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SIAM2 - Sustainable Management C4: Environment Risks & Resource Management Inception Report - Final

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Prepared for

Ministry of Natural Resources and Environment, and Meteorology

By

Beca International Consultants Ltd

May 2005

The Chief Executive Officer
Ministry of Natural Resources, Environment and Meteorology
Private Bag
Apia
SAMOA

20 May 2005
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Attn: Vitaua Peleiupa Fuatai, PCM SIAM2

Dear Sir

SIAM2 - Sustainable Management C4: Environment Risks & Resource Management Inception Report - Final

We have pleasure in enclosing the finalised Inception Report for the above project. We have amended the report to take into account our discussions at the Draft Inception Report Workshop held on 14 April 2005 and the written comments received from both MNREM and from the PUM Division on MWTI.

We are still awaiting confirmation from both MNREM and MWTI that our understanding of our obligations under the contract consequent to the transfer of the PUM Division from MNREM to MWTI as set out in our letter to you dated 22 February 2005 was agreed. We have prepared the final Inception Report on the basis that these understandings have been accepted.

The hard copies of this report will follow by courier.

Yours faithfully
Graeme Roberts
Manager, Planning

on behalf of
Beca International Consultants Ltd
Direct Dial: +64-9-300 9271
Email: groberts@beca.co.nz

132 Vincent Street
PO Box 6345, Auckland, New Zealand
Telephone +64-9-300 9000
Fax +64-9-300 9300
www.beca.com

Revision History

Revision N°	Prepared By	Description	Date
A	Graeme Roberts	Draft for discussion at Workshop	April 2005
B	Graeme Roberts	Final version as amended following Workshop and with comments from MNREM & MWTI.	20 May 2005

Document Acceptance

Action	Name	Signed	Date
Prepared by	Graeme Roberts, Don Lyon, Peter Newsome, Michele Daly, Dave Brunsdon, Ted Wells		
Reviewed by	Graeme Roberts		
Approved by	Don Lyon		
on behalf of	**Beca International Consultants Ltd**		

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Appendices

Executive Summary

The Inception Report has substantially confirmed the Consultant's proposals to undertake the project as per the Technical Proposal submitted with the tender with two notable exceptions which are outlined below. The project will be managed around the four workstreams, viz:

- **Environmental Management** covering:
  - EIA regulations review
  - Environmental monitoring development and policy
  - Completion of Codes of Environmental Practice
  - Provision of further industry training and development including a contractor qualification scheme.
- **Natural Risk Management** covering:
  - CIM Strategy review
  - CIM Plan/SMP review
  - Effectiveness Survey
  - Completion of CIM Plans for the remaining 28 Districts.
- **Natural Resource Management** covering:
  - Further development of the application of GIS to the management of natural resources.
  - Preparation of a sustainable aggregate supply policy.
- **Emergency Management** covering:
  - A revised NDM Plan.
  - A plan and programme for institutional and staff development.
  - DMO Office and equipment specifications.
  - Agency and stakeholder workshops and response plan development.
  - Revised legislation.
  - Community education and development.
  - Disaster simulations
  - Disaster Insurance review.

The two areas where significant changes have been proposed are as follows:

CIM / SMP Plans

It has been suggested that a cautious approach be adopted in moving CIM Plans towards being SMP's under the PUM legislation. This has been advocated for two principal reasons:

- The original philosophy of the CIM Plan was that of a "partnership" between local villages/districts and Government. It is our belief that the ultimate success of the CIM Plans will derive more from the articulation of this philosophy than the more "regulatory" and "prescriptive" rules based approach which appear to be anticipated

in the SMP's. This approach may be necessary for the urban and peri-urban areas of Samoa but is in our view overly complex for the vast majority of rural districts.

- Secondly, we have real concerns about the resource implications arising from the SMP process. The process set down in the legislation will require substantial professional and technical resources in both MWTI and the community, which to date do not appear to have been available or forthcoming. It would in our view be unfortunate if all the real advances in coastal infrastructure management and the communities comprehension of the underlying issues were put at risk by the adoption of a resource hungry approach at this point in Samoa's development. We do however see how subtle amendments can be made to the CIM Strategy and CIM Plan formulation process to anticipate this step at an appropriate point in the future.

Emergency Management Task Content and Timing

The number of work tasks has been reduced from 12 to 10 by combining some tasks and the order of completion of tasks has been varied from that sought by the TOR. The reordering has been undertaken to allow for a more logical work flow and for the outcomes of key tasks to feed into subsequent tasks.

One matter which has not been resolved relates to the review of the National Co-ordination Centre. This was not allowed for in our original proposal nor was it a specific explicit requirement of the TOR. The PUM Division of MWTI in a letter of 13 April 2005 providing comments on the Draft Inception Report (See Appendix D) suggests that the MCDEM Review report (July 2004) has already provided discussions on and a summary of the NCC, implying that it would be a relatively straightforward task to include a review of the NCC within the current scope of work. MCDEM's letter of 18 April 2005 (Appendix F), states that a review of the NCC is *"pivotal to the effectiveness of existing or new disaster management arrangements and any review of the disaster management structure"* implying that this piece of work has yet to be undertaken.

We have proposed that this work be undertaken as additional items to the scope of work under the contract and would be pleased to provide our fee estimate for doing this.

1 Introduction

1.1 Project Description

The Terms of Reference for the project describe the project as follows:

'The Government of Samoa (The Client) requires services for:

1. *Environmental Management* - provide assistance to: (i) finalise the EIA regulations so that they can be endorsed by Cabinet and passed into law (and the requirements will then apply to all government and private sector proponents); (ii) provide further support and training in environmental management practices (including the COEP) relating to physical works, especially targeted at the design and construction industry; and (iii) assist to embed the routine process of data collection for environmental monitoring and impact assessment as a mainstream activity within MNREM.

2. *Natural Risk Management* - expand the CIM strategy to: (i) incorporate issues relating to climate change adaptation; and (ii) incorporate strategies for other types of hazards (e.g. flooding, landslips etc.) and to complete the CIM plans for the remaining 28 Districts of Samoa, incorporating coastal and other hazards.

3. *Natural Resource Management* - train and support MNREM to better manage and provide policy advice to government on natural resources using GIS as an analysis tool. The specific activities will be identified during project implementation, but will be strongly tied to initiatives identified from, or that make use of, the CIM Plans and the policy development objectives for MNREM as specified in its corporate plan.

4. *Emergency Management* - reform the National Emergency Management Plan (NEMP) to be consistent with best pacific region practice relating to emergencies, so that there is an emphasis on reduction as well as readiness, response and recovery. Apart from rewriting the NEMP, the proposed activities will include:

(i) workshops to align the approach forward amongst various stakeholders;

(ii) training and professional development;

(iii) community and organisation awareness training (implemented in conjunction with the CIM Plan consultation process);

(iv) simulations;

(v) additional equipment;

(vi) preparation of supporting legislation; and

(vii) review of options for disaster management insurance.

1.2 Purpose of Report

The Inception Report has the following purposes:

- To record the investigations and discussions undertaken during the inception review phase of the project.
- To review and comment upon the methodology proposed to complete the project in the light of those investigations and to propose any alterations thereto.
- To provide a detailed workplan for the execution of the project.
- To suggest key performance and progress indicators for the project and
- To develop an initial risk assessment and risk management plan for the project.

1.3 Structure of Report

Following this Introduction, the report has a further five sections:

- Section 2 reviews the methodology proposed by workstream and identifies any alterations to that contained in the tender proposal document.
- Section 3 contains the detailed work programme and deliverable outputs arising therefrom.
- Section 4 suggests key performance and progress indicators.
- Section 5 contains the initial risk management plan; and,
- Section 6 summarises the key decisions required or actions to be taken as a result of this report.

1.4 Definitions

The following definitions and abbreviations are used in this report:

AusAID	Australian Agency for International Development
Beca	Beca International Consultants Ltd
CIM Plan	Coastal Infrastructure Management Plan
CIMS	Coastal Infrastructure Management Strategy
COEP	Codes of Environmental Practice
DMO	Disaster Management Office (part of MNREM)
EIA	Environmental Impact Assessment
GEF	Global Environment Facility
GIS	Geographic Information Systems
GoS	Government of Samoa
GPS	Global Positioning System
IAMP-1	Infrastructure Asset Management Project – Phase 1
IDA	International Development Agency (World Bank)
LAN	Local Area Network
MCDEM	Ministry of Civil Defence and Emergency Management
MNREM	Ministry of Natural Resources, Environment & Meteorology
MOF	Ministry of Finance
MWTI	Ministry of Works, Transport and Infrastructure
PAD	Project Appraisal Document
PCC	Project Coordination Committee
PMU	Project Management Unit
PUMA	Planning and Urban Management Agency
SOPAC	South Pacific Applied Geoscience Commission
SPREP	South Pacific Regional Environment Programme
SIAM-2	Second Infrastructure Asset Management Project
SMP	Sustainable Management Plan
WB	World Bank

fono	village council
komiti	committee
matai	chief
pule	customary authority
pulenu'u	government village representative, village mayor

2 Methodology by Workstream

2.1 Environmental Management Workstream

2.1.1 Introduction and Overview

Our Inception review discussions have largely confirmed the understanding we had of the required actions to achieve the overall project goals in regard to this portion of the work. The draft EIA regulations have been being applied with varied levels of success and what is now required is for them to be the subject of a rigorous technical review and to then be promulgated under the relevant legislative framework. The recently passed PUMA Act 2004 provides for the drafting of regulations to give effect to the EIA requirements.

2.1.2 EIA Regulations Review

Discussions held with relevant MNREM staff during the Inception review have confirmed the broad applicability of the methodology as set out in the tender proposal. This involved the following key steps:

- Structured interviews with key stakeholders to assess the application of the draft regulations. This will include key staff in MNREM and other stakeholders including MWTI, EPC, SWA, SamoaTel, NGO's and other aid donors.
- Production of an annotated review of the current draft regulations with suggested areas for amendment and addition/deletion
- Facilitation of a half-day workshop for key stakeholders to agree the technical scope of revised draft regulations.
- Preparation of a Technical Paper on the scope and content of the revised draft EIA regulations for the guidance of the legal drafting team.

2.1.3 EIA Regulations Legal Drafting

The four stage process proposed in the tender proposal is still appropriate with minor modifications.

Stage 1 involved initial consultations and consideration of the MNREM principal act together with the PUMA Act 2004. With the transfer of the PUMA division to MWTI there will need to be consequential amendments to the PUMA Act to replace the responsible Minister amongst other matters. In addition it will be necessary to review the MWTI principal act and other relevant legislation. It will be necessary for confirmation to be given that MWTI will be responsible for the EIA regulations. We have not allowed for the additional work associated with changes to the PUMA Act in our tender but would be prepared to undertake it as a variation to the contract if required.

The PUMA Act provides for the making of regulations under the Act to give effect to the provisions of the Act. EIA related matters appear to be specifically provided for in sections 105(2)(j), (k), (s), (t) and (u) which provide for the form, content, examination and making available for public comment of EIA's and statements of environmental effects.

Stages 2, 3 and 4 will proceed as outlined in the tender proposal. These are briefly described below.

Stage 2 allows for a broad range of consultation both inside and outside MNREM and MWTI on the findings from Stage 1. We will also consider how the Memorandum of Understanding between MNREM and MWTI regarding the application of the draft EIA regulations to Government works, developed under IAMP-1, can be accommodated in the new regulations. Findings will be documented in a brief report summarising views collected during consultation.

Stage 3 involves the redrafting of the regulations. Taking the output from the Technical Review and any other matters identified in Stages 1 and 2, a revised set of draft regulations will be prepared in a content, style and format commonly used in Samoa. These will be circulated to and discussed with key staff in MNREM and MWTI. Following MWTI's acceptance of the draft regulations, these will be discussed in detail with the AG's office who will be responsible for the final processing of the regulations to Parliament.

Stage 4 involves the finalisation of the draft regulations including circulation to stakeholders outside MWTI, conducting workshops for MWTI , MNREM and other stakeholders to explain the revised draft regulations and final amendment of the draft regulations following the workshops.

Output will be finalised draft EIA regulations ready for submission by MWTI to Cabinet for approval including a supporting draft Cabinet paper.

2.1.4 Environmental Monitoring

It was not clear from Inception review discussions how this function will be split in future between the relocated PUMA Division in MWTI and MNREM. This matter requires early attention to provide the necessary clarity of functions. Overall the primary focus of the task will remain regardless of who will be responsible for its performance.

The task requires an assessment of the role environmental monitoring can and should play in assisting MNREM/MWTI to discharge their statutory obligations and desired core competencies under their Corporate Plans. We will commence this by reviewing and confirming with MNREM and MWTI senior management staff in a workshop what those key activities are, assessing where the responsibility lies for that function, where the two Ministries currently feels they are at and where they desire to be in the short, medium and long term. Objectives and action plans will be formulated for these future positions. The action plans will define the who, what and how together with a consideration of the potential funding of these actions. We would envisage a series of perhaps three interactive workshop sessions to develop the action plans with key MNREM/MWTI staff. It will be important for the staff to be intimately involved in the development of the action plans as this will secure ownership of them. We would wish to reserve the option of seeking a contract variation if this involves significantly more work than envisaged before the relocation of the PUMA Division.

We will review data collected to date, potential future data collection and suggest appropriate analytical methods and techniques to provide for the data to support desired policy initiatives. Where policy initiatives are currently being pursued or are desired in

future, we will identify the data sets necessary to support them. A desktop review will be undertaken of selected practice elsewhere in the Pacific (including NZ and Australia) and in other countries to draw out common good practice elements and identify areas of potential difficulty or limitations.

The output from this task will be Environmental Monitoring Mentoring Workshops and Action Plans.

2.1.5 COEP's Review

The interim codes, prepared by Beca in 2000, focus on road planning, design, construction and maintenance along with associated coastal protection works.

The intention is to broaden the scope of the COEP's to cover mainstream construction activities in general, in particular those for infrastructure works where there is the potential to have adverse effects on the environment.

The main advantage of the COEP is that, if they are adopted for particular public works, they reduce the amount of information that needs to be provided under the EIA process. This has been agreed as part of a Memorandum of Understanding between MNREM and MWTI and has already been demonstrated on recent projects. With respect to private works undertaken by other major agencies, similar positive benefits can also be realised.

It is therefore appropriate that the COEP's be developed into a complete set of codes and expanded to cover routine physical works undertaken by other infrastructure providers such as EPC, SamoaTel and the Samoa Water Authority. It will also be appropriate to review the application of the interim COEP's and their practical effectiveness.

Beca prepared the original COEP's under IAMP-1 and provided training sessions for staff from PWD, DLSE, Samoa Water Authority and EPC. A presentation on the COEP's was also provided to the Samoa Institution of Engineers. As part of this process it was signalled to the consultant industry that it was the intention to make compliance with the COEP's mandatory on Government contracts and that the possibility of requiring knowledge of the COEP's would be a pre-qualification criteria for future Government works contracts. We will review the application of these policies on recently let Government contracts with selected key staff from MNREM and MWTI plus obtain information on typical works activities from other bodies such as EPC, Samoa Water Authority, SamoaTel and any other substantial works undertakers identified.

Results of these investigations will be reported back to a workshop of relevant parties and recommendations will be made for new/revised COEP's. Draft new/revised COEP's will be prepared and circulated for comment before being finalised. A mechanism for approval/adoption of the COEP's will be discussed and agreed with MWTI.

2.1.6 Industry Training & Development

The objective of this portion of the project is to improve the general awareness of the consulting and contracting industry of the new EIA regulations and enhanced COEP's. To complete this task successfully it will be necessary to identify the majority of consultants and contractors working in the newly developing private market. Most consultants belong to the Samoa Institution of Engineers and can be contacted via MWTI, MNREM and this

body. For the contracting industry the situation is less clear. We understand that at present there is no formal association of contractors in Samoa but that initial moves are underway to form such a group based around the NZ Master Builders Federation model. Through the Samoa Institution of Engineers, the local consulting industry and the combined knowledge of both MNREM and MWTI we will prepare a listing of known domestic consultants and contractors. We propose that a series of workshops, probably three or four will be required at which the general concepts of the EIA regulations, environmental management procedures, and the COEP's will be introduced.

We would suggest that a trial period of application of the new/revised EIA Regulations and COEP's be undertaken on Government works contracts under SIAM-2. Specific obligations to comply with the regulations and codes will be written into the Conditions of Contract and their application reviewed during both contractor selection and works implementation. We have assumed that the mentoring required under this task will not exceed 2 person weeks for the entire project.

2.1.7 Contractor Qualification Scheme

Our discussions with a number of consultants and contractors during the Inception review have confirmed our initial views that the key ingredients of a Contractor Qualification Scheme should be that:

- It should be simple and easy to administer;
- It should deliver improved environmental outcomes;
- It should cover as many contractors as possible to ensure the pool of available contractors for Government projects is not unduly limited.

Our initial thoughts are that contractors be required to attend a set number of training sessions, that they then complete a practical test to confirm the knowledge gained and then that qualification be valid for a set period of time. We consider that the qualification should attach to individuals rather than firms and that there should be a self-instruction process to allow for additional persons to qualify after the initial courses have been conducted. We would aim at developing the training materials such that they could be used as self-instruction programme and/or be delivered by trained personnel in MNREM and MWTI.

We will develop this approach further during the initial visit for this task and will prepare a Technical Paper for presentation at a workshop. Following this, we will prepare a draft Contractor Qualification Scheme for discussion with MWTI and stakeholders.

A key aspect of the success of the Contractor Qualification Scheme will be the linkage to the mandatory requirements to construct works in accordance with the COEP's and for the necessary consents to be obtained under the EIA regulations before works commence. This can be achieved by additions to the Standard Conditions of Contract applying to Government works. We will explore with MWTI and other stakeholders means by which this can be achieved for other works.

2.2 Natural Risk Management Workstream

2.2.1 NRM1.1-1.3, 2.2 CIM Strategy

Introduction & Overview:

Our Inception visit has confirmed that the CIM Strategy (and CIM Plans) have become well engrained in a diverse range of planning and management frameworks and systems since its adoption in 2001. In fact it was very pleasing to observe the extent to which CIMS has become a foundation document for most of the agencies and stakeholders active in coastal management.

Accordingly, our philosophical approach is not to reinvent the wheel. Rather, for the CIM Strategy Review we propose to build on the success of the IAMP-1 projects and to further cement the role of CIMS as a foundation national policy instrument for planning, hazard avoidance and mitigation.

Further, feedback from the Inception visit has identified other key strengths of CIMS which must be retained or enhanced through the review process. In summary these key success factors are:

- A concise, attractive and easy to read format for the Strategy with detail housed in supporting technical background reports.
- Clear linkages from strategy through goals, objectives, policies and implementation methods.
- Adoption of the concept of a partnership between government and villages (cementing integration of national and local responses to management).
- Focus on a hierarchy comprising of four core groups of tools that can achieve effective implementation (Information, Evaluation and Monitoring; Education and Awareness; Management and Use of Land and Resources; Intervention Actions).
- Emphasis on 'self management' and an ethic of mutual responsibility under the umbrella Vision of "Resilience". For all agencies, stakeholders and communities to be resilient they must be "adaptive, responsive and quick to recover".

One area that can be strengthened from IAMP-1 is the dissemination and adoption of CIMS by a wider cross section of Samoan society. This is best achieved by education and awareness raising and is the focus of specific attention as part of the detailed methodology and work plan as outlined later in this report.

Methodology:

Task 1.1 CIM Strategy Review

Broadening the Scope of CIMS:

By definition CIMS mainly addresses hazards and management of the coastal environment. This reflects planning priorities for Samoa with over 80% of the population living in close proximity to the coast.

CIMS and the supporting CIM Plans address coastal hazards including erosion, landslip, flooding and severe events including cyclones and tsunami. The existing CIM Strategy has also incorporated matters arising from the likely effects of sea level rise as a result of climate change together with the predicted increase in the number and severity of extreme weather events.

Because many hazards can impact upon the same coastal areas, in practice the identification and mapping of coastal hazard zones undertaken during IAMP-1 has captured those areas of Samoa most at risk from the diverse range of hazards that exist. By way of example, the Coastal Flood Hazard Zone (CFHZ) in many coastal villages will be very similar for a variety of event scenarios including coastal inundation by waves, tsunami or by overtopping of rivers and streams discharging at the coast. The appropriate policy responses for these hazards (as identified in CIMS) are often also similar (whether they be avoidance by retreat inland or mitigation perhaps by the relocation of key infrastructure or community assets to safer sites).

In general therefore there is no need or justification for a substantive review of the content of CIMS. Emphasis should instead be directed to reviewing the utility of the existing policies, tools and actions and strengthening these to address the broader scope sought by SIAM-2. The review will also examine current best practice around the Pacific region and update CIMS where appropriate to incorporate best practice. Of note, Beca together with the NZ National Institute of Weather and Atmospherics (NIWA) has recently completed a national Planning Guidance Note for the Ministry for the Environment to provide Regional Councils and Territorial local authorities in NZ with practical guidance and good practice examples on appropriate planning responses to climate change.

With respect to incorporating additional policy in CIMS to address inland hazards such as flooding, river erosion and landslides, we note that Addendum 1 to the TOR has clarified the scope of works required and this has been discussed further during the inception visit.

The focus of consideration of these further hazards is primarily directed to their potential to adversely affect the major population areas and their associated infrastructure. Again these concentrations largely sit within or close to the coastal environment. Where hazards or land management issues are so significant that they have national implications, they are to be examined on a whole of catchment basis and we envisage the need for some additional objectives, policies and management tools to address matters of catchment wide relevance.

Aside from policy development for CIMS, we propose to develop for the CIM Plans additional GIS based interpretative layers to assist as necessary with the identification of potential hazard zones within the coastal areas beyond those already identified in IAMP-1.

For landslips we will review the existing geological maps plus review topography, geology, seismic risk and develop a susceptibility classification as an additional GIS layer. Depending upon the availability of information such as the geological maps, this may be a preliminary analysis only and further detailed investigation may be required in future to refine the analysis in areas of dense population or perceived higher risk.

For river and stream flooding hazards we will review basic data availability and flow records for identified catchments. We understand rainfall data is available for selected sites

around Samoa from Meteorological Office records. This will be reviewed to identify typical patterns of rainfall distribution together with any information on peak events and historical flood records. We will review the rivers and watercourses data layers in the existing GIS to identify key catchments for review with relevant MNREM and MWTI staff. We are also aware of anecdotal information of flooding from past major storm events plus some details at the village level gathered during the CIM Plan consultation under IAMP-1. Further useful anecdotal evidence will emerge from the 28 additional CIM Plans. We will utilise all this information to develop a GIS layer identifying locations which may be susceptible to flooding hazard. Again the degree of detail possible will be limited by the data available, but we will indicate where further field or technical work could be undertaken to improve the accuracy of the output.

One additional hazard that has been identified from discussions during the Inception Visit stems from river and stream bank erosion. This is particularly evident in the lower catchment of some waterways and hence often already falls within a Coastal Hazard Zone. CIMS can be strengthened by the addition of policy guidance for hazard avoidance or mitigation and in particular to assess proposals for waterway stop banks and walls. We understand PUMA is receiving increasing numbers of applications to erect training walls and controls structures along the margins of eroding waterways. As is often the case with sea walls this tends to be rather a knee jerk reaction to a perceived immediate risk rather than seeking to gain a fuller understanding of the root causes of the emerging hazard. A range of response options should be identified and evaluated before selecting a preferred solution. CIMS can help provide an appropriate assessment framework in this regard.

Scope of Work (Sub Tasks):

- Meetings and targeted consultation with key Government staff (users of CIMS)
- Gap Analysis
- Desk top review of current best practice for South Pacific coastal management.
- Technical research and mapping as appropriate of additional hazards
- Draft revised CIM Strategy
- Prepare material for formal CIM Strategy review Workshop

Output:

- Expanded draft CIM Strategy with additional content as necessary to address broader scope of hazards.
- Additional hazard layer overlays for the MNREM GIS system.

Task: NRM1.2 Revised CIM Strategy

We note the intention that MNREM should lead this task and are fully supportive of this approach – the CIM Strategy is now a Government approved national policy statement "owned" by MNREM.

We suggest that the formal review process commence with a structured 3 hour workshop involving the Beca project team, MNREM staff and other key stakeholders involved in the

application of the CIM Strategy. This will principally be those involved in the initial CIM Plans, including key national infrastructure providers such as EPC, SWA, SamoaTel etc. The consultant team would be willing to facilitate the workshop if required and we have discussed an appropriate format and framework with key counterpart staff as part of the Inception Visit.

From our Inception Visit we have also confirmed that the existing CIM Strategy is widely used and understood. However some stakeholders and infrastructure providers have seen significant staff turnover since 2001 and there are one or two new agencies of direct relevance (for example the Ministry of Women, Community and Social Development).

New staff within these organisations are not so familiar with the background to CIMS or its application at both national and local levels. A structured workshop provides an opportunity to introduce newcomers to the CIM Strategy and CIM Plan preparation process. We recommend that the first half hour of the workshop be devoted to a short presentation on the philosophy of and major policy directions contained in the existing CIM Strategy. To ensure workshop participants come well prepared we also envisage the need for the Beca Project Manager to visit some of the key agencies in advance to provide a short introduction and any background information they made need.

With respect to workshop structure, the focus will be on reviewing the component sections of the Strategy in a "step by step" manner similar to the way the initial draft of the Strategy was formulated.

Whilst not mentioned in the TOR, it will be important to consider any implications for the CIM Strategy arising from the review of the CIM Plans and the potential actions required to promulgate them as SMP's under the PUMA Act. For completeness alone, it would be desirable to ensure that there is appropriate cross referencing. We will take the output of Task NRM 2.1 into account in this process as they will be proceeding in parallel.

Upon completion of the workshop and any further consultation required, we will prepare a revised draft of the CIM Strategy together with a draft Cabinet paper explaining the rationale behind the changes proposed. We will review this with senior MNREM staff and adjust the draft as required to ensure it is suitable for the CEO to recommend to the Minister for a Cabinet discussion.

Following cabinet adoption we recommend a wide spread publicity campaign be launched to highlight coastal management issues and to signal the start of another round of local and stakeholder consultation geared to preparation of CIM Plans for the remaining 28 Districts.

The need to continue to "advertise" and widely advocate the use of the CIM Strategy was highlighted during several consultations undertaken as part of the Inception Visit. In general it is apparent that there is a high degree of awareness of coastal hazards associated with cyclones but only limited appreciation at a village level of the potential impacts and need to avoid or mitigate other hazards such as erosion, inundation and localised flooding.

With respect to appropriate media, it appears that television and radio offers the best potential to capture a wider audience than is possible through conventional consultation programmes. Government staff interviewed during the Inception Visit suggested that a video documentary could be developed tracing the process from review of the CIM

Strategy through to village consultation for the CIM Plans. 'Signature projects' highlighting good practice and successful outcomes from IAMP-1 can also be marketed this way.

The potential to highlight the SAMPII projects as part of a national education programme (as was done very successfully on Environment Day for the CIM Strategy in IAMP-1) should also be pursued.

Beca is happy to meet with PUMA staff to assist them formulate a publicly campaign and can help with source material, however our contract does not currently extend to leading the campaign or producing material suitable for multi-media or public education programmes. We would be happy to lead this additional work if required.

Scope of Work (Sub Tasks):

- Agree attendance list and workshop protocol with the Project Component Manager
- Pre-Workshop briefings for key participants by Beca Project Manager
- Circulate Workshop invitations, agenda and background material to participants
- Half-day workshop facilitated by either MNREM or Beca
- Write up minutes and matters arising from workshop
- Revise final draft of reviewed CIM Strategy
- Draft Cabinet Paper and brief CEO prior to submission
- Assist with formulating strategy for publicity campaign.

Output:

- Completion of CIM Strategy Review Workshop
- Revised Draft CIM Strategy plus Cabinet paper.

Task: NRM 1.3Revised CIM Strategy Background Report

We will develop a revised CIM Strategy Background Report to document the process, findings and outcome of the review process from the Task above. This will include:

- An outline of the review process adopted, its findings and the recommended changes to the strategy.
- A record of the consultation undertaken and a summary of key views expressed plus the response to those views.
- Identification of key performance indicators for monitoring purposes.
- Any assumptions adopted.
- Recommendations for future review and development.

This report will be No 8 in the series of CIM Strategy Background Reports and will complete the reference materials developed under IAMP-1.

Output:

Revised CIM Strategy Background Report.

Tasks: NRM 2.1 SMP Requirements Review& NRM2.2 Completed CIM Plans Review

Our preliminary view at the time of tender was that based on our understanding of the new PUMA Act, it would be possible to translate existing CIM Plans into Sustainable Management Plans (SMPS) on the basis of the requirements outlined in sections 12-19 of the Act.

It is still our view that the Act contains sufficient flexibility to allow for the CIM Plan process to transition into the preparation of SMPs, however following our Inception Visit we now have some doubts about the wisdom of such an approach and seek to discuss and resolve this with key stakeholders in MWTI and MNREM as soon as possible.

Our reservations with the relationship between the CIM Plan process and SMP process stem mainly from a philosophical stand point. We also note however that there are currently no SMPs in draft or finalised so the process to convert CIM Plans might well be the country's first attempt and a bad experience now could impact on wider application of the SMP model later.

It has always been the intention (and we believe is now a widely accepted principle) that the CIM Plan is a non statutory instrument something akin to a 'charter' registering a partnership between government, villages and other key stakeholders to improve community and infrastructural resilience to coastal hazards.

The engagement process with communities has been very effective because of this philosophical stance. We wish to retain such a positive focus for the next 28 plans.

Having further reviewed the PUMA Act and discussed this matter further with PUMA staff, we believe that there is a risk of undermining the positive process by moving the CIM Plan process too quickly towards a more regulated framework. In particular we see significant problems with a quick conversion of the existing 15 CIM Plans, because these were prepared through an intensive community consultation process, in good faith, and without any suggestion that at some point the CIM Plans would take on a more formal and or regulatory function.

Having reached this preliminary conclusion as a study team, we have seriously evaluated alternative ways forward. In short we envisage three alternatives:

- Proceed to convert all CIM Plans to SMPs and take them through the prescribed statutory process.
- Abandon the idea and leave the CIM Plans as stand alone planning documents outlining how an agreed partnership approach to improving resilience can be achieved.
- Adopt a pragmatic approach which retains the spirit and intent of the CIM Plan process but identifies ways that some matters can be progressed through to forming the basis for SMPs.

We see real risks with respect to the first option. However it should not be necessary to abandon the potential to convert some or certain aspects of the CIM Plans, hence our preference at this stage would be to adopt the third approach.

What we have in mind in this regard is outlined below as a series of logical steps for both existing and new CIM Plans

For existing CIM Plans

1. Review existing CIM Plans to identify key areas and key local recommendations that might be best progressed through a more formalised SMP. Prepare a report on how parts of the existing CIM Plans might best be translated (if at all).
2. Identify elements common to all CIM Plans that might benefit from being captured in a generic or national coastal SMP addressing Good Practice in Coastal Management. What we have in mind here are basic parameters such as those listed below:
   - natural hazard buffer and coastal habitat protection
   - avoidance of new development in Coastal Hazard Zones
   - safe location policy and design guidance for life line infrastructure, key community buildings and emergency shelters
   - standards for the location of houses with respect to roads, streams, the coast etc.
   - simple environmental standards and other practical initiatives to enhance local sustainability.
3. Investigate and make recommendations on an appropriate process to consult Districts on whether and how some of their desired local CIM Plan outcomes might be introduced to the SMP Plan preparation process.
4. Pilot the SMP consultation process with one District to test the reactions and response.
5. Agree a way forward for the existing CIM Plans and review scope of work and contract accordingly.

For new CIM Plans

1. Include an overview and discussion of the PUMA Act and SMP process in the first round of village consultations and gauge understanding and acceptance or otherwise of the new process.
2. Identify as part of the Plan preparation process matters that should or should not be captured by a local SMP.
3. Consult on the appropriateness of formalising some of the CIM Plan recommendations.
4. Draft the CIM Plan with a section on matters that could possibly be progressed through either a generic or local SMP and seek specific feedback.
5. Review the draft in light of consultation.
6. If appropriate (but do not make it mandatory) include a section in the completed and signed off CIM Plan on matters that will be progressed through either a generic or local SMP.

Finally, as a general observation we would see the greater detail referenced in S32 of the PUMA Act (Development Standards) as being more appropriate to urban development such as the main centres of Apia and Salelonga. Whilst in due course it may be necessary to move towards more detailed standards for the whole country, in our view a simpler

approach may be an appropriate first step encouraging better rural and village development through a more generic good practice guide as discussed earlier. This would allow more resources to be focused upon the development of management plans for the urban area and recognises the critical need for local partnership and engagement (rather than regulation) at a rural and village level.

Scope of Work (Sub Tasks):

- As outlined in staged methodology above

Output:

- Report on content of existing CIM Plans and matters of relevance to PUMA Act and SMP's
- First draft of a 'Good Practice in Coastal Management' guide that might form the basis for a generic or national SMP.
- Report on pilot conversion project recommending a way forward for the existing CIM Plans.
- Section on possible SMP content in each new CIM Plan.

2.2.2 NRM2.3 CIM Plan Completion (RFP Clause 20, 21)

Plans will be prepared by District as per the original methodology, but several districts will be grouped together to improve data gathering and workshop setup efficiencies.

It is assumed that two Teams will be operating during preparation of the CIM/SMP Plans, but the Village and District Workshops will be staggered so that only one team is "on the road" at any one time. Where logistical reasons dictate and staff resources allow, however, two teams involving two separate Districts may operate in the field at the same time.

In the months following the first inception workshop there will be a second workshop of all likely CIM Plan team members to explain the plan preparation process in detail. This CIM Plan Preparation workshop will be followed by a test run involving all team members to prepare a plan for a single district (Si'umu).

Beginning in July 2005, the team members involved in the Si'umu plan will then split into two teams and both will head for the western end of Savai'i for a second test run involving all three Districts in Group 2 (Vaisigano II, Falealupo and Alataua West). After that (in October) the two teams will then begin working independently in the same general area of the country. The work has been clustered around single geographic areas so that the two teams can share resources if necessary and make it easier to organize the orators and meeting venues.

The more complex districts (involving the north coast area of Upolu around Apia) will be tackled in mid 2006, after the teams have had a reasonable amount of on the ground experience, but not at the end of the project, so there is sufficient time should these districts prove to take slightly longer to secure agreement.

2.2.3 NRM2.4, 2.5, 2.6, Public Awareness, Effectiveness Survey (RFP Clauses 22,24,)

The approach to this work element remains as per the original methodology. The main survey work will be undertaken prior to beginning the formal CIM Plan preparation (apart from the first "test" plan). Plan preparation procedures will be continuously monitored and altered if necessary to ensure that the final plans are the result of full and fair public input.

2.3 Natural Resource Management Workstream

2.3.1 Mobilisation of Consultants

Substantive work by the international consultants in Samoa began on 17 February 2005 with the arrival in Apia of the Team Leader (Graeme Roberts) and Project Manager (Ted Wells). Peter Newsome (Natural Resource Management workstream leader) arrived for the period 22-25 February. The consultants' time was mainly spent visiting, collectively and individually, stakeholder divisions and agencies whose activities should harmonise with the goals of the MNREM and who manage datasets of relevance to the project.

2.3.2 Inception Activities -Summary of Activities Undertaken

Activities and tasks during the Inception review closely followed the Consultants' Technical Proposal. These included:

(a) Establishing the project office; confirming the TOR, financial and institutional arrangements;

(b) Discussions with the Chief Executive Officer and senior MNREM staff;

(c) Meetings with key individuals within MNREM and other ministries to collect information and compiling an inventory of available relevant spatial and non-spatial data;

(d) Developing a risk management plan based on AS/NZS4360 (See Section 5 for details);

(e) Based on meetings with counterparts and key ministries revision of the work plan and implementation schedule.

2.3.3 Initial Findings - Imagery and GIS Data Layers

a. Aerial Photography

MNREM have two sets of recent digital aerial photography:

- 1:5,000 scale natural colour taken in 1999-2000 by Air Research (Australia) Ltd (who later went out of business though their records were taken over by 'Fugro'). Coverage is of coastal areas of all islands and inland areas of Upololu in the Lepale-Alesia-Vitele area, the western and central cross-island roads and the O Le Pupu-Pu'e National Park, 222 frames in total. Image resolution is 0.8m and, with each frame comprising a 65MB.tif, total size of all frames is approximately 14GB. We are informed, but could not confirm that the negatives of this photography are held by the MNREM.

- 1:50,000 scale natural colour taken in 1999-2000 by Air Research (Australia) Ltd. Coverage is of all islands. Frames have been tiled to equate with the current 1:50,000 scale topographic maps of which 6 cover the country. Each tile is a 300MB.tif with total size of all six tiles of approximately 1.8GB. We are informed, but could not confirm that the negatives of this photography are held by the MNREM.

b. Satellite Imagery

IKONOS multispectral imagery has been acquired for all Samoa. These data have not yet been rectified. Rectification is being done by MNREM using a method advised by SOPAC that uses ground control points alone, and not GCPs combined with a DEM.

c. GIS Data Layers

The MNREM have a respectable collection of GIS data accessible from about five GIS workstations (primarily MapInfo but they have one ArcGIS-9 licence). Appendix 3 presents a list of those data layers described in the MNREM metadatabase. The origin of these data layers is often obscure even in the metadatabase. Probable origins include:

- the early 1:20,000 scale topographic maps (NZMS174) captured by tablet digitizing
- contours derived photogrammetrically from recent aerial photography
- screen-digitised features from digital imagery

It is difficult to determine whether multiple occurrences of the same data layers found in several locations are all unaltered replicates of one undetermined original or multiple, different, representations of that feature layer.

We are informed that the roads and rivers and 20m contour layers were captured by photogrammetry in Australia from the 1:5,000 aerial photography.

There are three immediate issues associated with the data layers as they presently exist.

1. Their derivation is obscure and cannot be determined. Metadata is present but there are few statements about lineage, the fidelity of the data capture, its currency and utility.
2. The positional accuracy of the data layers is not evident, except by observation of features in relation to each other. Geometric accuracy is also difficult to judge.
3. There is no overall data model identifying the specification and relationship of data layers.

The metadata facility used by the Ministry was created by James Atherton under IAMP1 for the Coastal Hazard mapping and is now used by several agencies in Samoa.

2.3.4 Initial Findings - Other Relevant Spatial Data

Two topographic map series exist for Samoa

- The current 1:50,000 scale topographic maps published as six sheets using conventional offset printing but using the digital layers now held in the GIS database
- The old 1:20,000 scale topographic maps compiled by the New Zealand Department of Lands and Survey as NZMS174. (Note: These are now obsolete)

It is believed, but we were unable to confirm, that SamoaTel, and possibly the Samoa Water Authority, have created additional digital spatial data layers on their systems, to complement those described above and Listed in Appendix B.

2.3.5 Stakeholder Agency Functions and their GIS Usage

a. MNREM Mapping Section

The MNREM sees itself as the prime supplier of core data to government and other agencies. The Mapping Section has a pricing policy for hardcopy GIS products that seems to be a mix of cost recovery and public good. Their policy for electronic data is considered more restrictive by some stakeholders. These stakeholders see the MNREM data pricing and cost recovery policy as a potential barrier to GIS application in nationally, and locally, important applications.

The Mapping Section of the MNREM are building a tangible record of GIS applications for private, business, and government clients including:

- Delineating closing lines across the mouth of bays to extend Samoan sovereignty over these coastal waters under international law
- Providing map material for village consultations on biodiversity protection by the Environment and Conservation Division, MNREM (with GEF funding).
- Providing map material for Environment and Conservation Division studies on watershed areas
- Delineating National Park boundaries and subdivisions for Environment and Conservation Division
- Digitizing new boundaries

MNREM will now have to successfully integrate the respective GIS capabilities of the present Mapping Section with those of the incoming Forestry Division and Met Office.

b. Disaster Management Office

The Disaster Management Office considers GIS to be key to its effectiveness in all four phases of disaster management namely; mitigation, preparedness, response, and recovery. Key to an effective disaster GIS service would be data layers of community lifelines; roads, electricity, communications, water etc. Also important is data of vulnerable and hazardous sites like low-lying areas, private, commercial and public buildings oil storage installations, industrial sites, reclamations, etc and refugia like schools and hospitals (although most of the local responsibility during emergencies is the responsibility of village authorities. The DMO is responsible more for mitigation, preparation and information dissemination during the response and recovery phases. At present, during an emergency, the authorities activate the National Coordination Centre, located in the Police Headquarters, Apia. The National Disaster Council determines priorities for response during an emergency. This council comprises the PM (as chair), all cabinet ministers, all ministry CEOs, Red Cross and the DMO (as secretariat). Disaster response is by agencies executing their normal functions such as, police/fire for rescue, PWD for roads, EPC for electricity, etc. DMO would like to acquire some basic resources for use during emergencies like communications equipment,

shelters, generators, tools and equipment, food and water to sustain the NCC during times of crisis, and a GIS to input and analyse information.

c. PUMA Sustainable Development Section

The Sustainable Development Section of PUMA (working under the Planning and Urban Management Act 2004) is responsible for processing all development consents, evaluating their environmental impact and recommending approval or otherwise to the Planning and Urban Management Board. Activities requiring consents include:

- Subdivision (Technical Services Division, MNREM also involved)
- Building
- Land clearance
- Sand mining (Land Management Division, MNREM also involved)
- Reclamation (Land Management Division, MNREM also involved)

Each village has a pulenu'u or mayor who acts as an intermediary between the people and central government. Every month there is a meeting of pulenu'u, hosted by the Department of Internal Affairs. In this forum, government projects are explained (for promulgation to the people) and the concerns of, and issues for, villages are made known to central government. Many of the consents handled by the Sustainable Development section are vetted by pulenu'u on behalf of their villages, because of their inevitable affect on the large area of customary land in Samoa.

The transfer of PUMA, including its Sustainable Development Section, to the Ministry of Works, Transport and Infrastructure could place their function of environmental assessment in conflict with the Ministry's primary role of development. It is also considered that Sustainable Development's Section function of environmental monitoring is well away from the core role of the MWTI. There is some speculation and optimism that this move might lead to subsequent restructuring to create a standalone planning and environmental monitoring agency.

d. MNREM Terrestrial Biodiversity Section

The Terrestrial Biodiversity Section is concerned with the biodiversity of all island ecosystems. It undertakes monitoring of birds, bats, reptiles and forest extent. The section also does some limited marine monitoring. Monitoring sites and techniques are not well standardised yet and nor do they use GIS for storage and analysis.

National ecosystem mapping was done by the University of Hawaii in 1991. The NZ Department of Conservation also did ecological surveys in Samoa of lowland forests (1991) and subsequently of upland forests (date unkn). Forest cover mapping is also available for 1954, 1989, and most recently, with FAO funding, 2004. There is potential to undertake GIS analyses of these data in conjunction with data on hazard and threat to assist the management of remaining areas of high indigenous biodivesity.

Public awareness and education is an obstacle to successful conservation of indigenous ecosystems. Incursions into indigenous forest for firewood and agricultural land is constant and clearance of both forest and mangroves for development continues. Many still regard these areas as a resource to be used without consideration of their other values. Hence, public awareness of their fragile state, and their contribution to a healthy island

environment, needs to be raised through publicity and education. Two social structures are key to the success of any publicity/education campaign, schools (because children are both key to the future and a means of educating adults) and Pulunu'u with their village fono (because almost all remaining indigenous ecosystems are in customary ownership).

The move by MNREM to undertake waste disposal is seen as positive and beneficial. In addition, limited recycling (of drink bottles) has begun as well as metallic (steel and aluminium cans). Large inorganic waste (appliances, cars, etc.) is also collected periodically in order to ensure safe disposal.

e. Electric Power Corporation of Samoa

EPC presently use accounting software to maintain an inventory of assets, but would like to move to a GIS-based asset management package. They would be keenly interested in accessing reputable spatial data of buildings, road centrelines (if edges are not available), land imagery, and property boundaries. They anticipate having to input poles, transformers, underground lines junction boxes, switches, etc.

Of the other utilities companies, SamoaTel is viewed as a maturing user, having been running GIS for two years, and Samoa Water Authority also have a MapInfo/ArcView system

f. MNREM Watershed Section

This section was part of the Forestry Division until 3 years ago and will now become part of the Forestry Division within MNREM. Now its focus is more on whole ecosystems (from the source to the sea) rather than primarily forests. Their function is advocacy in respect to watershed management. Data is collected by ground survey. They have a working relationship with Samoa Water Authority who has done some water quality monitoring – work that the Watershed section would like to see expanded.

Maps and map information are tools of the trade for this section. Although their use of GIS has been limited to date, they foresee potential for this as a powerful tool to analyse and depict land use and vegetation change, to facilitate data management and storage, and as a medium for the integration of disparate data and disciplines in whole catchment studies. The section views the Vaisigano Catchment studies done with FAO funding in the mid 1990s as a good example. They are also trying to promote the concept of watershed protection areas on customary land in for example the Loimata o Apoula area.

g. MNREM Parks and Reserves Section

The Parks and Reserves Section have 4 salaried staff and 38 wageworkers to manage all the park and reserve lands in Samoa. It also has a keen interest in the state of ecosystems outside reserves as a barometer of condition, trend and threat to the reserve system. There is hope that the present reserve system may be expanded from the present single national park (O Le Pupu-Pu'e) to include a park around Lake Lanoto'a and perhaps some watershed management areas.

A management plan is in place for the O Le Pupu-Pu'e National Park, and a management plan is in preparation for the whole reserve network. Samoa's ecosystems, while not endangered, have suffered a slow decline in the face of shifting agriculture and development. Anecdotal accounts point to the incidence of drought and water shortages as

evidence of the reduction in the ability of shrinking forests to regulate the hydrology of the islands. Such assertions fuel the debate for a mid-upper slope watershed management zone for both Upolu and Savaii. Other threats to environmental stability include exotic pests and weeds. Merremia vine (M. Peltata) is of particular concern in successional vegetation and disturbed land.

While not yet users of the GIS, Parks and Reserves can visualise uses for GIS in their work.

h. MAF/MNREM Forestry Division

Forests, mainly indigenous forests, cover 105 000 ha or 37.2 percent of the country's total land area. In the 1990s, the rate of deforestation in Samoa was around 3,000 ha or 2.1 percent per year. On the global scale, this is quite high. The main causes of deforestation and forest degradation are uncontrolled logging operations and conversion of forest lands to agricultural land uses. Currently, this is the number one forest-related issue in Samoa.

Samoa has about 5 000 ha of forest plantations. Plantation establishment began around 1974 with the planting of mahogany and Australian red cedar. Teak was also established during German colonial times. More than 90 percent of the plantation estate was destroyed by tropical cyclone Val in 1992. Samoa has banned the export of unprocessed logs. Commercial logging in natural forests on the largest island, Upolu, has also been banned. Samoa produces sawnwood for its domestic market. Other wood and paper products are imported. Much new forestry is now at the village level where Forestry Officers provide the first 100 seedlings free and demonstrate planting and silvercultural techniques, to empower landowners to plant and manage their own small woodlots.

The Forestry Division has a fully-functioning GIS (Samoa Forest Resource Information System, SamFRIS) built under an FAO funded project due to end in June 2005. With the completion of the latest forest inventory survey in 2004 there is a convenient time series of spatial forest layers dating from 1954, 1987 and 2004. SamFRIS are believed to have digitised catchment boundaries. A significant and unwelcome cost encountered when setting up SamFRIS was the data charge imposed by MNREM Mapping Section for basic data.

i. Meteorological Division

The Meteorological Division, now a part of MNREM, undertakes weather station recording, daily forecasting, and modelling of extreme events like storm track prediction, tsunami and storm surge inundation, and flood modelling. Extension activities are focussed on public education and preparedness to develop a capacity for communities to recognize and respond to emergencies when they occur.

The Met Division will become the host site for a Mapserver (Appendix C) being installed by SOPAC with EU funding. This presents both an opportunity and a challenge to the GIS community in Samoa. Current policies on custodianship and access will be strained as demand builds to populate the Mapserver with data.

Samoa has an ICT advisor (Fuatai Percell) who reports direct to cabinet. Fuatai is strongly supportive of the Mapserver as a potential central hub where spatial information is available as a key element of e-government.

j. South Pacific Regional Environment Programme (SPREP)

SPREP have an agreed division of labour with SOPAC whereby the latter supply all technology services and SPREP concentrates on the applications of the data. SPREP also facilitates SOPAC's training activities in the Pacific.

SPREPs work areas include:

- Environmental and sustainability development planning
- Systematic integrated approach to planning (environmental/social/economic)
- Encouraging better and wiser use of diminishing financial resources

SPREP promotes a multi-nodal approach to data custodianship with ready access to online catalogues and metadata.

2.3.6 Resource and Disaster Management Applications of GIS

1. Compiling a disaster management GIS for use by the DMO for planning during normal times and monitoring and reporting in times of crisis (key contact Filomena Nelson).
2. Prepare a hazards atlas from existing and new survey (inc landslide, alluvial flooding, storm surge flooding, reclamation areas (vulnerable to liquifaction?) etc (key contact Fetolai'I Alama).
3. Digitise consents (in collaboration with C5?) (key contact Fetolai'I Alama).
4. Undertake a national, spatial, vulnerability analysis of remaining areas of high indigenous biodiversity (key contact Tepa Suaesi).
5. Prepare an environmental resource kit for secondary schools containing maps, overlays and study sheets. Would require sponsorship to offset printing cost (Western Union, ANZ, National Bank of Samoa, Westpac, Pacific Forum Line, Mobil, Fiji Bunjap?) (key contact Tepa Suaesi).
6. Undertake an integrated watershed management scoping study that combines the interests of MNREM biodiversity, watershed, sustainable development and parks & reserves sections

2.4 Emergency Management Workstream

As a result of information learned during the Inception review visit in early March 2005, the methodology for the emergency management workstream has been refined and enhanced. These refinements are discussed below and reasons given for any departure from the original methodology in the technical proposal.

The original methodology consisted of 12 separate tasks. We have combined two of these tasks together and have now identified 10 separate work elements which are discussed below. References to the original numbering in both the RFP and the original methodology are given alongside each work element.

2.4.1 DM 1 – Review Workshop & Mandate (RFP Clause 29/ Proposal ref DM 1.1)

The emergency management review workshop is an important milestone for the project.

The intention of this workshop is to review the scope of work and programme for this workstream together with recommendations arising from the MCDEM review. We would also like to present four discussion documents at this workshop:

1. Options regarding changes to national disaster management structures (key committees and working groups, their membership and terms of reference etc),

2. Key features and best practice principles of generic emergency management legislation,

3. Options regarding organisational and physical location of the DMO,

4. Key elements of agency response plans.

We envisage that the outcomes of the Review Workshop to be:

- An agreed work programme (methodology and key dates) in the form of a full Workshop Report
- All departments and agencies understanding their involvements at the different stages of the project, their required level of inputs, and key decisions to be made and the associated options
- Feedback on suggestions and options outlined in specific discussion documents

The discussion documents produced, along with the associated recommendations, will be independent viewpoints (as required by the RFP). However the final outputs (NDMP, legislation and DMO fitout) will reflect the consensus views of the key agencies involved.

In terms of format, we recommend that the Review Workshop comprise two separate workshops as follows:

Day 1 (full day): (proposed date Mon 20 June)

Workshop involving core project participants (eg. MNREM; PUMA; DMO; Meteorological Division; MWTI, Ministry of Women, Community & Social Development; Ministry of Police, Prisons & Fire; Ministry of Health; Red Cross; NZ MCDEM; SOPAC; IDA).

Day 2 (half day): (proposed date Tues 21 June)

Workshop with utility agencies (eg. EPC; Airport Authority; SamoaTel; Ports; plus DMO; Meteorological Division; NZ MCDEM; SOPAC) to outline their specific involvement in the project; discuss response co-ordination arrangements; and brief them on the agency response planning process, including an introduction to the key response plan interagency elements discussion document.

We recommend that the Review Workshop be held during the week of 20th June 2005. This is two months later than the RFP requested. The main reason for this delay is the 12th Pacific Regional Disaster Management Meeting, to which the DMO principal officer, Filomena Nelson is going. This meeting is in Papua New Guinea from 6-8 June. A number of themes at the meeting relate directly to the project, and we want to make sure that any policy frameworks or structures endorsed by the meeting are incorporated into the discussion documents presented at the Review Workshop. We recommend that a member of the consultant team attend the PNG meeting (at our cost) and work alongside the DMO

principal officer and other Samoan Government representatives. The meeting also presents an opportunity to spend time with SOPAC and MCDEM representatives to discuss emerging trends in Pacific disaster management and how these relate directly to any changes being recommended for Samoa. MCDEM are presenting Response Guidelines for Small Island Development States at the meeting, which will be of relevance to the development of the NDMP (component DM2). The attendance of a member of the consultant team is supported by MCDEM (refer their letter dated 18 April 2005 – Appendix F).

Scope of Work (Sub Tasks):

- Develop Review Workshop approach and process.
- Conduct Review Workshop(s)
- Report on outcomes

Output:

- Review Workshop Report summarizing key outcomes of the meeting, confirmed project methodology and feedback on discussion documents.

2.4.2 DM 2 – Revised NDM Plan (RFP Clause 30/ Proposal ref DM 1.2)

The RFP calls for a revised NDMP within 3 months of commencement of the contract (7 May). During our inception visit, a number of agencies expressed the view that the arrangements in the existing Plan for the response phase need to have a fresh look and be more focused. Within the scope of the project proposal, this involves *taking the existing Plan largely as is*, and focusing on those elements that need changes.

The revised Plan needs to encompass all of the recommended structural changes to disaster management arrangements for Samoa. The inception interviews have identified a number of issues and considerations that need to be carefully worked through and widely consulted, including at the political level (noting the linkage with the preparation of legislation). Other feedback received during our inception visit indicated a preference for more consultation on the Plan than has occurred during the development of previous drafts of the NDMP. A staged approach is therefore recommended, including the preparation of a discussion document for consideration at the Review Workshop (DM 1) and at subsequent agency workshops.

We also recommend that the structures be tested during the simulation planned for August (DM 9) prior to producing a draft revised NDM Plan by the end of October 2005. A more formal consultation process is suggested over the period November to April 2006, with a final NDM Plan produced by June 2006.

We believe that the process as outlined above will result in a Plan with a greater level of buy-in from stakeholders and a greater level of awareness about the national disaster management arrangements.

None of the agencies interviewed[1] during the Inception visit could provide any tangible information in summary form relating to the hazards and consequences that Samoa faces.

[1] A list of persons met with is contained in Appendix G.

We were able to locate a couple of reports relating to volcanic hazards (Savai'i) and flooding (Apia), however, there seem to be significant gaps for some hazards (such as earthquake and non-natural hazards). A basic indication of *likelihood* and *consequence* for the principal hazards (natural and man-made) represents base information for risk management and planning purposes. While a summary of these hazards suitable for emergency management planning (specifically the NDMP) is provided for in the proposal, the collection and compilation of the base information needed to put such a summary together is not.

We recommend that the DMO or other staff from MNREM or MWTI (e.g. PUMA or Met Division staff) compile what hazard information there is available (both natural and man-made) from existing material and historical records. This would include working with agencies such as the Fire Service (hazardous substances), Ministry of Agriculture, Forests and Fisheries (plant pests and animal diseases), Ministry of Health (epidemics) etc. To be useful for the development of the NDMP it will be needed by the end of August 2005. We can assist this process by providing a template indicating what information is required and how it should be presented. We suggest that a small workshop be held with the DMO, staff from the Meteorological Division and also some of the other agencies listed above to determine how the information can be compiled. This workshop could be held as part of the Review Workshop series of meetings during the week of 20th June 2005.

Scope of Work (Sub Tasks):

- Review existing NDMP
- Produce discussion document including options regarding national disaster management structures for June Review Workshop
- Assist with a workshop to explore how hazard information can be collated for a hazard summary
- Meetings and targeted consultation with key Government departments and stakeholders
- Draft revised NDMP
- Targeted consultation with stakeholders and public consultation
- Revised NDMP

Output:

Revised NDMP with additional content as necessary and with national structures understood by government departments and stakeholders.

Hazards summary suitable for emergency management planning (if hazard information is able to be compiled by end August 2005).

2.4.3 DM 3 – Legislation Review (RFP Clause 37/ Proposal ref DM 3.1)

A discussion document summarising key features and best practice principles of generic EM legislation will be presented at the Review Workshop. Development of the legislation will be undertaken by a specialist legal draftsperson and it is recommended that this be undertaken with input from MCDEM. Consultation on the proposed coverage of the

legislation will need to integrate with the revision of the NDMP, so that any issues that come up during stakeholder plan development and simulations can be addressed.

Scope of Work (Sub Tasks):

- Produce discussion document summarizing key features and best practice principles of generic emergency management legislation.
- Develop proposed outline and coverage of legislation
- Meetings and targeted consultation with key Government departments and stakeholders
- Draft legislation and supporting cabinet paper

Output:

- Draft emergency management legislation.

2.4.4 DM 4 – Specification for DMO Office/ Equipment (RFP Clause 31/ Proposal ref DM 1.3)

The RFP requires outline specifications for dedicated offices for the DMO within 3 months of commencement (7 May).

However, the DMO Office arrangements need to take into account the recommended structural changes to disaster management arrangements for Samoa (in particular the relationship between the DMO and Government). This is likely to involve several options with various strengths and weaknesses. Analysis and consultation preferably needs to be undertaken in conjunction with work element DM2, and the preferred option is likely to become more apparent as time progresses.

A discussion document on the various options will be presented at the Review Workshop. Some recommendations for immediate equipment needs will be made, which will be independent of the DMO physical location. We recommend that an outline fit-out not be finalised until September 2005.

Material to the discussion of the location, functions and fit-out of the DMO, is the relationship of the DMO with the National Coordination Centre (NCC). Discussions with various agencies during the Inception visit highlighted the key function that the existing National Coordination Centre plays in the response to a disaster event. It is intended to be the hub of the response operation, and hosts the national emergency communications facilities. In discussions with agencies in which the NCC was raised, most if not all, had a preference that the NCC should operate as it was originally intended. Moreover, the option of basing the DMO in the NCC was raised in several discussions, as well as being a specific recommendation of the MCDEM report.

Given that several agencies have an operational interest in this facility (the Police and MSA), a systematic review of how it is currently intended to operate (including communications arrangements) and the effectiveness of those functions would seem worthwhile for both DM4 and DM5.

However as the RFP only made a passing reference to this facility within the framework we were requested to work within (paragraphs 29 through 40), such a review was not allowed for in the proposal.

MWTI's letter of 13 April 2005 (See Appendix D) suggests that the MCDEM Review report (July 2004) has already provided discussions on and a summary of the NCC, implying that it would be a relatively straightforward task to include a review of the NCC within the current scope of work. MCDEM's letter of 18 April 2005 (Appendix F), states that a review of the NCC is *"pivotal to the effectiveness of existing or new disaster management arrangements and any review of the disaster management structure"* implying that this piece of work has yet to be undertaken.

While we can confine our review to the DMO, we would strongly recommend that the scope of work be extended to include consideration of the NCC and include:

- A review of how the NCC is currently intended to operate (including communications),
- A recommended fit-out for the NCC which enables it to be used for its intended purpose,
- Standard operating procedures for the activation of the NCC,
- Process for recruiting and training NCC staff.

The additional work recommended assumes that the Government is supportive of using the current facility for its intended purpose, which we understand to be the case.

Scope of Work (Sub Tasks):

- Produce discussion document outlining physical options for DMO office arrangements.
- Consultation on DMO Office arrangements with key government departments and stakeholders.

Output:

- Fit-out specifications for the DMO.
- Fit-out specifications for the NCC (if expanded scope is approved)
- Standard operating procedures for the activation of the NCC (if expanded scope is approved).
- Process for recruiting and training NCC staff (if expanded scope is approved).

2.4.5 DM 5 – Communications Equipment Supply Specification (RFP Clause 32/ Proposal ref DM 1.4)

The RFP requires specification of radio communications equipment within 3 months of commencement (7 May). However, the RFP was not specific around the operational scope of the required emergency communications equipment. The shortcomings of the current National Co-ordination Centre communications arrangements identified during the inception interviews however indicate that the national requirements need a comprehensive review. This review is recommended to be undertaken as part of the extension to the scope of work as discussed above. The specification is also highly

dependent upon physical location and decisions taken in relation to the NCC and the DMO, which need clarification before Consultel as technical sub-consultant become involved. An early preparation of the specification and associated procurement would have a high associated risk of failure to meet the real needs. For this reason we recommend that a final specification be prepared by the end of October, with a review of this with affected agencies during November 2005.

Scope of Work (Sub Tasks):

- Produce briefing document on communication requirements.
- Needs analysis with respect to Pacific best practice.
- Outline specification of radio communications equipment with options and recommendations.
- Findings from simulations undertaken in August and November used to verify or further refine specification.
- Review specification with affected agencies.

Output:

- Communications specification (operational scope to be agreed).

2.4.6 DM 6 – DMO Institutional & Staff Development (RFP Clause 33/ Proposal ref DM 2.1)

The approach to this work element remains as per the original methodology. The focus will be on a long term sustainable approach to professional development as well as providing mentoring by the project team for the duration of the contract. A better understanding of the functions of the DMO will be gained through development of the NDMP (DM2) and position descriptions will be developed. A training needs analysis will be undertaken in conjunction with SOPAC, and a professional development strategy will be developed which will look at opportunities for partnering arrangements with other emergency management organisations in NZ, Australia and elsewhere.

The position descriptions, DMO fit-out (DM4), and professional development strategy will be packaged together as part of a DMO Business Plan. The development of a strategic component to the Business Plan has not been allowed for in the proposal. The strategic component involves an analysis of gaps in existing disaster management programmes and activities, prioritization of the gaps to be filled, and scheduling of work over a nominal (5 year) timeframe. This would identify and justify specific resourcing and budget items beyond the deliverables for item DM4. We will work with the DMO, as part of the peer mentoring programme to enable and support the DMO to develop this strategic component of the Business Plan. This may only involve some adjustments to the work programme the DMO has already developed.

Scope of Work (Sub Tasks):

- Analysis of DMO functions and roles
- Development of position descriptions
- Consultation on DMO position descriptions with key government departments

- Scope professional development requirements and identify opportunities for ongoing professional development.
- Draft professional development and mentoring plan.
- Work with DMO during mentoring sessions to develop strategic component to Business Plan.
- Identify any professional development implementation issues during term of contract.
- Review and update professional development plan at end of contract.

Output:

- DMO Business Plan, containing:
- Position descriptions
- Professional development plan
- DMO fit-out (from DM4)
- Strategic 5 year work programme (developed by DMO)

2.4.7 DM 7 – Community Education and Development (RFP Clauses 34 & 38/ Proposal ref DM 4.2)

The approach to this work element remains as per the original methodology. Community education and awareness raising will be undertaken as part of the village level consultation for the CIM Plans/SMP completion under Task NRM 2.3. A longer term education strategy will also be developed with the DMO. It is intended that the delivery of education material during the CIM Plan consultation be undertaken by the CIM Plan teams. It is strongly recommended that the DMO staff participate as team members, subject to their availability. This would allow the DMO staff to build up a picture of the vulnerabilities of the villages and districts, and contribute to their professional development.

During our inception visit, the concept of village or district response plans was suggested several times. We think this concept has merit. During the preparation of materials for the CIM Plan workshops, we will develop an outline of what should be covered in a village response plan. We will work with the DMO and CIM Pan teams to investigate the possibility of incorporating a response plan component to the CIM Plans, or if this is not feasible, recommend a subsequent process for their development.

Scope of Work (Sub Tasks):

- Identify existing education resources and delivery methods.
- Develop briefing materials for CIM Plan teams to deliver.
- Consider elements of a village response plan for possible incorporation into CIM plans.
- Participation in selected CIM plan consultation
- Draft community education strategy
- Consultation on education strategy with stakeholders

Output:

- CIM Plan briefing materials

- Process for the development of village response plans
- Community Education Strategy

2.4.8 DM 8 – Agency Education & Response Planning (RFP Clauses 35, 36 & 38/ Proposal ref 2.3, 4.1)

The approach to this work element remains as per the original methodology. We will prepare a guidance document on the key elements of agency response plans, covering aspects such as:

- Linkages with national DM arrangements,
- Interagency linkages,
- Own continuity/ operational arrangements,
- Minimum readiness/ preparedness expectations.

We will meet with individual agencies and also deliver combined agency workshops. The workshops will focus on the first two of the bullet points above, as these were the areas that the inception visit interviews revealed were the main vulnerabilities or gaps in agency planning. The workshops and meetings will also provide an opportunity to consult on the revised NDMP (DM2).

Inception visit interviews also indicated that there was quite a lot of variability in terms of agency response plans – some seem well developed, others don't exist, or are out of date. The emphasis will be on assisting agencies to review and revise their own plans. A major risk to the RFP requirement to have these plans 'completed' within 18 months, is the extent to which individual agencies have the commitment to ensure their plans are completed within the required time frame. This risk will in part be managed by involving agencies in combined workshops so they can be motivated by how other agency plans are developing.

Scope of Work (Sub Tasks):

- Prepare guidelines on the key elements of agency response plans.
- Prepare and deliver agency workshops grouped in sectors (emergency services, government departments, utilities, private sector etc)
- Hold individual meetings with agencies as both a precursor and follow-up to the workshops.
- Involvement of key agencies in the simulations as part of awareness and education about national emergency management arrangements.
- Follow-up on plan development and assist where needed.
- Workshop at conclusion of process for all agencies to review progress and celebrate achievements.

Output:

- Report summarizing progress in the development of agency response plans, and recommending future follow-up.
- Updated agency response plans, and greater awareness by agencies of their role in national emergency management arrangements.

2.4.9 DM 9 – Disaster Simulations (RFP Clause 39/ Proposal ref DM 5.1)

Disaster simulations are considered an important component to several of the work elements, including revision of the NDMP (DM 2), development of the legislation (DM 3), DMO location and positioning (DM 4), Communications Specification (DM 5), and Agency Education (DM 8). For this reason we propose that the 2 programmed simulations be run early in the project, with both completed by November 2005. It is likely that additional simulations will be beneficial, however, we will wait until the outcomes of both simulations before recommending additional simulations be undertaken.

The need for more simulations was a common theme from our inception interviews. Varying sized simulations (drills, tabletops exercises, regional exercises etc) were all identified as being critical to the development of Samoa's disaster management capability. We propose that the 2 simulations planned for August and November focus on different hazards. The August simulation will be based around an earthquake scenario with the November simulation based on a cyclone in preparation for the cyclone season.

Cyclones dominate response planning in Samoa (understandably), however, other hazards will occur and disaster management arrangements need to be tested in a variety of scenarios to ensure the will work in a variety of different circumstances. To assist the DMO to develop the skills to run and debrief simulations, we propose to take the lead in the first simulation, with the DMO in support. For the second simulation we recommend the DMO take the lead and we will advise and assist where necessary.

Pre-planning for the simulations has already begun and an outline of the objectives of each simulation is given below. The simulations will be discussed in more detail as part of the series of Review Workshop meetings during the week of 20th June 2005. Both simulations involve the use of the National Coordination Centre (NCC), and issues around its current and future use will need to be resolved before the simulations can proceed as planned.

Disaster Simulation 1: August 2005

Objectives

- To exercise the activation, set up and establishment of the National Co-ordination Centre facilities
- To exercise the national disaster management structures
- To test the effectiveness of existing communications linkages and communications equipment
- To provide opportunities for DMO personnel to develop skills in simulation planning and delivery.

Scenario

The scenario will be a moderate earthquake causing widespread damage and injuries. The scenario impacts will necessitate the activation of the National Co-ordination Centre. Participants will respond to the National Co-ordination Centre, set up their working areas, and establish the necessary management and reporting structures. The management

structure will be expected to activate, manage scenario activities, and ensure the NCC is operational for a full day.

Recommended Participants

DMO, MNREM, PUMA, Meteorological Division, NDC representation, Police, other selected lead response agencies.

Disaster Simulation 2: November 2005

Objectives

- To exercise the National Co-ordination Centre facilities
- To test the links between NCC management structures and operational response agencies
- To provide an opportunity for agencies with a role in disaster response to implement their response plans.
- To exercise the Cyclone Operational Response Procedures in the early stages of the cyclone season
- To provide the NDMO personnel with an opportunity to prepare for and deliver a simulation exercise.

Scenario

The scenario will be a cyclone affecting islands of Samoa causing widespread damage and injuries. The NCC will have been established during the warning period prior to the exercise beginning, and the exercise will focus on response activities that begin shortly before the impact of the cyclone. The exercise will be a mixture of operational and table-top workshop activities.

Recommended Participants

DMO, MNREM, PUMA, NDC representatives, utilities, other key agencies with a disaster response role (e.g. those listed as part of National Disaster Management Working Group), Meteorological Division.

Simulation Debriefs

In order to ensure lessons are learned from each exercise, a series of debriefs will be held. On the day of the exercise participating agencies will be asked to provide their initial feedback on what processes worked well, and which will require more training or preparation. On the day following the exercise, each agency will be given time to discuss the lessons they have learned as part of a full debrief. A debrief report will be prepared.

Scope of Work (Sub Tasks):

- Prepare outline and timing for two interagency simulations.
- Conduct simulation and debrief in August 2005.
- Support DMO to conduct and deliver simulation in November 2005.

Output:

- Reports on both simulations, which will include debrief notes, lessons learned, and recommendations to any changes to procedures, linkages with other agencies, or national structures as a result.
- Report recommending format and programme for future disaster simulations.

2.4.10 DM 10 – Disaster Insurance (RFP Clause 40/ Proposal ref DM 6.1)

The approach to this work element remains as per the original methodology.

Scope of Work (Sub Tasks):

- Review findings from the joint SOPAC/ World Bank/ AusAid "Catastrophe Insurance Pilot Project" currently set up in Port Vila.
- Prepare recommendations and report on preliminary review.

Output:

- Report on review with recommendations as to the implementation of a national disaster response fund or disaster management insurance.
- Presentation of findings to key government departments and stakeholders.

2.4.11 Decisions Required

During the inception visit and consequent development of the methodology, a number of additional work items emerged, which we considered material to the overall success of the project. These were discussed in the draft Inception Report and at the Inception Workshop on 14th April 2005. Feedback from the workshop and also in letters from MWTI and MNREM (appended to this report) have clarified some matters and the methodology has subsequently been revised as a result.

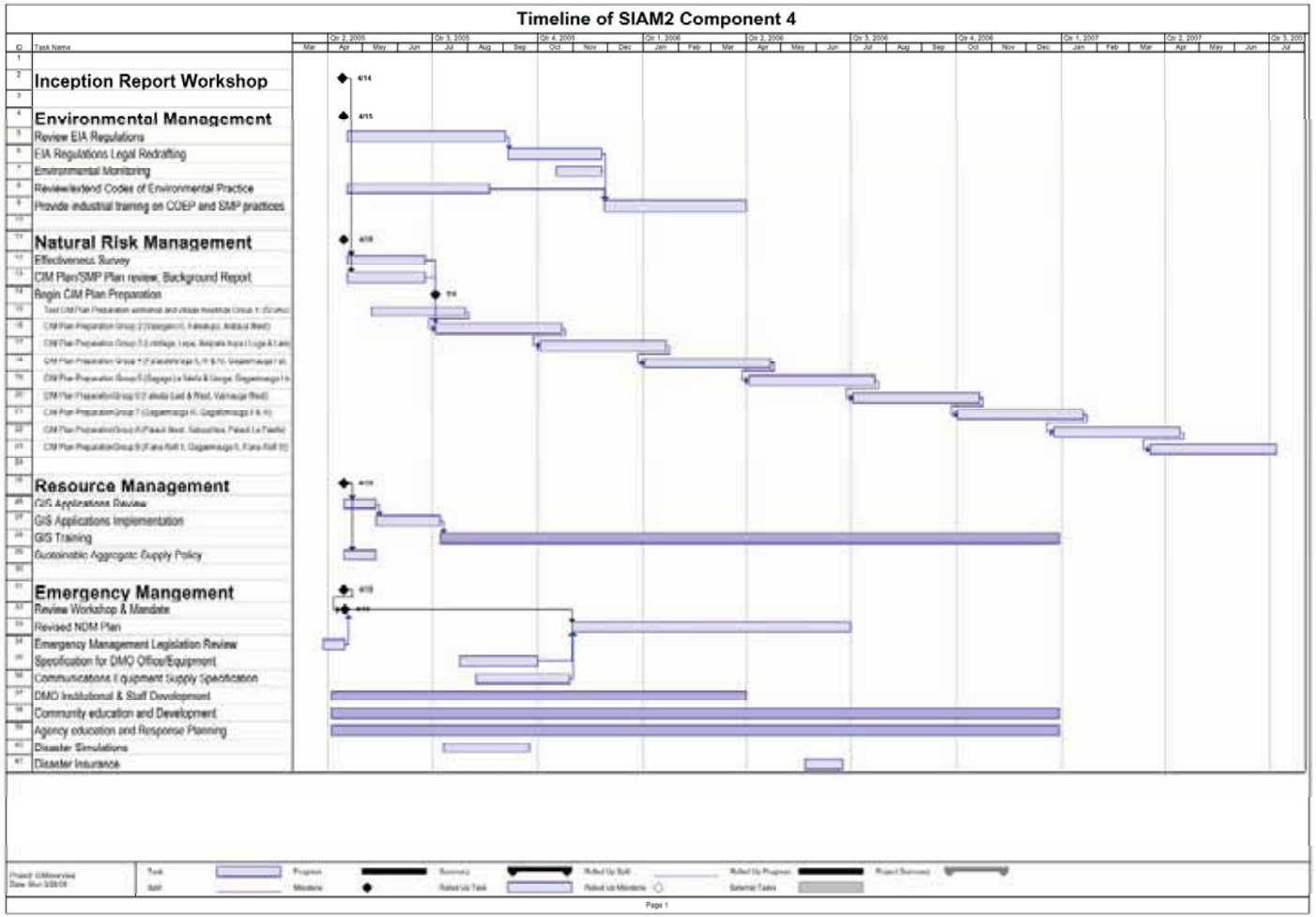
There remain some matters which require a decision or further clarification and these are discussed under the relevant sections of work above. We look forward to your consideration of these items. There is also the opportunity to discuss these further at the Review Workshop during the week of 20th June 2005.

3 Work Programme and Deliverable Outputs

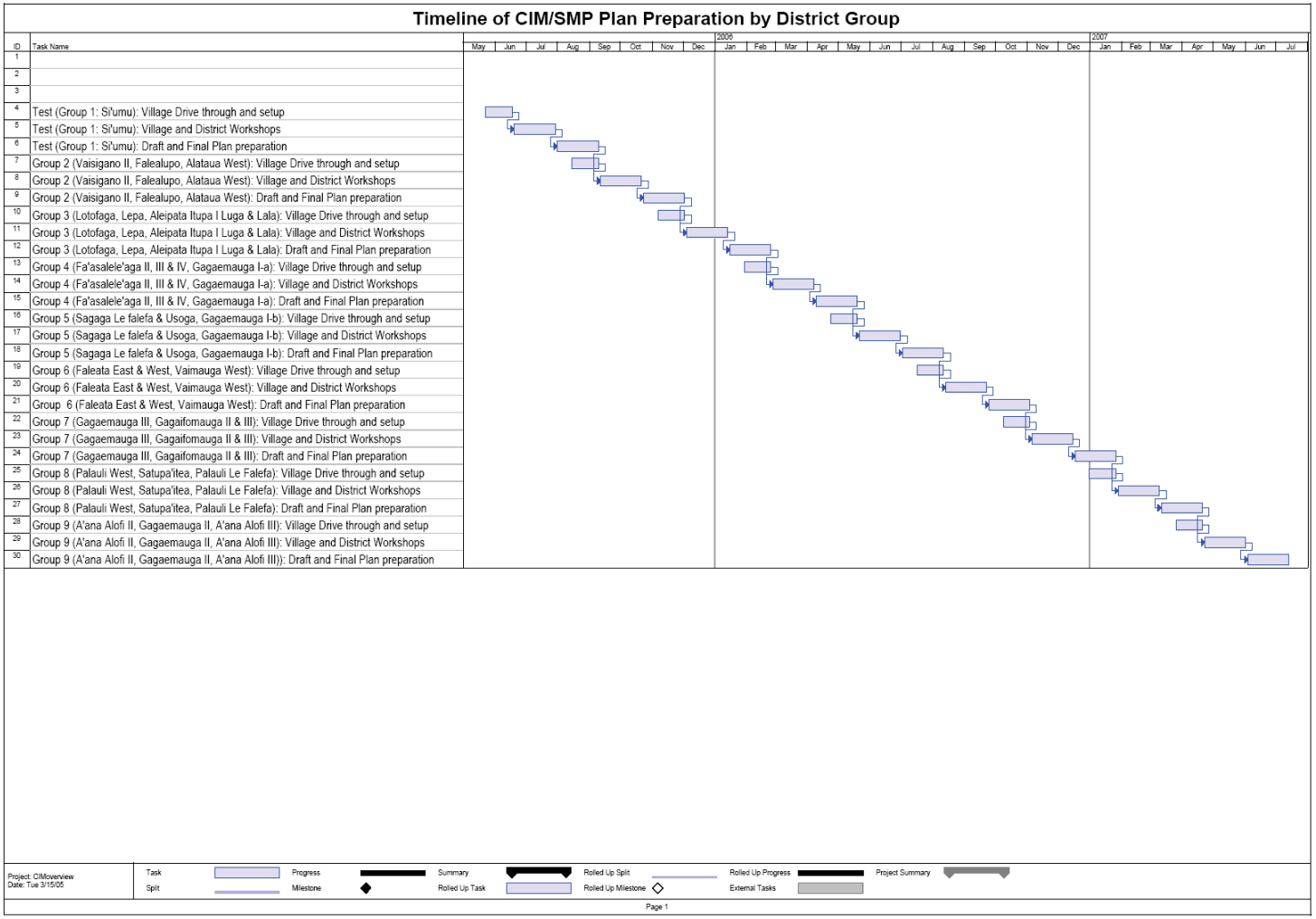
3.1 Introduction

Our work programme with the exception of the Emergency Management workstream, remains substantially as proposed in our Technical Proposal. We provide below a summary programme for the whole project and detailed programmes for the Natural Risk Management and Emergency Management workstreams. We also provide a generic detailed work programme for a typical district for the CIM Plan works under the Natural Risk Management workstream.

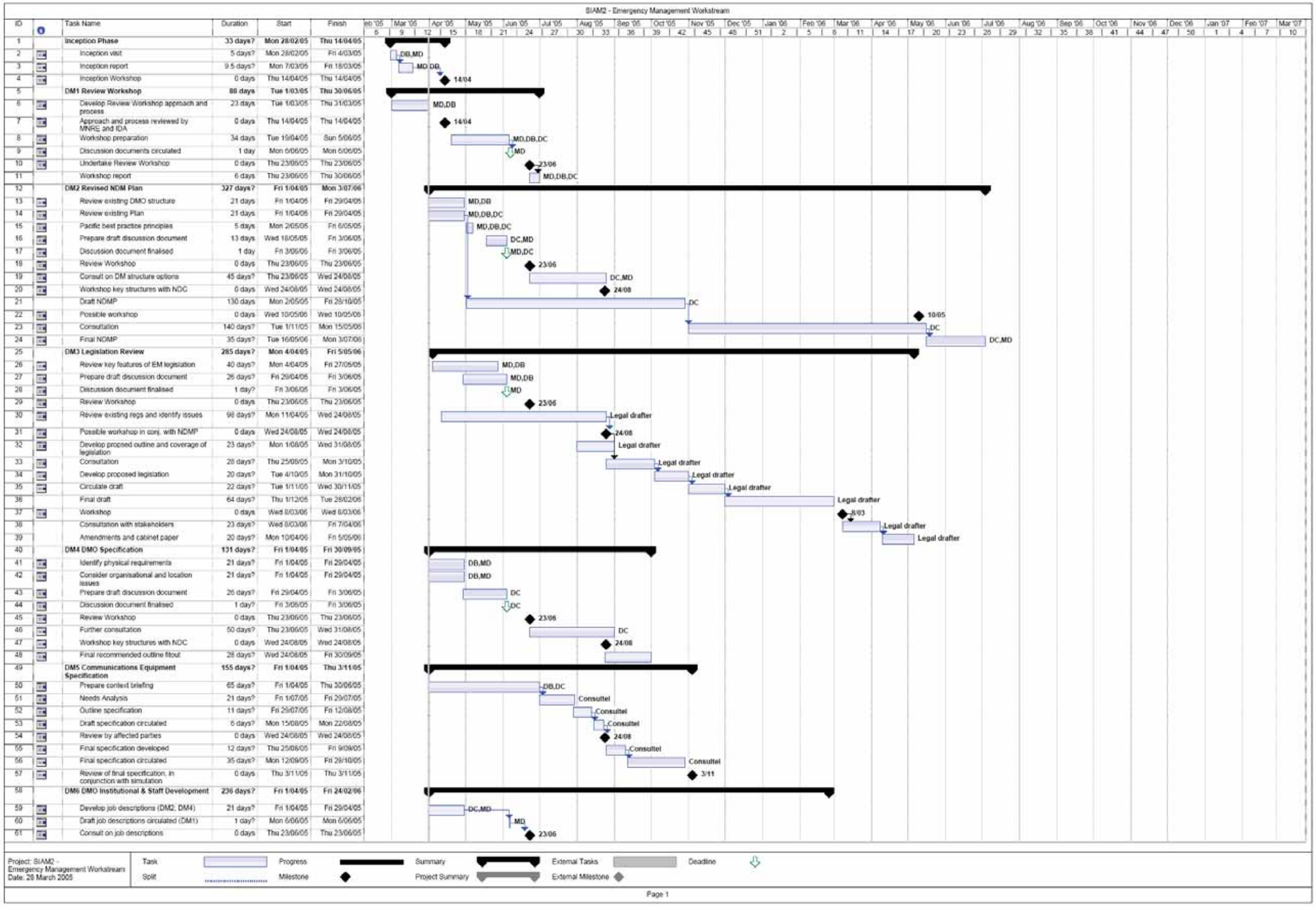
3.2 Overall Work Programme



3.3 Natural Risk Management Work Programme



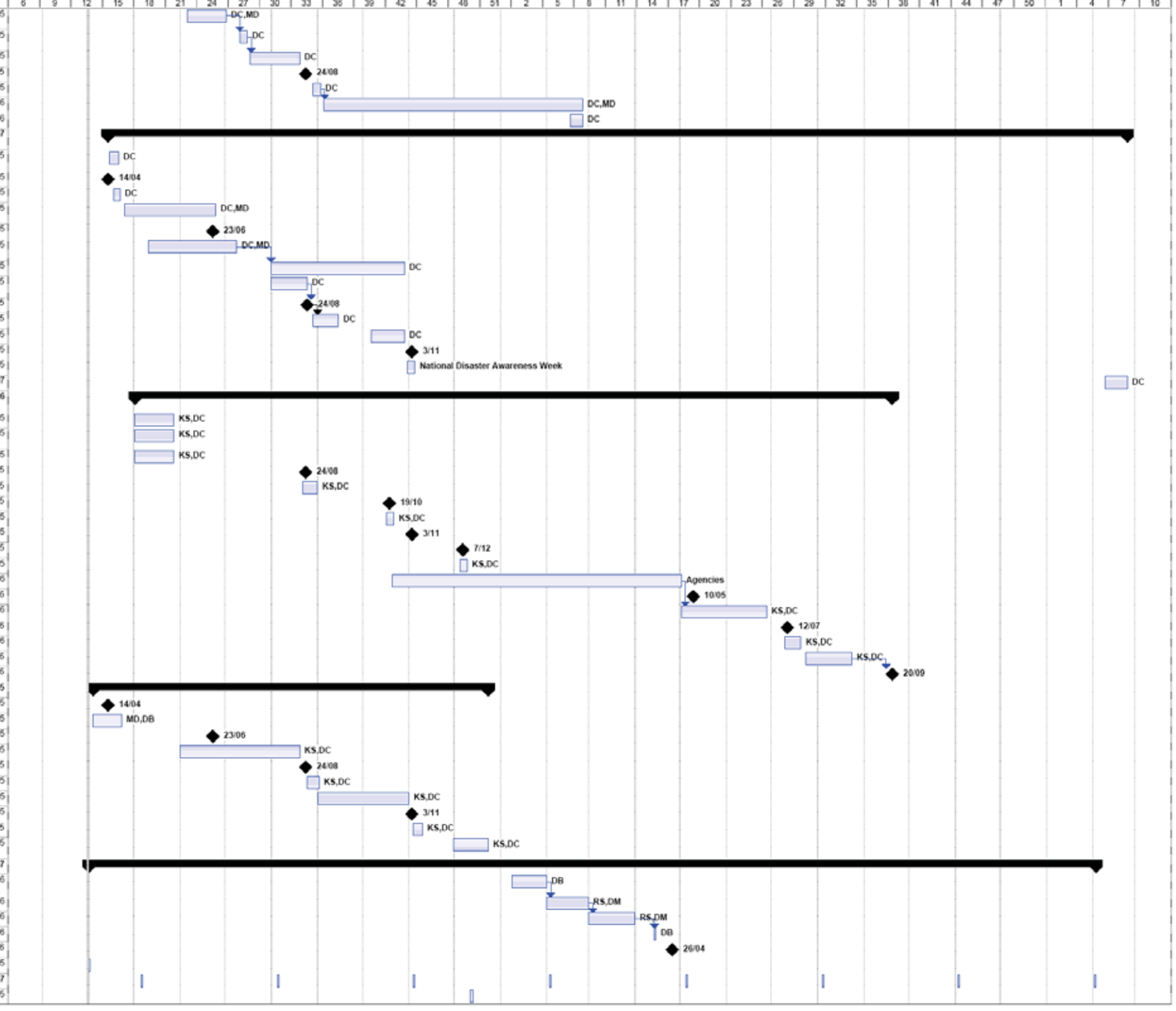
3.4 Emergency Management Work Programme



ID	Task Name	Duration	Start	Finish
1	**Inception Phase**	**33 days?**	**Mon 28/02/05**	**Thu 14/04/05**
2	Inception visit	5 days?	Mon 28/02/05	Fri 4/03/05
3	Inception report	9.5 days?	Mon 7/03/05	Fri 18/03/05
4	Inception Workshop	0 days	Thu 14/04/05	Thu 14/04/05
5	**DM1 Review Workshop**	**88 days**	**Tue 1/03/05**	**Thu 30/06/05**
6	Develop Review Workshop approach and process	23 days	Tue 1/03/05	Thu 31/03/05
7	Approach and process reviewed by MNRE and IDA	0 days	Thu 14/04/05	Thu 14/04/05
8	Workshop preparation	34 days	Tue 19/04/05	Sun 5/06/05
9	Discussion documents circulated	1 day	Mon 6/06/05	Mon 6/06/05
10	Undertake Review Workshop	0 days	Thu 23/06/05	Thu 23/06/05
11	Workshop report	6 days	Thu 23/06/05	Thu 30/06/05
12	**DM2 Revised NDM Plan**	**327 days?**	**Fri 1/04/05**	**Mon 3/07/06**
13	Review existing DMO structure	21 days	Fri 1/04/05	Fri 29/04/05
14	Review existing Plan	21 days	Fri 1/04/05	Fri 29/04/05
15	Pacific best practice principles	5 days	Mon 2/05/05	Fri 6/05/05
16	Prepare draft discussion document	13 days	Wed 18/05/05	Fri 3/06/05
17	Discussion document finalised	1 day	Fri 3/06/05	Fri 3/06/05
18	Review Workshop	0 days	Thu 23/06/05	Thu 23/06/05
19	Consult on DM structure options	45 days?	Thu 23/06/05	Wed 24/08/05
20	Workshop key structures with NDC	0 days	Wed 24/08/05	Wed 24/08/05
21	Draft NDMP	130 days	Mon 2/05/05	Fri 28/10/05
22	Possible workshop	0 days	Wed 10/05/06	Wed 10/05/06
23	Consultation	140 days?	Tue 1/11/05	Mon 15/05/06
24	Final NDMP	35 days?	Tue 16/05/06	Mon 3/07/06
25	**DM3 Legislation Review**	**285 days?**	**Mon 4/04/05**	**Fri 5/05/06**
26	Review key features of EM legislation	40 days?	Mon 4/04/05	Fri 27/05/05
27	Prepare draft discussion document	26 days?	Fri 29/04/05	Fri 3/06/05
28	Discussion document finalised	1 day?	Fri 3/06/05	Fri 3/06/05
29	Review Workshop	0 days	Thu 23/06/05	Thu 23/06/05
30	Review existing regs and identify issues	98 days?	Mon 11/04/05	Wed 24/08/05
31	Possible workshop in conj. with NDMP	0 days	Wed 24/08/05	Wed 24/08/05
32	Develop proposed outline and coverage of legislation	23 days?	Mon 1/08/05	Wed 31/08/05
33	Consultation	28 days?	Thu 25/08/05	Mon 3/10/05
34	Develop proposed legislation	20 days?	Tue 4/10/05	Mon 31/10/05
35	Circulate draft	22 days?	Tue 1/11/05	Wed 30/11/05
36	Final draft	64 days?	Thu 1/12/05	Tue 28/02/06
37	Workshop	0 days	Wed 8/03/06	Wed 8/03/06
38	Consultation with stakeholders	23 days?	Wed 8/03/06	Fri 7/04/06
39	Amendments and cabinet paper	20 days?	Mon 10/04/06	Fri 5/05/06
40	**DM4 DMO Specification**	**131 days?**	**Fri 1/04/05**	**Fri 30/09/05**
41	Identify physical requirements	21 days?	Fri 1/04/05	Fri 29/04/05
42	Consider organisational and location issues	21 days?	Fri 1/04/05	Fri 29/04/05
43	Prepare draft discussion document	26 days?	Fri 29/04/05	Fri 3/06/05
44	Discussion document finalised	1 day?	Fri 3/06/05	Fri 3/06/05
45	Review Workshop	0 days	Thu 23/06/05	Thu 23/06/05
46	Further consultation	50 days?	Thu 23/06/05	Wed 31/08/05
47	Workshop key structures with NDC	0 days	Wed 24/08/05	Wed 24/08/05
48	Final recommended outline fitout	28 days?	Wed 24/08/05	Fri 30/09/05
49	**DM5 Communications Equipment Specification**	**155 days?**	**Fri 1/04/05**	**Thu 3/11/05**
50	Prepare context briefing	65 days?	Fri 1/04/05	Thu 30/06/05
51	Needs Analysis	21 days?	Fri 1/07/05	Fri 29/07/05
52	Outline specification	11 days?	Fri 29/07/05	Fri 12/08/05
53	Draft specification circulated	6 days?	Mon 15/08/05	Mon 22/08/05
54	Review by affected parties	0 days	Wed 24/08/05	Wed 24/08/05
55	Final specification developed	12 days?	Thu 25/08/05	Fri 9/09/05
56	Final specification circulated	35 days?	Mon 12/09/05	Fri 28/10/05
57	Review of final specification, in conjunction with simulation	0 days	Thu 3/11/05	Thu 3/11/05
58	**DM6 DMO Institutional & Staff Development**	**236 days?**	**Fri 1/04/05**	**Fri 24/02/06**
59	Develop job descriptions (DM2; DM4)	21 days?	Fri 1/04/05	Fri 29/04/05
60	Draft job descriptions circulated (DM1)	1 day?	Mon 6/06/05	Mon 6/06/05
61	Consult on job descriptions	0 days	Thu 23/06/05	Thu 23/06/05

SIAM2 - Emergency Management Workstream

ID	Task Name	Duration	Start	Finish
62	Scope pd requirements and identify opportunities	20 days?	Mon 6/06/05	Fri 1/07/05
63	Develop draft professional development plan	5 days?	Mon 11/07/05	Fri 15/07/05
64	Circulate plan	25 days?	Mon 18/07/05	Fri 19/08/05
65	Meeting on plan	0 days	Wed 24/08/05	Wed 24/08/05
66	Finalise plan	5 days?	Mon 29/08/05	Fri 2/09/05
67	Identify implementation issues	125 days?	Mon 5/09/05	Fri 24/02/06
68	Review and update plan	6 days?	Fri 17/02/06	Fri 24/02/06
69	**DM7 Community Education & Development**	**487 days?**	**Thu 14/04/05**	**Fri 23/02/07**
70	Identify existing resources and delivery methods	4 days?	Fri 15/04/05	Wed 20/04/05
71	Inception workshop	0 days	Thu 14/04/05	Thu 14/04/05
72	Participate in CIM Plan planning session	4 days?	Mon 18/04/05	Thu 21/04/05
73	Develop draft long term community education strategy	45 days?	Mon 25/04/05	Fri 24/06/05
74	Review Workshop	0 days	Thu 23/06/05	Thu 23/06/05
75	Develop briefing materials for CIM Plan teams	43 days?	Wed 11/05/05	Fri 8/07/05
76	CIM Plan consultation	65 days?	Mon 1/08/05	Fri 28/10/05
77	Consultation on community education strategy	18 days?	Mon 1/08/05	Wed 24/08/05
78	Workshop with key stakeholders	0 days	Wed 24/08/05	Wed 24/08/05
79	Finalise education strategy	13 days?	Mon 29/08/05	Wed 14/09/05
80	Publicity materials for NDA week	16 days?	Fri 7/10/05	Fri 28/10/05
81	(Simulation)	0 days	Thu 3/11/05	Thu 3/11/05
82	National Disaster Awareness Week	5 days?	Mon 31/10/05	Fri 4/11/05
83	Review and update strategy	11 days?	Fri 9/02/07	Fri 23/02/07
84	**DM8 Agency Education and Response Planning**	**362 days?**	**Mon 2/05/05**	**Wed 20/09/06**
85	Requirements of agency plans	20 days?	Mon 2/05/05	Fri 27/05/05
86	Agree structure and format of agency workshops	20 days?	Mon 2/05/05	Fri 27/05/05
87	Guidelines on response plans	20 days?	Mon 2/05/05	Fri 27/05/05
88	(Simulation)	0 days	Wed 24/08/05	Wed 24/08/05
89	Meetings with individual agencies	8 days?	Mon 22/08/05	Wed 31/08/05
90	Sector Workshops 1	0 days	Wed 19/10/05	Wed 19/10/05
91	Sector workshops 2	5 days?	Mon 17/10/05	Fri 21/10/05
92	(Simulation)	0 days	Thu 3/11/05	Thu 3/11/05
93	Meetings with individual agencies 1	0 days	Wed 7/12/05	Wed 7/12/05
94	Meetings with individual agencies 2	5 days?	Mon 5/12/05	Fri 9/12/05
95	Agencies review/revise plans	137 days?	Fri 21/10/05	Mon 1/05/06
96	Draft Plans	0 days	Wed 10/05/06	Wed 10/05/06
97	Obtain and review draft plans	41 days?	Tue 2/05/06	Tue 27/06/06
98	Meetings with individual agencies 1	0 days	Wed 12/07/06	Wed 12/07/06
99	Meetings with individual agencies 2	9 days?	Mon 10/07/06	Thu 20/07/06
100	Summary report	23 days?	Mon 24/07/06	Wed 23/08/06
101	Final workshop	0 days	Wed 20/09/06	Wed 20/09/06
102	**DM9 Disaster Simulations**	**190 days?**	**Mon 4/04/05**	**Fri 23/12/05**
103	(Inception workshop)	0 days	Thu 14/04/05	Thu 14/04/05
104	Develop simulation programme	15 days?	Mon 4/04/05	Fri 22/04/05
105	(Review Workshop)	0 days	Thu 23/06/05	Thu 23/06/05
106	Planning for Simulation 1	58 days?	Wed 1/06/05	Fri 19/08/05
107	Interagency Simulation 1	0 days	Wed 24/08/05	Wed 24/08/05
108	Debrief and report on Simulation 1	6 days?	Thu 25/05/05	Thu 1/09/05
109	Planning for Simulation 2	43 days?	Thu 1/09/05	Mon 31/10/05
110	Interagency Simulation 2	0 days	Thu 3/11/05	Thu 3/11/05
111	Debrief and report on Simulation 2	4 days?	Fri 4/11/05	Wed 9/11/05
112	Report recommending programme for further simulations	17 days?	Thu 1/12/05	Fri 23/12/05
113	**DM10 Disaster Insurance**	**481 days?**	**Fri 1/04/05**	**Fri 2/02/07**
114	Organise agencies to participate in review and prepare briefing materials	17 days?	Mon 9/01/06	Tue 31/01/06
115	Review findings from Port Vila project	20 days?	Wed 1/02/06	Tue 28/02/06
116	Prepare recommendations	23 days?	Wed 1/03/06	Fri 31/03/06
117	Review and arrange presentation	1 day?	Fri 14/04/06	Fri 14/04/06
118	Presentation	0 days	Wed 26/04/06	Wed 26/04/06
119	Progress Reports	1 day?	Fri 1/04/05	Fri 1/04/05
120	**Quarterly Reports**	**456 days**	**Fri 6/05/05**	**Fri 2/02/07**
129	Dec 05 Report (project adjustments)	2 days	Mon 12/12/05	Tue 13/12/05



Project: SIAM2 - Emergency Management Workstream
Date: 28 March 2005

Task | Split | Progress | Milestone | Summary | Project Summary | External Tasks | External Milestone | Deadline

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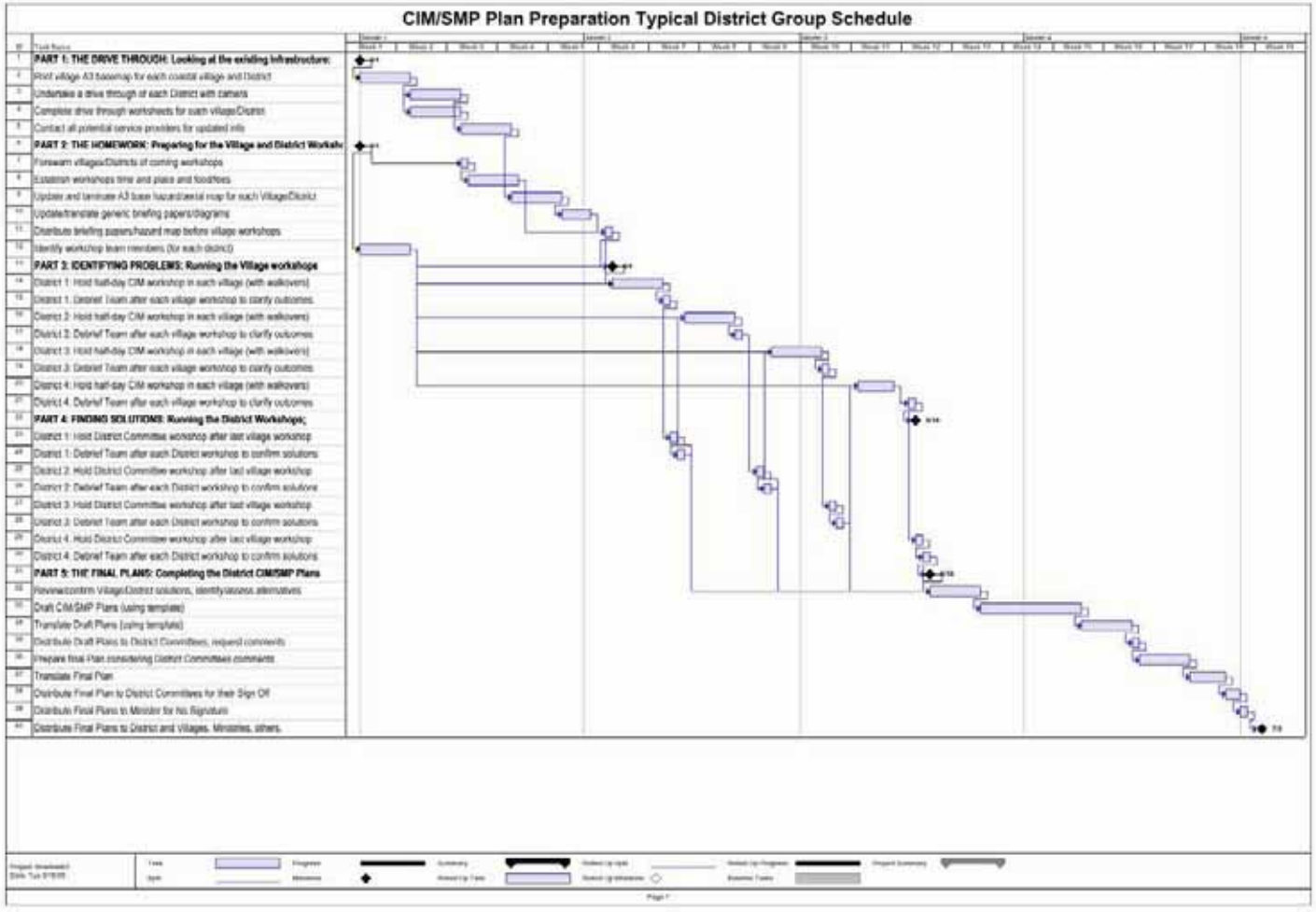
3.5 CIM Plan Typical District Work Programme



3.6 Deliverable Outputs

Deliverable outputs will be as provided for in the contract and detailed in our Technical Proposal.

3.7 Anticipated Counterpart Involvement

Counterpart availability for the CIM Plan process has major implications for the project. On the one hand visible Government staff representation as part of the CIM Plan consultation teams in the villages is essential to reinforce the "partnership" ethos of the process. On the other we are only too aware of the significant strain this work can place upon scarce staff resources in both MWTI and MNREM. We have structured our work programme on the basis that a minimum of one Ministry (Could either be MWTI or MNREM or both) staff person is available for each CIM Plan consultation team. Our discussions with MWTI and MNREM staff during the Inception review period have indicated that, subject to sufficient prior notice and a measure of flexibility in who actually participates on the day, then this assumption ought to be able to be fulfilled.

We will provide substantial advance warning of the requirement for counterpart staff support via the detailed work programme for the CIM Plan preparation which will be discussed with the MNREM PCM and other key staff in MWTI PUMA Division on a regular basis.

4 Key Performance and Progress Indicators

At the Inception Report workshop key stakeholders agreed that the key performance and progress indicators developed in the draft Inception Report were appropriate for the project.. These focussed upon key outcomes sought from the project, which have been summarised in Annex 2 of the TOR.

The key indicators proposed cover the following key elements from each workstream:

Environmental Management

- Operative EIA regulations under the PUMA Act 2004.
  - **Measure**: Completed EIA regulations agreed by Cabinet.
- Widespread application of the EIA regulations
  - **Measure**: Completed EIA regulations applied to all projects by MWTI PUM Division
- Improved environmental management techniques and practices applied to Government and private sector construction projects.
  - **Measure**: Completed COEP's consistently applied for Government and major private sector works
- Improved environmental monitoring practices and procedures with MNREM.
  - **Measure**: Completion of suggested environmental monitoring practices and procedures.

Natural Risk Management

- An updated and expanded CIM Strategy to include climate change adaptation and other hazards.
  - **Measure**: Revised and expanded CIM Strategy agreed by Cabinet.
- Completed CIM plans for the remaining 28 districts.
  - **Measure**: Completed CIM Plans incorporating the revised and expanded CIM Strategy
- Use of the CIM Plans as national planning documents under the PUMA Act.
  - **Measure**: CIM Plans adopted for all Districts and used to administer inter alia the Small Grants Scheme and other Government infrastructure investment decisions.
- Demonstrable wider level of awareness and acceptance of CIM Plans in the community.
  - **Measure**: Completed awareness survey with increased knowledge in all sectors of the community of CIM Plans.

Resource Management

- Increased utilisation of GIS as an analysis tool in support of natural resources management policies.
  - **Measure**: Completed GIS professional development and applications programme in MNREM.

- Support to other natural resources management initiatives arising from CIM Plans and other policy directives in MNREM's corporate plan.
  - **Measure**: Reference in MNREM's corporate plan to the CIM Strategy and CIM Plans as guiding policy and implementation frameworks for Government and private projects.

Emergency Management

- An updated NEMP.
  - **Measure**: Completed NEMP
- Training and professional development for NDMO staff.
  - **Measure**: Completed training and professional development plan and implementation commenced during the project.
- Awareness raising of community and organisations with respect to NEMP and EM generally.
  - **Measure**: Completed public awareness programme
- National disaster simulations.
  - **Measure**: Two disaster simulations completed by end 2005.
- Specification of accommodation and additional equipment.
  - **Measure**: Accommodation and equipment schedule completed
- Preparation of supporting DM legislation.
  - **Measure**: Legislation drafted and presented to Cabinet.
- Review of options for DM insurance.
  - **Measure**: Completed review of Port Vila Pilot Project

5 Risk Management Plan

5.1 Introduction

The TOR for the project requires as part of the Inception Review that a *"a risk management plan for the project (based on AS/NZS 4360 [Risk Management]), against which the project progress is to be assessed and risks are to be managed.*"

AS/NZS 4360 Risk Management describes risk management as " a generic framework for establishing the context, identifying, analysing, evaluating, treating, monitoring and communicating risk." It stresses the achievement of an appropriate balance between realising opportunities for gains whilst minimising losses. Risk management is an iterative process consisting of steps which when undertaken in sequence enable continuous improvement in decision-making and resultant performance. The Standard emphasises both the positive as well as negative outcomes of exposure to uncertainty or potential deviations from what was expected or planned.

The Standard is not a prescriptive tool but rather a framework for the systematic identification, evaluation, treatment and monitoring of risks. In the context of this project we have adopted a relatively high level analysis focussing on risks which may inhibit the attainment of overall project objectives rather than small scale risks to the programme for individual tasks. These risks can and will be managed via the project work programme and the progress reporting schedules.

5.2 Project Risk Plan

For each of the identified risks we have followed the recommended process in the Standard. This requires the *Identification* of the risk; the *Analysis* of the risk; the *Evaluation* of the risk and the *Treatment* of the risk. This process is conducted within a framework of on-going and continuous communication/consultation (to be achieved via the risk analysis section of the quarterly report) and monitoring/review (to be achieved by the project manager's monitoring of risks and the project programme which is also the subject of both monthly and quarterly reports.)

Identification of the risk involves description of the item or activity that creates the risk.

Analysis of the risk considers its potential to adversely impact upon attainment of the project objectives. This may also be a positive impact. This is about developing an understanding of the risk and assists with the decision as to whether the risk needs to be treated and what might be the most cost-effective treatment strategy.

Evaluation of the risk is all about assessing which risks need to be treated and treatment priorities.

Treatment of the risk involves the application of treatment methods which may include avoidance, changing the likelihood of the risk, changing the consequences, sharing the risk or retaining and accepting the risk.

In the following Table we set out our suggested structure for the assessment of the major project risks by workstream together with appropriate risk management strategies for each risk.

Table 5.1 - Risk Management Schedule

The Risk	Risk Level	Responsibility	Risk Management
Environmental Management Inability to secure Ministerial & Cabinet support for proposed EIA regulations	Low	MNREM & law draftsman	Briefing of Minister & Cabinet at regular intervals prior to draft being presented.
COEP's not adopted by industry	Moderate	MNREM & MWTI	Both Ministries to publicly notify of requirements to adopt and of their intention to enforce.
Nat Risk Management Inability to secure Ministerial & Cabinet support for proposed CIM Strategy revisions	Moderate	MNREM & project team	Briefing of Minister & Cabinet at regular intervals prior to draft being presented.
Inability to complete CIM Plans for remaining 28 districts within project timeframe	Moderate to High	Project Team, MNREM & MWTI	Regular monitoring of work programme and resource availability
Nat Resource Management: Natural Events Fire and/or water damage to materials and data crucial for achieving project outcomes, e.g. orthophotography, GIS data etc.	Moderate to High	MNREM MNREM & project team	Maintain backups on and offsite. Share project directories and layers between MNREM and project team
Nat Resource Management: Technology and Technical Issues Applications recommended poorly focused and inappropriate	Low	Consultant project team	Ongoing dialogue between consultants and counterparts Applications are appropriate to MNREM and other relevant agency needs Technical interventions are sound and based on:

The Risk	Risk Level	Responsibility	Risk Management
			In-depth needs analysis Stakeholder input Senior consultants, counterparts and agency representatives develop project plans with ongoing progress reports to monitor appropriateness of applications
Poor uptake of GIS technology	Low	MNREM & Consultant project team	Senior consultants and counterparts agree on training content and format based on joint needs analysis Targeted training/familiarization programmes in place with stakeholder commitment
Data unavailable to project	Low	CEO, MNREM	Establish protocols with data suppliers re ownership, use and intellectual property
Emergency Management Lack of commitment and buy-in by agencies to revising their response plans or to the draft NDMP	Low	Consultant Project Team and CEO/MNREM	Managed by: ■ alerting agencies well in advance to the consultation process ■ working with agencies on a one-on-one basis ■ encouraging agencies to show-case their plans with others (peer mentoring) ■ alerting MNREM early in the process if particular agencies are reluctant to participate
Lack of support for revised national disaster management arrangements by MCDEM and/or SOPAC	Low	Consultant Project Team and CEO/MNREM	Managed by: ■ involvement of MDCEM and SOPAC at the Inception Workshop stage, the Review Workshop stage and at other relevant parts of the project (e.g. invitations to simulations; requests to review discussion documents and draft reports)

6 Decisions/Actions Required

6.1 Organisational Changes

During the Inception visit the project team was advised of the recent decision by Cabinet to relocate the PUMA division of MNREM to MWTI. The PUMA division has a key role to play in the project being intimately involved in the Natural Risk Management workstream – this produces the revised CIM Strategy and completes the CIM Plans for the remaining districts of the country. This workstream consumes approximately 75% of the manpower resources of the entire contract.

There are several issues arising from this relocation both of a practical and more conceptual/philosophical nature.

- The contribution of counterpart support staff from the PUMA Division will require the agreement of the CEO of MWTI who is not a signatory to the contract for this component.
- Similarly MNREM counterpart staff support for this workstream will be to a function for which they no longer have an organisational responsibility.
- The integration of an increased awareness of the emergency management function into the CIM plan process will be made more difficult as will its continuous implementation via the planning process.
- As the primary environmental regulating authority under the PUMA legislation, the PUMA division within MWTI may find itself in a conflict of interest situation with other more works related divisions of MWTI.
- The CIM Plans will need to be signed by the Minister responsible for MWTI rather than that for MNREM.

We have initiated an exchange of correspondence to address some of these issues and look forward to further feedback as a result of this report. We are still awaiting confirmation of our understandings from MNREM & MWTI – a copy of our letter dated 22 February 2005 to MNREM is contained in Appendix H.

6.2 Natural Risk Management

It is essential that the project have access to digital (MapInfo or ArcView) maps of the country.

The Preparation of the remaining CIM/SMP plans will be a very "hands-on" learning experience for all those involved, including both Government Staff and local village participants. Much of the data collection work will take place in the field, and the speed and accuracy of map reproduction and modification will be critical to the successful completion of the project.

While it is crucial that the existing government mapping system retains its integrity and independence, it is essential that this project has a copy of all the base map layers of relevance to the preparation of the CIM plans. The following layers are considered

essential: coastlines, reefs, topography (contour lines), roads, paths, buildings, bridges, coastal hazards, land resource inventory information and (where mapped), utilities.

These map layers will be updated as necessary in the field and new layers will be created as they are developed (e.g. aggregate resources, cyclone "safe areas", possible future locations for public facilities, etc.). All layers, whether modified or not will be kept separate from the Government database until/unless the new/revised information is desired by the government offices.

During the Draft Inception Report Workshop on 14 April 2005, MNREM Mapping Division indicated that they would give further consideration to the Consultant Team's request for direct access to the necessary data layers to enable the production of the consultation maps for the CIM Plan preparation direct by the consultant. We still await conformation of this access.

- Appendix A

Description of Services Required

Description Of Services Required

Environmental Management

1. **EIA Regulations**: Based on discussion and feedback from MNREM, finalise the draft EIA Regulation to be camera ready for submission by the Minister of Natural Resources and Environment to Cabinet for approval. The EIA requirements were originally drafted to be regulations under the Lands, Surveys and Environments Act, 1989. The draft regulations will need to be upgraded to be compatible with the empowering legislation for MNREM, the draft PUMA Act, and administration improvements identified through the application of the draft regulations during the implementation under IAM-1.

2. **Environmental Monitoring**: Advise MNREM on environmental monitoring good practice, and in particular, how to make best use of environmental monitoring data collected to-date for national monitoring purposes, trend analysis, development and use of environmental monitoring indicators, and the development of policy and management initiatives based on, or drawing from, this data. This advice is likely to be delivered through workshops involving senior members of MNREM, and through mentoring of key staff within MNREM who can champion this initiative.

3. **Upgrade/Extend COEP**: Review and expand the Codes of Environmental Practice (COEP) to cover for other routine physical works undertaken by infrastructure providers such as EPC, Samoa Telecommunication and Water Authority.

4. **Industry Training and Development**: Develop and provide training to engineering consultants and contractors on: (i) procedures and obligations under the EIA Regulation; (ii) details, application, and obligations under the COEP; (iii) application of, and obligations to meet, environmental management procedures in contract management and implementation of physical works; and (iv) the principles of economic evaluation applied to infrastructure development project evaluation (including coastal hazard mitigation systems). It is expected that the training will be delivered through seminars and workshops with some mentoring (i.e. hands-on) support through immersion of the Consultant's staff with the consultant's/contractor's staff during key project preparation/implementation periods.

5. Provide similar, possibly concurrent, training to the MWTI, to build on the training provided under IAM-1.

6. The above training and industry development shall be arranged with the assistance of MWTI and MNREM and will also involve staff from these agencies, in order to raise awareness and understanding of good environmental management practices, and to improve compliance with requirements.

7. **Contractor Qualification Scheme**: Design and assist MWTI implement a mandatory qualification scheme in environmental management and the application of the COEP on construction works for contractors as a pre-requisite for eligibility to tender for government projects.

Natural Risk Management

8. **Expand Scope of CIM Strategy**: Expand the existing CIM Strategy to incorporate issues relating to climate change adaptation, and to include strategies for other, relevant, inland hazards such as flooding and landslides. In preparing the revised CIM Strategy, the consultant shall develop and agree with the MNREM the extent and approach to any additional consultation required to finalise the strategy. Consultation shall be lead by PUMA, but shall closely involve the consultant as an expert advisor in a supporting role.

9. Taking account of feedback from the consultation, the Consultant shall prepare a final draft of the revised CIM Strategy acceptable to, and suitable for, the Minister of Natural Resources and Environment to take to Cabinet for approval and endorsement as an official, updated strategy framework for the Government of Samoa.

10. The Consultant shall prepare a background report on the update to the CIM Strategy. This report shall be an addendum to the background report prepared as part of the original CIM Strategy development, and shall outline the approach taken in developing the additions to the Strategy, the underlying thinking and reasoning, consultation activities undertaken and conclusions drawn from them, key performance indicators for the additional elements of the strategy, critical assumptions, and any other observations on the approach.

11. **Implement CIM Plans for Remaining 28 Districts**: Implement CIM Plans for 28 Districts, namely:

Vaimauga West, Faleata East, Faleata West, Sagaga le Falefa, Sagaga le Usoga, Siumu, Aana Alofi II, Aana Alofi III, Lotofaga, Lepa, Aleipata Itupa i Luga,, Aleipata Itupa i Lalo, Anoamaa East, Faasaleleaga II, Faasaleleaga III, Faasaleleaga IV, Leauvaa, Gagaemauga I, Gagaemauga II, Gagaemauga III, Gagaifomauga I, Gagaifomauga III, Vaisigano West, Falealupo, Alataua West, Palauli West,Palauli le Falefa, Satupaitea

These plans are to:

- Implement the provisions of the updated CIM Strategy (including the expanded scope of hazards to be considered);
- Be of the style, cover the scope, and be developed in a similar manner as the plans for the 15 Districts completed under IAM-1;
- Be published in both Samoan and English;
- Be consistent with, and be able to be implemented as, Sustainable Management Plans under the draft PUMA Act, or as Management Plans under the existing Lands, Surveys and Environment Act, 1989;
- Be substantially accepted, and be seen as effective, by the relevant villages.
- Be prepared as user-friendly The order of implementation of plans in documents (in Samoan and English) issued in the name of MNREM (and the District concerned) in a format suitable for publishing including supporting diagrams, maps and photographs as appropriate.

12. The order that CIM Plans will be implemented in Districts is to be determined in consultation with PUMA. Consultation with village and District representatives is to follow

the protocols developed for the project under IAM-1 (O'Meara, 1998), but also take account of the findings and recommendations from the SIAM-2 implementation review[2].

13. During the course of development of the CIM Strategy and CIM Plans the Consultant will also be involved in assisting MNREM design and implement:

- Public awareness raising activities concerning the CIM Strategy and CIM Plans and related environmental issues in general, including the use of television, radio, newspapers, and public meetings;
- Preparation of advertising, educational material, brochures and booklets.

14. **Sustainable Management Plans under the PUMA Act**: Assist PUMA to adapt the CIM Plans completed, under IAM-1 and under this contract, into Sustainable Management Plans (SMPs) under the PUMA Act. Assistance shall take the form of re-drafting of the CIM Plans into a suitable format for SMPs (§12 – 15 and §19 of the PUMA Bill), advising and assisting on any additional consultation required above that already undertaken in the preparation of the CIM Plans (§17 – 18 of the PUMA Bill), and providing advice on issues relating to *Development Standards* (§32 of the PUMA Bill) and *Samoa Planning Provisions* (§33 of the PUMA Bill).

15. **Effectiveness Survey**: Design, conduct and report on opinion surveys on the public understanding, support for, and effectiveness of the CIM Strategy and CIM Plans. These surveys must cover report on cultural groups such recognised village representative and speakers, Women's Committee members, untitled adults and mature youths. Key government agencies (e.g. MWTI) and private sector agencies (e.g. contractors involved in sand extraction) are also to be assessed and reported. The survey may involve interactive interviews, questionnaires and use of focus groups as appropriate and must involve a sample size sufficient to ensure that results are statistically significant. It is expected that the survey will be conducted largely in the Samoan language.

Resource Management

16. **GIS Applications to Natural Resources Management**: The Consultant shall identify and agree with the Chief Executive Officer, MNREM, suitable activities in which GIS can be used as a primary or supporting tool to develop policy and apply, conduct investigations, and implement mitigation programmes relating to environmental, resource and risk management consistent with the aims of SIAM-2 and MNREM's strategic objectives. The Consultant shall then:

- Help MNREM design implementation programmes for these activities than will form part of MNREM's plan of annual activities;
- Act as an advisor, facilitator, mentor and occasional hands-on assistance to MNREM staff in practices and approaches to implementing the agreed programmes. The advice and direction is expected to cover not only practical

[2] In particular, two aspects that need strengthening in relation to the CIMP Plan consultation processes are: (i) ensuring that views are sought and taken into account from parts of the community who, due to customary practice, do not necessarily participate in the community consultation processes; and (ii) providing improved village level access to information and resources on the CIM Plans.

technical practices but also best practice on how to develop and use information from GIS systems to support policy and programme management.

- Provide additional on site and classroom based training on implementation of GIS and supporting computer systems.

17. Monitor and report on progress of implementation of the tasks identified from above. Provide ongoing support, training and mentoring to MLSNR staff to achieve the specific task objectives.

18. **Sustainable Aggregate Supply Policy**: At present, management of private and commercial extraction of aggregate taken from the coastal zone (i.e. beaches and the foreshore) is limited. In may places, aggregate extraction is unsustainable, leading to coastal erosion and adverse impacts on coastal hazards mitigation works, including sand nourishment schemes. The Consultant shall assist MNREM investigate the nature and scale of the problem (drawing largely on existing studies and opinions), and then to develop, and provide advice on how to implement, a policy on the extraction and supply of aggregate from the coastal zone.

Emergency Management

19. The New Zealand Ministry of Civil Defence and Emergency Management (MCDEM) will be undertaking a field visit and review of the existing Samoa DMO institutional, management and operational arrangements (covering all aspects relating to reduction, readiness, response and recovery) under a bilateral arrangement. The MCDEM will make recommendations to allow the DMO to operate under best pacific practice, providing a template for improvements to all relevant areas including *inter alia*: legislative mandate, funding, disaster mitigation practices, warning systems, awareness and education, departmental planning, DMO structure and staffing, control and committee processes, and the effectiveness of the national emergency operation centre. The Consultant's role will be to implement this template of improvement under the framework outlines below. The Consultant will continue to liaise and consult with MCDEM throughout this phase of the project. MCDEM in collaboration with MNREM will maintain a governance oversight of the Emergency Management component, reporting to MNREM PCM.

20. **Review Workshop and Mandate**: Develop and conduct a Review Workshop (in association with the MCDEM). The approach to the workshop, and facilitation processes to be employed, are to be planned and reviewed by the Implementing Agency and IDA prior to the workshop.

21. **Revised National Disaster Management Plan**: Lead the development of a revised National Disaster Management Plan (in association with the MCDEM). This plan, although based on the existing plan, is to reflect best Pacific practice, and incorporate appropriate responsibilities and processes for all aspects of emergency management covering *inter alia* risk reduction (including community, government agency and private sector responsibilities and implementation of initiative identified under the CIM Plans), readiness, response and recovery.

22. **Specification for DMO Office/Equipment**: Advise MNREM on requirements, and prepare outline specifications, for the fit out of dedicated offices for the DMO. Facilities are expected to incorporate office space, storage space for equipment, and a

training room. Note that a cyclone resistant emergency command centre already exists at the Police Head Quarters.

23. **Equipment Supply**: Specification of radio communications equipment, within an approved budget, to supplement equipment being provided by Emergency Management Australia (EMA) (the procurement will be done by the PMU).

24. **Institutional and Staff Development on EDMO Practices**: The Emergency and Disaster Management Office has only recently been integrated into PUMA. An appointment to the position of Principal Officer (Emergency and Disaster Management) has recently been made. Establishment of, and appointments to, supporting staff positions (potentially up to two persons) is still to be done. The Consultant shall undertake or arrange the following institutional and staff development delating to the Emergency and Disaster Management Office and staff:

1. Advise on the key functions of EDMO staff, covering the Principal and supporting staff, mapping out the skills and competencies required by each staff member to undertake their respective roles and responsibilities. Prepare positions descriptions for these positions.
2. Prepare a consolidated professional development plan including implementation strategies and monitoring/evaluation processes.
3. Scope professional development requirements, and identify appropriate development opportunities. Such development opportunities may include short secondment arrangements with developed country Pacific Emergency and Disaster organisations, and programmes available through the SOPAC Community Risk Program. Consider the widest possible range of development including formal courses, work assignments and mentoring.
4. Monitor staff development and progress, and provide ongoing mentoring assistance and advice throughout the contract period.

25. **Implementation Workshops/Consultation**: Assist the DMO with the development and implementation of agency and selected community/stakeholder (including relevant NGO) awareness raising programmes. This is expected to be delivered in the form of interactive workshops and site visits. The purpose of the workshops/consultation is the outline the propose and benefits of reforms to emergency management, to introduce key people involved, identify agency/community counterparts, share experiences and opinions, outline proposed implementation programmes, and to solicit feedback on issues that will help ensure the implemented practices will be effective sustainable.

26. **Agency Response Planning**: Assist agencies with the development of implementation plans for business continuity plans and emergency response plans. Agencies are: MoP, Telecom, EPC, MoH, MWTI, NGO's, Private Sector

27. Implementation workshops and mentoring covering all agencies. Review of existing plan. Models for new plans. DMO would be responsible for identifying counterparts within each agency.

28. **Legislation Review**: Carry out (in association with the Implementing Agency, Solicitor General and the Crown Law Office) and make recommendations regarding structure and powers of the DMO and related requirements of other government

departments, crown owned entities, and private organisations. Prepare a draft of the proposed legislation.

29. **Agency and Community Education and Development**: Assist the DMO with the development and implementation of agency and community awareness raising programmes. This is likely to involve consultation meetings with Districts and village *fonos*. The Consultant shall provide leadership and assistance to the DMO with the development and implementation of community work programmes for disaster preparedness and response that can be taken back, developed further and applied by village communities.

30. **Disaster Simulations**: Assist the DMO with developing an initial programme of emergency and disaster simulations to assess the efficacy of revised disaster and business continuity plans. Observe, evaluate and provide feedback and recommendations on emergency and disaster simulations (in association with the MCDEM).

31. Disaster Insurance: Conduct and report on a preliminary review of the feasibility of, and mechanisms for, implementing a national disaster response fund or disaster management insurance. This evaluation should consider any analysis and findings from the joint SOPAC/ World Bank/ AusAID "Catastrophe Insurance Pilot Project" currently set up in Port Vila.

▪ Appendix B

GIS layers held by MNREM

GIS layers held by MNREM

Feature	Coverage	Feature Type	Attributes
Geology	National	polygon	6 classes
Drains	Apia	line	Drainage type
Political Districts	National	polygon	District area Population (2001)
Political Districts	National	polygon	District code Faipule district name Political district Population (1999)
Conservation Areas	National	polygon	Conservation areas National Parks Reserves Watershed areas Protection forest
Ecology	National	polygon	Terrestrial ecosystem class
Coastal Hazard Zone	National	polygon	Flood Erosion Landslip Sensitive area
IKONOS Multispectral image	National	raster	
Land Cover 1999	National	polygon	Land cover class
Built up area	National	polygon	Feature name
Building	National	point?	Feature name
Contour (20m)	National	line	Elevation
Text (feature name & labels)	National	annotation	
Cultivation	National	polygon	
Fuel Tank	National	point?	
Hydrology	National	line?	Feature type, name
Built up type	National	polygon	Feature type, name
Offshore	National	line?	“Sea baseline”?, coast
Road	National	line	road, track
Structures	National	point?	Feature code Feature type, name Use
Water tanks	National	point	
Transmission lines	Afulilo	line	
Land Capability	National	polygon	Prim?, Suit?, Class? Soil? Land Use Capability?
Forest Cover 1954	National	polygon	

Forest Cover 1989	National	polygon	
Land Use	National	polygon	Land use class
Land tenure	National	polygon	Land tenure class
Orthophotography 1:50k	National	raster	Natural colour
Orthophotography 1:5k	Coastal & selected inland	raster	Natural colour

- Appendix C

Mapserver equipment released by SOPAC to Met Office, Samoa

Mapserver equipment released by SOPAC to Met Office, Samoa

1	HP Compaq DL380 Server
3	72GB HOT Swap Raid Drives
1	Modempak Q Series Cabinet
4	Planet 16 port 10/100 ethernet switch
1	24 port CAT5e patch panel
1	MGE UPS Pulsar Extreme 1000c UPS
1	MGE UPS ellipse 500 UPS
1	CMT 3.2GHz Desktop PC with DVD-Rom and DVD+R/+RW
1	Nvidia GeForce 4T Graphic Card
1	HP Flat panel TFT display L1702 17"
1	HP colour inkjet printer 1700d
1	Mapinfo Professional 7.8 SN# MIPWEU0780010303
1	MapBasic SN# MBUWEU0780010062
1	Vertical Mapper v3.1 SN# VM300-02-11873 ID: 74880-38271-45286
1	Erdas Imagine Essential 8.7
1	HP Colour Inkjet Printer CP1700D

▪ Appendix D

Comments from MNREM & MWTI on Draft Inception Report

Malo o Samoa
MINISTRY OF NATURAL RESOURCES, ENVIRONMENT & METEOROLOGY
Matagaluega o Punaoa Faanatura, Siosiomaga & Vaaniau
Private Bag, Apia, SAMOA
Website: http://www.mnre.gov.ws Email: info@mnre.gov.ws
Please address all correspondence to the Chief Executive Officer

13 April 2005

Mr Graeme Roberts
Manager - Planning
Beca International Consultants Ltd
PO Box 6345 Auckland
New Zealand

Dear Graeme

Samoa Second Infrastructure Asset Management Project (SIAM-2)
Component C4.01: Environment, Risks and Resource Management.
MNRE Review of Draft Project Inception Report.

The ministry has received with thanks the above-named draft Report. The following are the suggested changes or amendments to the draft Project Inception Report after the review by our ministry on the 07 April 2005.

Page 17
2.3.2 Inception Activities – Summary of Activities Undertaken
(d) AS/NZS 4360

Please explain this standard, maybe as a footnote.

Page 18
2.3.3 Initial Findings – Imagery and GIS Data Layers

a. Aerial Photography (second bullet)
The image resolution is determined by the scale of the aerial photo.

c. GIS Data Layers
Please clarify that sentence in bullet No 3, "There is no overall data model identifying the specifications and relationship of data layers."
The mapping section does not fully understand the meaning of that sentence, hence the request to clarify or elaborate further this sentence.

For the last sentence, the metadata facility referred to was done in IAMP I and refers to Hazard Mapping.

Page 19
2.3.4 Initial Findings – Other Relevant Spatial Data (second bullet)
The old 1:20000 scale topographic maps are presently obsolete. Please consider deleting this bullet from the report.

2.3.5 Stakeholder Agency Functions and their GIS Usage.

a. MNRE Mapping Section (first paragraph)
Please amend the sentence, "The MNRE sees itself as the prime supplier of core data ……", to "MNREM is the prime supplier of core data ….".
This is to reflect the role of the Mapping Section within the ministry and government as the sole supplier of core map data.

For the same 1st paragraph and last sentence, please clarify on what policy in MNREM is becoming a barrier to the application of GIS. Please clarify or delete this sentence.

The last sentence, "MNRE face a challenge integrating the respective …… Met Office."
Please reword this sentence to facilitate that there is no challenge now that the Forestry Division and the Meteorology Division is incorporated under the ministry. (Met Office becomes Meteorology Division under MNREM).

b. Disaster Management Office (page 19)
Please amend the sentence, "During and emergency, the authorities activate …… ", to "At present during emergency, the authorities activate ……. ".
This will make the sentence sensible to understand.

c. PUMA Sustainable Development Section (page 20) [bullet No. 1]
Please amend the involvement of the Land Management Division to the Technical Division in Subdivision. Within the Technical Division is the Survey Section that are responsible for Subdivision.

f. MNRE Watershed Section
Please amend as necessary that the Watershed Section is incorporated within the Forestry Division as described in Page 22. The Forestry Division under the recent department reshuffling is now under the Ministry of Natural Resources, Environment and Meteorology (MNREM).

i. Meteorology Office (page 22)
Please amend the above heading to become Meteorology Division.

Page 24
2.4.2 DM 2 – Revised NDM Plan (RFP Clause 30/Proposed ref DM 1.2)

This section of the report is very important and our review suggests that we should go over this part to make sure that the right approach and steps are followed through in achieving the Plan is fully covered and understood.

Page 25
2.4.4 DM 4 Specification for DMO Office/Equipment (RFP Clause 31/Proposal Ref DM 1.3)

There is a need to clarify on where the National Coordination Centre will be located.

Page 28
b. Review of the operation of the existing National Coordination Centre
From our review, there is a need for more information, some clarifications on this issue hopefully to be discussed during the workshop.

c. Summary of the hazards affecting Samoa (basic indication of likelihood and consequence)
Please clarify the first sentence indicating on which agencies were interviewed during the Inception visit.

Overall, the draft Inception Report was well presented and with some minor amendments to it will be then finalized pending the outcome of the proposed workshop to further discuss its contents. I submit our review for your perusal and/or necessitate amendments.

Yours faithfully

Vitaoa Pele Fuata'i
Project Component Manager, SIAM-2

cc: CEO, Ministry Of Natural Resources and Environment
PMU

Government of the Independent State of Samoa
Ministry of Works, Transport and Infrastructure
Private Bag, Savalalo; APIA

13 April 2005

Mr. Graeme Roberts
Manager - Planning
Beca International Consultants Ltd
PO Box 6345 Auckland
New Zealand

Dear Graeme

Samoa Second Infrastructure Asset Management Project (SIAM-2)
Component C4.01: Environment, Risks and Resource Management.
MWTI Review of Draft Project Inception Report.

Comments by MWTI (PUMA)

The following comments encompasses those of the Works, Transport, and Infrastructure sectors of the Ministry mandated that responsibility, and the Planning and Urban Management Agency recently transferred from MNRE and now a Division of the MWTI.

Generally, the report is of very high quality and most of the proposals for better refining the work streams, as well as various suggestions to address the recent shift of PUMA to MWTI are acceptable and supported. We commend the consultants for a well presented summary.

However we also feel that the scope of works for the project as intended in the RFP and TORs need to be discussed further so that the consultants fully appreciate the intentions of the RFP content so that agreement can be achieved as to exactly the tasks to be undertaken as well as outputs and deliverables expected. The proposal by the consultants was noted to have disregarded some of the activities specified in the RFP. The hope of the MNRE at the time of evaluation was to have the full TOR addressed by the consultants. The same was made clear to the consultants at the negotiations of the contract in January.

Our specific comments center on four main issues; namely the refinement of the EIA Regulations, review of the CIMS, development of SMPs and additional work items proposed by the consultants for Disaster Management.

EIA Regulations.

Much work has already been undertaken for the EIA regulations. The current Regulations have already gone through a consultative process. The same was also conducted for the development of the PUMA Act. Therefore the coming into effect of the PUMA Act means that direct guidance now lies with that Act for the EIA Regs to follow. Most of work will therefore concentrate on drafting and consultations of that draft so that it can be finalized.

CIMS review

The RFP is clear on the review of the CIMS as per paragraph 17 of the TOR. That is to incorporate issues of inland hazards, climate change etc. The inception report is suggesting a narrower focus as well as being selective on only a few catchments. The project intends to cover the whole country and so should all catchments. The identification of hazards with potential to impact on coastal areas necessitates the investigation of exacerbation activities and we feel that this would take up most of the consultations for the review. While it is useful to consider regional and NZ/Australian experiences, when attitudes and cultures of people in the catchments and inland areas are considered then foreign approaches could encounter some complications. The suggestion for an extra layer is fully supported.

On a technical issue of language, the report seems to propagate a very narrow definition of the CIMS when it is clear from the current phase TOR that the hazards to be addressed are now wider. The CIMS in the first phase is to be expanded in the CIMS of the second and that is why there is need for a substantive review. MNRE may want to consider amending or deleting this particular reference on page 9 last paragraph. I do not recall an established definition of the coastal environment. But if there was geographically, then it is now to be expanded to be in line with the intention of this phase.

On the CIM plans, it is interesting to note the change in the consultant's philosophical approach deviating from their earlier understanding in their proposal to a different view now. With this kind of shift the report should be limited to describing the change in view as this is not exactly an agreed view of the Ministry. This needs to be explored in detail first and the RFP was clear in stating that the services were to find a way to turn the CIMPs into SMPs. The result of the proposed modifications by the consultants in the inception report is the creation of two plans for each district. One CIM Plan and on top of that a SMP. We strongly feel that with the current arrangements and the PUMA Act provisions which are now interpreted to cover the whole country there should be one Plan for the district. We suggest that one existing CIM Plan should test a methodology for transformation them followed by the rest. We understand that the SMP process is longer than that for the development of Complains employed in the first phase. But this is a sign of progression into a more committed partnership. This rests upon really determining if the conclusion of the report to pilot only one Complain for a SMP and not the rest is based more on the length of process or the reasons being stated.

Rather than making recommendation for the option to take, the report should just provide the pros and cons of each option and stop at that. Leave the decision to PUMA and MNRE to make.

Sustainable Aggregate Policy.

There is no mention of the Sustainable Aggregate supply policy as intended and also contained in the proposal of the consultants in the inception report.

Additional works under the Disaster and Emergency tasks

Moreover, the report is making proposals for additional works for the disaster management workstream. We feel that the institutional development of the NDMO includes the review of its existing structure and providing recommendations on future structure including functions and position job descriptions are indications. Likewise paragraph 28 of the RFP clearly specifies that the consultants will implement the templates from the MCEDM report. That report provides for the institutional strengthening of the NDMO which includes the development of a framework and recommendations for implementation such as framework. The development of a business plan for the NDM in our view is therefore already included in the RFP. Item DM2.1 also talks about looking at the structure of the NMDO and making recommendations. Output (s) on page 53 also states that institutional development on emergency management and practices to be implemented.

A summary of hazards affecting Samoa is in our view parts and parcel of the development of the new NDMP after review. In order to fully understand the hazards that need management the review process must identify and look at hazards. Without such an assessment the plan will be incomplete and it is not the intention of government and MNRE to have an incomplete plan. While the RFP may be silent on specific as to such a summary it is our understanding that nay review of the NDMP will naturally have this undertaken. Unless of course MNRE's intention was just to conduct and editing job of the existing NDMP.

On the National Coordination Centre, the MCDEM report has already provided discussions and summary of this and the consultants will only need to work together with the MCDEM to have this covered.

An inventory of emergency management related assets will be available from the development of Agency response plans. The expectation is that all this information should be made available by each lead agency for a particular type of disaster.

While it will be of benefit for the consultants to attend the annual SOPAC regional Disaster Management Meeting, we would like some clarification as to the role of the consultants at the meeting. If participation is as an observer to obtain information, then it may be sufficient just for the delegation of Samoa who will be attending as a delegate well as one extra to be funded under this component to attend and provide reports and

outcomes of the workshop for the consultant's information. The consultants should already be in a position to understand and know the nature of training being provided to island DMOs as per consultants' Disaster management specialist's CV. We suggest that 2 -3 participants from Samoa should attend the workshop.

Lastly on an internal level, as the institutional arrangements for PUMA are still not finalized, I suggest that the division of this component between PUMA and MNRE should be emphasized so that the consultants are not confused. We have recent indications from our Minister that disaster management is to be retained under PUMA hence our detailed comments on the disaster management tasks. This needs to be agreed ASAP.

All the above comments are made with intention of receiving clarifications from the authors of the report, or perhaps also discussions at the review workshop.

We hope this will help.

I submit the PUMA review for your perusal and/or necessitate amendments.

Yours faithfully

Vitaoa Pele Fuata'i
Project Component Manager, SIAM-2

cc: CEO, Ministry Works, Transport and Infrastructure
PMU

▪ Appendix E

Attendance List & Notes from Draft Inception Report Workshop 14 April 2005

SIAM2 - Sustainable Management C4: Environment Risks & Resource Management Inception Report - Final

Location: **Conference Room, MNRE offices, Matautu**
Date: **14 April 2005**
Time: **9.30am**

Attendees List

	Name	Organisation	Address/Contact
1	Vitaoa Pele Fuatai	MNREM	pfuatai@lesamoa.net
2	Cedric Schuster	PECL	cschuster@conservation.ws
3	Don Lyon	Beca	don.lyon@beca.com
4	John McFarlane	PMU (IPA Ltd)	johnmcf@ipa.com.ws
5	Jude Kohlhase	MWTI (PUMA)	jude.kohlhase@mnre.gov.ws
6	Ted Wells	Beca	ted.wells@ipa.com.ws
7	Keith Frentz	Beca	keith.frentz@beca.com
8	Natalie Mitchell	MWTI (PUMA)	natalie.mitchell@mnre.gov.ws
9	Fiona Sapatu	MWTI (PUMA)	fiona.sapatua@mnre.gov.ws
10	Fetoloai Yandall-Alama	MWTI (PUMA)	fetoloai.alama@mnre.gov.ws
11	Debbie Cunningham	Beca/Kestrel	dc@kestrel.co.nz
12	Simon Chambers	MCDEM, NZ	Simon.chambers@dia.govt.nz
13	Mueiagatele Joe Reti	PECL	joereti@conservation.ws
14	Michele Daly	Beca/Kestrel	md@kestrel.co.nz
15	Graeme Roberts	Beca	graeme.roberts@beca.com
16	Leo'o Polutea	MNRE	leo'o.polutea@mnre.gov.ws
17	Filomena Nelson	MNRE	filomena.nelson@mnre.gov.ws
18	Kirisimasi Seumanutafa	MWTI (PUMA)	kirisimasi.seumanutafa@mnre.gov.ws
19			
20			
21			
22			
23			
24			

SIAM 2 Inception Report Workshop
14 April 2005
Meeting Notes

Issue 1: PUM Act

- Uncertainty of the scope of the task of reviewing the PUM Act along with the change of the PUM Authority to MWTI. This is likely to result in the need to review other legislation to ensure that the statutory base remains valid.

Resolution: Review PUM Act as per TOR and identify other reviews that should be undertaken either as an extension to the contract or by others.

Issue 2: CIM Strategy

- CIM Strategy and Plans have a Coastal focus and while most of the population and infrastructure is in this band they are not management tools for the whole of Samoa.
- Need to build on the strengths of the CIM Strategy including:
  - Easy to read
  - Concise
  - Partnership between Village and Government
  - Provides for integrated management from Strategy to Policy to Implementation
  - Applies to everyone
- Acknowledge need to incorporate "whole of catchment" inputs/outcomes as they affect the Coastal margin:

Resolution: Prepare an update to the CIM Strategy including a new section on inland/whole of catchment issues and related policies and actions supported by an associated technical report within the scope of the present contract.

Issue 3: CIM Plans

- Can CIM Plans be adapted to be SMPs
  - Different focus from partnership between Government/village to regulatory
  - CIM Plans focused on coastal issues not broad land use issues encompassed by SMPs
  - Not envisaged that CIM Plans be extended to cover another 35 villages inland.
  - Human resource management issues within PUMA/MWTI
  - Elements of CIM Plans in an SMP but not a whole SMP in itself
  - Villages not ready for regulatory approach of SMPs

Resolution:

Prepare a relationship diagram/structure incorporating National/Local planning mechanisms and effects based mechanisms. E.g., National Policy and Regulatory Statements, Local implementation guidelines, Coastal Strategy and Plans and Land-use Plans. The relationships of these Strategies,

Plans and Guidelines are vertical and horizontal incorporating social and physical elements within the scope of the present contract.

Prepare a National Coastal Sustainable Management Plan as an example of a National Policy and Implementation Guideline within the scope of the present contract.

- What is the appropriate form of Planning structure for Apia?
  - Key issues are land use
  - Beach and coast largely protected (sea wall)
  - Infrastructure highly resilient as has stood the test of time.

Resolution:

Consider amending the scope of the project in the Apia urban area to prepare an SMP as an extension to the contract. Coastal issues incorporated into the SMP but mainly dealing with Land-use and network infrastructure issues.

Consider relevance of Structure Planning in some areas e.g., Vaitele (presentation to be provided to PUMA on Structure Planning as a development management tool).

Issue 4: Provision of Aerial Photography and mapping layers

- Difficulties in resourcing the provision of aerial photographs and hazard data used in consultation from both Beca and MNRE point of view.
  - Long lead time to obtain aerials
  - No A1 laminator in Samoa (need to send to Auckland)
  - Extensive drain on MNRE resources
  - Acknowledges MNRE concern that unauthorized use may occur beyond the scope of the project.

Resolution: To make aerial photographs and associated topographic, hazard and text layers available in Mapinfo format for the project use. To be installed on a password protected, secure system accessed by named personnel and returned (including updates provided as a result of the project) as a deliverable at the end of the project.

Issue 5: Emergency Management

- Longer timeframe for some components required to fully incorporate the project requirements
- The strategic (longer term) element of the Business Plan not included in TOR but should be included as part of Business Plan.
- The extent to which consideration of the National Coordination Centre (in terms of fit-out, establishing operational capability etc) as part of the TOR needs clarification – also the relationship of the National Coordination Centre with other Emergency Management activities – Police, Fire etc., and who has responsibility for the facility.
- Preparing a summary of hazards for the NDMP is a part of the methodology, however, the collection and review of hazards information as an input to the summary is beyond the scope of the TOR.

- Attendance at the SOPAC regional meeting in June by one of the consultant team.
- Provision of an inventory of Disaster Management assets including physical and intellectual as an extension to the TOR.

Resolution:

Complete project as per TOR and identify further work that should be undertaken either as an extension to the contract or by others.

Clarification of the status of the NCC (who is responsible for the facility; ability to use the current facility for its intended purpose etc) to be provided.

Suggested Way Forward

To confirm the above resolutions

▪ Appendix F

MCDEM Comments on Draft Inception Report and Inception Review Workshop - Letter Dated 18 April 2005

Te Rākau Whakamarumaru

Ministry of Civil Defence & Emergency Management

Level 4, Ernst & Young Bldg, 277 Cambridge Tce, P.O. Box 13-766, Christchurch, New Zealand | Telephone: + 64 3 379 0294 | Facsimile: + 64 3 379 5223

18th April 2005

Mr Vitaoa Pele Fuata'I,
MNREM Project Component Manager SIAM-2
Ministry of Natural Resources, Environment & Meteorology
Private Bag
APIA
SAMOA

Infrastructure Asset Management Project Phase II. Component C4.01 Sustainable Management, Environment, Risks and Emergency Management Project Inception Workshop held at MNREM Matautu Office, Thursday 14th April 2005.

Dear Pele

Following the meeting on Thursday I have documented some of the discussion around the emergency management component of the above Project for which MCDEM acts as the peer review.

Emergency Management needs to be included in the scope of work for the CIM Strategy so that there is an identified link between the components, which is not clear at the moment in the draft Inception report.

Of immediate concern during the discussions are the Additional Work items that Beca have identified. Most of these with the exception of the visit to Papua New Guinea by the consultant to attend the Pacific Regional Disaster Management Meeting were specific recommendations of our review report last year and need to be given priority during this project.

The most important item is the review of the National Co-ordination Centre. This is pivotal to the effectiveness of existing or new Disaster Management arrangements and any review of the disaster management structure.

Similarly the work being done in the Natural Risk management work stream should be fed into a strategic section of the National Emergency Management plan. It is hoped that most of the National agencies that would have a role under this plan would also identify their risks and hazards and have a statement of their intent included in the strategic section of the National plan. This is necessary to develop best practise, which is one of the stated aims of the Project Appraisal Document.

Lastly I would support the application of the consultant to attend the Regional Disaster Management meeting in Papua New Guinea, 6th – 8th June 2005, as this meeting will signify establishment of a Pacific Islands framework for best practise in disaster/emergency management.

Thank you for your hospitality and I look forward to meeting you again in Samoa during the week of the 20th June.

Yours Sincerely

Simon Chambers
Emergency Management Planner

▪ Appendix G

List of Persons Consulted for Emergency Management Workstream Inception Visit

Persons met with during the Inception Visits (March and April 2005) for the Emergency Management Workstream

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1. *Paul Brennan*
Police Institutional Strengthening Project, AusAid

2. *Levaopolo Tupae Esera,* CEO,
Ministry of Education, Sports & Culture

3. *Namulauulu Tautala Mauala,* Secretary-General,
Samoa Red Cross Society

4. *Tony Hill,* Assistant Fire Chief
Ministry of Police, Prison and Fire Services.

5. Assistant Police Commissioner
(Tour of National Co-ordination Centre (NCC))

6. *Muaausa Joseph Walters* CEO, and *Sam Unutoa,* Safety Training Officer
Electric Power Corporation

7. *Alefosio Matulino,* Acting General Manager
Airport Authority

8. *Michael Johnston,* CEO
SamoaTel

9. *Luagalau Foisaga Eteuati Shon,* CEO,
Ministry of Women, Community & Social Development

10. *Mulipola Ausetalia Titimaea,* Assistant CEO plus several staff
Meteorology Division

11. *Papali'i Lorenesse Neru,* Police Commissioner
Ministry of Police, Prison and Fire Services.

12. *Taulapapa Captain, Maselino Tominiko,* Asst CEO Maritime
Ministry of Works, Transport & Infrastructure

13. *J. Saufoi Moors,* Director – Asset Management, Buildings
Ministry of Works, Transport & Infrastructure

14. *Barry Wilson,* Police Institutional Strengthening Project, AusAid

15. *Lt Cmdr Andy Schroder,* Maritime Surveillance Adviser
Royal Australian Navy, Samoa Police, Prisons & Fire Service

16. *Palanitina (Tina) Toelupe,* CEO, Ministry of Health

17. *Philip Hewitt,* NZAID Manager (First Secretary), NZ Consulate, Samoa

18. *Mavaega Mupo,* Port Authority

- Appendix H

Letter from BICL to MNREM & MWTI dated 22 February 2005

22 February 2005

Our Ref: 6060030/100

Final Inception Report - May 2005.DOC

Ministry of Natural Resources & Environment

Private Bag

APIA

SAMOA

Attention: Tu'u'u Dr Ieti Taulealo

Dear Sir

SIAM2 - Sustainable Management C4: Environment Risks & Resource Management Inception Report - Final

We refer to our meeting in your offices earlier today regarding the above contract. At that meeting we discussed the potential impacts upon the project, both practical and contractual, arising from the recent decision of Cabinet to undertake some restructuring of functions between MNRE and MWTI. It was agreed that we write to you setting down our understanding of these changes and the practical and contractual implications for the project.

We understand that the following changes are to occur:

- The transfer of the Planning and Urban Management Agency (PUMA) from MNRE to MWTI, including the responsibility for the preparation of the CIM Plans for the remaining 26 districts under the above project, the review and amendments to the CIM Strategy and any consequential changes to the CIM Plans already completed under Phase 1 of the project.
- We also understand that the responsibility for the drafting of the amended EIA regulations, to be promulgated under the PUMA Act, will also be transferred to MWTI.
- The NDMO is to remain within MNRE under the Meteorology Division which is to be transferred to MNRE from the Ministry of Agriculture Forests, Fisheries and Meteorology.

We understand and seek your confirmation of the following with regard to our obligations under the contract for the above project:

- That the PUMA Division within MWTI will continue to have the lead responsibility for Government inputs to the preparation of the CIM plans and the review of the CIM Strategy in close consultation with MNRE. Final approval of the CIM Plans is to be by the Minister of Works, Transport and Infrastructure.
- That the counterpart staff support arrangements, which were developed under Phase 1 of the Project, whereby Government staff were provided to be a part of the village and

district consultation teams will continue for the duration of this project. Such provision to be mutually agreed and programmed in advance of the consultation occurring.

- The review of current draft EIA regulations and the drafting of amended legislation is to be undertaken for MWTI in close consultation with MNRE, the Attorney General's office and other stakeholders. Final approval of the draft regulations to be by the Minister of Works, Transport and Infrastructure.
- The provision of all other services under the contract to remain with MNRE with final approval of deliverable items to rest with the Minister of Natural Resources and Environment.
- In the event of any disagreement regarding the matters set out above, in the first instance this be resolved under the auspices of the IAMP Steering Committee.

As we discussed, whilst we have some concerns that our contract will be with MNRE and yet a substantial proportion of the deliverable items will now be for MWTI, we would be comfortable with this being recorded in an exchange of correspondence.

We are looking forward to working with you and your staff again on this project. We are confident that with a continuation of the goodwill and professionalism exhibited by all parties, as was the case in Phase 1 of the project, a similar positive outcome is assured for this phase.

Yours faithfully

Beca International Consultants Ltd

Graeme Roberts

Project Director

Direct Dial: +64-9-300 9271

Email: graeme.roberts@beca.com

cc: Vaaelua Nofo Vaaelua CEO, MWTI.

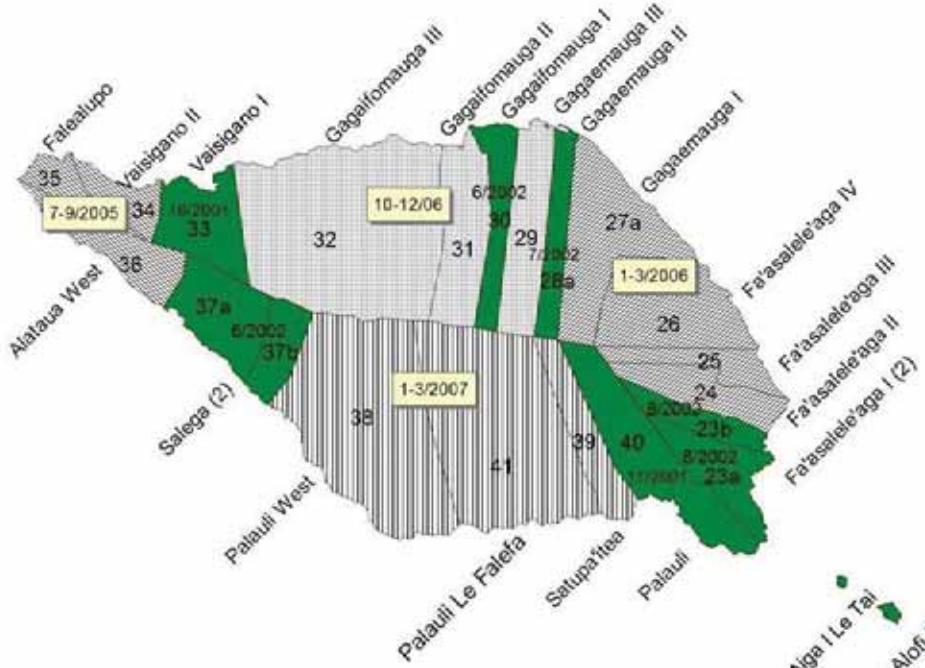
John Macfarlane, PMU

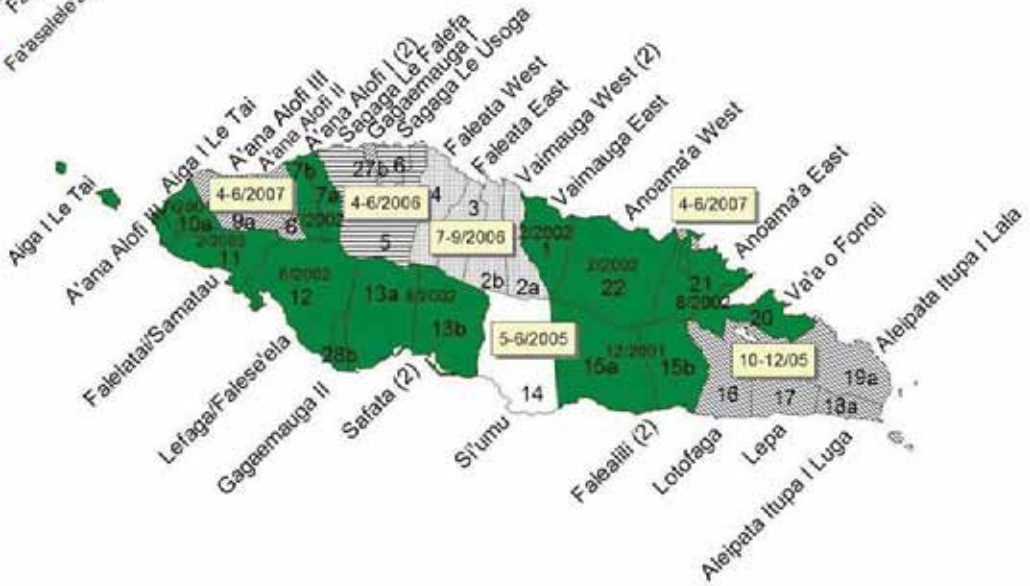
▪ Appendix I

Districts Table and District Program Map

Political District	Number	Villages	Date Completed	Order	Start Date
Aiga I Le Tai, Satuimalufilufi	10	11	07/2001		
Vaisigano I	33	3	10/2001		
Palauli (East)	40	3	11/2001		
Falealili	15	12	12/2001		
Vaimauga East	1	4	02/2002		
Falelatai/Samatau	11	6	02/2002		
Anoama'a West	22	7	02/2002		
Lefaga/Falese'ela	12	7	06/2002		
Gagaifomauga I	30	2	06/2002		
Salega	37	7	06/2002		
Gagaemauga II	28a & b	2	07/2002		
A'ana Alofi I	7a	2	07/2002		
Va'a o Fonoti, Saletele, Sauano	20	9	08/2002		
Safata	13	9	08/2002		
Fa'asalele'aga I	23	7	08/2002		
Si'umu	14	5		1	05-06/2005
Vaisigano II	34	3		2	07-09/2005
Falealupo	35	2		2	07-09/2005
Alataua West	36	6		2	07-09/2005
Lotofaga	16	5		3	10-12/2005
Lepa	17	15		3	10-12/2005
Aleipata Itupa I Luga	18	5		3	10-12/2005
Aleipata Itupa I Lala	19	7		3	10-12/2005
Fa'asalele'aga II	24	11		4	01-03/2006
Fa'asalele'aga III	25	8		4	01-03/2006
Fa'asalele'aga IV	26	3		4	01-03/2006
Gagaemauga I	27a	3		4	01-03/2006
Sagaga Le Falefa	5	12		5	04-06/2006
Sagaga Le Usoga	6	5		5	04-06/2006
Gagaemauga I	27b	3		5	04-06/2006
Faleata East	3	4		6	07-09/2006
Faleata West	4	5		6	07-09/2006
Vaimauga West	2	17		6	07-09/2006
Gagaemauga III	29	5		7	10-12/2006
Gagaifomauga II	31	10		7	10-12/2006
Gagaifomauga III	32	4		7	10-12/2006
Palauli West	38	11		8	01-03/2007
Satupa'itea	39	5		8	01-03/2007
Palauli Le Falefa	41	5		8	01-03/2007
A'ana Alofi II	8	2		9	04-06/2007

DRAFT SIAM-2 C-4
CIM/SMP PLAN WORK PROGRAMME





NOTES:

1. CIM Plans for dark shaded Districts have been completed. (date shown)
2. Remaining Districts will be completed in groups of three or four (similar hatch)
3. Date range in large box is anticipated time for Village and District meetings