



MILLENNIUM CHALLENGE ACCOUNT-VANUATU
Reducing Poverty through Improved Infrastructure



**Environmental Social Assessment and Environmental Management
Plan:**

Santo East Coast Road Subproject MCA03

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Abbreviations

AIDS	Acquired Immune Deficiency Syndrome
COC	Council of Chiefs
COM	Commissioner of Mines (Mines and Minerals Section of DGM)
DB	Design and Build
DGM	Department of Geology and Mines (of Ministry of Land & Natural Resources)
DLSR	Department of Land, Survey & Records (of Ministry of Land & Natural Resources)
EMP	Environmental Management Plan
ESA	Environmental and Social Assessment
ESU	Engineering Support Unit (of PWD)
GoV	Government of Vanuatu
HIV	Human Immune-deficiency Virus
HSU	HIV and STIs Unit (of Ministry of Health)
LBES	Labour Based Equipment Support
LTU	Lands Tribunal Unit
MCA-V	Millennium Challenge Account - Vanuatu
MCC	Millennium Challenge Corporation
MCC-V	Millennium Challenge Corporation - Vanuatu
MAFF	Ministry of Agriculture, Forestry and Fisheries
MLNR	Ministry of Land and Natural Resources
MOH	Ministry of Health
NGO	Non-governmental Organisation
NKBJ	Nasonal Kaonsel Blong ol Jif/National Council of Chiefs (Malvatumauri)
NKBW	Nasonal Kaonsel Blong ol Women/National Council of Women
OP	Operations Policy (of World Bank)
PAP	Project Affected People
PEA	Preliminary Environmental Assessment
PESA	Preliminary Environmental and Social Assessment
PRA	Participatory Rapid Appraisal
PWD	Public Works Department
RoW	Right of Way

SG	Secretary General
STIs	Sexually Transmitted Infections
RAP	Resettlement Action Plan
VKS	Vanuatu Kaljoral Senta/Vanuatu Cultural Centre

Executive Summary

The first priority civil works activity under the Millennium Challenge Account Vanuatu (MCA-V) Transport Infrastructure Program is the reconstruction of the Efate Ring Road, on which the works commenced in June 2008. The second priority is the upgrade of the Santo East Coast Road including the upgrade to bitumen seal to Matevulu. Dependent on available funding an unsealed upgraded road is proposed to Port Olry, this is subject to NZAID funding. The Santo road works are scheduled to commence in May 2009. This report provides the Environmental and Social Assessment, incorporating the Environmental Management Plan (EMP) for the Santo East Coast Road Sub-project through to Port Olry.

The purposes of this report are to provide;

- Guidance to Downer EDI Works Ltd (the Design and Build Contractor) in fulfilling their contractual obligations prior to construction of works, including finalizing their Environmental Management Implementation Plan (EMIP).
- Guidance to Queensland Consulting Project Partners (QCPP) as the Engineer working with the Public Works Department (PWD) Engineering Support Unit (ESU) in their role as Engineer to monitor the work of the design and build (db) contractor.
- Information to MCA-Vanuatu and MCC for approval and to ensure compliance with Government of Vanuatu (GoV) legislation, Compact obligations, and MCC guidance governing environmental, resettlement and social sustainability.
- Information to the SANMA Provincial Council to ensure that the works are integrated with provincial plans and guidance to enable SANMA to provide local assistance to MCA-V.
- Stakeholders, beneficiaries, and the general public with access to information about the program.

As part of its commitment to public outreach and information, the report will also be tabled on the MCA website. EMPs and Resettlement Action Plans (RAPs) are “conditions precedent” to the disbursement of construction funds as mandated under the Vanuatu Compact and Disbursement Agreement. EMIPs, prepared by the design and build contractor in response to the ESA/EMP and approved by the Engineer, are preconditions to the commencement of construction works.

This report has been developed utilizing initial reports by international consultants (Maunsell Limited). MCA-Vanuatu used these reports to work with its implementing entities such as the Ministry of Lands and the Public Works Department in SANMA Province, the SANMA Provincial Council and the Port Vila Representative for the Santo Council of Chiefs. Joint field trips with MCA, Downer EDI Works, Environmental Consultant to MCA, MCC, and relevant Government representatives have also contributed to the process. Extensive community consultation with those villages living adjacent to the Santo East Coast Road and relevant stakeholders in Luganville has been undertaken. There is a commitment to continue joint consultations and to use a whole of Government and broad consultative approach throughout the programme as required to resolve issues.

Summary of Potential Environmental and Social Impacts and Mitigation Measures

The environmental impacts associated with the Santo East Coast Road Subproject are largely positive or neutral as the upgrading works will result in mitigation of many existing environmental problems associated with the existing road. The greatest social impact associated with the Subproject will result from increased access (all season access) and reduction in travel time and travel costs. These impacts will support increased tourism and agricultural opportunities,

improved livelihoods and socio-economic conditions for those living along the Santo East Coast Road. Though the Subproject is welcomed by the people of Santo, there is strong disappointment regarding the lack of funds to seal the Santo East Coast Road through to Port Olry and the decision by the Vanuatu Council of Ministers on the priorities for the MCA projects. The increasing costs of construction have resulted in the reduction of length of tar seal on Santo to approximately 14.5 km from the end of the current seal near Luganville to Matevulu. Comparisons to the length of tar seal proposed on Efate Ring Road were made, and a request that additional funds be sought and used to tar seal the road to Port Olry as originally proposed. People were also angry that the Government and MCA had concealed the decision.

During the consultations, all stakeholders highlighted that the current condition of the Santo East Coast Road was the worst it has been in recent memory. The increase in activity in upper catchments (logging and agriculture) has led to more frequent flooding of rivers and erosion. Increasing rain events with changing climates were also reported to have contributed to erosion. The recent lack of maintenance of the road due to lack of equipment and budget at PWD has contributed to the further degradation of the road. People expressed a strong desire for road maintenance to be given a higher priority so that the benefits of the upgraded road would be maximized. It is essential that PWD brings the road to "trafficable condition" before the worst of the wet season and in order that the site can be handed over to the DB contractor in early 2009. PWD needs to take advantage of the opportunities (equipment, budget, and training) provided under the Compact for strengthening road maintenance capacities on Santo.

Amongst the range of positive and negative environmental and social impacts, which have been identified, the key impacts include:

During construction:

- Impacts on the surrounding environment during the construction of the road from increased noise and dust though temporary and localized have the potential to affect communities located on the Santo East Coast Road and the adjacent aquatic environments. The management of sediment and runoff during construction using good engineering and construction practice will mitigate any effects on the receiving environment.
- The impacts on communities of having construction workers living in temporary camps in the area include potential health risks and potential conflict related to respect of local village protocols and ownership of property. Relevant awareness campaigns for construction workers and villagers on potential health risks, and training for all construction workers on village protocol will mitigate the potential effects identified. The MCA-V grievance procedure has been revised in agreement with the Secretary-General of the SANMA Provincial Council to provide a Santo-based system for managing grievances.

Operation:

- The rehabilitation of the road in particular proper drainage and road design will reduce the runoff currently causing siltation of adjacent aquatic systems, erosion, and scouring of the road and flooding. The reduction in run-off from the road, in particular in the sealed sections, will improve the water quality of adjacent aquatic systems, to support healthier eco-systems, protect water supply (including water for swimming) for communities and maintain the pristine water quality to enhance tourism on the East Coast of Santo.
- Improved access to services (in particular health services) and facilities, the market and economic opportunities for communities on the East Coast of Santo will provide economic benefits to support the reduction of poverty.
- Facilitating better access to markets for agricultural producers, in particular transporting livestock will maximize the health and quality of the stock.
- Santo's important industries (copra and forestry) will benefit from the upgraded road as they transport their products to market and shipment.
- The road improvement will provide greater opportunities for tourism activities to be located along the East Coast, which will better distribute the tourism dollars spent in Santo (and Vanuatu). This is consistent with the new vision for the Tourism Industry Master Plan, which identifies Santo as a key tourist destination and the hub for tourism to the northern islands. This will provide opportunities for communities on the East Coast to engage in economic activities and remain living in their communities.
- Increase in public transport opportunities for vehicle owners between the villages and Luganville with reduced costs in vehicle maintenance required and reduced travel times encouraging greater number of trips, reduced fares, and additional income generation.
- Increased speeds by road users and therefore an increase in traffic safety issues will have a potential impact on communities. The use of traffic calming measures throughout the length of the road rehabilitation is

proposed, including the use of speed restrictions, speed humps in villages, and signage including maximum speed limit signs. Traffic safety signs and awareness-raising programs for road users may also be necessary to reduce the impact of increased vehicle speeds. The reduced pavement width of 5m has safety implications that must be addressed in awareness campaigns.

Provincial Government Role

A joint quarry regulatory committee with a representative of Lands and PWD at Provincial Level and the Secretary General for SANMA was developed initially to assist the Commissioner of Mines with the development of quarries on Santo. This three-person committee will now provide a broader role of coordinating and facilitating issues at the Provincial Level, with regular and direct contact with MCA. An IEA is currently being established with the Provincial Council to ensure commitments from the Province and support from MCA is sustainable. This committee will provide a valuable link between MCA and the communities during construction.

Summary of Environmental Management Plan

An Environmental Management Plan (EMP) has been prepared for the Santo East Coast Road Subproject. The EMP provides a detailed framework for managing the construction, operation and maintenance activities so that the potential negative environmental and social impacts associated with the subproject segments are avoided or mitigated.

The EMP includes:

- A description of the institutional responsibilities of the various parties involved in implementing the EMP;
- An environmental management plan matrix which identifies specific environmental impacts, associated mitigation measures, performance indicators and the party responsible for implementing the mitigation measure;.
- An environmental monitoring plan;
- Contingencies, complaints and incidents procedures; and
- Reporting and review procedures.

The EMP has been prepared in advance of the detailed design for the sub-project segments to facilitate the overall project implementation schedule, therefore the EMP is based on the most current design information available. Procedures are in place to review and update the EMP as required throughout the design, approval and construction phases.

Key Resettlement Issues

There will be no permanent physical displacement of people from their dwellings as a result of the Subproject, hence, in accordance with the criteria and requirements of the World Bank Operational Policy for Involuntary Resettlement Policy OP4.12, no requirement for a large scale RAP has been identified for the Santo East Coast Road. However abbreviated RAPs will be required to address a number of resettlement issues:

- Permanent loss of access to small amounts of road-side land.
- Market stalls and structures associated with small business enterprises,
- Realignment of fences
- Loss of coconuts and other garden resources
- Temporary loss of access to resources or assets

As a result of the phased approach to design and build, the RAPs will be prepared to support the DB schedule, with RAPs for the priority sections (and preferably the whole Sub-project) to be in place by April 2009. These RAPs will ensure that any potential issues with affected persons will be resolved prior to construction.

1.0 Introduction

1.1 Project Back Ground

The Government of the Republic of Vanuatu (GoV) has entered into a compact with the Government of the United States acting through the Millennium Challenge Corporation (MCC). The goal of this Compact is to reduce poverty Millennium Challenge Account-Vanuatu

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and increase incomes in rural areas by stimulating economic activity in the tourism and agriculture sectors through the improvement of transport infrastructure, which is key to economic growth and poverty reduction in Vanuatu. Copies of the Compact and supplementary agreements are available on www.governmentofvanuatu.gov.vu. All Compact activities operate in compliance with these core documents, the laws of Vanuatu, and relevant MCC guidelines. Under a restructure of the Compact Program in early 2008, the focus of the Program is on the upgrades to the Efate Ring Road and the Santo East Coast Road.

The Government of Vanuatu has established a program management unit, known as the Millennium Challenge Account-Vanuatu (MCA) within the Ministry of Finance and Economic Management with a primary role to oversee the implementation and management of the MCA program. MCA is supported locally by a number of implementing entities and contractors, and by MCC-Vanuatu with support from a specialist team in Washington.

1.2 Scope of this Report

This report (MCA03) provides the ESA and the EMP for the Santo East Coast Road Subproject. The Subproject comprises of rehabilitation of the unsealed and degraded Santo East Coast Road including associated drainage and if necessary some repair of bridges and creek crossings as they are assessed. The Subproject does not include any new road construction as it is upgrading the existing limestone paved road within the existing alignment. The section of the East Coast Road to Matevulu College will include bitumen seal. From this point the road will be upgraded to the same standard but without seal. Existing drainage structures will be examined and replaced where required for safety or performance reasons, with an emphasis on providing erosion protection where road drainage is discharged to creeks and is in close proximity to the coast. It is not anticipated that there will be any significant increase in storm water flows; any increase will be a result of solving existing problems where a lack of drainage allows some storm water to overtop existing undersized drains and discharge to adjacent receiving environment.

The works will include:

- Development of two storage areas (plant, machinery and stockpiles) and camps at the existing PWD storage area at 32.0km with overnight accommodation for up to 20 workers and a site (yet to be confirmed) around Hog Harbour area for overnight accommodation of up to 10 workers. The contractor has yet to enter into a lease agreement with the leaseholder (Ronan Harvey) or identify a suitable site near Hog Harbour.
- Reconstruction of 58.7 km of the existing road (section highlighted in red on the map below) on its existing alignment, to a two lane, 5m bitumen sealed pavement for the section to Matevulu College entrance and a 5m upgraded but unsealed pavement from there to Port Olry, with 2 x 1m shoulders and (at a maximum) 2 x 2m wide drainage structures. Based on the design specification provided in the DB Tender Document, a maximum 12m roadway is the agreed design standard for the Project. This indicative design standard allows for a construction zone (beyond the roadway) of between 3m and 8m depending on the width of the surveyed and acquired road reserve (i.e. 15m or 20m). A design speed generally of 80 km/hr for both the sealed and unsealed sections of the road, with some sections potentially 50 km/hr or less near villages, schools and other sections of frequent road crossing is anticipated. Further Government assessment of appropriate speed limits may mean alternative speed limits are sign posted.
- Improvement of road drainage with concrete table drains in steep sections and culvert crossings or concrete floodways for all creeks, with appropriate erosion control where required;
- Remedial work if required to the existing five (5) bridges; and
- Road furniture, including guard rails, speed bumps around villages and signage as required.

Santo map – Phillippe/ Catherine to provide ASAP

Figure 1: Map of East Coast Santo showing length of road to be upgraded.

2.0 Approach and Methodology

2.1 Research Reports and Surveys

This report is built upon the following work:

- A Preliminary Environmental and Social Assessment (PESA) January 2006 prepared by Parsons Brinckerhoff as part of the MCC's technical, financial and economic assessment of the MCA-Vanuatu program.
- A preliminary Reconnaissance Survey and Scoping Report prepared by Maunsell Limited in 2008.
- A preliminary Resettlement Framework for the Vanuatu Transport Infrastructure Program, prepared by Maunsell Limited in 2008.
- A range of locally prepared reports and surveys by Government agencies including preliminary environmental assessments, lease documentation, and reviews for the purposes of granting foreshore development, quarry, and water permits and Provincial Government support.
- Reports of meetings with stakeholders and communities living adjacent to the Santo East Coast Road.
- MCA teams (comprising an engineer, environmental, social and resettlement officers) have visited and will continue to monitor each section of the road to identify any assets and people who may be negatively affected by the road-works. An inventory of potential losses is being developed for each section and will form the basis of the RAPs. Discussions with affected persons and communities regarding entitlements (Goodwill Entitlements Table) have been completed for some sections of the road and are underway for the remaining sections.

These reports and surveys form an important backdrop to this report. They are available from the MCA Office.

2.2 Compliance with the Compact and International Standards

The approach taken throughout this report is consistent with the Compact and related agreements, Vanuatu legislation and MCC guidance, specifically;

- MCC Environmental Guidelines;
- Government laws and regulations regarding environment and social issues;
- World Bank Operational Policy (OP 4.12) on Involuntary Resettlement;
- World Bank Rural Roads Checklist;
- MCC Gender Policy; and
- Implementing Agreement with Ministry of Lands to assist in the implementation of the EMP.

2.3 Consultations

A Consultation Plan, (available from the MCA Office and the MCA website), has been prepared to ensure effective communication between stakeholders and to ensure transparency and accountability at all stages of the Subproject. The Consultation Plan provides guidance to the contractor during implementation and, if issues arise during construction, a mechanism to address these, and should be used by the contractor to prepare a communication plan.

ESA consultations were held with the primary stakeholders, with representatives at the meetings from the 12 villages along the Subproject road, for whom the Subproject road is the only access to Luganville, aid posts, dispensaries and schools. The consultations were an "open" forum with any parties interested in the subproject invited to participate.

Information on the road programme and design was delivered to the community. During village consultations the communities were also asked to provide information on infrastructure under the road and identify any sensitive cultural and heritage sites that may affect the road construction and design. The meetings were well attended and the results of the consultation process are incorporated into the relevant sections of this ESA report. In many villages more informal discussions were held with women outside the formal consultation agenda. Details of the consultation attendees are included in Appendix A.



Figure 2: Mamas and youth attending the consultation at Port Olry Village

The field work, consultations, and meetings were undertaken by MCA-Vanuatu supported by implementing agencies, Government Departments, Provincial Government, and Chiefs in Santo during November 2008. These consultations will continue throughout implementation and ensure that a joint whole of government and broader consultative approach is applied and is effective in addressing community concerns and changes in design and construction.

Consultations have occurred with:

- Communities adjacent to or likely to be affected by the road works, including plantation communities.
- Affected leaseholders and custom owners.
- Chiefs, Assistant Chiefs, and community spokespersons.
- Women's Association.
- Women and young people.
- NGOs –World Vision and Save the Children
- SANMA Provincial Council and senior staff
- The Santo Tourism and Hospitality Industry Association
- The Santo Land Transport and Taxi Association
- Government stakeholders.

The records taken for all consultations are available to the public for review at the Provincial Office in Santo. Reports of these consultations are being progressively placed on the MCA web-site.

Through the consultations and research, special note was taken of any vulnerable people likely to be affected by the road works. Women and children living in villages adjacent to the Subproject have been identified as being vulnerable with regard to the establishment of the two proposed construction camps. Single parent families who suffer any loss of food crops are another group. The communities living on and working for large plantations (landless communities) are also vulnerable, with the women and children in these communities the most vulnerable group identified during the consultations. Measures to mitigate any potential impacts on these groups and to provide any income-generation opportunities have been recommended in the EMP.

Further consultation and disclosure will be done during implementation through:

- The Project's Consultation Plan;
- Continued up-dating of MCA's website;
- Preparation and dissemination of posters and brochures in English and Bislama, explaining the Project, works required, progress, and anticipated timing of the works;
- Public notices at the SANMA Provincial Council buildings;
- Information boards regarding the approved Subproject and the proposed environmental management measures (including the DB Contractors EMIP) which will be posted at the day camps during Subproject construction;

- Media announcements;
- Use of the MCA-V/ SANMA formal grievance redress procedures;
- Further joint site visits and consultations by the MCA/SANMA road team, comprising the Santo Council of Chiefs Representative, the DB Contractor, MCA and its ESA consultants, SANMA Provincial Council representatives, and MCC, for the preparation of the RAPs, and Kastom Welkams at villages prior to the construction of each section;
- Joint site visits with the contractor, client and relevant Provincial Government representatives where issues arise during construction;
- Monitoring and site supervision by the Engineer;
- Monitoring of awareness-raising, such as the STI/HIV campaign.

All key reports are approved through the Government of Vanuatu procedures and by MCC and are available on the MCA website.

2.4 Description of Works

The final design of the road is being completed in sections as the quality of the existing road, culverts and crossings are assessed. The consultation and issues addressed in the RAPs may also affect the final design to accommodate the needs of the communities.

The description of works below is based on the existing alignment of the road. If an alternative alignment is proposed to MCA-V the realignment procedures process must be followed and all costs met by the applicant for approval to be obtained. If further assessment is necessary in accordance with the Compact, related agreements, Vanuatu legislation and MCC guidance these also must be undertaken at the cost of the applicant. The MCA Road Realignment Procedures are attached in Appendix D.

The 5 river crossings along the length of the road are all within the first 30km, are in varying states of operation and may require additional drainage and some upgrading. There are a number of blocked culverts running under the road. The location of these culverts have not all been identified and some input from PWD is required for the designers. These culverts will require assessment and clearing out or replacement.

The proposed works commence at the end of the bitumen seal to the east of Luganville. The end of the seal is the boundary between Luganville Area Council and East Santo Area Council. The proposed road construction will be a 7m carriage way with 5m of seal within this 7m and a 1m shoulder on either side. Beyond this there will be drainage of approximately 1.5m, depending on the topography. This design will be continued for approximately 14.5km, around the entrance of Matevulu College. From this point to Port Olry the road will maintain the 7m carriage way without the 5m seal. The pavement width will be 7m with the 1.5m wide drains on either side. Clearing of the whole 15m RoW may be required in some areas for the construction of the road. Where possible however the contractor will minimise the impact on roadside vegetation and fences and restrict construction to 12-13m of the road. Only vegetation that must be removed for construction of the road will be cleared and where established vegetation exists on one side of the road and less significant vegetation is on the other, the contractor will attempt to widen on that side of the road to reduce the impact.

The first 22km is relatively flat, mostly straight with a wide RoW cleared. Due to the width of the current RoW, construction should be relatively straightforward with some traffic management issues at the five river crossings within this section.

At approximately 22.3km the Pura River meets the road and branches widely along the left hand side of the road. Further research into the dynamics of this stream are required to design an appropriately located culvert. There are domestic and agricultural uses for this water and a tourism operation down stream of the road, which must also be considered in the final design.

After the Pura River the road is again wide (12 – 20m) and straight to the fifth and last bridge at Natawa River and Village entrance road. After the turn off to Natawa Village the road rises up relatively steeply to a plateau with Millennium Challenge Account-Vanuatu

Manioc Village, Seksek Community and the entrance to the Shark Bay Resort development site. The road width is mostly maintained despite the change in topography. A potential storage site for Downer is located at approximately 32 km on the right hand side. This section of the road is relatively windy and narrows in some sections. The road is again wide and straight as it passes Seksek community, Lorum village and then Bene community. The road then rises steeply again before dropping down to Hog Harbour. The road from the top of the hill above Champagne Beach to Port Olry is mostly narrow, windy with some steeper gradients. The contractor is currently looking for an additional construction camp in this area, whilst maintaining a suitable distance from Hog Harbour Community to reduce the social impact.

There are some noticeably sharp corners on this section, in particular at the Hog Harbour Primary School at 45.9km and then again before Port Olry at 51.3km. The final designs for these sections have not been completed, though some straightening of these corners is proposed.

2.5 Environmental and Social Assessment

The purpose of the ESA is to identify potential environmental impacts such as impacts on the ecological and physical environment, the use of hazardous materials, solid waste management, construction camps, quarries/ borrow pits, and secondary and cumulative impacts. It also identifies potential social and economic issues including any land acquisition and resettlement requirements, which require a RAP.

The ESA has taken into account Government regulatory requirements and the MCC Environmental Guidelines. The PESA and the Maunsell Resettlement Framework reports also included comprehensive reviews of the Government's policy, legal, and administrative framework in relation to environmental management and assessment in Vanuatu. Key documents reviewed by the PESA and during the ESA Consultancy include:

- Environmental Management and Conservation Act (No. 12 of 2002)
- Water Resources Management Act
- Mines and Minerals Act
- Forestry Act
- Vanuatu National Conservation Strategy and Action Plan
- Vanuatu National Cultural Council Act 1985
- Public Roads Act
- Fisheries Act 1982, and Fisheries Regulations; and
- National Parks Act
- Public Roads (Prohibition of Encroachment) Act 1988

MCA has established an implementing entity agreement with the Ministry of Lands to provide assistance in addressing any issues and requirements for permits identified during design and construction. Due to the MCA office being located in Port Vila, support from the staff at the SANMA Province has been generally agreed pre-construction with ESA work; during construction with managing grievances and providing communication links between communities, contractors and MCA staff in Port Vila; and post construction with the commencement of community contracts for road maintenance. MCA is currently establishing an implementing entity agreement with the SANMA Province.

With reference to MCC's Guidelines for Environment and Social Assessment, the PESA classified the overall Project as Category B. Such classification characterizes projects that could have localized environmental impacts with few, if any, being irreversible and that can be managed by appropriate mitigation measures. The Santo East Coast Road Subproject clearly falls within Category B since:

- All the upgrading works will be undertaken within an existing road right-of-way (ROW).
- MCA-Vanuatu and research to date has indicated that there is no requirement for any significant realignment.

For a Category B project MCC requires specific environmental and social impact analyses including preparation of EMPs.

3.0 Environmental Assessment

3.1 Ecological Impacts

Vegetation in Vanuatu, in addition to supporting eco-systems, provides communities with income, food and is part of kastom culture. The 'gardens' (subsistence crops) are located within and around villages, including adjacent to the Santo East Coast Road, or may be located some distance from villages depending on where the soil is fertile. These gardens provide the villages with their own food supply and excess to sell at market. There are a number of fruit trees and crops located within the road reserve that may require removal or pruning. The removal of any fruit trees or crops through the road-works will be addressed in accordance with the Goodwill Entitlements Table in the RAPs.

There are also a significant number of Nabanga (Banyan) trees located within a few metres of the existing Santo East Coast Road. These trees are significant resources and require significant consultation to remove or cut the roots of the trees. Options for any Nabanga trees with roots encroaching onto the road include realigning the road away from the tree and root system (recommended option), building up the road over the roots or cutting the roots to prevent ongoing maintenance issues (not recommended as may result in the death of the tree). Widening on the opposite side of the road to accommodate the Nabanga will depend on topography and vegetation on the opposite side of the road. The aerial roots once grounded establish their own underground root systems so could impact on the ongoing maintenance of the road. Widening on the opposite side of the road is therefore recommended as an option. The survey undertaken for the RAP includes an audit of the Nabanga trees potentially affected by the East Coast Road to advise the Contractor for final designs and the Environmental Management Implementation Plan.

The first 20km section of the Santo East Coast Road is mostly coconut plantations and cattle farming. There are Coconut Plantations again from 51km to the Catholic Mission (55km) before Port Olry. Coconut trees are the predominant species within the RoW that requires removal. Other crops that are within the RoW are bananas, breadfruit, nandao, some citrus and a row of Natangaora at Hog Harbour. Other roadside vegetation from the end of the plantations to Port Olry comprises mainly elephant grass, scrub and small wattle trees although some large Nabanga (Banyan) trees are located within a few metres of the existing road.

The road is adjacent to the coast in three sections for about 50m at 15.5km, at 19.9km where an estuary and mangrove area is close to the road and again at 49.6km where the road is adjacent to a blue hole on the coast (high tide the waves encroach into the fresh water). Where the road is close to the coast, typical coastal vegetation exists on the seaward side.

The American vine (*Merremia peltata*) is well established from the end of the coconut plantations all the way to Port Olry wherever land is not being managed. Some vegetation clearance will also be required for the preparation of the quarry and borrow pit sites, including the access ways to these pits.

There are two community established conservation areas that may potentially be affected during construction of the East Coast Road. These are:

- Han and Naru Conservation Area (46.5km Hog Harbour Community)
- Loru Conservation Area (approximately 300m down the road to Kole not directly adjacent to the Coast Road)

These community-established conservation areas provide protection of habitat for a number of species, including coconut crab. These conservation areas are in place to increase the resources in the area, protect resources for future generations and encourage tourists to the area. The province has not yet recognized these conservation areas in any formal planning, however the increase in tourism resulting from the improved road may stimulate a formal tourism planning exercise and increase the value and status of these areas.

The ecology of fresh water and marine environments adjacent to the upgraded road will be improved with reduced sediment loaded stormwater entering water ways as proper road drainage is introduced. During construction, silt management measure will need to be put in place and properly monitored to maintain water quality. With the implementation of the measures the local marine and river environments will not be significantly affected by road runoff. Improving the quality of inland coastal waters contributes to the supply of food catch for communities

harvesting shellfish and fishing. The improved water quality resulting from the improved drainage is further discussed below in section 3.3.

3.2 Physical Impacts

By following the existing alignment of the road (unless RAP or road safety issues require alternative alignments) the scale of the construction works proposed, including limited cut and fill requirements, means that the impact on soils and erosion will not be significant. As a result of the upgrading works (sealing and improved drainage and culverts etc) there will be a significant reduction in the existing level of erosion and sedimentation observed along the road and at creek crossings.

There are no sections of the road that are potentially at risk from coastal erosion. The closest point is at 15.6km where the road is approximately 7m from the high water mark and two large Tamanu trees are located between the road and the coast stabilising the foreshore. The road narrows at the blue hole at 49.6km and is approximately 4m above the blue hole running along a limestone cliff face that drops into the fresh water. It is recommended that widening for the road is on the opposite side of the road and the vegetation above the blue hole is protected during construction.

Dust nuisance for roadside settlements located within the first 14km will be significantly reduced after the sealing of this section of the Santo East Coast Road.

For the clearing of areas adjacent to the road for the storage of materials, equipment and construction camps (day camps and the two proposed overnight camps) during construction, site selection criteria should include minimum vegetation clearance. The EMP includes mitigation measures for these cleared sites including drainage and rehabilitation post construction. The RAPs address entitlements for temporary loss of land-use related to these selected sites.

Bridges and creek crossings are still being assessed by the contractor with regard to necessary rehabilitation works. If during construction any creek crossings or culverts require any works, environmental and social impacts including resettlement will be addressed appropriately as an Addendum to this report.

3.3 Impacts on Fresh Water Resources

During the construction phase temporary site drainage facilities including sediment fences, sediment traps and settlement ponds will be used to avoid direct runoff from the site into fresh water bodies or the foreshore, thereby mitigating potential impacts on coastal waters. These mitigation measures are identified in the EMP

The sealing of the road (first 14.5km section), repair of culverts and consistent standard of drainage design proposed for the length of the road will result in better management of stormwater runoff in the road reserve and where storm water discharges to surface watercourses. It is recommended that roadside drains, where possible, be constructed on the landward side of sections where the road abuts the coast and riparian margins. Appropriately sized sediment traps should then be installed and runoff discharged to the landward side. Thus, there will be reduced direct runoff from the upgraded road onto the coastline on completion of the road.

The impact will be an increase in the quality of water resources available for communities and eco-systems supported by the water resources. The water quality on the East Coast of Santo contributes to the pristine environment, often associated with the blue holes, which has supported the tourism 'boom' in Santo. Fishing and recreation are known to take place on a number of the streams and rivers that the road crosses, with tourist activities taking place down stream of the crossings



Figure 3: Students swimming in the Matevulu College Blue Hole

Though only a 14km section of the road will be sealed the drainage and upgrading of the pavement and design of the road to Port Olry will contribute to a reduction in silt runoff from the road. The reduction in the sediment load carried by the streams and rivers into inland coastal waters also enhances the quality of coral and sea life. This has ecological and socio-economic benefits related to tourism and supply of food-catch for communities. The blue hole north of Hog Harbour Village at 49.5km is directly adjacent to the road therefore additional silt management measures must be taken during construction and all vegetation between the road and the blue hole protected from any damage. Monitoring of the quality of the blue hole during construction should be undertaken by the ES Officer for SANMA in addition to the Engineer's site visits. As the blue hole is also currently a tourist operation it is anticipated that regular monitoring will also be undertaken by the operators. The contractor proposes to apply for a water permit for this blue hole to take water for compaction. Impacts of this will need to be carefully managed such as preventing any siltation during water taking, in particular from vehicles accessing the water.

3.3.1 Purea River

At approximately 22.3km the Purea River meets the edge of the road on the left hand side and runs along the side of the road for approximately 150m in both a northerly and southerly direction. The river was not flowing over the road at the time of the site visit however during long heavy rain events it was recorded by the community to flow across the road. There is currently a working culvert diverting the water from the entrance of Purea Village to a small overgrown pond on the right hand side of the road. It is assumed that this water is then fed into the blue hole approximately 400m from the road to the east. Due to overgrown wild taro plants in the river it was hard to observe the exact pattern of the flow. During consultation with the Purea Community and the landowner to the north (at the Tapas Community meeting) it was recorded that the river is sourced by two seasonal springs both with relatively small catchments, approximately 1km from the road. The streams from these springs meet approximately 200m to the west of the road and form a very wide and shallow mouth. The community reported that during short heavy rain events the stream did not flood or flow across the road.



Figure 4: Purea River running along the edge of the East Coast Road.

Two settlements use this water for their water supply but both watertakes are further upstream and will not be affected by the road upgrading. The other uses for the stream are for water taro plantations for both communities living adjacent to the river, washing by the Purea River Community living to the south of the stream and the tourism operation at the blue hole downstream for the road.

Any drainage works will affect these current uses of the river, as the flow of water will need to be properly managed and diverted to culverts under the road to prevent scouring of the road. Some works have been undertaken previously by PWD in an attempt to manage the river flow, perhaps in response to flooding. This was reported to have caused flooding of the adjacent coconut plantation to the north. It was also observed during the site visit that the Purea Community have blocked a culvert on the left hand side of the road to create a pool for washing and, reportedly, to limit flooding of the plantation.



Figure 5: Purea River culvert blocked by village to create pool for washing.

Considering the issues above it is recommended that additional consultation be undertaken with the stakeholders, adjacent landowners and users of the water on the options presented under the preliminary design for the drainage of this section.

3.3.2 Impacts on Water Supply

Water supply for the villages on the East Coast of Santo varies. Some is sourced from lower catchment springs and rivers and some from the upper catchment, in the forested terrain towards the centre of the island. The villages use a range of sources for water collection, including rain water tanks, wells for groundwater and gravity fed pipes for surface water from streams and rivers.

It is considered that the Subproject will not affect the quality of the water supply of villages located on or near the East Coast Road. The water takes from surface water are all upstream from the road and bridge crossings where the water will be taken for construction. Water supply infrastructure from source to the villages is known to be located under the road and running along side the road at a number of locations. This existing community owned infrastructure must be protected from damage during construction and retained within the new road. Some public water supply infrastructure that is being proposed to supply Matevulu College was identified during the consultation. The PWD proposed water supply however, will not be located under the road and is still 5 years away. A private developer in the Turtle Bay area also reported additional water infrastructure was being considered. They will submit any plans to the contractor before final designs to prevent the undermining of the road after completion.

The potential pollution of groundwater sources that are used for water supply for villages during extraction of material from quarry activity will be mitigated by measures and conditions required by quarry permits. Consultation with the Water Section of the DGMWR on groundwater systems and village water supply systems is also central to preventing any negative social impacts on groundwater supplies. This is addressed in the EMP with specific detailed requirements for the Quarry sites in the QMP.

The extraction of water for the compaction of the road and dust suppression during construction from surface water sources may be necessary during dry periods. The quantity of water required for compaction is also dependent on the frequency of rain. Approval for the contractor to take water in accordance with an agreed schedule of rivers and quantities (maximum rate of extraction) must be provided by the Water Section for water use related to construction. The permits must be approved based on the capacity of the river to support this level of supply without affecting the quantity of water available for downstream users. The Provincial Water Supply Officer will work closely with the contractors during construction to assist with the monitoring of these permits. The contractor is currently proposing to submit applications for water permits for all surface water bodies adjacent to the road, including the river running through the VARTDC northern campus. There is a section of road from Natawa River (24.5km) to Port Olry that does not have sufficient water supply for compaction purposes near the road. The contractor is continuing to look for appropriate sources of water.

Water permits will be requested for the following sources:

Chainage	Location	River/water source
4.1 km	Matantas	Matantas River

5.6	Ihro (or Suranda)	LobeLobe River
13.7	Matevulu	Bondum River
15.4	Matava	Matafou River
24.7	Natawa	Warore River
49.6	Hog Harbour	Blue Hole

3.4 Hazardous Materials and Solid Waste Management

Potentially hazardous substances in the form of petroleum products will be used in the construction of the Santo East Coast Road. These substances include (but are not limited to) oil and diesel for equipment. Waste will be generated from the dismantling of existing structures on the East Coast Road that are to be replaced, construction of the new crossings and from workers on site. Provisions for ensuring appropriate sanitary and solid waste management facilities, and hazardous materials management procedures are outlined in the EMP.

The organic waste collected from the clearing of the sides of the road will be disposed of in approved stockpile locations along the road. The MCA approval process will ensure that the stockpiles will not result in any siltation of waterbodies or have any visual effects from the road. There may be instances where the fill can be used in communities to assist in leveling an area of ground. This will be established in further consultation closer to construction.

3.5 Construction Camps

It is proposed that the main construction camp will be in Luganville and workers will be transported each day to the work site. The contractor is also proposing to accommodate up to 20 workers in a construction camp at 32.0 km near Shark Bay. This site is considered appropriate for the camp as the nearest villages are 2km (Seksek Community) and 8km (Natawa) from the camp, therefore reducing the social impact of these communities. The site has been previously used for storage of plant and machinery by PWD and contains two sheds. As the site is on leased land there are no community gardens around the site that might be affected by the development of the site. The vegetation between the road and the camp should be retained to create a buffer between the road and the site.

The contractors are also considering a second construction camp in the Hog Harbour area. This camp will be smaller with overnight accommodation of up to 10 workers with adjacent storage and stock pile areas. The location of this camp is yet to be determined but should be as far from local communities as possible to reduce the impact on these communities. Once the site is selected, an additional assessment by the MCA ES Officer should be undertaken before approval is granted.

The construction camp will include workers' living and eating areas and an equipment storage and servicing area. The site will also be used to stockpile road building materials. The management of the construction equipment operation and servicing on site should ensure the prevention of spills and pollution, which should be addressed in the Health and Safety Plan. The EMP includes provisions for ensuring appropriate sanitary and solid waste management facilities at the construction camp to reduce environmental degradation. Issues such as health and safety, risk of spread of communicable diseases and stress on resources and infrastructure, potentially resulting in issues with communities are also included. Water permits will be required to supply the construction camp with water. There is no known water source on the site so a new source may need to be developed.

Day camps may also be established for the storage of equipment and materials for each 5km stretch of road being rehabilitated. These sites will also be used by workers during breaks throughout the work-day. There will be sufficient portable toilets located on the sites, a container and area for the workers to eat and rest. It is considered that the temporary use of these sites will have a minimal impact on the surrounding environment. The sewage from the portable toilets must be disposed of at the Luganville dumpsite. Sanitation systems should be located at a minimum of 100m from surface water.

Construction camps and the day camps provide economic opportunities for nearby communities selling food and laundry services to the workers. These issues are included in the Social Assessment in Section 5 of the ESA.

3.6 Quarries/Borrow Pits

There are a number of sources for coronus pavement material available for construction of the Santo East Coast Road Subproject. Firstly there will be some material available as a result of the construction of the road; where cuts are made the material will be used as fill for base material. Additional material will be quarried from existing licensed pits at different points along the East Coast Road. A total of 5 existing unlicensed limestone borrow pits have been operated by PWD and are located close to the Santo East Coast Road. These pits are available to the Contractor to apply for a license for extraction of coral for road pavement materials. Coral will not be mined from coastal zones and no live corals will be mined or used.

In view of the fact that there are a number of borrow pits available for use by the Contractor, it is recommended that these existing pits are licensed and utilized wherever possible to avoid the need for developing new pits, and the associated environmental impacts from clearing vegetation and extraction. The decision of which quarries and borrow pits are to be used will also be dependent on costs related to transport of materials from pit to site, extraction, access to the pit and fees or royalties to be paid. Initially, the Contractor has identified five potential borrow sites along the Santo East Coast Road which are currently being investigated as to the suitability of their materials prior to a formal request for licensing or a review of requirements to extend the current operation.

The five sites include:

- Matevulu College (13.8km)
- Manioc (26km)
- Loru (33.6km on the road to Kole)
- Lotgen (40.6km)
- Port Olry Catholic Mission (56.8km)

The Quarry Management Plan (QMP) prepared by the Contractor will provide mitigation measures relating to potential environmental impacts resulting from the extraction of material. The environmental impacts were identified during an environmental screening of the five potential sites listed above. These assessments are available for public review from the MCA Office.

The environmental screening indicated that all of the proposed additional sites have either been previously used as quarries (Loru, Matevulu College and Port Olry Catholic Mission), or currently being used as a pit by PWD (Manioc and Lotgen). Though none of these sites have current quarry licenses for the purpose of environmental screening these five sites should be considered as existing borrow pits or “highly disturbed” sites. Due to time constraints the basic preliminary environmental assessment undertaken for these sites did not include consultation with the Kastom Owners. A PWD representative was present on the field visit, and only for Lotgen Pit was the kastom owner present. During the assessment undertaken by the Minerals Section of the Department of Geology Mines and Water Resources (DGMWR) it is therefore necessary to undertake a more detailed PEA in consultation with the Kastom Owner. This would be necessary to progress the application of a quarry permit should these sites be selected for use by the DB Contractor. The PEA (attached in Appendix C) recommended that for each of the pits an additional site visit with kastom owners is undertaken before approval is gained.

All borrow pits have the potential to contaminate groundwater by exposing the water table to the air and allowing contaminated surface water to leach into the ground. Borrow pits need to be located away from groundwater supply wells during restoration of used borrow pits. The DB Contractor will ensure that the groundwater table is covered and not exposed to contamination.

The EMP includes provisions to ensure that the environmental impacts of all borrow pits and crushing operations are minimized and acceptable. The EMP includes a requirement for the Contractor to prepare QMPs, which will address all the necessary environmental mitigation and site restoration requirements to ensure no unacceptable impacts will arise from pit operations.

For the borrow pit sites any resettlement issues will be addressed by RAP procedures. Where it is necessary to extend a pit, additional ESA issues may need to be addressed and appropriate permits gained from Government. Increased use of the access roads to the pits with heavy machinery may have increased impacts of noise and possible dust nuisance for adjacent landowners that will need to be considered in further assessments.

There are potential social and environmental impacts at Lotgen Pit and Manioc Pit relating to the community of plantation workers living adjacent to these pits. Consultation with this community should form part of the assessment for use of the pit, in particular impacts from noise, dust, vibration, clearance of vegetation, expatriates working close to their community and water supply.

The pits being considered are all more than 100m away from any water source including foreshore and surface water, therefore impacts from additional siltation on water quality as result of the pitting activity is not anticipated.

The DB contractor is required to give reasonable notice to the client should any additional quarries or extensions to the above quarries be required.

3.7 Secondary and Cumulative Impacts

Road improvements can lead to secondary impacts associated with improved access. Secondary impacts are difficult to measure but can ultimately have more profound consequences on the environment than primary or direct impacts. Over time they can affect larger geographical areas of the environment than anticipated. Monitoring of these impacts over time is necessary to measure any potential impact. Positive and negative potential secondary impacts may include;

- Increased exploitation of natural resources such as forests and protected areas as these become more easily accessed. This requires the relevant Government Departments to increase monitoring and enforcement procedures for the protection of forest and protected areas.
- The increasing impact of logging trucks on the new road and feeder roads should also be considered in forestry policy.
- Increased runoff from sealed road:
 - Incremental changes within the watershed may occur as a result of a change in drainage systems potentially generating additive effects resulting in damage to the function of ecosystems and communities relying on the ecosystem's services.
 - The effects of roadside drainage systems associated with the subproject are generally positive. Sections of the road currently prone to flooding as is commonly reported along the Santo East Coast Road will benefit from the implementation of a properly designed road drainage system.
- Growth in tourism activities.
 - Damage to vegetation and eventual erosion of roadside pull-out areas for tourist buses, in particular on the hill overlooking Hog Harbour where spectacular views from various points could encourage tourist buses to stop at particular locations in the absence of designated rest areas. Some mitigation measures that are recommended to the contractor include a designated parking areas established at an appropriate location to support the National and SANMA Tourism Plans and existing tourist patterns. Pull-out or car parking areas adjacent to tourist operations for blue holes will also be greatly beneficial for operators by preventing silt from unformed parking areas impacting on the blue hole. This will allow tourist vehicles to stop in a safe manner with minimal disturbance to the environment.
- Urban growth adjacent to the road, and expatriate leases.
 - Vegetation clearance,
 - Increased solid waste,
 - Competition for water and land resources.
 - Reduced access to marine resources.
 - Need for construction of improved services such as sanitation, power and telecommunications.

Apart from the construction of the roadside pull-out areas, mitigation of all indirect impacts is beyond the scope of this Subproject. However, it is important that Government planning authorities be aware of these issues and give them due consideration in all future development planning for the East Coast of Santo. MCA will continue to work with tourism planning authorities and stakeholders to maximize benefits from the Compact program.

With good planning involving broad stakeholder participation and taking advantage of lessons learned from other countries, many of the potential secondary impacts identified above can be mitigated to a greater or lesser extent. The PEA notes Vanuatu's environmental protection legislation and constitutional provisions, the adoption of multilateral Millennium Challenge Account-Vanuatu

and regional environmental agreements, the national strategic framework linking planning documents from the national policy level to the local planning areas, and streamlined public administration which should help to maintain and improve environmental quality. However it also notes that while the Vanuatu Government appears able to cope on the surface, budget constraints, lack of political will and a depleted Environment Unit shows a limited commitment to the environment. The potential negative secondary impacts of the project need to be seen alongside the benefits expected from the project. MCA will need to continue to promote a strengthening of environmental and social impact awareness and mitigation skills through the Program and with the implementing entities and the strengthened PWD team, especially through the new Environmental and Social Impact Officer position, once filled. The consultations identified that the PWD currently takes an indifferent and sometimes uncaring approach to consultation and environmental and social concerns, suggesting that the need for this position is urgent.

4.0 Social Impact Assessment

The Santo East Coast Road currently provides villages on the East Coast access to the provincial capital of Luganville, national and international airport and seaport. Of the estimated 30,400 people who live on Santo, about 1500 live in Port Olry and 10,700 live in Luganville, with the remainder living in smaller villages mostly in the South and East Coasts of Santo. The East Coast Road serves 26 villages, with 13 villages located along the road and 13 other villages in the wider catchment area. The population of the East Coast of Santo is around 4,000 the third most populated area after Luganville and South Santo. There are also a number of close islands that have boat landings at different points along the East Coast and travel to Luganville via coastal villages. The most regularly used landing is in the Sarami Plantation for Mavea Island which has a population of over 200 people.

Households in each of the villages are mostly engaged in subsistence agriculture (gardens) including growing of taro, cassava, banana, sugar cane, and yam, and some cash crop production (mostly coconut, banana and taro). Households in Surrender, Matevulu, Sarami, Turtle Bay, Tapas, Seksek, Manioc and Port Olry have livelihoods associated with the coconut plantations. Households in the first 20km also have livelihoods associated with the cattle farming activities working for the leaseholders.

MCA-V's 2008 Roadside Enterprise Survey undertaken to assist monitor the Compact, found that there are 106 different roadside business on the Santo East Coast Road, including Kava Bars, transport businesses, bungalows, retail and bakery. The majority of these businesses are small family-run businesses. The increase in traffic on the road anticipated with the upgraded road will increase the customer base for these businesses and provide greater opportunities for new businesses. Consultations with the tourism and hospitality industry and leaseholders indicated that there are a number of proposals for significant international developments being progressed to take advantage of the road upgrade.

Only the coconut plantation communities and Matevulu is connected to the national electricity grid provided by UNELCO; the other villages supply their own electricity with household generators, with some solar. Communication networks have recently improved with the roll-out of the Digicel network providing greater cellular network access to Santo.

4.1 Contribution to Poverty Reduction

The Subproject can contribute to local poverty reduction and improve the livelihoods and well-being of the people in the Subproject area by provision of income generation opportunities such as construction employment and provision of goods and services to workers. The MCA Steering Committee has directed that preference be given to ni-Vanuatu workers where possible, and that un-skilled work be reserved for ni-Vanuatu workers. This is supported in Vanuatu legislation and complies with MCC guidance that benefits are afforded to local laborers including women wherever reasonable.

The following guidelines are provided to assist the contractor;

- (i) Explicit prohibition of the use of foreign unskilled labor;
- (ii) Limits on the import of semi-skilled workers where such workers already exist or can be reasonably trained within Vanuatu.
- (iii) Unskilled labor for the Santo East Coast Road should be sourced locally in the first instance.

- (iv) A balanced approach should be taken in procurement for retaining good local labour and provide training with continued employment, where possible selected from local villages
- (v) Payment of legal wages to workers;
- (vi) No use of child labor for construction activities;
- (vii) Encourage the inclusion of women as well as the poor and vulnerable persons in the local construction force;
- (viii) Equal wages for men and women for work of equal value; and

MCC and MCA also encourage the use of locally sourced materials in the road reconstruction to the maximum extent possible.

Following reconstruction, upgrading and sealing (for the first section of the road), an improved flow of traffic, goods and passengers will provide opportunities for those seeking employment or economic opportunities outside the village and support greater distribution of tourism activities on the East Coast of Santo. This will help enable the transition from household level subsistence living to greater market production. Improved access to health services and education opportunities for communities will also contribute to poverty reduction.

Additional vehicles (cars and vans) into the Subproject area will increase transport services for passengers and cargo, reduce travel times for both vehicles and pedestrians, as well as reducing costs associated with vehicle travel along the road (vehicle operating cost savings) which will carry over to the public transport customers. The consultation in Port Olry Village found that the community has reduced the frequency of its public transport services from 5 daily departures to just two, until the road is improved. The existing poor road conditions damage vehicles beyond the communities' capacity to maintain them. It was reported in a number of communities that the road is currently the worse it has ever been, mostly due to the lack of maintenance recently by PWD.

An opportunity for contribution to localized poverty reduction is through enhancements to the tourism sector derived from an improved East Coast Road. The PESA noted that there has been limited tourism development away from Luganville and South East Santo. The condition of the road is a disincentive to development causing slow and uncomfortable journeys and considerable wear and tear on vehicles; tour operators are reluctant to use larger more comfortable buses, and tourists are disinclined to take the time needed to visit the north eastern parts of the island. The Santo East Coast road has some of the most attractive tourism potential in Santo, with beaches such as Champagne Beach and Lonnarc Beach. Tourist travel out of Luganville provides a reason for tourists to stay longer, spend more, and distribute the spending away from the main areas. The Government has proposed that upgrading of the road will promote further tourism development away from Luganville, and further agricultural and land development. MCA has opened up dialogue with the Tourism and Hospitality industry and has contributed to the new visioning of the industry's development through the early release of its tourism surveys and associated reports. Similar dialogue is being undertaken with the agriculture industry planners, including the forestry and copra industries. The proposed Implementing Entity Agreement with the Sanma Provincial Council provides an opportunity to take an integrated approach to helping the Sanma industries maximize the benefits of the road upgrade. This ongoing work will assist ni-Vanuatu in particular to identify income-generating tourism and agriculture opportunities emanating from the upgrade of the road.

Following completion of the re-construction there will be the need for a maintenance program to ensure the sustainability of the investment and improvements to access. By facilitating this program through the PWD Service Performance Agreement, supported by capacity-building assistance from the DB contractor, there will be increased opportunities for the engagement of community contracts through simple labour-based equipment support (LBES) methods. Community contracts have been used in Santo before with some positive and negative experiences. When developing these new contracts for community road maintenance the lessons learned under the previous contracts should be used to develop a more resilient system. Consultation with the stakeholders in the communities and the PWD staff involved should be undertaken before drafting up new contracts. The main components of the LBES approach include (i) introducing LBES methods of road construction and maintenance whenever cost effective; (ii) training and employing local small-medium sized community contractors, and (iii) supporting access to equipment through leasing, hire purchase and/or other methods. The DB contractor has undertaken to promote and support community road and bridge maintenance skills as part of its obligations to provide an ongoing maintenance plan.

Participation in any proposed LBES maintenance programs will provide opportunities for women and men to acquire skills in road works, which they could then apply to community-level infrastructure. Regular involvement in economic activities empowers women in particular by providing an opportunity to earn money and to be involved in decision

making. Access to income provides women an opportunity to acquire productive assets, further contributing to their economic empowerment. Overall, the community will benefit from the increased purchasing power of the workers in their communities.

The potential economic benefits can be summarized and measured in terms of:

- Improved connectivity for communities to health services;
- Improved access for tourism related activities, and benefits to the tourism sector in general;
- Induced agricultural production;
- Time savings (as a result of improved travel and vehicle speeds);
- Passenger and freight cost savings;
- Vehicle operating cost savings;
- Generated traffic; and
- Wages paid to local labor during road rehabilitation and for ongoing maintenance activities.

4.2 Improved Access to Services and Facilities

During the construction phase the benefits derived from improving access will not be realized. Indeed it will be important that construction activities do not unreasonably hamper access and movement of goods and people along the East Coast of Santo during the civil works and road reconstruction. The DB Contractor is required to prepare and submit a traffic management plan that will address this (refer to sub-section 4.6) and must provide appropriate notice for any approved disruption or closure. It is noted however, that access improvements are occurring early in the work on the Efate Ring Road and similar improvements may be experienced on the Santo East Coast Road.

During the operations phase, the social impacts and benefits in respect of improved access to services and facilities are the same as those already described for poverty reduction, in particular improved access to education and health facilities. No mitigation measures are required.

4.3 Land Acquisition, Realignment and Resettlement

The Department of Land, Survey and Records (DLSR) has advised that the reserve for the Santo East Coast Road had been surveyed and acquired. The Government has advised that there are no points where the road has deviated from the current alignment. However where realignment is recommended by the road designers for traffic safety, any resettlement issues relating to these deviations will be addressed in the RAPs. The other instance for realignment is where a third party, leaseholder or custom owner, proposes a realignment. Such proposals must be processed under the MCA realignment procedures (attached in Appendix D). The ESA site visits have identified a potential private realignment proposal in the Turtle Bay area. Any such proposals need to be processed, then approved or declined in advance of construction. MCA will also issue public notices to advise that such realignment proposals can only be considered if they are submitted before the end of 2008. Placement of these public notices should be actioned as soon as possible.

Generally the reserve is 20m wide but in some sections it is 15m. The indicative design standard (10m road including drainage) would allow for a construction zone beyond the roadway of between a total for both sides of the road of 5m and 10m depending on the width of the surveyed and acquired road reserve (i.e. 15m or 20m). For the purposes of construction the 5m to be cleared of structures and vegetation on either side of the 7m carriageway may need to be reduced at some points, for example where the width of the road is restricted by steep rock faces. Where the clearance of vegetation and structures is required to preserve sight lines and traffic safety the required 3m will be cleared.

Along both sections of road there are fences, structures, and trees that could require relocation to outside the RoW to allow construction of the road or access for plant and machinery for construction. These are being progressively identified, with the initial survey completed to develop an Inventory of Losses table. This will be further developed at final design stages. This information will form the basis of any RAPs.

There are also locations where Nabanga must be protected within the proximity of the ROW, and care will be required when working in these areas so as not to affect them. These have been identified during a joint road survey by the ES Consultant, MCA and the DB Contractor as part of the RAP work. Where simple structures (wood, thatch and corrugated iron), are required to be moved back beyond the ROW this can be done in less than one day, and will therefore have minimal impact on livelihoods. Discussions with owners of any assets that require relocation will be undertaken as per the Consultation Plan. The moving of structures (fences and stalls) can be done with assistance from PWD and, if required, the DB Contractor. The full RoW does not need to be completely cleared to facilitate the construction activities, as long as a construction zone can be accommodated. The details of the location of trees, structures and assets within the road reserve will be included in the RAP for each section of the Subproject. PWD has been advised that it should only clear and relocate items in the RoW as agreed in the RAP.

The relocation of telecom infrastructure and/or power poles may be required where they are located either in the existing shoulder or close to the edge of the road. There are possible power pole removals required only in the first 10km of the road upgrade. Depending on the constraints on the opposite side of the road these will be relocated appropriately to accommodate the works. MCA has an agreement with the Utilities Suppliers that these relocations will be funded by the suppliers.

Ongoing maintenance activities will include grading, filling of pot-holes and ruts, minor vegetation clearance to allow for proper drainage and around bridges and culverts. This clearing the sides of the road also facilitates better pedestrian access. These works are not likely to require land acquisition or create resettlement impacts during operation. It may, however, be necessary to locate new sources of gravel for road maintenance, which may involve resettlement impacts.

4.4 Impacts on Cultural Environment

To date there has been very little VKS survey work of villages located near the East Coast Road to identify sites of cultural, historical and archaeological importance. However, during consultations, the chiefs and landowners were asked to identify any sites of cultural or historical value, any 'tabu' sites. Two specific sites were identified. The first is a Christmas tree near Matevulu College entrance which was identified as a signal of the changing of the seasons for those living along the East Coast of Santo. This tree will be protected during the works.



Figure 6: Culturally significant Christmas tree

The second is just before the entrance to Port Olry Village where there is a large Nabanga tree with a Statue of the Virgin Mary and small alter built into the tree, located on the right hand side of the road within the RoW. This Nabanga is part of an annual ceremony and therefore will be protected during the construction. The construction programme should consider this festival on Assumption Day each year.



Figure 7: 'Mary tree' at Catholic Mission Port Olry.

As elsewhere in the Pacific cultural values are linked with the ecology of the area so ensuring the protection of streams and rivers, marine resources and substantial vegetations such as the Nabanga also supports the protection of cultural values.

No sites of potential archaeological significance were identified by the communities during the community consultations. However, some research undertaken by VKS have shown multiple sites related to World War II along the East Coast of Santo mostly in the south near Luganville and Matavulu. The road itself in its current alignment was constructed by the Americans during World War II. No other American war sites will be directly affected by the construction works.

Lapita pottery found at various sites around Vanuatu is linked to of the first arrival of people on the island, some 3,100 years ago, up until roughly 1,000 years ago. The first site is around the Eruwiti area (south Santo). There are 3 other known Lapita sites in Santo in Luganville, Port Olry and Big Bay. Some consideration during construction in the Port Olry Village section of works to the occurrence of Lapita pottery should be made. The VKS has requested immediate notification and adherence to the VKS protocol if any objects of archaeological significance (i.e. anything that does not occur naturally), including human remains, are uncovered during construction.

4.5 Health and Safety

The Subproject's construction phase can cause a range of health and safety impacts. The main impacts on health and safety are associated with

- (i) Air pollution and noise;
- (ii) Contamination of local water supplies (runoff from road works, groundwater contamination in borrow pits and waste water from construction camps);
- (iii) Risk of accidents at work sites;
- (iv) Traffic safety issues; and
- (v) The risk of spread of communicable disease is considered to be medium to high and is dealt with in the next sub-section.

Observing general health and safety requirements, including provision of safety and protective gear and equipment to workers, will reduce the risk of accidents at the work sites. The construction camps will be equipped with a health post, which will include first aid and basic medical supplies. To reduce the risk of incidents at the camp or work site, access to the construction camps and work sites by other than those authorized will be prohibited.

It should be noted that the Design & Build Tender Document requires that the DB Contractor "Implement health and safety requirements of the approved EMP and directives as issued as a result of periodic inspections to be undertaken as part of the supervisory role required of the Engineer, to ensure compliance with the requirements of the EMPs."

Mitigation measures for reducing and avoiding impacts on health and safety include:

- Provision of adequate protection to the general public in the vicinity of the work site, including advance notice of commencement of works, installing safety barriers if required by villagers, and signage or marking of the work areas;

- Awareness campaign on traffic safety to be implemented for communities living along the East Coast Road by MCA and the Province, in particular addressing the safety implications of the reduced pavement width. Awareness to be delivered to the public transport providers and drivers.
- Provision of safe access across the works site to people whose villages and access are temporarily affected during road rehabilitation activities;
- Use of signs and other appropriate safety features to indicate construction works are being undertaken;
- Adequate signage and security provided at the work camp site and prevention of unauthorized people (including children) entering the work camp site or workshop area;
- The DB Contractor will include an environmental specialist to undertake environmental management responsibilities such as preparing EMIPs, monitoring and also to address health and safety concerns and liaise with MCA, PWD-ESU and villages (as per the Consultation Plan);
- The DB Contractor will provide adequate health care facilities including a health post and access to first aid facilities if construction camps are set up. The DB Contractor will provide construction workers personal protection equipment and training of all in basic sanitation, hygiene and health care issues, health and safety matters, and on the specific hazards of their work;
- The DB Contractor will ensure that no wastewater is discharged to local water bodies;
- The DB Contractor will ensure safe and clean facilities including sanitation and drinking water is provided to all workers;
- The DB Contractor will ensure any borrow pits used for coronus and other materials extraction are properly restored to ensure groundwater resources are not contaminated;
- No site-specific landfills will be established at the construction camps;
- Septic tanks and garbage receptacles will be set up at construction camp sites camps, which will be regularly cleared by the contractors to prevent outbreak of diseases. Waste will be disposed of at sites approved by the Environment Unit, MCA and local land owners; and
- The DB Contractor will ensure that there is adequate drainage throughout the work site (including any camp) to ensure that disease vectors such as stagnant water bodies and puddles do not form.

Following completion of construction activities, health and safety impacts are associated with traffic issues; these are dealt with below in Section 4.6.

4.6 Traffic and Access Issues

The proposed road rehabilitation will attempt to contain the works within the existing alignment and 15 – 20 m road reserve. If a realignment of the road is required for traffic safety reasons an appropriate assessment will be made to address any issues. There are currently two potential realignments being proposed for safety reasons for the Santo East Coast Road. The first is at 45.8km Hog Harbour Primary School where an unsafe bend restricts sight lines and safe turning. During consultation realignment on the other side of the school was suggested by the community as a way to improve the safety of the corner in particular for children crossing the road to the rest of the village. However it is considered that other measures to manage the safety of the corner, slight realignment to straighten the corner and improve sight lines, fencing the school and diverting the children to a safe place for crossing, speed bumps and signs are a more appropriate method to reduce risks. The second section is before Port Olry at 51.3km where a number of tight corners create a potentially hazardous stretch of road. It has been agreed that a design solution is necessary to reduce risks on this section. The preliminary designs for this section are currently being prepared, however it is anticipated that approximately 600m of cattle fence will be affected, (this will be addressed further in the RAP).

The DB Contractor is required to submit a traffic management plan that will address access and safety issues during construction. There are no proposed road closures for the Santo East Coast Road. The most impact will be delays for traffic during works associated with the five bridges. Traffic management and construction methods will minimise the impact and time in delays for vehicles.

Road improvement projects can also inadvertently cause adverse impacts on road and traffic safety as a result of higher vehicle speeds due to improved road conditions. An increased traffic volume and possibility of higher vehicle

speeds can increase the potential for accidents involving pedestrians. Children walking to and from school along the edge of the roads with the reduced pavement width of 5m create a potential hazard with passing cars. In Vanuatu children often play on roads, and families traditionally use roads as a central area for social gathering, particularly in the evening. Traffic speed, especially through villages, is a risk requiring management for the operational phase of the subproject. In general traffic safety will be improved following rehabilitation and routine maintenance of the project road, inclusion of the shoulder and minor widening of existing road formation where it is less than 6m (within the ROW) to allow for safe passing of vehicles. This will provide a safer option for pedestrians using the road to go to gardens, schools and other services along the side of the road. The clearing of vegetation from the drainage areas and shoulders as part of the community contracts will be essential to maintain this pedestrian access.

The design improvements that could encourage higher speeds will be mitigated through signage and physical speed deterrents such as speed humps (favored by villages consulted) or chicanes. A reduced design standard through villages, which force drivers to slow down, is also acceptable Pacific practice. Awareness-raising through village meetings and through road safety programs included in schools will help mitigate some dangers. An ongoing traffic safety campaign and awareness is recommended to reinforce behavior change messages.

It should be noted that overgrown vegetation poses a traffic hazard, especially when it reduces sight lines around corners. Vehicles are known to cross to the other side of the road to avoid heavily vegetated areas along sections of the existing East Coast Road, posing accident risks to oncoming vehicles. Clearance of road-side vegetation should be included as part of the road maintenance program.

There are a number of large beef cattle farms adjacent to the Santo East Coast Road, particularly in the first 20km. There are currently no dairy farms located adjacent to the proposed upgraded sections of road therefore there is minimal movement of cattle within the road reserve. The potential risks to traffic safety of wandering stock on the road, in particular at night, and to the stock has been identified by communities, plantation owners and contractors. Proper cattle fencing must be maintained by the land owners and where sections of the cattle farms are not fenced (one section at Sarami Plantation) fencing will be requested by the SANMA Provincial Council. The Turtle Bay plantation farm manager has identified an area where the cattle will cross the road at different times of the year when moving stock between pasture. Signs warning drivers of this crossing have been agreed to by the contractor to improve safety of this practice. A similar sign may be required at the cattle plantations near Port Olry.

Mitigation measures for reducing and avoiding impacts on traffic and access include:

- Signs and other appropriate safety features will be used to indicate construction works are being undertaken;
- Preparation (by the DB Contractor) of a traffic management plan addressing access issues during construction activities (as required by the tender document);
- Provision of safe access across the works site to people whose villages and access are temporarily affected during road rehabilitation activities; and
- Consideration of a reduced design standard through villages, and/or inclusion of signage and physical measures (such as speed humps and chicanes) to reduce traffic speed in the vicinity of villages.

4.7 Risk of Spread of Communicable Diseases and Trafficking

The transmission of communicable diseases such as sexually transmitted infections (STIs) and Human Immunodeficiency Virus (HIV) is a potential impact of the construction phase posed by construction workers engaging in either commercial sex or sexual relationships with local people. Communities living along the Santo East Coast Road have particularly high rates of STI's especially among communities working on the plantations, often from other islands.

Matevulu College is located adjacent to the road with over 600 youths living on the site. In addition to the construction team the development of the proposed borrow pit on the College site will require overnight accommodation for security staff. An HIV/STI awareness programme at the school should be part of the contractors awareness training programme.

The high risk of spread of STIs and HIV associated with the project is a function of a number of factors including

- (i) Lack of knowledge about the risk;
- (ii) The length of time large and relatively mobile populations will be located in the subproject area; and

- (iii) Engagement in high-risk behaviors (such as increased alcohol consumption and multiple partners etc).

The subproject will require a construction workforce of approximately 80 people. The current proposal is for a team comprised of approximately 20 foreigners, and 60 Ni-Vanuatu, with local people from Santo employed as a priority. The majority of workers will be located in accommodation in Luganville, with others located in the construction camps proposed. The workforce is required for supervision, equipment and vehicle operation, vegetation clearing, material sourcing, pipe and culvert crews, erosion control crews, pavement crews, bitumen spraying crews, manager, as well as ancillary staff such as cook, cleaners and security guards. This construction force could be located on Santo for 18 months.

Experience with construction camps in other Pacific Island countries infrastructure projects in areas with limited health awareness, is that during construction phase there is a risk for both the construction workforce and the communities along the road. A STIs/HIV/AIDS awareness and prevention campaign in conjunction with the ongoing efforts of Government, Donors and the NGO partners is considered to be the most effective mitigation of these risks.

There are currently a number of different agencies working on STIs/HIV/AIDS awareness-raising and prevention campaigns in Santo, under the general coordination of the Santo STI/HIV/AIDS Committee. Local NGO, Wan Smol Bag, is part of the ADBs regional HIV/AIDS program and provides information and builds links with other organizations in the delivery of awareness and prevention programs, and supports communities directly with general and reproductive health (including establishing community health clinics). Wan Smol Bag has developed a package of instruction, education, and communication (IEC) materials¹ related to STIs and HIV and a module or standard workshop for delivery, which could be ideal for the contractor's construction force and adjacent communities prior to construction. Wan Smol Bag has also developed relationships with national and provincial health agencies and other NGOs working in the sector. Linking with an already established network in the area would be beneficial in terms of implementing the awareness and prevention aspects of the program aimed at the villages along the subproject road. In Santo, the Wan Smol Bag office is in the Youth centre and has a nurse on staff. It has been reported by a previous staff member of the Wan Smol Bag Santo that 25-30 new cases a month of STIs were being reported this year. The statistics for STI show that Santo and in particular South Santo has the worse rate of STIs in the country.

Other HIV/STI awareness activities on Santo include a Youth Forum (December 1st 2008) run by the Rural Health Centre on Santo and previous awareness campaigns run by the Ministry of Health. It is important that any proposed awareness activities related to the project relate to Government programs and reinforce their messages. It is also recommended that the network of Community Youth Officers supported by Save the Children are utilized as liaison officers to coordinate awareness activities in the villages to ensure the audiences are appropriate and youth are able to respond in a comfortable environment.

Mitigating the risk of spread of STIs and HIV/AIDS during the construction and operation phase of the subproject will include implementation of the STIs/HIV/AIDS awareness and prevention program as a preliminary program for all major construction and will include:

- Requirement for the DB Contractor to ensure the construction workforce attends STI and HIV/AIDS prevention workshops (including in Bislama for the local workforce). The workshops will be delivered to the contractor's workforce prior to commencement of any civil works;
- Village-based community awareness-raising about transmission of STIs and HIV, reproductive health and safe sex². The program will be implemented prior to contractor mobilization in the area and will link with local NGOs, youth liaison officers and Provincial Government Officers to enable awareness that is appropriate for women and youth and maximizes the effect on these vulnerable groups;
- The DB Contractor providing adequate health care facilities including an HIV/AIDS education posts and first aid facilities within the construction campsite³; and

¹ The IEC materials are currently being translated into Bislama with funding through SPC (the regional organisation focusing on HIV/AIDS in the Pacific).

² These include separate meetings for men and women and within each gender group further separating them into groups of teenagers/youth and older people in order that age and gender specific and targeted messages can be included in the workshops.

³ Under the provisions of the Design & Build tender document (sub-clause 6.7) the Contractor is required to implement an HIV/AIDS awareness program in the Project area as required by the approved EMP.

- If required a follow-up awareness campaign at an appropriate time during construction to be determined by the contractor and the provider, in consultation with MCA.

In addition to the provisions of the EMP, the following measures for the management of social risks are also recommended:

Table 1: Measures for Management of Social Risks

Spread of STIs/HIV/AIDS and Child Exploitation		
Subproject Activity	Risk Management activity	Expected outcome
Immediate pre-construction	EMP to include provisions for HIV/AIDS education and make condoms accessible to all employers (paid by the DB Contactor) Wan Smol Bag HIV/AIDS training team contracted to provide community awareness program and adapted programme for Matevulu College students.	All households in the subproject area will be fully informed about the risks of HIV/AIDS; No unprotected sexual activity will occur during construction
Construction	Monitoring by DB Contractor and FIDIC Engineer	HIV/AIDS prevention program is implemented
Maintenance	Reinforcement of HIV/AIDS message during performance service agreement contracts and other maintenance work, including HIV /AIDS education to maintenance contractors	

4.8 Other Social Impacts – Stress on Resources & Infrastructure

Workers accommodated temporarily in construction camps can place stress on resources and infrastructure of adjacent communities, which could lead to antagonism between residents and the contractor. The DB Contractor will re-construct the road in 5km sections (where possible with the weather dependent construction programme) and will set up satellite day camps to support construction workers within that 5 km section being rehabilitated. These day camp areas will include a container for equipment adjacent to the road, a simple rain shelter and 2 toilets. These areas will be determined in consultation with villages as they will require clearing of roadside vegetation and possible temporary resettlement issues.

The provision of two construction camps for the storage of materials, equipment and accommodation for up to 20 workers will also be established during construction. Provision of water on these sites may also require water permits to be sought from the DGMWR prior to establishment.

The contractor will where possible utilize the community contract system with the support of PWD to engage local labor to clear scrub and over-hanging vegetation prior to construction. This will reduce the need to accommodate additional workers from outside the village in the construction camps and reduce the pressure of on the surrounding resources.

Mitigation Measures:

- The proposed construction camps (overnight accommodation) will provide temporary facilities such as health care, eating and sleeping areas (including a cook and provision of meals), water and electricity supply, telecommunications, so that existing facilities and services of adjacent villages are not over-burdened.
- The DB Contractor will be responsible for removing all temporary structures and reinstating the land to its pre-project condition at the completion of the works for both day camps and, if necessary, the construction camp.
- Construction workers should be limited to subproject sites (immediate site of works on the road and camp site).
- Workers should be briefed on land owner and property boundaries and village protocol, rules and terms of conduct (especially when addressing women and elders).

- Contract employment rules will be enforced relating to any damage of productive trees and gardens, and access to the beach, foreshore and freshwater springs, and protected areas including reserves.
- The DB Contractor will be required to comply with the provisions of the MCA Consultation Plan, including the development of a communications plan for outlining protocol between the project team and community, including the role of the contractor's Stakeholder Liaison Manager, village chief and elders, as well as communication between the contractor and Project (MCA, FIDIC Engineer).
- The DB Contractor will be responsible for the behavior of construction workers outside working hours for those construction workers accommodated outside Luganville. In the event that there are complaints about the behavior or conduct of construction workers, complaints will be dealt with immediately and seriously, by the contractor, and the method of addressing the grievance will be relayed to the complainant. If the complainant is not satisfied that the complaint has been resolved, the worker causing the complaint should be restricted to working on another site. The lodgment and resolution of complaints will be recorded and monitored.
- Children and teenagers should be expressly forbidden entry to the construction camp. This will also assist in reducing the risk of coerced or transactional sex and other forms of child exploitation.
- Access to the construction camp and work site should be carefully monitored. Only authorized personnel shall be permitted entry into the construction camp.

The increasing demand for land, in particular coastal land, as a result of improved access may have an indirect negative impact on Ni-Vanuatu land owners. The increase in land values in recent years in Vanuatu, in particular on the East Coast of Santo has led to disputes within and between communities over the rightful owners of pieces of land and therefore who has the right to lease land. These disputes can fracture communities and result in expensive and time-consuming court cases. MCA has entered into an agreement with the Ministry of Lands for the appropriate officers to provide timely assistance to mitigate these issues arising during the East Coast Road Subproject.

4.9 Gender Issues in Vanuatu

Clear gender differences exist in Vanuatu, in terms of access to resources and entitlements. Current social, economic and political indicators highlight the disadvantaged position of women in all areas. Discussions with women undertaken during the consultations recognized the following issues underlying potential impacts on women of the subproject:

- The gendered nature of transport in the project area and the differential impacts of failing infrastructure between the genders;
- Women's participation in construction activities; and
- Role of women community contractors and the barriers they face in responding to the implementation of a gender-equitable community road maintenance program.

The results of the discussions with communities identified both negative and positive social impacts on women that could result from the subproject. The main benefits of the subproject identified by the women related to improving access to schools for childrens and heath care services in Luganville.

There will also be economic opportunities during construction with both traditional gender roles such as provision of food to construction workers and potential for employment by the contractor related to construction.

An important strategy will be for MCA to work closely with the Sanma Women's Association.

Measures that can be included in the project to maximize benefits for women, and to remove any constraints on the participation of women, can include:

- Identify and remove any potential gender-bias within the procurement processes for construction workers;
- Provide training and information on LBES and maintenance procedures that address gender issues including a greater focus on gender-balanced community participation, enabling an understanding of the gender impact of failing infrastructure, and of the non-economic benefits of investment;
- Encouraging community contractors to include women;

- Identify means (such as micro-finance or revolving credit schemes) to overcome other possible barriers such as difficulty in securing the start-up capital that a small-scale contractor or community contracting group requires to purchase equipment and tools and to provide flexibility with cash flow (especially prior to first invoice being paid);
- Support women's involvement in economic opportunities along traditional gender roles such as provision of food to construction workers while encouraging women's involvement in less traditional roles such as construction activities
- Requirement for equal pay for equal work for both men and women; and
- Requirement for Contractor (construction) and PWD (maintenance) to submit records of labour, dis-aggregated by gender and origin (imported or Ni-Vanuatu local or outside provinces).

The improved access to services and facilities in Luganville will have longer-term gender benefits of improving the education and health status of women with increased opportunities of employment outside the village (in addition all community members will also be able to access health care services especially during emergencies). The gendered outcomes of the project will be enhanced with women's participation in construction and maintenance activities.

With the implementation of LBES maintenance activities in the villages participation will need to be balanced with the usual (paid and non-paid) workload of women and men. Women may be disproportionately affected since in addition to providing labor, they will continue doing household chores and other unpaid work. This means that they may experience even more fragmented use of their time and have less time for leisure and rest.

Table 2: Summary of Subproject Gender Impact

Level	Labour/Time Issues	Benefits
Women	Acquire skills in road works; Hours spent on road activities can lead to more fragmented use of time and less time for rest and leisure	Access to cash; Increased control over, and access to, productive assets; Empowerment Increased exposure to public life; Increased confidence
Men	Acquire skills in road works; Hours spent on road activities can lead to more fragmented use of time and less time for rest and leisure	Access to cash; May wish to control income of wife/daughter Uneasy about women working on the road
Household	Women have less time for household chores and unpaid work; Children, especially young become more engaged in household chores may affect school attendance.	Increased household food security; Improved household income; Improved nutrition Spare cash for school fees for children Ability to improve houses i.e. tin roofs/water tanks
Community	Less time for community work, meetings, group leisure; Formation of new networks	Trained community in road works Skills transferred to other community infrastructure works; Improved farm gate prices Reduced commodity prices Better access to markets and social services

4.10 Enhancement of Project Benefits

Overall the subproject will result in beneficial impacts. The table below outlines how these benefits are maximized.

Table 3: Measures for Maximizing Subproject Benefits

Subproject Activity	Risk Management activity	Expected outcome
Immediate pre-construction	Households in subproject area fully informed about road works and will benefit from them to the maximum extent possible;	All households in the subproject area will cooperate with the project

Subproject Activity	Risk Management activity	Expected outcome
	Contractors are required to rehabilitate and maintain the road with the maximum local labor inputs, commensurate with good quality work paid at least the minimum rural wage; Awareness creation about the potential negative impacts (HIV/AIDS transmission and prevention)	
Construction	Consultation regarding formalization of road-side stalls (upgrading standard of construction and inclusion of lay-bys to improve safety for vehicles stopping etc) Inclusion of tourist attraction signage highlighting villages and sites off the regular tourist route.	Tourists are visiting villages not on regular tourist route; safe parking is provided at road side stalls.
Gender equity measures	Construction procurement in a manner that promotes women's involvement with traditional gender roles and non-traditional; equal pay for women and men; encourage community maintenance contracts for Road to include women.	Women from within subproject area have opportunity to participate in project; Livelihood and socio-economic status of women improves
Maintenance	PWD and MCA ensure plan for maintenance contracts go to community groups wherever possible (as per PWD performance service agreements)	Road is rehabilitated and maintained with maximum local labor inputs

Proposed amenities (parking, pull-outs, shelter or toilet facilities) to enhance tourism activities along the Santo East Coast Road may be presented to communities as an option where possible to enhance the benefits of the Subproject. The design and alignment of the road should consider the proposed location of these amenities and where possible facilitate access to these parking areas.

4.11 Conclusions of Social Assessment

The Subproject is welcomed by the SANMA Provincial Council, the people in villages along the road, leaseholders and enterprises, the key industry groups and NGOs. Although there is widespread disappointment at the lack of funds for tar seal from Matevulu to Port Olry, stakeholders and beneficiaries support the upgrading of the road. The project will have an overall beneficial impact; improving access and connectivity, reducing travel time and travel costs, supporting tourism, while improving livelihoods and socio-economic conditions along the East Coast of Santo.

The overall level of negative social impacts will be minor and the mitigation measures will manage any impact. The risks associated with the Subproject relate to the construction phase, and will therefore be temporary and localized. The mitigation measures include effective management of construction workers by the contractor, appropriate awareness of village protocol and rules to be provided to construction workers, and good environmental practices for construction sites.

The spread of STIs and HIV/AIDS during construction phase has been identified as a potential risk. This can be addressed through implementation of a STIs and HIV/AIDS awareness and prevention campaign aimed at (i) DB Contractor's employees, and (ii) villages along the road.

Another social risk of the Subproject is potential conflicts between contractors, local land owners and residents of the Subproject area. The communities raised concerns of sexual harassment of village women, damage to property, theft, drunkenness and fights between local men and outsiders. These issues would need to be addressed in the operation and management of the two construction camps being considered by the contractor.

The DB Contractor will be required to provide suitable accommodation for the foreigners and Ni-Vanuatu who do not live locally. Foreigners as well as Ni-Vanuatu from other islands or provinces employed by the DB Contractor can be considered as an ‘opportunity’ for young people to access money and goods which would normally be out of their reach.

In addition to mitigating social impacts (or managing the social risks), there are measures that can be included in the project to maximize benefits.

Secondary or cumulative benefits of the Subproject that can be maximized by measures put in place during construction include empowerment of women in communities who have greater access to economic opportunities and training through the community maintenance contracts. Another potential secondary benefit on completion of the road is the increase in children attending school. It was reported in communities that a barrier to education is the high cost of public transport to schools. Improving the road is anticipated to reduce the cost of transport reducing the financial barrier to education for some children.

5.0 Environmental Management Plan

The EMP identifies the potential environmental and social impacts and outlines the mitigation measures for the identified impacts required for the Santo East Coast Road MCA03 Subproject. The Contractor is required to produce an Environmental Management Implementation Plan (EMIP) for the subproject to detail how the Contractor will implement the specific site mitigation measures. This must be completed and approved by the client prior to commencement of the upgrade works.

Institutional responsibilities and reporting and review requirements associated with all subproject EMPs implemented under the MCA Project are described below. This is followed by the detailed EMP matrix (Table 4) and Environmental Monitoring Plan for MCA03 the Santo East Coast Road Subproject (Table 5).

5.1 Institutional Responsibilities

5.1.1 MCA-Vanuatu

MCA will be responsible for ensuring that the overall project is implemented in accordance with the MCA Compact and related agreements, Vanuatu legislation and MCC guidance. These include:

- MCC Environmental Guidelines
- Government of Vanuatu laws and regulations regarding the environment and social issues;
- World Bank Operational Policy (OP 4.12) on Involuntary Resettlement
- World Bank Rural Roads Checklist
- MCC Gender Policy

5.1.2 The Engineer - Queensland Consulting Project Partners (QCPP) on behalf of PWD

The QCPP as the FIDIC Engineer will initially supervise the overall project works through the specially created Engineer Support Unit (ESU) which includes an Environmental and Social Officer. At an agreed date, this responsibility will transfer to the ESU and PWD, with QCPP providing technical support. The Engineer will be responsible for ensuring, on a day-to-day basis, that the mitigation measures and monitoring activities identified in this EMP are implemented.

The Engineer will be responsible for the following activities:

- Undertaking its specific responsibilities for implementation of environmental mitigation measures as specified in Table 4.
- Carrying out regular monitoring of the Design and Build (DB) Contractor’s construction activities to ensure that the work is carried out in full compliance with the EMP and provisions set out in the DB contract.

- Holding monthly site meetings with the Contractor to review environmental performance and compliance with relevant environmental mitigation measures specified in the EMP, identify areas of satisfaction and shortcomings in the Contractor's work and provide guidance to resolve areas where the work is deficient.
- Auditing the DB Contractor's implementation of the Environmental Monitoring Plan (Table 5) including facilitating and co-ordinating the environmental monitoring and supervision responsibilities of external parties such as local communities and appropriate NGOs.
- Prepare monthly environmental monitoring reports, and quarterly summaries for inclusion in progress reports to MCA-Vanuatu/MCC.

5.1.3 The Responsibilities of the DB Contractor

The DB Contractor will be responsible for:

- Preparing an Environmental Management Implementation Plan (EMIP), which indicates how the Contractor will implement the EMP and support the RAP, namely the Contractor's responsibilities as specified in Table 4.
- Implementing the relevant environmental controls and mitigation measures as set out in the EMP (Table 4).
- Operating quarries and borrow pits according to approved QMPs and quarry permits.
- Communication Plan for the Subproject.
- Following all reasonable directions and corrective actions given by the Engineer including co-operating with the monthly site environmental performance meetings convened by the Engineer.
- Carrying out all works in such a manner as to cause as little impact as possible to the environment.
- Reporting on environmental issues in monthly site progress reports, environmental issues and complaints.

5.2 Environmental Management Plan

The EMP identifies the following:

- Potential environmental impacts that need to be mitigated.
- Environmental mitigation measures that will be implemented to address the potential impacts.
- Authority responsible for implementing the environmental mitigation measures.
- Timing for implementing the mitigation.

5.3 Environmental Monitoring Plan

The Environmental Monitoring Plan identifies the environmental monitoring requirements to ensure that all the mitigation measures identified in the EMP are implemented effectively. Environmental monitoring methodology for this project includes:

- Audit of detailed designs.
- Audit and approval of site environmental planning documents.
- Consultations with communities and other stakeholders (eg. Environment Unit, Geology and Mines, Vanuatu Cultural Centre) as required.
- Routine site inspection of construction works to confirm or otherwise the implementation and effectiveness of required environmental mitigation measures.

Non-compliance to environmental mitigation measures identified in the EMP will be advised to the DB Contractor (copied to the client and MCC-V) in writing by the ESU including FIDIC Engineer as required. The non-compliance notification will identify the problem, including the actions the contractor needs to take and a time frame for implementing the corrective action.

5.4 Contingencies, Complaints and Incidents

5.4.1 Cyclone Preparedness

The Cyclone Preparedness Plan developed for the Efate Ring Road Subproject will be adapted for the Santo East Coast Road to ensure that in the event of a pending cyclone all staff are fully aware of their responsibilities in respect of human safety and environmental risk reduction. The procedure should clearly delineate the roles and responsibilities of staff, define the functions to be performed by them, the process to be followed in the performance of these functions including tools and equipment to be kept in readiness, and an emergency medical plan. All Contractor's staff on Santo should undergo training/induction in the Plan. The Engineer will audit preparedness prior to the commencement of cyclone season.

5.4.2 Environmental Complaints and Incidents

Complaints and incidents should be referred to the Contractor's Stakeholder Liason Manager (or designated staff) for undertaking complaint/incident investigation procedures. In general the following procedure should be followed:

- Log complaint/incident and date of receipt
- Investigate the complaint/incident to determine its validity, and to assess whether the source of the problem
- Identify and undertake any action required
- Log the date of resolution
- Refer the complaint through the MCA Grievance Procedures as required
- Report the complaint in monthly monitoring report including actions, resolution status and any outstanding actions required.

5.5 Reporting and Review

Throughout the construction period, the DB Contractor will prepare monthly environmental monitoring reports and quarterly summaries for MCA-Vanuatu/MCC. These reports will form part of the DB Contractor's monthly and quarterly project progress reports to MCA-Vanuatu/MCC, and will generally cover the following aspects:

- Description and results of environmental monitoring activities undertaken during the month.
- Status of implementation of relevant environmental mitigation measures pertaining to the works
- Key environmental problems encountered and actions taken to rectify problems.
- Summary of non-compliance notifications issued to DB Contractor during the month.
- Summary of environmental complaints received and actions taken.
- Key environmental issues to be addressed in the coming month.

Table 4: Environmental Management Plan for Santo East Coast Road MCA03 Subproject

Potential Impact	Mitigation Measure	Performance Indicator	Responsibility	Cost (US\$)
Pre-Construction Stage (applicable to entire Santo East Coast Road subproject)				
Spread of STIs/HIV/AIDS	Implementation of awareness and prevention program – contractor, expatriate workers and local staff.	Program implemented	Contractor & recognized provider	Direct provider cost paid by contractor
	Implementation of awareness and prevention program – community (villages) in coordination with local NGOs and utilizing the existing youth networks in the communities.	Program implemented with gender disaggregated attendance records submitted to MCA.	MOH & Recognized Provider	Direct provider cost paid by contractor
Social disruption due to construction workers in area	Village protocols discussed with communities (including mamma's groups); worker awareness campaign as part of mobilization; prohibition on unauthorized people entering camp site/work areas	Worker awareness program completed	Contractor, MCA, communities	No marginal cost
Land acquisition, resettlement, tree, crop and structure clearance	A number of potential losses and relocations have been identified and will be addressed through an Inventory of Losses Table and RAP.	RAP implemented	Contractor and MCA with other relevant GoV agencies	Refer RAP
Local custom requirements for access through land, for materials or discharge	Access through or to land to obtain materials or discharge water etc. shall only be done after consultation with MCA, the Engineer, and in accordance with the RAP and the Consultation Plan	Relevant consultations completed	Contractor	TBA
Run-off from Material stockpile locations	Material stockpile areas shall be nominated in the Stockpile Plan and approved in accordance with the Stockpile Approval Process by the Engineer prior to construction and managed (including slope angle and run-off diversion ditches) to minimize run-off to surrounding terrain	Stockpile Plan prepared and approved by Engineer. No or minimal observed run-off and no increased turbidity in rivers observed from these sources.	Contractor	No marginal cost
Construction Stage				
Borrow Pits and Quarries	Use of existing unlicensed PWD limestone quarries and haul roads for road base materials. All these require QMP, further consultation as part of the PEA and quarry license in advance in accordance with Government and MCC guidelines.	Existing borrow pits identified, license gained and QMP submitted and approved.	Contractor	No marginal cost

<p>For unlicensed PWD borrow pits:</p> <p>The approval of applicable land owners, lessee (custom owners, Province or PWD) will be required before extraction of any material can occur⁴.</p> <p>A quarry permit is required pursuant to the Mines and Minerals (Licences) Regulations. This may require an EIA and RAP in accordance with Government and MCC Guidelines.</p> <p>In accordance with the Contract a Quarry Management Plan is required incorporating details of quarry opening activities; quarrying operations, quarry closing and site rehabilitation.</p>	<p><i>Quarry license obtained</i></p> <p><i>Approval obtained</i></p> <p><i>Quarry Management Plan prepared</i></p>	<p><i>Contractor</i></p>	<p><i>TBA</i></p>
<p>For all quarry operations (existing or new quarries):</p> <p>Cut-off drains are to be constructed around the uphill side of the borrow pit to prevent runoff entering the area and will direct all runoff away from the borrow pit on to stable disposal areas.</p> <p>The base of the borrow pit is to be drained at all times (to prevent build-up of still water that provide a suitable environment for mosquitoes to breed). The drains must not directly discharge to waterways.</p> <p>Borrow pits are to be situated well away from groundwater wells and the water table level managed to prevent contamination of groundwater resources.</p> <p>Overburden is to be stockpiled for spreading in the borrow pit surface when operations are complete. Runoff is not to pond in the stockpiled area.</p> <p>The face of the borrow pit is to be stable at all times.</p> <p>Blasting operations are to be carried out by certified personnel⁵.</p> <p>Where appropriate and/or considered aesthetically desirable, areas that have been quarried will be rehabilitated. A rehabilitation plan should be</p>	<p><i>Cut-off drains constructed</i></p> <p><i>Bottom drains operating and no direct discharge to water courses.</i></p> <p><i>No nearby wells.</i></p> <p><i>Overburden stockpiled.</i></p> <p><i>Borrow pit face stable.</i></p> <p><i>Certified personnel</i></p>	<p><i>Contractor</i></p>	<p><i>No marginal cost</i></p>

⁴ The material will need to be purchased.

⁵ The contractor will be responsible for public safety at the borrow pit, particularly during blasting operations. Strict public safety measures are to be implemented at all times, and staff posted at safe distances to prevent entry to the danger zone during blasting operations.

developed in consultation with the Environment Unit and the local community ⁶ . Rehabilitation should include covering of the water table to avoid future contamination.	<i>responsible for blasting.</i> <i>Rehabilitation completed in accordance with Quarry Management Plan.</i>		
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Erosion or sedimentation caused during clearing, earthworks or activities in streams and rivers	Install sediment fences and/or sediment traps to collect sediment prior to any site disturbance and construction works and to be checked after each rainfall	Sediment traps installed	Contractor	TBA once number known
	No dumping of spoil on, or extraction of material within 100m of streams, rivers or coastal area without correct Government permits.	No evidence of spoil dumping or extraction of materials at nearby streams and coastal areas.	Contractor	No marginal cost
	No run-off diversions to be directed to private property, unless approved by a provincial representative and the Engineer, and any run-off management shall be consistent with the site EMIP	Run-off diversions approved by Engineer	Contractor	No marginal cost
	Side slopes of embankments designed to reflect soil strength	No slope failures observed on side slopes	Contractor	No marginal cost
	Gabion baskets or rock rip-rap to be used around bridge abutments as appropriate	Bridge abutments protected	Contractor	No marginal cost
	Embankments and stream or river channels to be monitored for signs of erosion	Site inspection records indicating monitoring undertaken.	Contractor	No marginal cost
	Stones and rocks kept on hand and used in event of bank or channel erosion	Stockpiles of rock and stones around stream courses.	Contractor	No marginal cost
	Minimize size and duration of cleared areas	Minimal vegetation clearance	Contractor	No marginal cost
	Retain topsoil (in stockpiles no higher than 2m, away from drainage paths and including run-off ditches) for use in re-vegetation as required	Topsoil stockpiles observed.	Contractor	No marginal cost
	Undertake progressive re-vegetation of cleared areas if required	No exposed soil areas following completion of works.	Contractor ; PWD Community Contractors	No marginal cost

⁶ The rehabilitation plan need only be a simple commitment operation. Steps could involve a regrade of the surface to allow natural drainage patterns to function, replacement and compaction of the topsoil originally removed and stockpiled, and reseeding/planting to prevent erosion.

	Avoid clearing gravel or spreading activities during rain or if rain is imminent	No gravel spreading during heavy rain	Contractor	No marginal cost
	Vehicle traffic to be restricted to designated paths within the site	Temporary traffic lanes clearly designated.	Contractor	No marginal cost
Land and soil stability related to proposed drainage works	For all drainage works an assessment of impact on additional water flows on stability of adjacent slopes must be measured.	No land or soil stability issues.	Contractor	No marginal cost
Sedimentation from Coastal Works	Where appropriate stabilize exposed soil areas including berms, batters and topsoil stockpiles as soon as possible using local and secondary vegetation.	No exposed soil areas following completion of works.	Contractor	No marginal cost
	Identify areas effected by coastal erosion, work with the client on joint design engineering solutions. Client to provide appropriate team for solution.	Design solution agreed by project team.	Contractor/MCA	To be included in engineering cost
	Re-use excavated material wherever possible	Minimal spoil dumps.	Contractor	No marginal cost
	No dumping of spoil on, or extraction of material from within 20m of coast.	No evidence of disturbance to coastal areas resulting from the works	Contractor	No marginal cost
	Rip-rap, retaining structures, gabion baskets, reno mattresses etc to be used wherever necessary for riparian stabilization. Gabions and reno mattresses shall be supplied and installed in accordance with manufacturer specifications and recommendations.	No evidence of erosion related to construction works.	Contractor	To be incl. in engineering cost
Water quality	Install sediment fences and/or sediment traps to collect sediment prior to any site disturbance and construction works and to be checked after each rainfall	No evidence of direct site run-off into water courses or coastal areas or resultant increased turbidity in these water bodies	Contractor	TBA once number known
	Use of silt control grass (appropriate for local ecosystems) or similar at bridges during works to protect water and blue holes down stream from siltation.	No evidence of runoff into streams, blue holes and rivers.	Contractor	TBA once design finalised
	River, stream or creek crossing works should not be carried out (or works stopped) during peak flows to prevent washout of sediment and erosion control measures, and waste material affected downstream users	No evidence of equipment or waste material downstream of site.	Contractor	No marginal cost

	Sediment controls measures to be maintained on a regular basis	Evidence of sediment controls operating effectively.	Contractor	No marginal cost
	Placement of diversion ditches around stockpiles, camp (day and overnight)	No evidence of direct run-off from stockpiles into water courses.	Contractor	No marginal cost
	Waterways and coastal area to be protected from pollution, silting, flooding or erosion through the installation of sediment traps, ponds, silt fences and bunds	No evidence of direct site run-off into water courses or coastal areas.	Contractor	TBA once number known
	Debris, spent fuel or oil, waste material not to be dumped along the coast or near streams or rivers. Spills require immediate attention including removal of contaminated material (for disposal in approved landfill) and remediation of the site to the satisfaction of the Engineer	No evidence of dumping of site waste materials in unauthorized areas.	Contractor	No marginal cost
	Site surface water including run-off or groundwater seepage shall not be discharged directly to any aquatic environment. If saturation occurs all work in this locality shall cease and may only resume on approval of the Engineer. Any drying out shall proceed in accordance with Clause 24.26 of the DB Contractor bid documents (dated April 2008).	No evidence of direct site run-off into water courses or coastal areas.	Contractor	No marginal cost
	Culverts to comply with design specifications	Engineer's approval of design specifications.	Contractor	To be incl. in engineering cost
	Spoil and material stockpiles not to be located within 15 m of coast, waterways, streams or rivers or drinking wells.	No stockpiles observed within 15m of water courses	Contractor	No marginal cost
	All waste-water and waste generated by the project to be collected and disposed of in approved manner and location	Solid and liquid waste collection and disposal system operating on site.	Contractor	No marginal costs
	Run-off from potentially polluted surfaces, such as vehicle and machinery storage areas, site huts, construction camps etc., must be captured and treated onsite	Sediment and grease traps installed around plant maintenance areas.	Contractor	No marginal cost
Interference with existing infrastructure (telecommunications, electricity, water)	Consult with relevant authorities (including village water committees) responsible for utility services to minimize physical impacts on public infrastructure and disruption to services	No disruption to public infrastructure or utilities.	Contractor	TBA once design finalised
	Abandoned service infrastructure (as approved by the Engineer) shall be cut (ducts, pipes or cables), removed and stockpiled for later disposal	No evidence of unauthorized waste disposal	Contractor	TBA once design finalised

	Community or individually owned infrastructure uncovered during construction should be protected from damage. Consultation with the owner of the infrastructure to determine whether infrastructure is being used and should be retained within the new road is required.	No disruption to community or privately owned infrastructure or utilities.	Contractor	TBA once design finalised
	In the case of any disruption of utilities for a period that has the potential to affect income generation or health (water supply disruption) an appropriate response (water trucks to deliver water or goodwill entitlements offered) must be facilitated by Contractor with MCA assistance.	No complaints related to disruption of services to households.	Contractor	TBA
Soil contamination from spillage of oil or other chemicals or substances	Store oil, fuel and chemicals in secure area/compound, with concrete floor and weatherproof roof and surrounded by bunds that will prevent spilt oil, other chemicals or substances escaping to the ground.	No evidence of oil and/or chemical seepage into ground around fuel and chemical storage depots.	Contractor	TBA once number known
	Develop a hazardous materials spill response/ clean up plan to implement in the event of a spill occurring.	Spill response clean up plan available on site.	Contractor	No marginal cost
	Refueling, oil and hydraulic fuel change to be undertaken in the field in designated areas surrounded by bunds to prevent escape of pollutants to the ground. Such areas should be located at least 30m from the nearest stream or coastline.	Designated refueling and maintenance areas operating.	Contractor	No marginal cost
	Ensure all construction vehicles and equipment are well maintained	oil leakages minimized from site equipment	Contractor	TBA once design finalised
Clearing of vegetated areas	Where appropriate stabilize exposed soil areas including berms, batters and topsoil stockpiles as soon as possible using local vegetation and secondary vegetation.	No exposed soil areas following completion of works.	Contractor	No marginal costs
	Minimize clearance of roadside vegetation as much as possible.	Minimal roadside vegetation clearance.	Contractor	No marginal cost
	Vegetation clearance and grubbing may only commence once sediment and erosion controls are implemented.	Site drainage measures properly established immediately prior to site clearance	Contractor	No marginal cost
	Avoid the felling of road-side trees wherever possible.	Minimal roadside vegetation clearance.	Contractor	No marginal cost
	No removal of culturally significant trees within road reserve as identified in the RAP (e.g. <i>Nabanga</i> trees and fruit trees).	Culturally significant trees remain.	Contractor	No marginal cost
		Contract staff notices		

Exploitation of local resources including poaching of fauna	Poaching of fauna (including marine resources) or felling trees that are not required to be cleared or removed by the project within the project areas will be forbidden.	prohibiting staff from poaching of fauna and felling of trees.	Contractor	No marginal cost
	Extraction of materials/aggregates etc only from licensed or MCA approved quarries.	Approved	Contractor	No marginal cost
	Contractor will impose sanctions on any worker poaching fauna (including marine resources) or felling trees unnecessary for the project works.	Contract staff notices prohibiting staff from poaching of fauna and felling of trees.	Contractor	No marginal cost
Noise	Ensure all construction vehicles and equipment are well maintained.	Low noise levels	Contractor	No marginal cost
	Limit noisy construction activities to daylight hours where ever possible, agree works schedule with village leaders. If operation is required outside daylight hours, local residents and businesses must be consulted and a request must be made prior to commencement and approved by the client.	No noise complaints from nearby residents for times outside agreed work hours	Contractor	No marginal cost
	Provide workers with noise abatement equipment.	Construction workers wearing noise abatement equipment.	Contractor	No marginal cost
Dust	Manage dust nuisance where construction works occur adjacent to dwellings, road side stalls e.g. spray road with water.	No dust complains from nearby residents.	Contractor	No marginal cost.
Disruptions to traffic movements, property access	Install signage in vicinity of works on road and in accordance with Health & Safety Plan	Road safety signage visible and clear.	Contractor	No marginal cost
	Install temporary access to effected properties	Access to private property provided at all times.	Contractor	No marginal cost
	Notify communities, people living adjacent to the road in advance of schedule and duration of construction works	Notification confirmed by village leaders.	Contractor	No marginal cost
Waste disposal problems (construction activity or wastes generated within construction camp sites)	No dumping of rubbish other than sites approved by the Vanuatu Environment Unit or other applicable regulatory authority	Solid waste collection and disposal system operating on site.	Contractor	No marginal cost
	Train construction workers in appropriate waste disposal methods	No domestic waste observed on site .	Contractor	No marginal cost
	Remove waste regularly from site for disposal to a Government approved landfill or burnt on site in a filed incinerator. Waste from portable toilets to be taken to Luganville Land Fill disposal facility.	Solid waste collection and disposal system operating on site.	Contractor	No marginal cost
	Install approved waste collection facilities in construction camp	Solid waste collection and disposal system operating in construction camp. .	Contractor	No marginal cost

	Approved wastewater systems from construction camp must not discharge into water bodies, which are used for domestic purpose water supplies. Soak pits for waste water from construction camps to be located at a minimum of 100m from any water source	Sanitary waste water facilities operating in construction camp.	Contractor	No marginal cost
Construction workers cause social disruption (incl. sanitation/health issues)	Ensure construction camp maintained in clean/hygienic condition	Tidy construction site including sanitary waste water facilities operating.	Contractor	No marginal cost
	Train workers on appropriate interactions with local community; implement awareness program about sanitation and communicable diseases; ensure children/teenagers not entering camp; and Village rules are adhered to.	Awareness raising programs for workers Implemented.	Contractor, communities, MOH & NGO	Incl. in above
	Consult with PWD and landowners to plan for temporary construction worker housing arrangements at suitable separation distance from any local communities to reduce social impacts on communities.	Appropriate housing arrangements provided for workers.	Contractor	No marginal cost
Conflict between construction workers and communities.	DB Contractor to ensure labour-force engaged are aware of relevant provisions of Consultation Plan EMP provisions requiring DB Contractor to set a code of behavior towards girls and women, and requiring workers to treat landowners/villages with respect.	Workers will maintain acceptable codes of conduct	Contractor	No marginal cost
	Contractor visits all villages to explain and negotiate construction activities and access to resources and construction materials (as per Consultation Plan) and maximises local employment opportunities.	All households in the subproject area will be fully informed about construction works; Negotiations will be conflict-free Local villagers will be employed by the Contractor if appropriate skills are available.	Contractor	No marginal cost
Employment or livelihood benefits from employment of local people	Maximize the number of local people involved in the construction works and provide equal opportunities for women with the appropriate skills.	Number of local workers employed.	Contractor	No marginal cost
Risks to public or construction worker health or safety	Provide safety equipment to workers and train them in its use.	Workers observed using safety equipment.	Contractor	No marginal cost
	Secure construction site and restrict access by local community (especially children and teenagers).	Only construction staff present on site.	Contractor /local community	No marginal cost
	Make available to villages (for use in gardens or for local community			

Generation of excess spoil	purposes); or in consultation with MCA (and in agreement with local landowner) locate a suitable disposal location (either temporary or permanent) and stabilize to prevent run-off and erosion.	No unauthorized spoil dumps observed.	Contractor	No marginal cost
Loss of archaeological artifacts or sites	Contractor to notify the Engineer and VKS immediately if any potential archaeological artifacts or sites are unearthed during construction activities. Appropriate VKS protocol then followed for the management of archeological sites.	Awareness raising on artifact discovery procedures provided to workers.	Contractor	No marginal cost
Operation Stage				
Changes to road safety	Installation of road safety signage and/or speed bumps etc through villages and as instructed by the engineer.	Decreased incidence of road accidents	PWD	No marginal cost
	Work with police and PWD to carry out enforcement of traffic regulations on the road once upgraded	Decreased incidence of road accidents	PWD	No marginal cost
	Ensure drainage system well maintained and free of blockages	Road drainage operating effectively.	PWD; routine maintenance contractor	No marginal cost
	Retain roadside vegetation where possible, replant or otherwise stabilize drainage systems	Road drainage operating effectively.	PWD; routine maintenance contractor	No marginal cost
	Implement Road Safety Awareness Campaign, with communities, children, schools, public transport drivers and tourism operators. In particular address pedestrian activity and implications of reduced pavement width.	Decreased incidence of road accidents	MCA; SANMA Province	TBA
Changes to visual amenity & landscape values	Low maintenance Road-side maintenance plan developed for each village, including training of community members on road maintenance, management of roadside local vegetation and the PWD community contract.	No exposed soil surfaces along road margins.	PWD; routine maintenance contractor	Incl. in cost of revegetation

6.0 Environmental Monitoring Plan for Santo East Coast Road

The Monitoring and Evaluation Plan for the MCA-V Compact provides a broad framework for the monitoring and evaluation of the Santo East Coast Road Subproject including the collection of baseline and progressive data against key indicators. The data collected relates to tourism, traffic volumes, economic data such as household income and expenditure and road maintenance. This information will be used to measure the different indicators identified in the Compact, to enable measurement of progress against the Compact goal, objectives, outcome and activities.

For the monitoring of environmental impacts of the pre-construction and construction phases the FIDIC engineer (currently QCPP and eventually PWD) will be responsible. Progress will be reported as part of regular reports to the client. Serious non-compliance will be drawn immediately to the client and MCC-V's attention. The following Environmental Monitoring Plan provides requirements for this monitoring.

Table 5: Environmental Monitoring Plan

Parameter	Location	Monitoring (Visual Inspection)	Frequency of Inspection	Responsibility
Pre-Construction Phase				
STI/HIV/AIDS prevalence	Camp	Check contractor records, consultation with employees, discussions with NGO	Prior to construction	Engineer
	Villages	Discussions with NGO, consultation with villages	Prior to construction	Engineer
Construction Phase				
Borrow Pits/Quarries	Borrow pit/Quarry sites	Visual inspection to ensure requirements of EMP and Quarry Management Plans are properly implemented.	Daily by Contractor Weekly by ESU	Contractor; Engineer
Spoil areas	Road corridor	Visual inspection (i) ensure vegetation clearance minimized; (ii) no garden or agricultural land used; (iii) no dump sites near waterways or on coastal side	Monthly by Contractor Monthly by ESU	Contractor; Engineer
Erosion	Coastal areas adjacent to road corridor	Visual inspection of culverts, bridges and coastal areas for any occurrence of erosion	Daily by Contractor Weekly by ESU	Contractor; Engineer
Hydrocarbon and chemical storage	Construction camp/workshop area	Visual Inspection of storage facilities as per EMP and emergency response plan. Ensure storage sites are using concrete base with containment bunds.	Weekly by Contractor Monthly by ESU	Contractor; Engineer
Waste management	Construction camps	Visual inspection that solid waste is disposed as per EMP	Daily by Contractor Weekly by ESU	Contractor; Engineer
Surface water quality	Streams and rivers	Visual inspection, consultation with users	Daily by Contractor Weekly by ESU	Contractor; Engineer

Parameter	Location	Monitoring (Visual Inspection)	Frequency of Inspection	Responsibility
	Nearby water courses and coastal areas	Visual inspection that sediment traps, ponds, silt fences and bunds are in place and operating effectively.	Daily by Contractor Weekly by ESU	Water Section of the DGMWR as per IEA
	Directly downstream of pollution event	Visual inspection, consultation with users	After pollution event by Contractor and ESU	Water Section of the DGMWR as per IEA
Air quality	Emissions, dust, particulate matter	Visual inspection	Daily by Contractor After complaint by ESU	Contractor; Engineer
Noise	Sensitive areas	Consultation (ensure schedule being adhered to)	Daily by Contractor After complaint by ESU	Contractor; Engineer
Re-vegetation	Road corridor	Monitoring of progress of re-vegetation activities per EMP	Monthly by Contractor and ESU	Contractor; Engineer
Social impacts	Villages along the subproject road	Consultation and visual observations - complaints viz-a-viz workers; village rules being adhered to; access to camp prohibited to other than authorised staff	Monthly by Contractor and ESU	Contractor; Engineer
Community	Road corridor	Consult with villages along subproject road to monitor environmental concerns	Ongoing by Contractor and ESU	Contractor; Engineer
Operation Phase				
Noise	Sensitive areas (villages, schools, health post)	Villages (as per EMP)	Twice/year for 3 years, mid-term and post-evaluation monitoring	PWD
Erosion	Subproject corridor incl. coastal erosion	Visual assessment of erosion protection resulting from project	Twice/year for 3 years, mid-term and post-evaluation monitoring	PWD
Water Quality	Road corridor, streams and rivers	Visual assessment of increased suspended solids from road or areas of erosion, if identified	Twice/year for 3 year, mid-term and post-evaluation monitoring	PWD
Road Safety	Road corridor	Collect road accident data; Safety issues discussed in schools	Twice/year for 3 year, mid-term and post-evaluation monitoring	PWD
Re-vegetation	Road corridor	Ongoing monitoring of re-vegetation as per EMP	Twice/year for 3 year mid-term and post-evaluation monitoring	PWD

7.0 Conclusions and Recommendations

The Santo East Coast Road subproject is the rehabilitation of the road from the end of the seal north of Luganville to Port Olry, including the upgrade to bitumen seal for the first section. The main conclusions of the ESA for this subproject are that:

- The subproject has the potential to create significant positive social impacts;
- The environmental impacts of the activities are largely positive or neutral due mainly to the fact that the upgrading works will result in mitigation of existing environmental problems associated with the road segment. Some minor temporary environmental impacts could result during construction but these can be managed effectively through good engineering and construction practice.
- Potential adverse environmental and social impacts associated with the road upgrade will occur mostly during the construction phase and can be avoided or sufficiently mitigated through the application of good design principles, and implementation of the EMP and monitoring plan for the subproject;
- Specific recommendations have been made:
 - That the culturally significant Nabanga trees that are located adjacent or within the road reserve are protected from any damage, and that those trees with roots visible on the road are addressed in consultation with Provincial Environmental Officer and MCA ES Officer;
 - In areas directly adjacent to the coast or fresh water bodies, to prevent construction and subsequent road runoff discharging directly into the marine environment;
 - Abbreviated RAPs are prepared as required along the length of the Subproject;
 - For works adjacent to Porea River, a combined design and ESA solution, that includes input from the water users and Province is necessary;
 - An awareness campaign on traffic safety should be implemented in villages, schools and churches on the East Coast of Santo. An ongoing campaign using regular reinforcement of messages would most effectively promote road use behavior change among communities. In particular the campaign should address the safety implications of the reduced pavement width of 5m.
 - Proper signage and traffic calming measures are included in the design at locations where cattle cross the road between pastures. Proper cattle fencing be erected and maintained along the sides of the road to prevent stock from entering the road reserve.
 - That the blue hole directly adjacent to the road at 49.6km is protected during construction from any siltation and the drainage design manages run-off appropriately to protect the water quality of the blue hole.
 - That consultation with the communities living adjacent to the proposed quarries/borrow pit sites and the kastom owners is undertaken on site and the PEA checklist forms completed with their input.

Appendix A – Consultation Lists and Attendance Records for the Santo East Coast Road Subproject MCA03

List of Consultations for Santo

Date	Purpose	Comments
April 2008	Field visit by Manusell and Dr Dick Watling with MCA.	- See Reconnaissance Survey report for assessments.
5 th Nov 2008	Meeting with Secretary General of SANMA Province Joel Path	- Discussion about our ToR for the trip. Issues we need to look at.
5 th Nov 2008	SANMA provincial council meeting @ headquarters in Luganville 9.15am Chuck Sethness (MCC) Chris Cookson (MCC) Andrew Scroggins (Downer EDI) Craig Smart (Downer EDI) Allen Iavro (Santo Chiefs Representative) Catherine Malosu Mandy Fitchett Tony Sewen (MCA Acting Director)	- See meeting notes and consultation Attendance list
5 th Nov 2008	Government Stakeholders and Transport Association 1.30pm @Chiefs Nakamal Chuck Sethness (MCC) Chris Cookson (MCC) Andrew Scroggins (Downer EDI) Craig Smart (Downer EDI) Allen Iavro (Santo Chiefs Representative) Catherine Malosu Mandy Fitchett Tony Sewen (MCA Acting Director)	- See meeting notes and consultation Attendance list
5 th Nov 2008	Santo Hospitality and Tourism Association at Hotel Santo 5pm. Chuck Sethness (MCC) Chris Cookson (MCC) Andrew Scroggins (Downer EDI) Craig Smart (Downer EDI) Allen Iavro (Santo Chiefs Representative) Catherine Malosu Mandy Fitchett Tony Sewen (MCA Acting Director)	- See Meeting Notes and consultation Attendance list
6 th Nov 2008	Santo Leaseholders Meeting at Chefs Nakamal Luganvilla at 9am Chuck Sethness (MCC) Chris Cookson (MCC) Andrew Scroggins (Downer EDI) Craig Smart (Downer EDI) Allen Iavro (Santo Chiefs Representative) Catherine Malosu	- See Meeting notes and consultation Attendance list

	Mandy Fitchett Tony Sewen (MCA Acting Director)	
2.30pm Sunday 9 th November	Port Olry Community Consultation Chris Cookson (MCC) Sakaraia Daneil (SANMA) Craig Smart (Downer EDI) Allen Iavro (Santo Chiefs Representative) Catherine Malosu Mandy Fitchett Simeon Stanley (PWD)	- See Meeting notes and consultation Attendance list
4.30pm Sunday 9 th November	Hog Harbour Community Consultation Chris Cookson (MCC) Sakaraia Daneil (SANMA) Craig Smart (Downer EDI) Allen Iavro (Santo Chiefs Representative) Catherine Malosu Mandy Fitchett Simeon Stanley (PWD)	- See Meeting notes and consultation Attendance list
9am Mon 10 th Nov 2008	Bene Community Consultation Chris Cookson (MCC) Craig Smart (Downer EDI) Allen Iavro (Santo Chiefs Representative) Catherine Malosu Mandy Fitchett Simeon Stanley (PWD)	- See Meeting notes and consultation Attendance list
8am Tues 11 th Nov 2008	Lorum Community Consultation Chris Cookson (MCC) Craig Smart (Downer EDI) Allen Iavro (Santo Chiefs Representative) Catherine Malosu Mandy Fitchett Simeon Stanley (PWD)	- See Meeting notes and consultation Attendance list
10am Tues 11 th Nov 2008	Seksek Community Consultation Chris Cookson (MCC) Craig Smart (Downer EDI) Allen Iavro (Santo Chiefs Representative) Catherine Malosu Mandy Fitchett Simeon Stanley (PWD)	- See Meeting notes and consultation Attendance list
4pm Tues 11 th Nov 2008	Santo Road Team Training Catherine Malosu Mandy Fitchett Chris Cookson	- Presentation of ESA, EMP, communication and project requirements to the Provincial Planning staff and the SG.
12.30 Wednesday 12th Nov 2008	Manioc Community Consultation Chris Cookson (MCC) Craig Smart (Downer EDI) Allen Iavro (Santo Chiefs Representative) Catherine Malosu Mandy Fitchett	- See Meeting notes and consultation Attendance list

	Simeon Stanley (PWD)	
4.30pm Wed 12 th Nov 2008	Santo Road Team Training Catherine Malosu Mandy Fitchett Chris Cookson	Presentation of ESA, EMP, communication and project requirements to the Provincial Planning staff and the SG.
8am Wed 12 th Nov 2008	Natawa Community Consultation Chris Cookson (MCC) Craig Smart (Downer EDI) Allen Iavro (Santo Chiefs Representative) Catherine Malosu Mandy Fitchett Simeon Stanley (PWD)	See Meeting notes and consultation Attendance list
11am Wed 12 th Nov	Tapas Community Consultation (also Pura Community) Chris Cookson (MCC) Craig Smart (Downer EDI) Allen Iavro (Santo Chiefs Representative) Catherine Malosu Mandy Fitchett Simeon Stanley (PWD)	See Meeting notes and consultation Attendance list
9am Thurs 13 th Nov	Matevulu Community Consultation Chris Cookson (MCC) Craig Smart (Downer EDI) Allen Iavro (Santo Chiefs Representative) Catherine Malosu Mandy Fitchett	See Meeting notes and consultation Attendance list
1.15pm Thurs 13 th Nov	Nitchiku Representative Toru (Manager of Nitchuku Vanuatu) Mandy Fitchett Chris Cookson	- Discussion on the GET and impact of theroad on Nitchiku and signature obtained for RAP.
1.30pm Thurs 13 th Nov	Womens Council for SANMA Jocelyn Catherine Malosu Mandy Fitchett Chris Cookson	- Meeting with Jocelyn about projects to link into and women's issues in Santo.
Thurs 13 th Nov	World Vision and Save the Children Joanna & Robson (Save) Benri (World Vision) Catherine Malosu Mandy Fitchett Chris Cookson	See Meeting notes and consultation Attendance list
Thurs 13 th Nov	Sarami Plantation Community Catherine Malosu Mandy Fitchett Craig Smart Allen Iavro Phillipe Firiam John Claasen	See Meeting notes and consultation Attendance list

7.30am Friday 14 th Nov	SG SANMA Province De-brief Catherine Malosu Mandy Fitchett Craig Smart Allen Iavro John Claasen	See Meeting notes and consultation Attendance list
9.30am Friday 14 th Nov	Surender Plantation Community (Nitchuku) Catherine Malosu Mandy Fitchett Craig Smart Allen Iavro John Claasen	See Meeting notes and consultation Attendance list
10.30am Friday 14 th Nov	Turtle Bay Plantation Community (Nitchiku) Catherine Malosu Mandy Fitchett Craig Smart Allen Iavro John Claasen	See Meeting notes and consultation Attendance list

SANMA Provincial Council Meeting

Santo East Coast Road Consultations
Attendance Record Sheet

5/11/08

Name & Title	Village or lease title number	Phone number
PROSPER BALETARE - Physical Planner	Sanma Province	5447103 / 36712
Peter James / Councilor	Sanma Province	5495060
LANGI TOU / Councilor	SANMA PROVINCE.	5444216.
* Silas Roxoo / Councilor	Sanma Province	5419259
George Maxing / Councilor	Sanma Province	5449605
Jack Wino / Councilor	Sanma Province	5461498
THOMAS VORA	Sanma Province	5424366 5424366
STEM KALO Cou.	Big Bay S Province. 5414114	5424366
C. EDWARD PAIA	SANMA PROVINCE Santo	5486341
JACQUELINE C. TIMBASAL	AREA COUNCIL DEVELOPMENT ADVISOR VSO VOLUNTEER	5414432
Simeon Seler	Sanma Province	5425026
* C. Calumb Calixto Cevard.	" "	✓
William Malon	Sanma Province	5470407
AM Lee	Sanma Province	5445826
A. JOHNATHAN	Sanma Province	5445811
Daniel Lelekele	Compliance Officer	5486203
Arsen Meliu	Councilor Sanma Province	
THOMAS VORA	Sanma Province	5424366
Tom Wells.	(Youth Field) Sanma Provincial Council	5441594
* JOEL PAUL / vice President	Sanma Province	✓

A

Leaseholder Meeting.

Santo East Coast Road Consultations
Attendance Record Sheet

Name & Title	Village or lease title number	Phone number
Kalo Nial, (farmer)	Pne Bush Farm	774877 5488932
Steve Croucher	04/1813/002 04/1813/004	36883
Sakaraia Daniel	Planer (Sanna)	5418200/3638
TORU MACHIZUKI	NITCHIKU (VANUATU)	36139 9752112
MICHAEL LOUË	SARAMI plantation	36824 5541978
PETER COLTAR	"	5547410
CHRISTOPHER COLTAR	"	5424368
Thierry Wilcox	Pne Bush Farm	5408487
BLAN COOT	BORISSA / MATEVULA	30030 7741913
MOLIVARA Jingo JIF	AUXIMATEFI WEST MALO	5417269
Kyran NORZ.	Santo Road & construction	5422850
RONAN HARVEY	VEAT BAI PLANTATION	555-1111
JIF SALES BANI	FANDELVILLE W. MALO	37904
John Neel	Hog Harbour village	37088/5463819
Gordon Wilkie (lands officer)	Lands Dept.	36256/56493

Transport Associates and Government Stakeholders.

Santo East Coast Road Consultations
Attendance Record Sheet

Name & Title	Village or lease title number	Phone number
JIF SALE BANI	RANDEL VILLAG	37904.
George Josiah	Luganville	7746397.
Timothy Lokai	Shark Bay	36414.
Lidorick Obed.	Matevalu Village	66219
Sulds Braz	Luganville	365241
S. WASS	Hog Harbour	643758
Ben Rouu	LUGANVILLE	7788646
ARIEL MARANDA	" "	7756555
Maximo Pierre Chanel	"	7750219
JIF MOLIURIA JINCA	Aukuteai Village west MCA	5412269
THOMPSON WPMOZ	LORUM EAST SANTO	5422663.
Kalmer Vocor	Lanroc Resort East Santo	37902
Ehislerie James	PORT OLEY	7744391
Saundrie Kalven	Hog Harbour	5470799.
Ramul Lelele	Same Province	5486208
Jochobeth Liat	Hog Harbour	7765268
BANI - TIMBALI	PORTS & HARBOR	7748778 36033.
Louis. Tiomei	Port - Oley -	5423620
SAMUEL ANDIKAR	VUNASPEF VILLAGE	5470957
KENERY. SIAVA	Hog Harbour	7758001
Donald Barne	VTO SANTO	7767605
JOHN WARE	Tourism Dept Santo	37719

Consultation Attendance Record.

Name	Tourist Operation + Location	Phone No.
Patricia Gil	Turtle Bay Resort (4km north of Metevolu to turn off more or less)	37988
Phill Jonesa Charmaine Viljaen Timmy	CORAL QUAYS Resort San Michel Uganville HERITAGE TOURS.	36257 7740968.
TOMY LEWIS Mayumi Green	ALLAN POWER DIVE Wracks to Rainforest (Island Travel Agent)	36822 37365
Grant Dorwin LUKE TOKAR SALLY TISHA	Oyster Island Resort Tour Operator MOYYAN RES/BARRIER BEACH	36283 7747159 30026

88 people

7/11/08

Santo East Coast Road Consultations
Attendance Record Sheet

Name & Title	Village or lease title number	Phone number
Eloi TARU'S ^{SICRY} Chief	PORT-OLRY	54 61386
John Rapovel ^{sector 4}	PORT-OLRY	
Gildas Rapoulpoul "	"	
Edouard Alguet ²	"	
Dolospout Relie ^{SICRY} Chief	"	
Martin Rité	"	
Verjant Sarsum	"	
Jackie Sere	"	
Augustin Maliu	"	
David sere	"	
David Ova	"	
Cyriaque Rapoulpoul	"	
Cyrille Sarsum	"	
Tarsiclose Alguet	"	
Simon Moss	"	
Xbraham Tsivi	"	
Dominico Rep	"	
Gégère Relié	"	
Laurenty Tegebu	"	
Frédéric	"	
Xavier Rapoulpoul	"	
Auratis Sarsum	"	

9/11/08

Name & Title	Village or lease title number	Phone number
Alexandre Sanson	Port-olry	
Marie-France Tal	"	
Claudia-Paloud	"	
Danilas Frank	"	
Matheas	"	
Joseph Ora	"	
Sebastien Tal	"	
Maurice Alquet	"	
Wanes Wass	"	
Michel Nevu	"	
Pedre Nevu	"	
Harry Kavrot	"	
Guy Sapu	"	
Wargon	"	
Joan Jacques Palo	"	
Holloir	"	
Bernard Market	"	
Chryseint Frank	"	
Sylvere Tiome	"	
Dierno Savsum	"	
Pio Tal	"	
Abel Stanley	"	
Iselyto Wass	"	
Alain Palo	"	

9/11/08

Santo East Coast Road Consultations
Attendance Record Sheet

Name & Title	Village or lease title number	Phone number
Sotere Palaud	PORT-OLRY	
Christian Rapoukol	"	
Urbain Golgol	"	
Fabricio Sarsuog	"	
Fabiano	"	
Pascal Rité	"	
Armand Rité	"	
Annie Frank	"	
Sylvana Atguet	"	
Franco Sapo	"	
Arthur Golgol	"	
William Oua	"	
Thomas Jigny	"	
Johan Raupope	"	
Carine	"	
Eric	"	
Christiano Raupope	"	
Juliano Palo	"	
Sylvano	"	
Emille Tovor	"	
Raymonde Tsivi	"	
Nicolson Kath	"	

9/11/08

Name & Title	Village or lease title number	Phone number
Mario Tiome	PORT-OLRY	
Arsène Jeck	"	
Jonas Relie	"	
Fabiano	"	
Haling	"	
Selial	"	
Bernadin	"	
Marie Paule Neuv	"	
Arthé	"	
Marjolaine	"	
Maria Rité	"	
Mari sir Wass	"	
Thomas REX	"	
Emille Lecaille	"	
Balthazar	"	
Chrys Wass	"	
Xowan Rapouipoul	"	
Jovite	"	
François Ruppe	"	
Marthino Neuf	"	
Alice Sarsum	"	
Antoinette OVA	"	
François SAPO	"	
Bruno CEVIR	"	

9/11/08

Name & Title	Village or lease title number	Phone number
Marie-Agnes TSINTSIANUS	PORT-OLRY	
Lawetta SARSOUM	"	
Marie-Noëlle BERG	"	
Marie OVA	"	
Licotte OVA.	"	
Fidelia. WASS	"	
Ronnie RAPULPUL	"	
Didier. RAUPEPE.	"	
Jérémic TELPUS	"	
JIMMYS HORHOR	"	
Brianne. Peace Corps	"	
Guillaume TAMUE	"	
Jegor NALIUPIS	"	
Daniel KATH.	"	
Flora OVA	"	
Rolline SARSOUM	"	
Sylviane TAMSEUL	"	
Annicka TAMSEUL	"	
Boniface TSINTSIANUS	"	
Pedro RITE	"	
Jean-Freddy SAMSEN	"	
Noé FRANCK	"	
Bill Henry.	"	
Victorien RAPULPUL		

Santo East Coast Road Consultations
Attendance Record Sheet

9/11/08

Name & Title	Village or lease title number	Phone number
MRS JANET ICREET	HOGHARBOUR	36284 / 5474562.
Mrs DEVI ISMAEL	HOGHARBOUR	"
MRS ALICE James	H.H.B.R.	"
MRS ELONEY	HOGHARBOUR	"
MRS Frauld	HOG-Harbour.	"
Edna Jairo	Losanville/AH.	36419
Mrs. Wawa Path	Hog Harbour Village	36284
Janet Ores	VCH	"
D. WAREK. Mei	H.H.B.R.	"
Wales Robert.	Hog Harbour Village	"
John B.	Hog Harbour Village.	"
George Lol	Hog Harbour Village	"
Paton meiR	1) 1P	"
NAUSON Tomker	" "	"
IAKO WALES.	" "	"
OKA MEIR	✓ -	"
JOHNANSEN. NIAL	- -	"
THACOL JAVRO	- -	"
TOM BELLOU	- -	"
ATHA TALBER-	" "	"
MAHLOW. William	" "	"
Loyalty Kumped.	" "	5482600
Fred I	" "	36284.
Mickson. Karpia	Hog Harbour	5487208
manuel JAVRO	Hog Harbour	36284.
T T	Hog Harbour.	36284.

9/11/08

Name & Title	Village or lease title number	Phone number
OWE ISIAA	HOGHEMBARR	36284
BONE KROT	"	"
Ket	Hogharbour	" "
Samsou R	-	"
E. J. BONG.	✓	
Thomasius	-	
THUKULA NOEL	-	
...	✓	
YAKOE WOE	-	-
Charles Wilbraim		
JAYCUTS		
WILLIE I		
EL SANDER		
Chief Kalmose Warsal	-	25429090
Pastor Graham Path	-	5462218
Bekun Tomke	-	36284
EKALTHA	-	36284
TICE ISMAEL		
Elder Philip Pasua	✓	5498843
Custom. Ch. G. Nial	=	
Ch. NAIKER kb	✓	
Leisahgi	/	
Serah. Dick	✓	5429698.
N. Kouren.	✓	

Philimon. W ✓ Hogheembarr 5452090
 Yangobed 36284
 Naomi Jerry Hogharbour 36284.

9/11/08

Name & Title	Village or lease title number	Phone number
Olive William	HogaltaRBour.	
Shila Kaven.	✓	
Lusi Jonas	✓	
Michael Koh	✓	
Polini Isiah	✓	
ERICK	✓	5441699
Teresia Tavro	✓	36284
TAMAR-William	✓	36284
TRISH: ISAIH	✓	36284
Ram nia	✓	36284
Seral. L	✓	36284
Jimmy-ENACH	✓	36284
Philip Nau.	✓	
Noel Stanley	✓	5411689
JOELY DANIEL	✓	5411689
EZRA Stanley	✓	5465395.
Naomi KALISO	✓	546368.
Lisa Thul	✓	36284
Faena Mer.	✓	
Morien Toto	✓	54461830
Walter Thul	✓	
Yang yako	✓	89778
HENRY. KUSKUS	✓	5476900
WENCHAN.I	✓	5412124
BONDY.L.	✓	5447102
Philip Ismeal	✓	36284.
JOSEP WANSAL	✓	36284.

5450705

Seksek Community
11/12/08

Santo East Coast Road Consultations
Attendance Record Sheet

Name & Title	Village or lease title number	Phone number
MARIE	Lorevia Karkar	5470399
Wus Kalnet - Jief	Kole	5441595
Peter Paul	Laevi Karkar	
Denny Samson	Lorethiakarkar	5435653
DAVID KALWAT	Lorethiakarkar	5412183
RIT VOR	Lorevia Karkar	5447345
KRPA	LORETHIAKARKAR	5485049
KAWOL MARTINO	LOREVIKARKAR	5480036
TABU Jean Benedict	Lorevia Karkar	
MATTHEW Lulu	LOREVIKARKAR	5414558
Jimmy J.	hanothau kuma	5446235
Timothy M.	Lorevia Karkar	5448090
Francois	Lorevia Karkar	5437170
David	Lorevia Karkar	5473889
MARIAM	LOREVIKARKAR	5411492
JIMMY	LOREVIKARKAR	5489345
Obed	Lorethiakarkar	5445714
Wallie	Lorethiakarkar	5445876
ROGER Black	Lorethiakarkar	5445890
Kalep	Lorethiakarkar	5437908
RUTH	LOREVIKARKAR	
REMI	LORETHIAKARKAR	5415022

11/21/08
lorum Nakamal

Santo East Coast Road Consultations
Attendance Record Sheet

Name & Title	Village or lease title number	Phone number
Chief Kalse	Lorum	5449227
Resi WAR	"	
Peter Paul	"	
Henry Ryck	"	
MANLEY PAUL	"	
GREG PAUL	"	
young sul	"	
PAUL Kalse	Lorum	
Mariella Paul	"	
Hellen Paul	"	
Singe Paul	"	
SERGE PAUL	Lorum	
MARIE KALSE	Lorum	
Marie Rose Paul	Lorum	
Cicel war	Lorum.	
Arhe Paul	Lorum	
REGina xPaul	Lorum	
ROWEL-PETER	"	
KELLE PETER	"	
URE PAUL	LORUM	
Vicky PAUL	LORUM	
ROSE ALICK	Lorum	

12/11/08

**Santo East Coast Road Consultations
Attendance Record Sheet**

Name & Title	Village or lease title number	Phone number
Elda JOTHY MARK	Natawa	
Ronie Lokai	Natawa	5477057
JEFFERY LOKAI	Natawa	
STAN & PAUL	NATAWA.	
ROGER - LOKAI	NATAWA	
Malaehi Lokai	Natawa	5449232
Jacob Tomae	Natawa	
THOMAS	Natawa	
Pastor John Vimoi	Natawa	5494395
Sophie lui	Natawa	5474903 5494395
Joyce ERICK	Natawa	
Timo	Natawa	5413125
George	Natawa	
KIBSON	Natawa	54014627
RAND	Lokai Natawa	
willson	Jacob Natawa	
Fred	Natawa	
Steward	natawa	
Helen	Natawa	
Solomon	Natawa	
JUDY PAUL	NATAWA.	
KEN. GIRA	NATAWA.	

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12/11/08

Santo East Coast Road Consultations
Attendance Record Sheet

	Name & Title	Village or lease title number	Phone number
Chief	Tony Mosou	Manioc Village	5484640
	JOHN SAMSON	MANIOC VILLAGE	5442316
	HAR HANSEN	MANIOC VILLAGE	
	AMOS HANSEN	MANIOC VILLAGE	
	JERRY SAMSON	MANIOC VILLAGE	
	MICKACK HANSEN	MANIOC VILLAGE	
	RO7 LOKAI	MANIOC VILLAGE	
Photo	LUI LEON	MANIOC VILLAGE	
	AJO	MANIOC VILLAGE	
	SALE WILLIE	MANIOC VILLAGE	
	LANGAT JOEL	MANIOC VILLAGE	
	DANNILLA .ESBOM.	" "	
	ANNIE .HUZA.	" "	
o -	MAY JOHN	" "	
o	JANICES .DAVID.	" "	
o	Leah Mosu	" "	
o -	Vombani .STEPHIN		
	Jenny .Zacche		
	Rahab .Frank		

13/11/08

Obeds haus

Santo East Coast Road Consultations
Attendance Record Sheet

Name & Title	Village or lease title number	Phone number
EMOCK	MATEVULU Village	5411809
OBED	Matevulu Village	
Pascal	Matevulu village	5475921
Alucim	" "	
Bernard	" "	
OBED. RIRI	" "	
George	" "	
Taitus		
Bill	" "	
chief JOSEPH Riri	" "	7749015
MARINA RIRI	" "	
Lumi Taitus	" "	
VAIKIA	" "	
MAUTHE	" "	
Vasile. Keisene	Matevulu village	
Sylvie	" "	5480669
LOTTI	" "	
Nicde	" "	
JOHNNY. Riri		
ALICO		
Fetavi		

Sarami Plantation
Community
13/11/08 @ Makimi haos.

Santo East Coast Road Consultations
Attendance Record Sheet

Name & Title	Village or lease title number	Phone number
JOHN TAPAS PASIWA	VALANKARA	
OLIVER SUBMAI CHIEF	VALANKARA	
ROBERT SABI	VALANKARA	
SHAKKI WELLS	VALANKARA	
RICHARD	VALANKARA	
JOHANSEN	VALANKARA	
JOHN ESAD	VALANKARA	
KEW WELLS	VALANKARA	
KEDY JOHN	VALANKARA	
ANDID CHIEF	VALANKARA	
PAUL MARTIN	VALANKARA	
DORMINIC MERVIN	VALANKARA	
CEREL TAPAS	VALANKARA	
REGIE ALBAN	VALANKARA	
ROY DAVID	VALANKARA	
ROMAROSE	VALANKARA	
MARY JOHN	VALANKARA	
CERENLINE DAVID	VALANKARA	
LIELIC MICKA	VALANKARA	
FR. WILLIAM BICE	VALANKARA	
NEELSON TOSUL	VALANKARA	
HMASTER JOHN.E.	VALANKARA	

Surender Community
(Nitchiku Plantation)

14/11/03

Name & Title	Village or lease title number	Island	Phone number
TOMACKY FRANK.	TAHAL Metawa Vill. Serevati	PAAMA	
STEVEN FRANK	NOV	PAAMA	54.37318
Rubby John	ULEI	S.E. Ambrym	54.84203
ROSE Job	TOAK	S.E. AMBRYM	
EL. Ian Jacob	TOAK villages	S.E. AMBRYM	
Ineth J.	V	V	V
JOHN P.	VLEP	S.E. AMBRYM	
SALES	TOAK	S.E. AMBRYM	
MAKI Job	TOAK	S.E. AMBRYM	
JOV. Paul	TOAK	S.E. AMBRYM	
KATTY	TOAK	S.E. AMBRYM	
BOSSI	TAHAI	PAAMA	
RESSEN	TAHAI	PAAMA	
JEAN	TOAK	S.E. AMBRYM	
SOAN	TAHAI	PAAMA	
Willie	TOAK	S.E. AMBRYM	
SELENA	TOAK	S.E. AMBRYM	
ANDRE	TOAK	S.E. AMBRYM	
SALMA	TOAK	S.E. AMBRYM	
PATRICA	NOV	PAAMA	
JOSEPH JOB	ETONP	S.E. AMBRYM	
Enneth JOB	ETONP	S.E. AMBRYM	
PHILIP	VLEP	S.E. AMBRYM	
RETH RAHAP	VLEP	S.E. AMBRYM	

CONSULTATION REGISTRATION SHEET

DATE: 14/11/08 PLACE OF MEETING: Turtle Bay Plantation (Nihiku)

NAME	Island Village	Village Phone
Leonard	Merelava Village	Auta
John Sakil	Merelava Village	Auta
Clement	Merelava Village	Auta
John. Suret	Merelava Villag	Auta
Richard moc	Merelava. Auta	
BANI ABAS	Merelava. Auta	
Auck	MOTA NOVYRE	
John stiel	Merelava. Auta	
Timon. Nelson	Merelava. Auta	
Jeffrey DANIEL	Merelava. Auta	
John. Jackie	Merelava. Auta	
Suitia. ERMON	Merelava. Auta	
Joseph TIMON	Merelava Auta	
George Seckas	Merelava Auta	
Suetim Saran	Merelava Auta	
Sarel	Merelava Auta	
Pascal	Merelava Auta	
Clement	Merelava Auta	
Elison Tula	Merelava Auta	
Mika	MOTA Tasmate	
ELLY	MOTA Tasmate	
ABI	AMBREAM SAWULY	
JIMMY	Merelava Auta	
ALVIE ELM	MOTA Tasmate	
Stephen	MOTA Tasmate	
PHILIMON	Auta Merelava	
BANI Clement	Merelava Auta	
JOHNATAN	Merelava Auta	
IWORD	Merelava Auta	
KEVEN	Merelava Tasmate	
Francois Buar	" Auta	
Norman Vogis	" "	
Linas	" Big Stone	
Selina Palangis	Merelava	

Name & Title	Village or lease title number Island	Phone number
JOSIAH BULE	NARUWATH Pentecost	
ISAAC TAHUN	HINGAL PAAMA	
FRANCIS B.	MELISISI Pentecost	
AVOOK R. HAUL	UVALLELI PAAMA	
P.O. WEN	FO TERE AMBRAM	
PIERRE R.	MELISISI Pentecost	
TERRY	HULEY AMBRAM	
TOP	AVUNATAVOA MALO	
ALBEICK HAUL	OLALIMA AMBRYM	7775284
ALAIN KEN	TEPRUM SANTO	
WILLIE BAKON	PORT VATU AMBRYM	
HOLU	PAAMA	
FREDDY MAKI	WAILLEY PAAMA	
MAGUCKOU ALAIN	AMBRYM	7772105
RAYMOND AXY	BENENAVETH MALAKULU	
JONATHAN BULE	RAMPUROR Pentecost	
MERANDUM NOEL	OLAL AMBRYM	
ESTHER ALBERT	TEPRUMA SANTO	
BETTY SANEL	FANOVO SANTO	
LESBERI	WALEP PAAMA	
MERRY	TAHAL PAAMA	
JACK	PORTVATO AMBRYM	
LOREN	WILIT AMBRYM	
Bernadette	MELISISI	7775284

Appendix B – Meeting Notes from Consultations

SANMA Provincial Council Meeting 9am Wednesday 5th November @ Provincial Headquarters Luganville

Chuck Sethness (MCC)
Chris Cookson (MCC)
Andrew Scroggins (Downer EDI)
Craig Smart (Downer EDI)
Allen Iavro (Santo Chiefs Representative)
Catherine Malosu
Mandy Fitchett
Tony Sewen (MCA Acting Director)

Meeting Notes

- Welcome from Vice President, apologies as Secretary General not present.
- Tony introduces team and updates on projects, south Santo bridges etc.
- Timeline waiting for 2 years when will it happen. Design will be finished in February (preliminary) then they can start the work. Will try and work both in Efate and in Santo.
- Is it a one off programme or is it a continuous programme for Vanuatu. Many conditions are required to make program current program is 5 years to spend the money, must meet conditions continuously otherwise you lose funds. If you fail then program will not be continuous so up to the Government of Vanuatu to meet conditions.
- Last few visits are consultation, from now its actual program so in consultation talk to communities about actual damage and impact on communities. So Council must give full support to help MCA with this stage.
- Full cooperation from the 3 Councillors from the East Coast Section affected by the road.

Transport Association and Government Departments, other Stakeholders Consultation Meeting 1.30pm Wednesday 5th November @ Santo Chiefs Nakamal

Chuck Sethness (MCC)
Chris Cookson (MCC)
Andrew Scroggins (Downer EDI)
Craig Smart (Downer EDI)
Allen Iavro (Santo Chiefs Representative)
Catherine Malosu
Mandy Fitchett
Tony Sewen (MCA Acting Director)

Meeting Notes

- Tony introduction
- Gender important women's views are important for whole family benefit of road.
- Realignments process must be completed properly through MCA.
- STI and HIV awareness training will be undertaken
- Environmental Guidelines of MCA and MCC, consultation requirements and the RAP requirements under WB OP 4.12.
- Moratorium on structures and crops in the RoW
- Craig advised that the road will be sealed to Matevulu and after will be sealed. Would like to start construction in April depending on the weather) all consents and approvals gained by end of February.

- Need information on bridge repairs, flooding places, archeological sites, special trees that road needs to be designed around to help design process.
- 7m seal formations, then plus drainage a total 10m strip will be affected by the works, mostly new road can be located within the existing RoW.
- Before construction series of shows and films, education to locals on STIs and HIV.
- Employment opportunities, Downer will have forms available next year.
- Local contractors will also be needed for hire machinery.
- Dangerous hills, corners, gradients need to be identified if stakeholders can please help with this.
- Signboard within the RoW will removed without cost to the owner and relocated outside the RoW.
- Seedlings from Department of Ag. Provided to landowners.
- Chief comment that project has been talked about for 5 years now; today not all chiefs are here, not enough notice. Need to talk straight to communities, everyone uses the road helps everyone. Namele leaves should not appear as everyone should cooperate. Before when the road first built it took much land but no consultation and no compensation as it cut corners without any information.
- Chief thanking the Government and Road Team. Hog Harbour Chief (land transport association). Wanted road for a long time, must go through, no more time to listen to complain time to construct the road. Bridge on the east are small if you want to make them bigger, to carry copra and logging trucks are spoiling the road now.
- 7 m with 5 m of seal until Matevulu. From there not sealed but formed to 7m wide to Port Olroy. Tony responded to question about what happens with NZ funding, will have drainage and be compacted properly.
- What is the total cost of the road? 15-16 million USD
- Luganville Tourism Association - Owner of Beach resort not happy that the seal will end at Matevulu. Bridge 10 years ago fell down near Matevulu so needs replacing. Logging business growing so need bridges to be replaced. Also straighten road needed as is too windy (a leaseholders land) to show on the map at the end of meeting. Rumor that the road is going to Champagne beach (story from a govt staff member). Road should be sealed at least upgraded to Champagne beach if serious about tourism.
- No money for bridges as contract stands, realignment needs land department permissions, costs a lot more to do compared to following the existing alignment.
- Money in budget some money for signs, tourist attractions and road signs there is opportunity to do that.
- How much money more will it take to put tar seal from Matevulu to Port Olroy. 200 million vatu approximately (Tony Sewen)
- Govt of Vanuatu responsible to find some more money to finish the sealing of the rest of the road. Approval through CoM to not do south Santo bridges.
- Equipment for PWD for fixing road?? Grader, roller PWD will buy so can start to build roads and maintain them properly.
- As small pots of money are found then can use them on South Bridges.
- No noticeboard everything not cleared out of RoW yet, no trust here – positive about road, glad that we came, health???
- Proper drainage for the non-sealed section as PWD just can't maintain the road without it., yes has proper drainage so yes will be much easier to maintain.
- Thomas Ruben talked about the road here, another short cut, to cut costs as going straight so less seal. Much less road so would be cheaper, maybe. To show on the map. Sad but we don't have enough money to do it (Tony)
- Timeframe for project to be finished (already responded), early 2010 until finished. Cannot be certain as still working out the details. Programme is 5 years and it started in 2006 so 2 ½ years left have to finish by 2011.
- Two realignments suggested are to create shortcuts where road is deviated around coconut plantations. The two places are Coconut Plantation at Shark Bay owned by Rowan and the again one at Nitchiku (within first 16km) which would come out a Turtle bay.
- Person to contact regarding these realignments is Kalmer Vason 37902 or 7740796

**Santo Tourism Association Consultation Meeting
5pm @ Hotel Santo, 5th November 2008**

Chuck Sethness (MCC)
Chris Cookson (MCC)
Craig Smart (Downer EDI)
Andrew Scroggins
Allen Ivaro
Catherine Malosu
Mandy Fitchett
Tony Sewen (MCA Acting Director)

Meeting Notes

- 11 Members of Association attending
- PWD staff to be trained to maintain the road after contractor gone and any machinery to be left behind to help them maintain the road.
- Craig answered yes provision in contract to be involved in future maintenance of road, capacity building of PWD, simple work on road that villagers will do for a particular section under community contracts.
- Contractor has bought some plant that will go back to NZ, but also purchased some trucks that will not take back to NZ. Downer not handing over machinery to PWD.
- Condition of compact was to increase the funding allocation for maintenance of contract, substantial increase in funds allocated by the Govt, but PWD capacity has to keep up with spending the increase budget, within the additional increase in govt funds machinery and equipment is being purchased. Some donors harmonizing to
- Ausaid doing an elaborate 10 year project to takeover the projects that MCC can't do but largely through PWD, rather than international contractors, AUaid committed to a 10-year project of PWD strengthening to get these done.
- What is the alignment of the road. New road will follow the existing closely. Turtle Bay realignment not from Turtle bay resort. Road alignments will have through consultation, will keep the land owners informed. MCA not advocating for realignment developers have to do it pay for it, standards are Australian. Aus roads 2004 – pavement design standard, design curve based on traffic volumes and weights. Spec's for road base are critical. Coral used, 300mls sufficient pavement. Compaction specs will be tested and drainage.
- No one knows about developments until they appear, advertise on radio and newspapers, land owners about projects that may be affected by realignments. Hard to find out about what's happening in development. Realignment process has been issued in paper.
- VIPA could assist with the future developers
- Nothing for the Coolidge Road – carries more tourist than any other road in Santo.
- PWD may be able to upgrade the road with its new capacity and machinery.
- How many bridges are you upgrading, currently none. The one before turtle bridge (that will fall down soon) – Downer to have a look underneath the bridge – canoed under and looks like it is rusted out.
- When are they are going to grade the road next – current problems 2 graders are being repaired at the moment, could be 2-3 months before being graded. Have to ask PWD, having trouble accessing the money to make road passable – which under contract are required to do before the hand it over to the contractor.
- Distribution of the money and machinery from administration.
- Will you build on existing coral yes definitely use what is on the road as it is so hard at the moment
- Tony from Alan Power – took 48 divers down to the Cooleridge, would like to know why it has been overlooked for upgraded.
- But fund can't everything so just chose what they could, govt working through the priorities, priorities were decided 2 years ago. Scott Bradford Peace corp did a proposal for the Cooleridge road. Back to PWD for this section of road.

- What certainty is going to actually happen before 2012. Penalties if highway contractor does not deliver. 18 months to build the road. Depending the weather.
- Traffic management during road closures, need to inform the tourist operation.
- Dave to provide cruise ship schedule for the next year
- Ester has association emails distribution list to send out notices
- Bridge repairs and works will be one lane flow but won't be closure will use stop go people to manage people.
- ESA officers will be walking the road and doing consultation with kastom landowners and communities. To identify specific issues and get agreement and sign off before the contractors come and construct.
- Relocation of trees and crops within the Row. Is it a new concept for Vanuatu. New for Vanuatu, agree with the better environmentally for locals and builds goodwill.

Santo Leaseholder Consultation Meeting

9am Thursday 6th November 2008 @ Santo Chiefs Nakamal Luganville

Chuck Sethness (MCC)

Chris Cookson (MCC)

Andrew Scroggins (Downer EDI)

Craig Smart (Downer EDI)

Allen Iavro (Santo Chiefs Representative)

Catherine Malosu

Mandy Fitchett

Tony Sewen (MCA Acting Director)

Meeting Notes

- Tony introduction, team will do an inventory of losses of everything in RoW to Port Olry this week.
- PWD told the leaseholders that there is no money to spend on the road now, PWD say got not money PWD done nothing for 6 months Leaseholders need to know what's happening on the road in the meantime as Downer starting in April, trucks getting wrecked will be worse, coral they have put on is bad. PWD won't maintain the road, Would like answers from the Government, not necessarily from Downer, when will they fix the road, who will maintain it
- Downer will not be responsible for the road until it is trafficable.
- But PWD don't have anything in the budget. Not even have diesel not money to grade the road so waste of money to build a new road as no one will maintain.
- No faith in PWD to maintain the road, and budget between now and the time that Downer take over the road in April.
- Tony advises that the PWD must upgrade the road to an acceptable standard before Downer do the road. We are meeting Simeon to talk about the upgrade of road.
- Serious concerns that the road must be n good standard before handover to DEDI to do work.
- Govt as condition of compact has to increase budget for road maintenance, but a planning issue with PWD for timing
- Road condition very bad at the moment, PWD problem (Old fulla) but if condition for handover too bad then maybe Downer will not build the road? Govt obligation to ensure that maintenance budget is there, but if don't adhere to obligation then becomes a sad story.
- Should be tar sealed otherwise then it is not good for maintenance waste of money for Downer and MCC.
- Chris to provide summary, first govt has made budget commitment but capacity issue for PWD to spend money well and timely. We will take these issues back to PWD as serious issues.
- Contract says trafficable condition for road standard. Efate has gone through this, did get there in the end before handing it over. PWD need to understand the conditions of this. Should see improvement soon e have a number of strategies in place to improve the road condition now.
- Team go back to Vila and say Road is bad now, is rain season coming December you can't grade it, sun shining now, no drainage at the moment, grader could do work quickly. Stop water running down the road before the rain comes, very urgent.

- Directions to Simeon must happen this week, otherwise wet season will destroy the road further. Need funding allocated with direction to spend the money.
- Tony will keep pushing the PWD to fix the roads, PWD is purchasing new equipment for maintenance under this programme, so arriving in Efate early next work Allen to tell them more next
- Peter (leaseholder who raises the point about the road condition now)
- Allen apologizes to Peter about the road and how funds are spent.
- Last month PWD got a new bitumen sprayer and 2 new lorries which will help with maintenance. Early next year will be in place to implement measures.
- Peter has the cold tar been reduced on Efate, Santo gets screwed once again, unfair proportion reduced, message go back to govt that Santo road gets reduction in Cold Tar, Efate should be reduced in cold tar proportionally to be fair.
- Santo got more industry up here cattle and copra more economic diversity up here.
- Efate only got tourism, no one goes around the island in Efate except tourists.
- Santo thought (plastics and airports guy) they were going to get the cold tar all the around
- Should but the diesel now as price of oil has plummeted at \$65 a barrel down from \$145 can you future purchase all the materials
- Small farmers been waiting for this for a while, 15m RoW must remove everything, but what about loss of crops and cash. Fences what is the process for removal of these. (Old fulla) Tony responds that fence removed by PWD if damaged then PWD fixes.
- Rowan from Shark Bay does not want a realignment
- Kuvu with plant and machinery – people need the road so don't compensate for moving fence or crops think about good for all. Don't want individuals to stop the benefit of the road for all.
- Nitchiku – width of road 15 RoW belongs to Government, existing lease have 15 RoW no used to have 20m but law changed so now variance between 15 and 20m. Govt decided to make change who
- Peter lease goes to 10m, if lease shows this are we going to have it re-surveyed and the lease updated, who pays for this, some don't care about compensation but does it affect the legal status of the leases. Compensation of lease rights not the
- All these issues must be considered but at the end of the day everyone wants the road (Old fulla)
- If a different situation over the next few weeks in Santo than Efate where no problems, we can identify. Can't afford to delay the road would have to Passover any section where agreement isn't reached. Has to follow the rules and fit in the short time frame
- **Ask lands to tell us if anyone has under 15m lease RoW – There are none that are under 15m so fine.**
- Nitchuku realignment for turtle bay, he has never heard anything about realignment through his land, who
- Kastom owner approached Peter other leaseholders
- No decision at all, haven't received a proposal yet so not even consideration
- Peter – planning process, coral is given get free (Daily post) but need to clarify to contractors here how it is going to be managed, need to bring up know what the situation is.
- Downer looking for sites, if are being used, currently no locations earmarked, want to come up with
- Will they be paid, (Peter), Craig responds with that this is part of the negotiation
- Andrew – contract has a limit how much can be paid for oral if we go over that then less road gets built, Downer has been getting own permits to make it cheaper Downer willing to talk to everyone but have a limited budget. What price per cubic metre as cheap as possible so more road.
- Downer operate quarries, would never tell the price in front of the client if agreed.
- Quarry landowners how do you chose the material, just people who have a permit or anyone with coral. Downer can find new spot and apply for a new permit.
- Nitchiku realignment is glad that the realignment was mentioned, please don't mention this in public forum. Angry as he is the leaseholder do not bypass them, kastom landowners. Govt and contractor got no interest in realignment, if someone want to have realignment for their benefit there is a process to go through. Nitchiku is part of landowner,
- Realignment process (Chris) once anyone has initiated it before anyone agrees with it or anyone affected must be consulted, if anyone wants in a realignment go through PWD as part of accessing this must be consulted.

- MCC funds cannot be used to fund realignment unless everyone
- Apologies to Nitchiku from landowners for initiating without talking to the kastom owners.
- Leaseholders should identify their leases on the map.
- Quarries where there is lease and someone wants to do the quarry but leaseholder doesn't want on their land. If you don't want a quarry, do the leaseholders have rights, if you have agricultural lease then you don't have a lease for quarry. Has to be an agreement between landowners and leaseholders. But everything under the ground belong to the Government, but if kastom owner wants to do a quarry on our land. Katherine responded that under your lease if it doesn't say quarry cannot quarry and so must apply to change lease rights which requires leaseholder agreement so protected.
- Realignment because of sharp corners, any straight safer rational for realignments
- CTF have done survey u here, designers flew in this morning so driving down road to look at these issues so no timing of safety realignments yet. But please tell us.
- Should straighten the road as much as possible.
- Can you make the road like the American Road very hard from Matevulu if not sealing.
- Americans used live coral, and salt water won't be doing that
- Not just about the budget for the area of non-tarseal also maintenance a road that not sealed is much better to maintain a cannot grade tar seal but you can with un sealed road. Will last much longer than tar seal because easier to maintain.
- Hard to get good maps,
- Shark Bay realignment (Ronan Harvey) leaseholder advises is nothing to do with him, has never heard about it.

**SANMA Provincial Council Consultation Meeting
11am Thursday 6th November 2008 @ Provincial Offices**

Allen Iavro
Mandy Fitchett
Craig Smart
Chuck Sethness
Chris Cookson
Catherine Malosu

Meeting notes

- Meeting with Joel Path and Sakaria (left at 11.30am).
- Identified our need to meet with PWD urgently
- SG explained the quarry committee he has set up with a member of Lands, Simeon Stanley and himself. Everything must go through him. If Downer want a quarry some where then they tell the Committee not just PWD. Need to list where you want quarries which ones you want to use. Any problems at all including Namele leaves to be directed to the 3-man team.
- SG wanted to know about the compaction proposed, said that the American Road had been in place since 1942, didn't start getting bad until 2000.
- Lasted 50 years, will this road last 50 years? Compaction is important. Can it be the same as existing road and last as long.
- Would prefer road thickness the same as the Americans. If tar seal not possible all the way to Port Olry then compacting of road is more important.
- Goal is a well compacted road. 20 year designs life needs good maintenance as well. Life of road depends on Province /PWD.
- Lots of logging now so road is getting used by heavy trucks and will get only worse in the future. Flooding is getting worse from these trucks.
- Weather has changed a lot in the past years, flooding happens more, may be due to all the logging in the upper catchment, causing problems on the road.
- Compacting and good planning and drainage will help the road life and will also help PWD maintenance of the road.
- Use local knowledge for flooding locations and water flow patterns over the road.

- SANMA have given extra money to the PWD to help them out with maintenance only province in Vanuatu that does this but basically had to due to serious under funding of Santo PWD.
- As the money is meant to come from central govt the SANMA Councillors are not happy about this Joel had to explain how important it was and so know accepting it but cannot happen every year. Good roads means people come to town and will spend money in Luganville.
- Still not sure where the maintenance budget for 2006 for PWD has gone.
- Road is worse than ever before, now you have to have a 4WD to drive the entire road before you could take a normal car the length of the road.
- Tourists and locals need a good road before Christmas as it is only going to get worse with the rain and wet season and tourism and travel is busy on that road during Christmas break.
- South Road has a very high water table, road is at water level.
- Duty of Committee to talk to people ground level work by them for quarries.
- Can use Sakaria to coordinate the SANMA province assistance. Some training needed.
- A team to be trained could include Physical Planner, Environmental Officer (Philippe) and Sarakaia.
- After meeting some discussion with Road team included – need to adapt the Grievance Procedures to make sure localized for Santo, use SANMA more than used for Efate and SHEFA. Benwill Tari is the Committee Rep for Lands Department.
- Check if any provincial rules for protection of roads, speeds, weight limits etc Craig asked need to be aware of any provincial rules.

**Port Olry Community Meeting
2pm @ Port Olry Seafront 9th November 2008**

Sakaraia (Provincial Planner SANMA)
Simeon Stanley (PWD)
Chris Cookson (MCC)
Craig Smart (Downer EDI)
Allen Ivaro
Catherine Malosu
Mandy Fitchett

Meeting Notes

- Paramount Chief sick but Vice – Chief (Chief of Sector 2 in attendance and chair of meeting)
- 5 sectors in community 2,500 to 3,500 people living in Port Olry. All members of Roman Catholic Church, only 1 church.
- Used to have 5 public transport trips a day to Luganville now only 2 as road is damaging trucks.
- Copra biggest industry of Port Olry
- PWD Quarry on RHS, approx 1km to coast
- Some bungalows on beach front evidence of tourism operations, some fishing
- Mary tree observed on way to meeting on RHS attached to a Nabanga tree, on Assumption Day each year entire village walk to Mary Tree together.
- Village is francophone, translation for future consultation into Bislama.
- Meeting not in Nakamal as too hot so next to coast. Some difficulty hearing questions, Allen Iavro assisted with clarification
- First comment was that last year MCA came and said that the road was going to be sealed all the way to Coal Tar now it isn't why not? Catherine responded that maintenance is easier with non sealed for PWD, and costs of oil and construction have gone up. Still looking for donors to seal the road all the way.
- Community member heard that Lennox Vuti misused funds, is that where the money for the coal tar went? Catherine and Chris responded that no funds have been misused.
- Community member appeared angry that no coal tar. The biggest economy is in Port Olry so they deserve coal tar all the way. It has to come to Port Olry
- Coal tar in Eate Ring Road, how does this compare with Santo coal tar, costs and lengths of coal tar. Angry that Santo missed out and Efate got the coal tar. Response from Catherine that the CoM made

decision to do all of Efate. Simeon said he only heard today that no coal tar all the way to Port Olry and he will tell the message from the community to Vila Govt.

- Simeon explain the road standard for the unsealed section as high quality and the same as sealed except no tar. Prepared exactly the same with drainage.
- Sakaria told community that the south Santo bridges have missed out complete as have Malo road upgrade.
- Question about whether the equipment will come from highway stabilizers. Allen and Craig respond that not finally decided yet, and there are opportunities for local contractors such as Kuvu.
- April 2011 the road will be completed no room for delays
- Breadfruit and LVS trees need trimming the community agreed, and do not have any special trees along the road.
- NZAid funding for the road explained.
- Suggestion of the community to spray the trees you want to cut down and community will remove them for you.
- Question of who will move the fences that are in the way? PWD will relocate for the village
- Craig advises don't move or remove anything yet wait for the final design.
- Realignment will there be any? No the road will follow the existing alignment
- Simeon explain the delay costs, so community are not delay construction of the road let the Contractors work.
- Grievance procedures – Simeon advise to sort out in the village.

Hog Harbour Community Meeting 4pm @ Hog Harbour Nakamal 9th November 2008

Sakaraia (Provincial Planner SANMA)
Simeon Stanley (PWD)
Chris Cookson (MCC)
Craig Smart (Downer EDI)
Allen Ivaro
Catherine Malosu
Mandy Fitchett

Meeting Notes

- About 60 people 22 of which were mamas.
- Allen Chaired the meeting (his village)
- Seal will end at Matavulu but wouldn't it be better to do the sections of the road that are steep, hill near shark bay in seal rather than flat bits.
- People of the village are disappointed that the seal will not come all the way to Hog Harbour as believed that it would. Last time MCA came community were glad that seal come all the way so a bit disappointing.
- Why not all the way with coal tar? Catherine explained that bad budgeting for costs but no misuse of funds is the reason. Tender high costs, weakened US dollars and fuel price both beyond the control of the govt.
- Santo is the economic power of Vanuatu so deserves Coal tar road Efate should not get more km of coal tar. Not a good thing not fair
- PWD maintenance of unsealed road is not good, no evidence that they can maintain it, what about the future.
- Need evidence that there is budget for PWD to maintain an unsealed road
- Comparison of km on Efate being sealed made with Santo, a quarter of the seal that Efate is getting.
- Realignment suggested through the village for safety reasons as traffic will speed past primary school and there is concern that the children will get injured/trucks already speed. No accidents yet but will be if road is better.
- Speed bumps can be included in design, even in unsealed road.

- Get designs from contractor first then bring these back to community – to get agreement on safety. (Check later on National Interest Realignment – Check with SG)
- Pipes under the road that come down from ‘Antap’ water supplies.
- What is the width of the road – 7m including drainage within the 15m RoW.
- Will Contractor improve the hill (very steep) just before the village? Designs not complete yet but now that Downer know about it they will feed this information back to the designers.
- Millennium fund said they would fund the Champagne Beach road, just improvement, this is incorrect.
- Dangerous corner near Hog Harbour Primary school identified. Craig has identified this during the RAP and is looking into it. Mamas agreed very happy to hear this.
- Comment that the community should clear out everything in the RoW. Advised not to as wait until final designs are completed so we can say what is actually in the way and what is not. No point clearing wrong place.
- Comment from the Principal of the school saying that support the road and that the people of the community are disappointed but will never get in the way of development of the road. They will help where ever they can, they just want us to speak the truth when we come to the community, unlike last time.
- Chief supported the Principals comment it is just that the road sounded better before the community will of course support the road builders. But please tell the govt. and NZAid that the community need coal tar to Port Olry
- Sakaria from SANMA advised that previously there were 3 projects and this is the only road in Santo that is left. Simeon says sorry that not coal tar, but is to hard to maintain for PWD.
- Question to province about the maintenance of feeder roads, need to grade but can't with the budget of 50 million vatu a year.
- Who will pay for quarries and how much will they pay. Downer will talk to the quarry owners and negotiate the best deal with each landowner.
- Chief advised that the community will clear everything out of the RoW when the time comes that it can be confirmed what is in the way.

Bene Community Meeting

9am @ Bene Church, 10th November 2008

Philippe Firiam (PWD)

Simeon Stanley (PWD)

Chris Cookson (MCC)

Craig Smart (Downer EDI)

Allen Ivaro

Catherine Malosu

Mandy Fitchett

Absent – SANMA Province representative

Meeting Notes

- Nine families in community, 12 attendees with 3 mamas and 2 youth.
- 2 km stretch of land next to the road RAP Issues only 2 fences relocated, 3 coconuts tree and 1 timber tree to be removed, trim breadfruit and Mango trees.
- No water near road in area, need a source.
- Quarry near Bene close to road.
- Why is coal tar finishing at Matevulu and not coming all the way up . Craig explains budget allows coal tar to this place only. Road all the way up is the same standard with drains, speed bumps – high quality still just no coal tar. Other donor partner is coming to do the road to
- Properties next to the road, clearing of how much land next road. Before they gave compensation what will this program be doing? Catherine respond no gat money for compensation. Goodwill approach instead, replacement for crops with seedling from Agriculture.

- Comment – some orange, breadfruit, to cut out and trim. But who will manage fence relocation. Contractor has 15m so will only move if it needs to. Negotiate with fence removal with owner. Arrangement with PWD for them to move the fence back. Will replace if damaged in new location. Costs with government for resettlement.
- Who will maintain road after 2011? Chris – Govt signed agreement with US Govt that will pay more to the PWD, paid into budget already, and also agreed to community maintenance contract, PWD started this already, and part of money will be to work with communities. Contractor will give skills to communities to help maintain the road.
- Speed bump in community as children walk on road, they have dispensary and some children walk up to primary school. Sign saying slow down.
- Width of road is it safe for passing of big trucks and small trucks.
- Issue of water pipes under the road, Simeon asks whether we are putting water ducts along the road where water pipes under the road. What is the plan with SANMA current plan and budget for water pipes under the road. No information on the pipes. Talk to SG and PWD further, Simeon identified need to coordinate to prevent road being dug up after constructed.
- Very small water source about 1 km
- Speed bumps clinic and school next to road and need 4 speed bumps, consultation on speed bumps done Simeon knows the location.
- River is not really river, not too good for compaction due to low flow rate.

**Lorum Community Consultation
8am @ Nakamal in Lorum 11th November 2008**

Philippe Firiam (PWD)
Simeon Stanley (PWD)
Chris Cookson (MCC)
Craig Smart (Downer EDI)
Allen Ivaro
Catherine Malosu
Mandy Fitchett
Absent – SANMA Province representative

Meeting Notes:

- Population of the Village -
- Mama's 12 in attendance and 14 men.
- All property close to the road, suppose you must push them out. What happens.
- No fences in the way in Lorum so all fine.
- Tree to be trimmed were listed from the RAP exercise then the 2 trees to be removed listed.
- Natangora to be removed.
- Mama asked question (local language). Children's safety. Road is wider, cars will go 5m formation, 1 metre to walk if you want bumpers come and show us on the map. (teacher)
- Support for the road from the village, if you want anything cut down from the RoW they can do it.
- Glad for road as is good for life and economy of the village but how can community relocate the fences
- PWD is buying the wire and posts to relocate the fence, and for labour will pay the community. PWD providing staples, nails and wires to move fence.
- Employment and maintenance of the road. Is labour going to be local so each section of road will have people from that section of road being constructed.
- Craig responds depends on the skills of the workers have to look at skills for each job. Security yes but many different jobs.
- Road no coal tar as fine as long as it is better and good enough to take people to hospital fast enough so they do not die on the way.
- New play centre opened there is concern for safety for the pikininis on the road.

**Seksek Community Consultation
10am @ Nakamal in Seksek Village 11th November 2008**

Phillipe Firiam (PWD)
Simeon Stanley (PWD)
Chris Cookson (MCC)
Craig Smart (Downer EDI)
Allen Ivaro
Catherine Malosu
Mandy Fitchett
Absent – SANMA Province representative

Meeting Notes:

- What will happen to all the coconuts close to the road? Should community move them out. Catherine explained the GET agriculture replace as goodwill. Seksek only got 1 coconut close to the road.
- Got some Tabu stone close to the road, so must show PWD where this is before the construction starts. Community to show where. (Old Fulla)
- If you cut coconuts down no problem they need the road, will move fence if it needs to go, road is more important. 1 Coconut don't need seedling as they have fullup coconut seedlings already.
- Been traveling the road for a long time, not got too much to say but must use men from here to work on the road. Young fulla will be glad for small money and some work on the road.
- Water pipe is near the Christmas tree before the village. (check with Wus).

**Natawa Community Consultation
8am @ Nakamal in Natawa Village 12th November 2008**

Phillipe Firiam (PWD)
Simeon Stanley (PWD)
Chris Cookson (MCC)
Craig Smart (Downer EDI)
Allen Ivaro
Catherine Malosu
Mandy Fitchett
Absent – SANMA Province representative

Meeting Notes

- 34 people with 4 Mamas present
- Population of village is 200
- Road funds can't finance Coal tar all the way to Port Olry, Why?
- Only 14km of seal but the rest is upgraded to a high level with good pavement, just not tarseal, The Govt is looking for funds to tar seal the rest but not as part of this contract.
- Water is needed for the road, the stream is not perennial, can be dry for six months. Village water supply is from the Natawa Stream
- The machine outside the Nakamal, front end loader belongs to Ming, a Chinese man living in Luganville.
- What is the road formation and design, does it fit in the 15m RoW width of the road. Craig responded with 12-13m of the road will be affected, though sometimes it will affect one side more than other.
- Fence for bullocks close to the road need moving? If so how will this happen, who will pay for it to go back? PWD relocation process explained, no fences in this section need relocation.

- Drainage is important in the design for the life of the road, maybe fences can be relocated for better drainage.
- Phillipe explained that the surveyors will put sticks on the road at the width of the RoW so community can see what is located in the RoW.
- PWD will order and pay for the wire, nails and staples needed for the fences.
- Comment from Old Fulla if MCA talk too much then it will affect the speed of the work.
- Before there were 11 projects, why now only 2? Catherine explained the budget increasing costs of fuel, construction etc.
- Employment on the road for the community starts when? Craig responds that not yet, wait until early next year to get application forms. Work doesn't start until April or May next year.
- Speed bumps near the bridge and village entrance to get cars to slow down. This area is also the bus stop for the community so lots of people on the road in the mornings.
- Thank you for coming from the Pastor as the road is a very good thing and everyone will co-operate with the road builders, the road is life for the East Coast Santo.

**Manoic Community Consultation
1pmm @ Nakamal in Manioc Village 11th November 2008**

Phillipe Firiam (PWD)
Simeon Stanley (PWD)
Chris Cookson (MCC)
Craig Smart (Downer EDI)
Allen Ivaro
Catherine Malosu
Mandy Fitchett
Absent – SANMA Province representative

Meeting Notes

- Two visits were made to the community. The first one they were at a community picnic and so Road Team went to the picnic to organize for another day. Second meeting was during a fund raiser so women were in the kitchen running the fundraiser. To accommodate Simeon presented to the men and mostly those directly affected persons.
- Mandy and Catherine presented to the Mama's in the kitchen.
- Comments were similar to previous meetings regarding the coal tar going to Port Olry before and not now, would like to know why not?
- Community would like 2 speed bumps near the entrance of their village.
- There is a water pipe under the road which they will show Craig.

**Tapas Community Consultation
10am @ Nakamal in Tapas Village 12th November 2008**

Phillipe Firiam (PWD)
Simeon Stanley (PWD)
Chris Cookson (MCC)
Craig Smart (Downer EDI)
Allen Ivaro
Catherine Malosu
Mandy Fitchett
Absent – SANMA Province representative

Meeting Notes

- 6 mamas, 30 people total. Some people are working in the plantations so not able to come.
- Zach Wells, during first awareness was told that the Coal Tar goes all the way to Port Olry. Were really happy when they heard this, then coal tar got reduced to Kole now to Matevulu, so now not so

happy about this. Catherine explained the decisions made at Govt High Level. Costs going up and so cannot do all 11 projects as well. Why has Santo not got the same as Efate, it is not fair, Santo should get the same, as made the same agreement with Efate as did with Santo Chiefs and Pastors. Also not fair as the revenue for the country comes from Santo rather than Efate, bigger industry, especially the East Coast.

- Catherine explained the Steering Committee and the approach they took with the decisions, trying to get funds to fulfill the original commitments.
- Chris explained that the money not changed, but the world economy changed, cost of fuel and building and construction industry boomed, all countries that MCC out funds into has had the same problem. Washington sent people to work with GoV to make decisions on what is prioritized. We understand and are sorry that there is not enough money, still working hard with other donors. MC will take back to all donors that there is cry for the tar seal to go to Port Olry. AusAid spending 18 million on roads in Vanuatu so MCC will let them know.
- Community will move everything out of the RoW, main thing is tar seal not worried about everything in the RoW, small things for the community.
- Phillip explains the duty of PWD to move the fences out of the RoW. Public works will provide new wire, survey team will come and put 15m RoW for sticks, only need to move the fence if it is really inside the boundary. If you want to change your fence your own way then PWD provides material and you can do it otherwise PWD will do it.
- Catherine explains the GET, and agreements that we are making with community give consent to remove crop trees.
- We need some information on the water that is next to the road, Pura River.
- How will the drainage work at Pura River. Big drainage problem at Pura River. Yes Downer will be doing something to fix this, but need to investigate further.
- Pura stream is actually 2 streams that meet, one stream is perennial and the other dry for some months each year. The stream doesn't flood the road since the culvert was put in but does flood Joel Roberts's coconut plantation. It is damaging his coconuts. He has some water taro planted near the stream but would rather his coconuts were protected from flooding. Johnson Warren representative from Pura Community advises they use the water for washing and swimming, cooking but not for drinking unless their tanks are dry, last resort water source. The spring head is about 1km from the road. During heavy rain event the stream stays the same size.
- The water branches out after the 2 rivers come together. Has only been over the road once.
- Proper drainage design is needed, PWD works made flooding problem at the problem so need to be very careful, suggestion that once we have design we bring it back to community and present to PAP's
 - Jackie Wells
 - Joel Robert
 - Johnson Warren
 - Richard Joshua
 - Chief Tapas
 - Pastor John

Matevulu Community Consultation
9am @ Obeds Haos in Matavulu Village 13th November 2008

Phillipe Firiam (PWD)
Simeon Stanley (PWD)
Chris Cookson (MCC)
Craig Smart (Downer EDI)
Allen Ivaro

Catherine Malosu
Mandy Fitchett
Absent – SANMA Province representative

18 community members, including 8 mama's and 2 youth.

Meeting Notes

- Populations approximately 400 students at Matevule College and 500 (including Pikinini's) in the village
- There was no representative in the meeting from the college.
- Chiefs welcome included comment about trucks getting wrecked going to town and costs of this becoming hard to manage, trucks going to the mechanic nearly every week now.
- No schools directly on the road, so no children crossing regularly. Matevulu College is well off the road.
- They didn't believe signs were necessary as everything they use is off the road.
- Thank you for bringing the road to Santo it is needed for all aspects of their lives.
- No pipes run across the road, though UNELCO runs along the road edge but we are aware of this.
- Water surveying for the pipe to Matevulu College and community is underway already.
- Question regarding the quarry payments, is the material free or is there a cost. The quarry committee setup by the Province will work with Downer to ensure a fair process is negotiated for land owners.
- Procedure for quarries varies depending on the quarry location and kastom owner requirements but there will be a consistent approach regarding price.
- Will there be allowance for pedestrians on the road. Craig responds that yes the 1m on either side will allow pedestrians to walk. The road maintenance contracts with communities will have to ensure manage that this area is clear of vegetation.
- Road markets on the side of the road should have signs to slow traffic down also where the road goes very close to houses.
- Road markets should be moved to places where there is room to park as it is dangerous at the moment.
- Chief is also on the board of Matevulu College, he asked that as a Government institution can the community contracts include maintenance of the College Road, can PWD help with this. Simeon absent so cannot answer this.

Consultation Meeting – SANMA Womens Council President 1.30 Thursday 13 November 2008 at SANMA Provincial Office

Mandy Fitchett
Catherine Malosu
Benri (World Vision)
Robson (Save the Children)
Joanna (Save the Children)
Chris Cookson

Meeting Notes:

- Currently running cooking workshops for Mama's. Could tie in with contracts to feed the construction workers and support the Women's Council Network. They learn hygiene and customer service as well as flower arrangement.
- No schooling in the very remote areas is a big problem in Santo. World Vision are undertaking literacy classes in the bush communities.
- Plantation workers have different issues, many women work in the plantations, and they are included in the Women's Council.
- The fees for the cooking course are 1500VT and they gain a provincial certificate.
- The Council also undertakes awareness courses in planting cash crops such as sandalwood.

- Trucks for mamas to get to market up north of Manioc is 5000VT for a truck load so very expensive.
- Women can be involved in Community maintenance contracts as they are at the moment. Perhaps let Downer know about the network of Women through the Council.
- Access to health services in particular for maternity care will be a big positive benefit for the East Coast. A women died recently giving birth on the way to hospital from blood loss. The Council encourages women to move to town and stay near hospital near the time of their birth.

**Consultation Meeting - World Vision & Save the Children
2.30 Thursday 13 November 2008 at SANMA Provincial Office**

Mandy Fitchett
Catherine Malosu
Benri (World Vision)
Robson (Save the Children)
Joanna (Save the Children)
Chris Cookson

Meeting Notes:

- Priority should be the South Santo bridges, both NGOs have projects there as they identified these areas as the most disadvantaged areas. Three big rivers that flood regularly
- SANMA Province Cooperatives project is failing due to the infrastructure, no guarantee for supply of produce as community cannot come to town often. This is effecting the livelihoods of community there.
- Save the Children often have to cancel activities during heavy rain events.
- Floods in the south re preventing kids from going to school.
- Other projects they would like to do are income generation for Plantation workers. There is not much else they can do for people who have come from other islands except build awareness on improved production methods.
- Their understanding is that children from Turtle bay community do not go to school, also very low literacy rate and lack of confidence in children as a result.
- Transport costs may go down with improved road which will help kids get to school as larger vehicles can be organized for transporting kids to school and produce to market. These will affect villages in different ways as they vary a lot between communities.
- Wan Smol Bag has a nurse in Luganville working with youth on STI/HIV awareness.
- The Province also has initiatives on HIV, need to work in with existing programmes here.
- Big problem with STIs here, 25-30 new cases reported at the Wan Smol Bag clinic none at the Government Aid Posts or hospital which is evident that the youth do not want to report symptoms. Need a very careful approach, perhaps youth separate discussion.
- Irene has done some awareness in Surrender, Falhao and Port Olry. Still much more education needed. Turtle Bay has particularly high record of STIs, very vulnerable group living in this plantation.
- Robson was previously an educator with Wan Smol Bag.
- Check Maunsell report statistics on HIV and STI
- Youth forum coming up December first, Dr Frank from Rural Health is running this and it would be good to link in with this awareness about construction of the road and foreign workers.
- Save the Children have a network of Youth in the communities who could help to organize in the community awareness appropriately for each community.

**Consultation Meeting – Sarami Plantation Community
4pm Thursday 13 November 2008 at Mastermi haos**

Mandy Fitchett
Catherine Malosu

Craig Smart
Allen Iavro
John Claasen
Phillipe Firiam
Chris Cookson

Meeting Notes:

- 100 people in the village
- Previously they had a community contract and worked on the road would be interested to do this again.
- Transport to hospital in town is very difficult and the road is worse at the moment.
- Very glad to have the coal tar road as affecting their lives.
- Mama (teacher) comments on the garden road and plantation on the hills across the road so anything that is in the RoW can be taken away as they have plenty of gardens. Nothing in the RoW in this section needs removal as mostly plantation coconuts.
- Safety of the crossing from the village entrance to the road to the school and the gardens is a concern. Need sign for crossing and spend bumps.
- Water piper under the road (Frank Thomarky 7766859) knows the details of the location Downer to contact him during final design stage.. It is close to the entrance of the village.
- UNELCO transformers have cables under the road.
- No Tabu places near the road.
- A bus for children going to school also comes to the entrance of the village so maybe a bus stop sign is needed.
- Mavea Island Landing (100 plus people in community over there) also use the crossing and the road in front of the village. Children go to a Mission school on top of the plantation for Class 1 – 4 then some students go to Saint Michel mission school but must go by bus which costs the chief 11,000VT per month.
- They use the Matevulu College health post and dispensary.
- A one way trip to Vila from here costs 1500VT

Consultation Meeting – Nitchiku Plantation Communities

9.30am Surrender & 10.30am Turtle Bay Friday 14th November 2008 at Community Nakamals

Mandy Fitchett
Catherine Malosu
Craig Smart
Allen Iavro
John Claasen

Surrender Community - Meeting Notes:

- 33 people attending including 12 women and 3 youth
- Water pipes that go across the road must be protected.
- UNELCO box has a cable that crossed the road 3 times.
- They have wanted the road improved for a very long time.
- Kids get dropped off at the junction (3.2 km) so a sign warning people that school children crossing could be good. The children do not walk along the road edge but rather through the property.
- Some people sit near the road at the bridge as use the river for swimming.
- Bus stop sign should be included
- Aese Island Landing is not used as no one lives there.
- Children go to Santo East School; approx 50 children go each day in the truck.
- They are close to town anyway and so they said they do not have too many issues related to the road.
- Only 200VT to go to town on the bus.

Turtle Bay - Meeting Notes

- They have land and gardens in the bush across the road so the community crosses regularly in front of their village.’
- Village is very close to the road, they will need to 2 signs one in each direction warning that people will be on the road.
- Concern that the construction disturbance will affect the animals during different movements of animals. Downer to communicate with the Farm Manager for Nitchiku about timing for work.
- Sign needed for cattle crossing. Surrender community needs one too.
- Fence repair so that cows don’t get out is important for safety of vehicles and cattle.
- They like the approach taken for the RoW clearance the GET.
- Master asked about the other Santo projects

**Consultation Meeting – SG De brief
7.30am Friday November 2008 at Provincial Office**

Mandy Fitchett
Catherine Malosu
Craig Smart
Allen Iavro
John Claasen
Chris Cookson

Meeting Notes:

- Meeting with Joel Path is an opportunity to go through the issues and comment on whether we have got it right.
- Only about 8 sections of fence need relocating.
- The Province is still 5 years away from the development of the piped water all the way to Port Olry. The water pipe for Matevulu college will not go along the road edge but across the land from Luganville. Some sections may intercept but mostly it won’t. Advised by SG to largely ignore for now.
- If anything required for infrastructure that is being developed privately it is up to the private developer to pay for all costs including fixing the road up.
- Nitchiku use groundwater.
- HIV/STI problem, will use local network and strategy that has been developed for SANMA, focusing on using youth wherever possible and broader groups later.
- Very high STI occurrence at the WSB Youth centre, in particular from Turtle Bay community.
- Feeder roads to be done by the province could be worked on collaboratively with equipment purchased under the programme.
- Budget for PWD comes under the Council, PWD will have a separate Provincial TAC, SANMA control the development funds for all ministries.
- Joint budge planning
- Condition of contract that the road is handed over to Downer in ‘Trafficable condition; is concern and current community contracts must be in place for maintenance clearing and cleaning culverts, which has definitely not happened recently, many blocked culverts.
- Any future power poles for UNELCO work (large hydro project) must be controlled by SANMA to prevent problems with road and road maintenance.
- UNELCO will pay to move any infrastructure.
- Current coal tar ends at the boundary of South East Council Area.
- Discussed Malo project, population in Mal is 6,000 – 8,000 people.
- Joel cell number 5471154.

Appendix C – Preliminary Environmental Assessment Checklists for Borrow Pits

DRAFT CHECKLIST ENVIRONMENTAL ASSESSMENT – PORT OLRV

COMPANY NAME: Downer EDI Works, New Zealand

PROJECT: Port Olry Coral Borrow Pit



PERMIT OR LICENSE: Not currently licensed used by PWD

LOCATION: Port Olry RHS of road at 57km

PROVINCE: SANMA

PROPERTY OWNERSHIP: [] Lease [] State [] Traditional ownership

Catholic Mission – granted land

TYPE AND PURPOSE OF ACTION:

For use as coral borrow pit for the construction of the Santo East Coast Road

IMPACTS ON THE PHYSICAL ENVIRONMENT	
RESOURCE	[Y/N] POTENTIAL IMPACT AND MITIGATION MEASURES
1. GEOLOGY AND SOIL QUALITY, STABILITY AND MOISTURE: Are soils present which are fragile, erosive, susceptible to compaction, or unstable? Are there unusual or unstable geologic features? Are there special reclamation considerations?	No surface moisture observed Quarry one large pit very close to the road, not visibly unstable but QMP to deal with any stability issues related to the road.
2. WATER QUALITY, QUANTITY AND DISTRIBUTION: Are important surface or groundwater resources present? Is there potential for violation of ambient water quality standards, drinking water maximum contaminant levels, or degradation of water quality?	No adjacent surface water and no ground water as advised by PWD.
3. AIR QUALITY: Will pollutants or particulate be produced? Is the project influenced by air quality regulations or zones (<i>Class I airshed</i>)?	No people living adjacent to the quarry. Part of a large land grazed by cattle and belonging to the Catholic Mission.
4. VEGETATION COVER, QUANTITY AND QUALITY: Will vegetative communities be significantly impacted? Are any rare plants or cover types present?	Low value species surrounding the pit, some significant vegetation beyond the

IMPACTS ON THE PHYSICAL ENVIRONMENT	
	fence around the pit.
5. TERRESTRIAL, AVIAN AND AQUATIC LIFE AND HABITATS: Is there substantial use of the area by important wildlife, birds or fish?	None observed, further consultation with kastom owners
6. UNIQUE, ENDANGERED, FRAGILE OR LIMITED ENVIRONMENTAL RESOURCES: Are any nationally or internationally listed threatened or endangered species or identified habitat present? Any wetlands? Species of special concern?	None observed, further consultation with Catholic mission required
7. HISTORICAL AND ARCHAEOLOGICAL SITES: Are any historical, archaeological or paleontological resources present?	Approximately 800m from the 'Mary Nabanga Tree' a culturally significant tree, possible historic. Need to consult further with the Catholic Mission and Kastom Owner.
8. AESTHETICS: Is the project on a prominent topographic feature? Will it be visible from populated or scenic areas? Will there be excessive noise or light?	Pit adjacent to the road approx 5 m from road, not visible from any houses. No excessive noise or light effects are anticipated.
9. DEMANDS ON ENVIRONMENTAL RESOURCES OF LAND, WATER, AIR OR ENERGY: Will the project use resources that are limited in the area?	No
10. IMPACTS ON OTHER ENVIRONMENTAL RESOURCES: Are there other activities nearby that will affect the project?	The surrounding land is cattle farming. The quarry is fenced with proper cattle fencing which will need to be maintained as the quarry is expanded for use by the contractor.

IMPACTS ON THE HUMAN POPULATION	
11. HUMAN HEALTH AND SAFETY: Will this project add to health and safety risks in the area?	Due to close proximity to the road appropriate safety and security measures in place to be addressed in QMP, the site will need to be fenced, gated and be restricted to personnel only.
12. INDUSTRIAL, COMMERCIAL AND AGRICULTURAL	

ACTIVITIES AND PRODUCTION: Will the project add to or alter these activities?	Adjacent cattle farming pit must be appropriately fenced at all times.
13. QUANTITY AND DISTRIBUTION OF EMPLOYMENT: Will the project create, move or eliminate jobs? If so, estimated number.	Port Olroy community may benefit from employment opportunities in pit.
14. LOCAL AND STATE TAX BASE AND TAX REVENUES: Will the project create or eliminate tax revenue?	N/A
15. DEMAND FOR GOVERNMENT SERVICES: Will substantial traffic be added to existing roads? Will other services (fire protection, police, schools, etc.) be needed?	No
16. LOCALLY ADOPTED ENVIRONMENTAL PLANS AND GOALS: Are there State, County, City, USFS, BLM, Tribal, etc. zoning or management plans in effect?	No
17. ACCESS TO AND QUALITY OF RECREATIONAL AND WILDERNESS ACTIVITIES: Are wilderness or recreational areas nearby or accessed through this tract? Is there recreational potential within the tract?	No
18. DENSITY AND DISTRIBUTION OF POPULATION AND HOUSING: Will the project add to the population and require additional housing?	NO
19. SOCIAL STRUCTURES AND MORES: Is some disruption of native or traditional lifestyles or communities possible?	No, highly disturbed area .
20. CULTURAL UNIQUENESS AND DIVERSITY: Will the action cause a shift in some unique quality of the area?	No, highly disturbed area .
21. PRIVATE PROPERTY IMPACTS: Are we regulating the use of private property under a regulatory statute adopted pursuant to the police power of the state? (Property management, grants of financial assistance, and the exercise of the power of eminent domain are not within this category.) If not, no further analysis is required.	N/A
22. PRIVATE PROPERTY IMPACTS: Does the proposed regulatory action restrict the use of the regulated person's private property? If not, no further analysis is required.	N/A
24. OTHER APPROPRIATE SOCIAL AND ECONOMIC CIRCUMSTANCES:	

Alternatives Considered:

No other alternatives in the area have been considered. As the site is already highly disturbed it is considered to have less impact of developing a new quarry site.

Recommendation for Further Environmental Analysis:

That a PEA be undertaken on site with the Kastom owner, and with representative of the Catholic Mission to address any concerns and assess the possible impacts on cultural, historical and spiritual resources in the area.

DRAFT CHECKLIST ENVIRONMENTAL ASSESSMENT - LOTGEN

COMPANY NAME: Downer EDI Works, New Zealand

PROJECT: Lotgen Pit



PERMIT OR LICENSE: No license

LOCATION: 39,7km LHS of the road just after Bene Church

PROVINCE: SANMA

PROPERTY OWNERSHIP: [] Lease [] State [X] Traditional ownership

Kastom Owner - Shem

TYPE AND PURPOSE OF ACTION:

Coral borrow pit currently used by PWD to be used for construction of the Santo East Coast Road.

IMPACTS ON THE PHYSICAL ENVIRONMENT	
RESOURCE	[Y/N] POTENTIAL IMPACT AND MITIGATION MEASURES
1. GEOLOGY AND SOIL QUALITY, STABILITY AND MOISTURE: Are soils present which are fragile, erosive, susceptible to compaction, or unstable? Are there unusual or unstable geologic features? Are there special reclamation considerations?	Existing coral pit, highly disturbed site. Relatively recently used by PWD, and used for past 10 years without a license. Pit is currently 100 m x 100m fenced off area, above the road approximately 150m access road to the pit 1 large pit and a small bench on the access road above the pit that goes to a plantation community living above the pit
2. WATER QUALITY, QUANTITY AND DISTRIBUTION: Are important surface or groundwater resources present? Is there potential for violation of ambient water quality standards, drinking water maximum contaminant levels, or degradation of water quality?	Closest water source is approx 1 km to the east of the site. Across the road in is a small stream, source to be determined. Groundwater well above the pit where small settlement (9 families) working on the plantation (Shems plantation) are living, approximately 100m from the edge of the western point of the

IMPACTS ON THE PHYSICAL ENVIRONMENT	
	pit. Need to assess the possible effect of the piting on this water source. Water section to make an assessment.
3. AIR QUALITY: Will pollutants or particulate be produced? Is the project influenced by air quality regulations or zones (<i>Class I airshed</i>)?	Potential dust effects on community living to west of pit as residents close to site.
4. VEGETATION COVER, QUANTITY AND QUALITY: Will vegetative communities be significantly impacted? Are any rare plants or cover types present?	No significant vegetation above the pit, some plantation coconuts above the pit and mainly low value species adjacent to the pit. Some large stands of primary forest to the east of the pit would recommend that the pit be expanded away from this area if possible.
5. TERRESTRIAL, AVIAN AND AQUATIC LIFE AND HABITATS: Is there substantial use of the area by important wildlife, birds or fish?	None observed, kastom owners son advised that none present
6. UNIQUE, ENDANGERED, FRAGILE OR LIMITED ENVIRONMENTAL RESOURCES: Are any nationally or internationally listed threatened or endangered species or identified habitat present? Any wetlands? Species of special concern?	None observed, kastom owner reported none
7. HISTORICAL AND ARCHAEOLOGICAL SITES: Are any historical, archaeological or paleontological resources present?	None recorded by Kastom Owner
8. AESTHETICS: Is the project on a prominent topographic feature? Will it be visible from populated or scenic areas? Will there be excessive noise or light?	Not visible from the road, approximately 200m from the road. Access through same land owners cattle farm. The pit forms part of a side of a hill so is visible from the east, however there is no settlement in this area. Potential noise effects on the adjacent plantation worker community, further consultation needed if proceed with permit application
9. DEMANDS ON ENVIRONMENTAL RESOURCES OF LAND, WATER, AIR OR ENERGY: Will the project use resources that are limited in the area?	None
10. IMPACTS ON OTHER ENVIRONMENTAL RESOURCES: Are there other activities nearby that will affect the project?	Gardens of community living adjacent to the pit, depending on how the pit is expanded the plantation community living adjacent to the pit could be affected. Consultation with community should be undertaken.

IMPACTS ON THE HUMAN POPULATION	
11. HUMAN HEALTH AND SAFETY: Will this project add to health and safety risks in the area?	Potential issues, QMP must address security of the site and potential safety problems with young women and children living adjacent to the site.
12. INDUSTRIAL, COMMERCIAL AND AGRICULTURAL ACTIVITIES AND PRODUCTION: Will the project add to or alter these activities?	Coconut plantation owned by the same owner of the pit, however the coconut plantation is approximately
13. QUANTITY AND DISTRIBUTION OF EMPLOYMENT: Will the project create, move or eliminate jobs? If so, estimated number.	Potential for employment of plantation worker families on pit
14. LOCAL AND STATE TAX BASE AND TAX REVENUES: Will the project create or eliminate tax revenue?	No
15. DEMAND FOR GOVERNMENT SERVICES: Will substantial traffic be added to existing roads? Will other services (fire protection, police, schools, etc.) be needed?	No
16. LOCALLY ADOPTED ENVIRONMENTAL PLANS AND GOALS: Are there State, County, City, USFS, BLM, Tribal, etc. zoning or management plans in effect?	Provincial Planner to advise
17. ACCESS TO AND QUALITY OF RECREATIONAL AND WILDERNESS ACTIVITIES: Are wilderness or recreational areas nearby or accessed through this tract? Is there recreational potential within the tract?	Provincial Planner to advise
18. DENSITY AND DISTRIBUTION OF POPULATION AND HOUSING: Will the project add to the population and require additional housing?	No
19. SOCIAL STRUCTURES AND MORES: Is some disruption of native or traditional lifestyles or communities possible?	Potential Disruption need further consultation with the adjacent community
20. CULTURAL UNIQUENESS AND DIVERSITY: Will the action cause a shift in some unique quality of the area?	Further consultation with Kastom owner

Alternatives Considered:

No other alternatives in the area have been considered. As the site is already highly disturbed it is considered to have less impact of developing a new quarry site.

Recommendation for Further Environmental Analysis:

That a PEA be undertaken on site with the Kastom owner, and with representative of adjacent community to address any concerns and assess the possible impacts on cultural, historical and spiritual resources in the area.

DRAFT CHECKLIST ENVIRONMENTAL ASSESSMENT - LORA

COMPANY NAME: Downer EDI Works, New Zealand

PROJECT: Loru Coral Borrow Pit



PERMIT OR LICENSE: Not currently licensed used by PWD before Independence

LOCATION: On the Road to Kole Village RHS of road north of Manioc Village about 1km from the Main Road.

PROVINCE: SANMA

PROPERTY OWNERSHIP: [] Lease [] State [X] Traditional ownership

Kastom Land of Kole Village

TYPE AND PURPOSE OF ACTION:

For use as coral borrow pit for the construction of the Santo East Coast Road

IMPACTS ON THE PHYSICAL ENVIRONMENT	
RESOURCE	[Y/N] POTENTIAL IMPACT AND MITIGATION MEASURES
1. GEOLOGY AND SOIL QUALITY, STABILITY AND MOISTURE: Are soils present which are fragile, erosive, susceptible to compaction, or unstable? Are there unusual or unstable geologic features? Are there special reclamation considerations?	Small pit area directly adjacent to the road, covered in vegetation so difficult to observe geology. Not used in the last 30 years.
2. WATER QUALITY, QUANTITY AND DISTRIBUTION: Are important surface or groundwater resources present? Is there potential for violation of ambient water quality standards, drinking water maximum contaminant levels, or degradation of	No adjacent surface water and no ground water as advised by PWD.

IMPACTS ON THE PHYSICAL ENVIRONMENT	
water quality?	
3. AIR QUALITY: Will pollutants or particulate be produced? Is the project influenced by air quality regulations or zones (<i>Class I airshed</i>)?	No people living adjacent to the quarry. Closest people are living in Kole another 1.8km down the road. Some gardens on the Kole Road to the quarry and after the quarry. If access road needs widening then some resettlement may be required for gardens within the RoW.
4. VEGETATION COVER, QUANTITY AND QUALITY: Will vegetative communities be significantly impacted? Are any rare plants or cover types present?	Low value species surrounding the pit, some significant vegetation beyond the outside of the pit. One Namalous tree on the entrance of the pit which will need protection during construction.
5. TERRESTRIAL, AVIAN AND AQUATIC LIFE AND HABITATS: Is there substantial use of the area by important wildlife, birds or fish?	None observed, further consultation with kastom owners
6. UNIQUE, ENDANGERED, FRAGILE OR LIMITED ENVIRONMENTAL RESOURCES: Are any nationally or internationally listed threatened or endangered species or identified habitat present? Any wetlands? Species of special concern?	None observed, further consultation with kastom landowner required if pit selected
7. HISTORICAL AND ARCHAEOLOGICAL SITES: Are any historical, archaeological or paleontological resources present?	No consultation with the Kastom landowner yet, required
8. AESTHETICS: Is the project on a prominent topographic feature? Will it be visible from populated or scenic areas? Will there be excessive noise or light?	Pit adjacent to the road, not visible from any houses. No excessive noise or light.
9. DEMANDS ON ENVIRONMENTAL RESOURCES OF LAND, WATER, AIR OR ENERGY: Will the project use resources that are limited in the area?	No
10. IMPACTS ON OTHER ENVIRONMENTAL RESOURCES: Are there other activities nearby that will affect the project?	The pit is very close to the road and villagers use the road to access their gardens adjacent to

IMPACTS ON THE PHYSICAL ENVIRONMENT	
	the road. Some safety measures and awareness in Kole Community would be necessary

IMPACTS ON THE HUMAN POPULATION	
11. HUMAN HEALTH AND SAFETY: Will this project add to health and safety risks in the area?	Due to close proximity to the road appropriate safety and security measures in place to be addressed in QMP
12. INDUSTRIAL, COMMERCIAL AND AGRICULTURAL ACTIVITIES AND PRODUCTION: Will the project add to or alter these activities?	The Hog Harbour and Kole people have community owner plantation adjacent the quarry, consultation with managers will need to be undertaken.
13. QUANTITY AND DISTRIBUTION OF EMPLOYMENT: Will the project create, move or eliminate jobs? If so, estimated number.	Kole and Seksek community may benefit from employment opportunities in pit.
14. LOCAL AND STATE TAX BASE AND TAX REVENUES: Will the project create or eliminate tax revenue?	No
15. DEMAND FOR GOVERNMENT SERVICES: Will substantial traffic be added to existing roads? Will other services (fire protection, police, schools, etc.) be needed?	No
16. LOCALLY ADOPTED ENVIRONMENTAL PLANS AND GOALS: Are there State, County, City, USFS, BLM, Tribal, etc. zoning or management plans in effect?	No
17. ACCESS TO AND QUALITY OF RECREATIONAL AND WILDERNESS ACTIVITIES: Are wilderness or recreational areas nearby or accessed through this tract? Is there recreational potential within the tract?	No
18. DENSITY AND DISTRIBUTION OF POPULATION AND HOUSING: Will the project add to the population and require additional housing?	No
19. SOCIAL STRUCTURES AND MORES: Is some disruption of native or traditional lifestyles or communities possible?	No, highly disturbed site and area.
20. CULTURAL UNIQUENESS AND DIVERSITY: Will the action cause a shift in some unique quality of the area?	No

Alternatives Considered:

No other quarries near the site. Loru is approximately 1.2km from the main road, so access to the main road is not ideal, therefore if another quarry was identified closer to the road then this would be considered an alternative to Loru Quarry.

Recommendation for Further Environmental Analysis:

Recommend that the PEA checklist is completed on site with the kastom owner.

DRAFT CHECKLIST ENVIRONMENTAL ASSESSMENT – MATEVULU COLLEGE

COMPANY NAME: Downer EDI Works, New Zealand

PROJECT: Matevulu College Coral Borrow Pit



PERMIT OR LICENSE: Not currently licensed used by PWD

LOCATION: Matevulu LHS, use Matevulu college entrance first left and then left again. Quarry is approximately 100m from road. Near area of American air strip.

PROVINCE: SANMA

PROPERTY OWNERSHIP: [] Lease [X] State [] Traditional ownership

Matevulu College, Ministry of Education

TYPE AND PURPOSE OF ACTION:

For use as coral borrow pit for the construction of the Santo East Coast Road

IMPACTS ON THE PHYSICAL ENVIRONMENT	
RESOURCE	[Y/N] POTENTIAL IMPACT AND MITIGATION MEASURES
1. GEOLOGY AND SOIL QUALITY, STABILITY AND MOISTURE: Are soils present which are fragile, erosive, susceptible to compaction, or unstable? Are there unusual or unstable geologic features? Are there special reclamation considerations?	No surface moisture observed Very large open pit with different arms of the quarry in a few directions. Steep access down to pit.
2. WATER QUALITY, QUANTITY AND DISTRIBUTION: Are important surface or groundwater resources present? Is there potential for violation of ambient water quality standards, drinking water maximum contaminant levels, or degradation of water quality?	Closest surface water at Matevulu Blue hole, over 400 m from the pit. No ground water as advised by PWD.

IMPACTS ON THE PHYSICAL ENVIRONMENT	
3. AIR QUALITY: Will pollutants or particulate be produced? Is the project influenced by air quality regulations or zones (<i>Class I airshed</i>)?	A few families living approximately 300m from the pit, that operate a small blue hole tourism operation. The pit is located on a very large (80 hectares) site owned by the Matevulu College, airstrip area so generally flat topography around the pit.
4. VEGETATION COVER, QUANTITY AND QUALITY: Will vegetative communities be significantly impacted? Are any rare plants or cover types present?	Low value species surrounding the pit, some significant vegetation beyond the fence around the pit.
5. TERRESTRIAL, AVIAN AND AQUATIC LIFE AND HABITATS: Is there substantial use of the area by important wildlife, birds or fish?	None observed, further consultation with kastom owners
6. UNIQUE, ENDANGERED, FRAGILE OR LIMITED ENVIRONMENTAL RESOURCES: Are any nationally or internationally listed threatened or endangered species or identified habitat present? Any wetlands? Species of special concern?	None observed, further consultation with Kastom Owner required
7. HISTORICAL AND ARCHAEOLOGICAL SITES: Are any historical, archaeological or paleontological resources present?	American airstrip from WWII adjacent to pit, no other sites known about, site visit with Kastom Owner recommended.
8. AESTHETICS: Is the project on a prominent topographic feature? Will it be visible from populated or scenic areas? Will there be excessive noise or light?	Pit is not visible from any houses. No excessive noise or light impacts are anticipated.
9. DEMANDS ON ENVIRONMENTAL RESOURCES OF LAND, WATER, AIR OR ENERGY: Will the project use resources that are limited in the area?	No
10. IMPACTS ON OTHER ENVIRONMENTAL RESOURCES: Are there other activities nearby that will affect the project?	The land surrounding the pit is not managed and is mostly covered in Bush Lime trees.

IMPACTS ON THE PHYSICAL ENVIRONMENT	

IMPACTS ON THE HUMAN POPULATION	
11. HUMAN HEALTH AND SAFETY: Will this project add to health and safety risks in the area?	Due to location of the pit on the College site appropriate safety and security measures in place to be addressed in QMP, including fencing and no access to non-personnel, in particular students.
12. INDUSTRIAL, COMMERCIAL AND AGRICULTURAL ACTIVITIES AND PRODUCTION: Will the project add to or alter these activities?	no
13. QUANTITY AND DISTRIBUTION OF EMPLOYMENT: Will the project create, move or eliminate jobs? If so, estimated number.	Matevulu community may benefit from employment opportunities in pit, in particular security jobs.
14. LOCAL AND STATE TAX BASE AND TAX REVENUES: Will the project create or eliminate tax revenue?	N/A
15. DEMAND FOR GOVERNMENT SERVICES: Will substantial traffic be added to existing roads? Will other services (fire protection, police, schools, etc.) be needed?	No
16. LOCALLY ADOPTED ENVIRONMENTAL PLANS AND GOALS: Are there State, County, City, USFS, BLM, Tribal, etc. zoning or management plans in effect?	No
17. ACCESS TO AND QUALITY OF RECREATIONAL AND WILDERNESS ACTIVITIES: Are wilderness or recreational areas nearby or accessed through this tract? Is there recreational potential within the tract?	There is a blue hole tour operation on the road to the pit, approximately 100m after the access to the quarry starts. The access would therefore need to be reserved. Further consultation with the owners of the blue hold operation and the residents of the community.
18. DENSITY AND DISTRIBUTION OF POPULATION AND HOUSING: Will the project add to the population and require additional housing?	No
19. SOCIAL STRUCTURES AND MORES: Is some disruption of native or traditional lifestyles or communities possible?	No, highly disturbed site and area.
20. CULTURAL UNIQUENESS AND DIVERSITY: Will the action cause a shift in some unique quality of the area?	Further consultation with Kastom owner

Alternatives Considered:

No other quarries considered in the area. Closest quarry to the beginning of the road upgrade.

Recommendation for Further Environmental Analysis:

Recommended that a site visit be undertaken with the Kstom Owner and consultation with those families living adjacent to the quarry pit be undertaken.

DRAFT CHECKLIST ENVIRONMENTAL ASSESSMENT – MANIOC

COMPANY NAME: Downer EDI Works, New Zealand

PROJECT: Manioc Quarry



PERMIT OR LICENSE: No license

LOCATION: 26.5km 2 km north of Natawa River and Bridge

PROVINCE: SANMA

PROPERTY OWNERSHIP: [] Lease [] State [X] Traditional ownership

Manioc Village, Kastom owner not present on site visit so no confirmation.

TYPE AND PURPOSE OF ACTION:

Coral Quarry for use on the Santo East Coast Road

IMPACTS ON THE PHYSICAL ENVIRONMENT	
RESOURCE	[Y/N] POTENTIAL IMPACT AND MITIGATION MEASURES
1. GEOLOGY AND SOIL QUALITY, STABILITY AND MOISTURE: Are soils present which are fragile, erosive, susceptible to compaction, or unstable? Are there unusual or unstable geologic features? Are there special reclamation considerations?	Coral pit, recently used by PWD, steep slope immediately adjacent to the road. Two different arms of the pit. Some stability assessment related to the road may need to be undertaken.
2. WATER QUALITY, QUANTITY AND DISTRIBUTION: Are important surface or groundwater resources present? Is there potential for violation of ambient water quality standards, drinking water maximum contaminant levels, or degradation of water quality?	Closest water is located 2km south of the site at Natawa River. Unknown water source for plantation workers living adjacent to the quarry most probably ground well. Inland no foreshore adjacent
	Plantation workers living adjacent (immediately

IMPACTS ON THE PHYSICAL ENVIRONMENT	
3. AIR QUALITY: Will pollutants or particulate be produced? Is the project influenced by air quality regulations or zones (<i>Class I airshed</i>)?	to the south) below the quarry near one of the 2 access roads to the quarry/ Potential dust impact on these households. Consultation with community may need to be undertaken, assessment of the number of families living adjacent to he quarry
4. VEGETATION COVER, QUANTITY AND QUALITY: Will vegetative communities be significantly impacted? Are any rare plants or cover types present?	No significant vegetation – Low value species, secondary growth, previously used quarry by PWD. On e large whitewood to west of the site on bank may need removal. Gardens growing near the quarry will need protection or resettlement. Quarrys natural boundaries are the road to the east and the fenced coconut plantation to the west, any quarry expansion would be to the north as the community is located to the south. Vegetation to the north is LVS and not considered significant.
5. TERRESTRIAL, AVIAN AND AQUATIC LIFE AND HABITATS: Is there substantial use of the area by important wildlife, birds or fish?	No bird life observed
6. UNIQUE, ENDANGERED, FRAGILE OR LIMITED ENVIRONMENTAL RESOURCES: Are any nationally or internationally listed threatened or endangered species or identified habitat present? Any wetlands? Species of special concern?	None observed or recorded by locals, further consultation with Kastom Owner may be required. Surrounding area is impacted by the road and associated road noise and vehicle activity.
7. HISTORICAL AND ARCHAEOLOGICAL SITES: Are any historical, archaeological or paleontological resources present?	None reported further consultation required with Kastom owner
8. AESTHETICS: Is the project on a prominent topographic feature? Will it be visible from populated or scenic areas? Will there be excessive noise or light?	Site visible from road, visible from adjacent housing to the south (plantation workers). Currently screened by vegetation, recommended to retain vegetation at the south end of the quarry to allow a buffer between the houses and the quarry. Noise will be heard at adjacent community – further consultation.
9. DEMANDS ON ENVIRONMENTAL RESOURCES OF LAND, WATER, AIR OR ENERGY: Will the project use resources that are limited in the area?	No
10. IMPACTS ON OTHER ENVIRONMENTAL RESOURCES: Are there other activities nearby that will affect the project?	No

IMPACTS ON THE HUMAN POPULATION	
11. HUMAN HEALTH AND SAFETY: Will this project add to health and safety risks in the area?	Appropriate management of site with regard to health and safety, especially women and children. Awareness with adjacent community on potential noise and safety issues.
12. INDUSTRIAL, COMMERCIAL AND AGRICULTURAL ACTIVITIES AND PRODUCTION: Will the project add to or alter these activities?	Plantation of coconuts to the west and south of the site. Primary forest to the north of the site. Road to the east of the site. Beef cattle in Plantation.
13. QUANTITY AND DISTRIBUTION OF EMPLOYMENT: Will the project create, move or eliminate jobs? If so, estimated number.	Potential for employment in quarry site for adjacent families.
14. LOCAL AND STATE TAX BASE AND TAX REVENUES: Will the project create or eliminate tax revenue?	N/A
15. DEMAND FOR GOVERNMENT SERVICES: Will substantial traffic be added to existing roads? Will other services (fire protection, police, schools, etc.) be needed?	Some additional plant and machinery will be required.
16. LOCALLY ADOPTED ENVIRONMENTAL PLANS AND GOALS: Are there State, County, City, USFS, BLM, Tribal, etc. zoning or management plans in effect?	No
17. ACCESS TO AND QUALITY OF RECREATIONAL AND WILDERNESS ACTIVITIES: Are wilderness or recreational areas nearby or accessed through this tract? Is there recreational potential within the tract?	Further consultation with Kastom owner needed
18. DENSITY AND DISTRIBUTION OF POPULATION AND HOUSING: Will the project add to the population and require additional housing?	No
19. SOCIAL STRUCTURES AND MORES: Is some disruption of native or traditional lifestyles or communities possible?	No adjacent community living on the
20. CULTURAL UNIQUENESS AND DIVERSITY: Will the action cause a shift in some unique quality of the area?	No an existing pit, and highly disturbed site.
24. OTHER APPROPRIATE SOCIAL AND ECONOMIC CIRCUMSTANCES:	No

Alternatives Considered:

Quarry site has good easy access to the road, no other quarries in the area that are currently identified.

Recommendation for Further Environmental Analysis:

Further consultation with kastom owners and adjacent plantation community.

Appendix D: MCA-V Road Realignment Procedures

MCA-V has informed the public that plans are being prepared for the upgrade of the Santo East Coast Road on the existing alignment. As a consequence, realignment proposals will be hard to be considered unless they can be processed with speed. MCA's Road Realignment Procedures are:

- A written application for the proposed realignment should be submitted to the Director Department of Public Works (PWD).
- The application should be in the form of a letter including a description of the proposed realignment, a description of the area of land proposed to be ceded to the road easement and the area of the existing road easement proposed to be taken up by the developer, and a statement of the expected benefit, (if any) to the Republic of Vanuatu and Efate or Santo in particular.
- The application should be accompanied by:
 - Civil Engineering drawings to PWD standards and adequate survey drawings showing the existing horizontal and vertical alignments, typical cross-sections and all related proposed drainage to the proposed road. Details of the transition from the existing to the new alignment are to be included.
 - Survey drawings to PWD standards showing existing and proposed new cadastral boundaries.
 - An Environmental and Social Assessment (ESA) and a Resettlement Action Plan (RAP) prepared to Department of Environment standards and which complies with the Millennium Challenge Corporation (MCC) Environmental Guidelines and the World Bank Operational Policy OP 4.12.

The application should document names and contacts for other people affected by the proposed road realignment, and indicate when these persons were consulted and whether they have agreed with the proposal.

Appendix E: Santo MCA Grievance Procedure

MCA-V has a grievance procedure guiding the proper and timely management of all grievances and complaints which may arise as a result of the works on the Santo East Coast Road. The procedure has been amended to make good use of existing systems and resources available in Santo, and has been agreed with the Sanma Provincial Secretary-General, who has established a three-man team comprising himself, a representative of the Sanma Department of Lands and a representative of the Sanma Public Works Department to assist with local issues regarding the road works. A copy of the procedure is to be posted on the Sanma Provincial Notice Board and is available from the Sanma Provincial Government Reception. The procedure is described below:

