



**Government of the Republic of Kiribati**  
Ministry of Finance and Economic Development  
Ministry of Public Works and Utilities



The World Bank



Asian Development Bank

## **Kiribati Road Rehabilitation Project**

Consulting Services: Preparation of Design  
and Construction Supervision of Road  
Rehabilitation Works

## **Construction Phase Quarterly Progress Report**

**December 2014**



<b>PROJECT NAME:</b>	<b>CONSULTING SERVICES: PREPARATION OF DESIGN AND CONSTRUCTION SUPERVISION OF ROAD REHABILITATION WORKS</b>
<b>REPORT TITLE:</b>	<b>CONSTRUCTION PHASE QUARTERLY REPORT</b>
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## CONSULTING SERVICES: PREPARATION OF DESIGN AND CONSTRUCTION SUPERVISION OF ROAD REHABILITATION WORKS

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**APPENDICES**

**Appendix A: Summary of Environment Licences**

**Appendix B: Key Materials & Material Suppliers**

**Appendix C: Programme (rev 3, April 2014)**

**Appendix D: Progress Graphs**

**Appendix E: Cash Flow**

**Appendix F: Complaints Summary**

**Appendix G: Weather**

**Appendix H: Progress Diagrams**

**Appendix I: Import Permits & Fumigation Certificates**

**Appendix J: Contract Variations**

**Appendix K: Contract Claims**

**Appendix L: Payments**

**EXECUTIVE SUMMARY**

This report covers the period from 1<sup>st</sup> October 2014 to 31<sup>st</sup> December 2014. Key Contract information relating to the financial and programme status is summarised hereunder:

Item	Status	Comment
<b>Contract Award</b>		
Letter of Acceptance (LoA)	Issued 12 <sup>th</sup> February 2013	Donor 'No Objection Letter', to award Contract, provided 8 <sup>th</sup> February 2013
Contract Agreement	Issued 12 <sup>th</sup> February 2013	Signed & issued by the Employer with the LoA
	Returned 11 <sup>th</sup> March 2013	Signed & returned by the Contractor
<b>Financial Status</b>		
Accepted Contract Amount	AUD 48,197,957.20	Following adjustment from Contract Award negotiations
Approved Variations	AUD 922,298	Details provided at Appendix J
Approved Claims	AUD 0.00	Details provided at Appendix K
Contract Price Adjustment	AUD 58,810	Details provided at Appendix L
Current Estimated Cost at Completion	AUD 51,370,000	Details provided at section 35.
Certified Payments to Date	AUD 18,502,141	Details provided at Appendix L
Balance of Amount to Completion	AUD 32,867,859	
<b>Programme Status</b>		
Commencement Date	1 <sup>st</sup> July 2013	
Time for Completion	690 calendar days	
Date for 'Practical Completion'	22 <sup>nd</sup> May 2015	
Extensions of Time (EoT)	0 calendar days	The Contractor has lodged 4 claims for extensions of time and these are listed at section 7 (none yet approved). The Contract also makes provision for an automatic EoT for weather conditions and currently this stands at +30 days (can decrease but cannot be negative).
Revised Contractual Date for Practical Completion	22 <sup>nd</sup> May 2015	
Engineer assessment of actual Date for Practical Completion	October 2015	There is increasing concern over the Contractors' capacity to improve production to levels required to complete within the schedule 'time to complete'. A new programme (rev 4), submitted in early December 2014 and under review, shows completion at 1 <sup>st</sup> October 2014.
<b>Performance Indicators</b>		
Assessment of Physical Works status		Favourable weather conditions continued throughout the period and this has been continued for further good progress to be achieved. The Contractor contends that progress continues to be hampered by conflicts with existing services.
Excluding 'Materials on Site'	19.1%	
Including 'Materials on Site'	19.8%	
Elapsed Time		
No adjustment for mobilisation	77.2%	
Adjustment for mobilisation	64.6%	
Actual vs Anticipated Cash Flow	64.3%	Based on overall earnings per programme (rev 3)
	33.5%	Based on earnings/projections from June-14 alone

By way of a 'Letter of Acceptance' from the Employer dated 12<sup>th</sup> February 2013, following a 'No Objection Letter' from the World Bank on 8<sup>th</sup> February 2013, the Contract for services associated with construction activities on the Kiribati Road Rehabilitation Project (KRRP) was awarded to McConnell Dowell (Aust) Pty Ltd for the 'Accepted Contract Amount' of Australian Forty-Eight Million One Hundred and Ninety-Seven Thousand Nine Hundred and Fifty-Seven Dollars and Twenty Cents (AUD 48,197,957.20).

After fulfilment of certain Contractual obligations (by the Employer and Contractor) a 'Commencement Date' of 1<sup>st</sup> July 2013 has been established for the Contract. With a Contract duration of six hundred and ninety (690) calendar days the currently scheduled date for Practical Completion (issue of the Taking Over Certificate) will be 22<sup>nd</sup> May 2015 after which there will be a 'Defects Notification Period' of seven hundred and thirty (730) calendar days and the date of Contract Completion (issue of the Performance Certificate) will be 21<sup>st</sup> May 2017.

Clarity has been provided on many of the previously uncertain work scope and material supply issues although the finer details still need to be worked through on some aspects. Current status of key components and issues, in this area, are itemised below:

**Betio causeway;** pavement and asphalt surfacing works have been deleted from the Contract, bridge improvement works remain. Government of Kiribati continues to explore options for separate project to provide long term protection to the causeway (this will likely now include road improvements).

**Coastal protection;** along the main Betio-Temaiku road works have reverted to the 'original' sand-cement bag approach whilst works along the Temaiku road have been revised to provide a more robust long term rock boulder solution. The majority of works along the Betio-Temaiku road are now substantially complete (some minor works needed to pre-existing walls and some very localised works to complete) and it is anticipated that works along the Temaiku road will commence in Jan-Feb 2015.

**Valve chambers;** for KAP related 'fresh' water supply works the need for a single chamber, to facilitate leak detection activities (and follow up monitoring) along the 225mm diameter transmission main, has been confirmed. In addition KAP have advised a need to replace existing covers to all existing chambers (14 no. either 3.5m x 2.0m or 3.0m x 2.0m) and, as these impinge on KRRP works, the covers have been designed and details provided to the Contractor for installation under the KRRP.

Chamber requirements associated with the STSISP, for upgrading salt water mains and sewers (in Betio, Bairiki & Bikenibeu), have been finalised. Whilst instruction has been given to the Contractor to install some chambers (Bikenibeu) the exact locations in other areas still need to be confirmed. Liaison with the STSISP is ongoing.

**Local coralline material supply;** the Contractor now has supply agreements in place for sourcing materials material from TACL and PVU. Supply from PVU was an interim measure pending arrival of equipment, being mobilised by the Contractor, needed to extract material from the TACL source. Equipment, originally targeted for arrival in September 2014, did not arrive at Tarawa until 18<sup>th</sup> November 2014. Following establishment works (equipment checks, environmental measures, haul roads etc) the Contractor has only recently been in a position to produce aggregates 'for the Works' and hence 'full production' should be expected from the beginning of 2015.

Having 'local' material available will mitigate the risk of additional costs (as the need for additional imported aggregates can be avoided).

**Betio & Bairiki roads;** works to the 2 main feeder/loop roads in Bairiki will remain in the KRRP (although, due to on-going deterioration, work scope will need to be modified to suit conditions at time works are undertaken) together with the short link to the Bairiki wharf (including the general wharf area).

**Bonriki to Tanaea road;** termed as an 'extension' of the Airport, road works have been added to the KRRP where realignment of the existing road is required, at the western (lagoon) end of the airport runway, to avoid conflict with the line of the new airport security fencing.

Issues relating to areas of 'conflict', between construction activity and existing underground services, had become a major issue that required resolution. Subsequent to discussions (Employer, Engineer & Contractor) initiatives to mitigate future potential areas of 'conflict' have been agreed and involve:

- the establishment of a dedicated 'team' (3 small excavators, support trucks & investigative hydro-vac truck together with associated operators and technical staff). The team is expected to be needed for a period of 4-8 months and will relocate services ahead of the main roadworks activities, and
- raising of road levels (~150mm) along the main Betio-Temaiku road, Ch 7+500 to 20+500, utilising local corraline materials that will soon become available from Takoronga channel works (under separate contract) being undertaken for TACL. Raising levels will further mitigate areas of potential conflict and hence reduce the amount of time the aforementioned resources will be required

Instructions and/or variations associated with the aforementioned 'work scope' and 'service conflict' issues have been provided to the Contractor and, as a consequence, an updated works programme had been requested. This updated programme was provided in early December (without supporting reports, cash flow etc) and is currently under review.

A brief summary of areas of physical road works, and tasks undertaken to date, follows below:

**Betio-Temaiku road;** the Contractor does now have greater presence along this road with focus of attention being:

- Pavement & Surfacing; Bairiki & Nanikaai areas and Bikenibeu/Naiverevere area
- Coastal works, installation of 'enabling' works; various sites including Ambo causeway
- Ducting & Drainage works; Bikenibeu area
- Kerbing; Bairiki-Nanikaai and Bikenibeu areas

**Airport road (Ananau causeway);** works are now essentially complete (road markings/furniture excepted) with much of the asphalt surfacing placed along this road (currently just short of the airport terminal facility). Only a short section remains together with an 'extension', at the western end of the airport runway, where realignment is needed to accommodate new security fencing.

**Temaiku road;** works have resumed on this road with activities focused on kerbing and pavement works along the section that parallels the airport runway. Kerbing activities have progressed further towards Temaiku village.

**Bikenibeu feeder road;** works have commenced on these roads and the concrete geo-cell pavement is well advanced along link 04.

Associated with the physical works are various 'safeguards' issues that the Employer and Contractor have to address and the key components are highlighted below together with any pertinent issues that have developed during the report period:

**Resettlement Plan;** the Employer, through MELAD/LMD, has completed making payments of compensation entitlements to the vast majority of affected parties (AP). Payments to a few remaining AP's cannot be finalised until such time as on-going court actions (related to ownership or boundary disputes) have been settled. As works progress there will still be a need for further compensation assessment/payment as, prior to clearing activities, there may be some additional trees/crops identified that need to be considered (arising costs are not expected to be significant). This is being managed (MPWU/LMD) and compensation entitlements are being processed in the usual manner.

**Health & Safety;** the Contractor is implementing and rigidly enforcing a comprehensive Health & Safety Plan that has been prepared for the KRRP site activities. To ensure there is a safe working environment all employees, and visitors, have to pass through a site 'safety induction'. There are also a variety of separate meetings, primarily aimed at the Contractors workforce, where specific concerns and/hazards are highlighted and discussed. Selected members of the workforce are also attending first aid programmes being run by the Red Cross.

Separate to the needs of physical site activity the Contractor is also responsible for initiating HIV/AIDS IEC campaigns with the assistance of a local NGO. The Kiribati Family Health Association (KFHA) are tasked with the necessary activities and, following an initial period where some difficulties were being experienced, recent activities and deliverables have been to an acceptable standard.

**Environment;** the Contractor is working within an approved Contractor Environmental Management Plan (CEMP) although it has been acknowledged that this is a 'living' document that will, from time to time, need to be updated to ensure certain site specific activities are properly covered. Observation around the site does show that the Contractor continues to take his responsibilities, on environmental matters, seriously and is intent on 'doing the right thing'.

The Employer is tasked with obtaining Environmental Licences (EL) for the works and all those required for the current KRRP work scope have now been issued by MELAD/ECD. On-going coastal erosion has given rise to occasional 'localised damage', particularly during times of very high tides, and these have been dealt with as such areas became apparent.

**Quality Assurance;** the Contractors' approach to quality control has improved although there is room for further improvement on timeliness of information and ensuring works are properly sampled/tested ahead of 'covering up'. The Engineer has raised the issue with the Contractor, particularly as production levels do need to increase, to ensure proper quality control is carried out and maintained.

Total payments certified to the Contractor to date amount to AUD 18,502,140.76 (making due allowance for December 2014). Adjustments for price fluctuation, and repayment of the Advance Payment, commenced in the interim payment certificate prepared for August 2014. Physical works have been assessed as being ~20% complete with ~70% of time elapsed (depending on how any 'materials on site' and 'mobilisation period' might be considered). Whilst there has been recent improvement in general levels of progress the overall progress achieved to date is an increasing cause for concern (and this is reflected in cash flow earnings which continue to fall far below expectation). It has to be acknowledged that there have been some uncertainties with a variety of 'work scope' issues and dealing with 'service conflict' matters

although, now these have largely been clarified, the provision of a new programme will allow better monitoring of 'actual' vs 'scheduled' works.

The Accepted Contract Amount for the KRRP was ~AUD 48.1 million however, taking due account of instructed/potential variations and allowance for current/potential claims, the current projection for a 'Cost to Complete' has been assessed at ~AUD 51.37 million (an additional ~ AUD 3.27 million). This figure remains the same as that reported in the previously quarterly report (September 2014) although some clarification over work scope requirements has now been provided.

It is important the Employer appreciates that there are likely to be increases in the contract price that, unless alternative arrangements are made, will require financing by the Government of Kiribati (GoK).

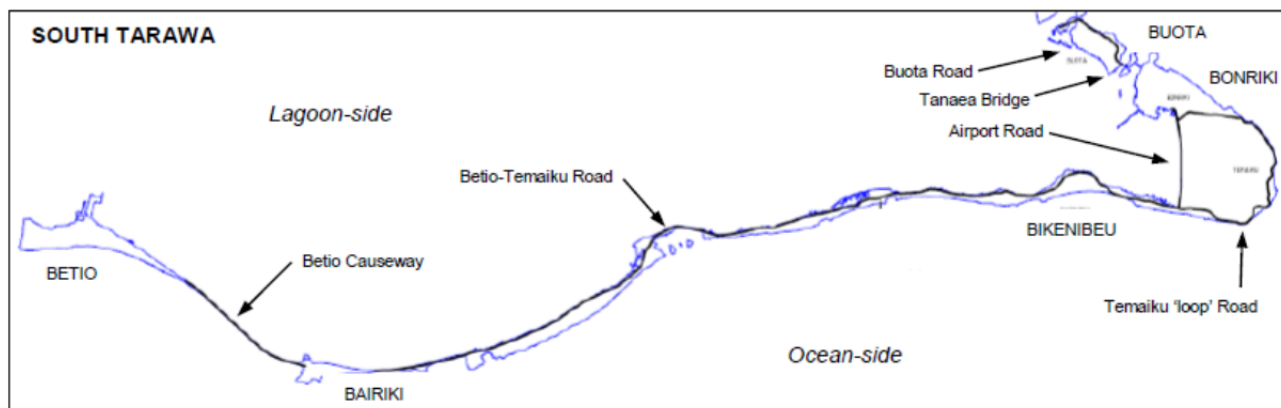
GENERAL

1. INTRODUCTION

1.1 Project Background

The Kiribati Road Rehabilitation Project (KRRP) involves the ‘Improvement of the Main Betio-Buota Road, Temaiku Road and Feeder Roads in Betio, Bairiki and Bikenibeu’ on the atoll of Tarawa, Kiribati. The principal roads are shown in Figure 1-1.

Figure 1-1: Location of main road components



The KRRP is jointly funded by the Government of Kiribati, World Bank, Asian Development Bank and Australian Aid (under the overall administration of the World Bank) with the Ministry of Finance and Economic Development (MFED) identified as the Executing Agency (EA) and the Ministry of Public Works and Utilities (MPWU) identified as the Implementing Agency (IA). The overall Work Scope, at the time of Bid, involved the following components:

South Tarawa

- Main road, Betio-Temaiku 24.0 km
- Temaiku road, 6.1 km
- Airport road, 2.2 km
- Betio feeder roads, 3.7 km
- Bikenibeu feeder roads, 3.1 km
- Betio main road repairs
- Bairiki feeder/loop road repairs

North Tarawa

- Buota ‘main’ road (ocean side), 2.0 km
- Buota feeder road (lagoon side), 1.0 km

Associated works involve:

South Tarawa

- Repairs and improvements to the Betio causeway bridge
- Upgrade of water supply transmission main from Teoraereke to Betio (~11km)



The Works are anticipated to involve the following main construction activities:

- Scarify, regulate, reshape and compact existing pavement,
- Construction of new pavement layers,
- Installation of concrete edge strips/kerbs,
- Provision of footpaths
- Bituminous asphalt surfacing,
- Drainage improvements,
- Provisions for existing and future services,
- Installation of road safety features,
- Bridge repair and widening,
- Coastal protection works, and
- Installation of water supply pipeline and associated valves

The Contract was Bid under the World Bank Guidelines for International Competitive Bidding (ICB) procedures and on 8<sup>th</sup> February 2013, following the Bid and Bid review process (including pre-Contract Award Negotiations), the World Bank provided their '*No Objection*' to award the Contract to McConnell Dowell (Aust) Pty Ltd for the '*Accepted Contract Amount*' of Australian Forty-Eight Million One Hundred and Ninety-Seven Thousand Nine Hundred and Fifty-Seven Dollars and Twenty Cents (AUD 48,197,957.20). Accordingly the Employer issued a '*Letter of Acceptance*', to the Contractor, on 12<sup>th</sup> February 2013.

### **1.2 Consulting Services**

Roughton International Ltd, in association with Fraser Thomas Ltd, were engaged to provide Consultant Services for Design and Supervision services by way of an agreement with the Ministry of Public Works and Utilities that was signed on 2<sup>nd</sup> December 2010 and which became effective on 8<sup>th</sup> February 2011. The Authorised Representative of the Consultant, for matters regarding this Contract, is Mr. Robert D'Cruz as the Roughton International Regional Manager for the Pacific.

### **1.3 Report Details**

The Consultants' Contract requires, during supervision of the physical works, preparation of reports on a 'Quarterly' basis. This report has been prepared to cover the period from the 1<sup>st</sup> October 2014 to 31<sup>st</sup> December 2014.

## 2. CONTRACT PARTICULARS

### 2.1 Key Data

A summary of relevant key data is provided in a Basic Data Sheet provided as Table 2-1 below.

**Table 2-1: Basic Data Sheet**

BASIC DATA SHEET		Reference <sup>1</sup>	Details
1	Project Title	ITB 2.1	KIRIBATI ROAD REHABILITATION PROJECT (KRRP)
2	Contract Details		
	Name	ITB 1.1	Improvement of the Main Betio-Buota Road, Temaiku Road and Feeder Roads in Betio, Bairiki and Bikenibeu
	Number	ITB 1.1	KIR-12/01
3	Funding Arrangements		
	Financing Institutions (the 'Bank')	CC 1.1.2.11	World Bank (Grant H645)
			Asian Development Bank (Loan No.2718-KIR)
			Australian Agency for International Development
	Borrower	ITB 2.1	Government of KIRIBATI (GoK)
	Executing Agency		Ministry of Finance and Economic Development (MFED)
	Implementing Agency (and 'Employer')		Ministry of Public Works and Utilities (MPWU)
4	Design and Supervision Arrangements		
	Consultant Services (and 'Engineer')	CC 1.1.2.4	Roughton International Ltd <i>in association with Fraser Thomas Ltd</i>
5	Procurement Details		
	Mode of Procurement		International Competitive Bidding (ICB) with Post-Qualification
	Deadline for Bids	ITB 22.1	Friday, 31 <sup>st</sup> August 2012
6	Contract Award		
	No Objection Letter to Award Contract		Friday, 8 <sup>th</sup> February 2013
	Letter of Acceptance	ITB 39.1	Tuesday, 12 <sup>th</sup> February 2013
	Contractor		McConnell Dowell (Aust) Pty Ltd
	Accepted Contract Amount	ITB 39.1	Australian Forty-Eight Million One Hundred and Ninety-Seven Thousand Nine Hundred and Fifty-Seven Dollars and Twenty Cents (AUD 48,197,957.20)
7	Programme Details		
	Commencement Date	CC 8.1	1 <sup>st</sup> July 2013
	Contract Duration	CC 1.1.3.3	Six hundred and ninety (690) calendar days
	Date of Practical Completion		22 <sup>nd</sup> May 2015
	Defects Liability Period	CC 1.1.3.7	Seven hundred and thirty (730) calendar days
	Date of Contract Completion		21 <sup>st</sup> May 2017

<sup>1</sup> ITB = Instructions to Bidders (inc particulars in the Bid Data Sheet)  
CC = Conditions of Contract (General and Particular Conditions)

## **2.2 Pre-Works Obligations**

### **2.2.1 Contract Agreement**

The Employer attached a signed Contract Agreement to the '*Letter of Acceptance*' of 12<sup>th</sup> February 2013 for counter-signature and return by the Contractor. The Contractor returned a signed Contract Agreement, to the Employer, on 11<sup>th</sup> March 2013.

### **2.2.2 Performance Bond**

The Contractor delivered a Performance Bond to the Employer on 4<sup>th</sup> April 2013 together with the associated Power of Attorney. The Bond was approved by the Employer on 18<sup>th</sup> April 2013.

### **2.2.3 Insurances**

In accordance with clause 18 of the Conditions of Contract the Contractor has taken out the various insurances required and provided evidence/policies of these.

### **2.2.4 Employers Financial Arrangements**

In accordance with clause 2.4 of the Conditions of Contract the Employer provided the Contractor with details of proposed financing arrangements on 10<sup>th</sup> April 2013.

### **2.2.5 Possession of Site**

In accordance with clause 2.1 of the General Conditions of Contract the Employer is required to provide the Contractor with 'Right of Access to the Site' within the time stipulated in the Contract.

It is to be noted that clause 2.1 of the Particular Conditions of Contract requires the Contractor to apply for 'Possession of Site' at least 14 days in advance of the actual date needed (as per requirements dictated by the Works programme submitted pursuant to clause 8.3 of the Conditions of Contract).

The Employer has generally been in a position to grant 'Possession of Site', to the Contractor, at the required time or soon thereafter (in a staged manner as set out by the 'current' Works programme).

### **2.2.6 Advance Payment**

The Contractor did receive an Advance Payment – this will start to be recovered in the certificate following the one in which the total of all payments, including the advance payment, has reached 30% of the Accepted Contract Amount.

### **2.2.7 Commencement Date**

Following completion of contractual obligations, on the part of the Employer and the Contractor, the Engineer delivered an instruction to 'Commence the Works', to the Contractor, on 1<sup>st</sup> July 2013.

### **2.2.8 Contract Documents**

The Employer and the Contractor have been provided with copies of the Contract Documents. Each party have a set of documents signed and countersigned by the other and these have been put aside for safe keeping.

### **2.2.9 Dispute Board**

In accordance with clause 20.2 of the Conditions of Contract the Dispute Board shall comprise one (1) sole member, who shall be agreed by the Parties, and shall be appointed within twenty-eight (28) days after the '*Commencement Date*'.

Following liaison and communication the Employer and Contractor have signed a contract with Mr Derek Firth on 4th September 2013.

### **2.2.10 Environmental Licences**

The Employer is responsible for obtaining Environmental Licences (EL) required for the Works.

EL's are provided for under Government Acts/Regulations and applications have to be made to the 'Environment Control Division' (ECD) of the Ministry of Environment, Lands, Agriculture and Development (MELAD). In addition to obtaining an EL for the road works, the Employer is required to obtain, and has obtained, separate licenses for each site where coastal protection works will be constructed.

A summary of all EL's provided for the KRRP is provided at Appendix A.

### **2.2.11 Unexploded Ordnance**

Section 1900 of the Specification sets out requirements for dealing with Unexploded Ordnance and which targets the Betio area (scene of a major battle during World War II). The Contractor engaged Milsearch, an organisation with a proven track record in dealing with UXO survey & disposal, to conduct necessary activities.

### **2.2.12 Manuals and Plans**

Specification clause 1801 requires that the Contractor prepare a '*Contractors' Environmental (Management) Plan*' (CEMP) and stipulates that '*no physical works shall be carried out*' until such CEMP has been approved by the Engineer. The Contractor is also required to prepare other manuals and/or plans in respect of Health & Safety (H&S), Quality Assurance (QA), Traffic Management (TM) and General Construction Methodology (Construction Execution Plan – CEP).

### **2.2.13 HIV/AIDS prevention**

The contract contains a requirement for the Contractor to provide an HIV-AIDs Information, Education and Consultation Communication (IEC) campaign. This is set out at clause 6.7 of the Particular Conditions of Contract, Part A; Contract Data. The clause originates from the World Bank standard forms for bidding documents that were specified for use on the project. Under this clause the Employer is obliged to provide a list of approved service providers and the Contractor is obliged to select a service provider from this list to undertake the IEC campaign.

The Employer (MPWU) provided the list of approved service providers in the contract documents at clause 6.7 Particular Conditions of Contract Part B; Specific Provisions. The list consisted of just one organisation, namely Kiribati Family Health Association (KFHA). Under clause 6.7 the approved service provider shall prepare the IEC campaign which shall be submitted to the Employer for approval. The Engineer advised the Contractor on 24th June 2013 that the IEC campaign should be based upon the World Bank's 'The Road to Good Health' toolkit ([www.theroadtogoodehealth.org](http://www.theroadtogoodehealth.org)), because the toolkit is specifically designed to ensure that proper IEC campaigns are executed for road projects.

The Contractor subsequently engaged the KFHA, who had acknowledged familiarity with the 'toolkit', to undertake the requisite IEC campaigns.

### 3. EMPLOYERS' ORGANISATION

#### 3.1 Project Management

The KRRP is administered by the Ministry of Finance and Economic Development (MFED) as the Executing Agency (EA), supported by the Kiribati Fiduciary Support Unit (KFSU), and the Ministry of Public Works and Utilities (MPWU) as the Implementing Agency (IA).

The Employer for the KRRP is the MPWU as set out in the Conditions of Contract at clause 1.1.2.2. The Employers' Representative is Mr. Ioataake Timeon, the current Secretary for MPWU. The Secretary is supported by:

- Mr Kireua B Kaiea, Director of Engineering Services (DES), and
- Mr Patrick Mannix, Technical Auditor and Advisor (TAA)

## 4. ENGINEERS' ORGANISATION AND ESTABLISHMENT

### 4.1 Engineer Details

The Engineer for the KRRP is Roughton International (RI), as set out in the Conditions of Contract at clause 1.1.2.4, and Mr John McFarlane, based in Fiji, is the Engineers' Representative (ER). The Engineer has been engaged by the MPWU, as the Design and Supervision Consultant (DSC), under separate contract arrangements for the design and supervision of the Works.

The Engineer has delegated responsibility for day-to-day administration of the KRRP construction contract to Mr. Ian Archer as the Resident Engineer (RE). Mr Archer is resident in Tarawa during the execution of the works, except for designated periods of leave (during which time cover is provided by the 'ER').

### 4.2 Staffing

#### 4.2.1 International

The Engineers' resident international staff comprises:

- Resident Engineer, Mr Ian Archer
- Quality Assurance Engineer, Mr Jan Paaskesen
- Works Inspector, Mr Llewellyn (Lew) Morgan
- Assistant Resident Engineer, Mr Rajendra Mouny

Following resignation of the Engineers' QA Engineer Mr Paaskesen has been conditionally approved (3 month assessment period) as a replacement for Mr Padmore. Mr Paaskesen arrived in Kiribati on 9<sup>th</sup> October 2014 whilst Mr Padmore departed Kiribati on 12<sup>th</sup> October 2014 following a brief handover period.

Mr Archer was on leave break for most of October 2014 (9<sup>th</sup> to 31<sup>st</sup>) during which time the 'Engineer' to the Contract, Mr McFarlane provided cover.

#### 4.2.2 National

National staff engaged directly by the Engineer comprises:

- Environmental Inspector, Ms Bweneata Kaoti,
- Community Liaison Officer, Mr Moanataake Beiabure
- Office Administrator, Ms Regina Fay
- Laboratory Technician, Mr Savaliga Malau

#### 4.2.3 Counterpart

The Consultants' contract provides for the Employer to assign full time counterpart staff, to the KRRP, for the duration of the physical works. Identified staffing positions, and assigned candidates, comprise:

- Technician Engineer, Onikanara Arika
- Technician Engineer, Mikeere Neemia
- Community Liaison Officer, Unassigned

The Engineer continues to encourage the Employer to assign other Engineers within their organisation to the KRRP, on a rotating short-term basis, so they might benefit from the experience gained.

The Engineers' Office closed down on 20th December 2014 and will reopen again on 5th January 2015; this in line with Contractors' decision to close down the works over the festive holiday period.

### 4.3 Engineers' Facilities

#### 4.3.1 Office & Laboratory

The main office and laboratory facilities have been established in part of the Employers' 'Civil Yard' compound in Betio (areas have been made available, within such facilities, for use by the Contractor). The facilities were available in Oct/Nov 2014 and, on completion of the Works, the main buildings will be handed over to the Employer.

#### 4.3.2 Transport

Vehicles for the Engineer are being provided through the construction contract. Four vehicles have been provided and these vehicles will become the property of the Employer when the contract is completed. In addition the Engineer has provided an additional vehicle from its own resources.

### 4.4 Construction Supervision Plan

The Engineer submitted a 'Construction Supervision Plan' (CSP) to the Employer on 26th February 2014.

### 4.5 Ceiling Amount

The contract is time based and payments are made on the basis of the actual inputs made by the various individual inputs. The quantities stipulated in the contract, as amended by variations, are estimates.

The following variations to the 'Design & Supervision Services Contract' have been made or are under consideration:

- Variation 1: Additional inputs in the design phase associated with increased work scope
- Variation 2: Adjustment for longer construction period (23 months from 18 months)
- Variation 3: Additional design needs and engagement of Assistant Resident Engineer (ARE)
- Variation 4: Extension of ARE inputs (associated with service conflict issues)
- Variation 5: Adjustments for expected Contract Completion Date (Projected cost to complete)

The following table gives an estimate of the final costs:

**Table 4-1: Estimate of Costs for Consulting Services**

Work Scope	Contract Ceiling Amounts		
	GBP	USD	AUD
<b>Original</b> (excluding Provisional Sums & Contingencies)	<b>328,680</b>	<b>860,521</b>	<b>395,620</b>
Variation No.1 (approved)	42,241	60,976	52,800
Variation No.2 (approved)	59,627	274,437	412,926
Variation No.3 (approved)	14,820	137,510	187,957
Variation No.4 (approved)	0	59,091	7,200
Variation No.5 (proposed)	100,946	499,418	157,508
<b>Revised / Projected Cost to Complete</b> (excluding Contingencies)	<b>546,314</b>	<b>1,891,872</b>	<b>1,097,762</b>
Price Fluctuation	35,000	90,000	10,000
Provisional Sum (equipment)		110,000	
Provisional Sum (training)		90,000	
Contingency (based on an additional 3 months EoT)		200,000	
<b>Revised Ceiling Amount</b>	<b>581,314</b>	<b>2,381,872</b>	<b>1,107,762</b>

## 5. CONTRACTORS' ORGANISATION AND ESTABLISHMENT

### 5.1 Mobilisation

The Contractor is now considered to be substantially mobilised although, given progress to date, it does seem likely that additional resources will have to be mobilised if the works are to be completed within the scheduled time for completion.

### 5.2 Subcontracts

Clause 4.4 of the Conditions of Contract set out the provisions for subcontracting arrangements and it is to be noted that the Contractor is not permitted to subcontract the whole of the Works. Unless any subcontractor is named in the Contract (or Bid) the prior consent of the Engineer is required for proposed subcontracting arrangements.

To date the Contractor has entered into few sub-contract arrangements with the following being the current status:

- Blacktop Construction; major sub-contract for asphaltting (and some pavement) activities subsequently fell through when company entered receivership in early September 2013
- Milsearch; minor sub-contract for UXO surveys

### 5.3 Staffing

The Contractors' staffing and workforce levels fluctuate during the reporting period but, at the end of December 2014 the number of persons engaged was:

- International, 36 (33 male, 3 female)
- National, 213 (192 male, 21 female)

The Contractors' international staff comprises the following numbers and positions:

**Table 5-1: Details of Contractor Management Staff**

Discipline	Numbers
Project Manager	1
Commercial Manager	1
Accounts/Administration	2
Project Engineers	2
Laboratory Manager	1
Site Engineers/surveyors	2
Graduate Engineer/Technicians	3
Health, Safety & Environ Supervisor	1
Works Superintendents	1
Works Supervisors	10
Workshop	3
Plant controllers/operators	9
<b>Total</b>	<b>36</b>



The Contractor has been coordinating local labour requirements with the Ministry of Labour under an ‘Employment Agreement’ that meets with their approval. A breakdown of the labour force into the various disciplines follows:

**Table 5-2: Details of Contractor Labour force**

Organisation	Discipline	Numbers
MacDow	Carpenters	15
	Drivers	32
	Operators	36
	Labour (skilled)	27
	Labour (unskilled)	103
	Total direct employees	175
	Male	192
	Female	21
	Resignation and/or dismissal	48
TSS	Security	12

TSS are a ‘local’ company offering security services. The Contractor has reported no industrial relations issues to date.

#### 5.4 Equipment

The Contractor has mobilised a total number of over 200 items of plant and equipment as of the end of December 2014. This includes major items of construction equipment together with miscellaneous items such as pumps and generators. A summary of the various items is provided hereunder:

**Table 5-3: Details of Contractor Equipment**

Description	Number
Construction plant	45
Trucks (general, crane, concrete, tanker)	28
Utility vehicles	21
Transport	2
Pumps, compressors & generators	20
Plate compactors & power tools	21
Containerised facilities	26
Miscellaneous	47
Facilities:	
Screen plant	1
Concrete batcher	1
Asphalt plant	1

All vehicles have been registered and insured in Kiribati. The Contractor has an established plant workshop in Betio and servicing schedules have been prepared.

## **5.5 Materials and Material Suppliers**

### **5.5.1 Materials on Site**

Clause 14.5 of the Conditions of Contract does make provision for the payment of '*Materials on Site*' for certain materials:

- Precast concrete items,
- Imported processed aggregates,
- Bitumen,
- PVC pipes/ducts, and
- Street lighting

Consignments of materials are now arriving at Tarawa on a routine basis. Due to supply demand (and barging constraints) the Contractor is now importing some processed aggregates in containers using commercial shipping lines. Although entitled under the Contract the Contractor has ceased to seek reimbursement, for materials on site, in recent applications for interim payment.

### **5.5.2 Material Suppliers**

The Contractor is making arrangements, with many suppliers, to provide certain items and materials required for the Works. A current listing of material and/or suppliers, and their status, is provided at Appendix B.

## **5.6 Workshops, Depots and Storage Areas**

Apart from the main office-laboratory compound the Contractor requires many other 'areas' to use for workshops (mechanical, carpentry etc), depots (concrete batching, asphalt plant etc) and general storage (imported aggregates, precast concrete units etc). The following main areas are currently being utilised:

- Storage & Weigh station area, Betio (adjacent to meteorological station)
- Storage & stockpile area, Betio (ESAT/TACL compound, Takorong)
- Storage area, Bairiki (north loop road)
- Storage area, Bairiki causeway (km5)
- Storage area, Nanikaai causeway (km6)
- Storage area, Betio-Temaiku road (km9, behind Tarawa Motors)
- Storage & screening plant, Betio-Temaiku road (km11, opposite parliament)
- Storage & concrete plant, Betio-Temaiku road (km22.5, McKenzie Point), and
- Asphalt plant, Temaiku (old PVU car dump site)

The Contractor ceased to use the TACL compound, in December 2014, for KRRP activities as the area will be needed for a separate contract to excavate local materials (for TACL) prior to them being supplied to the KRRP. Stockpiled imported materials were moved to a new storage area along the Nanikaai causeway.

## **5.7 Micro-enterprise Groups**

The Contract makes provision for training of routine road maintenance micro-enterprise groups by the Contractor.

The 3 groups (of 6/7 individuals) engaged by the Contractor continue to operate within the Betio (2 groups) and Bairiki (1 group) areas. Tasks remain focused towards cleaning the road and drains, together with cutting back vegetation (for say 1m behind kerb lines).

## 6. PROGRAMME & CASHFLOW

### 6.1 Programme

As set out under clause 8.3 of the Conditions of Contract the Contractor has to submit a Works Programme within twenty-eight (28) days of the receipt of an instruction to 'Commence the Works' and subsequently update the programme if at any time the Engineer notifies the Contractor that the programme is not consistent with the actual rate of progress.

The Contractor is currently working to revision 3 of his programme (although some activities are noted to be 'out of sequence') a summary of which is provided at Appendix C and which provides a comparison of actual vs scheduled work activities for various sections of the Works. Following clarity on a number of uncertain work scope issues a draft copy of programme revision 4, without detailed supporting particulars, was informally provided on 30<sup>th</sup> September 2014 (for 'information' ahead of pending donor mission in early October) with the Contractor noting that there were 'some errors'. That programme showed completion by 1<sup>st</sup> September 2015 which is just over 3 months later than the scheduled completion date of 22<sup>nd</sup> May 2015 (excluding weather EoT). Formal submission of this programme did not follow as subsequent agreement on initiatives to deal with service conflict issues warranted further review. An updated version of the revision 4 programme was submitted on 2<sup>nd</sup> December 2015 although this again was not accompanied by the various supporting documentation that needs to be provided, the programme shows project completion at 29<sup>th</sup> September 2015 which is just over 4 months later than the scheduled completion date of 22<sup>nd</sup> May 2015 (excluding weather EoT). The Contractor has been asked to provide the required additional support information and this is currently awaited. Review of the programme has commenced but the additional information is required before this exercise can be completed. Nothing was received before the issue of this report.

Unless additional resources are mobilised it seems likely that the Engineer will have to give notice to the Contractor, under clause 8.6 of the Conditions of Contract, seeking advice on measures to be adopted to ensure Works are completed 'on time'.

Graphical representations of progress on key activities, for the various road components (still against programme rev 3), are provided separately as Appendix D. An overview of each programme is briefly described below.

#### 6.1.1 Programme rev.0 (July 2013)

A programme (rev 0) was issued within 28 days of Commencement but it initially lacked the additional supporting information required by the specification. The general philosophy of the Contractors programme remained as per the programme provided with their Bid ie one team working along the main Betio-Temaiku road (starting at the western 'Toll Booth' end and working progressively eastwards) and one team working in parallel in the Temaiku area (working, in turn, on the Temaiku, Airport and Buota roads).

#### 6.1.2 Programme rev.1 (November 2013)

A revised programme (rev 1) was provided on 25<sup>th</sup> November 2013 which still did not provide all the supporting information provided by the terms of the contract. Completion of works was still being targeted for 21<sup>st</sup> May 2015 in line with Contract requirements.

By the end of the December 2013 the programme had already become out of date, certain works were behind programme and being executed out of sequence, and further revision was requested, by the Engineer, in late-January 2014.

#### 6.1.3 Programme rev.2 (February/March 2014)

A revised programme (rev 2) was submitted on 26<sup>th</sup> February 2014 with a supporting 'report' provided on 4<sup>th</sup> March 2014.

On the basis of the deficiencies that were identified programme (rev.2) was not accepted the Contractor was asked to resubmit accordingly.

Due to the deteriorating condition of the Betio causeway protection revetment, and following discussions during the Donor mission in March 2014, the Contractor was notified, on 21<sup>st</sup> March 2014, to defer much of the pavement works, across the Betio causeway until as late as possible in a revised programme.

#### 6.1.4 Programme rev.3 (April 2014)

The Contractor submitted an updated programme (rev 3), together with supporting information, on 15<sup>th</sup> April 2014.

The programme was primarily required following deferral of pavement/surfacing works across the Betio causeway (with consequential EoT claim for 50 calendar days).

The Employer subsequently decided that pavement works on Betio Causeway should be deleted from the KRRP to allow time for funding to be put in place for the rehabilitation of the causeway structure. On this basis the Employer declined to agree to any extension of time.

#### 6.1.5 Programme rev.4 (December 2014)

The Contractor submitted an 'informal' draft of an updated programme (rev 4) on 30<sup>th</sup> September 2014 however, due to prevailing circumstances (work scope clarifications and service conflict initiatives), further review became necessary and formal submission of the programme was made on 2<sup>nd</sup> December 2014.

The programme is currently undergoing a review process although it is noted that project completion date is shown as 29<sup>th</sup> September 2015 which is just over 4 months later than the scheduled completion date of 22<sup>nd</sup> May 2015 (excluding automatic wet weather time extensions).

### 6.2 Cashflow

The most recent cash flow information provided by the Contractor is that associated with, and subsequent to, submission of programme revision 3. Details are tabulated below:

**Table 6-1: KRRP Cash-flow Expectations**

Year	Month	Amount (monthly)		Cumulative
		Actuals	Predicted	
2013	April	4,819,796		4,819,796
	May	1,112,066		5,931,862
	June	839,800		6,771,662
	July	771,880		7,543,542
	August	448,582		7,992,124
	September	361,831		8,353,955
	October	353,545		8,707,500
	November	446,960		9,154,460
	December	385,386		9,539,846
2014	January	754,090		10,293,936
	February	374,850		10,668,786
	March	718,254		11,387,040
	April	920,284		12,307,324
	May	1,028,904		13,336,228
	June	593,154	609,000	13,945,228
	July	1,206,106	2,400,000	16,345,228
	August	758,269	3,047,000	19,392,228
	September	651,386	2,270,000	21,662,228

	October	466,430	2,292,000	23,954,228
	November	1,490,568	2,373,000	26,327,228
	December		2,452,000	28,779,228
2015	January		2,686,000	31,465,228
	February		2,609,000	34,074,228
	March		2,478,000	36,552,228
	April		2,653,000	39,205,228
	May		4,088,000	43,293,228
	June		2,913,000	46,206,228
	July		702,000	46,908,228
Repayment of Retention			2,407,897.86	49,316,126

Figures to November 2014 are based on certified amounts. Predicted earnings provided with Programme revision 3 in June are shown alongside for comparison against earlier projections. It is clear that earnings to date fall far below those anticipated and this serves to demonstrate that improved rates of progress are necessary if Works are to be completed within the scheduled time for completion. There remains some discrepancy in the Contractors final 'cost to complete' (ie after repayment of retention) and although clarification has been sought further information has not yet been provided.

An updated cash flow is required as part of the support information which accompanies any programme submission. Although a new programme has recently been received the updated cash flow expectations is awaited.

A graphical representation is of cashflow (expected) against earnings (actual) is provided at Appendix E.

## **7. CONTRACT ADMINISTRATION**

### **7.1 Communications**

To avoid confusion it is important that proper lines of communication are available between the Employer, Engineer and Contractor. Required procedures have been established and, apart from odd occasions, are functioning satisfactorily.

### **7.2 Meetings**

Site meetings, with the Contractor (and Employer), are being held on a routine basis. Additional meetings will be called if and when circumstances dictate this is required. Two formal site meetings were held during the current report period with several other informal discussions taking place over work scope matters and existing services issues.

### **7.3 Notices & Instructions**

During the course of the Works there will be times when the Engineer has to give instruction to the Contractor and when the Contractor needs to seek clarification from the Engineer. Systems have been established whereby this can take place.

### **7.4 Site Records**

The importance of having good site records available is recognised and, wherever practicable, such records should be agreed by personnel from the respective Engineer/Contractor organisations. Of particular note is the need to agree measurements of completed works that is due for payment (particularly if it is to be 'covered up'). Systems have been established to ensure such records are maintained.

### **7.5 Inspection and Testing**

As set out at section 1205 of the Specification the Contractor maintains responsibility for overall Quality Control of the Works. The Engineer will however institute routine inspection and testing through an 'Audit' Laboratory that is being established for the Engineers' use. Systems have been established whereby the Contractor provides the Engineer with due notice of on-going works that are ready for testing and the Contractors' records will be reviewed and checked. Additional 'audit' checks may be carried out as and when required and various standard forms, established and used on past projects, will be adapted for use in monitoring the KRRP day-to-day activities, conducting various inspections and undertaking, and reporting on, the various laboratory testing that is required. Quality standards are meeting the requirements of the specification on a routine basis and non-conformities are very few in number. Ensuring that QA procedures are routinely followed and that the delivery of test results keeps pace with the proposed works in the field requires constant prompting and vigilance. As pressure mounts to deliver greater productivity the current resources may struggle to cope.

### **7.6 Measurement and Payment**

Clauses 12 and 14 of the Conditions of Contract respectively set out the various formal requirements for Measurement and Payment. Procedures for routine agreement (Engineer/Contractor) of measured works and/or activities have been established. Agreed quantities of works will be used to prepare Interim Payment Certificates and summaries will be provided in the attached supporting documentation.

## 8. COMMUNITY LIAISON

It is recognised that it will be important for local communities to be kept apprised, in advance, of the Contractors' scheduled activities. There is close on-going dialogue with the various local communities, during actual physical works, to make sure they are informed about the potential hazards and dangers involved, as well as general liaison in respect of permanent/temporary access arrangements and issues with existing services & utilities. In particular work on feeder roads is constrained by lack of working space and this will need careful planning.

Both the Engineers' and Contractors' staffing arrangements provide for a 'local' Community Liaison Officer (CLO) who will deal with issues raised by the various stakeholders and communities as the works proceed. The Engineer and Contractor liaison officers continue to engage with the public to advise on pending works so that there is greater general awareness over what is happening. Interaction with the general public, and roadside residents, has increased (now works are progressing through the Bikenibeu 'town' area) and liaison is ongoing in order to address, where practicable, specific requests or concerns.

Following communications with the Employer/Donors, and discussions with the Contractor, the CLO's are coordinating any comments and complaints (and any subsequent responses) received either by telephone call to the Contractors' office or by SMS (text messaging) to the web-based system established by the Donors. Telephone numbers have been included on the project noticeboards for the public to use for advice and/or complaints. Proposed arrangements have been incorporated into the Contractors CEMP.

Complaints received to date have been few, generally of a relatively minor nature and have been dealt with through consultation and action as might be appropriate. A combined record of complaints (those received by Engineer and Contractor) is being maintained and a summary of complaints received, together with any resolution action, is provided at Appendix F.

## ISSUES IMPACTING ON THE WORKS

### 9. WORK SCOPE

#### 9.1 General

The main road components of the KRRP, as described at section 1.1, are shown on a plan of South Tarawa included as Figure 1-1.

Since the award of the construction contract there has been ongoing discussion and uncertainty on many work scope related matters. In recent months greater clarity has been provided on the works that will be required and this will allow a programme to be prepared that reflects what will be the 'final' works (possibly with some minor alterations). In turn this will enable proper monitoring of associated rates of production to be undertaken in order to assess if/where deficiencies in the Contractors' resources and/or procedures exist.

#### 9.2 Betio Causeway & Temaiku Road

##### 9.2.1 Betio Causeway

Pavement & surfacing works have been deleted from this section of the main Betio-Temaiku road (Ch 0+400 to 3+200) and will now be considered for inclusion in any subsequent follow up project(s) to provide long term protection to the causeway.

Works associated with bridge improvements (Ch 1+400) will continue as planned.

##### 9.2.2 Temaiku Road

Bituminous surfacing to the Temaiku road has been changed, from Asphalt to a 2-coat surfacing dressing, over much of the total length. Sections at each 'end' of the road, where traffic levels are highest, will remain as asphalt (Ch 0+000 to 0+750 and 5+400 to 6+100).

#### 9.3 Coastal Protection

Works along the lagoon side of the Betio-Temaiku road have reverted to the sand-cement bag form of construction, similar to that originally scheduled, although it has been acknowledged that the separately designed walls (under KAP) will need to follow current works if a more robust and longer term protection is required. Significant works have been required at Ambo causeway where protection was arranged to encapsulate existing services (power, water & telecom) that had been exposed by on-going coastal erosion.

For two major sites along the Temaiku road it has been confirmed that the more robust long term solution of rock boulders will be adopted. In conjunction with this the road pavement, for sections behind both 'walls', will be formed with concrete.

#### 9.4 Valve Chambers (KAP Water Supply)

Only one new chamber (near Nanikaai) is now required although an existing chamber (at the Airport road intersection) will need to be modified/extended to suit KAP requirements.

KAP have confirmed a need to replace all existing covers to existing chambers along the main water supply transmission main between Teaoaraereke and Bonriki. As many of these chambers impinge on the scheduled road works the KRRP has been tasked with carrying out the required works. Designs have been completed, in liaison with KAP, instructions provided to the Contractor. KAP are to provide the lids and frames that will be cast into the new lids, and also lids for any valves that are identified in the road carriageway. At a co-ordination meeting 15<sup>th</sup> December 2014 KAP advised that the request for bids for these materials had been unsuccessful and will need to be repeated. At present there is no projected delivery date for the required materials.

#### 9.5 Valve Chambers (STISIP Sanitation upgrade)

Provisional allowance has been made to install 24 new chambers to facilitate potential valve/hydrant works under the STISIP. As previously reported the general rationale, agreed with the Employer and STISIP, is that:



- where any valves/hydrants lie within the asphalt surfaced carriageway chambers will be installed
- where any valves/hydrants lie within a concrete footpath or concrete feeder road a 'box-out' will be formed (and in-filled with a concrete 'surface') for future access/works by the STSISP contractor

The Employer and Engineer continue to liaise with STSISP on valve/hydrant locations with focus of attention being given to the Bikenibeu area where works are currently on-going. To date the need for 3 chambers have been identified and instruction has been provided to the Contractor.

In addition to valves and hydrants there are a number of sewer manholes that also slightly impinge on scheduled roadworks. It had been the intention, under KRRP, to just reset their covers to suit new finished levels. However, following discovery that the 'lids' in the covers are all now 'fused' with rust and STSISP advice that under such circumstances covers will be replaced under their project, instructions have been issued to place a flush kerb in the road and around the lid. STISP Contractor will adjust the levels of the lids.

#### **9.6 Betio and Bairiki Roads**

Although the condition of the Betio and Bairiki roads have deteriorated, since the time of design (early 2011), there are currently no plans to review or expand the KRRP to cover any new sections of road.

Within Bairiki, for the works to the north and south feeder/loop roads, allowance has been made to rework both roads due to their deteriorating condition (original works scope was primarily a 1-coat reseal) although actual requirements will be confirmed at time works are carried out.

A short spur road to the Bairiki wharf, off the northern loop road, will also be improved together with the general wharf area (where a concrete geo-cell pavement will be used).

#### **9.7 Airport road 'extension'**

To facilitate the installation of new security fencing around the Bonriki International Airport complex (being upgraded under KAIP) it will be necessary to realign the existing road, locally, around the western end of the main runway. Preliminary designs have been prepared and proposed work limits, for both road and fencing, have been set out by each respective contractor. This did highlight that there was conflict in some areas and the Employer continues to liaise with KAIP on necessary arrangements prior to designs being finalised.

## 10. MATERIAL SUPPLY

### 10.1 Environmentally Safe Aggregates for Tarawa (ESAT)

The Contractor has now entered into a formal contract with Te Atinimarawa Co. Ltd. (TACL) for the supply of coralline materials. Equipment (1 x 45t excavator and 2 x 10m<sup>3</sup> articulated dump trucks) has been mobilised and, although initially targeted for arrival in September 2014, arrived Tarawa on 18<sup>th</sup> November 2014. Following equipment checks etc works on the 'haul' road commenced on or around 4<sup>th</sup> December 2014 and, towards mid-December, access to the main channel excavation area had been established. The Contractor has started to stockpile some coral materials however the main thrust of activities can be expected when the Contractor returns early-2015 after the Christmas/new year shut-down.



### 10.2 Supply of Material from MPWU/PVU

As an interim measure, pending availability of material from TACL, the Plant & Vehicle Unit (PVU) have been supplying local coral materials to the Works. Of the three PVU sources available (Betio, Ambo and Bikenibeu) only the source in Betio (adjacent to the High Court complex) has been utilised.

### 10.3 Contract Arrangements (for local aggregate use)

Prior to entering into any formal supply contract the Contractor did need to obtain the approval of the Employer if costs exceed \$10/m<sup>3</sup>. The Contractor will be entitled to reimbursement of any additional costs incurred if the supply cost exceeds \$10/m<sup>3</sup> (as provided for during contract award negotiations). As costs do exceed \$10/m<sup>3</sup> (supply cost ex PVU is \$35/m<sup>3</sup> 'loose' measure and ex TACL \$65.5/m<sup>3</sup> 'solid' measure) such approval has been sought from, and granted by, the Employer for sources operated by PVU and TACL.

In addition, proposed suppliers must have proper environmental documentation/clearance for the sources that are intended to be utilised. For the sites that have been identified (PVU and TACL) environmental licences, issued by MELAD/ECD, are available.

#### **10.4 Imported Crushed Stone Basecourse**

The Contractor has been sourcing crushed stone basecourse from a river gravel 'quarry' in Fiji. Material being supplied complies with specification requirements and required bio-security measures are routinely followed when importing such material into Kiribati. To date ~6,000 m<sup>3</sup> of basecourse material has been imported.

With the expected availability of larger quantities of local coralline materials it can be expected that reliance on imported aggregates will drop off and this will mitigate (or negate) any potential cost increases that might have occurred had 'local' materials not become available. Proper assessment of cost implications could only be made once 'local' material became 'available' and the Contractor confirms when 'imported' material is no longer required. Given recent developments these issues can now be 'predicted' with a reasonable degree of confidence and an exercise to evaluate cost implications will be carried out in the near future.

## 11. WEATHER

### 11.1 Automatic Extension of Time for Wet Weather

Specification clause 1215 provides a formula for calculating the 'Extension of Time' (EoT) associated with weather conditions that differ from the average conditions (based on available historical records). The EoT is an automatic entitlement that can go up and down during the course of the Contract but the Contract period cannot be reduced if the overall EoT becomes negative. A detailed listing of monthly weather conditions, and EoT entitlements (in calendar days), is presented at Appendix G.

During the design of the works rainfall data was collected from the Metrological Office, Betio and used to determine the 'fixed' elements in a formula established to calculate any extension of time (EoT) entitlement for weather conditions that differ from the historical 'norm'. The Contract does not permit the overall Contract duration to be reduced but negative figures can be used to off-set against those times when conditions are wetter than average and additional time does become due to the Contractor.

Data is being collected from the same station to determine the quantum of any associated EoT. For the report period weather conditions have been wetter than average and, to date, the current EoT due to rainfall stands at 'plus thirty' (+30) calendar days.

## 12. RESETTLEMENT

The Government have been initiating the various requirements of the RP and payment of compensation to Affected Parties has been on-going since late-May 2013. The Engineer has met with the various parties involved in the implementation of the RP and continues to liaise with, and assist, the Employer in their dealings with the Lands Management Division (LMD).

The LMD have generally been dealing with issues in a manner that reflects the Contractors programmed needs and sections of the works are available should the Contractor request them. The overall resettlement process is ~96% complete and outstanding entitlements primarily relate to locations where there are on-going ownership or boundary disputes (which are subject to court proceedings) or logistical difficulties in identifying/contacting rightful 'owners' who now reside overseas. The LMD have confirmed that an 'escrow' account has been established for entitlements that cannot be dispersed as a result of such difficulties.

The Contract does make provision for the extent of the physical works to be set-out two weeks ahead of any construction activity so that LMD have opportunity to ensure, through site inspection, that all affected property has been properly compensated for. During this process any additional trees/crops that have to be included (those leaning into the roadway, newly planted, small and not surveyed, or missed) are identified, areas needed for stopping bays adjusted (during on-going consultations some have had to be moved), and this is being managed so that entitlements are properly compensated.

### 13. POSSESSION OF SITE

The Contractor has requested, and the Employer has granted, Possession of Site for the following locations.

**Table 13-1: Details of 'Possession of Site' Requests**

Component	Location / Chainage	Date		Comments
		Requested	Granted	
Office and laboratory facilities within the MPWU civil works yard in Betio.	MPWU yard in Betio	8 May 2013	3 June 2013	The Contractor accepted this as fulfilment of the Employers' obligations prior to the Engineer issuing the Contractor with an instruction to 'Commence the Works'.
Betio-Temaiku road	Ch 0+000 to 3+250	10 October 2013	10 October 2013	Contractor application dated 27 September 2013
	Ch 3+250 to 4+700	08 September 2014	15 September 2014	Needed for water main works only
	Ch 4+700 to 10+000	10 February 2014		Contractor withdrew his request 5 February 2014
	Ch 4+700 to 10+000	27 February 2014	14 March 2014	Contractor application dated 29 January 2014
	Ch 12+450 to 12+950	22 September 2014	29 September 2014	Primarily for initial coastal protection works
	Ch 14+000 to 19+000	5 January 2015	5 January 2015	Contractor application dated 1 December 2014 Original request changed from 1 <sup>st</sup> December 2014 to 5 <sup>th</sup> January 2015. Programme envisages possession on 3 <sup>rd</sup> December 2014
	Ch 19+000 to 23+900	22 April 2014	22 April 2014	Contractor application dated 27 February 2014. Original request changed from 17 April 2014.
Airport Road	Ch 0+000 to 2+230	10 October 2013	10 October 2013	Contractor application dated 27 September 2013
Temaiku Road	Ch 5+000 to 6+100	10 October 2013	10 October 2013	Contractor application dated 27 September 2013
	Ch 0+000 to 5+000 (exc Ch 2+200-2+450)	11 November 2013	11 November 2013	Contractor application dated 4 November 2013. Ch 2+200 to 2+450 was initially excluded.
	Ch 2+200 to 2+450	11 November 2013	4 December 2013	Contractor application dated 4 November 2013.
Bikenibeu Feeder roads	Links 01, 02, 03, 06 & 08	5 January 2015	5 January 2015	Contractor application dated 1 December 2014
	Links 04, 05 & 07	20 January 2014	27 January 2014	Contractor application dated 20 January 2014

It is to be noted that clause 2.1 of the Conditions of Contract requires the Contractor to apply for 'Possession of Site' at least 14 days in advance of the actual date needed.

## 14. PROJECT COORDINATION

### 14.1 General

The Employer has now initiated separate project coordination meetings, to address issues related to any areas of potential conflict or concern, with invitations being extended to various projects and organisations, notably:

- Kiribati Adaptation Project, phase 3 (KAP-III); coastal protection and water supply
- South Tarawa Sanitation Improvement Sector Project (STSISP);
- Kiribati Aviation Investment Project (KAIP); security fencing, and
- Public Utilities Board (PUB); existing services

There are other projects recently commenced in South Tarawa such as:

- Development of the University of the South Pacific campus (USP), and
- Bairiki Housing Development – for Bairiki Housing Corporation
- Bonriki Solar Power (PV) Project – for Public Utilities Board

The Employer liaises separately with these projects to ascertain any implications that these projects might have on the KRRP (and vice versa). The introduction of these coordination meetings has allowed for greater interaction between the projects and further allows the Employer to provide better informed routine updates to the National Infrastructure Development Steering Committee (NIDSC).

### 14.2 Coastal works; KAP-III

Issues relating to coastal works and fresh water supply are now being managed with outcomes as highlighted within work scope issues reported on at sections 9.3.

### 14.3 Water supply; KAP-III

Issues relating to water supply (chambers) are now being managed with outcomes as highlighted within work scope issues reported on at sections 9.4

### 14.4 Sanitation works; STSISP

Issues relating to works needed to facilitate future valve/hydrant replacement are now being managed with outcomes as highlighted within work scope issues reported on at section 9.5.

### 14.5 Airport works; KAIP

Issues relating to works needed to facilitate installation of security fencing are now being managed with outcomes as highlighted within work scope issues reported on at section 9.7.

### 14.6 Existing services; PUB & TSKL

Conflict between physical road works and existing underground services continues and the Engineer is in constant liaison with service authorities in regards to any relocation works that need to be arranged. Use is being made of the materials that have been procured to facilitate such relocation works.

Following discussions (Employer/Engineer/Contractor) agreement has been reached on two 'initiatives' put forward to mitigate 'conflict' difficulties, namely:

- Mobilisation of a separate team of resources dedicated to service repair/relocation works, and
- Raising designed road levels, say 150mm (now availability of local materials is 'imminent') where practical to do so.

The Contractor has been instructed accordingly and follow up formal variation is being prepared.



#### **14.7 USP development**

Works have commenced on building works within the University of the South Pacific (USP) complex in Teoraereke. The proposed works do interface with the road works at a common boundary, along the frontage of the development, where access, stormwater & service connections need to be accommodated. The Employer continues to liaise with the designer/developer in order to finalise arrangements that are mutually acceptable.

#### **14.8 Bairiki Housing Development**

Works have commenced on clearing activities within the areas set aside in Bairiki (eastern and western 'ends' of the town) for housing development. The proposed works do interface slightly with the road works at a common boundary, along the frontage of the development, where footpaths need to be accommodated (at the Mary's Motel intersection where a new roundabout is to be formed) and new water supply main (which skirts the development in places). The Employer continues to liaise with the designer/developer in order to finalise arrangements that are mutually acceptable.

#### **14.9 Bonriki Solar Power Project (for PUB)**

PUB are arranging to establish a 'solar farm' to the north of the Bonriki airport complex and control, from their depot in Bikenibeu, will be by way of fibre optic cabling. Ducting is required for the necessary cables and the Employer is liaising with PUB in regards to timing issues and whether or not duct installation will be undertaken as part of the KRRP or PUB-PV works. This will largely be dependent on respective programme requirements.

## PROGRESS ON PHYSICAL WORKS

A brief narrative is provided, in following sections, on the status of various work activities for each of the various road components within the KRRP. A schematic representation of key activities is provided as Appendix H together with a selection of site photographs.

### 15. BETIO-TEMAIKU ROAD

#### 15.1 General

##### 15.1.1 Possession of Site

The Contractor currently has 'possession of site' for the following sections of road:

Ch 0+000 to 10+000,

Ch 12+450 to 12+950, and

Ch 19+000 to 23+920

The Contractor has lodged an application for the section Ch 14+000 to 19+000 as of 5<sup>th</sup> January 2015 and this has been granted by the Employer.

##### 15.1.2 Existing Services

Investigations to assess existing underground services have been completed in the following areas:

Ch 0+000 to 3+300,

Ch 4+700 to 7+200, and

Ch 19+000 to Ch 23+900

Results of the investigations are fed through to the Engineer and instruction is provided, following liaison with relevant service providers, on any required relocation works. The Contractor also coordinates any works with service authorities (particularly for power isolation).

##### 15.1.3 Entry upon Land

A separate exercise is undertaken to inspect 'general' requirements along the existing road (ie primarily resettlement issues but also other aspects which might impact on the works) prior to commencing clearing activities and this has been completed in the following areas:

Ch 0+000 to 3+300,

Ch 4+700 to 9+000, and

Ch 18+500 to 23+920

##### 15.1.4 Clearing and Grubbing

Current status of clearing and grubbing is:

Ch 0+000 to 0+400, completed

Ch 4+700 to 8+300, completed

Ch 19+000 to 20+000, on-going, and

Ch 20+000 to 23+920, completed

##### 15.1.5 Road Maintenance

Road maintenance, in the areas where 'possession of site' has been granted, is being carried out on a routine basis.

#### 15.2 Drainage

##### 15.2.1 Ducting

Fibre optic ducting has been installed in the following areas:

Ch 0+000 to 3+300,  
Ch 4+700 to 8+100, and  
Ch 19+600 to 23+900

### **15.2.2 Stormwater**

Stormwater u-drains have been installed, or are underway, in the following areas:

Ch 6+300 to 6+540 LHS,  
Ch 7+100 to 7+500 LHS & RHS (ongoing, resumed early December), and  
Ch 19+600 to 23+440 LHS & RHS,

Progress on some sections of u-drain has been hampered by the presence of existing underground services and the Contractor continues to advise that production levels being achieved are far less than what had been planned for in their bid/programme. With the 'initiatives' now in place (to deal with areas of potential conflict) it can be expected that this will become lesser of an issue from the start of 2015.

### **15.2.3 Kerbing and Edge strips**

The following kerbing activities have been undertaken to date:

Ch 0+000 to 0+080 LHS (flush edge strip)  
Ch 4+750 to 5+500 LHS & RHS (flush edge strip),  
Ch 6+100 to 6+800 LHS & RHS (flush edge strip),  
Ch 20+000 to 20+500 LHS (flush edge strip),  
Ch 20+500 to 21+000 LHS & RHS ongoing (raised kerb), and  
Ch 21+000 to 23+900 LHS & RHS (flush edge strip & raised kerb)

## **15.3 Earthworks**

### **15.3.1 Bulk Earthworks**

No major works to date.

## **15.4 Pavement**

### **15.4.1 Sub-base**

Current status of sub-base is:

Ch 0+000 to 0+400, complete  
Ch 4+700 to 5+500, complete  
Ch 6+100 to 6+800, complete and  
Ch 23+700 to 23+920 complete

Preparation of sub-base is not required everywhere along the road, only where the existing pavement is to be removed (for use elsewhere in the works or where existing material is deemed unsuitable).

### **15.4.2 Basecourse**

Current status of basecourse (nominal 150mm) is:

Ch 0+000 to 0+400 complete (imported material),  
Ch 4+700 to 5+400 complete (imported material),  
Ch 6+100 to 6+800 complete (imported material),  
Ch 21+700 to 22+200 ongoing (regulated coral),  
Ch 22+320 to 23+700 complete (regulated coral), and  
Ch 23+700 to 23+920 complete (imported material),

## **15.5 Surfacing**

Current status of surfacing (30mm asphalt) is:

Ch 0+000 to 0+400 complete,

Ch 4+700 to 5+400 complete,  
Ch 6+100 to 6+800 complete,  
Ch 21+700 to 22+200 primed, and  
Ch 22+320 to 23+920 complete,

#### **15.6 Ancillary Works**

Works have commenced on installation of speed humps; a number are under construction in the Bikenibeu area (with 1 complete at Ch 23+760).

## 16. TEMAIKU ROAD

### 16.1 General

#### 16.1.1 Possession of Site

The Contractor currently has 'possession of site' for the following sections of road:

Ch 0+000 to 6+100

#### 16.1.2 Existing Services

Investigations to assess existing underground services have been completed in the following areas:

Ch 0+000 to 6+100 (necessary instructions provided to Contractor)

There has been no further activity since last quarterly report.

#### 16.1.3 Entry upon Land

A separate exercise is undertaken, to inspect 'general' requirements along the existing road (ie primarily resettlement issues but also other aspects which might impact on the works), prior to commencing clearing activities and this has been completed in the following areas:

Ch 1+300 to 6+100 (necessary instructions provided to Contractor)

There has been no further activity since last quarterly report.

#### 16.1.4 Clearing and Grubbing

Clearing and grubbing has been completed in the following areas:

Ch 3+200 to 6+100 but has yet to commence in other areas.

There has been no further activity since last quarterly report. Clearing has been undertaken some time ago and it is likely that re-clearing will be necessary in some areas.

#### 16.1.5 Road Maintenance

Road maintenance, in the areas where 'possession of site' has been granted, is being carried out on a routine basis. A grader is being utilised where the road has no bituminous surfacing and a gang of manual labour is available to fill in potholes, within surfaced sections, when conditions require.

Drainage

#### 16.1.6 Ducting

Ducts for future fibre optic cable (including jointing chambers), and cross-road ducts, have been installed from Ch 5+000 to 6+100 (RHS).

There has been no further activity since last quarterly report.

#### 16.1.7 Stormwater

Stormwater culverts have been installed within the section from Ch 5+000 to 6+000. Inlet/outlet structures are still required.

There has been no further activity since last quarterly report.

#### 16.1.8 Kerbing and Edge strips

Current status of kerbing activities, all flush edge strip, is:

Ch 3+300 to 4+140 RHS complete, and

Ch 4+140 to 6+080 LHS & RHS complete

### 16.2 Earthworks

#### 16.2.1 Bulk Earthworks

Excavation of unsuitable material, and backfill with approved fill, has been completed from Ch. 5+950 and 6+040 where it was necessary to widen the existing road in an area of soft/swampy ground conditions.

There has been no further activity since last quarterly report.

### **16.3 Pavement**

#### **16.3.1 Sub-base**

Current status of sub-base is:

- Ch 4+750 to 6+100, complete

#### **16.3.2 Basecourse**

Current status of basecourse is:

Ch 4+720 to 5+200, complete (imported material)

Ch 5+200 to 5+400, placed (imported material)

Ch 5+400 to 6+080, complete (imported material)

### **16.4 Surfacing**

Current status of surfacing is:

Ch 4+720 to 5+200, primed

Ch 5+400 to 5+550, asphalt (trials), and

Ch 5+550 to 6+080, p[rimed

Following clarification of work scope requirements much of the surfacing along the Teraiku road has changed to a 2-coat (double) bituminous surface treatment (DBST).

### **16.5 Ancillary Works**

No works to date.

## 17. AIRPORT ROAD

### 17.1 General

#### 17.1.1 Possession of Site

The Contractor currently has 'possession of site' for the following sections of road:

Ch 0+000 to 2+300

#### 17.1.2 Existing Services

Investigations to assess existing underground services have been completed in the following areas:

Ch 0+000 to 2+300 (necessary instructions provided to Contractor)

No further works required on this road.

#### 17.1.3 Entry upon Land

A separate exercise is undertaken; to inspect 'general' requirements along the existing road (ie primarily resettlement issues but also other aspects which might impact on the works), prior to commencing clearing activities and this has been completed in the following areas:

Ch 0+000 to 2+300 (necessary instructions provided to Contractor)

No further works required on this road.

#### 17.1.4 Clearing and Grubbing

Clearing and grubbing has been completed from Ch 0+000 to Ch 2+300.

No further works required on this road.

#### 17.1.5 Road Maintenance

Road maintenance, in the areas where 'possession of site' has been granted, is being carried out on a routine basis. A gang of manual labour is available to fill in potholes, within surfaced sections, when conditions require. The vast majority of this road has received the new asphalt surfacing and hence maintenance of the 'existing road' is now greatly reduced.

### 17.2 Drainage

#### 17.2.1 Ducting

Ducts for future fibre optic cable (including jointing chambers), and cross-road ducts, have been installed from Ch 0+000 to 1+850 (LHS).

No further works required on this road.

#### 17.2.2 Stormwater

Stormwater culverts have been installed at Ch 2+000. Inlet/outlet structures are still required.

No further works required on this road.

#### 17.2.3 Kerbing and Edge strips

Concrete edge strips (flush with the road surface) have been installed from:

Ch 0+050 to 1+900 (LHS & RHS)

### 17.3 Earthworks

#### 17.3.1 Bulk Earthworks

No works to date.

## **17.4 Pavement**

### **17.4.1 Sub-base**

No works required.

### **17.4.2 Basecourse**

Basecourse has been prepared, by regulating the existing basecourse with coralline material, in the following areas:

Ch 0+050 to 1+900

### **17.5 Surfacing**

Asphalt surfacing has been placed, in the following areas:

Ch 0+050 to 1+900

### **17.6 Ancillary Works**

No works to date.



## **18. BUOTA ROAD**

### **18.1 General**

No works to date.

### **18.2 Drainage**

No works to date.

### **18.3 Earthworks**

No works to date.

### **18.4 Pavement**

No works to date.

### **18.5 Surfacing**

No works to date.

### **18.6 Ancillary Works**

No works to date.

## **19. BETIO FEEDER ROADS**

### **19.1 General**

No works to date.

### **19.2 Drainage**

No works to date.

### **19.3 Earthworks**

No works to date.

### **19.4 Pavement**

No works to date.

### **19.5 Surfacing**

No works to date.

### **19.6 Ancillary Works**

No works to date.

## **20. BAIRIKI FEEDER ROADS**

### **20.1 General**

No works to date.

### **20.2 Drainage**

No works to date.

### **20.3 Earthworks**

No works to date.

### **20.4 Pavement**

No works to date.

### **20.5 Surfacing**

No works to date.

### **20.6 Ancillary Works**

No works to date.

## **21. BIKENIBEU FEEDER ROADS**

### **21.1 General**

#### **21.1.1 Possession of Site**

The Contractor currently has 'possession of site' for the following road links:

- Link (04),
- Link (05), and
- Link (07)

#### **21.2 Drainage**

No works to date.

#### **21.3 Earthworks**

##### **21.3.1 Sub-grade**

Current status of road subgrade works is:

- Link (04), Ch 0+290 to 1+100 complete

#### **21.4 Pavement**

Current status of pavement works (geo-cell concrete) is:

- Link (04), Ch 0+290 to 1+100 complete

#### **21.5 Surfacing**

The concrete geo-cell pavement also serves as the surfacing

#### **21.6 Ancillary Works**

No works to date.

## **22. BETIO REPAIRS**

### **22.1 General**

No works to date.

### **22.2 Repair Area 1**

No works to date.

### **22.3 Repair Area 2**

No works to date.

### **22.4 Repair Area 3**

No works to date.

### **22.5 Repair Area 4**

No works to date.

### **22.6 Repair Area 5**

No works to date.

### **22.7 Repair Area 6**

No works to date.

### **22.8 Repair Area 7**

No works to date.

## **23. BETIO CAUSEWAY BRIDGE**

### **23.1 General**

No works to date.

### **23.2 Sub-structure**

No works to date.

### **23.3 Super-structure**

No works to date.

## 24. COASTAL PROTECTION WORKS

### 24.1 General

### 24.2 Betio-Temaiku Road

Coastal protection works, consisting of sand cement bags (all lagoon side), has been undertaken in the following areas:

- Ch 4+950 area, complete
- Ch 5+200 area, complete,
- Ch 5+500 area, complete
- Ch 6+900 area, complete
- Ch 9+250 area, complete
- Ch 9+700 area, complete
- Ch 12+600 area, nearing completion

### 24.3 Temaiku Road

No works to date.

### 24.4 Airport Road

Coastal protection works consisting of sand cement bags has been completed from:

- Ch 0+400 to 0+435 (LHS), and
- Ch 0+800 to 2+000 (LHS)

## 25. WATER SUPPLY

### 25.1 General

### 25.2 Pipeline

The new 200mm water main has been installed in the following areas of the main Betio-Temaiku road:

- Ch 0-120 to 3+200, and
- Ch 4+700 to 8+100

### 25.3 Chambers and Valves

Chambers installed, and status of 'fittings' works, follows below:

- Ch 0+260 (valves installed)
- Ch 2+300 (valves installed)
- Ch 6+550 (valves installed), and
- Ch 7+000 (valves installed)

### 25.4 Testing and Commissioning

Testing of the water main has been completed from Ch 0-120 (ie ~120m to the Betio side of Ch 0+000) to Ch 3+200 and 4+700 to 8+100 with satisfactory results.



**ISSUES RESULTING FROM THE WORKS****26. HEALTH & SAFETY****26.1 General Works**

The Contractor has provided a formal document outlining the procedures that will be put in place to provide for the health and safety of its' employees and other visitors to areas where work activities are on-going. Issues related to safety are dealt with in a number of ways, notably through:

- Site safety inductions (421 to date),
- Pre-start meetings (3742 held to date),
- Toolbox meetings (368 to date),
- Safety inspections (84 to date), and
- Job Safety & Environmental Hazard Analysis (20 to date)

The Contractor has arranged for documents used in many of the above have been translated into the local language. A 'Safety Committee' has been established by the Contractor, from within his own workforce, and the committee has met on 5 occasions to date. The Contractors procedures are subject to 'internal' audit of which there have been 3 to date. The Contractor has provided audit reports, which appear very thorough, to the Engineer with advice that action is being taken where deficiencies were identified (predominantly procedural issues).

There have been a number of minor incidents/accidents to date although none have resulted in serious injury. Pertinent statistics reported by the Contractor are as follows:

**Table 26-1: HSE Statistics**

<b>Index</b>	<b>Target</b>	<b>To Date</b>
Injuries or illness to anyone associated with company operations	0	10
Incidents due to change	0	1
Prosecutions	0	0
Significant reduction in Golden Rules breaches and At Risk behaviour	0	1
Reportable Incident Frequency Rate (RIFR) <sup>2</sup>	0.51	<5.4
Lost time incident frequency rate (LTIFR) <sup>1</sup>	<0.55	0.47

**1 - LTIFR = No. LTI's x 1 million / No. hours worked**

**2-RIFR = No. of reportable incidents/ No. of hours worked x 10<sup>6</sup>**

The Contractor has arranged, with the Kiribati Red Cross, to conduct 'work place' First Aid training courses for selected members of the senior workforce (the Engineer has been invited to send selected members of his staff) and this is an on-going process.

**26.2 HIV/AIDS Campaign**

Required IEC campaigns continue to be conducted, by the Kiribati Family Health Association (KFHA), on a bi-monthly basis, with the programmes being well attended and received. To date there has been a total of 7 campaigns undertaken (separate campaigns are now being run for new employees and those who have previously attended earlier campaigns). To date over 118 persons have attended the initial presentations and 114 have attended part 2, being a total of 232.

KFHA do provide reports and deliverables, on their presentations and monitoring survey, and these are provided to the MPWU for distribution to others as might be appropriate.

### **26.3 Unexploded Ordnance**

Required around the Betio area - surveys, collection and storage of UXO has been completed (within those areas where works are scheduled to take place).

## 27. ENVIRONMENT

### 27.1 Environmental Management Plans

The latest update to the Environmental Management Plan (EMP rev 5), prepared by the 'Design & Supervision Consultant' (DSC), was approved in October 2014. The updated version addresses some issues relating to the use of 'local' aggregates, stockpile heights and refuelling of Contractor's equipment.

The Contractor has provided their Contractors' Environmental Management Plan (CEMP), as reported at section 2.2.12. It has previously been recognised that the CEMP is a 'living' document that will be updated, to address specific needs, ahead of when certain specific activities are scheduled to commence. To that end the Contractor provided CEMP (rev I) on 16<sup>th</sup> December 2014 which responds to the changes brought about by EMP (rev 5).

As previously reported the CEMP is supported by other documentation, notably:

- Job Safety & Environmental Hazard Analysis (JSEA), and
- Environmental Protection Instructions (EPI)

### 27.2 Imported Materials

The Contractor continues to import 'processed aggregates' to Tarawa (barged and containerised shipments), notably:

- sands & aggregates for concrete works, and
- aggregates for basecourse and surfacing works

As previously reported, with the imminent availability of local aggregates for basecourse, the need for imported basecourse aggregates is likely to no longer be required in the near future.

Biosecurity arrangements, as previously reported, continue to be carried out on a routine basis and fumigation certificates are provided for each consignment (and for the different material types where necessary). On arrival in Kiribati the importer is required to provide the Customs and Port officials with the necessary certification prior to being allowed to offload any materials.

Following queries raised in relation to the fumigation process for rock boulders needed for coastal protection works, during the Donor visit in October 2014, documentation has been provided to show that any residue is not detrimental to the surrounding local environment.

Documentation provided on the rock boulder fumigation issue, together with copies of certificates for the current report period, are included at Appendix I.

### 27.3 Monitoring and Incidents

Monitoring of environmental compliance is carried out by the Engineer, the Contractors HS&E officer, the Contractors internal HS&E auditing and MELAD/ECD inspections. ECD have confirmed that they do not provide reports on inspections carried out if compliance with EL conditions is being achieved. For the current report period no formal communications have been received, from ECD, in relation to concerns over compliance issues (informal communications recognise the Contractors' continued 'good' performance in this area).

Few 'environmental' incidents have been recorded to date and, apart from two minor events involving the prime coat being washed onto the verge by heavy rain, there have been no major issues of concern arising from the Contractors' activities, which have had negative impact of the local environment. Where spillage of 'hazardous' materials have occurred they have been dealt with in accordance with the Contractors CEMP provisions (contaminated material is collected and stored for disposal off-island).

The Contractors activities are monitored, from an environmental perspective, by the Engineers' Environmental Inspector with separate dedicated reports being provided on a monthly basis.

## 28. QUALITY CONTROL

### 28.1 General

The Contractors laboratory manager employed in March 2014 has left the project mid-November and a replacement manager has been here for an overlapping period of 2 weeks. The new manager then demobilised but will return on a full time basis from 1 January 2015.

The Contractor continues to exercise good control in respect of required quality testing and provides control documentation on a regular basis. To date results achieved have been satisfactory and in accordance with the specification requirements.

Progress has taken the project to a stage that contains no further trials and pre-testing but mainly routine testing.

### 28.2 Testing Approach

Materials quality control is being undertaken in three ways:

- testing by the Consultant's Audit Laboratory independently, or
- in conjunction with the tests being carried out by the Contractor's laboratory, or
- direct supervision of the Contractor's technicians

In addition calculation audits of the Contractor's test sheets is undertaken on a random basis.

### 28.3 Physical Works

The works carried out during this reporting period are briefly described in the following sections together with comment on pertinent issue and results achieved.

#### 28.3.1 Trench Backfill:

The previously established routine of testing layers in trench backfill for U-drains, fibre optic cable and water main installation using the nuclear densometer in back-scatter mode continues in a satisfactory manner.

#### 28.3.2 Kerb Backfill:

Trench pre-investigation for all 6 km (and both sides) of Temaiku loop is now finished. The investigation is showing very coarse coral materials that can be difficult to compact and could be prone to segregation.

Density testing where kerbs are to be constructed has now become routine testing using the NDM in back-scatter mode with compliant results being obtained at all locations.

#### 28.3.3 Coralline Sub-base:

Coralline sub-base was constructed in two places on the Main road and this conformed to the Specification, with relative compaction being on average 100.3% with a range of between 97.2% and 105.5%. In km 23+800 to 23+900 the sub-base was primarily a mixture of reworked in-situ material with some imported material. This area showed difficulties in achieving compaction most likely because of the road bed contained unusual large amount of fines. As a safety precaution the Contractor decided to overlay with this area with Crushed Stone base course instead of Coralline Base Course materials. In km 22+500 the profile of the new road was designed with super elevation resulting in a cut of the existing materials. The cut material was replaced with locally obtained coralline sub-base in a thickness of 150 mm.

#### 28.3.4 Coralline Base Course:

Using Sand Replacement method the average relative density of the approved area of the Main Road between km 21+800 to 23+800 was 103.1% with a range of 98.4% to 106.5%.

Longitudinal and transverse straight edge readings were undertaken every 20m along both the left and right sides of the carriageway with readings being within specified tolerance.

#### 28.3.5 Crushed Stone Base Course:

In-situ density testing using the nuclear densometer was determined after compaction and found in conformance with the Specification with an average relative density of 100.6% and a range of 93% to 110%. The MDD of the material was 2.49 Mg/m<sup>3</sup> with a CBR value exceeding 100%.

Surface tolerance was measured longitudinally and transversely every 20m along each side of the single carriageway using a 3 metre straight edge with all results conforming to the Specification.

#### 28.3.6 Prime Coat:

The Contractor has been able to pave Asphalt in a timely manner during this quarter thereby avoiding any damages caused by traffic on freshly made Prime Coat.

The measured spray rate of about 0.8 l/m<sup>2</sup> has been satisfactory in providing suitable sealing and penetration of the base course surface together with providing a suitable layer for adhesion by the subsequent pavement layer to the base course.

### **28.3.7 Asphalt Surfacing Construction**

Asphalt Wearing course was undertaken on the main road in km 4+700 to 5+500 and 21+800 to 23+900.

Binder content for the period has been 6.6% bitumen in average with a target of 6.7%. Air voids in the mix has been on the lower side with 3.2% in average ranging from 1.9-4%. This is marginally on the low side and could lead to an instable mix if air voids was to drop further below 2%. The recent production days has shown improvements with air voids of 4% which is the target value of the mix and this issue has to be further monitored.

The cores taken provide an average relative density compared to the target density set by the Marshall briquettes to be in the range of 93% to 101% with an average of 98%. The thickness of asphalt surfacing measured from the cores gave an average of 35 mm and a range of 22 to 56 mm; the lower value conforming to the requirements for minimum value given in the specification table 72095/1 (acceptance limits).

The regularity of the pavement was checked using a 3 metre straight edge both transversely every 20m and longitudinally continuously and found to conform to the specified requirements

Sand circle tests were undertaken and these indicated the surface texture depth was not measurable.

This is not considered uncommon for this type of mix (for a thin asphalt layer) and is not seen as being problematic.

## 29. TRAFFIC MANAGEMENT

The Contractors' 'Traffic Management Plan' (TMP) continues to be effective and all work sites are provided with advance warning signs together with barriers/cones and stop/go boards (as may be appropriate).

The Contractor is working closely with the KPS on traffic management matters. A road safety review with the local Police was held on 18 December 2014. The Contractor expected that most of the Officer Commanding of the 5 districts would attend but only 3 junior ranks attended. The meeting continued with the Contractor expressing concerns about several issues relating to driver attitude and road safety.

The attending officers committed to going back to their superiors and recommending that a road safety campaign be conducted before the new road and new road signs are in place. Macdow has offered assistance in producing information posters showing the new signs and meanings.

## 30. VARIATIONS

A summary of all Contract variations (and their status) is provided at Appendix J, together with formal communications relating to instructed variations during the report period. Each has been assigned a 'variation' number for future reference, including expected variations that are under discussion but have not yet been finalised and authorised.

### **30.1 Variation No.1 - Work Scope (1) Changes**

The variation order was issued on 9th September 2013 and covers various work scope changes as previously reported.

The financial impact of this variation is estimated to be a reduction of AUD 1.35 million.

### **30.2 Variation No.2 – Local Material Supply**

A potential contract variation to cover issues discussed at section 10.1.

Following the deletion of pavement works across the Betio causeway, and the prospect of raising road levels to mitigate service conflict issues, there will be significant changes to material and mass-haul requirements and it is likely that the major impact of having local materials available will be incorporated into a separate/new variation (labelled as no. 16).

As an interim measure the Contractor has obtained local materials from the PVU. Estimated financial impact, on the basis of ~4,000 m3 supply, would amount to ~AUD 100,000.

### **30.3 Variation No.3 - Betio Causeway Repairs**

The variation order was issued on 9th September 2013 and covers remedial works needed to the existing concrete revetment protection across the Betio Causeway as previously reported.

Estimated financial impact was to increase the contract price by AUD 80,000 although the cost of actual works has amounted to ~AUD 40,000.

Given the on-going deterioration of the causeway revetment protection consideration does now need to be given towards a longer term solution in order to ensure continuing stability of the causeway (as reported at section 9.2). The Donors have indicated that any such work will not be carried out under KRRP.

### **30.4 Variation No. 4 - Coastal Protection Works**

There have been a number of components to variation 4 for the inclusion, exclusion and modification (sometimes by site instruction) with an outcome as described under work scope issues described at section 9.3.

Following completion of works along Airport road (Ananau causeway) and at a number of sites along the Betio-Temaiku road, together with assessment of remaining works, the overall financial impact of all the changes made (excluding the Temaiku road 'walls') is not likely to be significant with additional costs not expected to exceed AUD 50,000.

The Engineer has highlighted an on-going need for 'maintenance' works to existing seawalls (road side as well as water side) which is currently not included in any KRRP work scope. The Employer has advised that this should be addressed under KAP and has brought it to their attention.

### **30.5 Variation No 5 - Water Valve Fittings**

The variation order was issued on 9<sup>th</sup> September 2013. Its purpose is to standardise valves that will be installed under KRRP water supply items with those being planned for installation under KAP-III.

The financial impact will be an increase of AUD 11,575.

### **30.6 Variation No. 6 - Solar Street Lighting - LED lighting**

The variation order was issued on 4<sup>th</sup> December 2013 and covers the change in type of street lighting from 'sodium' based to 'LED' based technology, as previously reported.

There is no financial impact from this variation.

### **30.7 Variation No. 7 - Valve Chambers (KAP)**

Issues are as reported at section 9.4 and an instructed variation has been delivered to the Contractor.

Costs are not expected to be significant and have been assessed at ~AUD 20,000 pending provision of, and agreement to, new unit rates requested from the Contractor.

### **30.8 Variation No. 8 - Valve Chambers (STSISP)**

Issues are as reported at section 9.5 and an instructed variation has been delivered to the Contractor.

Costs are not expected to be significant and have been assessed at ~AUD 120,000 (assuming only 12 of the 24 chambers are required) pending provision of, and agreement to, new unit rates requested from the Contractor.

### **30.9 Variation No. 9 – Basecourse Specification**

The variation order was issued on 29<sup>th</sup> March 2014, to cover a change in basecourse specification as reported at section 10.4, subject to the Contractors' acceptance of various conditions. The Contractor has accepted those conditions which provided for no additional costs as a direct result of the change being accepted.

There is no financial impact from this variation.

### **30.10 Variation No. 10 – Deferral of Betio Causeway Pavement**

The variation order was issued on 31<sup>st</sup> March 2014 and covers the deferral of pavement works, across the Betio causeway, as reported at section 9.2.

The Contractor had provided an updated programme showing completion of works on 10th July 2015 ie a delay of 50 calendar days. This was been assessed by the Engineer and a recommendation provided to the Employer which, if agreed to, would have resulted in an increased cost of AUD 571,366. The Employer subsequently decided to delete Betio causeway works and this variation has been superseded by variation no. 12 instructing such action.

There is therefore no financial impact from this variation.

### **30.11 Variation No. 11 – Prime and Tack Coat Requirements**

A variation was instructed, on 19<sup>th</sup> July 2014, to provide for a prime coat (with blinding aggregate) and reduce the amount of 'tack coat'.

There was expected to be no financial impact from this variation (overall impact of changes was expected to be cost neutral) however the Contractor has subsequently sought new unit rates for the proposed activities and these are under review. If the Contractor proposed rates are adopted that additional cost would amount to ~AUD 400,000.

### **30.12 Variation No. 12 – Deletion of Pavement Works on Betio Causeway**

This variation, issued on 26<sup>th</sup> July 2014, followed reconsideration of issues that had led to the deferral of works, as instructed under variation no.10, and the subsequent contractual claim submitted by the Contractor.

The Employer provided advice that all road pavement works, bituminous surfacing, and road marking works on Betio Causeway from chainage 0+400 km to 3+200 km be deleted from the contract. Works from chainage 3+200 to 3+300 (new Bairiki roundabout) were to be retained, as were modifications/repairs to the causeway bridge and subsequent completion of the new water transmission main, with programming of associated works at the Contractor's discretion and convenience within the overall Time for Completion.

Cost implications associated with this variation were assessed at savings of ~AUD 1.33 million.

### **30.13 Variation No. 13 – Work Scope (2) Changes**

Due to on-going uncertainties over certain work scope issues, and the potential impact on financial arrangements, the Employer undertook a review of the KRRP in order to assess a range of options, and associated costs, that could be presented to Cabinet for consideration (these as previously reported on in the September quarterly report). Following Cabinet review a decision was made and instruction has been provided to the Contractor.



Cost implications associated with this variation were assessed at ~AUD 1.90 million pending agreement of new unit rates provided by the Contractor.

#### **30.14 Variation No. 14 – TSKL covers**

A number of existing 'chambers', for telecommunications assets across the Betio causeway, had covers that were either damaged or had lids that were so badly rusted they could not be opened. The Employer asked the Engineer to design replacement covers following which instructions were provided, to the Contractor, for their procurement and fixing.

Costs are not expected to be significant and have been assessed at ~AUD 20,000 (for 12 cover slabs) pending agreement of new unit rates provided by the Contractor.

#### **30.15 Variation No. 15 – KOIL building**

An existing small 'operations building' within the Bonriki airport refuelling depot, adjacent to the aircraft apron area, does pose a potential safety hazard to road users (due to roof overhang and restricted lines of visibility). Following Employer/KOIL agreement, on replacement arrangements, a variation has been instructed for necessary works.

Costs associated with this variation are not expected to be significant and have been assessed at ~AUD 10-15,000 (MPWU bid from local contractor within this range).

#### **30.16 Variation No. 16 – Initiatives to deal with Existing Services**

A variation is under consideration for initiatives to deal with conflicts that continue to arise between construction activities and existing underground services. Options, including mobilising additional resources and raising road levels, have been informally discussed although further discussion, and detailed particulars, will be required before firm decisions can be made.

Costs associated with this variation, which incorporates the impact of sourcing materials locally (as previously described under variation no.2) have been quickly assessed with a 'ball park' figure being of the order of ~AUD 0.8 million. Detailed assessment is currently ongoing and has been awaiting confirmation of realistic timelines for local material availability and cessation of imported aggregates.

#### **30.17 Variation No. 17 – KAP/PUB chamber covers**

Similar to variation no.14, the provision of new covers to some existing chambers along the existing water transmission main, running from Teorareke to Bonriki, has been confirmed. The Engineer has completed necessary design works, following confirmation of requirements by MPWU/PUB, and instructions have been provided to the Contractor. There will be a delay in the supply of the frames and lids by KAP as the initial attempt to procure these items was unsuccessful.

Costs associated with this variation are not expected to be significant and have been assessed at ~AUD 80,000 pending submission of, and agreement to, new unit rates sought from the Contractor.

#### **30.18 Variation No. 18 – Airport road 'extension'**

To facilitate installation of security fencing at the Bonriki International Airport the Employer has instructed that the existing road, at the western end of the main runway, be realigned to avoid conflict with the proposed new airport safety fence works. Following mobilisation of a fencing Contractor a site inspection was held, to view respective road/fence setting out, and this highlighted that there were areas of conflict. Subsequently the Engineer has been asked to make minor adjustments to the proposed alignment and the line of the safety fencing is to be slightly amended under KAIP. Confirmation that the proposed adjustment of the fence line has been approved will be required from MPWU.

Costs associated with this variation have been assessed at ~AUD 200,000.

## 31. CLAIMS

### 31.1 General

The Conditions of Contract follow the 'Bank Harmonised Edition' of the Conditions of Contract for Construction prepared and copyrighted by the International Federation of Consulting Engineers (*Federation Internationale des Ingenieurs-Conseils*, or FIDIC). The Conditions of Contract establish the respective obligations of the Employer and Contractor and provide for a 'shared risk' approach for the implementation of the necessary works. It is not uncommon, particularly on large civil engineering works, for actual conditions and circumstances to be different to what might have been expected and the Conditions of Contract (supported by any Particular or Special Conditions), provide a mechanism for dealing with such situations (including the establishment of timelines for provision and review of supporting particulars). Should the Contractor (or Employer) consider that he has incurred delay or additional cost, as a result of any changed condition or circumstance, a contractual 'claim' may be submitted for any resulting additional time or cost and this will then be assessed, initially by the Engineer, in accordance with the provisions of the Contract.

Costs associated with 'delays' are provided for under Specification clause 1303 and specifically Pay Item 13.01 (b) 'Maintenance of the Contractors Establishment' which stipulates that "In the event of an extension of the Contract period being granted by the Engineer (excluding any extension for which the Contractor is not entitled to costs, eg. extensions pursuant to Clause 1215 of the Specification) then payment shall be due at the lump sum rate per month for an extension not exceeding three months. Thereafter, costs associated with time extension shall be determined as provided for by the contract."

The amount assigned, by the Contractor, against Pay Item 13.01(b) is Australian Two Hundred and Ninety Thousand Nine Hundred and Five Dollars and Seventy-Nine Cents (AUD 290,905.79) per month. The inclusion of time related costs (for performance bond and certain other BoQ items) would raise this figure to around Australian Three Hundred and Fifty Thousand Dollars (AUD 350,000) per month ie an amount of ~\$12,000/day (for each day of delay). It is to be noted that such amount would need to be re-negotiated with the Contractor for delays beyond the three (3) month time span stipulated.

### 31.2 Potential

There are a number of Contract variations pending, as reported at section 30, and if/when they are issued to the Contractor there is some likelihood that some will attract Contractual claims (for additional time and associated costs).

### 31.3 Notices & Status

The Contractor has provided a number of 'notices of claim'. For future reference all contractual 'claims' are assigned a 'claim number' and a summary of their status is provided at Appendix K. The Contract requires that the Engineer seek the specific approval of the Employer before providing the Contractor with any determination on any claims issues. If the Employer/Engineer fail to provide a determination within the required timeline then the Contractor can refer the issue to the Dispute Board. Each of the claims are briefly described hereunder:

#### 31.3.1 Claim No.01; Work Scope (1)

Issues of a changed work scope, leading to the Contractor providing notice of a claim on this issue (NTC 047 dated 7<sup>th</sup> June 2013) have now been finalised (under variation no.01). At this time the Contractor has provided no indication that this claim will be pursued.

#### 31.3.2 Claim No.02; Betio Causeway Remedial Works

Issues related to remedial works required to damage of the concrete revetment protection along the causeway, leading to the Contractor providing notice of a claim on this issue (NTC 029 dated 22<sup>nd</sup> August 2013), have now been finalised (under variation no.03). At this time the Contractor has provided no indication that this claim will be pursued.

### **31.3.3 Claim No.03; Damage to Betio Causeway**

Issues related to three localised failures in the Betio causeway concrete revetment protection, leading to the Contractor providing notice of a claim on this issue (NTC 103 dated 3<sup>rd</sup> February 2014) have largely been dealt with, through works undertaken by the Contractor and the MPWU, but the MPWU have yet to fully complete more robust repairs as a 'follow up' (there are signs of further scour now taking place). At this time the Contractor has provided no indication that this claim will be pursued.

### **31.3.4 Claim No.04; Deferral of Pavement Works across Betio Causeway**

Issues related to deferral of pavement works across the Betio causeway, instructed as variation no.10, led to the Contractor providing notice of a claim on this issue (NTC 132 dated 25<sup>th</sup> March 2014). The Contractor has pursued this claim and provided detailed particulars for consideration.

Following review the Engineer arrived at a determination and accordingly provided a recommendation to the Employer. Subsequently the Employer decided to delete pavement/surfacing works across the causeway and hence the claim was rejected. It is unlikely that this claim will be pursued however the Contractor has lodged a new claim associated with the deletion of the said works.

### **31.3.5 Claim No.05; Introduction of VAT**

Issues related to introduction of VAT has led to the Contractor providing notice of a claim on this issue (NTC 150 dated 17<sup>th</sup> April 2014).

This is deemed to be a 'change in legislation' and the Contractor will be fairly entitled to reimbursement of any justified additional costs. Whilst this has been recognised the mechanism of how such reimbursement is to take place has to be confirmed with the options being:

- If the Contractor is registered for VAT then through VAT returns, and
- If the Contractor is not registered for VAT then through the KRRP contract

The Contractor has been liaising directly with the tax department on this issue and has been advised that they should not be registered for VAT. Notwithstanding the lack of registration the tax department have established procedures, for donor funded projects, whereby the Contractor still lodges a quarterly 'VAT return' (showing zero income) for reimbursement of any VAT payments that have been made when purchasing local supplies.

The above reflects informal advice provided by the Employer. On the basis of the procedures that now appear to have been put in place it is considered unlikely that the Contractor will pursue any claim on this issue however it is considered that the matter be properly formalised.

### **31.3.6 Claim No.06; Prime Coat**

The lack of 'Prime' as a specific line item in the Bill of Quantities has led to the Contractor providing notice of a claim on this issue (NTC 154 dated 26<sup>th</sup> April 2014).

A recommendation from the Engineer for a Contract variation, to reflect the change from tack coat to prime, has been accepted by the Employer (following donor no objection) and the required variation has been issued. Subsequent to the variation being prepared the Contractor has proposed new unit rates, for the works involved, and these are under review. If agreement on rates cannot be reached the Contractor may revert to a more formal 'claim' approach.

Cost implications associated with any claim could therefore amount to ~AUD 400,000 (as currently allowed for under potential 'variation' costs). It is unlikely that any claim will result in any additional time needs.

### **31.3.7 Claim No.07; Underground service obstructions**

Issues related to underground service obstructions has led to the Contractor providing notice of a claim on this issue (NTC 173 dated 16<sup>th</sup> June 2014). The Contractor is alleging that the presence of underground services is adversely impacting his programme causing delay and additional cost.

The Contractor provided detailed particulars of his claim (NTC 206 dated 29<sup>th</sup> July 2014) and this prompted review by the Engineer. Following such review the Engineer made a determination and a recommendation

was provided to the Employer for consideration. At the time the Engineers' determination had to be provided the Contractor asked that the review process be 'put on hold' pending submission of further supporting particulars. In order to mitigate potential dispute the Engineer recommended to the Employer that this request be accepted and the Employer agreed. Further particulars have been submitted (NTC 259 dated 23<sup>rd</sup> September 2014) and this is currently under review.

For the record the Contractors initial claim, for events between 24<sup>th</sup> March 2014 and 27<sup>th</sup> July 2018 (126 calendar days), was for an extension of time of 94 calendar days and associated costs of ~AUD 2.0 million. Subsequently the quantum of the claim has been modified and, for events between 3<sup>rd</sup> March 2014 and 31<sup>st</sup> August 2014 (182 calendar days), an extension of time of 93 days is being sought together with associated costs of ~AUD1.0m for 'delay' with further direct costs to be advised.

#### **31.3.8 Claim No.08; Survey controls and Setting out**

Although not formally presented under clause 20.1 the Contractor provided detailed particulars of this claim (letter NTC 209 dated 30<sup>th</sup> July 2014) and these have been reviewed.

There were some errors identified in the primary control points (primarily related to level) and the Engineer surveyors returned to Tarawa in 2013 to undertake checks and, following such exercise, agreed control points were established. Subsequently there has been some discrepancy in horizontal alignment data and the Engineer has been working through these, with their CAD designer, to provide the Contractor with revised set-out information in a timely manner.

#### **31.3.9 Claim No.09; Services, no power disconnection**

The Contractor has provided notice for a specific event that occurred on the 18<sup>th</sup> June 2014, notably the inability of the PUB (power) to isolate areas of work from 415V and 240V services (NTC 178 dated 18<sup>th</sup> June 2014). Circumstances leading to the claim were described in the same communication and these are under consideration by the Engineer – it is likely that this claim will be incorporated into the main 'services' claim described under claim no.07.

#### **31.3.10 Claim No.10; Supply of local materials**

Issues related to the availability (or lack thereof) of local material has led to the Contractor providing notice of a claim on this issue (NTC 179 dated 18<sup>th</sup> June 2014).

Pending finalisation of separate 'agreements' for obtaining coralline material from 'local' suppliers the Contractor has advised that material was not available and that this has caused delay to the Works. At this time the Contractor has provided no indication that this claim will be pursued.

#### **31.3.11 Claim No.11; Services, Impact on clearing & u-drain works**

Issues related to service conflict with on-going work activities has led to the Contractor providing notice of a claim on this issue (NTC 181 dated 27<sup>th</sup> June 2014).

This can be considered as an extension of 'claim 07' albeit, on this occasion, that specific parts of the site (various locations) are referred to.

#### **31.3.12 Claim No.12; Ducts provided through sea walls**

Issues related to the provision of drainage ducts through existing seawalls has led to the Contractor providing notice of a claim on this issue (NTC 183 dated 30<sup>th</sup> June 2014).

The Contract does make provision, within the BoQ, for installation of such ducts however the Contractor contends that the item is not appropriate for what is involved and further information is being collated to support their position. Further information has not yet been provided at this time, the Contractor has provided no indication that this claim will be pursued.

#### **31.3.13 Claim Nos.13-17; Services, Impact on clearing & u-drain works**

Issues related to service conflict with on-going work activities has led to the Contractor providing notices of a claim on this issue, on a weekly basis, for the period from 23<sup>rd</sup> June 2014 to 19<sup>th</sup> July 2014.

Although details have been submitted under separate claim notices the claims can be considered as extensions of 'claim 07'.

#### **31.3.14 Claim No.18; Delay associated with TACL contract**

Issues related to delay over receipt of an advance 'mobilisation payment', after signing a separate contract to excavate an 'access channel' for TACL, has led to the Contractor providing notice of a claim on this issue (NTC 200 dated 22<sup>nd</sup> July 2014).

At this time the Contractor has provided no indication that this claim will be pursued.

#### **31.3.15 Claim No.19; Deletion of Works across Betio Causeway**

Issues related to the deletion of selected works, under variation no.12, has led to the Contractor providing notice of a claim on this issue (NTC 208 dated 31<sup>st</sup> July 2014). On 4<sup>th</sup> September 2014 under NTC 243 the Contractor requested additional time of 14 days until 23<sup>rd</sup> September 2014 to provide details and particulars and this was agreed, but no further information has been received.

At this time the Contractor has provided no indication that this claim will be pursued.

#### **31.3.16 Claim Nos.20-39; Services, Impact on clearing & u-drain works**

Issues related to service conflict with on-going work activities has led to the Contractor providing notices of a claim on this issue, on a weekly basis, for the period from 21<sup>st</sup> July 2014 to 22<sup>nd</sup> December 2014.

Although details have been submitted under separate claim notices the claims can be considered as extensions of 'claim 07'.

### **31.4 Determinations and Approvals**

A summary of the status of any 'determinations and approvals' is provided below:

#### **31.4.1 Claim No.04; Deferral of Pavement Works across Betio Causeway**

The Engineers determination was submitted to the Employer for approval. The recommendations were rejected as a decision was taken, by the Employer, to delete selected works across the causeway.

#### **31.4.2 Claim No.07; Underground service obstructions**

The Engineer had prepared a draft determination by 5<sup>th</sup> September 2014 but was seeking further clarification from the Contractor on some of the details and so the deadline for the Contractor to respond was extended to 23<sup>rd</sup> September 2014. The Contractor then wrote on 15<sup>th</sup> September 2014 requesting that the claim as submitted be put on hold and that the Contractor submit a revised submission that would better identify the delay and additional costs resulting from the clash between the U-drains and the existing underground services. The Engineer and the Employer agreed to extend the deadline to 15<sup>th</sup> October 2014. In the event the Contractor submitted a revised claim on 23 September 2014. The submission stated that some further information would be delivered soon. It was subsequently clarified that the second submission completely superseded the initial one. The Engineer sought further clarifications and particulars and received a response on 29<sup>th</sup> October 2014, but this response still advised that some additional information on direct costs would be forthcoming 'as soon as possible'.

Additional information had not been delivered by 16<sup>th</sup> December 2014 and the Engineer then fixed a deadline, taking the upcoming Christmas holiday into consideration, of 10<sup>th</sup> January 2015, following which the Engineer would determine the claim by 20<sup>th</sup> February 2015.

#### **31.4.3 Claim No.08; Survey controls and Setting out**

The detailed particulars provided by the Contractor have been reviewed and the Engineer has expressed an opinion (letter McCD-0171 dated 7<sup>th</sup> October 2014) that:

- They do not establish a firm basis of claim under the Conditions of the Contract,
- Notices required by clause 20.1 and 1.9 of the Conditions of Contract were not provided, and
- They do not demonstrate that the events described have had an impact on programmed activities that will lead to a delay to completion for the purposes of sub-clause 10.1

As a consequence the Engineer has determined, pursuant to clause 3.5 of the Conditions of Contract, that the Contractor is not entitled to an extension of the Time for Completion nor payment for any additional costs.

## 32. DISPUTE BOARD

Issues relating to the establishment of a Dispute Board (DB) are as reported at section 2.2.9. Mr Firth (the appointed candidate) last visited the site in mid-September 2014 (as previously reported on) and is next scheduled to visit the site in early-February 2015.

## 33. PAYMENTS

### 33.1 General

The KRRP Contract was awarded for the 'Accepted Contract Amount' of Australian Forty-Eight Million One Hundred and Ninety-Seven Thousand Nine Hundred and Fifty-Seven Dollars and Twenty Cents (AUD 48,197,957.20) and it is to be noted that such sum was derived using unit rates and prices that excluded local taxes and duties. It is also to be noted that such amount is not a 'Lump Sum' and the final 'Contract Price' will be determined according to the actual works undertaken and measured and evaluated in accordance with the provisions of clause 12 of the Conditions of Contract.

Clause 14.3 of the Conditions of Contract does make provision for amounts to be deducted for Retention. Such amounts are based on ten percent (10%) of the amount due, under any Certificate (excluding the Advance Payment), to a maximum amount of five percent (5%) of the 'Accepted Contract Amount'. Retention is repaid on Practical Completion (50% on issue of the Taking Over Certificate) and Contract Completion (50% on issue of the Performance Certificate) with provision for the Contractor to provide a 'Bond', in lieu of Retention, for the 50% still held after Practical Completion. The Contractor has submitted a request to have all the current retention money released in exchange for a 'retention bond'. This matter is under discussion with the Employer who in turn is consulting the Donors.

Although amounts due to the Contractor will be certified entirely in Australian Dollar (AUD) payments to the Contractor will be made in the various currencies, and at the designated exchange rates, nominated by the Contractor in their Bid.

As highlighted in previous reports the Government of Kiribati has now introduced 'Value Added Tax' (effective from 1st April 2014) although, following informal advice, there is no requirement to include VAT on interim payment certificates.

### 33.2 Interim Payment Certificates

In accordance with clause 14.3 of the Conditions of Contract the Contractor has submitted twenty (20) statements as an Application for Interim Payment Certificate. The Engineer, pursuant to clause 14.6 of the Conditions of Contract, has subsequently issued Interim Payment Certificate (IPC) Nos. 01 to 20 for amounts that have been deemed to be fairly due to the Contractor, in accordance with the Contract, for activities carried out up to the end of December 2014. Notwithstanding issues that delayed payment on IPC No.01 subsequent IPC's have, apart from some minor delay to a few of the IPC's, generally been processed with no apparent difficulties. More recently there has been some administrative difficulties on the Employer side (related to designated signatories on withdrawal applications) although it is understood that this is in the process of being resolved. A summary of all IPC's issued to date, together with copies of IPC's issued during the report period, is included at Appendix **Error! Reference source not found.L.**

### 33.3 Cost Fluctuation

Cost Fluctuation adjustment is provided for under clause 13.8 of the General Conditions of Contract and the Particular Conditions state that the first adjustment is due 6 months after the closing date for bids, with adjustment factor amended every three months thereafter.

There are no schedules bound into the Contract Documents although the Contractor did supply indices during pre-Contract Award negotiations. In the absence of any information from the Contractor the Engineer compiled required information on indices (one index had been discontinued necessitating a new index to be established) and, following liaison with the Contractor, there is general agreement on indices to be adopted and these are now being applied to interim payment certificates. A summary of price fluctuation is provided with interim payment certificate details at Appendix L.



## 34. OVERALL STATUS

### 34.1 General

Giving due regard to the various issues reported on herein, some of which still require further action, the KRRP project does continue to progress forward albeit not at the rate that had been anticipated. Whilst there has been noticeable improvement in 'visible' works, and works in general, it is considered that further improvement is required if completion deadlines are to be achieved. The particular circumstances of working in Kiribati do involve certain logistical difficulties and 'lead' time for delivery of materials is generally of the order of two (2) to three (3) months. However the Contractor should, by now, be sufficiently familiar with particular circumstances and conditions and plan accordingly.

### 34.2 Physical Works

Works progress has improved and progress graphs (actual vs scheduled works) together with schematic diagrams (actual and scheduled works) have been prepared in order to present an overview of the current status. These are presented as Appendices D & G and show the status of the various road works activities, for the separate road components, together with general summaries of the percentage completion for key work activities on a section-by-section basis.

### 34.3 Financial Position

The quantum of Interim Payment Certificates issued to date amounts to Australian Eighteen Million Five Hundred and Two Thousand One Hundred and Forty Dollars and Seventy-Six Cents (AUD 18,502,140.76). The amount certified includes deductions for Retention which currently stands at Australian One Million Six Hundred and Twenty-Six Thousand One Hundred and Sixty-Three Dollars and Thirty-Eight Cents (AUD 1,626,163.38). Retention is deducted at a rate of 10% up to a limit of 5% of the Accepted Contract Amount.

It is to be noted that the Contract Conditions do allow payment for certain 'Materials on Site', as reported at section 5.5.1, and currently this amounts to Australian Two Hundred and Ten Thousand and Forty-Six Dollars and Ninety-One Cents (AUD 210,046.91).

Following the issue of instructions to the Contractor in respect of 'approved' variations, as described at section 30, the Contract Price has been adjusted and currently stands at Australian Fifty-One Million Three Hundred and Seventy Thousand Dollars and Fifty-Two Cents (AUD 51,370,000). This amount also includes estimated provisions for cost fluctuation and time extensions arising from contractual claims.

Most of the previously pending Contract variations, as set out at section 30, have been finalised and issued. Other variations, now agreed, are currently being prepared.

Although the Contractor has provided due 'notice' of potential Contractual claims, as reported on at section 31, full and detailed particulars are not available for most of these at present and issues will be assessed and reported on in due course. The one claim that has significant implications and is under review (service conflict issues) could, if accepted, result in additional costs of around Australian Two Million Dollars (AUD 2,000,000).

### 34.4 Completion Date

The automatic Extension of Time (EoT) that arises from weather conditions, as reported at section 11.1, will be calculated from the Commencement Date that has been established as 1st July 2013. To date the EoT due to adverse weather conditions stands at plus thirty (+30) calendar days. If normal rainfall patterns were to continue for the remainder of the contract period then the date for Practical Completion would be 21<sup>st</sup> June 2015 with corresponding adjustment to the Contract Completion date ie to 20<sup>th</sup> June 2017.

The Contractor is seeking additional time (~3 months to end-August 2014) for issues related to 'service conflicts' that he considers have impacted on general progress. The associated 'claim' is currently being assessed by the Engineer however it would be prudent, for planning purposes, that some time extension will be justified (and may be longer as, although mitigating measures are being discussed, the issue is 'on-going'). Given current progress, and pending claim assessments, it seems likely that completion will not be achieved before October 2015 at the earliest.

### 34.5 Completion of Physical Works vs Elapsed Time

Following receipt by the Contractor, of an instruction from the Engineer, the Commencement Date has been established as 1<sup>st</sup> July 2013. Together with progress graphs and schematic diagrams a good indication of the overall status of the project can be obtained by comparing progress made on physical works against time that has elapsed.

#### 34.5.1 Physical Works

The current status of physical works (on a financial basis), excluding General, Dayworks and Provisional Sums, and adjusted for instructed variations, is set out at Table 34-1.

**Table 34-1: Status of Physical Works**

Bill Series	Amounts (AUD)				Completion %
	As Bid	Variations	To Complete	To Date	
Drainage	4,930,764.15	-132,624.00	4,798,140.15	786,889	27.3
Earthworks	613,730.00	0.00	613,730.00	18,960	6.2
Pavement	7,901,230.00	-132,624.00	7,716,081.40	813,874	21.0
Surfacing	14,987,282.20	-1,544,828.00	13,442,454.20	1,274,883	17.5
Ancillary	4,596,370.77	511,824.22	5,108,194.99	21,394	0.4
Structures	1,106,239.54	0.00	1,106,239.54	612,764	63.9
Water	1,008,230.35	11,574.70	1,019,805.05	399,875	40.2
Totals(1)	35,143,847.01	-1,286,677.08	33,804,645.33	3,928,639	19.1
Materials on Site				767,483	
Totals(2)				4,696,122	19.7

The 'totals to date' include amounts certified through to end of August 2014 and provisionally assessed amounts for September 2014.

#### 34.5.2 Elapsed Time

The current status of elapsed time is set out at Table 34-2.

**Table 34-2: Elapsed Time**

Period	Description	Date	Time (calendar days)
To Complete	Contract Period		690
	Extensions of Time		30
	Revised Contract Period		720
To Date	Commencement Date	1 <sup>st</sup> July 2013	
	Effective Report Date	31 <sup>st</sup> December 2014	
	Elapsed Time		549
	Elapsed time less 90 day mobilisation		459
Completion (%) – elapsed time			76.25
Completion (%) – elapsed time less 90 day mobilisation			63.75

The adjustment for 90 day mobilisation is made to reflect the lack of 'General' items in the assessment of physical works.

### 34.5.3 Cumulative Record

An overview of the cumulative status of the KRRP is presented at Table 34-3.

**Table 34-3: Overview of Project Status**

	Percentage Completion (%)										
	2013			2014				2015			
	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Physical Works											
Materials on Site (excluded)	0	0	0.2	1.6	5.2	11.2	19.1				
Materials on Site (included)				2.4	7.8	13.4	19.7				
Elapsed Time											
Elapsed time	0	13	22	40	53	66	76				
Elapsed time - less 90 day mobilisation				26	40	53	65				

Although there are signs of improvement there continues to be concern over the poor progress achieved to date and this is an issue that continues to be taken up with the Contractor. The Contractor has cited difficulties associated with services conflict, between the new works and existing underground services, as a cause of poor production levels throughout the report period.

**35. PROJECTED COST TO COMPLETION**

The KRRP Contract is an 'add-measure' contract based on a Bill of Quantities prepared at the time of inviting bids. The quantities given in the Bill of Quantities are estimated and provisional, and are given to provide a common basis for bidding. The basis of payment (and hence final cost) will be the actual quantities of work ordered and carried out, as measured by the Contractor and verified by the Engineer and valued at the rates and prices tendered in the priced Bill of Quantities, where applicable, and otherwise at such rates and prices as the Engineer may fix within the terms of the Contract.

Depending on site conditions and circumstances instructions may need to be issued that will either increase or decrease quantities (and hence costs) as works are progressed. It is not anticipated that quantities will be reassessed for every instruction that is issued however the Engineer will monitor the progress of the works and, when required, will review outstanding remaining works (in conjunction with completed works) in order to keep the Employer apprised of the potential final cost to complete the Works.

Detailed below in Table 35-1 is an assessment of the 'Costs to Completion' as discussed with the Employer and as currently projected (no change to that reported in the September 2014 quarterly report):

**Table 35-1: Projected Costs to Completion**

Ref	Details	Amount (AUDx10 <sup>6</sup> )	Comments
1	Accepted Contract Amount	48.10	
2	Variations	0.92	As listed at appendix J
3	Claims	0.00	No claims approved to date
4	Allowances	2.35	
4.1	Potential (current) EoT claims	0.35	Based on 1 month extension
4.2	Price fluctuation	1.0	Based on 3% allowance
4.3	Potential (future) claims	1.0	Based on 90 days @ \$11,400/day
5	<b>TOTAL (1+2+3+4)</b>	<b>51.37</b>	
4	<b>Additional Cost (5-1)</b>	<b>3.27</b>	

It is very important that the Employer appreciates that any increase in the contract price will, unless alternative arrangements are made, require financing by the Government of Kiribati. It is understood that the donors have given some indication that additional financing may be available, from alternate sources, and pursuing such financing should be considered.

