



# MEMORANDUM OF UNDERSTANDING

## BETWEEN THE MINISTRY OF INFRASTRUCTURE AND PLANNING AND THE PUKAPUKA / NASSAU ISLAND LOCAL GOVERNMENT

### INTRODUCTION

This is a Memorandum of Understanding (MOU) which provides an Agreement set out below between

- Her Majesty, the Queen in Right of the Government of the Cook Islands through Ms. Donye Numa, the Acting Secretary of the **Ministry of Infrastructure and Planning (MOIP)**, and;
- The **Pukapuka / Nassau Island Council**, through the Mayor Mr Rotoika Tengere and;
- Her Majesty, the Queen in Right of the Government of the Cook Islands through Mr Lewtope Katoa, Island Secretary, **Pukapuka / Nassau Island Administration**.

### PURPOSE

The purpose of this MOU is to affirm the responsibilities of MOIP and the respective Islands local Governments (Island Councils and Island Administrations) during the implementation of the New Zealand Government-funded Northern Group Water Project on the islands of Penrhyn, Rakahanga, Pukapuka, Nassau and Manihiki.

### BACKGROUND

- During the 2004-2005 cyclone season, five cyclones struck the Cook Islands causing widespread damage to infrastructure on most islands. This led to the \$10-million NZAID-funded 2007-2010 Cyclone Recovery and Reconstruction Programme (CRRP).

- A sustainable water supply system underlies the viability of communities in the Outer Islands of the Cook Islands. The limited economic opportunities on the Outer Islands together with isolation and the migration in population have been attributed in part to the lack of sustained potable water supply systems domestically and within the community. Each island has unique resources and local governance arrangements.
- Rainwater is the main source of potable water supply for Penrhyn, Rakahanga, Pukapuka, Nassau and Manihiki and collected from roofs of residential houses and community buildings using purpose-built collection and storage systems. The stock of tanks, guttering, downpipes and roofing on these islands are in diverse conditions, from functional to a state of disrepair.
- Groundwater from open wells is a supplement to rainwater and primarily used for non-potable purposes. Since many groundwater wells are within village areas, these are likely to be subjected to pollution and contamination from septic tanks and other sources and require boiling to be potable.
- The aim of the Northern Group Water Project is to improve the adequacy and reliability of supply, ensure a sustainable system is in place to ensure longevity of the Project and importantly safety of potable water by increasing rainwater collection and storage capacity in order to improve the resilience to natural disasters (including droughts) and strengthening disaster management capabilities. Along with capacity building, a flexible contract approach (i.e. supply and install, measure and value) has been chosen to allow improvements to be adapted to specific situational need.
- In order to stretch the Project funds available (\$2,200,000) across the five islands of Penrhyn, Rakahanga, Pukapuka, Nassau and Manihiki, the Project has prioritised islands in terms of their relative water needs.
- A minimum water service standard of 6,000 litres storage for up to 6 occupants per eligible household is used to determine household level entitlements. Through a partnership approach, the Project seeks to build collective responsibilities and encourage actions (including own financial contributions) by local households and communities.
- The Islands local Governments are key stakeholders in optimising the impact and benefit of Project activities on each island. Conditions of funding require that arrangements for future repairs and maintenance of these rainwater collection and storage systems is agreed in writing for each island, before materials get delivered and the Project implemented by the Contractor.

## **THE AGREEMENT**

### **The Responsibilities of the Pukapuka / Nassau Island Local Government & Island Administration**

- Consult and advise island residents and also non-residents as necessary on the Project goals and entitlements.
- Foster scaling up of water improvements by advocating for homeowner's contribution to the costs of improvements, particularly on roof structures (i.e. rafters, purlins and claddings).
- Broker arrangements with households and communities to clarify ownership and responsibility for future maintenance of these improved rainwater systems.
- Facilitate the work of Romanidesigns Ltd, MOIP's appointed Project Manager, to set up community awareness and training, groundwater monitoring, assess and contract works and oversee the works of the contractor. The contractor shall be fully responsible to MOIP through its appointed Project Manager.
- Waive literage, costs of transportation, plant, equipment and machineries including operators related to the supply of local materials for tank bases (sand, gravel and rocks) when required as part of the Cook Islands Government 'in-kind' contribution to the Project.
- Develop a work-plan including budget covering existing community rainwater systems improvements and provide these to the MOIP for approval.
- Consider the most appropriate and cost-effective approach for exceptional repairs (e.g. major roof repairs) to homeowners and recommend action to the MOIP for consideration. Such repairs will however be subject to funding available, PMC approval and the completion of priority areas.
- Fund and perform all future maintenance of all community rainwater systems improved by this Project through the normal Operational and CAPEX budgeting process of the Pukapuka / Nassau Island local Government.

- Develop Water Safety Plans (assisted by the Ministry of Health – Public Health Division) and local rain and groundwater monitoring systems in a manner to sustain local data collection after Project completion.

### **The Responsibilities of the Ministry of Infrastructure and Planning**

- Responsible for the process of developing a National Water Policy for all the Cook Islands in consultation with all relevant stakeholders.
- Provide a Technical Assistant (Ngateina Rani, ph 20321 / 78599) based in the MOIP, to manage the CRRP Programme including this Project.
- Support the Pukapuka / Nassau Island local Government with budget estimates and survey data relevant to decision making.
- Finance and manage the Contractors to deliver all approved improvements under this Project within the 2011 calendar year and prior to the 2011-2012 cyclone season.
- Approve and finance improvements on existing community rainwater systems according to negotiated and approved Penrhyn Island local Government work-plans and budget estimates.
- Provide a Project Manager (Romanidesigns Ltd) to oversee the Project implementation and report back on the progress.
- Provide funding from the Project to partner Agencies to deliver educational and awareness training activities such as water safety plans (i.e. Ministry of Health, Ministry of Internal Affairs and Ministry of Education), basic maintenance of rainwater systems (i.e. contractor/plumbers), water conservation and water monitoring (i.e. schools, Cook Islands Red Cross, Meteorological Service, uniform organisations and other relevant Island agents).
- Manage the Project using an open and transparent decision-making process with the inclusion of local communities and their representatives.

## **GENERAL TERMS AND CONDITIONS**

- Any variation to this Agreement shall be made in writing and with the agreement of both parties.
- The minimum water service standard is based on water storage allocation of 1,000-litres per person and a baseline number of occupants of 6 per household. On the household scale, this minimum water service standard is set at 6,000-litres of storage. This 6,000-litres storage can either be in the form of a single 6,000-litre polyethylene tank or double 3,000-litre polyethylene tanks.
- Those eligible households with additional 2 to 4 occupants above the baseline number of occupants may be entitled to an additional 3,000-litre polyethylene tank.
- Eligible households are only those occupied households that do not meet the minimum service standard. Ineligible households are those that are either unoccupied or have already met the minimum service standard.
- All eligible households are listed in the Eligible and Approved Household Listing attached to this MOU as Appendix 1.

**EXECUTION**

**IN WITNESS WHEREOF**, the undersigned, being duly authorised to act for and on behalf of their respective Organisations, have signed this Arrangement as follows:

**Signed for and on behalf of Her Majesty the Queen in right of the Government of the Cook Islands by Ms. Donye Numa, as Acting Secretary of the Ministry of Infrastructure and Planning**

**Signed for and on behalf of the Pukapuka / Nassau Island Council by the Mayor, Mr Rotoika Tengere**

Signature

Signature

15/9/11

Witness

Witness

POLICE OFFICER. 16.09.2011

**Signed for and on behalf of Her Majesty the Queen in right of the Government of the Cook Islands by Mr. Lewutope Katoa, as Island Secretary, Pukapuka / Nassau Island Administration**

Signature

15/09/11

Witness

POLICE OFFICER. 16.09.2011

**APPENDIX 1**

**ELIGIBLE AND APPROVED HOUSEHOLDS LISTING**

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Building Ref No.	No of people	Island / Village	Residential Houses - need water tanks, fascia board, spouting	Tanks Qty	Roof Dimension	Eave	Fascia	Down Pipes	Remarks		
					6000L, 3000L Length (m) Width (m) Area (m2)	ht (m)	Length (m)	Length (m)			
PUK 90	6	Amosa Puhia	1	1	14	12	168	3	14	1	New fascia and spouting
PUK 91	2	Amosa Puhia	1	1	14	12	168	3	14	1	New fascia and spouting
PUK 92	1	Amosa Puhia	1	1	14	12	168	3	14	1	New fascia and spouting
PUK 93	8	Amosa Puhia	1	1	14	12	168	3	14	1	New fascia and spouting
PUK 94	2	Amosa Puhia	1	1	14	12	168	3	14	1	New fascia and spouting
PUK 95	2	Amosa Puhia	1	1	14	12	168	3	14	1	New fascia and spouting
PUK 96	2	Amosa Puhia	1	1	14	12	168	3	14	1	New fascia and spouting
PUK 97	6	Amosa Puhia	1	1	14	12	168	3	14	1	New fascia and spouting
PUK 98	6	Amosa Puhia	1	1	14	12	168	3	14	1	New fascia and spouting
PUK 99	6	Amosa Puhia	1	1	14	12	168	3	14	1	New fascia and spouting
PUK 100	5	Amosa Puhia	1	1	14	12	168	3	14	1	New fascia and spouting
PUK 101	5	Amosa Puhia	1	1	14	12	168	3	14	1	New fascia and spouting
PUK 102	5	Amosa Puhia	1	1	14	12	168	3	14	1	New fascia and spouting
PUK 103	5	Amosa Puhia	1	1	14	12	168	3	14	1	New fascia and spouting
PUK 104	4	Amosa Puhia	1	1	14	12	168	3	14	1	New fascia and spouting
PUK 105	4	Amosa Puhia	1	1	14	12	168	3	14	1	New fascia and spouting
PUK 106	6	Amosa Puhia	1	1	14	12	168	3	14	1	New fascia and spouting
PUK 107	4	Amosa Puhia	1	1	14	12	168	3	14	1	New fascia and spouting
PUK 108	5	Amosa Puhia	1	1	14	12	168	3	14	1	New fascia and spouting
PUK 109	5	Amosa Puhia	1	1	14	12	168	3	14	1	New fascia and spouting
PUK 110	7	Amosa Puhia	1	1	14	12	168	3	14	1	New fascia and spouting
PUK 111	7	Amosa Puhia	1	1	14	12	168	3	14	1	New fascia and spouting
PUK 112	8	Amosa Puhia	1	1	14	12	168	3	14	1	New fascia and spouting
PUK 113	3	Amosa Puhia	1	1	14	12	168	3	14	1	New fascia and spouting
PUK 114	3	Amosa Puhia	1	1	14	12	168	3	14	1	New fascia and spouting
PUK 115	6	Amosa Puhia	1	1	14	12	168	3	14	1	New fascia and spouting
PUK 116	6	Amosa Puhia	1	1	14	12	168	3	14	1	New fascia and spouting
PUK 117	6	Amosa Puhia	1	1	14	12	168	3	14	1	New fascia and spouting
PUK 118	5	Amosa Puhia	1	1	14	12	168	3	14	1	New fascia and spouting
PUK 119	6	Amosa Puhia	1	1	14	12	168	3	14	1	New fascia and spouting
<b>RESIDENTIAL HOUSES - REROOFING</b>											
PUK 120	4	Amosa Puhia	1	1	14	12	168	3	14	1	New fascia and spouting
PUK 121	4	Amosa Puhia	1	1	14	12	168	3	14	1	New fascia and spouting
PUK 122	8	Amosa Puhia	1	1	14	12	168	3	14	1	New fascia and spouting
PUK 123	9	Amosa Puhia	1	1	14	12	168	3	14	1	New fascia and spouting
PUK 124	4	Amosa Puhia	1	1	14	12	168	3	14	1	New fascia and spouting
PUK 125	10	Amosa Puhia	1	1	14	12	168	3	14	1	New fascia and spouting
PUK 126	8	Amosa Puhia	1	1	14	12	168	3	14	1	New fascia and spouting
<b>GOVERNMENT AND COMMUNITY BUILDINGS</b>											
0	0	Meeting House			13	13	169	3	19	1	Spouting required only
0	0	Public water tank - Vahia			19	10	190		19	1	All completed
126	187	TOTALS	30	14	178	93	16732	21	372	37	16 x 200 dia timber pits.




Building Ref No.	No of People	Island / village	Tanks Rqd	Roof Dimension	Eave	Fascia	D/ps	Remarks
RESIDENTIAL HOUSES - need water tanks, fascia board, spouting			6000L 3000L	length (m)width (m)area (m2)	ht (m)	& spouting	L (6m)	
PUK 42	7	Apirai Teihaki						
PUK 43	7	Aporo Mataora	2	12 10	120	2.1	12	Spouting required only
PUK 44	2	Arona Tairau		12 12	144	3.5	12	Fascia and spouting required
PUK 45	7	Aruia Lotani		13 13	169	3	13	Fascia and spouting required for front of hse only
PUK 46	5	Ateera Ateera		13 12	156	3	13	Spouting to both sides of hse
PUK 47	2	Aiteu Tubai		11 11	121	2.5	11	Spouting required only
PUK 48	3	Eraiti Teihaki		10 9	90	2.1	10	Fascia and spouting required for front of hse only
PUK 49	5	Ieremia Pori	2	13 7	91		13	Flate top, Fascia and spouting required
PUK 50	1	Issac Elisa		13 10	130	3	13	Fascia and spouting required
PUK 51	5	James Auwola		13 7	91	2.5	13	Fascia and spouting required
PUK 52	5	Mata Rangl		14 14	196	3.3	14	Spouting installed to one side of hse only
PUK 53	5	Manea Opo		11 10	110	2.9	11	Spouting required only
PUK 54	8	Mangere Mairo		13 12	156	3	13	Fascia and spouting required
PUK 55	5	Manure Opo		23 14	322	3.3	23	Spouting installed to one side of hse only
PUK 56	5	Manure Opo		13 11	143	2.5	13	12m of fascia and spouting required to complete hse
PUK 57	6	Marurai Marurai	2	12 9	108	2.1	12	Spouting installed to one side of hse only
PUK 58	5	Mose Manuhai		10 9	90	3	10	Spouting required only
PUK 59	4	Ngarui Taunga		16 10	160	2.5	16	Spouting installed to one side of hse only
PUK 60	4	Ngeretina Opo		17 11	187	2.5	17	Fascia and spouting required
PUK 61	9	Paulo Pakitonga		12 10	120	3	12	Fascia and spouting required
PUK 62	5	Peua Tairanguru		11 10	110	2.1	11	Spouting installed to back of hse only
PUK 63	8	Polokotai Kaihua		12 9	108	2.7	12	Fascia and spouting required
PUK 64	6	Tavero Robati		13 13	169	3	13	Spouting installed to one side of hse only
PUK 65	4	Teopenga Nio	2	12 10	120	2.1	12	New spouting installed to one side of hse only
PUK 66	7	Tere William		13 10	130	2.1	13	Fascia and spouting required
PUK 67	6	Tiaki Wuatai (new hse)		13 12	156	2.5	13	New spouting installed to both sides of hse
PUK 68	4	Tiritau Kavana Yeutu		12 12	144	3.2	12	Fascia and spouting installed to both sides of hse
PUK 69	5	Titonga Henry	2	10 9	90	2.1	10	Fascia and spouting required
PUK 70	6	Tukia Mataora		14 12	168	3	14	Spouting required for both sides
PUK 71	0	Vakaua Opo		12 8	96	2.5	12	New spouting installed to both sides of hse
PUK 72	8	Vavia Mataora		10 9	90	2.4	10	Fascia and spouting required
PUK 73	4	William William		11 11	121	2.5	11	Fascia and spouting required
<b>RESIDENTIAL HOUSES - REROOFING</b>								
PUK 74	5	Rakera Aumatalangi		8 8	64	3	8	Spouting installed to one side of hse only
PUK 75	2	Moake Purotu		12 11	132	3.1	12	Spouting installed to one side of hse only
PUK 76	6	Tuiva Karowia		12 10.3	123.6		12	Spouting installed to one side of hse only
PUK 77	2	Tawala		13 13	169	3	13	Hse completed
PUK 78	6	Mata Aumatalangi		15 9	135	2.7	15	Spouting installed to one side of hse only
PUK 79	8	Jnr Pengat Taulani Tiritau		14 9	126	2	14	Spouting installed to one side of hse only
PUK 80	9	Wuatai Wuatai		9 9	81	2.1	9	Spouting installed to one side of hse only
PUK 81	3	Don Obeia		10 9	90	3.1	10	Fascia and spouting required
PUK 82	5	Tupea Mataora Tapaki	2	17 10	170	3	17	Fascia and spouting required
PUK 83	9	Tai Ravarua		11 9.5	104.5	2.2	11	Fascia and spouting required to one side only
PUK 84	5	Vai Peua		13 10	130	3.1	13	Fascia and spouting required to one side only
PUK 85	8	John Hageai		10 9	90	2.5	10	Spouting installed to one side of hse only
PUK 86	4	Taki te ngutu		9 9	81	2.1	9	Spouting required for one side.
PUK 87	4	Vao Tiare		10 9	90	2.5	10	Fascia and spouting required
<b>GOVERNMENT AND COMMUNITY BUILDINGS</b>								
	0	Roto Meeting Hse		21.35 12	256.2	2.6	21	Need to replace 8 truss
	0	Roto Motu Tawa Lalo		8 7	56		8	need spouting to one side
	0	Roto Motu Tawa Ngaie		14 14	196		14	need spouting to one side
91	232	Totals	39	1415.1	560		44	









Building Ref No.	No of people	Island / village	Tanks Rqd	Roof Dimension	Eave	Fascia	Down Pipes	Remarks	
			6000, 3000	Length (m) / Width (m) / Area (m <sup>2</sup> )	Ht (m)	& spouling	Length (5m)		
<b>RESIDENTIAL HOUSES - need water tanks, fascia board, spouling</b>									
PUK 1	6	Apiala Tanaki	1	11	11	121	2.2	11	Needs spouling only
PUK 2	8	Areluo Pira	1	15	15	225	2.2	15	Fascia and spouling required
PUK 3	13	Auki Paniani	2	10	10	100	2.1	10	Spouling installed to one side only
PUK 5	10	Kalia Uirenga	2	9	9	81	2.2	9	Fascia and spouling required
PUK 8	2	Makona Boaza	1	12	8	96	2.2	12	Spouling required for one side only
PUK 9	7	Manila Maika Aariri	1	12	12	144	3	12	Spouling required only
PUK 10	11	Manila Malenga	1	12	10	120	2.2	12	Spouling only is required for this hse
PUK 11	10	Mare Danel	1	11	10	110	2.8	11	Spouling required for front and back
PUK 12	1	Nagarupe Malalo	1	10.5	10	105	2.7	10.5	Flat top, Spouling installed to one side only
PUK 13	6	Nyakokona Purulu	1	12	12	144	2.7	12	Fascia and spouling required
PUK 14	5	Noutu Noutu	1	11	11	121	2.5	11	Fascia and spouling required
PUK 15	2	Paiki Tengere	1	12	10	120	2.5	12	Spouling required for front and side only
PUK 16	0	Punga Punga	1	12	10	120	2.5	12	Spouling installed to one side only, Fasc & spout rqd for front
PUK 17	8	Rotoika Tengere	1	13	11	143	3	13	Sphn inslid to 2 sides of hse, nw spn rqd for opp 2 sides of hse
PUK 18	8	Rotoika Tengere	1	10	10	100	3.1	10	Fascia and spouling required for front only
PUK 19	0	Ruarau Iakono	1	10	10	100	2.2	10	Needs spouling for both side and fascia for front side only
PUK 20	10	Rukuna Marukore	1	15	10	150	2.2	15	Sphn inslid to one side only, Fasc and sphn rqd for ft
PUK 21	5	Tapa Malora	2	10	10	100	3	10	Fascia and spouling required
PUK 22	2	Tarapu William	2	11	11	121	2.2	11	Fascia and spouling required
PUK 23	6	Teau Panakiliwi	2	10	8	80	2	10	Fascia and spouling required
PUK 24	2	Tekere Pireli	1	10	10	100	2.9	10	New spouling been installed both sides of hse
PUK 26	4	Tupea Malora	1	14	12	168	2.2	14	Fascia and spouling required for front only
PUK 27	2	Tutai Ravarua	1	12	12	144	2.6	12	Existing spouling installed on back side only,
PUK 28	5	Tutai Punga	1	10	10	100	2.1	10	Fascia and spouling required
PUK 30	5	Ulairenga Taumaina	2	9	9	81	2.1	9	Fascia and spouling required
PUK 32	5	Woelai Okioai	2	14	12	168	2.2	14	Existing spouling installed on back side only,
PUK 33	5	Yingongo Purulu	2	12	12	144	2.6	12	Fascia and spouling required
PUK 34	13	Yiri Yiri	2	12	11	132	2.1	12	Fascia and spouling required
<b>RESIDENTIAL HOUSES - Reroofing and water tanks</b>									
PUK 35	4	Joe Angano	1	9.7	8.6	83.42	2.1	13	Fascia and spouling required
PUK 36	6	Boaza Boaza	1	13	10	130	2.2	10	Fascia and spouling required
PUK 37	6	Ranguria Walehaki	2	8	8	64	2.1	8	Fascia and spouling required for one side only
PUK 38	8	Rautama Koiati	2	10	10	100	2.1	10	Fascia and spouling required
PUK 39	12	Tamengaro	2	13	10	130	2.1	13	Fascia and spouling required
PUK 40	13	Tirokura Uirenga	1	11	11	121	3	11	Fascia and spouling required
PUK 41	2	Veve	1	11	9	99	2.3	11	Fascia and spouling required for one side only
PUK 42	2	Yaitu Kaha	1	18.2	9.5	172.9	3	1	Fascia and spouling required for front only
<b>GOVERNMENT AND COMMUNITY BUILDINGS</b>									
		Yaito Public Water Tank		18.2	9.5	172.9	3	1	
		Meeting House		14	14	196	3	1	
41	218	Total	25	23	727.42	361.5	33	1	














Building Ref No.	No of people	Island / village	Tanks Rqd		Length (m)	Roof Dimension		Area (m <sup>2</sup> )	Facia & spouting	Down Pipes Length (6m)	Remarks
			6000L	3000L		Width (m)	Area (m <sup>2</sup> )				
<b>RESIDENTIAL HOUSES - need water tanks, fascia board, spouting</b>											
NAS 1	6	Polia Polia	1		20	14		280	13	1	
NAS 2	10	Topelau Nelaio	1		12	15		180	12	1	
NAS 3	12	Tuakalau Wualai	1		10	13		130	10	1	
NAS 4	4	Course Topelau	1		14	15		210	13	1	
NAS 5	3	Mark Jack	1		7	10		70	10	1	
NAS 6	8	Tuaine William	1		10	14		140	12	1	
NAS 7	6	Tewola Jack	1		10	15		165	12	1	
NAS 8	4	Repetia George	1		10	14		140	11	1	
NAS 9	4	Roaiti Valioa	1		5	5		25	5	1	
NAS 10	6	Arona Nio	1		12	10		120	11	1	
NAS 11	4	Mama Lilia	1		6	7		42	7	1	
<b>NEW HOUSES TO BE REROOFED</b>											
NAS 12	3	Kumara Papihali	1		10.43	7.43		77.4949	15	1	
NAS 13	7	Tuaine Tuaitai	1		10.85	7.24		78.554	15	1	
<b>PORA HOUSES (thatched houses)</b>											
NAS 14	1	Karangi Piripo	1		6	5		30	6	1	
NAS 15	4	Ngarulu Topelau	1		6	5		30	6	1	
NAS 16	1	Mali Wualai	1		6	5		30	6	1	
NAS 17	1	Lameka Tewola	1		6	5		30	6	1	
NAS 18	3	Taneloa William	1		6	5		30	6	1	
NAS 19	2	Leleau Ruarau	1		6	5		30	6	1	
NAS 20	2	Tumoe Rabana	1		6	5		30	6	1	
NAS 21	1	Avavele Vila	1		6	5		30	6	1	
NAS 22	3	Mexico Jack	1		6	5		30	6	1	
NAS 23	5	Yvonne Nelaio	1		6	5		30	6	1	
NAS 24	3	Terepai	1		6	5		30	6	1	
NAS 25	6	Vevela Ayoka	1		6	5		30	6	1	
NAS 26	4	Tituanu Angolka	1		6	5		30	6	1	
<b>GOVERNMENT AND COMMUNITY BUILDINGS</b>											
NAS 27		Nassau school			30	15		450	30	2	
NAS 28		Office and Telecom			12	8		96	12	1	
NAS 29		Capra house			10	8		80	10	1	
NAS 30		Hospital			10	8		80	12	1	
NAS 31		Power house			5	5		25	5	1	
NAS 32		Meeting house			14	12		168	12	1	
NAS 33		Paranga house			12	7		84	12	1	
NAS 34		Nassau sports house					0			1	
<b>WATER/TANK CATCHMENTS</b>											
NAS 35	2	Tumoe	1		6	5		30	5	1	
NAS 36	3	Lwi	1		10	7		70	8	1	
NAS 37	2	Karangi	1		6	5		30	8	1	
37	123		29	0			548.0489	338	38		

Thomas  
 H. Awarai (Sr)  
 H. Awarai (Jr)