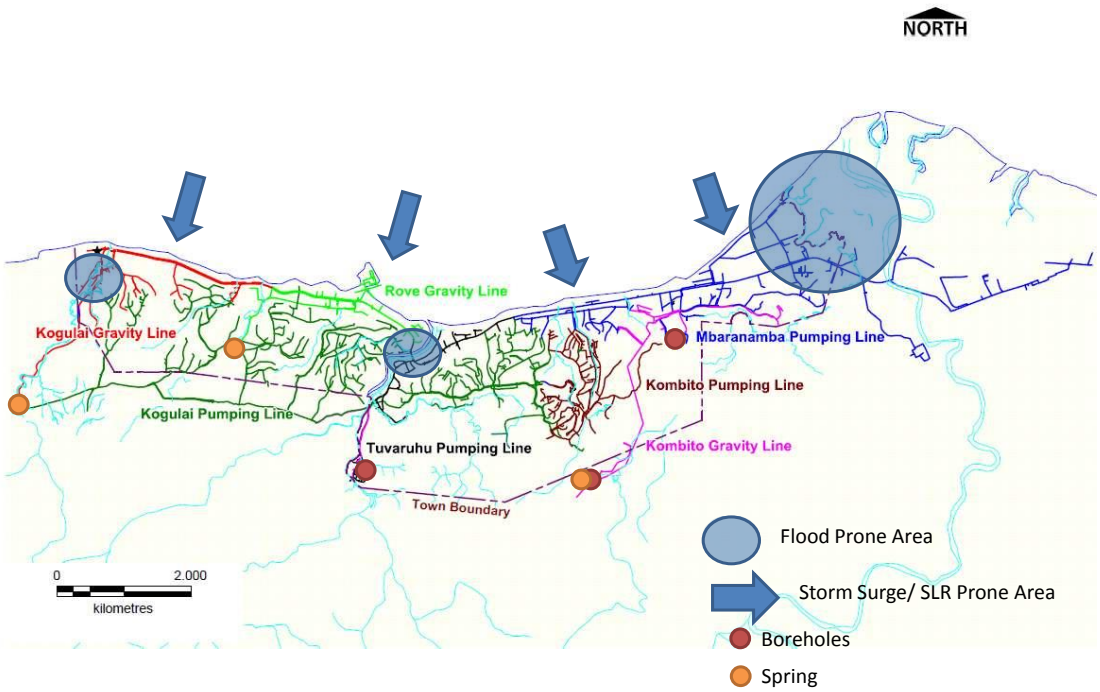


Figure B.2 Exposure of Water Supply Infrastructure to Hazards



Project R9. Malaita North Road Further Phase

Climate Change and Disaster Risk Management Strategy

1. Climate Change and Disasters Threats

This road is an extension to a nearly complete road-upgrading project, Solomon Islands Road Improvement Project II (SIRIP II), which included a climate change-proofing component.

In that context, a recent study commissioned by the ADB[3] assessed expected sea level rise for northern Malaita. The study found that the mean expected relative sea level rise for Auki and northwest Malaita by 2030 is 0.15m to 0.23m, compared to average levels during the period of 1980-99. For 2040, this range is 0.19m to 0.31m, and for 2050 the range extends from 0.24m to 0.38m. A low-probability, high-impact climate change scenario gives a range of sea-level rise to 2095 of 0.98m to 2.58m.These sea level rise assessments unfortunately do not account for any of storm surges, extreme tides, or changes in wave climatology, which are important factors in determining stress of coastal infrastructure and protective vegetation but are difficult to understand without detailed local marine studies.

The overall climate change findings for the area include (SIRIP IEE):

- Consistent with International Panel on Climate Change (IPCC) projections, the Solomon Islands could experience temperature increases in the order of 0.8°C and 2.2°C.
- Mean annual changes in rainfall matter less than changes in frequency and intensity of rainfall events, particularly as the region is already prone to floods and droughts, and water for agriculture is supplied almost entirely by rainfall (rather than by irrigation). More rainfall is expected in summer (the traditional wet period), and less in the already dry months, highlighting difficulties for sustaining crops throughout the year. Rainfall events are likely to be more intense, although possibly less frequent, with implications for both flooding and drought.
- Annual rainfall could increase by between three per cent and 10 per cent. Average rainfall intensity may also increase.
- Changes in rainfall during winter and summer are expected to be more pronounced than in other seasons. The months of February and July/August may record the greatest monthly precipitation volume increase.
- During the wet season, increase in total monthly rainfall is expected to be more constant than for the dryer period, with the most significant changes being in February and March, with increases estimated to be in the order of six-to-nine per cent, to 13 per cent. For other wet season months, rainfall increases range from three-to-four per cent, to 12%.
- Extreme hydrological events (floods and droughts) are unlikely to change markedly during the period compared with the existing situation. However, this does not mean that severe droughts and floods, as observed in the recent past, will decrease in either frequency or severity.
- Based on the foregoing temperature and rainfall projections, the total water volume flowing in the rivers on Malaita could slightly increase by 2080.

The climate change adaptation assessment conducted for the existing road project concludes that cumulatively, these changes could affect downstream river stretches flowing to the coast. Sea level rise, increased storm surges, and increase in wave heights could significantly affect river hydraulics and estuary/coastal zones. Such hydraulic changes and the associated backwater effects could lead to more frequent and intense river overbank flows and wave over-topping, with serious consequences in respect of potential impacts and damage. These considerations should be kept in mind when planning and building infrastructure in the coastal zone of Malaita.

In addition, the vulnerability of roads in northern Malaita is exacerbated by human activities that increase coastal erosion and by lack of any maintenance programs for the road. The erosion-affected sections are at located low-lying areas and where higher levels of community activities occur. Community activities, including village sites, market areas, mangrove timber collection, and boat/canoe access locations, have contributed to a degraded local environment reducing its natural resistance. There is evidence that high tides have inundated the road at some time although it does not seem to be an occurrence for regular high tides. Drainage is also poor and causes damage to the road formation.[4]

2. Adaptation Strategies

Activity 1. Undertake a comprehensive integrated risk (hazard and vulnerability) assessment to inform responses to the current disaster risks, as well as climate-proofing of road infrastructure in the light of projected increases in risks due to climate change.

Activity 2. Undertake an assessment of ecosystem dynamics affecting the road system, including coastal zone degradation, off-shore protective measures, upstream defforestation, debris, and sedimentation.

[3] Met Office – Hadley Centre, *Sea-Level Rise Projections for Solomon Islands Road Improvement Project (SIRIP) North Malaita*, draft (United Kingdom: 2011).
[4] Asian Development Bank (ADB), *Second Solomon Island Road (Sector) Improvement Project: SIRIP-2 Initial Environmental Examination In Association with North Road Malaita Province*, Report No. 69 (April 2011).

Activity 3. Identify appropriate expertise and terms of reference for the project design team. This may include an environmental economist to work with the transport economist to undertake a more comprehensive assessment of costs and benefits of non-engineering adaptation solutions. An economist with expertise in risk and probability analysis should also be considered.

Activity 4. Develop and implement a monitoring and evaluation system for existing road sector projects to collect information that can feed into the development of more evidence based adaptation strategies in the transport sector

Activity 5. Develop a long-term transport and resiliency strategy including short-term, medium-term, and long term resilince measures for coastal infrastructure in northern Malaita. Apply integrated coastal management principles and ridge to reef review of infrastructure resilience challenges and needs.

Activity 6. Pre-allocate additional financial resources for climate resiliency investments.

Project A3. Henderson Airport Apron Upgrade

Climate Change and Disaster Risk Management Strategy

1. Climate Change and Disasters Threats

Henderson Airport is located in the mid-catchment zone of the Lungga River Catchment and floodplain. The main risks for the airport from hazards and climate change are large-scale flooding, extreme drought, intense flash floods, and increased temperatures.

Figure B.3 identifies the flood and landslide risks in the Guadalcanal Plains. The purple colored areas have the highest risk levels (NDMO), where the airport is located. Risk from high intensity flash flooding is considered very high, and results in high rate of erosion, including gullying and landslides. Storm surge/coastal flooding and saline intrusion, has a medium vulnerability level. Coastal flooding is not considered a high risk due to the high elevation (5m to 9m above sea level[5]) above the mean sea level at present.[6]

Cyclones are also a cause of much of the flooding. In 1967, Cyclone Glenda flooded the airport up to the level of an airplane engine. The airport and terminal buildings were flooded with six inches of water again in 1972 during Cyclone Carlotta.

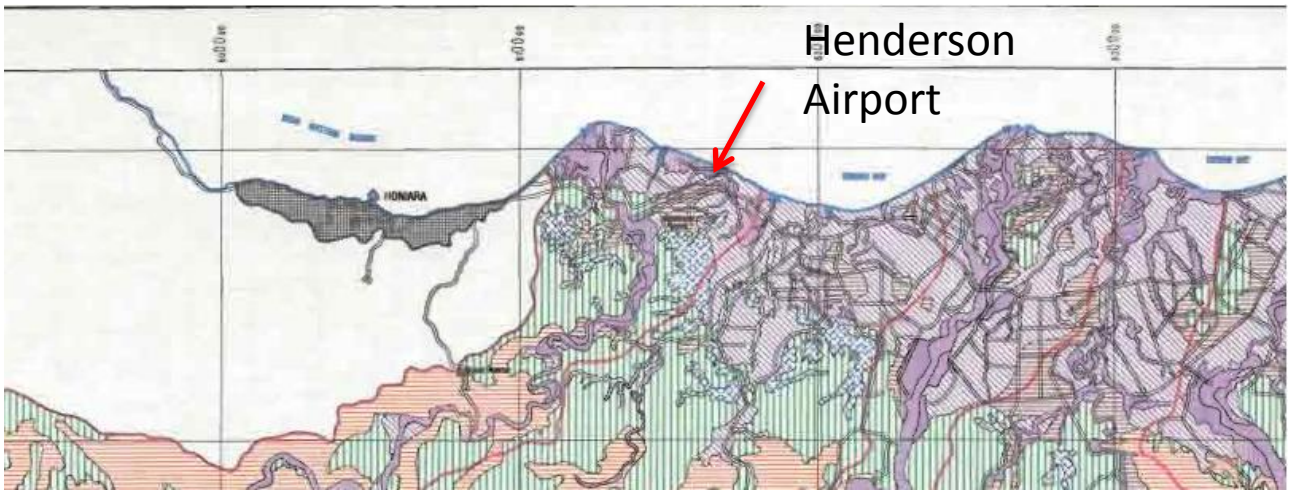
Extensive flood damage occurred to the airport runway and facilities in the 1986 cyclone Namu, during which the airport was inundated by large scale extreme flooding and the flood depth at the domestic terminal was waist high[7] or about a metre. Some wind damage also was sustained during that cyclone on the airport terminal and buildings. The storm water drainage system was completely overloaded and, unable to handle the massive flooding, suffered damage through inundation. The runway was out of service and planes could not land or takeoff for some days due to extensive pavement and foundation damage as a result of the flood.

Currently for the international terminal building, corrosion damage is a concern observed on the primary load bearing steel columns, and could be related to salinity carried by wind as the airport is located close to the sea. Pavement damage such as rutting and buckling has been observed, and it could be due to temperature increase and extreme heat

Climate change predictions point towards more extreme cyclones and rainfall events, while overall average annual rainfall is expected to decrease. Moreover, sea levels in Honiara have been rising by 8mm/year since 1993, much higher than the global average of 2.6-3.8mm/year.[8]

The implications of climate change include greater flood risks from the Lungga river basin from cyclones and materials degradation due to higher temperatures. The impacts on the airport can both operational and structural, including airport closures, flight delays, and safety concerns. The infrastructure itself may experience higher rates of erosion, pavement rutting, and buckling.

Figure B.3 Flood and Landslide Hazards in the Guadalcanal Plains and Henderson Airport (NDMO Datasets)



[5] *Revised Baseline Assessment* (September 2011).
[6] Asian Development Bank, KBR, LBS Engineers, *Vulnerability Assessment/Adaptation Options* (September 2011).
[7] Solomon Islands Meteorological Service 1986.
[8] Pacific Climate Change Science Program (PCCSP) (2011).

2. Adaptation Strategies

The project design would benefit from some additional preparatory assessments including:

Activity 1. Review of records for previous damages caused by past hazard events and maintenance needs due to climate related deterioration. Identify causes, historical costs of damages, and recommendations for future upgrade.

Activity 2. A detailed flood protection strategy is developed for Henderson Airfield, including over the short-term, medium-term, and long-term.[9]

Activity 3. Identify the best technologies to ensure apron integrity under a scenario of higher temperatures, higher salinity, more intense rainfall and flooding events, and higher intensity cyclones.

Activity 4. Integrate options into project design and budget.

[9] Noel A. Trustrum; Ian E. Whitehouse; Paul M. Blaschke. *Flood and Landslide Hazard Northern Guadalcanal, Solomon Islands* (1989).

Project A4. Provincial Airfields Upgrade

Climate Change and Disaster Risk Management Strategy

1. Climate Change and Disasters Threats

A total of eight provincial runways have been marked for upgrades through this project and are listed in the table below. The exposure of the different areas varies, but sea level rise, strong winds including cyclones, and increased temperatures are a concern for all. Some have previously been exposed to damages during tsunamis, such as in Choiseul, while others are located in extremely sensitive beach landing areas. A number, such as in San Cristobal, may be more protected because they are more elevated land or protected in lagoons.

Little information exists regarding the vulnerability and exposure of the existing sites and infrastructure to the impacts of climate change (sea level rise, increased winds, and storms) and natural disasters (earthquakes, tsunamis).

Table B.1 Identification of Provincial runways and exposure to climate change and disasters

Island	Location	Exposure
Choiseul	Taro Island	Was exposed to tsunami, low lying, swampy, sea-level rise and storms a concern
New Georgia	Seghe	Low-lying but in a lagoon
Santa Isabel	Fera	Beach landing strip
Malaita	Guanaru	Exposed coast
San Cristobal	Kirakira	Coastal but slightly elevated land
Santa Cruz	Lata	
Rennell and Bellona	Anua	
Malaita	Maana'ba island	North Malaita lower hazard risk

2. Adaptation Strategy

The proposed activities would seek to address the information and knowledge gaps necessary for locating airfields, and improving their design and management.

Activity 1. Undertake an integrated vulnerability and impacts assessment of runways to damages and safety concerns due to natural hazards and climate changes. These include coastal erosion, the impacts of sea level rise, earthquake risks, and the impacts of changes in rainfall patterns to maintenance needs.

Activity 2. Identify measures to reduce the vulnerability of runways and integrate these into project planning and design.

Activity 3. Identify safety concerns and response plans during hazard events such as earthquakes and typhoons.

Project S2. Honiara Port Extension

Climate Change and Disaster Risk Management Strategy

1. Climate Change and Disasters Threats

This project proposes the development of a new wharf at the existing Honiara Port. Current and past challenges to the port offer an indication of how future risks may be exacerbated due to climate change.

The current shipping infrastructures are located mostly at the coastal seafront around the harbour, making them more vulnerable to threats relating to sea level rise and storms. Along the Solomon Islands Port Authority (SIPA) coastline, foundation damage due to wave actions during storms has been occurring, and concrete dolosses have been used to protect the coastline from further damages. Wharves, jetties, and ramps have also been under threat from damage due to storm surges and wave overtopping; causeways and parking areas are also vulnerable to scouring from the process. Sediment build-up or deposition on the seabed in the harbour continues to occur due to riverine floods and surface runoffs going into the harbour. The corrosion of steel works is a common problem and more critical for shipping infrastructure due to their exposure to the marine environment. During storms visibility for navigation can be impaired, making it difficult for sighting of navigational lights at the Port especially at nighttime. The coastline of Honiara is littered with ships washed ashore during past storm surges. Storm surge also was responsible for incidences of damage to floating navigational buoys causing them to drift away from their fixed locations – this could cause confusion in navigation leading to possible accidents.[10]

2. Adaptation Strategies

Shipping navigation is sensitive to storminess and wind/wave conditions, and also to sea level in ports. The industry needs to be prepared to adapt sea waterways and seaports, infrastructure and facilities, as well as the ships and navigational equipment, to be able to continue to operate successfully in future.11 Adaptation measures should include the proper design and location of the new port. A number of ongoing risks assessments for Honiara and Guadalcanal should inform this process. Implications for navigation should also be considered given the importance of shipping transport to the Solomon Islands and the history of accidents during storm events. Examples from the World Association for Waterborne Transport Infrastructure (PIANC) are shown in Table B.2 below.

Activity 1. Incorporate a thorough assessment of risks posed by climate change and storms into the study and design of the new wharf. This should include vulnerability to the adjacent infrastructure needs, such as access routes and storage facilities.

Activity 2. Incorporate measures to reduce losses and increase security of port operations during extreme events.

Activity 3. Develop and implement improved safety and navigation measures for reducing risks during extreme events.

Activity 4. Identify and install measures to minimise potential pollution that may flow from damages to ports and associated facilities, such as from oil tankers, chemical spills, and hazard events.

[10] ADB, KBR, LBS Engineers, *Revised Baseline Assessment*.
[11] World Association for Waterborne Transport Infrastructure, PIANC.

Table B.2 Potential Adaptation Measures for Shipping Infrastructure, Operations, and Management and Navigation

Area of intervention	Response (measures)
Maritime infrastructure design	Redevelopment of wharf fendering (to barrier ships at dock)
	Increase of quay levels, sea wall structures and connected area behind to overcome increased frequency of overtopping and low land flooding
	Lowest point in buildings placed at a higher level
	Revision of ship tunnel dimensions
	Relocation or strengthening of less protected marinas for pleasure boats
	Stronger and higher salt water erosion resistant bridges needed
	Overtopping and stability of breakwaters: crest height and armour unit block size increased; possible reorientation
	Restrictions on existing port developments, and limitations on location of new ports
	In the absence of site-specific guidance, a sensible allowance for sea level rise is 5 mm/yr
	A sensible response to possible future wave condition change is to check that design and operability are not seriously affected by a blanket 10 % increase in offshore wave heights (plus 5% increase in wave periods to maintain the same wave steepness): Defra (2006)
	For nearshore wave conditions affected by wave breaking, change in sea level (and hence water depth) is another consideration: apply the 10% precautionary increase in deep water wave height, and then break the waves to the limit determined by the water depth at any particular location
	A reasonable test of sensitivity to possible future wind condition change is to check that design and operability are not seriously affected by a blanket 10 % increase in wind speeds: Defra (2006)
	Communities and industrial facilities in coastal zones may already be threatened or forced to relocate, while others face increasing risks and costs
	Rebuilding or new design elements of land-based Arctic infrastructure may be required by melting permafrost: ACIA (2004)
Maritime infrastructure operation and maintenance	Increased maintenance and replacement costs of port, coastal and sea platform infrastructure
	Increased maintenance due to increased storm surge damage to coastal protection infrastructure, seawalls, dunes, breakwaters etc.
	More sedimentation at river outlets, increasing dredging need
Maritime navigation practice	Adapting to fish migration, changes in fishing fleet design and harbour location
	Fishing fleet needs bigger boats to maintain activity if wave height increases, or else the work time is changed
	Change in beach erosion may require new or changed beach nourishment
	More frequent moist and cold air requires more compact and airtight equipment to avoid condensation problems
	Pilot meeting places may need to be altered
	Terminals for smaller passenger boats may need to be relocated; use of “quieter” parts of the coastline

Project S13. New Wharves Tranche 2
Project S4. 2012 New Replacement Wharves

Climate Change and Disaster Risk Management Strategy

1. Climate Change and Disasters Threats

The Tranche 2 project will include the construction of new wharves and the replacement or rehabilitation of wharves at Bina Harbour, Suava Bay, Santa Ana, Tulagi, Pepesal and Taroniara. The second project, 2013 Replacement Wharves, will cover Buala (Isabel), Viru (New Georgia), Vuranggo (West Choiseul), Lambulambu, Legana (Vella la Vella), and Koriovuku (Ranongga).

The main concern with respect to climate change and disasters is sea level rise, associated storm surges, and increased wave action. Extreme events such as tsunamis and earthquakes are threats to a greater or lesser degree in the different locations.

Table B.3 Wharf location and Descriptions

Wharf	Location	Description
S13. New Wharves Tranche 2		
Bina Harbour		New wharf, sheltered lagoon
Suava Bay	Northern tip of Malaita Island	New wharf, located in a bay area
Santa Ana	Island of Santa Ana, East of the main island of Makira	Not specifiied
Tulagi wharf	Tulagi island, Central Province	Existing wharf has collapsed and need replacement. Located in sheltered location
Taroniara wharf	Main Ngella Island,	Sheltered passage of Mboromole passage
Pepesal	Information not available	Information not available
S4. 2013 Replacement Wharves		
Buala	Isabel	Wharf constructed in 1987 and needs to be raised
Viru	New Georgia	Original wharf has collapsed under water.
Vuranggo	West Choiseul	The location is sheltered from sea state by reefs close offshore but open to wind from the NE.
Lambulambu, Legana	Vella la Vella	Lambulambu wharf was built in the mid 70s and original structure has sunk into the water. High tide also inundates the existing road and buildings next to the wharf. Wharf located in a sheltered bay Legana wharf was built in 1994 in a sheltered bay but was destroyed during the Tsunami in 2007
Koriovuku	Northwest Ranongga	Located in A sheltered bay

Measured increase in sea level in Honiara is 8mm/year since 1993. However, a number of factors affect relative sea level rise, all of which vary across the country and thus a uniform figure cannot be estimated for each wharf location. In addition to natural factors, human influences on coastal erosion are important to determining the vulnerability of specific locations, the most important being environmental degradation which leads to erosion and retreat of the coastline. Mangrove and coral reef damage from dynamite fishing, extraction, and construction reduce these natural protective buffers which can protect coastal activities from increased wave action and storms.

Regional sea levels for any particular location is likely to differ from the global mean as it is affected by ocean circulation and geographical variations in the temperature and/or salinity of the water column particular to the region. These regional influences may also alter under the influence of global warming. Local changes in sea level may thus be considered a combination of global mean changes and changes in the patterns of sea level, relative to the global mean.[12]

Changes in local sea level relative to the land depend on vertical land movement as well as ocean changes; for this reason we will also look at the ongoing vertical adjustment of the land in relation to the ocean following the last glacial period.[13]

As the Solomon Islands are located in a very tectonically active region, it is possible for rapid orogenic uplift and/or subsidence to occur in these Islands. Indeed, during an earthquake in 1961, parts of the Solomon Island off Guadalcanal were lifted by 1.5m.[14] Such potential changes are difficult to predict, but it is important for planners to be aware of their possibility into the future.[15] Subsidence due to groundwater over-extraction can also result in subsidence in coastal areas.

[12] Met Office – Hadley Centre, *Sea-Level Rise Projections for Solomon Islands Road Improvement Project (SIRIP) North Malaita*.
[13] Met Office – Hadley Centre, *Sea-Level Rise Projections for Solomon Islands Road Improvement Project (SIRIP) North Malaita*.
[14] Brij Lal and Kate Fortune, *The Pacific Islands: An Encyclopedia* (Honolulu: Univerity of Hawaii Press, 2000), p. 42.
[15] Met Office – Hadley Centre, *Sea-Level Rise Projections for Solomon Islands Road Improvement Project (SIRIP) North Malaita*.

Salinity may also be rising in areas due to warming. As a result, rates of corrosion may increase and require more maintenance or where possible, using less corrosive materials.

2. Adaptation Strategies

For many islands in the country, sea-based transport is the only means of moving people and goods into and out of the Islands. Ensuring adequate wharf design in such remote areas is essential. However, it can be infeasible to avoid damage during large-scale extreme events. Therefore, contingency plans for adequate fuel, potable water, and other back-up systems are particularly important during hazard events and in the case of wharf failure.

Some experiences and lessons can be drawn from previous efforts at using 'hard' measures for protecting wharves from sea level rise. The following are excerpts from the draft report, *Infrastructure and Climate Change in the Pacific*.[16]

"Increasing sea levels are causing engineers to rethink the design parameters required to design wharf and port structures. However, to design a port that will work in 20-30 years time means that it will not work now. In Vanuatu, on an ADB ports project, the solution was to reinforce the pilings which supported the wharf so that as the sea level rose the height of the platform could be raised using additional concrete. The added weight of the concrete could be supported by the existing pilings.

Federated States of Micronesia – Pohnpei Port Scoping Study, Pacific Region Infrastructure Facility, October 2010: A scoping study was undertaken in Pohnpei to upgrade the existing port facilities to accommodate current and future trading volumes. In designing the upgrade the expected sea level rise was estimated at 0.5 m over the next 90 years. Combining sea level rise with high tides this resulted in a still water level of +1.72 m to Mean Lower Low Water, which provided a freeboard for the quay of 1.33 m. This is a relatively small freeboard but acceptable. It was also determined that the quay wall structure was nearly 40 years old and would probably reach its useful life in the next 20 years. At this time, when a new quay structure is built, there will be the opportunity to raise the deck level of the quay to an appropriate level above tide and any increased sea level. This is an excellent example of a pragmatic approach to engineering a port upgrade."

Activity 1. Identify the adequacy of design of wharves given sea level rise, increased storm surges, wave action. and the impact of increased salinity on corrosion. Provide recommendations on improving structural measures given lessons learned to date, including considering using different wharf types such as floating and retractable wharves.

Activity 2. Identify resiliency measures to protect wharf area from impacts, such as mangrove and coral protection, and sand berms.

Activity 3. Identify risks and contingency plans in case of wharf failure during extreme events.

[16] Pacific Adaptation Strategy Assistance Program (2011).

Project W26. Water Supply Two-Year Plan
Project W27. WASH Projects

Climate Change and Disaster Risk Management Strategy

1. Climate Change and Disasters Threats

Current statistics shows that more than 33 per cent of the population in the country does not have access to clean water and 82 per cent do not have access to proper sanitation facilities. These projects will endeavor to close the gap.

Climate change and natural hazards affect water supply and sanitation (WSS) activities from four perspectives: the water supply itself, demand side management, the adequacy of the WSS infrastructure, and ensuring safe water during disaster events:

1. ***Ensuring adequate long-term water supply:*** one of the major concerns with climate change is the change in the distribution of rainfall throughout the year. In some cases, overall average rainfall may either increase or decrease, but the timing of water availability is consistently predicted to change. For the Solomon Islands, the most serious implications would be longer and more intense droughts during the dry season, as well as more intense rainfall events, possibly leading to floods. In addition, many coastal aquifers are already threatened by over-extraction, and this can lead to salt water intrusion. Sea level rise will exacerbate this effect, further reducing the potability of groundwater sources. Increased temperatures, which have already been recorded, also increase evaporation rates of open surface water sources and retention systems.

2. ***Changes in water demand:*** as temperatures warm, demand for water increases for domestic and agricultural needs. Most agriculture in the Solomon Islands is rain fed and so demand for irrigation may increase during longer dry spells in order to maintain agricultural productivity. This may increase tensions between different water users and draw water away from WSS systems.

3. ***The adequacy of the WSS infrastructure:*** greater fluctuations in water volumes would require greater water storage capacities to capture extra water during the rainy seasons for redistribution during dry seasons. Also, sanitation systems may need to be designed to handle longer dry spells.

4. ***Ensuring public health during extreme events:*** in developing regions of the world, acute sanitation problems and various water-borne diseases – such as diarrhoea, dysentery, cholera and typhoid – threaten disaster affected populations, especially the poor and vulnerable, due to a lack of access to safe drinking water, medicine, and hygienic food. Sanitation systems such as toilets can be designed to reduce overflows during flood events and to avoid water contamination during both flood and drought events. Contingency plans for water supplies during and after any disaster event could prevent illnesses and death caused by the failure of the WSS system during hazard events.

2. Adaptation Strategies

These projects can benefit from asessing the appropriate design of individual WSS systems given the threats identified above. The specific locations have not yet been identified and the solutions will be specific to each site.

Activity 1. Identify the long term sustainabilty of water resources, including under a climate change scenario, and potential pressures on water demand, and include these in the design of WSS infrastructure and management.

Activity 2. Identify risks to public health during flooding and drought events and establish risk management systems and emergency contingency plans during and following hazard events. Coordinate with disaster management networks in place.

Project SW2. Provincial Sanitary Landfills

Climate Change and Disaster Risk Management Strategy

1. Climate Change and Disasters Threats

Flooding events and geological hazards are the most important concern in terms of the potential impacts of climate change and disasters on sanitary landfills. Climate and drainage are two of the factors affecting locating landfills.

Regardless of whether a landfill is lined or not, it is generally inadvisable to locate them close to water sources because of the potential for leachates seeping into water sources, which can then enter the food chain and potable water supply. Climate change projections suggest that sea level rise and more intense but less frequent rainfall events can expand the size of areas that are flooded. Landfills are usually long-term installations, and so changes to the local hydrology, includng of groundwater, over the medium and long-term therefore must be considered in siting and designing individual sites in order to prevent leachate from seeping into the environment.

Another potential impact is on the biologic aerobic decomposition of waste. The duration of the aerobic decomposition phase of waste is dependent, in part, on the amount of moisture in the landfill. The presence of water reduces the volume of air, moving the system into anaerobic decomposition – the byproducts, such as methane and sulfides have a greater impact on the environment than aerobic decomposition.[17] This also slows the rate of decomposition of waste, potentially increasing the more pressure for expansion.

Slope failures of landfills due to earthquake events also occur occassionally and ought to be considered in the siting and designing of landfills.

Figure B.4 Interrelation Between Climatic, Topographic, Hydrologic, and Geologic Factors in Terms of Leachate Travel and Groundwater Contamination
(United Nations Environment Programme)

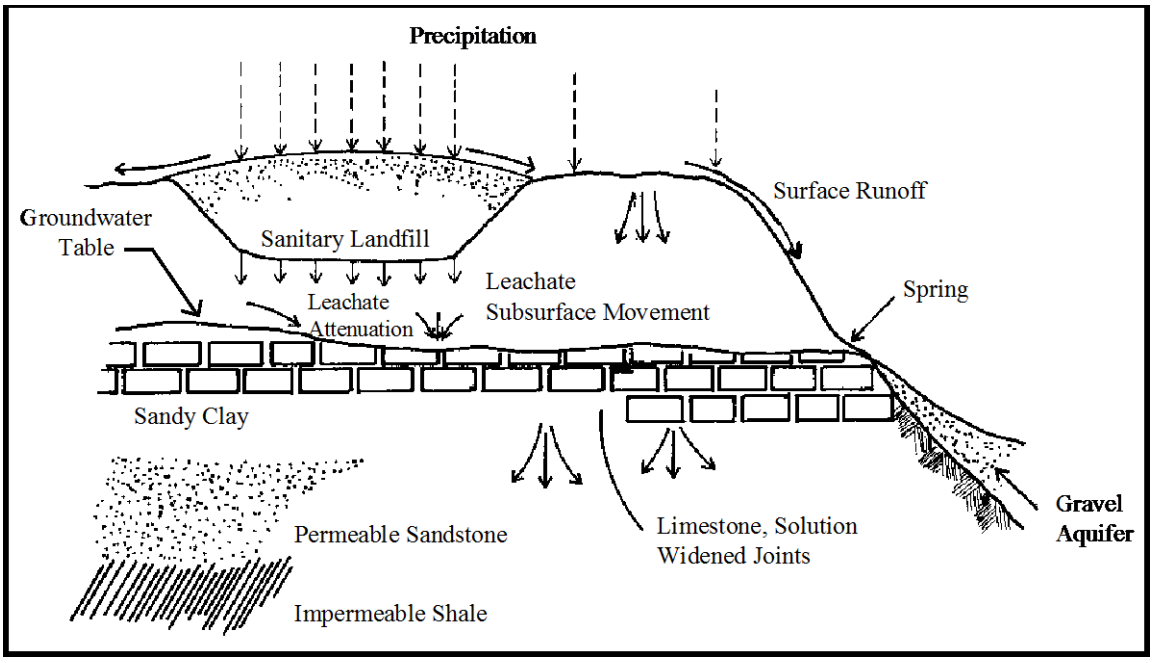


Figure B.4 above illustrates the importance of understanding the hydrology of landfill sites. In addition to understanding current hydrology, analysing trends in rainfall and flooding events is necessary to prevent pollution from landfill flooding and runoff.

[17] United Nations Environment Programme (UNEP), *Sanitary Waste Management,* Volume 1, Part 3 (International Energy Technology Centre, 2005), http://www.unep.org/ietc/Portals/136/SWM-Vol1-Part3.pdf.

2. Adaptation Activities

Activity 1. Identify risk areas in order to avoid locating sanitary landfills in sites highly exposured to natural hazards, as well as future changes in sea level, flooding, and moisture content. Use these to inform siting decisions.

Activity 2. Identify landfill designs and management plans which are safest in preventing leachate runoff into the surrounding environment, such as bottom liners, intermediary and final covers, slope stability measures, hydraulic barriers, drainage, and maintenance needs.

Project E5. Tina Hydropower

Climate Change and Disaster Risk Management Strategy

1. Climate Change and Disasters Threats

Energy production, utilisation, conversion, and transportation may be affected by most natural weather phenomena such as droughts, floods, fires, storm surge, and cyclones. Large hydroelectric systems such as Tina Hydro are considered less vulnerable compared to small-scale hydro systems because they are designed with large risk considerations in mind. Further, they may, if well managed, reduce downstream flooding because the reservoir and floodgates are able to retain water for even river-flow to drive electricity production. However, because of weak rock conditions and permeable embankments in Guadalcanal, there is a risk of failure attached to the planned reservoir currently being considered in the project feasibility study.[18]

Historical events show that the area is affected by cyclones. Cyclone Namu (May 1986) subjected the Tina River basin to flooding, landslides, and mudflow, with highly destructive results. The cyclone resulted in the formation of a landslide derived natural dam, which gave way and released a wave of mud downstream with fatal consequences. Concerns have been voiced by various local community members of the potential for a similar catastrophe arising from the failure of manmade dam. Anecdotal evidence suggests the course of the Tina River has altered significantly in response to high rainfall events. The potential impact of high rainfall, which may increase due to climate change; and sediment transport events on the Tina River and hydropower scheme, (which may naturally result in the shifting of the water course) should be considered in the development of the engineering design as well as the siting of construction.[19]

The productivity of the site may be affected by changes in rainfall patterns. Historic rainfall records for the Tina River catchment are unavailable and accurately estimating rainfall in the highland areas is very difficult. The lack of rainfall data in the upper Tina River catchment is a major impediment to estimating catchment rainfall and flow at the proposed dam site. Establishing a trend in rainfall patterns in therefore difficult. While gauges have been installed, it will take some time before the hydrology, and therefore changes to it, of the area can be more fully understood. The operation of the hydroelectric system will affect flow regimes but it is not known how.

Another important issue raised in the feasibility report is that the changes to the flow regime will impact on groundwater, which local communities rely on using small boreholes. If the dry seasons deepen because of climate change, compounded by reduced groundwater recherché, this will have negative consequences for local populations.

2. Adaptation Strategies

The project can benefit from a greater emphasis on reducing risks from climate change and natural disasters to the infrastructure itself and to the affected populations.

Activity 1. Design and incorporate measures to ensure adequate water supplies for populations whose current water supplies will diminish or flood due to the changes in the local hydrology.

Activity 2. Implement long-term rainfall, hydrological, and geological monitoring and modelling to increase understandings of the flow regime, and to allow for early warning of future changes and risks to the system and populations in the basin.

Activity 3. Build land-use management arrangements into the construction and operations of the project to reduce sedimentation, landslides, flooding, and droughts.

[18] Tina River Hydro Development Project Environment and Social Impact Assessment (ESIA) Scoping Report.
[19] Tina River Hydro Development Project Environment and Social Impact Assessment (ESIA) Scoping Report.

Appendix C: Project Long-List

No.	Name/Location	Description/scope	Source of project information	Status	Estimated Cost (SBD)	Proposed Funding
	Multi-sector					
MS1	Isabel and Choiseul Infrastructure Development	These two projects are linked to the Nickel Mining projects to be operated by the Japanese company, Sumitomo Metal Mining Company. Intention of studies is to produce Infrastructure Master Plans for the two provinces leading to development of integrated infrastructure provision. Solomon Islands Government (SIG) pledged $75m towards the Choiseul Project.	Japanese International Corporation Agency (JICA) Meeting Notes	Proposed 2013-2020	SBD140m	Solomon Islands Government (SIG)?
MS2	Choiseul Township Urban Development	Development of Choiseul Township is linked to the relocation of the capital of Choiseul Taro from the island to the main land. Being a new development it will a number of infrastructure such as: reclamation works, roads, civil works, sanitation, power/energy, ICT, Solid waste and water supply.	Form BUD1 2013 Budget Ministry of Development Planning and Aid Coordination (MDPAC), Ministry of Provincial Government and Institutional Strengthening (MPGIS). Choiseul Province Mid Term Development Plan 2011-2013	Proposed 2012-2020	SBD60m	SIG
MS3	Development of 50 Economic Growth Centres	Establishment of constituency centres that have all the basic facilities such as ICT, Energy/Power, Water, Administration buildings etc. Includes PfNet Communications and other integrated developments plans.	Ministry of Rural Development (MRD) Corporate Plan 2011-2013	Proposed 2013	SBD145?	SIG
MS4	Honiara Urban Development	Multi-sector integrated urban development of greater Honiara. Feasibility study followed by investment in a range of urban infrastructure services.	Discussions with SIG and donors	Proposed 2013-2020	SBD140m	?
MS5	Malaita Industrial Parks	Development of economic centres at 3 sites namely: Faumamanu (East Malaita), Wairaha (South Malaita), and Suava (North Malaita). Other sites also considered in Malaita are Kadabina (North Malaita) and Liwe (Small Malaita). Note that Ministry of Rural Development is allocating $30m for the first 3 projects. Israel is providing Technical Assistance.	Permanent Secretary Malaita Province Meeting Notes	Proposed 2013-2015	SBD210m	Israel International Corporation Agency/SIG/?

No.	Name/Location	Description/scope	Source of project information	Status	Estimated Cost (SBD)	Proposed Funding
	Transport – Land					
R1	Noro Munda Road (Western Province)	Rehabilitation and sealing of road from Munda Airport to Noro Town. 16.85 km road.	Ministry of Infrastructure Development (MID) Tender Document	Ongoing 2012	SBD40.9	NZ Foreign Affairs and Trade (MFAT)/New Zealand Aid (NZAid)
R2	Malaita North Road	Solomon Islands Road Improvement Project (SIRIP) 2 funded. SIRIP 2 project is funded by Asian Development Bank (ADB) at the value of USSBD14.9m	Transport Sector Development Programme (TSDP) 2012-2015	Ongoing 2012	SBD22m	Asian Development Bank (ADB)
R3	Honiara Feeder Roads	Sealing of existing roads	TSDP 2012-2015	Ongoing 2012	SBD28m	National Transport Fund (NTF)
R4	Honiara Highway Improvements	Re-sealing works	TSDP 2012-2015	Ongoing 2012	SBD18m	NTF
R5	Guadalcanal Feeder Road	Road upgrade works St Martins Road, Betivatu School Road, Koleasi Rd, Veradoma Rd, Tina Road	TSDP 2012-2015	Ongoing 2012/2013	SBD48.9m	NTF
R6	Naro Hill –Lambi Road (Guadalcanal)	Sealing of roads-on tendering in 2013	TSDP 2012-2015	Committed 2013	SBD84.7m	NTF
R7	Berande-Aola Road (Guadalcanal)	Sealing of roads-on track tendering in 2013	TSDP 2012-2015	Committed 2013	SBD41.0m	NTF
R8	East Guadalcanal Bridges	On track tendering 2013	TSDP 2012-2015	Committed 2013	SBD19.9m	NTF
R9	Malaita North Road Further Phase	Scoping underway	TSDP 2012-2015	Committed 2013	SBD87.3m	NTF
R10	Afio Road (Small Malaita)	Preparatory work underway	TSDP 2012-2015	Committed 2013	SBD111.5m	NTF
R11	Radesifolomoe Road (Malaita)	Preparatory work underway	TSDP 2012-2015	Committed 2013	SBD8.7m	NTF
R12	Temotu Roads	Program to be confirmed. Luselemba-Carlisle Bay, South Road, Forest Rd, Pala-Luselemba	TSDP 2012-2015	Committed 2013	SBD59.2m	NTF.

No.	Name/Location	Description/scope	Source of project information	Status	Estimated Cost (SBD)	Proposed Funding
R13	Ndoma Road (Guadalcanal)	The Ndoma project was initially earmarked for a Fish Process Plant. There is also land allocated for the National University Campus and tourism. The total cost of infrastructure estimated by Rider Levett Bucknall (RLB) is around SBD147m and this includes road, power, water and wastewater treatment, Storm water and Telecommunications.	New Zealand High Commission Meeting Notes Rider Levett Bucknall (RLB) Report 2012	Proposed 2014-2020	SBD103m	?
R14.a	Honiara Main Roads Upgrade	Construction of Mataniko Bridge (4 lanes), China town bridge (2 lanes), upgrade roundabouts, re-designing of road pavement, drainage and relevant utilities, resealing of deteriorated roads within City area to improve flow of traffic.	Japanese International Corporation Agency (JICA) Meeting and Brief Notes	Proposed 2014-2020	SBD210 m	?
R14.b	Honiara City Centre Relief Road	This project could be linked to the Ports Upgrade. The proposed esplanade will provide a Relief Road which will run alongside the Honiara coastline from Point Cruz Wharf to Guso Point at Kukum.	Solomon Islands Ports Authority(SIPA) Meeting notes Ministry of Infrastructure Development (MID) Meeting notes	Proposed 2013-2020	SBD150m	?
R15	Guadalcanal Route Planning Studies	Study on the development of a possible route running across the island of Guadalcanal. (>50 km across Guadalcanal). Calculations based on SBD1646/km for 74km	JICA Meeting and Brief Notes	Proposed 2013-2020	SBD121.8m	?
R16	Rennell Road	Scoping to be updated	TSDP 2012-2015,	Proposed 2014	SBD128.4m	NTF
R17	Guadalcanal Feeder Roads Tranche 2	Gesa,Tumurora, Pitukoli, Sali 2, Ghavangha Road-Scoping to be completed	TSDP 2012-2015,	Proposed 2014	SBD49.4m	NTF
R18	Malaita Main Roads	Auki-Fulisango, Lilisiana, Fiu –scoping completed	TSDP 2012-2015,	Proposed 2014	SBD24.5m	NTF
R19	Honiara Feeder Roads Tranche 2	Mt Austin, Panatina, R468, Jackson Ridge, Kastom Garden, Lau Valley, Mambulu, Vura –scoping completed	TSDP 2012-2015,	Proposed 2014	SBD18.9m	NTF
R20	Choiseul Bay Connectivity Road	Choiseul Bay Connectivity Road-Scoping underway	TSDP 2012-2015,	Proposed 2014	SBD175.4m	NTF
R21	Kolobangara-Koloni Road	Kolobangara –Koloni Road-scoping to be completed	TSDP 2012-2015,	Proposed 2014	SBD22.9m	NTF
R22	Guadalcanal Feeder Roads Tranche 3	Jericho, Komukogha, Ndolo, Pitukoli, Airport Rd, Tetupa, Papaga Rd -sub-project preparation 2014 -Shortlist to be confirmed	TSDP 2012-2015,	Proposed 2015	SBD38.5m	NTF
R23	Malaita Feeder Roads Tranche 1	Busurata, Alisisiu-Aesi, Gwadingali, Talakali -Shortlist to be confirmed	TSDP 2012-2015,	Proposed 2015	SBD28.9m	NTF

No.	Name/Location	Description/scope	Source of project information	Status	Estimated Cost (SBD)	Proposed Funding
R24	Honiara Feeder Roads	Ropi, Manusata Terrace, Tolu Avenue, R332,R345,R55, Tanakake, R391,R392,R436,R454,R464,R568,R575,R613,R826,R894 Shortlist to be confirmed	TSDP 2012-2015,	Proposed 2015	SBD8.4m	NTF
R25	Tulagi Road	Tulagi Road-scoping to be completed	TSDP 2012-2015,	Proposed 2015	SBD10.4m	NTF
R26	Rendova Roads	Ughele-Egholo, Ughele-Mauru Scoping to be completed	TSDP 2012-2015	Proposed 2015	SBD14.7m	NTF
R27	Bellona Roads	Rehabilitation and upgrading of roads on Bellona	National Transport Plan (NTP) 2011-2030	Proposed	SBD2.5m	NTF
R28	Honiara Feeder Roads Tranche 3	Rehabilitation and upgrading of roads within Honiara	NTP 2011-2030	Proposed	SBD100m	NTF
R29	Guadalcanal Feeder roads Tranche 4	Upgrading of feeder roads on the north side of Guadalcanal	NTP 2011-2030	Proposed	SBD120m	NTF
R30	Gizo Town Roads	Rehabilitation of town and feeder roads in Gizo	NTP 2011-2030	Proposed	SBD60m	NTF
R31	Malaita feeder roads Tranche 2	Upgrading of feeder roads around Malaita	NTP 2011-2030	Proposed	SBD70m	NTF
R32	East Malaita Roads	Construction of new roads in east Malaita	NTP 2011-2030	Proposed	SBD100m	Donors (Australian Agency for International Development (AusAID?))
R33	Guadalcanal West Roads	Construction of a new road between Lambi , Babanakira and Avuavu	NTP 2011-2030	Proposed	SBD350m	Donors (Japanese International Corporation Agency (JICA))
R34	Guadalcanal East Roads	Construction of a new road between Aola, Rere and Marau	NTP 2011-2030	Proposed	SBD150m	Donors (JICA)
R35	West Makira Roads	Construction of new roads in west Makira	NTP 2011-2030	Proposed	SBD50m	NTF
R36	East Makira Roads	Construction of new river crossings and road sections to serve east Makira agricultural areas	NTP 2011-2030	Proposed	SBD100m	NTF/Donors
R37	Choiseul South Roads	Upgrading of existing tracks to vehicle use along the south west coast of Choiseul	NTP 2011-2030	Proposed	SBD30m	NTF
R38	Nendo Roads	Construction of new roads to serve agricultural areas on Nendo Island (Temotu)	NTP 2011-2030	Proposed	SBD25m	NTF

No.	Name/Location	Description/scope	Source of project information	Status	Estimated Cost (SBD)	Proposed Funding
R39	Resealing of Urban Roads	Resealing of existing sealed roads in Honiara and north Guadalcanal – recurring programme	NTP 2011-2030	Proposed	SBD20m per annum	NTF
	Transport - Aviation					
A1	Munda Airfield Upgrade	Upgrading of Munda Airfield is to cater for larger aircraft and to improve aviation safety standards. Works include reconstruction and extension of the existing runway from 1400mm to 1800m length, construction of a new taxiway and reconstruction and enlargement of the aircraft parking apron. Works will also include other ancillary civil construction.	SIG-MID Bidding Documents 2011	Ongoing 2012-2014	SBD38.5m	NZMFAT
A2	Nusatupe Airfield Upgrade	Runway 11400m x 23m wide sealing upgrade to be undertaken. This will improve safety standards. The runway upgrade will facilitate an improved all-weather operation for current DHC6 Twin Otter and DASH 8-100/200 operations. Improvement to taxiway and parking facilities.	SIG-MID Bidding Document 2011	Ongoing 2012-2014	SBD26.1	NZMFAT
A3	Henderson Airport Apron Upgrade	Current condition of the International Apron is classed as very poor and it must be upgraded to meet International Civil Aviation Organisation (CAO) standards.	New Zealand High Commission Meeting Notes Ministry of Communications and Aviation, 2012 Valuation of Airport Assets Report	Proposed 2013	SBD14m	?
A4	Provincial Airfields Upgrade	Government Owned: *Lata (Temotu), *Seghe (Marovo), Balalae (Shortlands) *Taro (Choiseul), Fera (Isabel),–under construction but not constructed to Dash 8 specifications. To be acquired by Government as these are located next to Provincial Townships: *Kirakira (Makira), *Qwanaru (Auki) Not Government owned: *Tingoa (Rennell), *Anua (Bellona), *Manaoba (North Malaita) *Airports proposed by Solomon Airlines to be upgraded to suit the new DASH 8 plane.	NZAid Meeting Notes MID Meeting Notes Solomon Airlines Meeting Notes	Proposed 2013-2020	SBD192.0m	?
A5	Isabel Airfields	Kaola New Airport And Kia Airport	Isabel Province Development Priorities 2013	Proposed	SBD20.0m	?
A6	Lata Airfield	To be discussed with Ministry of Communications and Aviation (MCA), being postponed .	TSDP 2012-2015,	Postponed 2013	SBD24.0m	NTF
A7	Kirakira Airfield	To be discussed with MCA-postponed .	TSDP 2012-2015,	Postponed 2014	SBD24.0m	NTF

No.	Name/Location	Description/scope	Source of project information	Status	Estimated Cost (SBD)	Proposed Funding
A8	Lomlom Airfield	New Airport in the Reef Islands	Ministry of Communications Aviation (MCA) Meeting	Ongoing 2012	SBD10.0m	SIG
A9	Parasi Airfield	Rehabilitation of existing airfield	Ministry of Communications Aviation (MCA) Meeting	Proposed 2013	SBD12.0m	SIG
	Transport - Shipping					
S1	Honiara Port Remedial works	Completion of remedial works to improve the operation of the existing port, as well as heavy maintenance of key structures	Scoping Study	Planned	SBD40m	Private?
S2	Honiara Port Extension	Construction of a new wharf alongside the existing facilities	Feasibility study & design	Proposed	SBD180m	JICA
S3	Honiara New Greenfield Port	Construction of a new port, either at the existing location or one of a number of alternative locations – depends upon the conclusions of a master plan study	Scoping study	Proposed	SBD300m	Private?
S4	2013 Replacement Wharves	Buala, Viru, Vuranggo, Lambulambu, Legana, Koriovuku wharves SIEAP wharves being reviewed, others require scoping	TSDP 2012-2015,	Committed 2013	SBD25.0m	NTF
S5	Yandina Wharf	Yandina Wharf Rehabilitation for Russell Islands Plantation RIPEL. This was recommended by the Central Province but due to unresolved RIPEL dispute, this proposition was delayed until such time it is resolved.	Central Province Profile Report 2011	Proposed	SBD10.0m	?
S6	Construction of Buala Seawall (this could go with Buala Wharf project)	Coastal rehabilitation and re-armoring to prevent coastal erosion.	Isabel Provincial Development Plan 2011-2014 TSDP 2012-2015,	Proposed 2013	SBD5m	European Union (EU)-Isabel Provincial Government (IPG)
S7	DMSP Wharves Lot 1	Nu'usi, Siota, Bunikalo, Katurasele, Manikaraku	MID Meeting Notes TSDP Project Schedule Sheet	Ongoing 2012	SBD52.0m	ABD
S8	DMSP Wharves Lot 2	Tatamba, Susubona, Keru, Ringi, Gasini, Waisis, Uhu	MID Meeting Notes TSDP Project Schedule Sheet	Committed 2013	SBD73.0m	ADB
S9	Replacement Wharves Tranche 2	Kirakira Ramp, Aola, Atori, Takwa, Bita'ama, Waisisi, Lambi, Marau, Marasa, Rere, Buma, Laolasi, Grasciosa Bay, Nuatambu, Paregho, Makina, Mbau, Manivovo, Nuatabu, Uhu, Wairokai, Rokera, Posarae, Paradise, Kukudu, Rohinari (see listed as replacements)	NTP 2011-2030, TSAP 2011-2013	Proposed 2015-2020	SBD360.0m	NTF
S10	Isabel Wharf (new)	Buala Wharf located at Isabel Provincial Centre (this should be integrated with the seawall project)	Provincial Government Project Submission 2013	Proposed	SBD5.0m	NTF
S11	Choiseul Wharf (new)	Nuatambu Wharf	Choiseul Province Mid Term Development Plan 2011-2013	Proposed	SBD5.0m	SIG

No.	Name/Location	Description/scope	Source of project information	Status	Estimated Cost (SBD)	Proposed Funding
S12	New Wharves Tranche 1	Papara, Boeboe, Ogho, Sigana, Bumbukuana, Vanikoro, Wagina, Mbirasu, Alialia, Zirokana, Samasodu, Lofang, Mbaraulu, Furona, Nila.	NTP 2011-2030, Transport Sector Action Plan(TSAP) 2011-2013	Proposed 2015-2020	SBD160.0m	NTF
S13	New wharves Tranche 2	Bina Harbour, Suava Bay, Santa Ana, Tulagi, Pepesal, Taroniara -Initial Studies Underway	TSDP 2012-2015 Bina Harbour Investigative Study 2010 Investigative Study for Suafa Bay 2010	Proposed 2015	SBD68.0m	NTF
S14	New wharves Tranche 3	Aola, Haemarau, Kwailabesi, Lianuia –preparation to be carried out in 2014 Shortlist to be confirmed	TSDP 2012-2015,	Proposed 2015	SBD40.0m	NTF
S15	Maritime Navigational Aids	Rehabilitation of existing beacons, navigational lights, markers throughout Solomon Islands Waters.	SIMSA	Proposed 2013-2016	SBD56m	SIG
	Water and Sanitation					
WS1	Malu'u and Afio Water Supply	Water supply to meet the demand of Malu'u and Afio Sub-stations and surrounding villages. (Afio SBD5m Malu'u SBD5m)	Malaita Provincial Development Plans Malaita Meeting Notes	Proposed	SBD10.0m	SIG/?
WS2	Honiara and Auki Water Supply Improvement Project	Construction of 16 boreholes in Honiara and 2 in Auki. Replace or upgrade 32km of new pipeline in Honiara. Construction of 4 tanks boosting additional 7,000m3/day volume.	Solomon Islands Water Authority (SIWA) Meeting Notes	Ongoing 2012-2014	SBD175.0m	JICA
WS3	Honiara NRW Project	Assessment of NRW and conduct repairs and upgrades to pipeline networks.	SIWA Meeting Notes	Committed 2013	SBD15.0m	JICA
WS4	Solomon Islands Water Authority RAP Project	Funding for upgrade of pumps, switchboards, Chlorination pumps and other institutional strengthening programmes.	SIWA Short Term Recovery Action Plan (RAP) Report 2011	Ongoing 2012	SBD14.0	AusAID
WS5	Gizo Water Supply	General assessment (NRW) of water supply, replacement of pipelines, replacement of pump, maintenance work to network. Critical to supporting the new Gizo Hospital, Tourism Sector and township which is affected by serious water shortage. [Focus would be on system network upgrade as pipes in place are really old and possibly leaking badly. Need a thorough study on the whole hydraulic network , NRW and institutional setup to managing the day to day operations and maintenance of the system]	Prime Minister's Office (PMO)	Proposed	SBD16.0m	SIG

No.	Name/Location	Description/scope	Source of project information	Status	Estimated Cost (SBD)	Proposed Funding
WS6	Water Supply 2 Year Plan	Project includes: support to NRW, upgrading of reticulation pipelines, and institutional strengthening. Development of 5 Year Master Plan for sewerage and water looking at alternative water sources, risks associated with land issues and alternative energy plans.	SIWA 2 Year Plan Concept Paper 2012	Proposed 2013-2015	SBD42.0m	AusAID
WS7	WASH Projects	Project includes: Rural Water and Sanitation Infrastructure, Institutional Strengthening and Community Education.	European Union (EU) Meeting Notes	Proposed 2014-2020	SBD142.2m	EU
WS8	Tingoa Water Supply	Tingoa Water Supply, solar driven pumps and associated tanks and pipe networks.	Renbell Development Plan 2009-2012.	Proposed	SBD2.5m	SIG
	Solid Waste Management					
SW1	Gizo and Honiara Solid waste management	J-Prism Project –Gizo and Honiara (Pilots) (a) Strengthening of Ministry and HCC capacity (b) Develop systems and processes (c) Community education (d) Development of landfill rehabilitation plan.	Pacific Islands GeoScience Commission SOPAC/JPrism Website, Meeting with Department of Environment Notes	Ongoing 2011-2015	SBD5.0m	JICA
SW2	Provincial Sanitary Landfills	Sanitary Landfills and management of waste for all other urban centres : Auki, Lata, Munda, Noro, Kirakira, Buala, Tulagi, Tingoa, and Taro Project to be integrated with other infrastructure needs such as access roads, security fencing, equipment, and possibly other institutional needs. Estimate SBD2m per Urban Centre	National Waste Management Strategy 2009	Proposed 2015-2020	SBD15.0m	?
	Energy/Power					
E1	Auki Bio-fuel Energy Studies	Auki Bio-fuel-install 450kVA bio-fuel generator and extend grid for additional 250 houses.	Solomon Islands Electricity Authority (SIEA) Meeting Ministry of Energy Mines and Rural electrification (MEMRE) Corporate Plan 2011-2013 SIEA Strategic Plan 2012	Ongoing 2013-2015	SBD3.0m	ADB/SIEA/SIG

No.	Name/Location	Description/scope	Source of project information	Status	Estimated Cost (SBD)	Proposed Funding
		Small scale support to renewable energy in outer islands	SI- Outer Island Renewable Energy Project, ADB Concept Paper 2012.	Committed 2012-2015		
E2	Outer Island Renewable Energy	Project Preparation TA and preparation of renewable energy investment plan. Project preparation will include screening 5 provincial centres proposed hydro sites: Auki(3MW), Ringi (140kW), Noro/Munda (?), Lata(80kW) and Choiseul-Sorave Falls (130kW) and Kirakira and prioritise 3 sites. Mini Hydro Projects	ADB, 2011 Country Operations Business Plan ADB Tender October 2012- Consulting Services ToR for Renewable Energy Investment Plan	2012 2013	SBD1.6m SBD38.5m	ADB
E3	Gizo Solar Photovoltaic System	Solar energy to power the Gizo Provincial Head Quarters.	MDPAC 2013 Budget Provincial Bid Submission to MDPAC Budget 2013	Proposed 2013-2015	SBD1.95m	SIG
E4	Honiara SIEA Genset Upgrade	Replacement of old Gensets and purchase of four(4) new Gensets -2x 5MW 2 'skid mounted' x 1.5MW	SIEA Corporate Plan 2011-2015	Committed 2013-2015	SBD150.0m SBD8.0m	SIEA
E5	Tina Hydro Project (Guadalcanal)	Located East of Honiara, East Guadalcanal. Construction of Hydro Dam to generate Full Capacity 12 MW (Wet Season). 5MW (Dry season). Energy generation 53 GWh/yr.	SIEA Corporate Plan 2012	Proposed 2011-2016	SBD770.0m	World Bank
E6	Paraiso Thermal Power	Paraiso Bay (Vella la Vella Island, Western Province) 300MW Potential-decision is to decide how much is to be produced for the island of Vella. A 10MW power station is recommended for the island. Feasibility Study Thermal Power Station 10MW	National Coalition for Rural Advancement (NCRA) Policy Document	Proposed 2015-2020	SBD1.6m SBD ?	?
E7	Choiseul Province Solar Project s (including Taro Solar Project)	Solar Project for Choiseul's Ward 3,5 and 7, total households is 1139. Note a solar for a house costs around $10,000/house. Total $11.39m. This cost is inclusive of CMTDS nominated projects such as–Paranui Solar, Pujivae Secondary School, CBPSS, Vanogo Solar projects mentioned. Includes Taro Admin backup solar power.	Choiseul Province Mid Term Development Plan 2011-2014	Proposed 2013-2020	SBD14m	SIG?
E8	Buala and Malu'u -Hydro-Plants	Buala Hydro-plant and Malu'u -revive and extend grid. Note- Buala was constructed at the cost of SBD3m in 1996. The existing infrastructure are still there and could be revived at such time land issues are cleared.	MEMRE Corporate Plan 2011-2013	Proposed 2013-2020	SBD6.0m	?

No.	Name/Location	Description/scope	Source of project information	Status	Estimated Cost (SBD)	Proposed Funding
E9	Nafinua and Ladeabu Mini-Hydro	Proposal for min-hydro scheme	Malaita 3 Year Development Plan 2010-2013	Proposed 2013-2020	SBD6.0m	SIG
E10	Tingoa Solar-Rennell	Tingoa Solar Project is located in Rennell. Project to include office buildings, secondary school dormitories, classrooms, mini hospital and surrounding provincial 20 residential households	Renbell 2009-2012	Proposed 2013-2020	SBD3.6m	SIG
E11	Savo Geothermal	Initial survey-geothermal mapping, and geophysical analysis Exploration drilling and complete feasibility study for development of first stage. Geodynamic and JV Kentor Energy to develop and operate.	Geodynamics	Proposed FS completed 2013	SBD1,057.0m	Private/SIG
E 12	Rural Electrification Program	Lump sum allocation for rural electrification programs, to be formulated under ongoing energy sector planning and analysis	NDS Taskforce and MEMRE	Lump sum allocation; sector studies ongoing	SBD 100 million	To be determined
	ICT					
ICT1	Submarine Fibre Optic Cable (Honiara, Noro, Auki)	Submarine fibre optic communication cable system linking Solomon Islands to an existing international submarine cable network that runs between Guam and Sydney. 1 international spur to Honiara and 2 local spurs connecting Auki and Noro.	Activity Description Template for Pacific Regional Infrastructure Facility (PRIF) pipeline activities.	Committed 2012	SBD420 m (ADB Grant $58m ADF Loan $78m)	ABD/SIG
ICT2	Remote Communities ICT	Telecommunication towers and equipment to provide ICT services to communities in remote areas where it is uneconomic to do so.	Telecommunications Commission Solomon Islands (TCSI), Solomon Telekom	Proposed	SBD75 m	?

Appendix D: Responsibilities for Infrastructure

Sector	Scope of Services	Institution Providing Services	Regulation/ Monitoring	Planning/ Policy
National Planning	Development	PMO	MDPAC	MDPAC
	Economic	MFEM	MoFT Reserve Bank	MoFT
	Land	MLH	Lands Division	MLH
Transport – Land	National	MID	MID	MID
	Municipalities (1)	HCC/MID		
	Outside urban areas	Provincial Works Division		
Transport – Aviation	Airports (all)	MCA	MCA	MCA
	International Airports (1)	MCA	CAASI	
Transport – Shipping	National (all)	MID/SIMSA	SIMSA	MID
	Honiara Port, Noro Port	SIPA		
	Others Rural Ports	Churches, Private, Provincial		
Water Supply	National (all)	MMERE/DWR	MMERE	MMERE/MHMS
	Honiara, Auki, Tulagi	SIWA	MMERE/Water Resources Division(WRD) RWSS	MMERE
	Gizo, Munda, Lata, Kirakira	Provincial Works Depts.		MHMS
	Outside urban centres	Environment Health Divisions - Province	RWSS	
Sanitation	National (all)	MMERE	MMERE/MHMS	MMERE
	Honiara	SIWA/HCC	MHMS/HCC/WRD	
Rural Sanitation	Provincial Centres	Provincial Environmental Health Divisions	RWSS	MMERE MHMS
Drainage	Honiara	MID/HCC	MID	MID
	Provincial Centres	Provincial Works Depts		
Solid Waste Management	Honiara	Honiara City Council	MHMS/MECCDM	MECCDM
	Noro, Auki, Gizo, Munda	Town Councils	Environment Health Divisions-Provincial Government	
	Lata, Kirakira, Taro, Tulagi, Tinggoa	Provincial Works Depts.		
Telecom/ ICT	National	Solomon Telekom Be Mobile	TCSI	MCA
Energy/ Power	National	MMERE	MMERE	MMERE
	Honiara, Gizo, Noro, Auki, Lata, Kirakira, Tulagi	SIEA	MMERE-Energy Division	
	Outside urban areas	None		

Appendix E: List of People Consulted

Adrian Toni	Provincial Secretary, Western Province
Akiko Suzaki	Joint Presence Manager UNDP
Alfred Ramo	CEMA
Allan Arafoa	SIPC
Amillah Rove	UN-Habitat, Disaster Management Consultant
Ashley E Bengasi	Solomon Islands Broadcasting Corporation
Austin Holmes	Solomon Forest Association
Barnabas Anga	Secretary to the Prime Minister
Barnabas Vote	MoFT
Bernard Hill	Commissioner, TCSI
Bill Macgregor	CAASI Aviation Advisor
Carlos O Romero	MoFT
Charles Brown	Premier, Temotu Province
Charles Kelly	Permanent Secretary Honiara City Council
D.K.Kim	Korean Consulate
Dalcy Ilala	MoFT
Dalcy Tozaka-Ilala	MoFT
Dennis Wendel	USAID
Dick Filewood	Project Manager, TSDP
Dinah Hansman	Advisor, Debt Management Unit, MoFT
Donald Mamura	Debt Management Unit, MoFT
Dr. Chris Becha	MHMS
Edward Tokuru	SI Marine Safety Administration
Edwin Suibaea,	Premier, Malaita Province
Eileen Kwalea	New Zealand Aid Programme
Elisabeth Gotschi	Rural Development Advisor EU
Eoghan Walsh	Charges d'Affaires, EU
Eric Lui	Senior Programme Officer, AusAID
Erik Johnson	Acting Country Representative WB
Francis Waleanisia	GRML
Gem K Lao-Araya	Country Manager, ADB
Geoffrey Pakipota	Choiseul Provincial Government
George S Lilo	Premier, Western Province
George Tuhaika	Premier, Rennell and Bellona
Greg Moores	Senior Budget Advisor, MoFT
Haggai Arumai	Director, Competition & Market Intelligence, TCSI
Hon Baddley Tau	Temotu Province
Hon Joshua H Votu	Provincial Member of Isabel
Hon. Alick Maeaba	Malaita Provincial Government
Hudson Kauhiona	Director of Climate Change, MECCDM
Hunter Masuguria	Ministry of Commerce
Iroi Chanel	Acting Permanent Secretary, MECCDM
Jackson Kiloe	Premier, Choiseul Province
James Kana	Debt Management Unit, MoFT
James Taeburi	Provincial Secretary, Guadalcanal Province
Jane Lake	Development Coordinator AusAID/RAMSI
Jennifer Lakoa	Solomon Islands National Provident Fund
Jeremiah Manele	Permanent Secretary MDPAC
Joe Horokou	Director of Environment and Conservation, MECCDM
Jonathan Tafiariki	National Disaster Management Office
Katherine Tuck	Senior Advisor, Economic Reform Unit, MoFT
Katsura Miyazaki	JICA HQ
Keir Preedy,	Chief Technical Officer, Solomons Telekom
Keithi Saunders	US Embassy
Kenedy Fulasi	RAMSI
Kirsten Hawke	RAMSI
Lisa Sugumanu	Principal Planning Officer (Infrastructure) - Economic, MDPAC
Lotte Yates	National Disaster Management Office

Loyley Ngira	Chief Executive, Solomons Telekom
Marcos Vaena,	Country Coordinator, IFC
Martin Karani	Makira/Ulawa Provincial Government
Martin Sam	SIEA
Matthew Howell	First Secretary, Development, NZMFAT
Mia Rimon	SPC
Michael Payne	Chief Financial Officer SIEA
Mike Wate	Solomon Islands National Provident Fund
Mose Saitala	ComSec
Moses Virivolomo	Permanent Secretary, MID
Nancy Kwalea	SI Chamber of Commerce
Naoko Laka	Project Formulation Advisor, JICA
Nixon Qurusu	Head of Project Implementation Unit, MPGIS
Norman Nicholls	General Manager SIEA
Patteson Mae	Premier, Central Province
Peter Hauia	Provincial Secretary, Malaita Province
Peter Sogoilo	Solomon Airlines
Rence Sore	Permanent Secretary, MMERE
Richard Austin	General Manager, SIWA
Rishi Adhar	Senior Transport Specialist, ADB Sydney
Roger Collier	Team Leader, Economist, NDS
Rollen Selesol	Deputy Premier, Guadalcanal Province
Ron Davies	Finance Administration Manager, SIWA
Ron Sumsum	Solomon Airlines
Ronald Amigo	UNDP Volunteer, Guadalcanal Province
Ronald Ivupitu	Director Engineering, SIPA
Salome Pita	Environment Specialist, Solomon Islands Road Improvement Project II
Sarah Wong	NZMFAT
Scott McNamara	Senior Development Program Specialist, Economic Infrastructure AusAID
Selina Z Boso	Permanent Secretary, Ministry of Rural Development
Selwyn Takana	Director, Economic Reform Unit, MoFT
Shadrach Fanega	Permanent Secretary, MoFT
Stanley Pirione	Permanent Secretary MPGIS
Steve Hall	Director Solomons Telekom
Steve Likaveke	Consultant UN Habitat
Susan Sulu	Director Aid Coordination Division, MDPAC
Suzanne Paisley	WB
Tai'atu Ata'ata	ADB, Development Coordinator
Tendai Gregan	Senior Energy Specialist, WB, Sydney
Tini Chatterjee	WB
Tobias Bule	Senior Finance Officer, Debt Management Unit, MoFT
Tom Woods	Legal specialist, advisor to MGPIS (through PGSP)
Tony Makabo	General Manager, Solomon Islands National Provident Fund
Tony Telford	Team Leader, Solomon Islands Road Improvement Project II
Toshio Yamada	Consultant to JICA
Willson Karamui	Office of the Prime Minister
Yasushi Hayashi	JICA advisor to MDPAC
Yoshinobu Takishita	Resident Representative, JICA

Appendix F: Reference Documents

Document or Section	Organisation/Author	Date
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Strategy for Aid Co-ordination and Management	SIG

Appendix G: Inventory of Transport Infrastructure

Source: TSDP Consultants

Roads

Province	Island	Road Class	Name	Length	Needs	Engineering Constructability and Sustainability
Central	Tulaghi	Feeder	SIEA Road	0.25	Rehab	medium
Central	Tulaghi	Feeder	Tulaghi Hospital Road	0.55	Rehab	medium
Central	Tulaghi	Feeder	No1 Haus Road	0.06	Rehab	medium
Central	Tulaghi	Feeder	McMahon Road_1	0.2	Rehab	medium
Central	Tulaghi	Feeder	McMahon Road	0.24	Rehab	medium
Central	Tulaghi	Main	Coastal Ring Road	7.51	Maintenance	high
Central	Nggele Pile		Siarana - Bokolonga	6	Rehab	low
Choiseul	Choiseul		Kolombangara - Ghoe	23	Maintenance	high
Choiseul	Choiseul		Kolombangara - Saqigae	7	Rehab	medium
Choiseul	Choiseul		Saqigae - Koloni	12.5	Rehab	medium
Choiseul	Choiseul		Taro - Chirovanga	32	Rehab	medium
Choiseul	Choiseul		Ghoe - Papara	10.5	Rehab	medium
Choiseul	Choiseul		Taro - Koloni	38	Rehab	medium
Guadalcanal	Guadalcanal	Feeder	Vura Road	3.00	Maintenance	high
Guadalcanal	Guadalcanal	Feeder	Gold Ridge Plantation Rd	3.48	Rehab	medium
Guadalcanal	Guadalcanal	Feeder	Koleasi Road	16.51	Rehab	medium
Guadalcanal	Guadalcanal	Feeder	Gesa Road	12.97	Rehab	medium
Guadalcanal	Guadalcanal	Feeder	St. Martin Road	1.82	Rehab	medium
Guadalcanal	Guadalcanal	Feeder	Veradoma Road	6.89	Rehab	medium
Guadalcanal	Guadalcanal	Feeder	Tina Road	10.32	Rehab	medium
Guadalcanal	Guadalcanal	Feeder	Betivatu School Road	7.34	Rehab	medium
Guadalcanal	Guadalcanal	Feeder	Vutu Road	4.28	Rehab	medium
Guadalcanal	Guadalcanal	Feeder	Tumurora School Road	11.48	Rehab	medium
Guadalcanal	Guadalcanal	Feeder	Pitukoli Plantation Road	3.45	Rehab	medium
Guadalcanal	Guadalcanal	Feeder	Sali 2 Road	9.75	Rehab	medium
Guadalcanal	Guadalcanal	Feeder	Ghavagha 2 Road	3.45	Rehab	medium
Guadalcanal	Guadalcanal	Feeder	Jericho Road	5.46	Rehab	medium
Guadalcanal	Guadalcanal	Feeder	Komukogha Road	9.66	Rehab	medium
Guadalcanal	Guadalcanal	Feeder	Ndolo Road	10.61	Rehab	medium
Guadalcanal	Guadalcanal	Feeder	Tetupa Road	9.55	Rehab	medium
Guadalcanal	Guadalcanal	Feeder	Papaga Road	7.79	Rehab	medium
Guadalcanal	Guadalcanal	Feeder	Komuniasi Road	10.45	Rehab	medium
Guadalcanal	Guadalcanal	Feeder	Pitukoli Road	4.86	Rehab	medium
Guadalcanal	Guadalcanal	Feeder	Lungga-Old Main Road	2.87	Rehab	medium
Guadalcanal	Guadalcanal	Feeder	Airport Motel East Road	1.18	Rehab	medium

Province	Island	Road Class	Name	Length	Needs	Engineering Constructability and Sustainability
Guadalcanal	Guadalcanal	Feeder	Keamami Road	4.26	Rehab	medium
Guadalcanal	Guadalcanal	Feeder	Paoka Road	6.73	Rehab	medium
Guadalcanal	Guadalcanal	Feeder	Sun Valley Road	1.78	Rehab	medium
Guadalcanal	Guadalcanal	Feeder	Tenaru Beach Road	0.95	Rehab	medium
Guadalcanal	Guadalcanal	Feeder	Nguvia School Road	3.46	Rehab	medium
Guadalcanal	Guadalcanal	Feeder	Tulaghi Road	3.53	Rehab	medium
Guadalcanal	Guadalcanal	Feeder	New Birao Road	6.55	Rehab	medium
Guadalcanal	Guadalcanal	Feeder	Tetere Prison Service Rd	4.41	Rehab	medium
Guadalcanal	Guadalcanal	Feeder	Kaotave Road	4.07	Rehab	medium
Guadalcanal	Guadalcanal	Feeder	Rarata 1 Road	4.28	Rehab	medium
Guadalcanal	Guadalcanal	Feeder	Kolona 2 Road	8.74	Rehab	medium
Guadalcanal	Guadalcanal	Feeder	Magia School Road	11.88	Rehab	medium
Guadalcanal	Guadalcanal	Feeder	Mboneghe East Road	6.83	Rehab	medium
Guadalcanal	Guadalcanal	Feeder	R783	3.05	Rehab	medium
Guadalcanal	Guadalcanal	Feeder	Henderson Road	1.00	Rehab	medium
Guadalcanal	Guadalcanal	Feeder	GBR Road	1.20	Rehab	medium
Guadalcanal	Guadalcanal	Feeder	Sakaiana Settlement Rd	0.94	Rehab	medium
Guadalcanal	Guadalcanal	Feeder	Suaghi Road	3.65	Rehab	medium
Guadalcanal	Guadalcanal	Feeder	Komufalau	4.58	Rehab	medium
Guadalcanal	Guadalcanal	Feeder	Calvary Road	6.40	Rehab	medium
Guadalcanal	Guadalcanal	Feeder	Vatukulau Road	3.00	Rehab	medium
Guadalcanal	Guadalcanal	Feeder	Aruligho West Plantation Road	1.63	Rehab	medium
Guadalcanal	Guadalcanal	Feeder	Vaturanga School Road	1.09	Rehab	medium
Guadalcanal	Guadalcanal	Feeder	Lambi Clinic Road	2.70	Rehab	medium
Guadalcanal	Guadalcanal	Feeder	Red Beach West Road	0.62	Rehab	medium
Guadalcanal	Guadalcanal	Feeder	Red Beach Central Road	0.42	Rehab	medium
Guadalcanal	Guadalcanal	Feeder	Red Beach East Road	0.47	Rehab	medium
Guadalcanal	Guadalcanal	Feeder	Taloa Road	1.98	Rehab	medium
Guadalcanal	Guadalcanal	Feeder	Bebe Road	1.93	Rehab	medium
Guadalcanal	Guadalcanal	Feeder	Momolu Plantation Rd	1.96	Rehab	medium
Guadalcanal	Guadalcanal	Feeder	Thanginipaura Road	1.94	Rehab	medium
Guadalcanal	Guadalcanal	Feeder	Lunga Station Road	0.89	Rehab	medium
Guadalcanal	Guadalcanal	Feeder	Horokeru Road	6.47	Rehab	medium
Guadalcanal	Guadalcanal	Feeder	R964	0.09	Rehab	medium
Guadalcanal	Guadalcanal	Feeder	Aligator Creek	0.50	Rehab	medium
Guadalcanal	Guadalcanal	Feeder	Nazareth Apostolic Centre	1.11	Rehab	medium
Guadalcanal	Guadalcanal	Feeder	Samba Junction	0.99	Rehab	medium
Guadalcanal	Guadalcanal	Feeder	Ngaimera Road	1.24	Rehab	medium
Guadalcanal	Guadalcanal	Feeder	Australian High Com Residential Road	0.59	Rehab	medium
Guadalcanal	Guadalcanal	Feeder	Babani Road	1.33	Rehab	medium
Guadalcanal	Guadalcanal	Feeder	Tanahoru Road	0.45	Rehab	medium
Guadalcanal	Guadalcanal	Feeder	Tangisaliu East Road	0.20	Rehab	medium

Province	Island	Road Class	Name	Length	Needs	Engineering Constructability and Sustainability
Guadalcanal	Guadalcanal	Feeder	Judiah Road	0.94	Rehab	medium
Guadalcanal	Guadalcanal	Feeder	Rauni Road	4.83	Rehab	medium
Guadalcanal	Guadalcanal	Feeder	Tangisaliu Road	0.39	Rehab	medium
Guadalcanal	Guadalcanal	Feeder	Uni Road	3.78	Rehab	medium
Guadalcanal	Guadalcanal	Feeder	Bikuvite Road	1.13	Rehab	medium
Guadalcanal	Guadalcanal	Feeder	Monga Road	3.08	Rehab	medium
Guadalcanal	Guadalcanal	Feeder	LDA East Road	0.25	Rehab	medium
Guadalcanal	Guadalcanal	Feeder	LDA Road	1.23	Rehab	medium
Guadalcanal	Guadalcanal	Feeder	LDA West Road	0.44	Rehab	medium
Guadalcanal	Guadalcanal	Feeder	Vura West Road	0.43	Rehab	medium
Guadalcanal	Guadalcanal	Feeder	Rurusia Road	0.94	Rehab	medium
Guadalcanal	Guadalcanal	Feeder	Tamboko Road	2.00	Rehab	medium
Guadalcanal	Guadalcanal	Feeder	Tapua Road	1.95	Rehab	medium
Guadalcanal	Guadalcanal	Feeder	Vatusi Road	2.00	Rehab	medium
Guadalcanal	Guadalcanal	Feeder	Ngalikasiu Road	1.05	Rehab	medium
Guadalcanal	Guadalcanal	Feeder	Vilu Road	2.00	Rehab	medium
Guadalcanal	Guadalcanal	Feeder	Horobau Road	2.00	Rehab	medium
Guadalcanal	Guadalcanal	Feeder	Aruligho Plantation Road	0.38	Rehab	medium
Guadalcanal	Guadalcanal	Feeder	Takaboru Road	0.96	Rehab	medium
Guadalcanal	Guadalcanal	Feeder	Takaboru Road (Seaward)	0.47	Rehab	medium
Guadalcanal	Guadalcanal	Feeder	Takaboru Road West (Inland)	0.16	Rehab	medium
Guadalcanal	Guadalcanal	Feeder	Tanaeba Road (Seaward)	0.32	Rehab	medium
Guadalcanal	Guadalcanal	Feeder	Kohimarama Road	1.49	Rehab	medium
Guadalcanal	Guadalcanal	Feeder	Kila Road	2.50	Rehab	medium
Guadalcanal	Guadalcanal	Feeder	Popo Road	4.50	Rehab	medium
Guadalcanal	Guadalcanal	Feeder	Kakalaka Road	0.75	Rehab	medium
Guadalcanal	Guadalcanal	Main	Honiara Aola Road	68.13	Maintenance	high
Guadalcanal	Guadalcanal	Main	Honiara-Lambi Road	68.39	Rehab	high
Guadalcanal	Guadalcanal	Rural Access	Tetere Sikaiana	0.88	Maintenance	high
Guadalcanal	Guadalcanal	Rural Access	Airport Drive 1	0.38	Rehab	medium
Guadalcanal	Guadalcanal	Rural Access	Airport Drive 2	0.24	Rehab	medium
Guadalcanal	Guadalcanal	Rural Access	Airport Drive 3	0.21	Rehab	medium
Guadalcanal	Guadalcanal	Rural Access	Tenavatu School Road	1.87	Rehab	medium
Guadalcanal	Guadalcanal	Rural Access	Verakaukiki Road	8.39	Rehab	medium
Guadalcanal	Guadalcanal	Rural Access	Unknown Veradoma East	1.11	Rehab	medium
Guadalcanal	Guadalcanal	Rural Access	Kodovu School Road	1.33	Rehab	medium
Guadalcanal	Guadalcanal	Rural Access	Nubu School Road	0.72	Rehab	medium
Guadalcanal	Guadalcanal	Rural Access	Pao Road	0.24	Rehab	medium
Guadalcanal	Guadalcanal	Rural Access	Sungina Road	2.60	Rehab	medium
Guadalcanal	Guadalcanal	Rural Access	Tanatita Road	3.69	Rehab	medium
Guadalcanal	Guadalcanal	Rural Access	R969	2.61	Rehab	medium
Guadalcanal	Guadalcanal	Rural Access	Umea Road	1.89	Rehab	medium

Province	Island	Road Class	Name	Length	Needs	Engineering Constructability and Sustainability
Guadalcanal	Guadalcanal	Rural Access	Unknown Veradoma West	0.94	Rehab	medium
Guadalcanal	Guadalcanal	Rural Access	Telenikolivuth Road	0.76	Rehab	medium
Guadalcanal	Guadalcanal	Rural Access	Marava Road	1.82	Rehab	medium
Guadalcanal	Guadalcanal	Rural Access	Horohotu 1 Road	0.73	Rehab	medium
Guadalcanal	Guadalcanal	Rural Access	Red Beach Coast Rd	1.74	Rehab	medium
Guadalcanal	Guadalcanal	Rural Access	Veuru Road	0.80	Rehab	medium
Guadalcanal	Guadalcanal	Rural Access	Tumunage Road	0.92	Rehab	medium
Guadalcanal	Guadalcanal	Rural Access	Bamboo Creek Road	1.34	Rehab	medium
Guadalcanal	Guadalcanal	Rural Access	Ghughue Road	1.72	Rehab	medium
Guadalcanal	Guadalcanal	Rural Access	Horobau East Road	0.84	Rehab	medium
Guadalcanal	Guadalcanal	Rural Access	Vatukulau West Road	0.34	Rehab	medium
Guadalcanal	Guadalcanal	Rural Access	Maenu'u Settlement Road	0.69	Rehab	medium
Guadalcanal	Guadalcanal	Rural Access	Fijian Settlement Road	0.26	Rehab	medium
Guadalcanal	Guadalcanal	Rural Access	LA Street	0.53	Rehab	medium
Honiara	Guadalcanal	Local Access	BurnsCreek Road	0.50	Rehab	medium
Honiara	Guadalcanal	Local Access	R672	1.35	Rehab	medium
Honiara	Guadalcanal	Local Access	Cyprus Lane	1.03	Rehab	medium
Honiara	Guadalcanal	Local Access	Vura 3 Road 1	0.21	Rehab	medium
Honiara	Guadalcanal	Local Access	Ngaliraugha Road	1.03	Maintenance	high
Honiara	Guadalcanal	Local Access	Namo Ruka Road	0.82	Maintenance	high
Honiara	Guadalcanal	Local Access	Tavioa Ridge Road	0.81	Maintenance	high
Honiara	Guadalcanal	Local Access	White River Road	0.79	Maintenance	high
Honiara	Guadalcanal	Local Access	Mboko ST	0.47	Maintenance	high
Honiara	Guadalcanal	Local Access	R387	0.23	Maintenance	high
Honiara	Guadalcanal	Local Access	R601	0.22	Maintenance	high
Honiara	Guadalcanal	Local Access	R674	0.90	Maintenance	high
Honiara	Guadalcanal	Local Access	Lekamboli Lane	0.33	Maintenance	high
Honiara	Guadalcanal	Local Access	Guppy ST	0.94	Rehab	medium
Honiara	Guadalcanal	Local Access	Woodford ST	0.14	Rehab	medium
Honiara	Guadalcanal	Local Access	Huhuru Road	2.63	Rehab	medium
Honiara	Guadalcanal	Local Access	Independence Drive	0.58	Rehab	medium
Honiara	Guadalcanal	Local Access	Ngossi Ridge Road	0.92	Rehab	medium
Honiara	Guadalcanal	Local Access	Bishop Epalle School Road	0.58	Rehab	medium
Honiara	Guadalcanal	Local Access	Tuvaruhu School Road	0.08	Rehab	medium
Honiara	Guadalcanal	Local Access	R755 Gilbert Camp Road	1.54	Rehab	medium
Honiara	Guadalcanal	Local Access	Central Market Road	0.12	Rehab	medium
Honiara	Guadalcanal	Local Access	Taba Road	1.66	Rehab	medium
Honiara	Guadalcanal	Local Access	Aho ST	0.10	Rehab	medium
Honiara	Guadalcanal	Local Access	Saungale ST	0.25	Rehab	medium
Honiara	Guadalcanal	Local Access	Lombi Cres	0.34	Rehab	medium
Honiara	Guadalcanal	Local Access	Vara Cres	0.23	Rehab	medium
Honiara	Guadalcanal	Local Access	New Georgia Road	0.62	Rehab	medium

Province	Island	Road Class	Name	Length	Needs	Engineering Constructability and Sustainability
Honiara	Guadalcanal	Local Access	Vave ST	0.22	Rehab	medium
Honiara	Guadalcanal	Local Access	Vatulwa Road	0.24	Rehab	medium
Honiara	Guadalcanal	Local Access	R059	0.29	Rehab	medium
Honiara	Guadalcanal	Local Access	Ashley ST	0.11	Rehab	medium
Honiara	Guadalcanal	Local Access	Savo ST	0.33	Rehab	medium
Honiara	Guadalcanal	Local Access	Eagle ST	0.37	Rehab	medium
Honiara	Guadalcanal	Local Access	Vasakena Road	0.42	Rehab	medium
Honiara	Guadalcanal	Local Access	Mbumburu Road 2	0.35	Rehab	medium
Honiara	Guadalcanal	Local Access	Titigge Road	0.51	Rehab	medium
Honiara	Guadalcanal	Local Access	Garden Drive	0.72	Rehab	medium
Honiara	Guadalcanal	Local Access	Village Six Road	0.23	Rehab	medium
Honiara	Guadalcanal	Local Access	Tingge Road	0.48	Rehab	medium
Honiara	Guadalcanal	Local Access	R333	0.33	Rehab	medium
Honiara	Guadalcanal	Local Access	R349	0.18	Rehab	medium
Honiara	Guadalcanal	Local Access	R362	0.43	Rehab	medium
Honiara	Guadalcanal	Local Access	R370	0.40	Rehab	medium
Honiara	Guadalcanal	Local Access	R383	0.34	Rehab	medium
Honiara	Guadalcanal	Local Access	R413	0.86	Rehab	medium
Honiara	Guadalcanal	Local Access	R423	0.54	Rehab	medium
Honiara	Guadalcanal	Local Access	R432	0.22	Rehab	medium
Honiara	Guadalcanal	Local Access	R433	0.14	Rehab	medium
Honiara	Guadalcanal	Local Access	R438	0.28	Rehab	medium
Honiara	Guadalcanal	Local Access	R447	0.72	Rehab	medium
Honiara	Guadalcanal	Local Access	R449	0.14	Rehab	medium
Honiara	Guadalcanal	Local Access	R453	0.30	Rehab	medium
Honiara	Guadalcanal	Local Access	R478	0.23	Rehab	medium
Honiara	Guadalcanal	Local Access	R486	0.22	Rehab	medium
Honiara	Guadalcanal	Local Access	R487	0.73	Rehab	medium
Honiara	Guadalcanal	Local Access	R488	0.48	Rehab	medium
Honiara	Guadalcanal	Local Access	R491	0.46	Rehab	medium
Honiara	Guadalcanal	Local Access	R502	0.10	Rehab	medium
Honiara	Guadalcanal	Local Access	R506	0.22	Rehab	medium
Honiara	Guadalcanal	Local Access	R518	0.12	Rehab	medium
Honiara	Guadalcanal	Local Access	R527	0.23	Rehab	medium
Honiara	Guadalcanal	Local Access	R558	0.47	Rehab	medium
Honiara	Guadalcanal	Local Access	Panatina Valley Road	0.37	Rehab	medium
Honiara	Guadalcanal	Local Access	Lewino Road	0.46	Rehab	medium
Honiara	Guadalcanal	Local Access	R584	0.41	Rehab	medium
Honiara	Guadalcanal	Local Access	R608	0.14	Rehab	medium
Honiara	Guadalcanal	Local Access	R684	0.65	Rehab	medium
Honiara	Guadalcanal	Local Access	R685	0.70	Rehab	medium
Honiara	Guadalcanal	Local Access	R701	0.59	Rehab	medium

Province	Island	Road Class	Name	Length	Needs	Engineering Constructability and Sustainability
Honiara	Guadalcanal	Local Access	R731	0.06	Rehab	medium
Honiara	Guadalcanal	Local Access	R737	0.13	Rehab	medium
Honiara	Guadalcanal	Local Access	R814	0.48	Rehab	medium
Honiara	Guadalcanal	Local Access	Tanahue Road	0.23	Rehab	medium
Honiara	Guadalcanal	Local Access	R917	0.68	Rehab	medium
Honiara	Guadalcanal	Local Access	R919	0.08	Rehab	medium
Honiara	Guadalcanal	Local Access	R928	0.36	Rehab	medium
Honiara	Guadalcanal	Local Access	R932	0.34	Rehab	medium
Honiara	Guadalcanal	Local Access	R939	0.38	Rehab	medium
Honiara	Guadalcanal	Local Access	R977	0.07	Rehab	medium
Honiara	Guadalcanal	Local Access	Fox ST	0.07	Rehab	medium
Honiara	Guadalcanal	Local Access	R990	0.06	Rehab	medium
Honiara	Guadalcanal	Local Connector	Mbua Road	1.29	Maintenance	high
Honiara	Guadalcanal	Local Connector	Vara Road	0.96	Maintenance	high
Honiara	Guadalcanal	Local Connector	Mbokonavera 4 Road	1.07	Maintenance	high
Honiara	Guadalcanal	Local Connector	Skyline Drive	1.58	Maintenance	high
Honiara	Guadalcanal	Local Connector	Mbokona Road	2.12	Maintenance	high
Honiara	Guadalcanal	Local Connector	Panatina Campus Road	0.57	Maintenance	high
Honiara	Guadalcanal	Local Connector	Kukum Campus Road	0.89	Maintenance	high
Honiara	Guadalcanal	Local Connector	Naha Road	0.47	Maintenance	high
Honiara	Guadalcanal	Local Connector	Mboka ST	0.18	Maintenance	high
Honiara	Guadalcanal	Local Connector	Klaucke ST	0.16	Maintenance	high
Honiara	Guadalcanal	Local Connector	Mbokonavera 2 Road	0.37	Maintenance	high
Honiara	Guadalcanal	Local Connector	Mud Alley	0.16	Maintenance	high
Honiara	Guadalcanal	Local Connector	Tsilm ST	0.16	Maintenance	high
Honiara	Guadalcanal	Local Connector	Rifle Range	0.63	Maintenance	high
Honiara	Guadalcanal	Local Connector	R457	0.51	Maintenance	high
Honiara	Guadalcanal	Local Connector	West Koloale Road	0.69	Maintenance	high
Honiara	Guadalcanal	Local Connector	Betikama Road	1.29	Rehab	medium
Honiara	Guadalcanal	Local Connector	Ranadi Road	1.83	Rehab	medium
Honiara	Guadalcanal	Local Connector	Mt. Austine Road	7.92	Rehab	medium
Honiara	Guadalcanal	Local Connector	Tanuli Ridge Road	1.35	Rehab	medium
Honiara	Guadalcanal	Local Connector	Tuvaruhu Road	1.34	Rehab	medium
Honiara	Guadalcanal	Local Connector	Mbokonavera1 Road	0.85	Rehab	medium
Honiara	Guadalcanal	Local Connector	Kukum Market Road	0.49	Rehab	medium
Honiara	Guadalcanal	Local Connector	Panatina Road	0.90	Rehab	medium
Honiara	Guadalcanal	Local Connector	SolRice Road	0.96	Rehab	medium
Honiara	Guadalcanal	Local Connector	R468	1.27	Rehab	medium
Honiara	Guadalcanal	Local Connector	Jackson Ridge Road	1.52	Rehab	medium
Honiara	Guadalcanal	Local Connector	Kastom Garden Road	1.34	Rehab	medium
Honiara	Guadalcanal	Local Connector	Lau Valley Road	0.78	Rehab	medium
Honiara	Guadalcanal	Local Connector	Mambulu Road	0.62	Rehab	medium

Province	Island	Road Class	Name	Length	Needs	Engineering Constructability and Sustainability
Honiara	Guadalcanal	Local Connector	Ropi ST	0.16	Rehab	medium
Honiara	Guadalcanal	Local Connector	Chung Wah Road	0.55	Rehab	medium
Honiara	Guadalcanal	Local Connector	Koloale Road	0.56	Rehab	medium
Honiara	Guadalcanal	Local Connector	Dowling ST	0.31	Rehab	medium
Honiara	Guadalcanal	Local Connector	Manusata Terrace	0.14	Rehab	medium
Honiara	Guadalcanal	Local Connector	Tolu Avenue	0.19	Rehab	medium
Honiara	Guadalcanal	Local Connector	R332	0.61	Rehab	medium
Honiara	Guadalcanal	Local Connector	R345	0.18	Rehab	medium
Honiara	Guadalcanal	Local Connector	R355	0.36	Rehab	medium
Honiara	Guadalcanal	Local Connector	R391	0.15	Rehab	medium
Honiara	Guadalcanal	Local Connector	R392	0.47	Rehab	medium
Honiara	Guadalcanal	Local Connector	R436	0.42	Rehab	medium
Honiara	Guadalcanal	Local Connector	R454	0.76	Rehab	medium
Honiara	Guadalcanal	Local Connector	R464	0.92	Rehab	medium
Honiara	Guadalcanal	Local Connector	R568	0.53	Rehab	medium
Honiara	Guadalcanal	Local Connector	R575	0.41	Rehab	medium
Honiara	Guadalcanal	Local Connector	R826	1.05	Rehab	medium
Honiara	Guadalcanal	Local Connector	R894	0.36	Rehab	medium
Honiara	Guadalcanal	Local Connector	Bahai' Road	0.60	Rehab	medium
Honiara	Guadalcanal	Local Connector	R916	0.71	Rehab	medium
Honiara	Guadalcanal	Local Connector	Kwan Tung Rd	0.15	Rehab	medium
Honiara	Guadalcanal	Local Distributor	Naha Back Road	1.09	Maintenance	high
Honiara	Guadalcanal	Local Distributor	Kola'a Ridge Road	2.77	Maintenance	high
Honiara	Guadalcanal	Local Distributor	Koloale Ridge Road	0.64	Maintenance	high
Honiara	Guadalcanal	Local Distributor	Vavaea Ridge Road	1.59	Maintenance	high
Honiara	Guadalcanal	Local Distributor	Hibiscus Avenue	0.95	Maintenance	high
Honiara	Guadalcanal	Local Distributor	Lengakiki Road	0.60	Maintenance	high
Honiara	Guadalcanal	Local Distributor	Rewa Road	0.60	Maintenance	high
Honiara	Guadalcanal	Local Distributor	Tasahe Road	5.37	Maintenance	high
Honiara	Guadalcanal	Local Distributor	China Town Road	1.32	Maintenance	high
Honiara	Guadalcanal	Local Distributor	Borderline Road	0.53	Maintenance	high
Honiara	Guadalcanal	Local Distributor	Chaka ST	0.14	Maintenance	high
Honiara	Guadalcanal	Local Distributor	Commonwealth ST	0.17	Maintenance	high
Honiara	Guadalcanal	Local Distributor	Mbumburu Road	0.76	Maintenance	high
Honiara	Guadalcanal	Local Distributor	R408	0.79	Maintenance	high
Honiara	Guadalcanal	Local Distributor	Vura Road	1.73	Rehab	medium
Honiara	Guadalcanal	Local Distributor	Tanakake Road	0.37	Rehab	medium
Honiara	Guadalcanal	Local Distributor	R613	0.06	Rehab	medium
Honiara	Guadalcanal	Minor Access	Parliament Drive	0.24	Maintenance	high
Honiara	Guadalcanal	Minor Access	R459	0.92	Maintenance	high
Honiara	Guadalcanal	Minor Access	Rove Clinic Road	0.07	Rehab	medium
Honiara	Guadalcanal	Minor Access	Island Jetty Road	0.11	Rehab	medium

Province	Island	Road Class	Name	Length	Needs	Engineering Constructability and Sustainability
Honiara	Guadalcanal	Minor Access	Civil Aviation Road	0.21	Rehab	medium
Honiara	Guadalcanal	Minor Access	R768	1.75	Rehab	medium
Honiara	Guadalcanal	Minor Access	Ohiola Road	1.52	Rehab	medium
Honiara	Guadalcanal	Minor Access	SICA Road	0.21	Rehab	medium
Honiara	Guadalcanal	Minor Access	Roadmakers Road	0.27	Rehab	medium
Honiara	Guadalcanal	Minor Access	R006	0.09	Rehab	medium
Honiara	Guadalcanal	Minor Access	R007	0.12	Rehab	medium
Honiara	Guadalcanal	Minor Access	R457	0.25	Rehab	medium
Honiara	Guadalcanal	Minor Access	Duna Road	0.06	Rehab	medium
Honiara	Guadalcanal	Minor Access	R018	0.13	Rehab	medium
Honiara	Guadalcanal	Minor Access	R019	0.13	Rehab	medium
Honiara	Guadalcanal	Minor Access	Luap ST	0.09	Rehab	medium
Honiara	Guadalcanal	Minor Access	Kotasi View	0.26	Rehab	medium
Honiara	Guadalcanal	Minor Access	R029	0.15	Rehab	medium
Honiara	Guadalcanal	Minor Access	Patterson Lane	0.29	Rehab	medium
Honiara	Guadalcanal	Minor Access	Fijian Road	0.05	Rehab	medium
Honiara	Guadalcanal	Minor Access	R045	0.16	Rehab	medium
Honiara	Guadalcanal	Minor Access	R047	0.05	Rehab	medium
Honiara	Guadalcanal	Minor Access	Mbokonavera 3 Road	0.44	Rehab	medium
Honiara	Guadalcanal	Minor Access	Tehamurina Road	0.41	Rehab	medium
Honiara	Guadalcanal	Minor Access	Chipu Chau Road	0.39	Rehab	medium
Honiara	Guadalcanal	Minor Access	Choviri Road	0.22	Rehab	medium
Honiara	Guadalcanal	Minor Access	Port Authority Res. Quaters Road	0.04	Rehab	medium
Honiara	Guadalcanal	Minor Access	R058	0.73	Rehab	medium
Honiara	Guadalcanal	Minor Access	Coronation Avenue	0.10	Rehab	medium
Honiara	Guadalcanal	Minor Access	Tanosi ST	0.29	Rehab	medium
Honiara	Guadalcanal	Minor Access	Rewa Road 1	0.04	Rehab	medium
Honiara	Guadalcanal	Minor Access	Vasekena Road 1	0.05	Rehab	medium
Honiara	Guadalcanal	Minor Access	R081	0.07	Rehab	medium
Honiara	Guadalcanal	Minor Access	Mbumburu Road 1	0.09	Rehab	medium
Honiara	Guadalcanal	Minor Access	R087	0.27	Rehab	medium
Honiara	Guadalcanal	Minor Access	Independance Rd 1	0.11	Rehab	medium
Honiara	Guadalcanal	Minor Access	Independance Rd 2	0.12	Rehab	medium
Honiara	Guadalcanal	Minor Access	Independance Rd 3	0.06	Rehab	medium
Honiara	Guadalcanal	Minor Access	R095	0.09	Rehab	medium
Honiara	Guadalcanal	Minor Access	Tasahe Drive 1	0.44	Rehab	medium
Honiara	Guadalcanal	Minor Access	SIEA Compound Rd 1	0.14	Rehab	medium
Honiara	Guadalcanal	Minor Access	NPF Staff Compound Rd	0.10	Rehab	medium
Honiara	Guadalcanal	Minor Access	SIEA Compound Rd 2	0.08	Rehab	medium
Honiara	Guadalcanal	Minor Access	SIEA Compound Rd 3	0.11	Rehab	medium
Honiara	Guadalcanal	Minor Access	Tabuou Road	0.36	Rehab	medium
Honiara	Guadalcanal	Minor Access	Mbura Road	0.63	Rehab	medium

Province	Island	Road Class	Name	Length	Needs	Engineering Constructability and Sustainability
Honiara	Guadalcanal	Minor Access	Tautu Lane	0.23	Rehab	medium
Honiara	Guadalcanal	Minor Access	R462	0.62	Rehab	medium
Honiara	Guadalcanal	Minor Access	R114	0.25	Rehab	medium
Honiara	Guadalcanal	Minor Access	R115	0.09	Rehab	medium
Honiara	Guadalcanal	Minor Access	Njirini ST	0.08	Rehab	medium
Honiara	Guadalcanal	Minor Access	Gilbert Camp Rd 1	0.16	Rehab	medium
Honiara	Guadalcanal	Minor Access	Gilbert Camp Rd 2	0.46	Rehab	medium
Honiara	Guadalcanal	Minor Access	Pokelilina ST	0.16	Rehab	medium
Honiara	Guadalcanal	Minor Access	R497	0.43	Rehab	medium
Honiara	Guadalcanal	Minor Access	Village Six Rd 2	0.10	Rehab	medium
Honiara	Guadalcanal	Minor Access	Vasekena Road 2	0.06	Rehab	medium
Honiara	Guadalcanal	Minor Access	Gina Cres	0.18	Rehab	medium
Honiara	Guadalcanal	Minor Access	R359	0.43	Rehab	medium
Honiara	Guadalcanal	Minor Access	R371	0.03	Rehab	medium
Honiara	Guadalcanal	Minor Access	R373	0.50	Rehab	medium
Honiara	Guadalcanal	Minor Access	R386	0.12	Rehab	medium
Honiara	Guadalcanal	Minor Access	R414	0.33	Rehab	medium
Honiara	Guadalcanal	Minor Access	R425	0.21	Rehab	medium
Honiara	Guadalcanal	Minor Access	R426	0.35	Rehab	medium
Honiara	Guadalcanal	Minor Access	R427	0.16	Rehab	medium
Honiara	Guadalcanal	Minor Access	R435	0.23	Rehab	medium
Honiara	Guadalcanal	Minor Access	R437	0.27	Rehab	medium
Honiara	Guadalcanal	Minor Access	R439	0.92	Rehab	medium
Honiara	Guadalcanal	Minor Access	R442	0.20	Rehab	medium
Honiara	Guadalcanal	Minor Access	R448	0.41	Rehab	medium
Honiara	Guadalcanal	Minor Access	R451	0.29	Rehab	medium
Honiara	Guadalcanal	Minor Access	R463	0.16	Rehab	medium
Honiara	Guadalcanal	Minor Access	R470	0.20	Rehab	medium
Honiara	Guadalcanal	Minor Access	R473	0.24	Rehab	medium
Honiara	Guadalcanal	Minor Access	Vara Creek Road	0.58	Rehab	medium
Honiara	Guadalcanal	Minor Access	R479	0.22	Rehab	medium
Honiara	Guadalcanal	Minor Access	R480	0.12	Rehab	medium
Honiara	Guadalcanal	Minor Access	R496	0.09	Rehab	medium
Honiara	Guadalcanal	Minor Access	R497	0.35	Rehab	medium
Honiara	Guadalcanal	Minor Access	R500	0.15	Rehab	medium
Honiara	Guadalcanal	Minor Access	R503	0.08	Rehab	medium
Honiara	Guadalcanal	Minor Access	R509	0.30	Rehab	medium
Honiara	Guadalcanal	Minor Access	R510	0.19	Rehab	medium
Honiara	Guadalcanal	Minor Access	R512	0.10	Rehab	medium
Honiara	Guadalcanal	Minor Access	Rove Road	0.17	Rehab	medium
Honiara	Guadalcanal	Minor Access	R523	0.20	Rehab	medium
Honiara	Guadalcanal	Minor Access	R531	0.03	Rehab	medium

Province	Island	Road Class	Name	Length	Needs	Engineering Constructability and Sustainability
Honiara	Guadalcanal	Minor Access	R532	0.25	Rehab	medium
Honiara	Guadalcanal	Minor Access	R536	0.37	Rehab	medium
Honiara	Guadalcanal	Minor Access	R538	0.16	Rehab	medium
Honiara	Guadalcanal	Minor Access	R539	0.16	Rehab	medium
Honiara	Guadalcanal	Minor Access	Works Road	0.25	Rehab	medium
Honiara	Guadalcanal	Minor Access	R576	0.20	Rehab	medium
Honiara	Guadalcanal	Minor Access	Red Mansion Road	0.16	Rehab	medium
Honiara	Guadalcanal	Minor Access	R579	0.24	Rehab	medium
Honiara	Guadalcanal	Minor Access	Niri Road	0.25	Rehab	medium
Honiara	Guadalcanal	Minor Access	Kaitu'u Road	0.15	Rehab	medium
Honiara	Guadalcanal	Minor Access	Palua Road	0.29	Rehab	medium
Honiara	Guadalcanal	Minor Access	Loboi Road	0.17	Rehab	medium
Honiara	Guadalcanal	Minor Access	Fredy Road	0.48	Rehab	medium
Honiara	Guadalcanal	Minor Access	R599	0.23	Rehab	medium
Honiara	Guadalcanal	Minor Access	R602	0.16	Rehab	medium
Honiara	Guadalcanal	Minor Access	R603	0.18	Rehab	medium
Honiara	Guadalcanal	Minor Access	R605	0.14	Rehab	medium
Honiara	Guadalcanal	Minor Access	R607	0.18	Rehab	medium
Honiara	Guadalcanal	Minor Access	R609	0.16	Rehab	medium
Honiara	Guadalcanal	Minor Access	R621	0.38	Rehab	medium
Honiara	Guadalcanal	Minor Access	R625	0.06	Rehab	medium
Honiara	Guadalcanal	Minor Access	R626	0.08	Rehab	medium
Honiara	Guadalcanal	Minor Access	R628	0.13	Rehab	medium
Honiara	Guadalcanal	Minor Access	R630	0.30	Rehab	medium
Honiara	Guadalcanal	Minor Access	R636	0.16	Rehab	medium
Honiara	Guadalcanal	Minor Access	R673	1.35	Rehab	medium
Honiara	Guadalcanal	Minor Access	R675	0.17	Rehab	medium
Honiara	Guadalcanal	Minor Access	R681	0.13	Rehab	medium
Honiara	Guadalcanal	Minor Access	R682	0.13	Rehab	medium
Honiara	Guadalcanal	Minor Access	R687	0.25	Rehab	medium
Honiara	Guadalcanal	Minor Access	R689	0.34	Rehab	medium
Honiara	Guadalcanal	Minor Access	R702	0.11	Rehab	medium
Honiara	Guadalcanal	Minor Access	R703	1.09	Rehab	medium
Honiara	Guadalcanal	Minor Access	R707	0.05	Rehab	medium
Honiara	Guadalcanal	Minor Access	R714	0.25	Rehab	medium
Honiara	Guadalcanal	Minor Access	R715	0.10	Rehab	medium
Honiara	Guadalcanal	Minor Access	R716	0.22	Rehab	medium
Honiara	Guadalcanal	Minor Access	R717	0.03	Rehab	medium
Honiara	Guadalcanal	Minor Access	R718	0.06	Rehab	medium
Honiara	Guadalcanal	Minor Access	R719	0.08	Rehab	medium
Honiara	Guadalcanal	Minor Access	R725	0.15	Rehab	medium
Honiara	Guadalcanal	Minor Access	R740	0.21	Rehab	medium

Province	Island	Road Class	Name	Length	Needs	Engineering Constructability and Sustainability
Honiara	Guadalcanal	Minor Access	R752	0.40	Rehab	medium
Honiara	Guadalcanal	Minor Access	R764	0.11	Rehab	medium
Honiara	Guadalcanal	Minor Access	Baranaba Road	0.11	Rehab	medium
Honiara	Guadalcanal	Minor Access	R787	0.13	Rehab	medium
Honiara	Guadalcanal	Minor Access	R789	0.28	Rehab	medium
Honiara	Guadalcanal	Minor Access	R798	0.99	Rehab	medium
Honiara	Guadalcanal	Minor Access	R799	0.17	Rehab	medium
Honiara	Guadalcanal	Minor Access	R816	0.16	Rehab	medium
Honiara	Guadalcanal	Minor Access	R823	0.18	Rehab	medium
Honiara	Guadalcanal	Minor Access	R829	0.11	Rehab	medium
Honiara	Guadalcanal	Minor Access	R853	0.07	Rehab	medium
Honiara	Guadalcanal	Minor Access	R868	0.08	Rehab	medium
Honiara	Guadalcanal	Minor Access	R882	0.07	Rehab	medium
Honiara	Guadalcanal	Minor Access	Daifa Road	0.47	Rehab	medium
Honiara	Guadalcanal	Minor Access	R897	0.26	Rehab	medium
Honiara	Guadalcanal	Minor Access	R909	0.34	Rehab	medium
Honiara	Guadalcanal	Minor Access	R913	0.23	Rehab	medium
Honiara	Guadalcanal	Minor Access	R920	0.19	Rehab	medium
Honiara	Guadalcanal	Minor Access	R924	0.34	Rehab	medium
Honiara	Guadalcanal	Minor Access	R931	0.35	Rehab	medium
Honiara	Guadalcanal	Minor Access	R933	0.15	Rehab	medium
Honiara	Guadalcanal	Minor Access	R937	0.05	Rehab	medium
Honiara	Guadalcanal	Minor Access	R938	0.11	Rehab	medium
Honiara	Guadalcanal	Minor Access	R940	0.08	Rehab	medium
Honiara	Guadalcanal	Minor Access	R976	0.12	Rehab	medium
Honiara	Guadalcanal	Minor Access	Starling Road	0.31	Rehab	medium
Honiara	Guadalcanal	Minor Access	Mbumbulu Road	0.12	Rehab	medium
Honiara	Guadalcanal	Minor Road	R908	0.57	Rehab	medium
Isabel	Santa Isabel		Kaevanga	13	Maintenance	high
Isabel	Santa Isabel		Jarihana Road	5	Maintenance	medium
Isabel	Santa Isabel		Koghe Road	5.5	Maintenance	high
Isabel	Santa Isabel		Ghojoruru Rd.	3	Rehab	medium
Isabel	Santa Isabel		Soqolona Rd.	3.5	Rehab	medium
Isabel	Santa Isabel		Hovuikolo Rd.	7	Rehab	medium
Isabel	Santa Isabel		Jejevo	1	Rehab	medium
Isabel	Santa Isabel		Gnunalaghe Rd.	1.5	Rehab	medium
Makira	Makira		East Road	18	Maintenance	high
Makira	Makira		West Road	26	Rehab	medium
Makira	Makira		West Road	74	Rehab	high
Makira	Ulawa		Coastal ring Rd.	15	Rehab	medium
Makira	Santa Anna		Wharf Rd.	3	Rehab	medium
Makira	Ulawa		Coastal ring Rd.	14	Rehab	medium

Province	Island	Road Class	Name	Length	Needs	Engineering Constructability and Sustainability
Malaita	Malaita	Feeder	Dala - Atori Road	41.87	Maintenance	high
Malaita	Malaita	Feeder	Califonia Road	2.79	Maintenance	high
Malaita	Malaita	Feeder	Gou'ulu Road	9.15	Maintenance	high
Malaita	Malaita	Feeder	Anda'ua Road	3.75	Maintenance	high
Malaita	Malaita	Feeder	Kilufi Road	0.63	Maintenance	medium
Malaita	Malaita	Feeder	Radesifolomae Road	3.38	Rehab	medium
Malaita	Malaita	Feeder	Fiu Road	11.21	Rehab	medium
Malaita	Malaita	Feeder	Busurata Road	14.11	Rehab	medium
Malaita	Malaita	Feeder	Gwaidingale Road	0.89	Rehab	medium
Malaita	Malaita	Feeder	Talakali Road	0.94	Rehab	medium
Malaita	Malaita	Feeder	Ilikeliana Road	3.77	Rehab	medium
Malaita	Malaita	Feeder	Faidaedae Road	1.25	Rehab	medium
Malaita	Malaita	Feeder	Kilusakwalo Road	1.9	Rehab	medium
Malaita	Malaita	Feeder	Kwareasi Road	0.83	Rehab	medium
Malaita	Malaita	Feeder	Busi'i Road	0.77	Rehab	medium
Malaita	Malaita	Feeder	Kiluwasa Road	0.63	Rehab	medium
Malaita	Malaita	Local Access	Auki Road 1	0.12	Maintenance	medium
Malaita	Malaita	Local Access	Auki Road 2	0.16	Maintenance	medium
Malaita	Malaita	Local Access	Auki - Road 3	0.13	Maintenance	medium
Malaita	Malaita	Local Access	Auki - Road 4	0.29	Maintenance	medium
Malaita	Malaita	Local Access	Lilisiana	0.43	Rehab	medium
Malaita	Malaita	Local Access	Fa'asitoro Road 2	0.18	Rehab	medium
Malaita	Malaita	Local Access	Fa'asitoro Road 1	0.14	Rehab	medium
Malaita	Malaita	Local Access	Sikitae Road	0.49	Rehab	medium
Malaita	Malaita	Local Access	Fa'asitoro Road 3	0.33	Rehab	medium
Malaita	Malaita	Local Connector	Fa'asitoro Road	0.98	Rehab	medium
Malaita	Malaita	Local Connector	Police Residential Road	0.5	Rehab	medium
Malaita	Malaita	Local Connector	Agriculture Road	0.13	Rehab	medium
Malaita	Malaita	Local Distributor	Auki Fulisango Road	9.16	Rehab	medium
Malaita	Malaita	Main	Auki - Hauhui Road	76.24	Maintenance	high
Malaita	Malaita	Main	Auki - Fouia Road	112.7	Maintenance	high
Malaita	Malaita	Rural Access	Kwaiafa - Alisisiu Road	17.96	Maintenance	high
Malaita	Malaita	Rural Access	Nafinua Road	9.43	Maintenance	high
Malaita	Small Malaita	Rural Access	Afio Road	46.43	Rehab	medium
Malaita	Malaita	Rural Access	Alisisiu - Aesi Road	8.68	Rehab	medium
Malaita	Malaita	Rural Access	Canaan Road	2.54	Rehab	medium
Malaita	Malaita	Rural Access	Busuniniu Road	0.85	Rehab	medium
Malaita	Malaita	Rural Access	Talakali Turn off Road	1.23	Rehab	medium
Malaita	Malaita	Rural Access	Namorako Road	0.99	Rehab	medium
Malaita	Malaita	Rural Access	Harumou Road	15.53	Rehab	medium
Malaita	Malaita	Rural Acess	Adadaitolo Road	1.17	Rehab	medium
Renbell	Bellona	Feeder	Mungiki	9.77	Maintenance	medium

Province	Island	Road Class	Name	Length	Needs	Engineering Constructability and Sustainability
Renbell	Bellona	Rural Access	Aotaha Road	0.62	Rehab	low
Renbell	Bellona	Rural Access	Nukutonga	0.21	Rehab	low
Renbell	Bellona	Rural Access	Angohi	0.1	Rehab	low
Renbell	Bellona	Rural Access	Mataiho School Road	0.4	Rehab	low
Renbell	Bellona	Rural Access	Patonu Road	0.07	Rehab	low
Renbell	Bellona	Rural Access	Pauta Road	0.16	Rehab	low
Renbell	Bellona	Rural Access	Siva School Road	0.12	Rehab	low
Renbell	Bellona	Rural Access	Ahanga Road	0.48	Rehab	low
Renbell	Bellona	RuralAccess	Anua Road	0.16	Rehab	low
Renbell	Rennell		Lake Rd.	50	Rehab	medium
Renbell	Rennell		Kangua Rd.	9	Rehab	medium
Temotu	Nendo	Feeder	Nemba Rd.	4	Maintenance	medium
Temotu	Nendo	Feeder	Noipe Rd.	6	Maintenance	medium
Temotu	Nendo	Feeder	Luselemba - Carlise Bay	18.3	Rehab	medium
Temotu	Nendo	Feeder	Forest Rd.	8	Rehab	medium
Temotu	Nendo	Feeder	Pala- Lueselemba	18	Rehab	medium
Temotu	Nendo	Feeder	Nonia Rd.	1	Rehab	medium
Temotu	Nendo	Main	Coastal Rd.	15	Maintenance	medium
Temotu	Nendo	Main	Inland Rd.	24	Maintenance	medium
Temotu	Nendo	Main	South Rd.	6	Rehab	medium
Western	Gizo	Feeder	Middean Highway	1.7	Maintenance	high
Western	Gizo	Local Access	Gizo Wharf Road	0.06	Maintenance	high
Western	Gizo	Local Access	Gizo Primary School Rd	0.48	Maintenance	high
Western	Gizo	Local Access	China Town Road	0.16	Maintenance	high
Western	Gizo	Local Access	SSEC Road	0.22	Maintenance	high
Western	Gizo	Local Access	Jah Mountain Road	1.2	Maintenance	high
Western	Gizo	Local Access	Meqo ST	0.21	Maintenance	high
Western	Gizo	Local Access	Cathedral Lane	0.08	Maintenance	high
Western	Gizo	Local Access	Naqua_Road	0.14	Maintenance	medium
Western	Gizo	Local Access	Crayford Road	0.12	Maintenance	medium
Western	Gizo	Local Connector	D - Road (Hill Top)	1.78	Maintenance	high
Western	Gizo	Local Connector	Malakerava Road	0.82	Maintenance	high
Western	Gizo	Local Distributor	Gizo Main Road	1.3	Maintenance	high
Western	Gizo	Main	Gizo Coastal Road	12.93	Maintenance	high
Western	Gizo	Main	Gizo Inland Road	10.97	Maintenance	high
Western	Gizo	Minor Access	Old SIEA Compund Road	0.31	Maintenance	medium
Western	Gizo	Minor Access	TC Road	0.57	Maintenance	medium
Western	Gizo	Minor Access	Banana Valley Sortcut	0.16	Maintenance	high
Western	Gizo	Minor Access	Banana Valley 1 Road	0.24	Maintenance	high
Western	Gizo	Minor Access	Mengo Road	0.14	Maintenance	medium
Western	Gizo	Minor Access	Prov Gov Resid Road	0.16	Maintenance	medium
Western	Gizo	Rural Access	Marie Point	2.7	Rehab	medium

Province	Island	Road Class	Name	Length	Needs	Engineering Constructability and Sustainability
Western	Vella Lavella		Liapari - Lambulambu	34	Maintenance	medium
Western	Shortlands		Mono Road	3.5	Maintenance	medium
Western	Vella Lavella		Liapari - Sambora	3	Maintenance	medium
Western	Vella Lavella		Puisama - Supato	12	Maintenance	medium
Western	New Georgia		Munda Roads	8	Maintenance	medium
Western	Shortlands		Magusaia Inland	8	Maintenance	low
Western	New Georgia		Munda-Noro Road	16.85	Rehab	medium
Western	Rendova		Ughele - Egholo	4.5	Rehab	medium
Western	Rendova		Ughele - Mauru	8	Rehab	medium
Western	Shortlands		Korovou - Koliai	5	Rehab	low
Western	Rendova		Mauru - Rano	17	Rehab	medium
Western	Rendova		Egholo - Raduvu	5.5	Rehab	medium
				1699.2129		
New Roads						
Choiseul	Choiseul	Local Distributor	Zinoa - Kumbanikesa		New Road	low
Choiseul	Choiseul	Local Distributor	Taro - Sumbisumbi		New Road	low
Choiseul	Choiseul	Local Distributor	Vuranggo - Karaoka		New Road	low
Guadalcanal	Guadalcanal	Rural Access	Lambi - Tangarare		New Road	low
Guadalcanal	Guadalcanal	Rural Access	Rere - Aola		New Road	low
Guadalcanal	Guadalcanal	Rural Access	Marasa - Kologhasi		New Road	low
Guadalcanal	Guadalcanal	Rural Access	Kologhasi - Avuavu		New Road	low
Guadalcanal	Guadalcanal	Rural Access	Avuavu - Marau		New Road	low
Guadalcanal	Guadalcanal	Rural Access	Tangarare - Marasa		New Road	low
Guadalcanal	Guadalcanal	Rural Access	Marau - Kaoka		New Road	low
Guadalcanal	Guadalcanal	Rural Access	Kaoka - Rere		New Road	low
Makira	Makira	Rural Access	Onebia - Hada		New Road	low
Makira	Makira	Rural Access	Onebia - Tetere		New Road	low
Makira	Makira	Rural Access	Warihito - Nahuhu		New Road	low
Makira	Makira	Rural Access	Marou Bay - Maroghu		New Road	low
Makira	Makira	Rural Access	Maroghu - Paregho		New Road	low
Makira	Makira	Rural Access	Paregho - Maraone		New Road	low
Malaita	Malaita	Feeder	Sulufou - Rongali		New Road	low
Malaita	Malaita	Feeder	Atoifi - Naomi		New Road	low
Malaita	Malaita	Feeder	Atoifi - Fole		New Road	low
Malaita	Malaita	Feeder	Atoifi - Namola		New Road	low
Malaita	Malaita	Feeder	Waimasi - Faukendea		New Road	low
Renbell	Rennell	Feeder	Rennell Feeder Roads		New Road	low
Temotu	Nendo	Rural Access	Carlise Bay - Pango - Ngaito		New Road	low
Temotu	Nendo	Rural Access	Nangu - Mbonembore		New Road	low
Western	Vangunu	Rural Access	Mbale - Halisi		New Road	low
Western	Rendova	Rural Access	Au - Hoponga - Kenelo		New Road	low

Airports

Name	IATA Code	Province	Island	Ownership	Type	Status	Runway Length (m)	Runway Width (m)	Surface type	Needs
Yandina	XYA	Central	Russell	Private	Domestic	Operational	930	30	Coral	Maintenance
Kaghau	KGE	Choiseul	Choiseul	Private	Domestic	Operational	740	15	Coral	Maintenance
Taro	CHY	Choiseul	Choiseul	Government	Domestic	Operational	660	25	Coral	Rehab/sealing
Avuavu	AVU	Guadalcanal	Guadalcanal	Government	Domestic	Operational	675	24	Coral	Maintenance
Mbabanakira		Guadalcanal	Guadalcanal	Government	Domestic	Operational	676	22	Coral	Maintenance
Marau	RUS	Guadalcanal	Guadalcanal	Government	Domestic	Operational	604	30	Coral	Maintenance
Henderson	HIR	Guadalcanal	Guadalcanal	Government	International	Operational	2200	45	Asphalt Concrete	Upgrade
Suavanao	VAO	Isabel	Isabel	Government	Domestic	Need Maintenance	850	24	Coral	Maintenance
Fera	FRE	Isabel	Isabel	Government	Domestic	Operational	565	25	Coral	Rehabilitation
Kirakira	IRA	Makira	Makira	Government	Domestic	Operational	1210	30	Coral/Grass	Rehab/sealing
Nana	NNA	Makira	Makira	Government	Domestic	Closed	810	20	Coral	None
Santa Anna	NNB	Makira	Santa Anna	Government	Domestic	Operational	820	23	Coral	Maintenance
Arona	RNA	Makira	Ulawa	Government	Domestic	Operational	860	20	Coral	Maintenance
Atoifi	ATD	Malaita	Malaita	Private	Domestic	Operational	844	15	Coral	Maintenance
Auki	AKS	Malaita	Malaita	Government	Domestic	Operational	945	30	Coral	Rehab/sealing
Kwalebesi		Malaita	Malaita	Private	Domestic	Idle for long time	625	20	Coral	None
Afutara	AFT	Malaita	Malaita	Private	Domestic	Closed	530	40	Coral	None
Ontong Java		Malaita	Malaita	Government	Domestic	Closed	805	19	Coral	None
Parasi	PRS	Malaita	Small Malaita	Government	Domestic	Unoperation -Land Dispute	640	24	Coral	None
Bellona	BNY	Renbell	Bellona	Government	Domestic	Operational	695	18	Coral	Maintenance
Rennell	RNL	Renbell	Rennell	Government	Domestic	Operational	720	20	Coral	Maintenance
Lata	SCZ	Temotu	Nendo	Government	Domestic	Operational	914	24	Coral	Rehab/sealing
Gatokae	GTA	Western	Gatokae	Private	Domestic	Idle for long time	590	37	Coral	None
Gizo/Nusatupe	GZO	Western	Gizo	Government	Domestic	Operational	1110	30	Coral	Rehab/sealing
Ringgi Cove	RIN	Western	Kolombangara	Private	Domestic	Idle for long time	750	23	Coral	None
Kukudu		Western	Kolombangara	Private	Domestic	Idle for long time	555	20	Coral	None
Mono	MNY	Western	Mono	Government	Domestic	Operational	1000	25	Coral	Rehab/sealing
Ramata	RBV	Western	New Georgia	Private	Domestic	Operational	850	20	Coral	Maintenance
Seghe	EGM	Western	New Georgia	Government	Domestic	Operational	915	30	Coral/Grass	Rehab/sealing
Munda	MUA	Western	New Georgia	Government	Domestic	Operational	1400	30	Aspalt	Upgrade
Viru Harbour		Western	New Georgia	Private	Domestic	Idle for long time	658	23	Coral	None
Ballalae	BAS	Western	Shortland	Government	Domestic	Operational	1650	25	Coral/Sand	Maintenance
Batuna	BPF	Western	Vangunu	Private	Domestic	Need Maintenance	618	15	Coral	Maintenance
Geva		Western	Vella La Vella	Private	Domestic	Idle for long time	700	25	Coral	None
Barakoma		Western	Vella La Vella	Government	Domestic	Closed	1138	38	Coral/Sand	None

Wharves, Jetties, Anchorages

Name	Island	Province	Condition	Engineering Constructability and Sustainability	Affected Population
Siota	Florida	Central	Needs to be replaced	high	4021
Taraoniara	Florida	Central	Needs to be replaced	medium	4827
Gizo BP Jetty	Gizo Islands	Western	Needs maintenance	high	7923
Gizo Main Wharf	Gizo Islands	Western	Requires repair	high	7923
Honiara	Guadalcanal	Guadalcanal	Needs maintenance	medium	54470
Manikaraku	Guadalcanal	Guadalcanal	Needs to be replaced	high	8239
Aola	Guadalcanal	Guadalcanal	Needs to be replaced	medium	7628
Lambi	Guadalcanal	Guadalcanal	Needs to be replaced	low	8484
Marau	Guadalcanal	Guadalcanal	Needs to be replaced	low	1136
Marasa	Guadalcanal	Guadalcanal	Needs to be replaced	low	8156
Rere	Guadalcanal	Guadalcanal	Needs to be replaced	low	1098
Makina	Guadalcanal	Guadalcanal	Needs to be replaced	low	681
Mbau	Guadalcanal	Guadalcanal	Needs to be replaced	low	4508
Alladyce	Isabel	Isabel	Needs maintenance	medium	1001
Buala Wharf	Isabel	Isabel	Requires repair	high	5506
Ghojoruru Wharf	Isabel	Isabel	Requires repair	high	2414
Kaevanga Wharf	Isabel	Isabel	Requires repair	high	3849
Kia Wharf	Isabel	Isabel	Requires repair	high	2306
Susubona	Isabel	Isabel	Needs to be replaced	high	3415
Tatamba Wharf	Isabel	Isabel	Needs to be replaced	high	2724
Ringi Wharf	Kolombangara	Western	Needs to be replaced	medium	3715
Maevo	Makira	Makira	Needs maintenance	medium	6054
Onebia	Makira	Makira	Needs maintenance	medium	3954
Paregho	Makira	Makira	Needs to be replaced	medium	1001
Manivoro	Makira	Makira	Needs to be replaced	medium	2591
Arabala	Malaita	Malaita	Needs maintenance	medium	2203
Ma'asupa Wharf	Malaita	Malaita	Requires repair	high	5170
Uru	Malaita	Malaita	Requires repair	high	1919
Kiu Wharf	Malaita	Malaita	Requires repair	high	1612
Onepusu	Malaita	Malaita	Requires repair	high	161
Rohinari (province)	Malaita	Malaita	Requires repair	high	967
Auki Wharf	Malaita	Malaita	Needs to be replaced	high	18782
Atori Wharf	Malaita	Malaita	Needs to be replaced	low	4555
Su'u Wharf	Malaita	Malaita	Needs to be replaced	medium	1181
Bita'ama	Malaita	Malaita	Needs to be replaced	medium	5002
Takwa	Malaita	Malaita	Needs to be replaced	medium	16240
Waisisi	Malaita	Malaita	Needs to be replaced	medium	3617
Buma	Malaita	Malaita	Needs to be replaced	medium	1001
Laulasi	Malaita	Malaita	Needs to be replaced	medium	1919
Uhu	Malaita	Malaita	Needs to be replaced	medium	1320

Name	Island	Province	Condition	Engineering Constructability and Sustainability	Affected Population
Wairokai	Malaita	Malaita	Needs to be replaced	medium	2000
Rohinari (church)	Malaita	Malaita	Needs to be replaced	low	967
Atoifi	Malaita	Malaita		medium	6374
Falamae	Mono	Western	Requires repair	high	1184
Karlise Bay	Nendo	Temotu	Needs maintenance	medium	1316
Nangu	Nendo	Temotu	Needs maintenance	medium	1223
Lata	Nendo	Temotu	Requires repair	high	1813
Nialo (Nea)	Nendo	Temotu	Requires repair	high	1453
Graciosa Bay(Pala)	Nendo	Temotu	Needs to be replaced	medium	1053
Noro	New Georgia	Western	Needs maintenance	medium	3482
Munda Lambete Wharf	New Georgia	Western	Needs maintenance	high	12362
Munda UC Wharf	New Georgia	Western	Needs maintenance	medium	12362
Enoghae	New Georgia	Western	Needs maintenance	medium	1746
Goldie College Wharf	New Georgia	Western	Needs maintenance	medium	1001
Seghe	New Georgia	Western	Requires repair	high	2328
Tusumine	New Georgia	Western	Requires repair	high	1001
Keru	New Georgia	Western	Needs to be replaced	high	2097
Menakasapa/Paradise	New Georgia	Western	Needs to be replaced	medium	1001
Viru Harbour Wharf	New Georgia	Western	Needs to be replaced	medium	582
Bunikalo Wharf	Nggatokae	Western	Needs to be replaced	high	1555
Tulagi Wharf	Nggella	Central	Needs to be replaced	low	4351
Panggoe	North Choiseul	Choiseul	Needs maintenance	medium	2385
Nuatabu	North Choiseul	Choiseul	Needs to be replaced	medium	3595
Vurango	North East Choiseul	Choiseul	Needs to be replaced	medium	3572
Chirovanga	North East Choiseul	Choiseul	Needs to be replaced	low	3572
Tarekukure	North West Choiseul	Choiseul	Requires repair	high	1001
Koriovuku Wharf	Ranogga	Western	Needs to be replaced	medium	1495
Ughele Wharf	Rendova	Western	Needs maintenance	high	2207
Yandina wharf	Russells	Central	Requires repair	high	3781
Pepesal	Russells	Central	Needs to be replaced	medium	1587
Korovou	Shortlands	Western	Needs maintenance	high	2088
Legana Wharf	Simbo	Western	Needs to be replaced	medium	1700
Afio Wharf	Small Malaita	Malaita	Requires repair	high	2358
Maka'a	Small Malaita	Malaita	Requires repair	high	942
Nu'usi	Small Malaita	Malaita	Needs to be replaced	high	7963
Rokera	Small Malaita	Malaita	Needs to be replaced	low	1001
Zinoa island	South Choiseul	Choiseul	Requires repair	high	2888
Katurasele	South Choiseul	Choiseul	Needs to be replaced	high	3410
Posarae	South Choiseul	Choiseul	Needs to be replaced	medium	1025
Taro	Taro	Choiseul	Needs maintenance	high	2682
Su'umoli	Ulawa Island	Makira	Requires repair	high	1500
Patutiva Wharf	Vangunu	Western	Needs maintenance	medium	1540

Name	Island	Province	Condition	Engineering Constructability and Sustainability	Affected Population
Batuna Wharf	Vangunu	Western	Requires repair	high	1126
Gasini Wharf	Vangunu	Western	Needs to be replaced	low	1626
Vonunu Wharf	Vella La Vella	Western	Requires repair	high	4848
Lambulambu Wharf	Vella La Vella	Western	Needs to be replaced	medium	850
New Wharves					
Kolombangara	Choiseul	Choiseul	New wharf	medium	1001
Kaghau	Choiseul	Choiseul	New wharf	medium	1001
Ogho/Tutu Harbour	Choiseul	Choiseul	New wharf	medium	1001
Bumbukuana	North Choiseul	Choiseul	New wharf	medium	2260
Wagina	Wagina	Choiseul	New wharf	low	1450
Haemarau	Guadalcanal	Guadalcanal	New landing ramp	medium	3984
Sigana	Isabel	Isabel	New wharf	medium	1001
Marou Bay	Makira	Makira	New wharf	medium	4765
Kaonasugu	Makira	Makira	New wharf	low	1422
Maroghu	Makira	Makira	New wharf	medium	1001
Arite	Makira	Makira	New wharf	medium	1001
Woua	Makira	Makira	New wharf	medium	1001
Star Harbour (Namungga?)	Makira	Makira	New wharf	medium	1271
Namungga (Star Harbour?)	Makira	Makira	New wharf	medium	1271
Tawarodo	Makira	Makira	New wharf	medium	1223
Kirakira	Makira	Makira	New landing ramp	low	5908
Santa Anna(Port Mary)	Santa Anna	Makira	New wharf	low	2400
Three Sisters	Three Sisters	Makira	New wharf	low	844
Hadja	Ulawa Island	Makira	New wharf	low	1300
Suava Bay	Malaita	Malaita	New wharf	medium	1001
Kwailebesi	Malaita	Malaita	New wharf	medium	11491
Bina Harbour	Malaita	Malaita	New wharf	medium	1001
Malu'u	Malaita	Malaita	New wharf	medium	7262
Gwaidingale	Malaita	Malaita	New wharf	medium	2203
Lianiua	Ontong Java	Malaita	New wharf	low	1317
Fanalei	Small Malaita	Malaita	New wharf	low	9352
Ahangha	Bellona	Renbell	New landing ramp	medium	2720
Lughughi	Rennell	Renbell	New landing ramp	medium	757
Taumoko	Duff Islands	Temotu	New landing ramp	low	1001
Mohawk Bay	Reef Islands	Temotu	New wharf	low	4944
Nembau	Utupua	Temotu	New wharf	low	1200
Vanikoro(Numbuko)	Vanikoro	Temotu	New wharf	low	889
Mbaraulu	New Georgia	Western	New wharf	low	1001
Lofang	Shortlands	Western	New wharf	low	1001

Name	Island	Province	Condition	Engineering Constructability and Sustainability	Affected Population
Anchorages					
Niumara(Leitongo)	Ngella	Central	Needs to be replaced	low	2623
Savo (Mbirasu)	Savo	Central	New wharf	low	2549
Alialia	Savo	Central	New wharf	low	2549
Varungga	Choiseul	Choiseul	New wharf	medium	1001
Papara	Choiseul	Choiseul	New wharf	medium	1001
Mboemboe	Choiseul	Choiseul	New wharf	medium	1001
Malangono	Choiseul	Choiseul	New wharf	medium	1001
Nanango/Zirokana	Nanango	Choiseul	New wharf	medium	953
Furona	Furona	Isabel	New wharf	low	100
Samasodu	Isabel	Isabel	New wharf	medium	949
Waimasi	Makira	Makira	New wharf	medium	674
Mwaniwowo	Makira	Makira	New wharf	medium	1001
Tetere	Makira	Makira	New wharf	medium	1001
Sulufou Island	Malaita	Malaita	New wharf	low	1591
Kukudu Wharf	Kolombangara	Western	Needs to be replaced	medium	2012
Nila	Shortlands	Western	New wharf	low	250
Chea	Vangunu	Western	Needs maintenance	medium	1001

Appendix H: Project Multi-Criteria Analyses

Solomon Islands National Infrastructure Investment Plan
Project Prioritisation Assessment Summary

Project MS1	**Isabel and Choiseul Infrastructure Development** - linked to the Nickel mining project. The intention of the studies is to produce infrastructure master plans for the two provinces leading to development of integrated infrastructure provision. The prioritisation is based upon the infrastructure that will result from the studies.

Objective	Criteria	Assessment	Score
Alleviate poverty	Will the scheme provide affordable infrastructure to support socio-economic development	The schemes will be focussed on industrial development but will have some subsidiary effects	minor positive
Alleviate poverty	Total population served	The schemes are likely to serve a relatively small population, as the mines are in generally unpopulated areas	minor positive
Support vulnerable people	Will the scheme specifically support the activities of women	The schemes are likely to benefit men more than women, given the focus on paid employment	no effect
Health and education	Will the scheme assist in improving access to and delivery of health and education	There may be some small subsidiary effects on access to healthcare and education	moderate positive
Economic growth and equitable distribution	Will the scheme support identified areas of investment and growth	The schemes are specifically focussed on the identified nickel mining opportunities in the areas	major positive
Economic growth and equitable distribution	Will the scheme remove barriers to trade	Supporting infrastructure is currently a barrier to the development of the mines	moderate positive
Economic growth and equitable distribution	Will the scheme support expansion of the tourism industry	Tourism is not a significant element in the local economy	no effect
Physical infrastructure	Does the scheme utilise or connect well with existing infrastructure	The schemes will generally involve the provision of new infrastructure, although it will need to link to existing wharves and power supplies	minor positive
Physical infrastructure	Does the scheme utilise technology which is appropriate for Solomon Islands	The sustainability of the infrastructure to be provided will be a key element in the design of the facilities	moderate positive
Physical infrastructure	Are the ongoing operating and maintenance costs affordable	The nickel mines will create substantial additional revenues for SIG, which should be much larger than the resulting maintenance costs	moderate positive
Protecting the Environment	Can the scheme improve SI's resilience to the impacts of climate change and natural hazards	No specific climate change resilience issues have been identified	no effect
Protecting the Environment	Will the scheme improve the environment or enable actions to protect the environment	Ensuring the provision of infrastructure to protect the environment from damage due to mining and the associated infrastructure is a key aspect of the schemes	positive
Protecting the Environment	Is the scheme robust against the effects of climate change and natural hazards	The schemes are not in an area with high climate change risks. There may be some potential risks associated with the design of some infrastructure	moderate positive
Improving governance	Does the project promoter have the capacity to deliver the project to budget and programme	The schemes are likely to be delivered by the mining concession holder with support from relevant Ministries and SOEs	positive

Key to Scoring

	No effect - the scheme would not contribute to the criteria	**Rank**
	Minor positive - the scheme would contribute only very little to the criteria	33
	Moderate positive - the scheme would have some moderate but limited supportive effects	
	Positive - the scheme would provide support to the criteria	
	Major positive - the scheme would provide major support to the criteria	

Solomon Islands National Infrastructure Investment Plan
Project Prioritisation Assessment Summary

Project MS2	**Choiseul Township Urban Development** - development of a new town close to Taro, to replace the existing provincial centre

Objective	**Criteria**	**Assessment**	**Score**
Alleviate poverty	Will the scheme provide affordable infrastructure to support socio-economic development	The infrastructure provided as part of the new town will provide links to new markets	moderate positive
Alleviate poverty	Total population served	The scheme will serve a growing population which could reach 20,000 people	moderate positive
Support vulnerable people	Will the scheme specifically support the activities of women	The township development will benefit men and women equally	minor positive
Health and education	Will the scheme assist in improving access to and delivery of health and education	The new town will include new healthcare and education facilities, as well as improving supporting infrastructure	positive
Economic growth and equitable distribution	Will the scheme support identified areas of investment and growth	The new town is a specific economic development site	major positive
Economic growth and equitable distribution	Will the scheme remove barriers to trade	There are no specifically identified barriers to trade in the area	no effect
Economic growth and equitable distribution	Will the scheme support expansion of the tourism industry	Tourism is not a significant element in the local economy	no effect
Physical infrastructure	Does the scheme utilise or connect well with existing infrastructure	The schemes will involve the provision of new infrastructure. Linkages will include to the existing airfield and wharf and the road network in the area	positive
Physical infrastructure	Does the scheme utilise technology which is appropriate for Solomon Islands	Most of the infrastructure will be designed and contructed by local specialists	moderate positive
Physical infrastructure	Are the ongoing operating and maintenance costs affordable	The infrastructure provided is likely to require significant additional maintenance which may not currently be affordable within provincial budgets	minor positive
Protecting the Environment	Can the scheme improve SI's resilience to the impacts of climate change and natural hazards	Moving the main population centre from Taro island onto the mainland should improve the resilience of the area and links to the rest of the country	positive
Protecting the Environment	Will the scheme improve the environment or enable actions to protect the environment	Beyond the initial environmental impacts of constructing the new town, it is unlikely that there will be any significant environmental effects	moderate positive
Protecting the Environment	Is the scheme robust against the effects of climate change and natural hazards	The area of the new town is subject to significant climate risks, which will need to be allowed for in the scheme designs	minor positive
Improving governance	Does the project promoter have the capacity to deliver the project to budget and programme	The new town is currently being delivered by the provincial government with support from relevant ministries	minor positive

Key to Scoring

	No effect - the scheme would not contribute to the criteria	**Rank**
	Minor positive - the scheme would contribute only very little to the criteria	24
	Moderate positive - the scheme would have some moderate but limited supportive effects	
	Positive - the scheme would provide support to the criteria	
	Major positive - the scheme would provide major support to the criteria	

Solomon Islands National Infrastructure Investment Plan
Project Prioritisation Assessment Summary

Project MS4	**Honiara Urban Development** - multi-sector integrated urban development of Greater Honiara. Feasibility study followed by investment in a range of urban infrastructure services

Objective	Criteria	Assessment	Score
Alleviate poverty	Will the scheme provide affordable infrastructure to support socio-economic development	The development of integrated infrastructure in Honiara will improve the provision of sustainable water supply, transport and energy, which will all contribute to socio-economic development	positive
Alleviate poverty	Total population served	The population of Honiara is around 65,000	positive
Support vulnerable people	Will the scheme specifically support the activities of women	Better urban planning and infrastructure provision will benefit men and women equally	minor positive
Health and education	Will the scheme assist in improving access to and delivery of health and education	Improvements in water supply and sanitation, energy supply and other infrastructure will have some significant benefits for healthcare and education provision	moderate positive
Economic growth and equitable distribution	Will the scheme support identified areas of investment and growth	Honiara is a key driver in the national economy and improving infrastructure throughout the city will have a significant effect on the national economy	moderate positive
Economic growth and equitable distribution	Will the scheme remove barriers to trade	Infrastructure in Honiara is not considered to be a significant barrier to trade	no effect
Economic growth and equitable distribution	Will the scheme support expansion of the tourism industry	Tourism is a significant element in Honiara's economy, which will be supported by improvements in infrastructure provision	minor positive
Physical infrastructure	Does the scheme utilise or connect well with existing infrastructure	The schemes will expand and strengthen existing infrastructure, linking core provision to newly developed areas and filling gaps in provision	moderate positive
Physical infrastructure	Does the scheme utilise technology which is appropriate for Solomon Islands	These schemes will involve expansion of existing facilities, utilising existing technologies	positive
Physical infrastructure	Are the ongoing operating and maintenance costs affordable	Many of the costs of the new infrastructure will be met from user charges. The costs of transport improvements should be afforded from within the NTF	positive
Protecting the Environment	Can the scheme improve SI's resilience to the impacts of climate change and natural hazards	Improving water supplies and energy sources will improve the ability of the country to withstand some aspects of climate change	moderate positive
Protecting the Environment	Will the scheme improve the environment or enable actions to protect the environment	Improving infrastructure will support efforts to improve the city's environment particularly with respect to waste management, sanitation and energy	positive
Protecting the Environment	Is the scheme robust against the effects of climate change and natural hazards	Some aspects of the schemes will be dependent upon hazard exposure	minor positive
Improving governance	Does the project promoter have the capacity to deliver the project to budget and programme	The project would need to be led by Honiara City Council, but individual schemes would be delivered by various ministries and SOEs	moderate positive

Key to Scoring

	No effect - the scheme would not contribute to the criteria	**Rank**
	Minor positive - the scheme would contribute only very little to the criteria	6
	Moderate positive - the scheme would have some moderate but limited supportive effects	
	Positive - the scheme would provide support to the criteria	
	Major positive - the scheme would provide major support to the criteria	

Solomon Islands National Infrastructure Investment Plan
Project Prioritisation Assessment Summary

Project MS5	**Malaita Industrial Parks** - development of economic centres at 3 sites namely, Faumamanu, Wairaha and Suava Bay. Prioritisation includes the supporting economic infrastructure

Objective	Criteria	Assessment	Score
Alleviate poverty	Will the scheme provide affordable infrastructure to support socio-economic development	Whilst the emphasis of the schemes will be on industrial development, there may be some small subsidiary benefits for wider development	minor positive
Alleviate poverty	Total population served	These areas will have around 15,000 residents in total	moderate positive
Support vulnerable people	Will the scheme specifically support the activities of women	The industrial parks are likely to support men more than women due to the emphasis on paid employment	minor positive
Health and education	Will the scheme assist in improving access to and delivery of health and education	There is unlikely to be a significant impact on healthcare and education	minor positive
Economic growth and equitable distribution	Will the scheme support identified areas of investment and growth	The industrial parks are key economic development areas and the infrastructure required to support them is important in encouraging their implementation	major positive
Economic growth and equitable distribution	Will the scheme remove barriers to trade	The schemes include new wharf facilities, improved water supply and energy all of which may reduce barriers to trade	positive
Economic growth and equitable distribution	Will the scheme support expansion of the tourism industry	Tourism is not a significant element in the local economy	no effect
Physical infrastructure	Does the scheme utilise or connect well with existing infrastructure	The schemes largely involve the provision of new infrastructure, although there will be connections to existing transport networks	positive
Physical infrastructure	Does the scheme utilise technology which is appropriate for Solomon Islands	Most of the infrastructure will be designed and contructed by local specialists	moderate positive
Physical infrastructure	Are the ongoing operating and maintenance costs affordable	The infrastructure provided is likely to require significant additional maintenance which may not currently be affordable within provincial budgets	minor positive
Protecting the Environment	Can the scheme improve SI's resilience to the impacts of climate change and natural hazards	Improving water supplies and energy sources will improve the ability of the country to withstand some aspects of climate change	moderate positive
Protecting the Environment	Will the scheme improve the environment or enable actions to protect the environment	Beyond the initial environmental impacts of constructing the new town, it is unlikely that there will be any significant environmental effects	moderate positive
Protecting the Environment	Is the scheme robust against the effects of climate change and natural hazards	The schemes are not in an area with high climate change risks. There may be some potential risks associated with the design of some infrastructure	positive
Improving governance	Does the project promoter have the capacity to deliver the project to budget and programme	The industrial parks are currently being delivered by the provincial government with support from relevant ministries	minor positive

Key to Scoring

	No effect - the scheme would not contribute to the criteria	**Rank**
	Minor positive - the scheme would contribute only very little to the criteria	14
	Moderate positive - the scheme would have some moderate but limited supportive effects	
	Positive - the scheme would provide support to the criteria	
	Major positive - the scheme would provide major support to the criteria	

Solomon Islands National Infrastructure Investment Plan
Project Prioritisation Assessment Summary

Project R6	**Naro Hill - Lambi Road** - upgrading of the existing road between Naro Hill and Lambi in west Guadalcanal, including widening of the existing alignment, construction of high level bridges and climate change adaptation measures

Objective	Criteria	Assessment	Score
Alleviate poverty	Will the scheme provide affordable infrastructure to support socio-economic development	The road will provide reliable, all weather access for the agricultural areas and villages along the route, enabling cheaper public and cargo transport	moderate positive
Alleviate poverty	Total population served	The road serves around 4,500 people	minor positive
Support vulnerable people	Will the scheme specifically support the activities of women	The road will benefit men and women equally	minor positive
Health and education	Will the scheme assist in improving access to and delivery of health and education	The area around the road inclues a number of local health centres and schools, Selwyn College lies just to the north of the road	moderate positive
Economic growth and equitable distribution	Will the scheme support identified areas of investment and growth	There are no identified growth centres in the area	no effect
Economic growth and equitable distribution	Will the scheme remove barriers to trade	The condition of the road is not considered a major barrier to trade	no effect
Economic growth and equitable distribution	Will the scheme support expansion of the tourism industry	Tourism is not an important element in the local economy	no effect
Physical infrastructure	Does the scheme utilise or connect well with existing infrastructure	The scheme involves upgrading a existing road, building upon the works undertaken between Honiara and Naro Hill	positive
Physical infrastructure	Does the scheme utilise technology which is appropriate for Solomon Islands	The scheme will provide an upgraded gravel road	positive
Physical infrastructure	Are the ongoing operating and maintenance costs affordable	Maintenance funding for roads is substantial and should easily cover the increased costs	positive
Protecting the Environment	Can the scheme improve SI's resilience to the impacts of climate change and natural hazards	The climate change adaptation measures included in the scheme will reduce the likelihood of flooding	positive
Protecting the Environment	Will the scheme improve the environment or enable actions to protect the environment	The road will have minimal impact on the local environment	moderate positive
Protecting the Environment	Is the scheme robust against the effects of climate change and natural hazards	There are some minor climate change risks that have been reflected in the design	moderate positive
Improving governance	Does the project promoter have the capacity to deliver the project to budget and programme	The project would be delivered by MID, utilising existing TA support	positive

Key to Scoring

	No effect - the scheme would not contribute to the criteria	**Rank**
	Minor positive - the scheme would contribute only very little to the criteria	18
	Moderate positive - the scheme would have some moderate but limited supportive effects	
	Positive - the scheme would provide support to the criteria	
	Major positive - the scheme would provide major support to the criteria	

Solomon Islands National Infrastructure Investment Plan
Project Prioritisation Assessment Summary

Project R7+R8	**Mberande - Aola Road** - rehabilitation of the existing road between Mberande and Aola in east Guadalcanal, including provision of high level bridges

Objective	Criteria	Assessment	Score
Alleviate poverty	Will the scheme provide affordable infrastructure to support socio-economic development	The scheme involves the provision of a gravel road which will enable the provision of improved public and cargo transport	moderate positive
Alleviate poverty	Total population served	The road serves around11,000 people	moderate positive
Support vulnerable people	Will the scheme specifically support the activities of women	The road will benefit men and women equally	minor positive
Health and education	Will the scheme assist in improving access to and delivery of health and education	There are a number of schools and health centres along the road	moderate positive
Economic growth and equitable distribution	Will the scheme support identified areas of investment and growth	The area served has significant agricultural potential, based upon disused plantations	minor positive
Economic growth and equitable distribution	Will the scheme remove barriers to trade	The road is not identified as a barrier to trade	no effect
Economic growth and equitable distribution	Will the scheme support expansion of the tourism industry	Tourism is not an important element of the local economy	no effect
Physical infrastructure	Does the scheme utilise or connect well with existing infrastructure	The scheme involves the rehabilitation of an existing road but includes a number of new river crossings	positive
Physical infrastructure	Does the scheme utilise technology which is appropriate for Solomon Islands	The scheme will provide an upgraded gravel road	positive
Physical infrastructure	Are the ongoing operating and maintenance costs affordable	Maintenance funding for roads is substantial and should easily cover the increased costs	positive
Protecting the Environment	Can the scheme improve SI's resilience to the impacts of climate change and natural hazards	The climate change adaptation measures included in the scheme will reduce the likelihood of flooding	moderate positive
Protecting the Environment	Will the scheme improve the environment or enable actions to protect the environment	The road will have minimal impact on the environment, except where blocked rivers are causing scour	minor positive
Protecting the Environment	Is the scheme robust against the effects of climate change and natural hazards	No significant climate change risks have been identified	moderate positive
Improving governance	Does the project promoter have the capacity to deliver the project to budget and programme	The project would be delivered by MID, utilising existing TA support	positive

Key to Scoring

	No effect - the scheme would not contribute to the criteria	**Rank**
	Minor positive - the scheme would contribute only very little to the criteria	20
	Moderate positive - the scheme would have some moderate but limited supportive effects	
	Positive - the scheme would provide support to the criteria	
	Major positive - the scheme would provide major support to the criteria	

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Project Prioritisation Assessment Summary

Project R9	**Malaita North Road** - upgrading and rehabilitation of the existing road serving the north coast of Malaita, continuing the work of ongoing contracts

Objective	Criteria	Assessment	Score
Alleviate poverty	Will the scheme provide affordable infrastructure to support socio-economic development	The scheme involves the provision of a gravel road which will enable the provision of improved public and cargo transport	positive
Alleviate poverty	Total population served	The road would serve around 27,000 people	positive
Support vulnerable people	Will the scheme specifically support the activities of women	The road will benefit men and women equally	minor positive
Health and education	Will the scheme assist in improving access to and delivery of health and education	There are a number of schools and health centres along the road	moderate positive
Economic growth and equitable distribution	Will the scheme support identified areas of investment and growth	The road serves the proposed Suava Bay Industrial Area	positive
Economic growth and equitable distribution	Will the scheme remove barriers to trade	The road is not identified as a barrier to trade	no effect
Economic growth and equitable distribution	Will the scheme support expansion of the tourism industry	Tourism is not an important element of the local economy	no effect
Physical infrastructure	Does the scheme utilise or connect well with existing infrastructure	The scheme involves the rehabilitation of an existing road	positive
Physical infrastructure	Does the scheme utilise technology which is appropriate for Solomon Islands	The scheme will provide an upgraded gravel road	positive
Physical infrastructure	Are the ongoing operating and maintenance costs affordable	Maintenance funding for roads is substantial and should easily cover the increased costs	positive
Protecting the Environment	Can the scheme improve SI's resilience to the impacts of climate change and natural hazards	Improvements to the road will provide greater reliability of travel for residents of the area	minor positive
Protecting the Environment	Will the scheme improve the environment or enable actions to protect the environment	The road will have minimal impact on the local environment	moderate positive
Protecting the Environment	Is the scheme robust against the effects of climate change and natural hazards	The road runs along the coast of north Malaita and may therefore be susceptible to some small flooding risks	minor positive
Improving governance	Does the project promoter have the capacity to deliver the project to budget and programme	The project would be delivered by MID, utilising existing TA support	positive

Key to Scoring

	No effect - the scheme would not contribute to the criteria	**Rank**
	Minor positive - the scheme would contribute only very little to the criteria	6
	Moderate positive - the scheme would have some moderate but limited supportive effects	
	Positive - the scheme would provide support to the criteria	
	Major positive - the scheme would provide major support to the criteria	

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Project Prioritisation Assessment Summary

Project R10	**Afio Road** - upgrading the existing walking track across Small Malaita to trafficable standard including the provision of new river crossings, linking to the existing road which runs along the west coast of Malaita

Objective	Criteria	Assessment	Score
Alleviate poverty	Will the scheme provide affordable infrastructure to support socio-economic development	The scheme involves the provision of a gravel road which will enable the provision of improved public and cargo transport	positive
Alleviate poverty	Total population served	The road would serve around 20,000 people	moderate positive
Support vulnerable people	Will the scheme specifically support the activities of women	The road will benefit men and women equally	minor positive
Health and education	Will the scheme assist in improving access to and delivery of health and education	Construction of the road will enable vehicular access to schools and health centres for people living in the area	moderate positive
Economic growth and equitable distribution	Will the scheme support identified areas of investment and growth	There are no identified growth centres in the area	no effect
Economic growth and equitable distribution	Will the scheme remove barriers to trade	Building the road will enable people from Small Malaita to access newly constructed wharves in west Malaita	minor positive
Economic growth and equitable distribution	Will the scheme support expansion of the tourism industry	Tourism is not an important element of the local economy	no effect
Physical infrastructure	Does the scheme utilise or connect well with existing infrastructure	The scheme will connect with existing roads and wharves in west Malaita	minor positive
Physical infrastructure	Does the scheme utilise technology which is appropriate for Solomon Islands	The scheme will provide an upgraded gravel road	positive
Physical infrastructure	Are the ongoing operating and maintenance costs affordable	Maintenance funding for roads is substantial and should easily cover the increased costs	positive
Protecting the Environment	Can the scheme improve SI's resilience to the impacts of climate change and natural hazards	The road can be accessible during more extreme hazard events for improved mobility	minor positive
Protecting the Environment	Will the scheme improve the environment or enable actions to protect the environment	The road will have minimal impact on the local environment	moderate positive
Protecting the Environment	Is the scheme robust against the effects of climate change and natural hazards	No climate change risks have been identified	moderate positive
Improving governance	Does the project promoter have the capacity to deliver the project to budget and programme	The project would be delivered by MID, utilising existing TA support	positive

Key to Scoring

	No effect - the scheme would not contribute to the criteria
	Minor positive - the scheme would contribute only very little to the criteria
	Moderate positive - the scheme would have some moderate but limited supportive effects
	Positive - the scheme would provide support to the criteria
	Major positive - the scheme would provide major support to the criteria

Rank
30

Solomon Islands National Infrastructure Investment Plan
Project Prioritisation Assessment Summary

Project R12	**Temotu Roads** - upgrading of feeder roads in Temotu, including Luselemba - Carlise Bay, South Road, Forest Road and Pala - Luselemba

Objective	Criteria	Assessment	Score
Alleviate poverty	Will the scheme provide affordable infrastructure to support socio-economic development	The proposed roads will provide new all weather links between a number of towns and villages and the main economic and population centres on the island	positive
Alleviate poverty	Total population served	The roads serve a population of around 6,000 people	minor positive
Support vulnerable people	Will the scheme specifically support the activities of women	The road will benefit men and women equally	minor positive
Health and education	Will the scheme assist in improving access to and delivery of health and education	The road will provide more reliable, vehicular access to education and healthcare across the island	moderate positive
Economic growth and equitable distribution	Will the scheme support identified areas of investment and growth	There are no identified growth centres in the area	no effect
Economic growth and equitable distribution	Will the scheme remove barriers to trade	The roads in the area are not identified as key barrier to trade	no effect
Economic growth and equitable distribution	Will the scheme support expansion of the tourism industry	Tourism is not a key element in the local economy	no effect
Physical infrastructure	Does the scheme utilise or connect well with existing infrastructure	The scheme involves upgrading existing walking tracks and deteriorated roads, which connect to the rest of the transport network	moderate positive
Physical infrastructure	Does the scheme utilise technology which is appropriate for Solomon Islands	The scheme will provide an upgraded gravel road	positive
Physical infrastructure	Are the ongoing operating and maintenance costs affordable	Maintenance funding for roads is substantial and should easily cover the increased costs	positive
Protecting the Environment	Can the scheme improve SI's resilience to the impacts of climate change and natural hazards	Minor contributions to overall resilience but could include improved access and mobility during hazard events	minor positive
Protecting the Environment	Will the scheme improve the environment or enable actions to protect the environment	The road will have minimal impact on the local environment	moderate positive
Protecting the Environment	Is the scheme robust against the effects of climate change and natural hazards	Upgrading the road standards generally increase their resilience, further risk consideration is needed	moderate positive
Improving governance	Does the project promoter have the capacity to deliver the project to budget and programme	The project would be delivered by MID, utilising existing TA support	positive

Key to Scoring

	No effect - the scheme would not contribute to the criteria
	Minor positive - the scheme would contribute only very little to the criteria
	Moderate positive - the scheme would have some moderate but limited supportive effects
	Positive - the scheme would provide support to the criteria
	Major positive - the scheme would provide major support to the criteria

Rank
38

Solomon Islands National Infrastructure Investment Plan
Project Prioritisation Assessment Summary

Project R13	**Doma Road** - rerouting of the existing road inland to provide space for the proposed Doma industrial development

Objective	Criteria	Assessment	Score
Alleviate poverty	Will the scheme provide affordable infrastructure to support socio-economic development	The re-routing of the road will have minimal impact on access to economic activities	no effect
Alleviate poverty	Total population served	The population of the area served by the road will be around 15,000	moderate positive
Support vulnerable people	Will the scheme specifically support the activities of women	The road will benefit men and women equally	minor positive
Health and education	Will the scheme assist in improving access to and delivery of health and education	The road will have minimal impact on access to healthcare and education	no effect
Economic growth and equitable distribution	Will the scheme support identified areas of investment and growth	The road is an essential element in the development of the new town and industrial investments in the area	major positive
Economic growth and equitable distribution	Will the scheme remove barriers to trade	There are no significant barriers to trade in the area	no effect
Economic growth and equitable distribution	Will the scheme support expansion of the tourism industry	Tourism is only a small element in the local economy, although this could increase as a result of complementary investments	minor positive
Physical infrastructure	Does the scheme utilise or connect well with existing infrastructure	The scheme involves re-routing an existing road to enable industrial development	moderate positive
Physical infrastructure	Does the scheme utilise technology which is appropriate for Solomon Islands	The road is likely to be designed and constructed by local specialists and firms	positive
Physical infrastructure	Are the ongoing operating and maintenance costs affordable	Re-routing of the road should result in no significant additional maintenance costs	positive
Protecting the Environment	Can the scheme improve SI's resilience to the impacts of climate change and natural hazards	Relocating the road away from the coast may improve the reliability of travel in the area	minor positive
Protecting the Environment	Will the scheme improve the environment or enable actions to protect the environment	There are unlikely to be any significant effects on the local environment	minor positive
Protecting the Environment	Is the scheme robust against the effects of climate change and natural hazards	Relocating the road away from the coast may increase its resilience to cyclones and sea-level rise	moderate positive
Improving governance	Does the project promoter have the capacity to deliver the project to budget and programme	The road is likely to be delivered as part of a package of infrastructure by a private sector organisation, facilitated by relevant ministries	moderate positive

Key to Scoring

	No effect - the scheme would not contribute to the criteria	**Rank**
	Minor positive - the scheme would contribute only very little to the criteria	53
	Moderate positive - the scheme would have some moderate but limited supportive effects	
	Positive - the scheme would provide support to the criteria	
	Major positive - the scheme would provide major support to the criteria	

Solomon Islands National Infrastructure Investment Plan
Project Prioritisation Assessment Summary

Project R14a	**Honiara Main Roads Upgrade** - upgrading and strengthening of the main road between Honiara and Henderson Airfield, including reconstruction of failed sections of pavement, replacement of existing major bridges, provision of necessary coastal protection measures and removal of congestion hotspots

Objective	Criteria	Assessment	Score
Alleviate poverty	Will the scheme provide affordable infrastructure to support socio-economic development	The scheme involves upgrading existing road infrastructure within the main Honiara city area	moderate positive
Alleviate poverty	Total population served	The road directly serves around 50,000 people. Many of these live in unplanned settlements to the east of Honiara	positive
Support vulnerable people	Will the scheme specifically support the activities of women	The scheme will benefit men and women equally	minor positive
Health and education	Will the scheme assist in improving access to and delivery of health and education	The main referral hospital lies along this section, although access is not a significant issue. There are a number of major schools in the area.	positive
Economic growth and equitable distribution	Will the scheme support identified areas of investment and growth	The road provides the only link between Honiara and Henderson airport. It also serves the Ranadi industrial area	positive
Economic growth and equitable distribution	Will the scheme remove barriers to trade	Access between Honiara and the airport is not considered to be a barrier to trade so this criteria is not relevant	no effect
Economic growth and equitable distribution	Will the scheme support expansion of the tourism industry	The scheme provides the main link between Honiara and Henderson airport, which will improve the tourist experience	minor positive
Physical infrastructure	Does the scheme utilise or connect well with existing infrastructure	The scheme involves rehabilitation and upgrading of the main road, to provide additional capacity and extended life	positive
Physical infrastructure	Does the scheme utilise technology which is appropriate for Solomon Islands	There will be a requirement to import new construction equipment depending upon the options chosen	minor positive
Physical infrastructure	Are the ongoing operating and maintenance costs affordable	The road sector is currently able to cover maintenance costs. The upgrading should reduce long term maintenance requirements	major positive
Protecting the Environment	Can the scheme improve SI's resilience to the impacts of climate change and natural hazards	Sections of the road are subject to coastal erosion and suffer deterioration during wet periods, the improvements should reduce these risks	moderate positive
Protecting the Environment	Will the scheme improve the environment or enable actions to protect the environment	The scheme should reduce dust and the use of scarce materials in maintenance activities	moderate positive
Protecting the Environment	Is the scheme robust against the effects of climate change and natural hazards	Sections of the road will need coastal protection works, which could have significant cost	minor positive
Improving governance	Does the project promoter have the capacity to deliver the project to budget and programme	The scheme would be delivered by MID, with the help of existing TA support	positive

Key to Scoring

	No effect - the scheme would not contribute to the criteria	**Rank**
	Minor positive - the scheme would contribute only very little to the criteria	4
	Moderate positive - the scheme would have some moderate but limited supportive effects	
	Positive - the scheme would provide support to the criteria	
	Major positive - the scheme would provide major support to the criteria	

Solomon Islands National Infrastructure Investment Plan
Project Prioritisation Assessment Summary

Project R14b	**Honiara City Centre Relief Road** - construction of a new coastal road, to provide higher quality access to Honiara Port, with added benefits of removing some traffoc from the main CBD of Honiara

Objective	Criteria	Assessment	Score
Alleviate poverty	Will the scheme provide affordable infrastructure to support socio-economic development	The road would support expansion of the port and would reduce congestion through the CBD, which would result in reduced public transport costs	moderate positive
Alleviate poverty	Total population served	The population of Honiara is around 50,000	positive
Support vulnerable people	Will the scheme specifically support the activities of women	The road would benefit men more than women as they tend to be more involved in paid employment in the port and CBD	no effect
Health and education	Will the scheme assist in improving access to and delivery of health and education	There are no health or education facilities in the area	no effect
Economic growth and equitable distribution	Will the scheme support identified areas of investment and growth	Honiara's CBD is a key element in the national economy and the road will encourage more sustainable development	moderate positive
Economic growth and equitable distribution	Will the scheme remove barriers to trade	Access to the port is considered to be a significant barrier to trade in the future	moderate positive
Economic growth and equitable distribution	Will the scheme support expansion of the tourism industry	The road would enable the improvement of streetscape in the CBD improving the tourist experience	minor positive
Physical infrastructure	Does the scheme utilise or connect well with existing infrastructure	The road would enable improvements throughout the CBD, allowing more effective use of existing facilities. It would directly serve the port	positive
Physical infrastructure	Does the scheme utilise technology which is appropriate for Solomon Islands	This type of road has not been constructed in SI previously and will require significant involvement from international contractors	minor positive
Physical infrastructure	Are the ongoing operating and maintenance costs affordable	Maintenance funding for roads is substantial and should easily cover the increased costs	positive
Protecting the Environment	Can the scheme improve SI's resilience to the impacts of climate change and natural hazards	The road would incorporate substantial coastal protection measures, enabling the protection of Honiara's CBD from the effects of climate change and natural hazards, but may also increase development in a vulnerable area	minor positive
Protecting the Environment	Will the scheme improve the environment or enable actions to protect the environment	The road may lead to some small environmental damage in its immediate environs, but will enable some improvements in streetscape	moderate positive
Protecting the Environment	Is the scheme robust against the effects of climate change and natural hazards	The road would lie along the coast, which would expose it to sea level rise and storm activities	no effect
Improving governance	Does the project promoter have the capacity to deliver the project to budget and programme	The road would most likely be delivered through development partner support, using international consultants	positive

Key to Scoring

	No effect - the scheme would not contribute to the criteria	**Rank**
	Minor positive - the scheme would contribute only very little to the criteria	34
	Moderate positive - the scheme would have some moderate but limited supportive effects	
	Positive - the scheme would provide support to the criteria	
	Major positive - the scheme would provide major support to the criteria	

Solomon Islands National Infrastructure Investment Plan
Project Prioritisation Assessment Summary

Project R15	**Guadalcanal Route Planning** - development of options for roads to connect the Guadalcanal Weather Coast to Honiara, including engineering, economic, environmental and social studies

Objective	Criteria	Assessment	Score
Alleviate poverty	Will the scheme provide affordable infrastructure to support socio-economic development	Provision of a new road to link the north and south coasts of Guadalcanal would greatly improve access to markets and social services for residents of the area	positive
Alleviate poverty	Total population served	The road would serve around 25,000 people directly or indirectly	moderate positive
Support vulnerable people	Will the scheme specifically support the activities of women	The road will benefit men and women equally	minor positive
Health and education	Will the scheme assist in improving access to and delivery of health and education	The road would have only a minor effect on access to health and education	minor positive
Economic growth and equitable distribution	Will the scheme support identified areas of investment and growth	There are no identified growth centres in the areas served	no effect
Economic growth and equitable distribution	Will the scheme remove barriers to trade	Access to Honiara is a significant issue for residents of the area, which has been proven by the impact of the recently introduced shipping services	major positive
Economic growth and equitable distribution	Will the scheme support expansion of the tourism industry	Tourism is not an important element of the local economy	no effect
Physical infrastructure	Does the scheme utilise or connect well with existing infrastructure	This would be a new road, with few links to existing infrastructure, although it might be possible to utilise some existing logging roads	minor positive
Physical infrastructure	Does the scheme utilise technology which is appropriate for Solomon Islands	It is likely that due to weather and topography this would need to be a sealed road throughout much of its length. This might require the import of new equipment	minor positive
Physical infrastructure	Are the ongoing operating and maintenance costs affordable	Maintenance funding for roads is substantial and should easily cover the increased costs	positive
Protecting the Environment	Can the scheme improve SI's resilience to the impacts of climate change and natural hazards	The road would provide the weather coast with an all weather link to Honiara, reducing reliance on unreliable, expensive shipping services	positive
Protecting the Environment	Will the scheme improve the environment or enable actions to protect the environment	The road will have to be designed carefully to avoid significant environmental damage. The road also has the potential to open remote areas to logging	minor positive
Protecting the Environment	Is the scheme robust against the effects of climate change and natural hazards	The construction and operation of the road may result in slope de-stabilisation, and create storm water runoff issues	no effect
Improving governance	Does the project promoter have the capacity to deliver the project to budget and programme	The road would most likely be delivered through development partner support, using international consultants	moderate positive

Key to Scoring

	No effect - the scheme would not contribute to the criteria	**Rank**
	Minor positive - the scheme would contribute only very little to the criteria	42
	Moderate positive - the scheme would have some moderate but limited supportive effects	
	Positive - the scheme would provide support to the criteria	
	Major positive - the scheme would provide major support to the criteria	

Solomon Islands National Infrastructure Investment Plan
Project Prioritisation Assessment Summary

Project R16	**Rennell Road** - rehabilitation and upgrading of the existing road running the length of Rennell, linking the airfield and main ship unloading point with the main population centres and tourist areas

Objective	Criteria	Assessment	Score
Alleviate poverty	Will the scheme provide affordable infrastructure to support socio-economic development	The road will provide improved access for local residents to local markets and social services	moderate positive
Alleviate poverty	Total population served	The population of Rennell is around 2,400 people	no effect
Support vulnerable people	Will the scheme specifically support the activities of women	These feeder roads will support the activities of women more than men, as they will improve access to markets	moderate positive
Health and education	Will the scheme assist in improving access to and delivery of health and education	The road will provide more reliable, vehicular access to education and healthcare across the island	moderate positive
Economic growth and equitable distribution	Will the scheme support identified areas of investment and growth	There are no identified growth centres on the island	no effect
Economic growth and equitable distribution	Will the scheme remove barriers to trade	The road is not identified as a significant barrier to trade	no effect
Economic growth and equitable distribution	Will the scheme support expansion of the tourism industry	There is some potential for expansion of the tourism industry in Rennell	minor positive
Physical infrastructure	Does the scheme utilise or connect well with existing infrastructure	The scheme would involve the upgrading of an existing road, which links to the airfield and main ship landing point	positive
Physical infrastructure	Does the scheme utilise technology which is appropriate for Solomon Islands	The scheme will provide an upgraded gravel road	positive
Physical infrastructure	Are the ongoing operating and maintenance costs affordable	Maintenance funding for roads is substantial and should easily cover the increased costs	positive
Protecting the Environment	Can the scheme improve SI's resilience to the impacts of climate change and natural hazards	No significant climate change adaptation opportunities have been identified	no effect
Protecting the Environment	Will the scheme improve the environment or enable actions to protect the environment	The road will have minimal impact on the local environment	moderate positive
Protecting the Environment	Is the scheme robust against the effects of climate change and natural hazards	No specific climate change risks have been identified, however Rennell has a high risk for hazards	minor positive
Improving governance	Does the project promoter have the capacity to deliver the project to budget and programme	The project would be delivered by MID, utilising existing TA support	positive

Key to Scoring

	No effect - the scheme would not contribute to the criteria	**Rank**
	Minor positive - the scheme would contribute only very little to the criteria	41
	Moderate positive - the scheme would have some moderate but limited supportive effects	
	Positive - the scheme would provide support to the criteria	
	Major positive - the scheme would provide major support to the criteria	

Solomon Islands National Infrastructure Investment Plan
Project Prioritisation Assessment Summary

Project R17	**Guadalcanal Feeder Road Rehabilitation Tranche 2** - rehabilitation and upgrading of feeder roads in north Guadalcanal, including Gesa Road, Tumurora Road, Pitukoli Road, Sali 2 Road, Ghavangha Road

Objective	Criteria	Assessment	Score
Alleviate poverty	Will the scheme provide affordable infrastructure to support socio-economic development	Many of these roads provide essential links between smallholders and local and regional markets	positive
Alleviate poverty	Total population served	Each road will serve a population of around 4,000 people	moderate positive
Support vulnerable people	Will the scheme specifically support the activities of women	These feeder roads will support the activities of women more than men, as they will improve access to markets	moderate positive
Health and education	Will the scheme assist in improving access to and delivery of health and education	Improving feeder roads will improve the reliability of access to healthcare and education	positive
Economic growth and equitable distribution	Will the scheme support identified areas of investment and growth	There are no specific growth areas that would be served by these roads	no effect
Economic growth and equitable distribution	Will the scheme remove barriers to trade	Feeder roads are not considered to be a significant barrier to trade	no effect
Economic growth and equitable distribution	Will the scheme support expansion of the tourism industry	In general tourism is not a moderate element in the economies of the areas served	no effect
Physical infrastructure	Does the scheme utilise or connect well with existing infrastructure	The scheme will rehabilitate and upgrade existing roads	positive
Physical infrastructure	Does the scheme utilise technology which is appropriate for Solomon Islands	The scheme will provide an upgraded gravel road	positive
Physical infrastructure	Are the ongoing operating and maintenance costs affordable	Maintenance funding for roads is substantial and should easily cover the increased costs	positive
Protecting the Environment	Can the scheme improve SI's resilience to the impacts of climate change and natural hazards	Increased access during hazard events will reduce the vulnerability of the population	minor positive
Protecting the Environment	Will the scheme improve the environment or enable actions to protect the environment	The road will have minimal impact on the local environment	moderate positive
Protecting the Environment	Is the scheme robust against the effects of climate change and natural hazards	Increasing the design standards and improving maintenance will reduce vulnerability	minor positive
Improving governance	Does the project promoter have the capacity to deliver the project to budget and programme	The project would be delivered by MID, utilising existing TA support	positive

Key to Scoring

	No effect - the scheme would not contribute to the criteria
	Minor positive - the scheme would contribute only very little to the criteria
	Moderate positive - the scheme would have some moderate but limited supportive effects
	Positive - the scheme would provide support to the criteria
	Major positive - the scheme would provide major support to the criteria

Rank
14

Solomon Islands National Infrastructure Investment Plan
Project Prioritisation Assessment Summary

Project R18	**Malaita Main Roads** - rehabilitation and upgrading of roads in Malaita including Auki - Fulisango, Lilisiana Road, Fiu Road and Radesifolomae Road

Objective	Criteria	Assessment	Score
Alleviate poverty	Will the scheme provide affordable infrastructure to support socio-economic development	These roads provide essential links between outlying communities and local and regional markets	positive
Alleviate poverty	Total population served	Each road will serve around 6,000 people	moderate positive
Support vulnerable people	Will the scheme specifically support the activities of women	These roads will support the activities of women more than men, as they will improve access to markets	positive
Health and education	Will the scheme assist in improving access to and delivery of health and education	Improving these roads will improve the reliability of access to healthcare and education	minor positive
Economic growth and equitable distribution	Will the scheme support identified areas of investment and growth	There are no specific growth areas that would be served by these roads	no effect
Economic growth and equitable distribution	Will the scheme remove barriers to trade	This type of roads are not considered to be a significant barrier to trade	no effect
Economic growth and equitable distribution	Will the scheme support expansion of the tourism industry	In general tourism is not a significant element in the economies of the areas served	no effect
Physical infrastructure	Does the scheme utilise or connect well with existing infrastructure	The scheme will rehabilitate and upgrade existing roads	positive
Physical infrastructure	Does the scheme utilise technology which is appropriate for Solomon Islands	The scheme will provide an upgraded gravel road	positive
Physical infrastructure	Are the ongoing operating and maintenance costs affordable	Maintenance funding for roads is substantial and should easily cover the increased costs	positive
Protecting the Environment	Can the scheme improve SI's resilience to the impacts of climate change and natural hazards	Increased access during hazard events will reduce the vulnerability of the population	minor positive
Protecting the Environment	Will the scheme improve the environment or enable actions to protect the environment	The road will have minimal impact on the local environment	moderate positive
Protecting the Environment	Is the scheme robust against the effects of climate change and natural hazards	Increasing the design standards and improving maintenance will reduce vulnerability	minor positive
Improving governance	Does the project promoter have the capacity to deliver the project to budget and programme	The project would be delivered by MID, utilising existing TA support	positive

Key to Scoring

	No effect - the scheme would not contribute to the criteria	**Rank**
	Minor positive - the scheme would contribute only very little to the criteria	20
	Moderate positive - the scheme would have some moderate but limited supportive effects	
	Positive - the scheme would provide support to the criteria	
	Major positive - the scheme would provide major support to the criteria	

Solomon Islands National Infrastructure Investment Plan
Project Prioritisation Assessment Summary

Project R19	**Honiara Feeder Road Rehabilitation Tranche 2** - rehabilitation of feeder roads in Honiara, including Mount Austin Road, Panatina Road, R468, Jackson Ridge Road, Kastom Garden Road, Lau Valley Road, Mambulu Road and Vura Road

Objective	Criteria	Assessment	Score
Alleviate poverty	Will the scheme provide affordable infrastructure to support socio-economic development	These roads make up a significant element of Honiara's road network and will improve local economic opportunities	minor positive
Alleviate poverty	Total population served	Each road will serve a population of around 3,000 people	minor positive
Support vulnerable people	Will the scheme specifically support the activities of women	The schemes will benefit men and women equally	minor positive
Health and education	Will the scheme assist in improving access to and delivery of health and education	The schemes will have minimal impact on access to healthcare and education	no effect
Economic growth and equitable distribution	Will the scheme support identified areas of investment and growth	Honiara is a key driver in the national economy and improving infrastructure throughout the city will have a significant effect on the national economy	moderate positive
Economic growth and equitable distribution	Will the scheme remove barriers to trade	Infrastructure in Honiara is not considered to be a significant barrier to trade	no effect
Economic growth and equitable distribution	Will the scheme support expansion of the tourism industry	Tourism is a significant element in Honiara's economy, which will be supported by improvements in infrastructure provision	minor positive
Physical infrastructure	Does the scheme utilise or connect well with existing infrastructure	The schemes involve the rehabilitation and upgrading of existing roads in Honiara	positive
Physical infrastructure	Does the scheme utilise technology which is appropriate for Solomon Islands	As a result of the schemes, the roads will be sealed, improving safety and reliability and reducing long term maintenance costs	positive
Physical infrastructure	Are the ongoing operating and maintenance costs affordable	In the long run the schemes will reduce maintenance costs	positive
Protecting the Environment	Can the scheme improve SI's resilience to the impacts of climate change and natural hazards	Increased access during hazard events will reduce the vulnerability of the population	moderate positive
Protecting the Environment	Will the scheme improve the environment or enable actions to protect the environment	The road will have minimal impact on the local environment	moderate positive
Protecting the Environment	Is the scheme robust against the effects of climate change and natural hazards	Increasing the design standards and improving maintenance will reduce vulnerability	minor positive
Improving governance	Does the project promoter have the capacity to deliver the project to budget and programme	The project would be delivered by MID, utilising existing TA support	positive

Key to Scoring

	No effect - the scheme would not contribute to the criteria
	Minor positive - the scheme would contribute only very little to the criteria
	Moderate positive - the scheme would have some moderate but limited supportive effects
	Positive - the scheme would provide support to the criteria
	Major positive - the scheme would provide major support to the criteria

Rank
34

Solomon Islands National Infrastructure Investment Plan
Project Prioritisation Assessment Summary

Project R20	**Choiseul Bay Connectivity Road** - rehabilitation and upgrading of the existing road between Taro and Chirovanga, linking the proposed new provincial capital, airfield and main port

Objective	Criteria	Assessment	Score
Alleviate poverty	Will the scheme provide affordable infrastructure to support socio-economic development	The road will provide an all weather link enabling the provision of improved passenger and cargo transport to the provincial capital	moderate positive
Alleviate poverty	Total population served	The road will serve around 7,500 people	minor positive
Support vulnerable people	Will the scheme specifically support the activities of women	The road will benefit men and women equally	minor positive
Health and education	Will the scheme assist in improving access to and delivery of health and education	The road will provide all weather access to the healthcare and education facilities in the provincial capital, improving access for all residents	positive
Economic growth and equitable distribution	Will the scheme support identified areas of investment and growth	The road will serve the new provincial capital at Taro	moderate positive
Economic growth and equitable distribution	Will the scheme remove barriers to trade	The road is not considered to be a significant barrier to trade	no effect
Economic growth and equitable distribution	Will the scheme support expansion of the tourism industry	Tourism is not a significant element in the local economy	no effect
Physical infrastructure	Does the scheme utilise or connect well with existing infrastructure	The scheme involves rehabilitation of an existing road, which will link to the provincial airfield and key wharves in the area	positive
Physical infrastructure	Does the scheme utilise technology which is appropriate for Solomon Islands	The scheme will provide an upgraded gravel road	positive
Physical infrastructure	Are the ongoing operating and maintenance costs affordable	Maintenance funding for roads is substantial and should easily cover the increased costs	positive
Protecting the Environment	Can the scheme improve SI's resilience to the impacts of climate change and natural hazards	The road runs through an area of marsh, and may disrupt the water regulation capabilities of the ecosystem	no effect
Protecting the Environment	Will the scheme improve the environment or enable actions to protect the environment	The road will have minimal impact on the local environment	moderate positive
Protecting the Environment	Is the scheme robust against the effects of climate change and natural hazards	The road will need to be designed to withstand the effects of high water table and flooding during wet periods	minor positive
Improving governance	Does the project promoter have the capacity to deliver the project to budget and programme	The project would be delivered by MID, utilising existing TA support	positive

Key to Scoring

	No effect - the scheme would not contribute to the criteria
	Minor positive - the scheme would contribute only very little to the criteria
	Moderate positive - the scheme would have some moderate but limited supportive effects
	Positive - the scheme would provide support to the criteria
	Major positive - the scheme would provide major support to the criteria

Rank
28

Solomon Islands National Infrastructure Investment Plan
Project Prioritisation Assessment Summary

Project R21	**Kolombangara - Koloni Road Rehabilitation** - rehabilitation and upgrading of the existing road along the west coast of Choiseul

Objective	Criteria	Assessment	Score
Alleviate poverty	Will the scheme provide affordable infrastructure to support socio-economic development	The upgraded road will improve connectivity to local and regional markets for those living in the area, as well as improving access to wharves and shipping	positive
Alleviate poverty	Total population served	The road will serve around 4,000 people	minor positive
Support vulnerable people	Will the scheme specifically support the activities of women	The schemes will benefit men and women equally	minor positive
Health and education	Will the scheme assist in improving access to and delivery of health and education	Improving the road will improve the reliability of access to healthcare and education	moderate positive
Economic growth and equitable distribution	Will the scheme support identified areas of investment and growth	The area served has been identified as an area with significant agricultural potential	minor positive
Economic growth and equitable distribution	Will the scheme remove barriers to trade	Roads in the area are not considered to be a barrier to trade	no effect
Economic growth and equitable distribution	Will the scheme support expansion of the tourism industry	Tourism is not a significant element in the local economy	no effect
Physical infrastructure	Does the scheme utilise or connect well with existing infrastructure	The scheme involves upgrading an existing walking track and will provide linkages to existing wharves in the area	moderate positive
Physical infrastructure	Does the scheme utilise technology which is appropriate for Solomon Islands	The scheme will provide an upgraded gravel road	positive
Physical infrastructure	Are the ongoing operating and maintenance costs affordable	Maintenance funding for roads is substantial and should easily cover the increased costs	positive
Protecting the Environment	Can the scheme improve SI's resilience to the impacts of climate change and natural hazards	Increased access during hazard events will reduce the vulnerability of the population	minor positive
Protecting the Environment	Will the scheme improve the environment or enable actions to protect the environment	The road will have minimal impact on the local environment	moderate positive
Protecting the Environment	Is the scheme robust against the effects of climate change and natural hazards	Increasing the design standards and improving maintenance will reduce vulnerability, the area is not highly vulnerable for hazard events	minor positive
Improving governance	Does the project promoter have the capacity to deliver the project to budget and programme	The project would be delivered by MID, utilising existing TA support	positive

Key to Scoring

	No effect - the scheme would not contribute to the criteria	**Rank**
	Minor positive - the scheme would contribute only very little to the criteria	38
	Moderate positive - the scheme would have some moderate but limited supportive effects	
	Positive - the scheme would provide support to the criteria	
	Major positive - the scheme would provide major support to the criteria	

Solomon Islands National Infrastructure Investment Plan
Project Prioritisation Assessment Summary

Project R22	**Guadalcanal Feeder Road Rehabilitation Tranche 3** - rehabilitation and upgrading of feeder roads in north Guadalcanal including Jericho Road, Komukogha Road, Ndolo Road, Pitukloi Plantation Road, Airport Roads, Tetupa Road and Papaga Road

Objective	Criteria	Assessment	Score
Alleviate poverty	Will the scheme provide affordable infrastructure to support socio-economic development	Many of these roads provide essential links between smallholders and local and regional markets	positive
Alleviate poverty	Total population served	Each road will serve a population of around 2,000 people	minor positive
Support vulnerable people	Will the scheme specifically support the activities of women	These feeder roads will support the activities of women more than men, as they will improve access to markets	positive
Health and education	Will the scheme assist in improving access to and delivery of health and education	Improving feeder roads will improve the reliability of access to healthcare and education	moderate positive
Economic growth and equitable distribution	Will the scheme support identified areas of investment and growth	There are no specific growth areas that would be served by these roads	no effect
Economic growth and equitable distribution	Will the scheme remove barriers to trade	Feeder roads are not considered to be a significant barrier to trade	no effect
Economic growth and equitable distribution	Will the scheme support expansion of the tourism industry	In general tourism is not a significant element in the economies of the areas served	no effect
Physical infrastructure	Does the scheme utilise or connect well with existing infrastructure	The scheme will rehabilitate and upgrade existing roads	positive
Physical infrastructure	Does the scheme utilise technology which is appropriate for Solomon Islands	The scheme will provide an upgraded gravel road	positive
Physical infrastructure	Are the ongoing operating and maintenance costs affordable	Maintenance funding for roads is substantial and should easily cover the increased costs	positive
Protecting the Environment	Can the scheme improve SI's resilience to the impacts of climate change and natural hazards	Increased access during hazard events will reduce the vulnerability of the population	minor positive
Protecting the Environment	Will the scheme improve the environment or enable actions to protect the environment	The road will have minimal impact on the local environment	moderate positive
Protecting the Environment	Is the scheme robust against the effects of climate change and natural hazards	Increasing the design standards and improving maintenance will reduce vulnerability	minor positive
Improving governance	Does the project promoter have the capacity to deliver the project to budget and programme	The project would be delivered by MID, utilising existing TA support	positive

Key to Scoring

	No effect - the scheme would not contribute to the criteria
	Minor positive - the scheme would contribute only very little to the criteria
	Moderate positive - the scheme would have some moderate but limited supportive effects
	Positive - the scheme would provide support to the criteria
	Major positive - the scheme would provide major support to the criteria

Rank
24

Solomon Islands National Infrastructure Investment Plan
Project Prioritisation Assessment Summary

Project R23	**Malaita Feeder Road Rehabilitation Tranche 1** - rehabilitation and upgrading of feeder roads in west Malaita, including Busuruta Road, Alisisiu - Aesi, Gwaidingali Road and Talakali Road

Objective	Criteria	Assessment	Score
Alleviate poverty	Will the scheme provide affordable infrastructure to support socio-economic development	Many of these roads provide essential links between smallholders and local and regional markets	positive
Alleviate poverty	Total population served	Each road will serve a population of around 4,000 people	moderate positive
Support vulnerable people	Will the scheme specifically support the activities of women	These feeder roads will support the activities of women more than men, as they will improve access to markets	positive
Health and education	Will the scheme assist in improving access to and delivery of health and education	Improving feeder roads will improve the reliability of access to healthcare and education	moderate positive
Economic growth and equitable distribution	Will the scheme support identified areas of investment and growth	There are no specific growth areas that would be served by these roads	no effect
Economic growth and equitable distribution	Will the scheme remove barriers to trade	Feeder roads are not considered to be a significant barrier to trade	no effect
Economic growth and equitable distribution	Will the scheme support expansion of the tourism industry	In general tourism is not a significant element in the economies of the areas served	no effect
Physical infrastructure	Does the scheme utilise or connect well with existing infrastructure	The scheme will rehabilitate and upgrade existing roads	positive
Physical infrastructure	Does the scheme utilise technology which is appropriate for Solomon Islands	The scheme will provide an upgraded gravel road	positive
Physical infrastructure	Are the ongoing operating and maintenance costs affordable	Maintenance funding for roads is substantial and should easily cover the increased costs	positive
Protecting the Environment	Can the scheme improve SI's resilience to the impacts of climate change and natural hazards	Increased access during hazard events will reduce the vulnerability of the population	minor positive
Protecting the Environment	Will the scheme improve the environment or enable actions to protect the environment	The road will have minimal impact on the local environment	moderate positive
Protecting the Environment	Is the scheme robust against the effects of climate change and natural hazards	Increasing the design standards and improving maintenance will reduce vulnerability	minor positive
Improving governance	Does the project promoter have the capacity to deliver the project to budget and programme	The project would be delivered by MID, utilising existing TA support	positive

Key to Scoring

	No effect - the scheme would not contribute to the criteria	**Rank**
	Minor positive - the scheme would contribute only very little to the criteria	14
	Moderate positive - the scheme would have some moderate but limited supportive effects	
	Positive - the scheme would provide support to the criteria	
	Major positive - the scheme would provide major support to the criteria	

Solomon Islands National Infrastructure Investment Plan
Project Prioritisation Assessment Summary

Project R26	**Rendova Roads** - rehabilitation and upgrading of the Ughele - Egholo and Ughele - Mauru roads on Rendova island in Western Province

Objective	Criteria	Assessment	Score
Alleviate poverty	Will the scheme provide affordable infrastructure to support socio-economic development	The roads will provide vital links between the towns of Egholo and Mauru and the main town of Ughele, which includes a wharf and regional market	positive
Alleviate poverty	Total population served	The roads would serve a population of about 1,800	no effect
Support vulnerable people	Will the scheme specifically support the activities of women	The road will benefit men and women equally	minor positive
Health and education	Will the scheme assist in improving access to and delivery of health and education	The road will provide more reliable, vehicular access to education and healthcare across the island	minor positive
Economic growth and equitable distribution	Will the scheme support identified areas of investment and growth	Rendova island has been identified as a potential agricultural investment site	minor positive
Economic growth and equitable distribution	Will the scheme remove barriers to trade	The road has not been identified as an important barrier to trade	no effect
Economic growth and equitable distribution	Will the scheme support expansion of the tourism industry	Tourism is not a significant element in the local economy	no effect
Physical infrastructure	Does the scheme utilise or connect well with existing infrastructure	The scheme involves rehabilitation of existing roads which connect to an existing wharf	positive
Physical infrastructure	Does the scheme utilise technology which is appropriate for Solomon Islands	The scheme will provide an upgraded gravel road	positive
Physical infrastructure	Are the ongoing operating and maintenance costs affordable	Maintenance funding for roads is substantial and should easily cover the increased costs	positive
Protecting the Environment	Can the scheme improve SI's resilience to the impacts of climate change and natural hazards	No significant climate change adaptation opportunities have been identified	no effect
Protecting the Environment	Will the scheme improve the environment or enable actions to protect the environment	The road will have minimal impact on the local environment	moderate positive
Protecting the Environment	Is the scheme robust against the effects of climate change and natural hazards	No climate change risks have been identified	minor positive
Improving governance	Does the project promoter have the capacity to deliver the project to budget and programme	The project would be delivered by MID, utilising existing TA support	positive

Key to Scoring

	No effect - the scheme would not contribute to the criteria	**Rank**
	Minor positive - the scheme would contribute only very little to the criteria	48
	Moderate positive - the scheme would have some moderate but limited supportive effects	
	Positive - the scheme would provide support to the criteria	
	Major positive - the scheme would provide major support to the criteria	

Solomon Islands National Infrastructure Investment Plan
Project Prioritisation Assessment Summary

Project R28	**Honiara Feeder Roads Tranche 3** - rehabilitation and upgrading of feeder roads in Honiara

Objective	Criteria	Assessment	Score
Alleviate poverty	Will the scheme provide affordable infrastructure to support socio-economic development	These roads make up a significant element of Honiara's road network and will improve local economic opportunities	minor positive
Alleviate poverty	Total population served	Each road will serve a population of around 3,000 people	minor positive
Support vulnerable people	Will the scheme specifically support the activities of women	The schemes will benefit men and women equally	minor positive
Health and education	Will the scheme assist in improving access to and delivery of health and education	The schemes will have minimal impact on access to healthcare and education	no effect
Economic growth and equitable distribution	Will the scheme support identified areas of investment and growth	Honiara is a key driver in the national economy and improving infrastructure throughout the city will have a significant effect on the national economy	moderate positive
Economic growth and equitable distribution	Will the scheme remove barriers to trade	Infrastructure in Honiara is not considered to be a significant barrier to trade	no effect
Economic growth and equitable distribution	Will the scheme support expansion of the tourism industry	Tourism is a significant element in Honiara's economy, which will be supported by improvements in infrastructure provision	minor positive
Physical infrastructure	Does the scheme utilise or connect well with existing infrastructure	The schemes involve the rehabilitation and upgrading of existing roads in Honiara	positive
Physical infrastructure	Does the scheme utilise technology which is appropriate for Solomon Islands	As a result of the schemes, the roads will be sealed, improving safety and reliability and reducing long term maintenance costs	positive
Physical infrastructure	Are the ongoing operating and maintenance costs affordable	In the long run the schemes will reduce maintenance costs	positive
Protecting the Environment	Can the scheme improve SI's resilience to the impacts of climate change and natural hazards	Increased access during hazard events will reduce the vulnerability of the population	minor positive
Protecting the Environment	Will the scheme improve the environment or enable actions to protect the environment	The road will have minimal impact on the local environment	moderate positive
Protecting the Environment	Is the scheme robust against the effects of climate change and natural hazards	Increasing the design standards and improving maintenance will reduce vulnerability	minor positive
Improving governance	Does the project promoter have the capacity to deliver the project to budget and programme	The project would be delivered by MID, utilising existing TA support	positive

Key to Scoring

	No effect - the scheme would not contribute to the criteria	**Rank**
	Minor positive - the scheme would contribute only very little to the criteria	42
	Moderate positive - the scheme would have some moderate but limited supportive effects	
	Positive - the scheme would provide support to the criteria	
	Major positive - the scheme would provide major support to the criteria	

Solomon Islands National Infrastructure Investment Plan
Project Prioritisation Assessment Summary

Project R29	**Guadalcanal Feeder Roads Tranche 4** - rehabilitation and upgrading of feeder roads in north Guadalcanal

Objective	Criteria	Assessment	Score
Alleviate poverty	Will the scheme provide affordable infrastructure to support socio-economic development	Many of these roads provide essential links between smallholders and local and regional markets	positive
Alleviate poverty	Total population served	Each road will serve a population of around 2,000 people	minor positive
Support vulnerable people	Will the scheme specifically support the activities of women	These feeder roads will support the activities of women more than men, as they will improve access to markets	positive
Health and education	Will the scheme assist in improving access to and delivery of health and education	Improving feeder roads will improve the reliability of access to healthcare and education	moderate positive
Economic growth and equitable distribution	Will the scheme support identified areas of investment and growth	There are no specific growth areas that would be served by these roads	no effect
Economic growth and equitable distribution	Will the scheme remove barriers to trade	Feeder roads are not considered to be a significant barrier to trade	no effect
Economic growth and equitable distribution	Will the scheme support expansion of the tourism industry	In general tourism is not a significant element in the economies of the areas served	no effect
Physical infrastructure	Does the scheme utilise or connect well with existing infrastructure	The scheme will rehabilitate and upgrade existing roads	positive
Physical infrastructure	Does the scheme utilise technology which is appropriate for Solomon Islands	The scheme will provide an upgraded gravel road	positive
Physical infrastructure	Are the ongoing operating and maintenance costs affordable	Maintenance funding for roads is substantial and should easily cover the increased costs	positive
Protecting the Environment	Can the scheme improve SI's resilience to the impacts of climate change and natural hazards	Increased access during hazard events will reduce the vulnerability of the population	minor positive
Protecting the Environment	Will the scheme improve the environment or enable actions to protect the environment	The road will have minimal impact on the local environment	moderate positive
Protecting the Environment	Is the scheme robust against the effects of climate change and natural hazards	Increasing the design standards and improving maintenance will reduce vulnerability	minor positive
Improving governance	Does the project promoter have the capacity to deliver the project to budget and programme	The project would be delivered by MID, utilising existing TA support	positive

Key to Scoring

	No effect - the scheme would not contribute to the criteria	**Rank**
	Minor positive - the scheme would contribute only very little to the criteria	24
	Moderate positive - the scheme would have some moderate but limited supportive effects	
	Positive - the scheme would provide support to the criteria	
	Major positive - the scheme would provide major support to the criteria	

Solomon Islands National Infrastructure Investment Plan
Project Prioritisation Assessment Summary

Project R30	**Gizo Town Roads** - rehabilitation of town and feeder roads in Gizo

Objective	Criteria	Assessment	Score
Alleviate poverty	Will the scheme provide affordable infrastructure to support socio-economic development	Improving these roads will enable the provision of reliable public and cargo transport linking to the main markets in Gizo	moderate positive
Alleviate poverty	Total population served	The population of Gizo is around 7,500 people	minor positive
Support vulnerable people	Will the scheme specifically support the activities of women	The roads will benefit men and women equally	minor positive
Health and education	Will the scheme assist in improving access to and delivery of health and education	The roads will provide a small benefit in terms of improving access to the new referral hospital in Gizo as well as regional schools	minor positive
Economic growth and equitable distribution	Will the scheme support identified areas of investment and growth	There are no identified growth areas in Gizo	no effect
Economic growth and equitable distribution	Will the scheme remove barriers to trade	Roads in Gizo are not considered to be a significant barrier to trade	no effect
Economic growth and equitable distribution	Will the scheme support expansion of the tourism industry	Gizo is one of the main centres for tourism and improved roads will help to expand the tourist industry	minor positive
Physical infrastructure	Does the scheme utilise or connect well with existing infrastructure	The scheme involves the rehabilitation and upgrading of existing roads, that will link to the airfield and wharf at Gizo	positive
Physical infrastructure	Does the scheme utilise technology which is appropriate for Solomon Islands	As a result of the schemes, the roads will be sealed, improving safety and reliability and reducing long term maintenance costs	positive
Physical infrastructure	Are the ongoing operating and maintenance costs affordable	In the long run the schemes will reduce maintenance costs	positive
Protecting the Environment	Can the scheme improve SI's resilience to the impacts of climate change and natural hazards	The area served is prone to earthquake activity and improving the roads should reduce the impact of this	minor positive
Protecting the Environment	Will the scheme improve the environment or enable actions to protect the environment	The schemes will have minimal impact on the environment	moderate positive
Protecting the Environment	Is the scheme robust against the effects of climate change and natural hazards	Some of the roads run along coastal areas and may be susceptible to some climate change impacts	minor positive
Improving governance	Does the project promoter have the capacity to deliver the project to budget and programme	The project would be delivered by MID, utilising existing TA support	positive

Key to Scoring

	No effect - the scheme would not contribute to the criteria	**Rank**
	Minor positive - the scheme would contribute only very little to the criteria	42
	Moderate positive - the scheme would have some moderate but limited supportive effects	
	Positive - the scheme would provide support to the criteria	
	Major positive - the scheme would provide major support to the criteria	

Solomon Islands National Infrastructure Investment Plan
Project Prioritisation Assessment Summary

Project R31	**Malaita Feeder Roads Tranche 2** - rehabilitation and upgrading of feeder roads throughout Malaita

Objective	Criteria	Assessment	Score
Alleviate poverty	Will the scheme provide affordable infrastructure to support socio-economic development	Many of these roads provide essential links between smallholders and local and regional markets	positive
Alleviate poverty	Total population served	Each road will serve a population of around 2,000 people	minor positive
Support vulnerable people	Will the scheme specifically support the activities of women	These feeder roads will support the activities of women more than men, as they will improve access to markets	positive
Health and education	Will the scheme assist in improving access to and delivery of health and education	Improving feeder roads will improve the reliability of access to healthcare and education	moderate positive
Economic growth and equitable distribution	Will the scheme support identified areas of investment and growth	There are no specific growth areas that would be served by these roads	no effect
Economic growth and equitable distribution	Will the scheme remove barriers to trade	Feeder roads are not considered to be a significant barrier to trade	no effect
Economic growth and equitable distribution	Will the scheme support expansion of the tourism industry	In general tourism is not a significant element in the economies of the areas served	no effect
Physical infrastructure	Does the scheme utilise or connect well with existing infrastructure	The scheme will rehabilitate and upgrade existing roads	positive
Physical infrastructure	Does the scheme utilise technology which is appropriate for Solomon Islands	The scheme will provide an upgraded gravel road	positive
Physical infrastructure	Are the ongoing operating and maintenance costs affordable	Maintenance funding for roads is substantial and should easily cover the increased costs	positive
Protecting the Environment	Can the scheme improve SI's resilience to the impacts of climate change and natural hazards	Increased access during hazard events will reduce the vulnerability of the population	minor positive
Protecting the Environment	Will the scheme improve the environment or enable actions to protect the environment	The road will have minimal impact on the local environment	moderate positive
Protecting the Environment	Is the scheme robust against the effects of climate change and natural hazards	Many of the roads suffer from degradation due to uncontrolled runoff and run alongside rivers, often with a high number of crossings	minor positive
Improving governance	Does the project promoter have the capacity to deliver the project to budget and programme	The project would be delivered by MID, utilising existing TA support	positive

Key to Scoring

	No effect - the scheme would not contribute to the criteria	**Rank**
	Minor positive - the scheme would contribute only very little to the criteria	24
	Moderate positive - the scheme would have some moderate but limited supportive effects	
	Positive - the scheme would provide support to the criteria	
	Major positive - the scheme would provide major support to the criteria	

Solomon Islands National Infrastructure Investment Plan
Project Prioritisation Assessment Summary

Project R32	**East Malaita Roads** - construction of new roads in east Malaita particularly roads around Atoifi, and to complete the north Malaita ring, serving the north east coast of the island

Objective	Criteria	Assessment	Score
Alleviate poverty	Will the scheme provide affordable infrastructure to support socio-economic development	These roads provide essential links between outlying communities and local and regional markets	positive
Alleviate poverty	Total population served	The roads will serve a population of around 25,000	moderate positive
Support vulnerable people	Will the scheme specifically support the activities of women	The schemes will benefit men and women equally	minor positive
Health and education	Will the scheme assist in improving access to and delivery of health and education	Improving these roads will improve the reliability of access to healthcare and education	moderate positive
Economic growth and equitable distribution	Will the scheme support identified areas of investment and growth	There are no specific growth areas that would be served by these roads	no effect
Economic growth and equitable distribution	Will the scheme remove barriers to trade	This type of roads are not considered to be a significant barrier to trade	no effect
Economic growth and equitable distribution	Will the scheme support expansion of the tourism industry	In general tourism is not a significant element in the economies of the areas served	no effect
Physical infrastructure	Does the scheme utilise or connect well with existing infrastructure	The scheme involves upgrading an existing walking track and will provide linkages to existing wharves in the area	moderate positive
Physical infrastructure	Does the scheme utilise technology which is appropriate for Solomon Islands	The scheme will provide an upgraded gravel road	positive
Physical infrastructure	Are the ongoing operating and maintenance costs affordable	Maintenance funding for roads is substantial and should easily cover the increased costs	positive
Protecting the Environment	Can the scheme improve SI's resilience to the impacts of climate change and natural hazards	Increased access during hazard events will reduce the vulnerability of the population	minor positive
Protecting the Environment	Will the scheme improve the environment or enable actions to protect the environment	The road will have minimal impact on the local environment	moderate positive
Protecting the Environment	Is the scheme robust against the effects of climate change and natural hazards	Many of the roads suffer from degradation due to uncontrolled runoff and run alongside rivers, often with a high number of crossings	minor positive
Improving governance	Does the project promoter have the capacity to deliver the project to budget and programme	The project would be delivered by MID, utilising existing TA support	positive

Key to Scoring

	No effect - the scheme would not contribute to the criteria
	Minor positive - the scheme would contribute only very little to the criteria
	Moderate positive - the scheme would have some moderate but limited supportive effects
	Positive - the scheme would provide support to the criteria
	Major positive - the scheme would provide major support to the criteria

Rank
38

Solomon Islands National Infrastructure Investment Plan
Project Prioritisation Assessment Summary

Project R33	**Guadalcanal West Road** - construction of a new road serving the west and south west areas of Guadalcanal island running south from Lambi to Avuavu

Objective	Criteria	Assessment	Score
Alleviate poverty	Will the scheme provide affordable infrastructure to support socio-economic development	The new road would provide a key link for access to local and regional markets and Honiara increasing income generating opportunities	positive
Alleviate poverty	Total population served	The road would serve a population of around 6,000 people	minor positive
Support vulnerable people	Will the scheme specifically support the activities of women	The schemes will benefit men and women equally	minor positive
Health and education	Will the scheme assist in improving access to and delivery of health and education	Improving these roads will improve the reliability of access to healthcare and education	moderate positive
Economic growth and equitable distribution	Will the scheme support identified areas of investment and growth	There are no specific growth areas that would be served by these roads	no effect
Economic growth and equitable distribution	Will the scheme remove barriers to trade	This type of roads are not considered to be a significant barrier to trade	no effect
Economic growth and equitable distribution	Will the scheme support expansion of the tourism industry	In general tourism is not a significant element in the economies of the areas served	no effect
Physical infrastructure	Does the scheme utilise or connect well with existing infrastructure	The new road will involve upgrading existing walking tracks for vehicular use, linking to the existing road at Lambi	minor positive
Physical infrastructure	Does the scheme utilise technology which is appropriate for Solomon Islands	The scheme will provide an upgraded gravel road	positive
Physical infrastructure	Are the ongoing operating and maintenance costs affordable	Maintenance funding for roads is substantial and should easily cover the increased costs	positive
Protecting the Environment	Can the scheme improve SI's resilience to the impacts of climate change and natural hazards	Currently access to the area is reliant upon coastal shipping services which are highly weather dependent	positive
Protecting the Environment	Will the scheme improve the environment or enable actions to protect the environment	Constructing the road is likely to cause some environmental damage as the areas are largely undeveloped	no effect
Protecting the Environment	Is the scheme robust against the effects of climate change and natural hazards	The road will run in mainly coastal areas and will include numerous river crossings	minor positive
Improving governance	Does the project promoter have the capacity to deliver the project to budget and programme	The project would be delivered by MID, utilising existing TA support	positive

Key to Scoring

	No effect - the scheme would not contribute to the criteria	**Rank**
	Minor positive - the scheme would contribute only very little to the criteria	48
	Moderate positive - the scheme would have some moderate but limited supportive effects	
	Positive - the scheme would provide support to the criteria	
	Major positive - the scheme would provide major support to the criteria	

Solomon Islands National Infrastructure Investment Plan
Project Prioritisation Assessment Summary

Project R34	**Guadalcanal East Road** - construction of a new road serving the east coast of Guadalcanal Island running south from Aola to Marau

Objective	Criteria	Assessment	Score
Alleviate poverty	Will the scheme provide affordable infrastructure to support socio-economic development	The new road would provide a key link for access to local and regional markets and Honiara increasing income generating opportunities	positive
Alleviate poverty	Total population served	The road would serve a population of around 6,000 people	minor positive
Support vulnerable people	Will the scheme specifically support the activities of women	The schemes will benefit men and women equally	minor positive
Health and education	Will the scheme assist in improving access to and delivery of health and education	Improving these roads will improve the reliability of access to healthcare and education	moderate positive
Economic growth and equitable distribution	Will the scheme support identified areas of investment and growth	There are no specific growth areas that would be served by these roads	no effect
Economic growth and equitable distribution	Will the scheme remove barriers to trade	This type of roads are not considered to be a significant barrier to trade	no effect
Economic growth and equitable distribution	Will the scheme support expansion of the tourism industry	In general tourism is not a significant element in the economies of the areas served	no effect
Physical infrastructure	Does the scheme utilise or connect well with existing infrastructure	The new road will involve upgrading existing walking tracks for vehicular use, linking to the existing road at Aola	minor positive
Physical infrastructure	Does the scheme utilise technology which is appropriate for Solomon Islands	The scheme will provide an upgraded gravel road	positive
Physical infrastructure	Are the ongoing operating and maintenance costs affordable	Maintenance funding for roads is substantial and should easily cover the increased costs	positive
Protecting the Environment	Can the scheme improve SI's resilience to the impacts of climate change and natural hazards	Currently access to the area is reliant upon coastal shipping services which are highly weather dependent	positive
Protecting the Environment	Will the scheme improve the environment or enable actions to protect the environment	Constructing the road is likely to cause some environmental damage as the areas are largely undeveloped	no effect
Protecting the Environment	Is the scheme robust against the effects of climate change and natural hazards	The road will run in mainly coastal areas and will include numerous river crossings	minor positive
Improving governance	Does the project promoter have the capacity to deliver the project to budget and programme	The project would be delivered by MID, utilising existing TA support	positive

Key to Scoring

	No effect - the scheme would not contribute to the criteria
	Minor positive - the scheme would contribute only very little to the criteria
	Moderate positive - the scheme would have some moderate but limited supportive effects
	Positive - the scheme would provide support to the criteria
	Major positive - the scheme would provide major support to the criteria

Rank
48

Solomon Islands National Infrastructure Investment Plan
Project Prioritisation Assessment Summary

Project R35	**West Makira Roads** - construction of new roads in the western part of Makira to serve existing wharves and areas with agricultural potential

Objective	Criteria	Assessment	Score
Alleviate poverty	Will the scheme provide affordable infrastructure to support socio-economic development	The scheme will improve roads that will provide good links between population centres and markets and existing wharves	positive
Alleviate poverty	Total population served	The roads would serve around 15,000 people	moderate positive
Support vulnerable people	Will the scheme specifically support the activities of women	The schemes will benefit men and women equally	minor positive
Health and education	Will the scheme assist in improving access to and delivery of health and education	Improving feeder roads will improve the reliability of access to healthcare and education	moderate positive
Economic growth and equitable distribution	Will the scheme support identified areas of investment and growth	There are no specific growth areas that would be served by these roads	no effect
Economic growth and equitable distribution	Will the scheme remove barriers to trade	Feeder roads are not considered to be a significant barrier to trade	no effect
Economic growth and equitable distribution	Will the scheme support expansion of the tourism industry	In general tourism is not a significant element in the economies of the areas served	no effect
Physical infrastructure	Does the scheme utilise or connect well with existing infrastructure	These would be largely new roads, although there may be opportunities to incorporate existing logging roads	minor positive
Physical infrastructure	Does the scheme utilise technology which is appropriate for Solomon Islands	The scheme will provide an upgraded gravel road	positive
Physical infrastructure	Are the ongoing operating and maintenance costs affordable	Maintenance funding for roads is substantial and should easily cover the increased costs	positive
Protecting the Environment	Can the scheme improve SI's resilience to the impacts of climate change and natural hazards	Currently access to some of the area is reliant upon coastal shipping services which are highly weather dependent	moderate positive
Protecting the Environment	Will the scheme improve the environment or enable actions to protect the environment	Constructing the road is likely to cause some minor environmental damage	minor positive
Protecting the Environment	Is the scheme robust against the effects of climate change and natural hazards	The roads will run through a mix of coastal and inland areas	minor positive
Improving governance	Does the project promoter have the capacity to deliver the project to budget and programme	The project would be delivered by MID, utilising existing TA support	positive

Key to Scoring

	No effect - the scheme would not contribute to the criteria	**Rank**
	Minor positive - the scheme would contribute only very little to the criteria	46
	Moderate positive - the scheme would have some moderate but limited supportive effects	
	Positive - the scheme would provide support to the criteria	
	Major positive - the scheme would provide major support to the criteria	

Solomon Islands National Infrastructure Investment Plan
Project Prioritisation Assessment Summary

Project R36	**East Makira Roads** - construction of new river crossings and road sections to serve east Makira agricultural areas

Objective	Criteria	Assessment	Score
Alleviate poverty	Will the scheme provide affordable infrastructure to support socio-economic development	The new road would provide access to key produce and wholesale markets	positive
Alleviate poverty	Total population served	The road would serve around 9,000 people	minor positive
Support vulnerable people	Will the scheme specifically support the activities of women	The schemes will benefit men and women equally	minor positive
Health and education	Will the scheme assist in improving access to and delivery of health and education	Improving these roads will improve the reliability of access to healthcare and education	minor positive
Economic growth and equitable distribution	Will the scheme support identified areas of investment and growth	The area served by the road is identified as an area with significant agricultural potential	moderate positive
Economic growth and equitable distribution	Will the scheme remove barriers to trade	Roads in the area are not considered to be a barrier to trade	no effect
Economic growth and equitable distribution	Will the scheme support expansion of the tourism industry	Tourism is not a significant element in the local economy	no effect
Physical infrastructure	Does the scheme utilise or connect well with existing infrastructure	The scheme would involve upgrading existing walking tracks, but requires a number of new river crossings	minor positive
Physical infrastructure	Does the scheme utilise technology which is appropriate for Solomon Islands	The scheme will provide an upgraded gravel road	positive
Physical infrastructure	Are the ongoing operating and maintenance costs affordable	Maintenance funding for roads is substantial and should easily cover the increased costs	positive
Protecting the Environment	Can the scheme improve SI's resilience to the impacts of climate change and natural hazards	Currently access to the area is reliant upon coastal shipping services which are highly weather dependent	positive
Protecting the Environment	Will the scheme improve the environment or enable actions to protect the environment	Constructing the road is likely to cause some minor environmental damage	minor positive
Protecting the Environment	Is the scheme robust against the effects of climate change and natural hazards	The road will run in mainly coastal areas	minor positive
Improving governance	Does the project promoter have the capacity to deliver the project to budget and programme	The project would be delivered by MID, utilising existing TA support	positive

Key to Scoring

	No effect - the scheme would not contribute to the criteria	**Rank**
	Minor positive - the scheme would contribute only very little to the criteria	34
	Moderate positive - the scheme would have some moderate but limited supportive effects	
	Positive - the scheme would provide support to the criteria	
	Major positive - the scheme would provide major support to the criteria	

Solomon Islands National Infrastructure Investment Plan
Project Prioritisation Assessment Summary

Project R37	**Choiseul South Coast Road** - upgrading of existing tracks to vehicle use along the south west coast of Choiseul serving existing population centres and wharves

Objective	Criteria	Assessment	Score
Alleviate poverty	Will the scheme provide affordable infrastructure to support socio-economic development	The upgraded road will improve connectivity to local and regional markets for those living in the area, as well as improving access to wharves and shipping	positive
Alleviate poverty	Total population served	The road will serve around 10,000 people	minor positive
Support vulnerable people	Will the scheme specifically support the activities of women	The schemes will benefit men and women equally	minor positive
Health and education	Will the scheme assist in improving access to and delivery of health and education	Improving the road will improve the reliability of access to healthcare and education	moderate positive
Economic growth and equitable distribution	Will the scheme support identified areas of investment and growth	There are no specific growth areas identified in this area	no effect
Economic growth and equitable distribution	Will the scheme remove barriers to trade	Roads in the area are not considered to be a barrier to trade	no effect
Economic growth and equitable distribution	Will the scheme support expansion of the tourism industry	Tourism is not a significant element in the local economy	no effect
Physical infrastructure	Does the scheme utilise or connect well with existing infrastructure	The scheme involves upgrading an existing walking track and will provide linkages to existing wharves in the area	moderate positive
Physical infrastructure	Does the scheme utilise technology which is appropriate for Solomon Islands	The scheme will provide an upgraded gravel road	positive
Physical infrastructure	Are the ongoing operating and maintenance costs affordable	Maintenance funding for roads is substantial and should easily cover the increased costs	positive
Protecting the Environment	Can the scheme improve SI's resilience to the impacts of climate change and natural hazards	Increased access during hazard events will reduce the vulnerability of the population	minor positive
Protecting the Environment	Will the scheme improve the environment or enable actions to protect the environment	The road will have minimal impact on the local environment	moderate positive
Protecting the Environment	Is the scheme robust against the effects of climate change and natural hazards	Increasing the design standards and improving maintenance will reduce vulnerability	minor positive
Improving governance	Does the project promoter have the capacity to deliver the project to budget and programme	The project would be delivered by MID, utilising existing TA support	positive

Key to Scoring

	No effect - the scheme would not contribute to the criteria	**Rank**
	Minor positive - the scheme would contribute only very little to the criteria	46
	Moderate positive - the scheme would have some moderate but limited supportive effects	
	Positive - the scheme would provide support to the criteria	
	Major positive - the scheme would provide major support to the criteria	

Solomon Islands National Infrastructure Investment Plan
Project Prioritisation Assessment Summary

Project R38	**Nendo Roads** - construction of new roads in Nendo Island (Temotu) to serve agricultural areas to the east and south of the island

Objective	Criteria	Assessment	Score
Alleviate poverty	Will the scheme provide affordable infrastructure to support socio-economic development	These new roads will link key towns and agricultural areas	moderate positive
Alleviate poverty	Total population served	The roads will serve a population of around 2,500	no effect
Support vulnerable people	Will the scheme specifically support the activities of women	These feeder roads will support the activities of women more than men, as they will improve access to markets	positive
Health and education	Will the scheme assist in improving access to and delivery of health and education	Improving the road will improve the reliability of access to healthcare and education	moderate positive
Economic growth and equitable distribution	Will the scheme support identified areas of investment and growth	There are no specific growth areas identified in this area	no effect
Economic growth and equitable distribution	Will the scheme remove barriers to trade	Roads in the area are not considered to be a barrier to trade	no effect
Economic growth and equitable distribution	Will the scheme support expansion of the tourism industry	Tourism is not a significant element in the local economy	no effect
Physical infrastructure	Does the scheme utilise or connect well with existing infrastructure	The scheme involves upgrading an existing walking track and will provide linkages to existing wharves in the area	moderate positive
Physical infrastructure	Does the scheme utilise technology which is appropriate for Solomon Islands	The scheme will provide an upgraded gravel road	positive
Physical infrastructure	Are the ongoing operating and maintenance costs affordable	Maintenance funding for roads is substantial and should easily cover the increased costs	positive
Protecting the Environment	Can the scheme improve SI's resilience to the impacts of climate change and natural hazards	Access to the area served currently relies upon expensive, unreliable coastal shipping services which are highly weather dependent	positive
Protecting the Environment	Will the scheme improve the environment or enable actions to protect the environment	The construction of the roads is likely to cause some environmental damage and open areas to logging	no effect
Protecting the Environment	Is the scheme robust against the effects of climate change and natural hazards	Temotu has a high exposure to climate risks including high rainfall	no effect
Improving governance	Does the project promoter have the capacity to deliver the project to budget and programme	The project would be delivered by MID, utilising existing TA support	positive

Key to Scoring

	No effect - the scheme would not contribute to the criteria	**Rank**
	Minor positive - the scheme would contribute only very little to the criteria	48
	Moderate positive - the scheme would have some moderate but limited supportive effects	
	Positive - the scheme would provide support to the criteria	
	Major positive - the scheme would provide major support to the criteria	

Solomon Islands National Infrastructure Investment Plan
Project Prioritisation Assessment Summary

Project R39	**Resealing of Urban Roads** - periodic maintenance of existing sealed roads in Guadalcanal and Malaita

Objective	Criteria	Assessment	Score
Alleviate poverty	Will the scheme provide affordable infrastructure to support socio-economic development	The scheme will have only very limited impact on socio-economic development	minor positive
Alleviate poverty	Total population served	The roads serve the main urban areas of Honiara and Auki, with a population of around 75,000	positive
Support vulnerable people	Will the scheme specifically support the activities of women	The schemes will benefit men and women equally	minor positive
Health and education	Will the scheme assist in improving access to and delivery of health and education	The scheme will have minimal impact on access to healthcare and education	no effect
Economic growth and equitable distribution	Will the scheme support identified areas of investment and growth	Strengthening and protecting these roads from deterioration will have a significant impact on the economy as a whole and key industries in particular	positive
Economic growth and equitable distribution	Will the scheme remove barriers to trade	The condition of these roads is not currently considered to be a barrier to trade	no effect
Economic growth and equitable distribution	Will the scheme support expansion of the tourism industry	Maintaining these roads will have a small positive impact on tourists by improving the comfort of journeys	minor positive
Physical infrastructure	Does the scheme utilise or connect well with existing infrastructure	The scheme involves the periodic maintenance of existing roads	major positive
Physical infrastructure	Does the scheme utilise technology which is appropriate for Solomon Islands	Depending upon the option chosen it may be that only a small but increasing number of local contractors are able to carry out this work	moderate positive
Physical infrastructure	Are the ongoing operating and maintenance costs affordable	These schemes should reduce long term maintenance costs	major positive
Protecting the Environment	Can the scheme improve SI's resilience to the impacts of climate change and natural hazards	These roads currently deteriorate rapidly during significant weather events. The schemes should reduce these effects, making transport in the area more resilient	positive
Protecting the Environment	Will the scheme improve the environment or enable actions to protect the environment	The schemes will have a small benefit for the environment by reducing the use of scarce materials for maintenance, reducing dust and better managing runoff	moderate positive
Protecting the Environment	Is the scheme robust against the effects of climate change and natural hazards	Some sections of these roads are in coastal areas, but generally there are few climate risks	moderate positive
Improving governance	Does the project promoter have the capacity to deliver the project to budget and programme	The project would be delivered by MID, utilising existing TA support	positive

Key to Scoring

	No effect - the scheme would not contribute to the criteria	**Rank**
	Minor positive - the scheme would contribute only very little to the criteria	1
	Moderate positive - the scheme would have some moderate but limited supportive effects	
	Positive - the scheme would provide support to the criteria	
	Major positive - the scheme would provide major support to the criteria	

Solomon Islands National Infrastructure Investment Plan
Project Prioritisation Assessment Summary

Project A3	**Henderson Airfield Apron Upgrade** - rehabilitation and extension of the international terminal aircraft holding apron, to repair existing failures and provide additional capacity to allow the handling of more than 2 aircraft at one time

Objective	Criteria	Assessment	Score
Alleviate poverty	Will the scheme provide affordable infrastructure to support socio-economic development	The scheme will increase the capacity of the airport to deal with additional international flights	minor positive
Alleviate poverty	Total population served	The scheme can be considered to serve the whole population, although a more realistic assessment is the number of international air passengers	moderate positive
Support vulnerable people	Will the scheme specifically support the activities of women	The scheme will benefit men and women equally	minor positive
Health and education	Will the scheme assist in improving access to and delivery of health and education	The scheme will have no impact upon domestically provided education	no effect
Economic growth and equitable distribution	Will the scheme support identified areas of investment and growth	The scheme is essential to the overall economy of Solomon Islands	moderate positive
Economic growth and equitable distribution	Will the scheme remove barriers to trade	The scheme will increase the capacity of the airport to deal with additional international flights, providing strong support to the overall economy	positive
Economic growth and equitable distribution	Will the scheme support expansion of the tourism industry	The scheme will increase the capacity of the airport, providing scope to increase the number of international flights	moderate positive
Physical infrastructure	Does the scheme utilise or connect well with existing infrastructure	The scheme will rehabilitate and expand the existing apron	major positive
Physical infrastructure	Does the scheme utilise technology which is appropriate for Solomon Islands	Depending upon the option chosen existing domestic contractors are able to implement the scheme	moderate positive
Physical infrastructure	Are the ongoing operating and maintenance costs affordable	The scheme will have minimal impact on maintenance requirements and may reduce them in the medium term	positive
Protecting the Environment	Can the scheme improve SI's resilience to the impacts of climate change and natural hazards	The scheme will extend the life of the existing facilities, minimising future deterioration due to weather	moderate positive
Protecting the Environment	Will the scheme improve the environment or enable actions to protect the environment	The scheme will have no impact on the environment	moderate positive
Protecting the Environment	Is the scheme robust against the effects of climate change and natural hazards	Depending upon the option chosen the scheme should be constructed to minimise climate change related risks	moderate positive
Improving governance	Does the project promoter have the capacity to deliver the project to budget and programme	The scheme is likely to be delivered by a private sector airport operator, using international consultants	positive

Key to Scoring

Key to Scoring		**Rank**
	No effect - the scheme would not contribute to the criteria	1
	Minor positive - the scheme would contribute only very little to the criteria	
	Moderate positive - the scheme would have some moderate but limited supportive effects	
	Positive - the scheme would provide support to the criteria	
	Major positive - the scheme would provide major support to the criteria	

Solomon Islands National Infrastructure Investment Plan
Project Prioritisation Assessment Summary

Project A4	**Provincial Runways** - upgrading to sealed standard of government owned provincial airfields

Objective	Criteria	Assessment	Score
Alleviate poverty	Will the scheme provide affordable infrastructure to support socio-economic development	Improvements to provincial airfields will have a small effect in terms of improving inter-island access for high value goods	minor positive
Alleviate poverty	Total population served	The airfields cover a wide population, particularly in the provincial capitals. This population is around 20,000	moderate positive
Support vulnerable people	Will the scheme specifically support the activities of women	The schemes are likely to support men more than women	no effect
Health and education	Will the scheme assist in improving access to and delivery of health and education	The improvements will have minimal impact on access to healthcare and education	minor positive
Economic growth and equitable distribution	Will the scheme support identified areas of investment and growth	Some of these airfields serve areas identified as key growth centres, such as Buala, Taro and Makira	moderate positive
Economic growth and equitable distribution	Will the scheme remove barriers to trade	Inter-island transport is considered to be a significant barrier to trade	moderate positive
Economic growth and equitable distribution	Will the scheme support expansion of the tourism industry	The poor reliability and high expense of domestic air services is stated as being a significant restraint to growth in tourism	positive
Physical infrastructure	Does the scheme utilise or connect well with existing infrastructure	The schemes involve upgrading existing infrastructure	positive
Physical infrastructure	Does the scheme utilise technology which is appropriate for Solomon Islands	The improvements will allow more efficient use of existing aircraft. The schemes will be implemented by domestic contractors	positive
Physical infrastructure	Are the ongoing operating and maintenance costs affordable	The schemes should reduce long term maintenance costs	positive
Protecting the Environment	Can the scheme improve SI's resilience to the impacts of climate change and natural hazards	Sealing these runways should reduce cancellations and delays due to weather events	positive
Protecting the Environment	Will the scheme improve the environment or enable actions to protect the environment	There should be minimal impact upon the environment	moderate positive
Protecting the Environment	Is the scheme robust against the effects of climate change and natural hazards	Some of the airfields are in coastal or island locations which may lead to some risks, but the improvements should improve drainage	minor positive
Improving governance	Does the project promoter have the capacity to deliver the project to budget and programme	The scheme is likely to be delivered by a private sector airport operator, using international consultants	positive

Key to Scoring

	No effect - the scheme would not contribute to the criteria	**Rank**
	Minor positive - the scheme would contribute only very little to the criteria	1
	Moderate positive - the scheme would have some moderate but limited supportive effects	
	Positive - the scheme would provide support to the criteria	
	Major positive - the scheme would provide major support to the criteria	

Solomon Islands National Infrastructure Investment Plan
Project Prioritisation Assessment Summary

Project A5	**Isabel Airfields** - construction of new airfields at Kaola and Kia in Isabel

Objective	Criteria	Assessment	Score
Alleviate poverty	Will the scheme provide affordable infrastructure to support socio-economic development	Improvements to provincial airfields will have a small effect in terms of improving inter-island access for high value goods	minor positive
Alleviate poverty	Total population served	The airfields would serve a combined population of around 4,000	minor positive
Support vulnerable people	Will the scheme specifically support the activities of women	The schemes are likely to support men more than women	no effect
Health and education	Will the scheme assist in improving access to and delivery of health and education	The improvements will have minimal impact on access to healthcare and education	no effect
Economic growth and equitable distribution	Will the scheme support identified areas of investment and growth	There are no identified growth centres in these areas, although there may be some support to upcoming mining projects	minor positive
Economic growth and equitable distribution	Will the scheme remove barriers to trade	Domestic air services will have minimal impact on barriers to trade	no effect
Economic growth and equitable distribution	Will the scheme support expansion of the tourism industry	Tourism is not a significant element of the local economy	no effect
Physical infrastructure	Does the scheme utilise or connect well with existing infrastructure	These schemes are new infrastructure, and relatively close to competing facilities	no effect
Physical infrastructure	Does the scheme utilise technology which is appropriate for Solomon Islands	These airfields would be constructed to gravel runway standard, which would not allow the use of larger aircraft	minor positive
Physical infrastructure	Are the ongoing operating and maintenance costs affordable	The construction of these airfields would increase the maintenance requirement for SIG	no effect
Protecting the Environment	Can the scheme improve SI's resilience to the impacts of climate change and natural hazards	The area served by these airfields currently relies upon shipping services for access	moderate positive
Protecting the Environment	Will the scheme improve the environment or enable actions to protect the environment	The construction of these airfields will reuslt in some environmental damage as land is cleared and materials gained	minor positive
Protecting the Environment	Is the scheme robust against the effects of climate change and natural hazards	These airfields would be in areas where weather conditions are likely to lead to significant delays	no effect
Improving governance	Does the project promoter have the capacity to deliver the project to budget and programme	These airfields are likely to be implemented by the provincial government with support from the relevant ministry	no effect

Key to Scoring

	No effect - the scheme would not contribute to the criteria	**Rank**
	Minor positive - the scheme would contribute only very little to the criteria	56
	Moderate positive - the scheme would have some moderate but limited supportive effects	
	Positive - the scheme would provide support to the criteria	
	Major positive - the scheme would provide major support to the criteria	

Solomon Islands National Infrastructure Investment Plan
Project Prioritisation Assessment Summary

Project A9	**Parasi Airfield** - reconstruction of the airfield in south Malaita and re-opening to regular services

Objective	Criteria	Assessment	Score
Alleviate poverty	Will the scheme provide affordable infrastructure to support socio-economic development	Improvements to provincial airfields will have a small effect in terms of improving inter-island access for high value goods	minor positive
Alleviate poverty	Total population served	The airfield would serve the population of south Malaita and Small Malaita totalling around 20,000	moderate positive
Support vulnerable people	Will the scheme specifically support the activities of women	The schemes are likely to support men more than women	no effect
Health and education	Will the scheme assist in improving access to and delivery of health and education	The improvements will have minimal impact on access to healthcare and education	no effect
Economic growth and equitable distribution	Will the scheme support identified areas of investment and growth	There are no identified growth centres in this area	no effect
Economic growth and equitable distribution	Will the scheme remove barriers to trade	Domestic air services will have minimal impact on barriers to trade	no effect
Economic growth and equitable distribution	Will the scheme support expansion of the tourism industry	Tourism is not a significant element of the local economy	no effect
Physical infrastructure	Does the scheme utilise or connect well with existing infrastructure	Whilst there used to be an airfield at this location, it has been non-operational for many years and is likely to be largely deteriorated	moderate positive
Physical infrastructure	Does the scheme utilise technology which is appropriate for Solomon Islands	This airfield would be constructed to gravel runway standard, which would not allow the use of larger aircraft	moderate positive
Physical infrastructure	Are the ongoing operating and maintenance costs affordable	The construction of these airfields would increase the maintenance requirement for SIG	no effect
Protecting the Environment	Can the scheme improve SI's resilience to the impacts of climate change and natural hazards	The area served by these airfields currently relies upon shipping services for access	moderate positive
Protecting the Environment	Will the scheme improve the environment or enable actions to protect the environment	There should be minimal impact upon the environment	moderate positive
Protecting the Environment	Is the scheme robust against the effects of climate change and natural hazards	This airfield is in a location which is susceptible to extreme weather events, which are likely to worsen due to climate change	no effect
Improving governance	Does the project promoter have the capacity to deliver the project to budget and programme	This airfield was originally closed due to unresolved land issues. These would need to be resolved before re-opening could be considered	no effect

Key to Scoring

	No effect - the scheme would not contribute to the criteria	**Rank**
	Minor positive - the scheme would contribute only very little to the criteria	55
	moderate positive - the scheme would have some moderate but limited supportive effects	
	Positive - the scheme would provide support to the criteria	
	Major positive - the scheme would provide major support to the criteria	

Solomon Islands National Infrastructure Investment Plan
Project Prioritisation Assessment Summary

Project S1	**Honiara Port Remedial Works** - completion of remedial repair and re-organisation works for Honiara Port as set out in the Port Scoping Study

Objective	Criteria	Assessment	Score
Alleviate poverty	Will the scheme provide affordable infrastructure to support socio-economic development	The scheme will have minimal impact on socio-economic development	no effect
Alleviate poverty	Total population served	In theory the port serves the whole of Solomon Islands	major positive
Support vulnerable people	Will the scheme specifically support the activities of women	The scheme is likely to support men more than women	no effect
Health and education	Will the scheme assist in improving access to and delivery of health and education	The improvements will have minimal impact on access to healthcare and education	no effect
Economic growth and equitable distribution	Will the scheme support identified areas of investment and growth	The scheme will protect the operation of the main international port, thus supporting overall economic development	moderate positive
Economic growth and equitable distribution	Will the scheme remove barriers to trade	Efficient operation of the port is crucial in reducing barriers to trade	moderate positive
Economic growth and equitable distribution	Will the scheme support expansion of the tourism industry	The scheme would have no impact on SIs tourist industry	no effect
Physical infrastructure	Does the scheme utilise or connect well with existing infrastructure	The scheme involves repairs to existing infrastructure and minor improvements to expand capacity	major positive
Physical infrastructure	Does the scheme utilise technology which is appropriate for Solomon Islands	The scheme involves the general tidying up and repair of existing facilities	major positive
Physical infrastructure	Are the ongoing operating and maintenance costs affordable	The proposed repairs should reduce the medium term maintenance requirements. The additional capacity should generate additional user revenues	positive
Protecting the Environment	Can the scheme improve SI's resilience to the impacts of climate change and natural hazards	The scheme would have minimal impact on the country's resilience to climate change effects	minor positive
Protecting the Environment	Will the scheme improve the environment or enable actions to protect the environment	The scheme should have some benefits for the environment by improving the management of pollutants and water runoff	moderate positive
Protecting the Environment	Is the scheme robust against the effects of climate change and natural hazards	Although the port is in a coastal location, the works should not have significant climate risks	positive
Improving governance	Does the project promoter have the capacity to deliver the project to budget and programme	The scheme will be implemented through donor support using international consultants and contractors	positive

Key to Scoring

	No effect - the scheme would not contribute to the criteria	**Rank**
	Minor positive - the scheme would contribute only very little to the criteria	5
	Moderate positive - the scheme would have some moderate but limited supportive effects	
	Positive - the scheme would provide support to the criteria	
	Major positive - the scheme would provide major support to the criteria	

Project S2	**Honiara Port New International Wharf** - construction of a new international wharf alongside the existing international wharf at Point Cruz as set out in the JICA/SIG MoU

Objective	Criteria	Assessment	Score
Alleviate poverty	Will the scheme provide affordable infrastructure to support socio-economic development	The scheme will have a small impact on rural income generation by providing new facilities for copra and cocoa loading	minor positive
Alleviate poverty	Total population served	In theory the port serves the whole of Solomon Islands	major positive
Support vulnerable people	Will the scheme specifically support the activities of women	The scheme is likely to support men more than women	no effect
Health and education	Will the scheme assist in improving access to and delivery of health and education	The improvements will have minimal impact on access to healthcare and education	no effect
Economic growth and equitable distribution	Will the scheme support identified areas of investment and growth	The scheme will provide significant additional capacity to cater additional for international trade thus protecting economic development for the next 10 years	positive
Economic growth and equitable distribution	Will the scheme remove barriers to trade	Increasing capacity for the port will ensure that port delays do not become a significant barrier to trade	positive
Economic growth and equitable distribution	Will the scheme support expansion of the tourism industry	The scheme would have no impact on SIs tourist industry	no effect
Physical infrastructure	Does the scheme utilise or connect well with existing infrastructure	The scheme would provide an additional wharf alongside the existing wharf, utilising existing container handling and port areas	moderate positive
Physical infrastructure	Does the scheme utilise technology which is appropriate for Solomon Islands	The scheme will need to be constructed to international standards to meet the requirements of safety and security conventions	moderate positive
Physical infrastructure	Are the ongoing operating and maintenance costs affordable	The scheme will result in significant additional operating and maintenance costs, but it is expected that a proportion of these will be recovered from user revenues	positive
Protecting the Environment	Can the scheme improve SI's resilience to the impacts of climate change and natural hazards	The new wharf will provide considerable flexibility for handling of container and other ships thus reducing the knock on impacts of weather events	positive
Protecting the Environment	Will the scheme improve the environment or enable actions to protect the environment	The scheme is likely to result in some environmental damage during construction but in the long run there will be some environmental benefits	minor positive
Protecting the Environment	Is the scheme robust against the effects of climate change and natural hazards	The location of the new wharf is Point Cruz; there may be some constrained by tidal and wind conditions, which may require mitigation measures	no effect
Improving governance	Does the project promoter have the capacity to deliver the project to budget and programme	The scheme will be implemented through donor support using international consultants and contractors	positive

Key to Scoring

	No effect - the scheme would not contribute to the criteria	**Rank**
	Minor positive - the scheme would contribute only very little to the criteria	18
	Moderate positive - the scheme would have some moderate but limited supportive effects	
	Positive - the scheme would provide support to the criteria	
	Major positive - the scheme would provide major support to the criteria	

Solomon Islands National Infrastructure Investment Plan
Project Prioritisation Assessment Summary

Project S3	**Honiara New Greenfield Port** - construction of a new port either at the existing location or one of a number of alternative locations - depending upon the results of a master plan study

Objective	Criteria	Assessment	Score
Alleviate poverty	Will the scheme provide affordable infrastructure to support socio-economic development	The scheme will provide new facilities for handling a range of agricultural produce so supporting rural income generation	minor positive
Alleviate poverty	Total population served	In theory the port serves the whole of Solomon Islands	major positive
Support vulnerable people	Will the scheme specifically support the activities of women	The scheme is likely to support men more than women	no effect
Health and education	Will the scheme assist in improving access to and delivery of health and education	The improvements will have minimal impact on access to healthcare and education	no effect
Economic growth and equitable distribution	Will the scheme support identified areas of investment and growth	The scheme will provide significant additional capacity to cater for international trade for the foreseeable future thus protecting economic development	positive
Economic growth and equitable distribution	Will the scheme remove barriers to trade	Increasing capacity for the port will ensure that port delays do not become a significant barrier to trade	positive
Economic growth and equitable distribution	Will the scheme support expansion of the tourism industry	The scheme would have no impact on SIs tourist industry	no effect
Physical infrastructure	Does the scheme utilise or connect well with existing infrastructure	The scheme may require additional infrastructure to be built to link with existing road network	minor positive
Physical infrastructure	Does the scheme utilise technology which is appropriate for Solomon Islands	The scheme will need to be constructed to international standards to meet the requirements of safety and security conventions	moderate positive
Physical infrastructure	Are the ongoing operating and maintenance costs affordable	The scheme is likely to reduce long term operating and maintenance costs whilst also increasing the opportunities for user revenues	moderate positive
Protecting the Environment	Can the scheme improve SI's resilience to the impacts of climate change and natural hazards	A completely new port can be built in the optimal location so will require less or equal new infrastructure to control tides and winds, thus ensuring that it can be used in all but the most extreme weather events	moderate positive
Protecting the Environment	Will the scheme improve the environment or enable actions to protect the environment	The scheme may create significant environmental impacts during construction, but the new port may be more environmentally friendly than the current port	minor positive
Protecting the Environment	Is the scheme robust against the effects of climate change and natural hazards	New port facilities are likely to be susceptible to a range of climate change effects	no effect
Improving governance	Does the project promoter have the capacity to deliver the project to budget and programme	The scheme will be implemented through donor support using international consultants and contractors	positive

Key to Scoring

	No effect - the scheme would not contribute to the criteria	**Rank**
	Minor positive - the scheme would contribute only very little to the criteria	40
	Moderate positive - the scheme would have some moderate but limited supportive effects	
	Positive - the scheme would provide support to the criteria	
	Major positive - the scheme would provide major support to the criteria	

Solomon Islands National Infrastructure Investment Plan
Project Prioritisation Assessment Summary

Project S4	**2013 Programme of Replacement Wharves** - replacement of broken wharves at Lambulambu, Lengana, Koriovuku, Buala, Vuranggo and Viru

Objective	**Criteria**	**Assessment**	**Score**
Alleviate poverty	Will the scheme provide affordable infrastructure to support socio-economic development	Replacing damaged or life expired wharves provides strong support to rural economic activity. Locations are chosen based upon the NTP priorities	positive
Alleviate poverty	Total population served	Each wharf will generally serve a population of between 3 - 5,000 people	moderate positive
Support vulnerable people	Will the scheme specifically support the activities of women	Replacement wharves enable women to sell produce in rural locations and access incoming goods	moderate positive
Health and education	Will the scheme assist in improving access to and delivery of health and education	Many of these wharves are close to existing hospitals and schools, providing residents with more reliable shipping services and easier access	minor positive
Economic growth and equitable distribution	Will the scheme support identified areas of investment and growth	Many of the wharf locations are close to existing and future areas of economic activity, with Buala wharf being crucial to specific investments	minor positive
Economic growth and equitable distribution	Will the scheme remove barriers to trade	Improved shipping services, which are often facilitated by new wharves are a key means by which to remove barriers to inter-island trade	minor positive
Economic growth and equitable distribution	Will the scheme support expansion of the tourism industry	These wharves will generally have little impact on the tourist industry	no effect
Physical infrastructure	Does the scheme utilise or connect well with existing infrastructure	These are generally replacement for broken wharves, often caused by tsunamis	moderate positive
Physical infrastructure	Does the scheme utilise technology which is appropriate for Solomon Islands	It is expected that these wharves will utilise existing best practice designs, which can be constructed by domestic contractors	positive
Physical infrastructure	Are the ongoing operating and maintenance costs affordable	New wharves generally do not lead to significant increases in maintenance requirements	positive
Protecting the Environment	Can the scheme improve SI's resilience to the impacts of climate change and natural hazards	The wharves allow for alternate sources of transport during extreme events and increase mobility for remote islands during hazard events	moderate positive
Protecting the Environment	Will the scheme improve the environment or enable actions to protect the environment	These wharf locations are generally distant from protected or vulnerable environments	moderate positive
Protecting the Environment	Is the scheme robust against the effects of climate change and natural hazards	New wharves are designed to withstand most weather conditions. However sea-leve rise and associated storm surges need to be taken into account	moderate positive
Improving governance	Does the project promoter have the capacity to deliver the project to budget and programme	To date new wharves have been implemented by international consultants working to MID. It is expected that this will continue	moderate positive

Key to Scoring

	No effect - the scheme would not contribute to the criteria	**Rank**
	Minor positive - the scheme would contribute only very little to the criteria	11
	Moderate positive - the scheme would have some moderate but limited supportive effects	
	Positive - the scheme would provide support to the criteria	
	Major positive - the scheme would provide major support to the criteria	

Solomon Islands National Infrastructure Investment Plan
Project Prioritisation Assessment Summary

Project S9	**Replacement Wharves Tranche 2** - construction of wharves to replace broken wharves at Atori, Takwa, Bita'ama, Lambi, Marau, Marasa, Rere, Buma, Laolasi, Grasciosa Bay, Nuatambu, Paregho, Makina, Mbau, Manivovo, Wairokai, Rokera, Posarae, Paradise, Kukudu and Rohinari

Objective	Criteria	Assessment	Score
Alleviate poverty	Will the scheme provide affordable infrastructure to support socio-economic development	The provision of wharves in rural areas provides significant support to rural income generation	positive
Alleviate poverty	Total population served	These wharves serve a combined population of around 30,000	moderate positive
Support vulnerable people	Will the scheme specifically support the activities of women	The provision of wharves generally supports women more than men	moderate positive
Health and education	Will the scheme assist in improving access to and delivery of health and education	These wharves will have only a small impact on access to healthcare and education	minor positive
Economic growth and equitable distribution	Will the scheme support identified areas of investment and growth	These wharves are not in areas with identified growth centres	no effect
Economic growth and equitable distribution	Will the scheme remove barriers to trade	Wharves can reduce barriers to trade by encouraging more reliable, less costly inter-island shipping services	minor positive
Economic growth and equitable distribution	Will the scheme support expansion of the tourism industry	Tourism is not a significant element of the local economy in the areas served	no effect
Physical infrastructure	Does the scheme utilise or connect well with existing infrastructure	These wharves are a mix of replacements for broken wharves and wharves replacing anchorages	moderate positive
Physical infrastructure	Does the scheme utilise technology which is appropriate for Solomon Islands	It is expected that these wharves will utilise existing best practice designs, which can be constructed by domestic contractors	positive
Physical infrastructure	Are the ongoing operating and maintenance costs affordable	New wharves generally do not lead to significant increases in maintenance requirements	positive
Protecting the Environment	Can the scheme improve SI's resilience to the impacts of climate change and natural hazards	Wharves have some effect in improving overall resilience by making the operation of shipping services more reliable	minor positive
Protecting the Environment	Will the scheme improve the environment or enable actions to protect the environment	These wharf locations are generally distant from protected or vulnerable environments	moderate positive
Protecting the Environment	Is the scheme robust against the effects of climate change and natural hazards	New wharves are designed to withstand most weather conditions. However to be effective it is necessary to provide reliable shipping services	moderate positive
Improving governance	Does the project promoter have the capacity to deliver the project to budget and programme	To date new wharves have been implemented by international consultants working to MID. It is expected that this will continue, although new arrangements will need to be put in place	moderate positive

Key to Scoring

	No effect - the scheme would not contribute to the criteria	**Rank**
	Minor positive - the scheme would contribute only very little to the criteria	30
	Moderate positive - the scheme would have some moderate but limited supportive effects	
	Positive - the scheme would provide support to the criteria	
	Major positive - the scheme would provide major support to the criteria	

Solomon Islands National Infrastructure Investment Plan
Project Prioritisation Assessment Summary

Project S12	**New Wharves Tranche 1** - construction of new wharves at Papara, Boeboe, Ogho, Sigana, Bumbukuana, Vanikoro, Wagina, Mbirasu, Alialia, Zirokana, Samasodu, Lofang, Mbaraulu, Furona, Nila

Objective	Criteria	Assessment	Score
Alleviate poverty	Will the scheme provide affordable infrastructure to support socio-economic development	The provision of wharves in rural areas provides significant support to rural income generation	positive
Alleviate poverty	Total population served	These wharves serve a combined population of around 20,000	moderate positive
Support vulnerable people	Will the scheme specifically support the activities of women	The provision of wharves generally supports women more than men	moderate positive
Health and education	Will the scheme assist in improving access to and delivery of health and education	These wharves will have only a small impact on access to healthcare and education	minor positive
Economic growth and equitable distribution	Will the scheme support identified areas of investment and growth	These wharves are not in areas with identified growth centres, although some are in areas with significant agricultural potential	minor positive
Economic growth and equitable distribution	Will the scheme remove barriers to trade	Wharves can reduce barriers to trade by encouraging more reliable, less costly inter-island shipping services	minor positive
Economic growth and equitable distribution	Will the scheme support expansion of the tourism industry	Tourism is not a significant element of the local economy in the areas served	no effect
Physical infrastructure	Does the scheme utilise or connect well with existing infrastructure	These are generally new wharves in areas which have not previously had wharves	minor positive
Physical infrastructure	Does the scheme utilise technology which is appropriate for Solomon Islands	It is expected that these wharves will utilise existing best practice designs, which can be constructed by domestic contractors	positive
Physical infrastructure	Are the ongoing operating and maintenance costs affordable	New wharves generally do not lead to significant increases in maintenance requirements	positive
Protecting the Environment	Can the scheme improve SI's resilience to the impacts of climate change and natural hazards	Wharves have some effect in improving overall resilience by making the operation of shipping services more reliable	minor positive
Protecting the Environment	Will the scheme improve the environment or enable actions to protect the environment	These wharf locations are generally distant from protected or vulnerable environments	moderate positive
Protecting the Environment	Is the scheme robust against the effects of climate change and natural hazards	New wharves are designed to withstand most weather conditions. However to be effective it is necessary to provide reliable shipping services	moderate positive
Improving governance	Does the project promoter have the capacity to deliver the project to budget and programme	To date new wharves have been implemented by international consultants working to MID. It is expected that this will continue, although new arrangements will need to be put in place	moderate positive

Key to Scoring

	No effect - the scheme would not contribute to the criteria	**Rank**
	Minor positive - the scheme would contribute only very little to the criteria	30
	Moderate positive - the scheme would have some moderate but limited supportive effects	
	Positive - the scheme would provide support to the criteria	
	Major positive - the scheme would provide major support to the criteria	

Solomon Islands National Infrastructure Investment Plan
Project Prioritisation Assessment Summary

Project S13	**New Wharves Tranche 2** - construction of new wharves at Bina Harbour, Suava Bay, Santa Ana, Tulagi, Pepesal, Taroniara

Objective	Criteria	Assessment	Score
Alleviate poverty	Will the scheme provide affordable infrastructure to support socio-economic development	The provision of wharves in rural areas provides significant support to rural income generation	positive
Alleviate poverty	Total population served	These wharves serve a combined population of around 20,000	moderate positive
Support vulnerable people	Will the scheme specifically support the activities of women	The provision of wharves generally supports women more than men	moderate positive
Health and education	Will the scheme assist in improving access to and delivery of health and education	These wharves will have only a small impact on access to healthcare and education	minor positive
Economic growth and equitable distribution	Will the scheme support identified areas of investment and growth	These wharves are generally in areas with specific economic growth investments	positive
Economic growth and equitable distribution	Will the scheme remove barriers to trade	Wharves can reduce barriers to trade by encouraging more reliable, less costly inter-island shipping services	minor positive
Economic growth and equitable distribution	Will the scheme support expansion of the tourism industry	Tourism is not a significant element of the local economy in the areas served	no effect
Physical infrastructure	Does the scheme utilise or connect well with existing infrastructure	These are generally new wharves in areas which have not previously had wharves	minor positive
Physical infrastructure	Does the scheme utilise technology which is appropriate for Solomon Islands	It is expected that these wharves will utilise existing best practice designs, which can be constructed by domestic contractors	positive
Physical infrastructure	Are the ongoing operating and maintenance costs affordable	New wharves generally do not lead to significant increases in maintenance requirements	positive
Protecting the Environment	Can the scheme improve SI's resilience to the impacts of climate change and natural hazards	Wharves have some effect in improving overall resilience by making the operation of shipping services more reliable	minor positive
Protecting the Environment	Will the scheme improve the environment or enable actions to protect the environment	These wharf locations are generally distant from protected or vulnerable environments	moderate positive
Protecting the Environment	Is the scheme robust against the effects of climate change and natural hazards	New wharves are designed to withstand most weather conditions. However to be effective it is necessary to provide reliable shipping services	moderate positive
Improving governance	Does the project promoter have the capacity to deliver the project to budget and programme	To date new wharves have been implemented by international consultants working to MID. It is expected that this will continue, although new arrangements will need to be put in place	moderate positive

Key to Scoring

		Rank
	No effect - the scheme would not contribute to the criteria	
	Minor positive - the scheme would contribute only very little to the criteria	11
	Moderate positive - the scheme would have some moderate but limited supportive effects	
	Positive - the scheme would provide support to the criteria	
	Major positive - the scheme would provide major support to the criteria	

Solomon Islands National Infrastructure Investment Plan
Project Prioritisation Assessment Summary

Project S14	**New Wharves Tranche 3** - construction of new wharves at Aola, Haemarau, Kwailabesi and Lianuia

Objective	Criteria	Assessment	Score
Alleviate poverty	Will the scheme provide affordable infrastructure to support socio-economic development	The provision of wharves in rural areas provides significant support to rural income generation	positive
Alleviate poverty	Total population served	These wharves serve a combined population of around 10,000	minor positive
Support vulnerable people	Will the scheme specifically support the activities of women	The provision of wharves generally supports women more than men	moderate positive
Health and education	Will the scheme assist in improving access to and delivery of health and education	These wharves will have only a small impact on access to healthcare and education	minor positive
Economic growth and equitable distribution	Will the scheme support identified areas of investment and growth	These wharves are not in areas with identified growth centres, although some are in areas with significant agricultural potential	minor positive
Economic growth and equitable distribution	Will the scheme remove barriers to trade	Wharves can reduce barriers to trade by encouraging more reliable, less costly inter-island shipping services	minor positive
Economic growth and equitable distribution	Will the scheme support expansion of the tourism industry	Tourism is not a significant element of the local economy in the areas served	no effect
Physical infrastructure	Does the scheme utilise or connect well with existing infrastructure	These are generally new wharves in areas which have not previously had wharves	minor positive
Physical infrastructure	Does the scheme utilise technology which is appropriate for Solomon Islands	It is expected that these wharves will utilise existing best practice designs, which can be constructed by domestic contractors	positive
Physical infrastructure	Are the ongoing operating and maintenance costs affordable	New wharves generally do not lead to significant increases in maintenance requirements	positive
Protecting the Environment	Can the scheme improve SI's resilience to the impacts of climate change and natural hazards	Wharves have some effect in improving overall resilience by making the operation of shipping services more reliable	minor positive
Protecting the Environment	Will the scheme improve the environment or enable actions to protect the environment	These wharf locations are generally distant from protected or vulnerable environments	moderate positive
Protecting the Environment	Is the scheme robust against the effects of climate change and natural hazards	New wharves are designed to withstand most weather conditions. However to be effective it is necessary to provide reliable shipping services	moderate positive
Improving governance	Does the project promoter have the capacity to deliver the project to budget and programme	To date new wharves have been implemented by international consultants working to MID. It is expected that this will continue, although new arrangements will need to be put in place	moderate positive

Key to Scoring

	No effect - the scheme would not contribute to the criteria	**Rank**
	Minor positive - the scheme would contribute only very little to the criteria	34
	Moderate positive - the scheme would have some moderate but limited supportive effects	
	Positive - the scheme would provide support to the criteria	
	Major positive - the scheme would provide major support to the criteria	

Solomon Islands National Infrastructure Investment Plan
Project Prioritisation Assessment Summary

Project S15	**Rehabilitation and Replacement of Maritime Navigation Aids** - implementation of a programme to provide a network of maritime navigation aids, including lighthouses, bouys and marker posts, throughout the country

Objective	Criteria	Assessment	Score
Alleviate poverty	Will the scheme provide affordable infrastructure to support socio-economic development	Maritime navigation aids are a significant benefit to domestic shipping services	moderate positive
Alleviate poverty	Total population served	A large proportion of the country would be served, although a relatively small proportion would actually benefit	moderate positive
Support vulnerable people	Will the scheme specifically support the activities of women	The scheme will benefit men and women equally	minor positive
Health and education	Will the scheme assist in improving access to and delivery of health and education	The scheme will have minimal impact on access to healthcare and education	no effect
Economic growth and equitable distribution	Will the scheme support identified areas of investment and growth	It is likely that some navigation aids will be in areas where economic investments are being proposed	minor positive
Economic growth and equitable distribution	Will the scheme remove barriers to trade	Improving inter-island shipping is seen as a key way to remove an important barrier to trade	moderate positive
Economic growth and equitable distribution	Will the scheme support expansion of the tourism industry	The scheme may have a small positive effect on tourism by making inter-island travel safer	minor positive
Physical infrastructure	Does the scheme utilise or connect well with existing infrastructure	The scheme would involve rehabilitation or replacement of existing infrastructure	positive
Physical infrastructure	Does the scheme utilise technology which is appropriate for Solomon Islands	The scheme would continue the use of existing technologies although these have not always proven to be sustainable	moderate positive
Physical infrastructure	Are the ongoing operating and maintenance costs affordable	Historically navaids have required significant levels of maintenance that have been difficult to sustain	minor positive
Protecting the Environment	Can the scheme improve SI's resilience to the impacts of climate change and natural hazards	The scheme may assist in enabling the provision of information relating to climate events and natural hazards	minor positive
Protecting the Environment	Will the scheme improve the environment or enable actions to protect the environment	The scheme will have a small positive impact on the environment by reducing the chances of wrecks	positive
Protecting the Environment	Is the scheme robust against the effects of climate change and natural hazards	The design of navaids will need to take into account the effect of climate change	minor positive
Improving governance	Does the project promoter have the capacity to deliver the project to budget and programme	The scheme would be delivered by SIMSA, although it will need consultancy and contractor support	minor positive

Key to Scoring

	No effect - the scheme would not contribute to the criteria	**Rank**
	Minor positive - the scheme would contribute only very little to the criteria	52
	Moderate positive - the scheme would have some moderate but limited supportive effects	
	Positive - the scheme would provide support to the criteria	
	Major positive - the scheme would provide major support to the criteria	

Solomon Islands National Infrastructure Investment Plan
Project Prioritisation Assessment Summary

Project WS5	**Gizo Water Supply** - rehabilitation of existing water sources, expansion of existing distribution systems, repair of sanitation facilities and provision of pumping facilities

Objective	Criteria	Assessment	Score
Alleviate poverty	Will the scheme provide affordable infrastructure to support socio-economic development	The scheme should provide clean water for the population around Gizo. Residents in this area are expected to be able to afford user charges	positive
Alleviate poverty	Total population served	The scheme will serve the residents of Gizo and surrounding areas. Population of this area is estimated at 7,500	minor positive
Support vulnerable people	Will the scheme specifically support the activities of women	The provision of clean water, even in largely urban areas, will be a substantial benefit for women and children	moderate positive
Health and education	Will the scheme assist in improving access to and delivery of health and education	The scheme will directly serve the new referral hospital at Gizo, as well as a number of schools	positive
Economic growth and equitable distribution	Will the scheme support identified areas of investment and growth	There are no significant areas of economic investment in the area	no effect
Economic growth and equitable distribution	Will the scheme remove barriers to trade	Water supply in this area is not considered to be a barrier to trade	no effect
Economic growth and equitable distribution	Will the scheme support expansion of the tourism industry	The area is a focus of the tourist industry and clean water provision will have a significant positive impact on this	moderate positive
Physical infrastructure	Does the scheme utilise or connect well with existing infrastructure	The scheme provides new infrastructure to build upon existing provision	moderate positive
Physical infrastructure	Does the scheme utilise technology which is appropriate for Solomon Islands	Depending upon the options chosen it is expected that the scheme will utilise similar technology to that used elsewhere	moderate positive
Physical infrastructure	Are the ongoing operating and maintenance costs affordable	It is expected that user charges will cover a large part of the operating and maintenance costs of the scheme	moderate positive
Protecting the Environment	Can the scheme improve SI's resilience to the impacts of climate change and natural hazards	Improving the supply of clean water will improve the ability of residents to resist disease, more efficient water systems will reduce stress on water supplies during droughts and store excess	moderate positive
Protecting the Environment	Will the scheme improve the environment or enable actions to protect the environment	Formalising water supply should reduce the use of bottled water, thereby reducing plastic waste	moderate positive
Protecting the Environment	Is the scheme robust against the effects of climate change and natural hazards	It is assumed that control equipment, reservoirs and pumping stations will be located in areas where climate change risks are minimised	moderate positive
Improving governance	Does the project promoter have the capacity to deliver the project to budget and programme	The scheme is likely to be delivered by JICA with support from international consultants	moderate positive

Key to Scoring

	No effect - the scheme would not contribute to the criteria	**Rank**
	Minor positive - the scheme would contribute only very little to the criteria	20
	Moderate positive - the scheme would have some moderate but limited supportive effects	
	Positive - the scheme would provide support to the criteria	
	Major positive - the scheme would provide major support to the criteria	

Solomon Islands National Infrastructure Investment Plan
Project Prioritisation Assessment Summary

Project WS6	**Water Supply 2 Year Plan** - rehabilitation of distribution systems, development of proper sewage systems and treatment plant for Honiara and other urban centres, and continued strengthening of SIWA management, with the aim of continuing the improvements to the financial situation of SIWA

Objective	Criteria	Assessment	Score
Alleviate poverty	Will the scheme provide affordable infrastructure to support socio-economic development	It is unclear whether users will be able to afford to pay for sewage and sanitation systems, as currently very few customers do	minor positive
Alleviate poverty	Total population served	The scheme would serve many of the population of Honiara and other centres	major positive
Support vulnerable people	Will the scheme specifically support the activities of women	Provision of improved water supply and sewage systems is a significant benefit for women	moderate positive
Health and education	Will the scheme assist in improving access to and delivery of health and education	The scheme will benefit healthcare and education through the provision of sanitary sewage treatment	moderate positive
Economic growth and equitable distribution	Will the scheme support identified areas of investment and growth	The scheme will have minimal impact in supporting economic growth	no effect
Economic growth and equitable distribution	Will the scheme remove barriers to trade	Water supply and sanitation is not considered to be a barrier to trade	no effect
Economic growth and equitable distribution	Will the scheme support expansion of the tourism industry	Improved water supply and sanitation will have a small impact in improving conditions for tourists	minor positive
Physical infrastructure	Does the scheme utilise or connect well with existing infrastructure	The scheme will build upon existing infrastructure, whilst providing significant new facilities	moderate positive
Physical infrastructure	Does the scheme utilise technology which is appropriate for Solomon Islands	The scheme generally involves expansion of existing facilities utilising existing technology	positive
Physical infrastructure	Are the ongoing operating and maintenance costs affordable	It is expected that any additional operating and maintenance costs will be covered by user revenues or SIG support	positive
Protecting the Environment	Can the scheme improve SI's resilience to the impacts of climate change and natural hazards	The scheme will have minimal impact in improving overall resilience, although better use of water will improve resilience to rainfall changes	minor positive
Protecting the Environment	Will the scheme improve the environment or enable actions to protect the environment	Improving sanitation and water supply will have a significant impact in improving the urban environment	moderate positive
Protecting the Environment	Is the scheme robust against the effects of climate change and natural hazards	The locations and design should include consideration of potential effects of changing water supplies for proper sewerage functions, and damages due to hazard events such as earthquakes	moderate positive
Improving governance	Does the project promoter have the capacity to deliver the project to budget and programme	The scheme will be implemented by SIWA supported by donors and international consultants	positive

Key to Scoring

	No effect - the scheme would not contribute to the criteria	**Rank**
	Minor positive - the scheme would contribute only very little to the criteria	14
	Moderate positive - the scheme would have some moderate but limited supportive effects	
	Positive - the scheme would provide support to the criteria	
	Major positive - the scheme would provide major support to the criteria	

Solomon Islands National Infrastructure Investment Plan
Project Prioritisation Assessment Summary

Project WS7	**WASH Projects** - implementation of the recently approved water supply and sanitation strategy, including expansion of rural water supply infrastructure, institutional strengthening and community training

Objective	Criteria	Assessment	Score
Alleviate poverty	Will the scheme provide affordable infrastructure to support socio-economic development	Improving rural water supply and sanitation will provide significant support to rural income generation opportunities	moderate positive
Alleviate poverty	Total population served	It is expected that the scheme will serve a large proportion of existing rural population	major positive
Support vulnerable people	Will the scheme specifically support the activities of women	Water supply and sanitation are key issues for women	positive
Health and education	Will the scheme assist in improving access to and delivery of health and education	The scheme will facilitate some improvements in healthcare and education by improving supply to rural facilities	moderate positive
Economic growth and equitable distribution	Will the scheme support identified areas of investment and growth	The scheme will have only minimal impact on growth centres	no effect
Economic growth and equitable distribution	Will the scheme remove barriers to trade	Water supply and sanitation are not significant barriers to trade	no effect
Economic growth and equitable distribution	Will the scheme support expansion of the tourism industry	Rural water supply and sanitation may have a small effect in supporting tourism	minor positive
Physical infrastructure	Does the scheme utilise or connect well with existing infrastructure	The scheme will involve a mix of new infrastructure, rehabilitation of existing infrastructure and extension of current networks	moderate positive
Physical infrastructure	Does the scheme utilise technology which is appropriate for Solomon Islands	It is expected that the schemes will utilise existing tried an tested technology	positive
Physical infrastructure	Are the ongoing operating and maintenance costs affordable	It is expected that the schemes will result in significant additional operating and maintenance costs, but that much of these will be recovered from users	moderate positive
Protecting the Environment	Can the scheme improve SI's resilience to the impacts of climate change and natural hazards	The project may help manage fluctuations in water availability with changing rainfall patterns, well designed schemes can ensure safe water supplies during hazard events	positive
Protecting the Environment	Will the scheme improve the environment or enable actions to protect the environment	The scheme will enable significant improvements in the environment by reducing water extraction from unsustainable sources and reducing pollution from sewage	positive
Protecting the Environment	Is the scheme robust against the effects of climate change and natural hazards	Consideration of fluctuating water volumes will need to be considered for proper design	minor positive
Improving governance	Does the project promoter have the capacity to deliver the project to budget and programme	The scheme requires the support of consultants and contractors to ensure that it is implemented	no effect

Key to Scoring

	No effect - the scheme would not contribute to the criteria	**Rank**
	Minor positive - the scheme would contribute only very little to the criteria	11
	Moderate positive - the scheme would have some moderate but limited supportive effects	
	Positive - the scheme would provide support to the criteria	
	Major positive - the scheme would provide major support to the criteria	

Solomon Islands National Infrastructure Investment Plan
Project Prioritisation Assessment Summary

Project SW2	**Sanitary landfill sites at main centres on outer islands** - development of new landfill sites at the main provincial centres, including the provision of proper leachate controls. Project includes completion of access roads, security fencing, handling equipment and institutional strengthening

Objective	Criteria	Assessment	Score
Alleviate poverty	Will the scheme provide affordable infrastructure to support socio-economic development	The collection and disposal of waste will provide some assistance to development	minor positive
Alleviate poverty	Total population served	The schemes will serve many of the main centres on the outer islands. The estimated population of these is around 80,000	major positive
Support vulnerable people	Will the scheme specifically support the activities of women	Collection of waste will assist women in keeping villages clean and tidy	moderate positive
Health and education	Will the scheme assist in improving access to and delivery of health and education	Sanitary landfills will assist the operation of health services in particular	moderate positive
Economic growth and equitable distribution	Will the scheme support identified areas of investment and growth	The schemes will generally serve existing population centres	moderate positive
Economic growth and equitable distribution	Will the scheme remove barriers to trade	The collection and disposal of waste is not considered to be a barrier to trade	no effect
Economic growth and equitable distribution	Will the scheme support expansion of the tourism industry	Improving waste management may improve the environment in key urban centres	moderate positive
Physical infrastructure	Does the scheme utilise or connect well with existing infrastructure	These would be new facilities	minor positive
Physical infrastructure	Does the scheme utilise technology which is appropriate for Solomon Islands	The proposed collection mechanisms are well understood	positive
Physical infrastructure	Are the ongoing operating and maintenance costs affordable	It is expected that user charges will cover most costs. In addition, recycling industries will create additional income	moderate positive
Protecting the Environment	Can the scheme improve SI's resilience to the impacts of climate change and natural hazards	Proper disposal of waste will improve the ability of SI to withstand the effects of flooding	minor positive
Protecting the Environment	Will the scheme improve the environment or enable actions to protect the environment	The schemes will provide a significant boost to the environment, reducing the amount of waste burned, or discarded by roadsides or in rivers	major positive
Protecting the Environment	Is the scheme robust against the effects of climate change and natural hazards	It is assumed that landfill locations will be outside existing residential areas, away from coastal areas	positive
Improving governance	Does the project promoter have the capacity to deliver the project to budget and programme	The project is currently being proposed by SIG. International support will be required to implement these schemes	no effect

Key to Scoring

	No effect - the scheme would not contribute to the criteria	**Rank**
	Minor positive - the scheme would contribute only very little to the criteria	9
	Moderate positive - the scheme would have some moderate but limited supportive effects	
	Positive - the scheme would provide support to the criteria	
	Major positive - the scheme would provide major support to the criteria	

Solomon Islands National Infrastructure Investment Plan
Project Prioritisation Assessment Summary

Project E4	**Honiara Electricity Generating Set Upgrade** - replacement of old generating sets and purchase of an additional four sets for use around Honiara

Objective	Criteria	Assessment	Score
Alleviate poverty	Will the scheme provide affordable infrastructure to support socio-economic development	Improving the reliability and efficiency of energy supplies is a key stage in encouraging income generation	minor positive
Alleviate poverty	Total population served	The scheme would serve the whole population of greater Honiara	positive
Support vulnerable people	Will the scheme specifically support the activities of women	Improved energy supplies are a significant benefit to women, particularly for household activities and cooking	moderate positive
Health and education	Will the scheme assist in improving access to and delivery of health and education	More reliable power supplies will enable improved healthcare and education	positive
Economic growth and equitable distribution	Will the scheme support identified areas of investment and growth	The scheme will support economic activity in Honiara	moderate positive
Economic growth and equitable distribution	Will the scheme remove barriers to trade	Energy supplies are not considered to be a barrier to trade	no effect
Economic growth and equitable distribution	Will the scheme support expansion of the tourism industry	Improved energy supplies will support growth in tourism	minor positive
Physical infrastructure	Does the scheme utilise or connect well with existing infrastructure	The additional generating capacity will feed into the existing distribution networks	positive
Physical infrastructure	Does the scheme utilise technology which is appropriate for Solomon Islands	The replacement generators will use similar technology to the existing sets	positive
Physical infrastructure	Are the ongoing operating and maintenance costs affordable	More reliable power supplies will result in additional user revenues as firms use less own generation	positive
Protecting the Environment	Can the scheme improve SI's resilience to the impacts of climate change and natural hazards	No specific opportunities have been identified	no effect
Protecting the Environment	Will the scheme improve the environment or enable actions to protect the environment	Reducing the amount of own generation, through inefficient standby generators will have a significant effect on local air quality	minor positive
Protecting the Environment	Is the scheme robust against the effects of climate change and natural hazards	No specific climate change risks have been identified	positive
Improving governance	Does the project promoter have the capacity to deliver the project to budget and programme	The scheme would be delivered by SIEA with financial support from the private sector	moderate positive

Key to Scoring

	No effect - the scheme would not contribute to the criteria	**Rank**
	Minor positive - the scheme would contribute only very little to the criteria	9
	Moderate positive - the scheme would have some moderate but limited supportive effects	
	Positive - the scheme would provide support to the criteria	
	Major positive - the scheme would provide major support to the criteria	

Solomon Islands National Infrastructure Investment Plan
Project Prioritisation Assessment Summary

Project E5	**Tina Hydropower Project** - construction of a hydro-electric power station to the east of Honiara

Objective	**Criteria**	**Assessment**	**Score**
Alleviate poverty	Will the scheme provide affordable infrastructure to support socio-economic development	The scheme will provide significant additional power for the greater Honiara and north Guadalcanal areas and could result in reduced electricity tariffs	positive
Alleviate poverty	Total population served	The scheme would serve a population of around 75,000	positive
Support vulnerable people	Will the scheme specifically support the activities of women	Improved energy supplies are a significant benefit to women, particularly for household activities and cooking	moderate positive
Health and education	Will the scheme assist in improving access to and delivery of health and education	More reliable power supplies will enable improved healthcare and education	positive
Economic growth and equitable distribution	Will the scheme support identified areas of investment and growth	The scheme will support economic activity in Honiara	positive
Economic growth and equitable distribution	Will the scheme remove barriers to trade	Energy supplies are not considered to be a barrier to trade	no effect
Economic growth and equitable distribution	Will the scheme support expansion of the tourism industry	Improved energy supplies will support growth in tourism	minor positive
Physical infrastructure	Does the scheme utilise or connect well with existing infrastructure	This is new infrastructure which will require new supporting infrastructure but will connect to the existing grid	minor positive
Physical infrastructure	Does the scheme utilise technology which is appropriate for Solomon Islands	This is the first major hydro scheme in SI and will require ongoing technical support	moderate positive
Physical infrastructure	Are the ongoing operating and maintenance costs affordable	The scheme is considered to be financially viable, with the additional costs being covered by user revenues, although SIG will be required to provide revenue guarantees	positive
Protecting the Environment	Can the scheme improve SI's resilience to the impacts of climate change and natural hazards	Depending upon the options chosen, the scheme will provide opportunities for flood management	minor positive
Protecting the Environment	Will the scheme improve the environment or enable actions to protect the environment	The scheme will have major environmental implications due to its design and construction, although there will be some benefits due to more reliable power supply and watercourse management	moderate positive
Protecting the Environment	Is the scheme robust against the effects of climate change and natural hazards	The design would have to be designed to consider greater fluctuations in water levels	moderate positive
Improving governance	Does the project promoter have the capacity to deliver the project to budget and programme	The project would be delivered through a PPP model with substantial input from the private sector	moderate positive

Key to Scoring

	No effect - the scheme would not contribute to the criteria	**Rank**
	Minor positive - the scheme would contribute only very little to the criteria	6
	Moderate positive - the scheme would have some moderate but limited supportive effects	
	Positive - the scheme would provide support to the criteria	
	Major positive - the scheme would provide major support to the criteria	

Solomon Islands National Infrastructure Investment Plan
Project Prioritisation Assessment Summary

Project E6	**Paraiso Thermal** - development of a thermal power generation facility on Vella La Vella

Objective	Criteria	Assessment	Score
Alleviate poverty	Will the scheme provide affordable infrastructure to support socio-economic development	Depending upon the costs of energy supplied to users, reliable power supplies should be a significant benefit for rural income generation	moderate positive
Alleviate poverty	Total population served	It is assumed that the scheme would provide power to most of Western Province, a population of 50,000 people	positive
Support vulnerable people	Will the scheme specifically support the activities of women	Improved energy supplies are a significant benefit to women, particularly for household activities and cooking	moderate positive
Health and education	Will the scheme assist in improving access to and delivery of health and education	More reliable power supplies will enable improved healthcare and education	moderate positive
Economic growth and equitable distribution	Will the scheme support identified areas of investment and growth	There are a range of economic developments in the area that would benefit from the scheme	positive
Economic growth and equitable distribution	Will the scheme remove barriers to trade	Energy supply is not identified as a barrier to trade	no effect
Economic growth and equitable distribution	Will the scheme support expansion of the tourism industry	Tourism is a key economic sector in Western Province, and the scheme will provide significant support to the industry	moderate positive
Physical infrastructure	Does the scheme utilise or connect well with existing infrastructure	This scheme would involve the provision of new generation and distribution infrastructure	no effect
Physical infrastructure	Does the scheme utilise technology which is appropriate for Solomon Islands	This is new infrastructure with technology that is new to SI	no effect
Physical infrastructure	Are the ongoing operating and maintenance costs affordable	Depending upon the costs of energy supplied to users, it would be expected that much of the additional operating and maintenance costs would be covered	minor positive
Protecting the Environment	Can the scheme improve SI's resilience to the impacts of climate change and natural hazards	No specific opportunities have been identified	no effect
Protecting the Environment	Will the scheme improve the environment or enable actions to protect the environment	By reducing reliance on fossil fuel and biomass burning, the scheme should have a significant effect on local environmental quality	moderate positive
Protecting the Environment	Is the scheme robust against the effects of climate change and natural hazards	No specific climate change risks have been identified	positive
Improving governance	Does the project promoter have the capacity to deliver the project to budget and programme	It is assumed that the scheme would be delivered through a PPP model with significant input from the private sector	moderate positive

Key to Scoring

	No effect - the scheme would not contribute to the criteria	**Rank**
	Minor positive - the scheme would contribute only very little to the criteria	42
	Moderate positive - the scheme would have some moderate but limited supportive effects	
	Positive - the scheme would provide support to the criteria	
	Major positive - the scheme would provide major support to the criteria	

Solomon Islands National Infrastructure Investment Plan
Project Prioritisation Assessment Summary

Project E11	**Savo Geothermal** - harnessing heat energy from Savo island to generate electricity to be provided to the Honiara grid

Objective	Criteria	Assessment	Score
Alleviate poverty	Will the scheme provide affordable infrastructure to support socio-economic development	The scheme faces considerable technical challenges which are likely to increase the cost of the resulting power	no effect
Alleviate poverty	Total population served	The scheme would serve a population of around 75,000	positive
Support vulnerable people	Will the scheme specifically support the activities of women	Improved energy supplies are a significant benefit to women, particularly for household activities and cooking	moderate positive
Health and education	Will the scheme assist in improving access to and delivery of health and education	More reliable power supplies will enable improved healthcare and education	positive
Economic growth and equitable distribution	Will the scheme support identified areas of investment and growth	The scheme will support economic activity in Honiara	moderate positive
Economic growth and equitable distribution	Will the scheme remove barriers to trade	Energy supplies are not considered to be a barrier to trade	no effect
Economic growth and equitable distribution	Will the scheme support expansion of the tourism industry	Improved energy supplies will support growth in tourism	minor positive
Physical infrastructure	Does the scheme utilise or connect well with existing infrastructure	This scheme would involve the provision of new generation and distribution infrastructure	no effect
Physical infrastructure	Does the scheme utilise technology which is appropriate for Solomon Islands	This is new infrastructure with technology that is new to SI	no effect
Physical infrastructure	Are the ongoing operating and maintenance costs affordable	Depending upon the costs of energy supplied to users, it would be expected that much of the additional operating and maintenance costs would be covered	minor positive
Protecting the Environment	Can the scheme improve SI's resilience to the impacts of climate change and natural hazards	No specific opportunities have been identified	no effect
Protecting the Environment	Will the scheme improve the environment or enable actions to protect the environment	By reducing reliance on fossil fuel and biomass burning, the scheme should have a significant effect on local environmental quality	moderate positive
Protecting the Environment	Is the scheme robust against the effects of climate change and natural hazards	No specific climate change risks have been identified	positive
Improving governance	Does the project promoter have the capacity to deliver the project to budget and programme	It is assumed that the scheme would be delivered through a PPP model with significant input from the private sector	moderate positive

Key to Scoring

	No effect - the scheme would not contribute to the criteria	**Rank**
	Minor positive - the scheme would contribute only very little to the criteria	54
	moderate positive - the scheme would have some moderate but limited supportive effects	
	Positive - the scheme would provide support to the criteria	
	Major positive - the scheme would provide major support to the criteria	

Solomon Islands National Infrastructure Investment Plan
Project Prioritisation Assessment Summary

Project ICT2	**Remote communities information and communication systems** - development of telecommunications towers and equipment to provide ICT services to communities in remote areas where it is uneconomic to do so

Objective	Criteria	Assessment	Score
Alleviate poverty	Will the scheme provide affordable infrastructure to support socio-economic development	The scheme will provide significant opportunities to encourage rural income generation through better links to markets and shipping services	positive
Alleviate poverty	Total population served	The scheme would serve around 10% of the country's population	moderate positive
Support vulnerable people	Will the scheme specifically support the activities of women	The scheme will benefit men and women equally	minor positive
Health and education	Will the scheme assist in improving access to and delivery of health and education	The scheme will have a small impact by making it more attractive for healthcare and education professionals to be based in remote areas	minor positive
Economic growth and equitable distribution	Will the scheme support identified areas of investment and growth	There are no specific growth areas identified in the areas served	no effect
Economic growth and equitable distribution	Will the scheme remove barriers to trade	Poor communications have been identified as a significant barrier to trade	moderate positive
Economic growth and equitable distribution	Will the scheme support expansion of the tourism industry	The scheme may have a small positive effect on tourism by enabling more efficient bookings for resorts in remote areas	minor positive
Physical infrastructure	Does the scheme utilise or connect well with existing infrastructure	The scheme would invovle new infrastructure linked to existing central networks	moderate positive
Physical infrastructure	Does the scheme utilise technology which is appropriate for Solomon Islands	The scheme would continue the use of existing technologies	major positive
Physical infrastructure	Are the ongoing operating and maintenance costs affordable	It is assumed that the additional operating and maintenance costs would be recovered through user revenues, although there may be a need for some operating subsidies	moderate positive
Protecting the Environment	Can the scheme improve SI's resilience to the impacts of climate change and natural hazards	The scheme may assist in enabling the provision of information relating to climate events and natural hazards	minor positive
Protecting the Environment	Will the scheme improve the environment or enable actions to protect the environment	The scheme is unlikely to have a significant impact on the environment	moderate positive
Protecting the Environment	Is the scheme robust against the effects of climate change and natural hazards	Towers should be designed to withstand increased winds	minor positive
Improving governance	Does the project promoter have the capacity to deliver the project to budget and programme	Both Solomon Telekom and Bemobile have substantial experience in delivering schemes of this type	positive

Key to Scoring

	No effect - the scheme would not contribute to the criteria	**Rank**
	Minor positive - the scheme would contribute only very little to the criteria	20
	Moderate positive - the scheme would have some moderate but limited supportive effects	
	Positive - the scheme would provide support to the criteria	
	Major positive - the scheme would provide major support to the criteria	