

**DEVELOPMENT OF BRIDGE MANAGEMENT  
SYSTEM  
PROJECT FINAL REPORT**

**Volume 2: Project Management and Finance  
March 2005 (Final Version July 2007)**



# Development of Bridge Management System

## Project Final Report

### Volume 2

## Project Management and Finance

March 2005 (Issued as Final Version July 2007)

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## **GLOSSARY**

BIBM	Bridge Inventory and Bridge Management
BMS	Bridge Management System
BRUP	Bridge Rehabilitation and Upgrading Project
DoW	Department of Works
GIS	Geographical Information System
GoPNG	Government of Papua New Guinea
MCS	Maintenance Co-ordination Services
PWO	Provincial Works Office
RAMS	Road Asset Management System
RMRP	Road Maintenance and Rehabilitation Project
WB	World Bank

# Bridge Management System Development Project Final Report

## Volume 2: Project Management and Finance

### 1 Introduction

The key technical issues relating to the BMS Implementation project are documented in Volume 1: Main Report. This volume addresses contract management and finance aspects.

### 2 Contract Information

#### 2.1 Project Status

The progress status of various tasks is summarised below:

Code	Task	Progress	Comments
PM1	Inception Meeting	100%	
PM2	Project Quality Plan/Inception Report	100%	
PM3	Project Administration and Reporting	83%	Remaining in 2006 and 2007
CS1	Training	60%	
CS2	Development of CDS Investment Strategy	100%	
CS3	Development of CDS Investment Programme	100%	
CS4	Development of Framework For Bridge Management Strategy	100%	
BMS1	Needs Analysis	100%	
BMS2	System Specification	100%	
BMS3	Procurement	100%	
BMS4	Software Integration	100%	
BMS5	Data Restructuring and Importation	100%	
BMS6	Testing and Commissioning	100%	
BMS7	Implementation and Support	100%	
DC1	Development of Standardised Procedures	100%	
DC2	Identification of Inspection Team	100%	
DC3	Provision of Inspection Equipment	100%	
DC4	Condition Assessment Training	100%	
DC5	Development of Inspection programme	100%	
DC6	Undertaking Inspection	100%	
DC7	Data Transfer	100%	

## 2.2 Project Data

Assignment	Consultancy Services for Bridge Management System Development						
Contract Number	CS/DOW/IBRD/06						
Key Officers in Reporting	Chris J Harrison - Project Manager N K Pradhan - Team Leader						
DoW Project Director	Roy Mumu, Deputy Secretary (Technical) S. Selvarajah, EPM Team Leader						
World Bank	Mr Hatim Hajj- Task Manager						
Mobilisation Date	26 February 2004						
Length of Services	14 months initially, with reviews in early 2006 and early 2007						
Value	<table> <tr> <td>Original Contract (All amounts are GST exclusive)</td> <td>Variation:</td> </tr> <tr> <td>NZD 690,300</td> <td>-(NZD 7,250)<sup>Note 1</sup> +NZD 8,856.99<sup>Note 2</sup> + NZD 6,930<sup>Note 4</sup>)</td> </tr> <tr> <td>PGK 1,025,350</td> <td>+PGK 262,640<sup>Note 1</sup> +PGK 100,250<sup>Note 3</sup> +PGK 11,100<sup>Note 4</sup> -PGK 4,600<sup>Note 5</sup></td> </tr> </table>	Original Contract (All amounts are GST exclusive)	Variation:	NZD 690,300	-(NZD 7,250) <sup>Note 1</sup> +NZD 8,856.99 <sup>Note 2</sup> + NZD 6,930 <sup>Note 4</sup> )	PGK 1,025,350	+PGK 262,640 <sup>Note 1</sup> +PGK 100,250 <sup>Note 3</sup> +PGK 11,100 <sup>Note 4</sup> -PGK 4,600 <sup>Note 5</sup>
Original Contract (All amounts are GST exclusive)	Variation:						
NZD 690,300	-(NZD 7,250) <sup>Note 1</sup> +NZD 8,856.99 <sup>Note 2</sup> + NZD 6,930 <sup>Note 4</sup> )						
PGK 1,025,350	+PGK 262,640 <sup>Note 1</sup> +PGK 100,250 <sup>Note 3</sup> +PGK 11,100 <sup>Note 4</sup> -PGK 4,600 <sup>Note 5</sup>						
Office Accommodation	Project Office Department of Works Boroko, NCD Papua New Guinea Phone: +675 324 1522 Fax: +675 324 1522						

*Note 1: Variation, as approved on 9 August 2004*

*Note 2: Variation for two additional HIMS licenses and annual maintenance fee, as approved on 22 November 2004. (expressed in equivalent NZD value)*

*Note 3: Variation for the Kina amounts, as approved on 22 November 2004*

*Note 4: Variations, as approved on 24 November 2004*

*Note 5: Variation, as approved on 25 February 2005*

## 2.3 Significant Issues Affecting Project Implementation

### 2.3.1 Security

Some delay in the initial months of bridge inspection resulted from suspension of bridge inspection because of security concerns. This followed several incidents where the inspection team was confronted at inspection sites by local people with weapons. In response, approval was gained for additional funding to cover the use of security personnel, where required and thereafter the inspection process proceeded without significant incident.

### **2.3.2 Availability of Computers**

It had been envisaged that the data collected during the bridge inspection would be entered by provincial staff at the provincial offices. However, the computers assigned for RAMS, which were expected to be available for this purpose had either not yet been provided or were no longer functional in most of the provinces. Consequently, most of the data entry had to be done in the project office using 3 additional computers assigned by MCS to the project. These computers were later sent to the provincial office with the BMS database and software installed.

### **2.3.3 Location Referencing Issues**

The absence of information in RAMS at the start and end of some road sections created some problems in preparation for field survey. The issues were resolved through discussion between the local supervisor and the RAMS co-ordinator on site. The project team has provided to RAMS team information on observed inconsistencies in the road section start and end location definition between RAMS central database and the information currently used by provincial staff.

### **2.3.4 System Integration Issues**

In the absence of an appropriate linear location referencing management function in the Road Asset Management System (RAMS) application some modifications to the RAMS database and interface were proposed. The modifications to the RAMS database structure to include additional fields required for location referencing system were undertaken, but these additional fields are not yet populated. Hence, some problems in implementing the proposed process of data exchange between the BMS and RAMS. The problem was temporarily rectified with the development of a query to obtain the information required for BMS analysis. Populating of these fields in RAMS with the required information will simplify the data exchange process in future.

### **2.3.5 Counterpart Staff and Funding**

Some issues arose with the absence of travel allowances for the counterpart staff to be involved in practical training in the Bridge inspection. Additional training funds were allocated by DoW and this facilitated the training.

The capability of the counterpart staff was assessed during the training process and they were assigned to certain positions in the BMS implementation organisation chart. The interim BMS functional organisation chart prepared based on this selection has been approved by DoW. It is considered necessary for DoW to provide incentives in order to keep and utilise these staff and accordingly contribute to the success of the on-going BMS implementation and minimise any sustainability risks.

### 3 Programme and Budget Compliance

#### 3.1 Deliverables

##### 3.1.1 Reports

The reports prepared under the project are summarised in Table 3-1. Two additional reports are due in the follow-up visits scheduled for 2006 and 2007 respectively.

**Table 3-1: Reports Delivered**

Reports	Draft	Final	Comments
R1 Inception Report	Apr '04	Aug '04	
R2 Interim (Bi-Monthly) Progress Reports		Aug '04 Oct '04 Dec '04 Feb '05	
R3 Draft Project Completion Report	Mar '05		
R4 Final Project Completion Report			To be submitted Apr '05
R5 First Follow-up Report			Due 2006
R6 Second Follow-up Report			Due 2007
R7 Training Strategy	Apr '04	Aug '04	
R8 System Specification	Aug '04	Mar '05	
R9 Software System User Manual	Sep '04	Mar '05	PBMS DEVQ User Manual PBMS Analysis Module User Manual PBMS Database Server User Manual
R10 Survey Inspection Forms	Apr '04	Mar '05	Initially included in Inception Report Final version in Bridge Inspection Manual
R11 Draft Investment Programme	Feb '05		Bridge Asset Management Strategy & Programme
R12 Final Investment Programme		Mar '05	

### 3.1.2 Training

The scheduled training courses conducted by the project were as presented in Table 3-2.

**Table 3-2: Training Schedule**

Scheduled Training	Location	Date	Comments
Bridge Inspection Training	Port Moresby	22-25 Apr '04	
	Manus	3 - 6 May '04	
	Kokopo	17 - 20 May '04	
	Kimbe	24 - 27 May '04	
	Lae	25 - 26 Nov '04	
	Popondeta	1 - 3 Dec '04	
BMS Software User Training	Port Moresby	19 & 22 Nov '04	BMS Application Introductory training
	Port Moresby	31 Jan 18 Feb'05	BMS Application Trainers hands-on training
	Lae	9 Feb'05	PBMS DEVQ software Training
	Popondeta	14 Mar '05	PBMS DEVQ software Training
	Port Moresby	22 Mar '05	PBMS DEVQ software Training
	Port Moresby	10 Mar '05	PBMS DEVQ software Training (for WNB personnel)
	Manus	31 Mar'05	PBMS DEVQ software Training
	Kokopo	31 Mar '05	PBMS DEVQ software Training
Bridge Asset Management Workshop	Lae	10 Feb'05	
	Port Moresby	17 Mar'05	
Annual Follow-up Workshops			Due in 2006 and 2007

### 3.1.3 Software Applications

The key tasks related to the development of the BMS software application and their respective completion dates are shown in Table 3-3.

**Table 3-3: BMS Software Development Schedule**

Tasks	Date Completed
System Specification	Aug '04
Systems Integration and Development	Nov '04
Data Restructuring and Importation	Feb '05
Testing and Commissioning	PBMS DEVQ Module - 16 Feb '05 PBMS Database Server - 16 Feb '05 PBMS Analysis Module - 03 Mar'05
Implementation and Support	Mar '05

### 3.2 Project Staffing

There were some minor changes on the input of the project staffs. Chief Bridge Inspector and System Analyst were replaced, as the proposed personnel were not available. Table 3-4 summarised the staffing input in the project.

**Table 3-4: Project Personnel Usage**

Position	Name		Input in Man-month			
	Original	Replacement	Original	Revised	Consumed	Balance
<b>FOREIGN STAFF</b>						
Project Manager	Chris Harrison		2.0	2.0	1.91	0.09
Team Leader	Nabin Pradhan		14.0	11.5	8.13	3.37
Software Engineer	Kristin McKeachie		3.0	3.0	2.90	0.10
System Analyst	Andrew Plagakis	Zuwei Deng	2.0	4.75	4.73	0.02
Transport Economist	Stephen Moynihan		2.0	2.0	1.98	0.02
Chief Bridge Inspector	Vic Ollerenshaw	Robert Selwyn	3.0	3.0	3.0	0
<b>Subtotal</b>			<b>25.0</b>	<b>26.25</b>	<b>22.65</b>	<b>3.60</b>
<b>LOCAL STAFF</b>						
Bridge Engineer	Peni Gari		5	5	2.88	2.12
Bridge Inspector 1	Henao Badira		8	9	7.59	1.41
Bridge Inspector 2	Allan Luga		8	11	9.51	1.49
Bridge Inspector 3	Kila Veapi		8	6	5.51	0.49
<b>Subtotal</b>			<b>29</b>	<b>31</b>	<b>25.49</b>	<b>5.51</b>

Note: As per 28 February 2005. Will be updated in Final version

### 3.3 Finance

The expenditure against the budget is summarised in Table 3-5.

**Table 3-5: Summary of Finance**

Price Component	Amounts in NZD			Amounts in PGK		
	Approved	Consumed	Balance	Approved	Consumed	Balance
Remuneration	557,250.00	475,968.78	81,281.22	492,900.00	403,994.85	88,905.15
Reimbursable	100,530.00	82,212.41	18,317.59	161,700.00	88,645.68	73,054.32
Miscellaneous Expenses	41,056.99	32,325.09	8,731.90	477,500.00	131,878.00	345,622.00
Counterpart Training				249,960.00	54,036.63	195,923.37
Security				12,680.00	5,990.00	6,690.00
<b>Total</b>	<b>698,836.99</b>	<b>590,506.28</b>	<b>108,330.71</b>	<b>1,394,740.00</b>	<b>684,545.16</b>	<b>710,194.84</b>

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Note: As per 28 February 2005. Will be updated in Final version

Details of expenditure in each component are presented in Table 3-6, Table 3-7, Table 3-8 and Table 3-9.

**Table 3-6: Project Budget Expenditure and Estimated Future Requirements**

Code	Item Description	Unit	Currency	Quantity		Budget					Comments
				Original	Revised	Original	Revised	Consumed	Balance	Est. 06/07	
<b>1</b>	<b>International Flights</b>										
1A	Wgtn-Port Moresby	Ret Trip	NZD	2	2	5,400	5,400				
1B	Akld-Port Moresby	Ret Trip	NZD	6	6	16,200	16,200			5,400	Need Variation
1C	Perth-Port Moresby	Ret Trip	NZD	1	2	3,200	6,400				
1D	Sydney-Port Moresby	Ret Trip	NZD	1	1	2,100	2,100				
	<b>Sub-total, Item 1</b>		<b>NZD</b>	<b>10</b>	<b>11</b>	<b>26,900</b>	<b>30,100</b>	<b>27,462.41</b>	<b>2,637.59</b>		
<b>2</b>	<b>Miscellaneous Travel Expenses</b>	Mobilisation	NZD	<b>10</b>	<b>11</b>	<b>4,000</b>	<b>4,400</b>	<b>4,262.81</b>	<b>137.19</b>		
<b>3</b>	<b>Per Diems</b>	Day	NZD	<b>650</b>	<b>687</b>	<b>58,500</b>	<b>61,830</b>	<b>47,610</b>	<b>14,220</b>	<b>5,400</b>	
<b>4</b>	<b>Accommodation</b>										
4A	Long Term	Month	PGK	<b>12</b>	12	65,700	65,700				
4B	Short-Term PoM	Day	PGK	<b>100</b>	137	30,000	50,100			18,000	
	<b>Sub-total Items 4A and 4B</b>		<b>PGK</b>			<b>95,700</b>	<b>115,800</b>	<b>60,097</b>	<b>55,703</b>		
4C	Short-Term Elsewhere	Day	PGK	<b>45</b>	45	<b>6,750</b>	<b>6,750</b>	<b>6,586</b>	<b>164</b>		
<b>5</b>	<b>Local Transportation Costs</b>	Month	PGK	<b>14</b>	<b>14</b>	<b>17,500</b>	<b>17,500</b>	<b>15,000</b>	<b>2,500</b>	<b>2,500</b>	
<b>6</b>	<b>Office rental</b>	Month	PGK	<b>14</b>	<b>15</b>	<b>14,000</b>	<b>15,000</b>	<b>4,056.74</b>	<b>10,943.26</b>	<b>2,000</b>	
<b>7</b>	<b>Telecommunications</b>										
7A	Local	Month	PGK	<b>14</b>	14	<b>2,450</b>	<b>2,450</b>	<b>2,412.74</b>	<b>37.26</b>	<b>350</b>	Need Variation
7B	Foreign(between NZ,Australia & PNG)	Month	NZD	<b>14</b>	14	<b>2,800</b>	<b>2,800</b>	<b>2,200</b>	<b>600</b>	<b>400</b>	
<b>8</b>	<b>Drafting &amp; reproduction of reports</b>	Month	PGK	<b>14</b>	<b>14</b>	<b>4,200</b>	<b>4,200</b>	<b>493.20</b>	<b>3,706.80</b>	<b>600</b>	
<b>9</b>	<b>Courier Fee</b>	Month	NZD	<b>14</b>	<b>14</b>	<b>1,400</b>	<b>1,400</b>	<b>677.19</b>	<b>722.81</b>	<b>200</b>	
	<b>TOTAL</b>		<b>NZD</b>			<b>93,600</b>	<b>100,530</b>	<b>82,212.41</b>	<b>18,317.59</b>		
			<b>PGK</b>			<b>140,600</b>	<b>161,700</b>	<b>88,645.68</b>	<b>73,054.32</b>		

Note: (a) The expenditure provided is tentative only. It will be updated in Final version once all the expenses are known.

(b) Approval for additional international travel and miscellaneous travel expenses will be required for obtaining visa extensions for Nabin Pradhan and Zuwei Deng.

**Table 3-7: Project Miscellaneous Expenses and Estimated Future Requirements**

Code	Item Description	Unit	Currency	Quantity		Budget					Comments
				Original	Revised	Original	Revised	Consumed	Balance	Est. 06/07	
1	GPS Hand-held Receiver	Each	NZD	3	3	1,650	1,650	945.95	704.05		
2	Digital Cameras and Batteries	Each	NZD	3	3	3,000	3,000	2,441.54	558.46		One was broken
3	Memory Cards for Cameras	Each	NZD	6	6	1,200	1,200	393.78	806.22		
4	Binoculars	Each	NZD	3	3	600	600	145.18	454.82		
5	Sundry measuring Equipment	Each	NZD	3	3	150	150	95.09	54.91		
6	Computer (MS Windows and Office)	Each	NZD	1	1	4,200	4,200	3,334.08	865.92		
7,8	High Volume Laser Printer and Facsimile	Each	NZD	1 each	1 each	3,400	3,400	2,232.48	1,167.52		
9	Software (HIMS)	Licence	NZD	1	3	10,000	18,051.81	18,051.81	0		
10	HIMS Annual Support Fee	Year	NZD	1	3	1,000	1,805.18	1,805.18	0	2700	2 x Annual Mtce fee
11	Administrative Support										
11A	Local Project Assistant	Month	PGK	7	14	17,500	32,500	17,134.05	15,365.95	10000	
11B	Consultants/Advisors	Month	NZD	7		7,000	7,000	2,880	4,120		
12	Workshops										
12A	Venue, Materials and Refreshment	Ret trip	PGK	22	22	22,000	22,000	3,534.81	18,465.19	12000	12 Workshops in 2006 & 2007
12B	Local Airfares	Ret trip	PGK	36	36	36,000	36,000	3,257.43	32,742.57	30000	24 trips in 2006 & 07
12C	Subsistence for Local Staff	Day	PGK	36	36	9,000	9,000	0	9,000	9000	
13	Surveys										
13A	Per Diem and Allowances	Month	PGK	21	24	63,000	72,000	25,200	46,800		
13B	4WD Vehicle Rental and Operations	Month	PGK	21	24	189,000	216,000	55,364.60	160,635.40		
13C	Accommodation	Month	PGK	21	24	47,250	54,000	16,778.71	37,221.29		
13D	Local Airfares	Ret trip	PGK	36	36	36,000	36,000	10,608.40	25,391.60		
	<b>TOTAL</b>		<b>NZD</b>			<b>32,200</b>	<b>41,056.99</b>	<b>32,325.09</b>	<b>8,731.90</b>		
			<b>PGK</b>			<b>419,750</b>	<b>477,500</b>	<b>131,878</b>	<b>345,622</b>		

Note: The expenditure provided is tentative only. It will be updated in Final version once all the expenses are known.

**Table 3-8: BMS National Counterpart Inspection and Field Training Budget Expenditure and Estimated Future Requirements**

Code	Item Description	Unit	Currency	Quantity		Budget					Comments
				Original	Revised	Original	Revised	Consumed	Balance	Est. for 2006/07	
	<b>Headquarters Counterpart Training</b>										
	Air Fare	Ret trip	PGK		14		15,600				
	Accommodation	Days	PGK		330		66,000				
	Travelling Allowance	Days	PGK		330		26,400				
	<b>Sub-total</b>						<b>108,000</b>	<b>40,483.55</b>	<b>67,516.45</b>		
	<b>Provincial Counterpart Training</b>										
	Central	Days	PGK		75		37,800				
	Oro	Days	PGK		25		12,600				
	East New Britain	Days	PGK		25		12,600				
	West New Britain	Days	PGK		75		37,800				
	Manus	Days	PGK		10		5,040				
	Morobe	Days	PGK		65		32,760				
	<b>Sub-total</b>						<b>138,600</b>	<b>11,410</b>	<b>127,190</b>		
	<b>Camping Equipment</b>		<b>PGK</b>				<b>3,360</b>	<b>2,143.08</b>	<b>1,216.92</b>		
	<b>TOTAL</b>						<b>249,960</b>	<b>54,036.63</b>	<b>195,923.37</b>		

Note: The expenditure provided is tentative only. It will be updated in Final version once all the expenses are known.

**Table 3-9: Security – Cost for Police Escort Budget Expenditure and Estimated Future Requirements**

Code	Item Description	Currency	Quantity		Budget					Comments
			Original	Revised	Original	Revised	Consumed	Balance	Est. for 2006/07	
	Security Cost	PGK				12,680	5,990	6,690		
	<b>TOTAL</b>	<b>PGK</b>				<b>12,680</b>	<b>5,990</b>	<b>6,690</b>		

Note: The expenditure provided is tentative only. It will be updated in Final version once all the expenses are known.

### 3.3.1 Variations

The variations in the original contract are summarised in Table 3-10.

**Table 3-10: Project Variations**

SN	Date	Description	NZD	PGK
1	9 Aug '04	Additional funding for security personnel and training of counterpart staffs	-7,250.00	+262,640.00
2	22 Nov '04	Variation for two additional HIMS licence and annual maintenance fee	+8,856.99	
3	22 Nov '04	Variation for additional time for Bridge Inspector for carrying out the inspection of additional number of cross drainage structure		+100,250.00
4	24 Nov '04	Variation for Relocation of Software Engineer's input	+6,930.00	+11,100.00
5	25 Feb '05	Realignment of input time of Kila Veapi to Allan Luga and Kila Vere		-4,600.00
<b>TOTAL</b>			8,536.99	369,390

*Note: Additional variations are required for international airfares, miscellaneous travel expenses resulting from the change in visa requirements.*

### 3.3.2 Requirements for Remainder of Commission

Based on the existing project schedule two additional visits in year 2 and year 3 of the project respectively will be carried out. These visits will include reviews of the status of the BMS implementation and will run refresher course training.

The estimated funding requirement is addressed in Section 4.

## 3.4 Equipment

### 3.4.1 Computers

One desk top computer and one printer together with the software procured during the BMS implementation have been handed over to the DoW BMS team in MCS on 29 March 2005. It is envisaged that the DoW BMS team will provide necessary office space and logistical support during the 2006 and 2007 visits by the Team Leader.

### 3.4.2 Survey Equipment

Three sets of survey equipment were procured by the project for Bridge Inspection (See Table 3-11 ).

**Table 3-11: Survey Equipment**

Equipment list	Unit	Quantity	Comments
GPS Hand-held Receiver	Each	3	
Digital Cameras and Batteries	Each	3 + 1	One camera was damaged during the bridge inspection
Memory Cards for Cameras	Each	6	
Binoculars	Each	3	
Sundry measuring Equipment	Each	3+3	5 m and 30 m tapes were purchased
CD Writer	Each	2	

## 4 Data Collection in Remaining Provinces

This BMS Development project was scheduled to collect data for 6 provinces. With the successful implementation of the BMS in these 6 provinces DoW is planning to extend the BMS implementation to other provinces. With CDS in 7 additional provinces inspected each year the whole of PNG can be covered within the next 2 years.

Considering the current shortage of skilled staff in MCS, it is envisaged that the private sector will be used for data collection. The estimated cost for the extension of BMS in other province is summarised in Table 4-1.

**Table 4-1: Summary of Data Collection Cost**

Items	Cost in NZD	Cost in PGK	Refer to
Data Collection Operation Expenses		1,258,235	Table 4-2
Reimbursable per Activity	94,600	268,500	Table 4-3
Equipment and Training Expenses	165,300	232,000	Table 4-4
Remuneration for Consultant Staff	343,500	880,000	Table 4-5
<b>GRAND TOTAL</b>	<b>603,400</b>	<b>2,638,735</b>	

As hiring of new local consultants (if used) will require some training, DoW may consider either extension of the existing BMS development project consultant's contract or using them for the supervision, quality assurance and training in data collection. The estimated cost is broken down in different items for DoW easier to make decisions. It is envisaged that the implementation of BMS will be completed in 2 years time.

**Table 4-2: Data Collection Operational Expenses**

CODE	PROVINCE	DURATION		PROPOSAL ITEM DESCRIPTION COSTS					OTHER EXPENSES				ESTIMATED TOTAL COSTS		
		Days	Weeks	Local Airfares (Kina)	Workshop & Training (Kina)	Accomm (Kina)	Vehicle Rental & Operations (Kina)	Per Diem (Kina)	Security (Kina)	Excess Baggage (Kina)	Survey Equipment (Kina)	Survey Stationery (Kina)	Sub- Total Amount (Kina)	Local Taxes Amount (Kina)	Total Amount (Kina)
31	Western	54	11	6,000	1,200	26,500	24,300	10,800	1,200	800	1,000	1,000	72,800	7,280	80,080
32	Gulf	54	11	6,000	1,200	26,500	24,300	10,800	1,200	800	1,000	1,000	72,800	7,280	80,080
34	NCD	39	8	0	1,200	0	17,550	7,800	300	800	1,000	1,000	29,650	2,965	32,615
35	Milne Bay	59	12	6,000	1,200	29,000	26,550	11,800	1,300	800	1,000	1,000	78,650	7,865	86,515
37	Southern Highlands	74	15	6,000	1,200	36,500	33,300	14,800	2,200	800	1,000	1,000	96,800	9,680	106,480
38	Enga	74	15	6,000	1,200	36,500	33,300	14,800	2,200	800	1,000	1,000	96,800	9,680	106,480
39	Western Highlands	74	15	6,000	1,200	36,500	33,300	14,800	2,200	800	1,000	1,000	96,800	9,680	106,480
40	Simbu	74	15	6,000	1,200	36,500	33,300	14,800	2,200	800	1,000	1,000	96,800	9,680	106,480
41	Eastern Highlands	74	15	6,000	1,200	36,500	33,300	14,800	2,200	800	1,000	1,000	96,800	9,680	106,480
43	Madang	64	13	6,000	1,200	31,500	28,800	12,800	1,700	800	1,000	1,000	84,800	8,480	93,280
44	East Sepik	64	13	6,000	1,200	31,500	28,800	12,800	1,700	800	1,000	1,000	84,800	8,480	93,280
45	West Sepik	64	13	6,000	1,200	31,500	28,800	12,800	1,700	800	1,000	1,000	84,800	8,480	93,280
47	New Ireland	59	12	5,800	1,200	29,000	26,550	11,800	1,600	800	1,000	1,000	78,750	7,875	86,625
50	North Solomons	54	11	6,000	1,200	26,500	24,300	10,800	1,200	800	1,000	1,000	72,800	7,280	80,080
<b>BMS EXTENSION BUDGET</b>		<b>881</b>	<b>176</b>	<b>77,800</b>	<b>16,800</b>	<b>414,500</b>	<b>396,450</b>	<b>176,200</b>	<b>22,900</b>	<b>11,200</b>	<b>14,000</b>	<b>14,000</b>	<b>1,143,850</b>	<b>114,385</b>	<b>1,258,235</b>

Note: Two personnel from DoW HQ (one from the Consultant and one from BMS Team) will be involved in survey.  
Remuneration of personnel not included.

**Table 4-3: Reimbursable per Activity**

No.	Description	Unit	Quantity	Unit Price		Amounts	
				Currency	Rate	NZD	PGK
<b>1</b>	<b>International Flights</b>						
1A	Wellington - Port Moresby	Return Trip	1	NZD	3,000	3,000	
1B	Auckland - Port Moresby	Return Trip	10	NZD	3,000	30,000	
1C	Perth - Port Moresby	Return Trip	1	NZD	3,500	3,500	
1D	Christchurch - Port Moresby	Return Trip	1	NZD	3,200	3,200	
<b>2</b>	<b>Miscellaneous Travel Expenses</b>	Mobilisation	13	NZD	600	7,800	
<b>3</b>	<b>Per Diems</b>	Day	390	NZD	90	35,100	
<b>4</b>	<b>Accommodation</b>						
4A	Short-term accommodation	Day	390	PGK	350		136,500
<b>5</b>	<b>Local Transportation Costs</b>	Month	24	PGK	3,000		72,000
<b>6</b>	<b>Office Rental</b>	Month	24	PGK	1,000		24,000
<b>7</b>	<b>Telecommunications</b>						
7A	Local	Month	24	PGK	500		12,000
7B	Foreign	Month	24	NZD	200	4,800	
<b>8</b>	<b>Drafting and Reproduction Reports</b>	Month	24	PGK	1,000		24,000
<b>9</b>	<b>Courier Fees</b>	Month	24	NZD	300	7,200	
	<b>Grand Total</b>			<b>NZD</b>		<b>94,600</b>	
				<b>PGK</b>			<b>268,500</b>

**Table 4-4: Equipment & Training Expenses**

No.	Description	Unit	Quantity	Unit Price		Amounts	
				Currency	Rate	NZD	PGK
<b>Equipment</b>							
1	GPS Hand-held Receivers	Each	14	NZD	550	7,700	
2	Digital Cameras & batteries	Each	14	NZD	1,000	14,000	
3	258Mb Memory Cards for Cameras	Each	14	NZD	200	2,800	
4	Binoculars	Each	14	NZD	200	2,800	
5	Sundry Measuring Equipment(2 Tapes)	Each	28	NZD	100	2,800	
<b>Computers</b>							
6A	Laptop Computer (incl. MS Windows & Office) for Port Moresby	Each	1	NZD	4,200	4,200	
6B	Computers (With MS Windows and Office) for BMS in provinces	Each	14	NZD	3000	42,000	
7	High Volume Laser Printer and photocopier	Each	1	NZD	5,000	5000	
8	Facsimile	Each	0	NZD	400	0	
9	Software HIMS (Additional License)	License	2	NZD	8,500	17,000	
10	HIMS Annual Support Fee (for 2 yrs)	Year	10	NZD	1,000	10,000	
<b>Administrative Support</b>							
11A	Local Project Assistant (Kila Vere)	Month	24	PGK	5,000		120,000
11B	Consultants/Advisers (NZ)	Month	24	NZD	1,000	24,000	
<b>Workshops</b>							
12A	Venue, Materials and refreshments	Workshop	14	PGK	1,000		14,000
12B	Local Airfares	Ret. Trip	28	PGK	1,000		28,000
12C	Subsistence for local staff	Day	56	PGK	250		14,000
12D	Overseas Training Fees	Day	30	NZD	300	9,000	
12E	Overseas Training Travel Allowance	Day	30	NZD	400	12,000	
12F	International Airfares	Return Trip	4	NZD	3,000	12,000	
<b>Surveys (Quality Control only)</b>							
13A	Pier Diems and Allowances	Month	4	PGK	3,000		12,000
13B	Accommodation	Month	4	PGK	7500		30,000
13C	Local Airfares	Ret. Trip	14	PGK	1,000		14,000
<b>Grand Total</b>				<b>NZD</b>		<b>165,300</b>	
				<b>PGK</b>			<b>232,000</b>

**Table 4-5: Remunerations**

**ESTIMATED PROFESSIONAL STAFF FEES (For 2 years)**

No.	Name	Position	Ref	Input MM	Unit Price		Amounts	
					Currency	Amount	NZD	PGK
<b>1</b>	<b>Foreign Staff</b>							
1A	Chris Harrison	Project Manager	PM	3	NZD	23,500	70,500	
1B	Nabin Pradhan	Team Leader	TL	8	NZD	23,500	188,000	
1C	Kristin McKeachie	System Engineer	SE	1	NZD	20,000	20,000	
1D	Zuwei Deng	Software Analyst	SA	1	NZD	20,000	20,000	
1E	Stephen Moynihan	Transport Economist	TE	1	NZD	25,000	25,000	
1F	Bob Selwyn	Chief Bridge Inspector	CBI	1	NZD	20,000	20,000	
<b>2</b>	<b>Local Staff</b>							
2A	Peni Gari	Bridge Engineer	BE	2	PGK	17,800		35,600
2B	Henao Badira	S. Bridge Inspector 1	BI1	2	PGK	16,600		33,200
2C	Allan Luga	Dep. Team Leader - S. Bridge Inspector 2	BI2	24	PGK	16,500		396,000
2D		Bridge Inspector 3	BI3	12	PGK	17,300		207,600
2E		Bridge Inspector 4	BI4	12	PGK	17,300		207,600
<b>Grand Total</b>						<b>NZD</b>	<b>343,500</b>	
						<b>PGK</b>		<b>880,000</b>