NINTH COUNCIL MEETING

CARICOM REGIONAL ORGANISATION FOR STANDARDS AND QUALITY

NINTH MEETING OF THE COUNCIL OF THE CARICOM REGIONAL ORGANISATIONS FOR STANDARDS AND QUALITY (CROSQ)

RESTRICTED

CROSQ2006/09/07-a

St. Lucia Bureau of Standards
Castries, St. Lucia
12 July 2006

ISSUE DATE: 5 July 2006

AGENDA ITEM 9.1

CARICOM REGIONAL BUILDING STANDARD
(Ref: CROSQ2006/09/07-a)

The attached documents are presented for the consideration of Council:

a) First draft of Paper on Technical Assistance
b) Budget
c) Terms of Reference for Staff of the PEU
d) Terms of Reference Technical Assistance for Member States
e) Terms of Reference for Standards Development Consultants
f) Terms of Reference for Development of Seismic Hazard Maps
g) Terms of Reference for Development of Flood Hazard Maps

Council is asked to note the following:

a) that the project document will be tabled at the CDB Board meeting in July
b) the full cost of the project
c) the responsibilities of CROSQ in the implementation
d) the obligations of CROSQ in respect of the matching funds

Council is also asked to note and to agree to the commitments and expenditure in this regard.

CARIBBEAN DEVELOPMENT BANK

TWO HUNDRED AND TWENTY SECONDNTH MEETING OF THE BOARD OF DIRECTORS

TO BE HELD IN BARBADOS

JULY 13, 2006

PAPER BD

TECHNICAL ASSISTANCE – PREPARATION OF CARIBBEAN BUILDING STANDARD

1. APPLICATION

1.01 By letter dated May 5, 2006 the CARICOM Regional Organisation for Standards and Quality (CROSQ) submitted a revised Technical Assistance (TA) proposal and request for Grant funding from the Caribbean Development Bank (CDB) to assist in financing the cost of developing a new Regional Building Standard (RBS). The activities involved include

1.02 CROSQ is an inter-governmental agency established in 2002, and mandated by the industrial Protocol of the Revised Treaty of Chaguaramas that established CARICOM. This treaty commits CARICOM countries to adherence to international standards and to the establishment of a regional standards organisation. CROSQ is the successor to the Caribbean Common Market Standards Council created in 1976. The primary objectives of CROSQ are "the establishment and harmonisation of standards for the enhanced efficiency and improved quality in the production of goods and services in the Community, thereby facilitating consumer and environmental protection and improved trade within the Community and with third states".

2. BACKGROUND

General

2.01 The need for a revision of Caribbean Uniform Building Code (CUBiC) has been recognised for many years. Since the late 1980's it was recognised that new developments in construction technology and a better understanding of regional disasters (hurricanes with sustained winds in excess of 150 mph, strong earthquakes with epicentres on land and unprecedented flood levels) meant that the existing code needed to be revised to address:

(a) Structural design requirements relating to foundation designs;

(b) Specific design requirements to include areas such as access by the physically challenged;

(c) The present and predicted levels of intensities of natural hazards, including earthquakes, tropical storms and hurricanes, floods and storm surges;

(d) The lack of usage of the CUBiC code region-wide.

2.02 The low level of ownership and the limited use of CUBiC by the region's professionals have resulted in the continued use of different building codes and standards within the region's various jurisdictions. Furthermore, damage assessments carried out following disasters due to natural hazards have shown that these existing Codes are not being properly applied in the region. This has resulted in the construction of a number of structures (particularly small buildings) that do not adequately meet safety standards and which have little resistance to imposed hazard forces.

2.03 Today, the need to revise the Code to address the limitations in scope and to recognise the advances in applicable technology is even more critical. The challenges that have to be addressed in this exercise include:

(a) The need for a regular review (and updating as required) of the codes in keeping with international trends in standardisation (three year cycle);

(b) The high cost of revising codes which is a deterrent to maintaining the international currency and effectiveness of the standards;

(d) The need to harmonise the region's standards and practices in keeping with international norms;

(e) The cost of participation in the standards development process which needs to be reduced to ensure ownership of the documents and application in the national jurisdictions;

(f) The need to ensure that acceptable minimum public safety standards are established to support the mitigation of hazards and in order to preserve places for shelter and medical attention after a disaster; and

(g) The need to encourage Caribbean states to use the Regional Standards as the common basis for approval of building plans.

Code Development Within The Region

2.04 In 1982 CDB approved a Grant of USD60,000 to the Caribbean Community (CARICOM) for part financing the cost of the development of CUBiC. The United States Agency for International Development/Office of Foreign Disaster Assistance (USAID/OFDA), also approved financing to CARICOM of USD216,000 for the project. The Caribbean Council of Engineering Organisations (CCEO) provided in-kind contribution of USD100,000.

2.05 In 1991, CCEO conducted a review of CUBiC and agreed to recommend a regional effort to

update and maintain CUBiC, including the completion of the outstanding sections. This was supported at the Caribbean/Central American Forum on Building Codes and Economic Development (CARIFORUM) held in Puerto Rico in 1998. Subsequently, officials of CDB, CARICOM and the then Caribbean Disaster Mitigation Project of the Organisation of American States agreed to support a regional effort to upgrade and maintain CUBiC.

2.06 In 1999 CCEO with the support of CARICOM applied to CDB for a grant to revise and update CUBiC and in June 2001 a formal proposal outlining the proposed methodology and costing was submitted to CDB by CARICOM. Following a review of the proposal by CDB staff, a meeting was held with CARICOM and CCEO representatives, at which a list of issues to be addressed by CCEO and CARICOM was presented. No response was received by CDB until a new proposal was submitted to CDB in March 2004 by CROSQ. This proposal incorporated a request which had been received in November 2003 from the Jamaican Institution of Engineers for assistance in funding the National Building Code for Jamaica. The approach proposed in this document was for the use of the International Code Council (ICC) codes as the base documents for the proposed new code with Caribbean Application Documents (CADs) being developed for application in the region.

2.07 In November 2004 a consultative meeting involving key stakeholders from throughout the region was held at CDB at which the methodology for developing new Regional Building Standards (RBS) was developed. The meeting confirmed that the RBS would utilise the ICC Standards as the base code for the RBS with CADs being developed which would set out the requirements that are specifically applicable to the Caribbean Region. In addition the need to develop guides specifically for small building construction was acknowledged.

Present Status Of Building Codes Within The Region

2.08 Generally, the region could be separated into those countries whose codes relied on CUBiC (most of the English speaking Caribbean countries) and those whose codes did not (Cayman and the Bahamas).

2.09 The countries of the Organisation of the Eastern Caribbean States (OECS) have adapted the original (1992) OECS Building Code (which uses CUBiC as a reference standard) to their national needs. Similarly in Barbados, Guyana and the Turks and Caicos Islands the existing building codes use CUBiC as their reference standard.

2.10 The Trinidad & Tobago Building Code incorporates the CUBiC technical standards. In the case of engineered buildings British, American and Canadian codes are used as standards.

2.11 The building code currently in use in the Bahamas is in its third edition and is based on the South Florida Building Code.

2.12 In September 2003, Jamaica initiated a National Code Development Programme which is currently nearing completion. The new code utilises ICC codes as the base document with Jamaican Application Documents developed to address the special requirements that are applicable in Jamaica.

2.13 The Cayman Islands Building Code, based on the South Florida Building Code, was approved in 1992.

CROSQ's Action Plan

2.14 The CROSQ Action Plan for 2005 – 2007 emphasises technical and capacity building in the region in order to ensure that testing facilities and human capital for standards development and implementation are in place. That plan also envisages the implementation of an integrated information management and reporting system to enhance communication between stakeholders involved in the development, monitoring, enforcement and adoption of standards. All CARICOM member states will require some capacity building and human resource development. The CROSQ collaborative tools and "Rules of Procedure for the Development of Standards" will support the regional collaborative process, which will be inclusive, with collaboration at all levels to ensure applicability and sustainability.

3.0 PROPOSAL

3.01 It is proposed that CDB provide a Grant to CROSQ not exceeding the equivalent of USD1.999 mn from its Special Funds Resources (SFR) to assist CROSQ in meeting the costs for the development of a new RBS. The key activities involved in the development of RBS include:

(a) the operation of a dedicated Project Executing Unit;

(b) the review of ICC base documents to be adopted or adapted for use as part of the proposed standards as well as relevant national codes and related standards;

(c) the preparation of hazard maps and vulnerability assessment studies for seismic and flood risks where none exist;

(d) the holding of consensus building and consultative meetings with all levels of stakeholders;

(e) the drafting of the relevant CADs;

(f) the drafting of specific guidelines in respect of small buildings;

(g) the approval and ratification of all Application Documents by the required authorities;

(h) the training of regional professionals in the use of RBS;

(i) the preparation of guidelines for the enforcement of RBS including training for regulatory departments and the provision of control tracking software;

(j) the calibration of CADs;

(k) the development of monitoring and tracking system to inform updating and review of RBS;

(l) the establishment of National Technical Working Groups in all member countries to work with the Regional Technical Committee as part of the review and development process as well as with future revisions of the RBS.

4.0 OBJECTIVE

4.01 The objective of this intervention is the production of an updated and comprehensive set of regional building standards and the expansion of their use in the Caribbean, thereby facilitating the safe and economical design of buildings in the Region.

5.0 JUSTIFICATION

5.01 Through financing the cost of the development of CUBiC in 1982, CDB signalled its support for legislative enactment and appropriate enforcement of building codes and standards in BMCs vulnerable to the impacts of natural hazards and disasters. Since then CDB has taken several steps toward this goal. For example, in the wake of hurricanes Luis and Marilyn in 1995, CDB made it a condition that each Government shall ensure that design criteria with respect to structures financed by the rehabilitation loans, conform to standards acceptable to CDB and take into account measures to reduce vulnerability to damage resulting from natural hazards.

5.02 Under its 1998 Natural Disaster Management Strategy and Operational Guidelines, CDB agreed to support the preparation of physical standards in design and construction. CDB intends to deepen existing initiatives toward mandated codes and standards in BMCs through its DMFC, a partnership between CDB and USAID/OFDA. Through the DMFC, CDB, inter alia, committed to provide support to BMCs for the development, updating and use of regional and national building codes, in particular CUBiC. In addition, CDB proposes to effect policy change by partnering with international finance institutions and BMCs to mandate compliance with approved codes and standards for structural design and construction of development projects. Without mandated codes and standards, structural design characteristics and all construction, including construction financed by international assistance agencies, can be expected to continue to vary dramatically with little or no consistency in the Caribbean Region therefore increasing the risk of damage or loss. CUBiC requires updating in order to conform to current technical standards and to complete outstanding sections. The updating and maintenance of CUBiC is therefore appropriate and can provide the basis for countries to develop national codes based on a common set of technical standards in the Region. In addition, these national codes may be supplemented by the addition of local technical standards and could be incorporated in the local laws of all BMCs.

5.03 The proposed approach to the development and maintenance of RBS will result in considerable savings to the region as all costs associated with the updating of the ICC codes will be incurred by ICC with the region responsible only for the cost of updating the CAD's and technical guides where necessary.

5.04 The ultimate benefits that will arise from the development and enforcement of a new regional code will mean greater uniformity in the standard of building design in the Region as well as safer and more appropriate design standards which will contribute to a reduction in the risk and attendant loss of life and property.

6.0 EXECUTION

6.01 The project will be executed by CROSQ utilising procedures and processes as outlined the "Code of Good Practice for the Preparation, Adoption and Application of Standards" published by the World Trade Organisation. A Regional Technical Committee will be established by CROSQ to manage the development of the RBS. This committee will in turn appoint technical subcommittees (National Technical Subcommittees) through the national standards bodies that will be responsible for specific aspects of the codes within the particular jurisdiction. A dedicated Project Executing Unit (PEU) will be established within CROSQ charged with coordinating and administering the project.

6.02 CDB will assist in financing in whole or in part the cost of the PEU, consultants' fees, travel, technical services, per diems, consultations and training expenses and the purchase of equipment and technical materials. CROSQ will provide resources for office accommodation, internal communications, publication and dissemination of material, equipment and training.

6.03 The consultancies to be funded by the project are:

(a) The services of the Project Coordinator and Administrative Assistant within the PEU. Detailed Terms of Reference (TOR) for the PEU and Staff are attached at Appendix 4.

(b) The services of four (4) Standards Development Consultants (SDC) who will provide support to the Regional Technical Committee and the Regional Technical Sub-committees. Detailed TOR are attached at Appendix 5.

(c) The services of four (4) Technical Consultants for Member States (TCMS) who will be responsible for the technical supervision of the standardisation process for their corresponding Regional Technical Sub-committees. Detailed TOR are attached at Appendix 6.

(d) The preparation of a Seismic Hazard Maps for those countries where they do not exist. Detailed TOR are attached at Appendix 7.

(e) The preparation of Rainfall-Intensity-Duration Curves and Flood Hazard Maps. Detailed TOR are attached at Appendix 8.

COST AND FINANCING

7.01 The total cost of the project is estimated at USD1.999mn. The detailed budget is attached at Appendix 9. The financing plan is summarised below.

	USD (000)	%
CDB's SFR	1,347	67
CROSQ	652	33
Total	**1,999**	**100**

8.0 FUNDING SOURCE

8.01 CDB's contribution of the equivalent of USD 1,347 is eligible for financing from its SFR. Funds are available from within existing resources.

9.0 PROCUREMENT

9.01 Procurement shall be in accordance with CDB's "Procedures for the Selection and Engagement of Consultants by Recipients of CDB Financing" (the Procedures) and CDB's "Guidelines for Procurement" (the Guidelines) except for the following:

(a) a waiver of the Procedures is sought to permit the direct hiring from an ineligible source of four consultants who will be charged with providing expert advice on aspects of the ICC codes and their compatibility with CADs. The value of this waiver is estimated at USD 35,000.

(b) a waiver of the Guidelines is sought to permit the purchase of ICC base documents including copyright uses from a single ineligible source. The value of this waiver is estimated at USD12,000.

(c) a waiver of the Guidelines is sought to permit bids from ineligible sources for the supply of "Code Enforcement Information System" software programming which will be use to assist enforcement agencies in record keeping and the enforcement of building regulations. The value of this waiver is estimated at USD25,000.

10.0 RECOMMENDATION

(a) CDB "no objection" to the persons on the Regional Technical Committee"
(b) CDB reserve the right to attend and take part in meetings of RTC
(c).

Appendix 2

PREPARATION OF A CARIBBEAN BUILDING STANDARD

BUDGET
(USD)

Item	CDB	CROSQ	Total
A. Project Executing Unit			
Project Manager	150,000	0	150,000
Regional Professional Consultant (fees)	0	130,000	130,000
Administrative Assistant	56,000	0	56,000
Accounting Assistant	0	56,000	56,000
Secretary	0	42,000	42,000
Sub-total	**206,000**	**228,000**	**434,000**
Computer Equipment	8,000	0	8,000
Office Furniture	0	11,400	11,400
Offices, Services, Communications, etc.	0	49,100	49,100
Air fares and Transfers	7,000	0	7,000
Per Diem	15,000	0	15,000
Preparation of Draft Application Documents	0	6,400	6,400
Sub-total	**30,000**	**66,900**	**96,900**
Support Consultants			
Standards Development Consultants	218,000	0	218,000
Technical Consultants For Member States	33,600	0	33,600
Air fares and Transfers	21,500	0	21,500
Per Diem	34,500	0	34,500
Sub-total	**307,600**	**0**	**307,600**
Technical Management Committee Meetings (12)	0	24,000	24,000
Regional Technical Committee Meetings (15)	14,000	0	14,000
Regional Technical Sub-committee Meetings (120)	30,000	0	30,000
Sub-total	**44,000**	**24,000**	**68,000**
B. Caribbean Application Document Development			
Purchase of Base Documentation/Copyright	12,000	0	12,000
Review of ICC Documents	50,000	0	50,000
Review of Other Building Codes & Standards	18,000	0	18,000
Technical Secretaries (In Countries)	0	28,000	28,000
Document Translation	21,000	0	21,000
Technical Document Compilation	12,800	0	12,800
Room Rental & Logistics for Committee Meetings	0	3,600	3,600

Public Consultation (180 meetings)	100,800	0	100,800
Equipment & Support Services (in Countries)	0	40,200	40,200
Presentation of Codes to COTED	0	12,000	12,000
Consultancy - Hazard Assessment (Seismic)	237,600	0	237,600
Consultancy - Hazard Assessment (Rainfall/Flooding)	140,000	0	140,000
Sub-total	**592,200**	**83,800**	**676,000**
C. <u>Awareness</u>			
Regional Consensus Conferences (3 No.)	60,000	30,000	90,000
National Conferences and Workshops (sensitisation)	0	75,000	75,000
Printing of Promotional Materials	20,000	100,000	120,000
Reproduction of Application Documents (CD/Hard)	5,000	10,000	15,000
Press Promotion	5,000	8,000	13,000
Mailing and Dissemination costs	1,000	2,400	3,400
Publication Costs –Application Documents & Guides	6,000	24,000	30,000
ICC –Annual Conference & Trade Show	0	6,000	6,000
Sub-total	**97,000**	**180,400**	**277,400**
D. <u>TRAINING</u>			
Training Seminars (8 No.)			
Professional fees	0	27,840	27,840
Administrative support	0	6,240	6,240
Course Material, Rental, Promotion	0	25,280	25,280
Air Fare (Participants)	15,000	0	15,000
Per Diem (Participants)	30,000	0	30,000
Sub-total	**45,000**	**59,360**	**104,360**
E. <u>Training /Enforcement</u>			
Training			
Design of e-learning Course	0	4,500	4,500
Training Courses (12 No.)	0	3,600	3,600
Logistical costs Re. Courses	0	1,800	1,800
Electronic Implementation software			
Purchase & Copyright	25,000	0	25,000
Sub-total	**25,000**	**9,900**	**34,900**
GRAND TOTAL	1,346,800	652,360	1,999,160
%	67	33	100

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Appendix 3

TERMS OF REFERENCE
FOR STAFF OF THE PROJECT EXECUTING UNIT

BACKGROUND

1.0 The CARICOM Regional Organisation for Standards and Quality (CROSQ) is an inter-governmental agency established in 2002, and mandated by the industrial Protocol of the Revised Treaty of Chaguaramas that established CARICOM. This treaty commits CARICOM countries to adherence to international standards and to the establishment of a regional standards organisation. CROSQ is the successor to the Caribbean Common Market Standards Council created in 1976. The primary objectives of CROSQ are "the establishment and harmonisation of standards for the enhanced efficiency and improved quality in the production of goods and services in the Community, thereby facilitating consumer and environmental protection and improved trade within the Community and with third states".

2.0 CROSQ has applied for a Technical Assistance grant from the Caribbean Development Bank (CDB) to assist in financing the cost of developing a Regional Building Standard (RBS). CROSQ has been designated as the executing agency for the development of the RBS and proposes to establish a dedicated Project Execution Unit (PEU) within its secretariat, which will be charged with coordinating and administering the implementation of the TA project.

3.0 Staff of the PEU will consist of two professional positions (Project Coordinator and Regional Professional Consultant) and administrative and secretarial support staff (Administrative assistant, Accounting Assistant and Secretary). CDB resources will fund the positions of Project Manager and Administrative Assistant while the remaining positions will be financed from CROSQ resources. CROSQ will provide offices and fund the cost of office expenses. The two positions within the PEU funded from the CDB grant will be full-time positions and work exclusively on the RBS project.

(A) Project Coordinator

The Project Coordinator (PC), PEU reports to the Executive Secretary of CROSQ and is accountable for the effective implementation of RBS project and in so doing for the effective management of PEU staff. The functions of the PEU include:

a) Operational Management and execution of the project;

b) Ensuring that the regional standard development protocol is adhered to and that all deliverables are produced within agreed time-frames;

c) Defining the scope of the work, preparation of work plans and identification of required resources to complete the drafting of RBS;

d) Ensuring that the Regional Technical Committee (RTC) is duly constituted and approved;

e) Ensuring that the RTC meetings are scheduled and held as prescribed;

f) Procuring and/or making available such documents as may be required by the Committee or Sub-committees for reference;

c) Providing the required technical support for the drafting of the standard (including hiring of consultants);

d) Providing administrative and logistical office support for the standard development;

e) Monitoring and guiding professionals involved in the drafting of the standard;

f) Preparing and circulating documents for comments to stakeholders;

g) Coordinating feedback and comments for discussion and inclusion in the standard;

h) Organising and hosting technical forums on issues that require regional consensus;

i) The coordination of report preparation and distribution.

Specific Accountabilities

The PC will be responsible for undertaking the following:

a. Directing and supervising the day–to-day operations of the Project at the including coordinating the development of project components in each country;

b. Developing close working relationships with all project participants and stakeholders to achieve a shared vision of the Project and its objectives;

c. Ensuring that procurement schedules are carefully planned and executed and that there is adherence to CDB's Guidelines and Procedures;

d. Expediting the submission of claims to CDB for disbursement/reimbursement;

e. Controlling of the budget and the introduction of safeguards acceptable to CROSQ/CDB to prevent funds and asset misuse;

f. Keeping accounts on project-related expenditure and disbursement activities;

g. Coordinating, monitoring and assessing the work of consultants engaged under the project;

h. Undertaking periodic reviews of project execution in each country to determine the extent of progress to verify that contractual obligations have been met;

i. Monitoring the performance indicators established in the logical framework;

j. Coordinating the preparation and presentation to CROSQ and CDB of the Annual Operational Plan for each country;

k. Directing and coordinating the work of staff assigned to the PEU;

l. Assisting in the selection of PEU staff and managing the process for selection and engagement of technical staff/consultants to support project components;

m. Ensuring that all contractual obligations are adhered to and make all necessary arrangements to ensure implementation meets projected targets;

n. Supervising and participating in awareness-raising activities;

o. Liaising with CDB on all relevant technical, financial and administrative aspects of the Project.

q. Ensuring the timely submission to CDB of all reports required under the financing agreement.

(B) Regional Professional Consultant (RPC)

The RPC, PEU will report to the PC, PEU on all matters relevant to the project. The PRC, PEU has specific responsibility for all technical aspects of the RBS project implementation.

Specific Accountabilities

The RPC, PEU will be specifically responsible for the following:

a. Preparation and submission to the PC of the annual regional operating plan in accordance with established requirements, including: (i) projecting the number of activities to be completed, their corresponding schedule of implementation and their respective costs; (ii) objectives and goals for the project in the period; and (iii) important milestones;

b. Preparation and submission to the PC of reports as required by the financing agreement and the Executing Agency;

c. Provision of advice and support to the national coordinators/consultants at the Member State level, including the coordination of planning activities and report preparation;

d. Monitoring the activities and services provided by the various consultants in the respective countries to ensure conformity in the achievement of goals and the completion of components;

e. Coordination, at the technical level, of the work to be carried out within the various countries;

f. Undertaking of activities delegated by the PC, PEU, within his/her specific area;

g. Collaboration with PC, PEU in the preparation and/or review of the Terms of Reference for contracting consultants, professionals or technicians;

h. Managing and administering, in collaboration the national coordinators, the procurement process to ensure that CDB's Guidelines and Procedures are observed;

i. Assisting in the organisation and coordination of the various workshops arising from the consultancy services;

j. Assisting in coordinating and processing all training programmes under the Project;

k. Promoting and facilitating cooperation between the executing agency, the Member States and the other beneficiaries;

l. Monitor the performance indicators established in the logical framework;

m. Expediting the submission of claims for disbursement to CDB through PC; and

n. Providing cost control and keeping accounts on relevant cost-related expenditures and disbursement activities.

(C) Administrative Assistant

The Administrative Assistant will support the PC, PEU and will be specifically responsible for:

a. Keeping the register of goods acquired and services contracted, in a database that includes information on: the services and/or activities contracted; the conditions of the contracts and their money value; the schedule on which the partial and/or final disbursements will be made; the state of such commitments and the register of Project's income and spending;

b. Recording in the register of contracts the activities related to each contract (start date, reports presented, reimbursements requested, payments made, etc.);

c. Providing complete and up-to-date information on details of Project income and expenditure, etc., in order to keep accounting registers in accordance with the accounting plan adopted;

d. Verifying the progress of contracted activities and the preparation of disbursement requests in accordance with CDB's policies and procedures;

e. Assisting in preparing the consolidated budget for the activities scheduled for each year. This will be done annually, in collaboration with the Administrative Accountant, RTC and PC;

f. Assisting the Administrative Accountant in preparing the Project's financial statements. This will be done annually for the consideration of the PC;

D. Administrative Accountant

The Administrative Accountant will support the PC and will be specifically responsible for:

a. The preparation of complete and up-to-date information required for the keeping of accounting registers, in accordance with the accounting plan adopted;

b. The structuring, with the support of PEU members, of a national and regional cost centre to manage the Program's spending;

c. The preparation of required accounting reports and, with the Administrative Assistant, the coordination of the preparation of the Project's financial statements;

d. The preparation, in coordination with PEU members, of any periodic national and regional accounting reports that may be deemed necessary, or as required by the CDB financing agreement or by the Executing Agency; and

g. The preparation and issue, within the first 20 days of each calendar month, of the Project's financial statements corresponding to the previous month (movements and accumulated balance), including the investments made (by category and source of financing), cash received and disbursements made by the Project;

h. The preparation and presentation to the PC, on a semi-annual basis, of the financial reports required by the Executing Agency;

e. The undertaking of any other related financial activities that may be required by the PC.

E. Secretary

The Secretary will support the PM and their responsibilities will include:

a. The preparation of correspondence and the provision of quality assurance for outgoing correspondence from the PEU;

b. The filing of all correspondence and other documentation in accordance with CROSQ"s system;

c. Providing receptionist services for the unit.

REPORTING SCHEDULE

The staff of PEU with the exception of the RPC (26 months) will be engaged for a period of thirty months to complete the implementation of the RBS TA project. Reporting requirements will be as specified in the grant agreement between CROSQ and CDB and the requirements of the Executing Agency.

PROJECT EXECUTING UNIT
BUDGET (USD)

Item	CDB	CROSQ	Total
A. CDB's Contribution			
1. Professional Fees -& Salaries			
Project Manager (30 Mths)	136,350	0	136,350
Regional Professional Consultant (26 Mths)	0	118,170	118,170
Administrative Assistant (28 Mths)	50,900	0	50,900
Accounting Assistant	0	50,900	50,900
Secretary	0	38,080	38,080
2. Air Travel	7,000	0	7,000
3. Per Diem	15,000	0	15,000
4. Office Equipment (computers)	8,000	0	8,000
5. Contingencies	18,750	20,850	39,600
Sub-total	236,000	228,000	464,000
B. Counterpart Contribution			
1. Office Furniture	0	11,400	11,400
2. Offices, Utilities, Communications etc.	0	49,100	49,100
3. Report Preparation	0	6,400	6,400
Sub-total	0	66,900	66,900
Total	**236,000**	**294,900**	**530,900**

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Appendix 5

TERMS OF REFERENCE
TECHNICAL CONSULTANTS FOR MEMBER STATES

BACKGROUND

1.0 The CARICOM Regional Organisation for Standards and Quality (CROSQ) is an inter-governmental agency established in 2002, and mandated by the industrial Protocol of the Revised Treaty of Chaguaramas that established CARICOM. This treaty commits CARICOM countries to adherence to international standards and to the establishment of a regional standards organisation. CROSQ is the successor to the Caribbean Common Market Standards Council created in 1976. The primary objectives of CROSQ are "the establishment and harmonisation of standards for the enhanced efficiency and improved quality in the production of goods and services in the Community, thereby facilitating consumer and environmental protection and improved trade within the Community and with third states".

2.0 CROSQ has applied for a Technical Assistance grant from the Caribbean Development Bank (CDB) to assist in financing the cost of developing a Regional Building Standard (RBS). CROSQ has been designated as the executing agency for the development of the RBS and proposes to establish a dedicated Project Execution Unit (PEU) within its secretariat, which will be charged with coordinating and administering the implementation of the RBS project.

3.0 Technical Consultants For Member States (TCMS) will be responsible for the technical supervision of the standardisation process for their corresponding Regional Technical Sub-committees in respect of the standard to be developed. In conjunction with the PEU they will also be responsible for supplying information to, and receiving comments, from other stakeholders. The TCMS will report to the project Coordinator, PEU.

4.0 Four TCMS will be hired to cover the following areas of expertise:

(a) International Building Code;

(b) International Residential Code;

(c) International Fire Code: and

(d) International Existing Building Code.

4.01 The assignments of the four TCMS will be on a part-time basis spread over a period of up to twenty months. Specifically, the TCMS will be required to:

(a) Propose working topics to their regional technical sub-committees and present these to the PC, PEU to be included in the standardisation programme.

(b) Request and review the reference documents necessary for preparation of the standards and the technical documents proposed by the committees.

(c) Prepare and support the technical documents corresponding to each stage of code development for presentation to the RTC.

(d) Assist in the selection of participants for sub-committee/working group meetings to ensure that the standardisation process is accomplished by consensus.

(e) Call and coordinate meetings of sub-committees/work groups assigned by the PC, PEU.

(f) Prepare the minutes of sub-committee/working group meetings, technical reports, and document files at the various stages of code development.

(g) Coordinate activities and work jointly with other technical experts/ specialists to ensure conformity relating to the regulatory documents prepared.

(h) Provide the PC, PEU with regular reports on the activities of their assigned sub-committees/work groups especially as relates to the standardisation work programme.

(i) Prepare basic technical information (articles, brochures) for the different mass media.

(j) Receive comments from and respond to queries/information requests from the internal and external users involved in their sub-committees/work groups.

(k) Develop and control special projects assigned to them by the PC, PEU.

(l) Represent the PEU at external events when requested.

QUALIFICATIONS AND EXPERIENCE

5.0 The consultants should possess, as a minimum, a Bachelor's Undergraduate Degree, corporate membership in a recognised professional body and have a minimum of ten years experience in a field related to the work of the respective Regional Technical sub-committee, viz. International Building Code, the International Residential Building Code, the International Existing Building Code and the International Fire Code. In

addition, the consultant should have work experience in industry and technical standardisation activities. A knowledge of international standardisation processes, Inspection by sampling methods, conformity assessment systems, negotiating techniques, metrology and project management will also be required

REPORTING SCHEDULE

6.0 The SDC's will be engaged over a period of twenty months to complete the implementation of the RBS TA project. Reporting requirements will be as specified in the grant agreement between CROSQ and CDB.

TECHNICAL CONSULTANT S FOR MEMBER STATES
BUDGET (USD'000)

Item	CDB	CROSQ	Total
A. CDB's Contribution			
1. Professional Fees & Salaries		0	
28 man weeks @ USD1200	33,600		33,600
2. Air Travel			
8 trips @ USD1,000	8,000	0	8,000
3. Per Diem			
48 days @ USD250	12,000	0	12,000
4. Contingencies	3,400	0	3,400
Total	57,000	0	57,000

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Appendix 4

TERMS OF REFERENCE
FOR STANDARDS DEVELOPMENT CONSULTANTS

BACKGROUND

1.0 The CARICOM Regional Organisation for Standards and Quality (CROSQ) is an inter-governmental agency established in 2002, and mandated by the industrial Protocol of the Revised Treaty of Chaguaramas that established CARICOM. This treaty commits CARICOM countries to adherence to international standards and to the establishment of a regional standards organisation. CROSQ is the successor to the Caribbean Common Market Standards Council created in 1976. The primary objectives of CROSQ are "the establishment and harmonisation of standards for the enhanced efficiency and improved quality in the production of goods and services in the Community, thereby facilitating consumer and environmental protection and improved trade within the Community and with third states".

2.0 CROSQ has applied for a Technical Assistance grant from the Caribbean Development Bank (CDB) to assist in financing the cost of developing a Regional Building Standard (RBS). CROSQ has been designated as the executing agency for the development of the RBS and proposes to establish a dedicated Project Execution Unit (PEU) within its secretariat, which will be charged with coordinating and administering the implementation of the RBS project.

3.0 Four Standards Development Consultants (SDC's) will be required to provide support the Regional Technical Committee (RTC) and the Regional Technical Sub-committees (RTSC) by providing guidance in respect of the International Building Code, the International Residential Building Code, the International Existing Building Code and the International Fire Code for the development of standards at all levels. The SDC's will report to the Project Coordinator (PC), PEU.

4.0 Specifically, the SDC's will be required to:

(a) Provide technical support to the PEU, PC, RTC and RTSC for the preparation of standardisation documents.

(b) Research and make technical proposals, according to standardisation guidelines, that serve as the basis for study by the RTSC.

(c) Evaluate the reference documents used to develop the regulatory documents.

(d) Review the technical documents corresponding to each stage of study and present the respective observations to the PEU.

(e) Collaborate in the selection of participants to committee/sub-committee/working group meetings to ensure that the standardisation process is accomplished by consensus.

(f) Attend and collaborate in meetings of committees/sub-committees as required.

(g) Support the taking of minutes of committee/sub-committee meetings and the preparation of technical reports on documents at their different stages of study.

(h) Prepare basic technical information (articles, brochures) for the different mass media.

(i) Provide responses to questions from the internal and external users involved in their committees.

(j) Support the development of special projects assigned to them by the PC, PEU.

(k) Monitor and review on a periodic basis the procedures used in the standardisation process.

(l) Be responsible for supplying information and consulting with all stakeholder interests in respect of national and regional technical requirements.

(m) In conjunction with the PC, ensure the harmonisation of the documents prepared.

QUALIFICATIONS AND EXPERIENCE

5.0 The consultants should possess, as a minimum, a Bachelor's Undergraduate Degree, Corporate membership in a recognised professional body and have a minimum of ten years experience in a field related to the work of the respective Regional Technical sub-committee, viz. International Building Code, the International Residential Building Code, the International Existing Building Code and the International Fire Code. In addition the consultant should have a knowledge of the standardisation process, negotiating techniques, metrology and project management.

REPORTING SCHEDULE

6.0 The SDC's will be engaged for a period of twenty months to complete the implementation of the RBS TA project. Reporting requirements will be as specified in the grant agreement between CROSQ and CDB.

STANDARDS DEVELOPMENT CONSULTANTS
BUDGET (USD'000)

Item	CDB	CROSQ	Total
A. CDB's Contribution			
1. Professional Fees & Salaries			
80 mths @ USD2,725	218,000	0	218,000
2. Air Travel			
45 @ 300	13,500	0	13,500
3. Per Diem			
90 @ 250	22,500	0	22,500
4. Contingencies	22,000	0	22,000
Total	276,000	0	276,000

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Appendix 7

TERMS OF REFERENCE

DEVELOPMENT OF SEISMIC HAZARD MAPS

1.0 BACKGROUND

1.01 The CARICOM Regional Organisation for Standards and Quality (CROSQ) is an inter-governmental agency established in 2002, and mandated by the industrial Protocol of the Revised Treaty of Chaguaramas that established CARICOM. This treaty commits CARICOM countries to adherence to international standards and to the establishment of a regional standards organisation. CROSQ is the successor to the Caribbean Common Market Standards Council created in 1976. The primary objectives of CROSQ are "the establishment and harmonisation of standards for the enhanced efficiency and improved quality in the production of goods and services in the Community, thereby facilitating consumer and environmental protection and improved trade within the Community and with third states".

2.0 CROSQ has applied for a Technical Assistance grant from the Caribbean Development Bank (CDB) to assist in financing the cost of developing a Regional Building Standard (RBS). CROSQ has been designated as the executing agency for the development of the RBS and proposes to establish a dedicated Project Execution Unit (PEU) within its secretariat, which will be charged with coordinating and administering the implementation of the TA project.

3.0 In order to prepare the Caribbean Application Documents (CADs) that are to be developed, as part of the RBS Seismic Hazard maps are required to be prepared in countries where they are unavailable. CROSQ is desirous of engaging a Consultant(s) to prepare seismic hazard maps for the Bahamas, Cayman Islands, Belize, Turks & Caicos Islands, British Virgin Islands, Anguilla, St Kitts & Nevis, Antigua & Barbuda, Montserrat, Guyana, Dominica, St. Lucia, Grenada, St. Vincent & the Grenadines, Barbados and Trinidad & Tobago.

2.0 OBJECTIVES

2.01 The objective of the project is to develop probabilistic earthquake ground-motion maps for the Anguilla, Antigua & Barbuda, Bahamas, Barbados, Belize, British Virgin Islands, Cayman Islands, Dominica, Grenada, Guyana, Montserrat, Turks & Caicos Islands, St Kitts & Nevis, St. Lucia, St. Vincent & the Grenadines, and Trinidad & Tobago for use in the design of structures in these countries. These maps will permit the design of structures in accordance with the methodologies presented in the seismic provision of the International building Code.

3.0 SCOPE OF WORK

3.01 The Consultant shall prepare countrywide Seismic hazard maps at a scale of 1:25,000 or other scale as agreed with PEU.

3.02 The Consultant shall report to the Project Manager, PEU and shall work in direct consultation with National Disaster Coordinators (NDC) of the respective countries.

For each country, the Consultant shall:

(a) review and become familiar with the common digital database (CDD) for hazard mapping and vulnerability assessment (HMVA) and national geographic information system (GIS).

(b) Undertake, where necessary, visits to collect the necessary data. The Consultant shall:

(c) collect and analyse relevant information/data on the seismic hazard required to generate the hazard map, including, but not limited to, location, frequency and magnitude of past hazards, topographic surveys of relevant areas, historical seismic data including frequency and intensity of events. As part of the data collection and analysis exercise, the Consultant shall meet with resource persons and agencies in the public and private sector, non-governmental organizations and community-based organizations, obtain local knowledge and conduct necessary field surveys;

(d) produce GIS data layers depicting the seismic hazard at the indicated scale. The Consultant shall utilise the CDD for this purpose and shall include additional layers where deemed necessary. These layers are to be generated in an identical GIS platform as the CDD;

(e) prepare an island-wide seismic hazard map at the agreed scale, utilizing a rigorous and established scientific methodology for hazard mapping. The hazard map should be prepared and presented on the CDD GIS platform and shall include a common set of reference features to be finalised in consultation with PEU. The map shall also conform to the layout defined in consultation with PEU;

(f) prepare a technical report of the hazard assessment process documenting the following:

(i) the hazard assessment methodology, to include descriptions of the structure and content of the hazard maps; methodology employed in map preparation (including data collected, analysis method, list of digital data layers used and final map preparation); and limitations of the methodology;

(ii) hazard mapping results in terms of the distribution of the hazard zones;

(iii) map use and limitations, including explanations of how the maps may be used for development planning purposes;

(iv) detailed process for map updating;

(v) metadata and information sources; and

(vi) recommendations for future work.

(g) prepare a non-technical summary of the hazard assessment process, including mapping methodology, results and their interpretation. This summary should be suitable for inclusion in a national HM plan. It should be no more than three pages in length and contain minimal technical jargon;

(h) present the draft hazard maps to key stakeholders at a workshop at dates to be determined by the PEU, for review and comment; the Consultant shall be required to attend the workshop for one day;

(i) prepare final maps and reports, incorporating the comments received from stakeholders; and

(j) make recommendations for improvement of the national process for generating hazard maps.

4.0 INPUTS

4.01 The National Disaster Office in the individual countries and PEU shall provide the Consultant with all relevant documentation to facilitate the completion of the consultancy, including the Survey on Hazard Mapping, Vulnerability Assessment and Digital Map Information in CDERA Participating States, prepared by CDERA.

5.0 QUALIFICATIONS AND EXPERIENCE

5.01 The Consultant shall have the following or equivalent qualifications and experience:

(a) post-graduate qualification in hazard mapping and assessment, or equivalent qualification;

(b) a minimum of five years experience in seismic hazard mapping and assessment; and

(c) specialist knowledge in GIS as demonstrated by previous work in hazard mapping in a GIS environment.

6.0 RESULTS AND DELIVERABLES

6.01 The Consultant will be required to submit the following reports to PEU and each respective country:

(a) an inception report after completion of the tasks described in paragraph 3.02 (a) & (b), including the following:

(i) a summary of the findings of any missions undertaken;

(ii) an outline of the proposed hazard assessment methodology, including proposed scientific definitions of map categories;

(iii) a list of data required;

(iv) a list of available data and data suitability, including data quality and currency;

(v) specific limitations/ constraints to completion of the work, if any;

(vi) recommendations for completion of the consultancy in the context of (i) to (v) above; and

(vii) a detailed work plan.

The inception report shall be submitted to PEU and copied to the NDC in the respective countries within six weeks of the start of the consultancy. PEU shall submit comments within two weeks of receipt of the report;

(b) draft final reports to PEU and copies to each respective country within six months of the start of the consultancy. PEU shall submit comments within three weeks of receipt of the

reports. The draft reports shall contain the following:

(i) copies of the digital database for seismic hazard generated as part of the consultancy, including all GIS data layers utilised and developed as input layers for the mapping or derived from the project (including seismic hazard maps), as outlined in paragraph 3.02 (d);

(ii) draft technical reports as described in paragraph 3.02 (f) including draft hazard maps in hardcopy format; and

(iii) draft non-technical summaries of the hazard assessment process as described in paragraph 3.02 (g);

(c) draft reports of the map review workshop referred to in paragraph 3.04 (i), which shall include the major issues raised and proposals for addressing these, and recommendations as outlined in paragraph 3.02 (j), to be submitted to PEU and copied to the respective countries within one week of the workshop. PEU shall submit comments within ten days of receipt of each report;

(d) final reports, containing the final seismic hazard digital database for each country, final hard copy hazard maps, and final technical reports and non-technical summaries as described in paragraphs 3.04 (j) incorporating the comments by PEU, within four weeks of receipt of comments; and

(e) final map review workshop reports described in paragraph 6.01(d) within one week of receipt of comments from PEU.

6.02 Draft copies of reports may be submitted by electronic mail. Draft and final maps shall be submitted via electronic media, in GIF or JPEG format. Three hard copies and one digital copy of the final reports referred to at paragraph 6.01 (d) and 6.01 (e), formatted in Microsoft Word/Excel shall be submitted. Five hardcopies of the final maps at actual scale are to be submitted as well as one copy in electronic format. The final seismic hazard digital database is to be submitted in GIS format.

SEISMIC HAZARD MAPPING
BUDGET (USD)

Item	CDB	CROSQ	Total
A. Professional Fees			
1. Team Leader/Seismic Specialist			
45 days @ 700/day	31,500	0	31,500
2. Geophysical Expert			
80 days @ 700/day	56,000	0	56,000
3. Geotechnical Engineer			
60 days @ 650/day	39,000	0	39,000
4. Computer Programmer			
15 days @ 600	9,000	0	9,000
Sub-total	135,500	0	135,500
B. Travel			
1. Airfares			
30 trips @ 400	12,000	0	12,000
9 trips @ 1000	9,000	0	9,000
2. Per Diem 120 days @ 250	30,000	0	30,000
4. Map and report production	10,000	0	10,000
5. Communication	4,000	0	4,000
6. Computer Progam Costs			
16 @ 1,000	16,000	0	16,000
Sub-total	81,000	0	81,000
C. Contingencies	**21,600**		**21,600**
Grand Total	**237,600**	**0**	**237,600**

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Appendix 6

TERMS OF REFERENCE
DEVELOPMENT OF FLOOD HAZARD MAPS

1.0 BACKGROUND

1.01 The CARICOM Regional Organisation for Standards and Quality (CROSQ) is an inter-governmental agency established in 2002, and mandated by the industrial Protocol of the Revised Treaty of Chaguaramas that established CARICOM. This treaty commits CARICOM countries to adherence to international standards and to the establishment of a regional standards organisation. CROSQ is the successor to the Caribbean Common Market Standards Council created in 1976. The primary objectives of CROSQ are "the establishment and harmonisation of standards for the enhanced efficiency and improved quality in the production of goods and services in the Community, thereby facilitating consumer and environmental protection and improved trade within the Community and with third states".

2.0 CROSQ has applied for a Technical Assistance grant from the Caribbean Development Bank (CDB) to assist in financing the cost of developing a Regional Building Standard (RBS). CROSQ has been designated as the executing agency for the development of the RBS and proposes to establish a dedicated Project Execution Unit (PEU) within its secretariat, which will be charged with coordinating and administering the implementation of the TA project.

3.0 In order to prepare the Caribbean Application Documents (CADs) that are to be developed as part of the RBS it is necessary that rainfall-duration-intensity curves and flood hazard maps be prepared in countries where they are unavailable. To this end the executing agency for the project is desirous of engaging a Consultant to prepare rainfall-duration-intensity curves and flood hazard maps for the Bahamas, Cayman Islands, Guyana, Montserrat, St. Vincent & the Grenadines and Trinidad & Tobago.

2.0 OBJECTIVES

2.01 The objective of the project is to develop rainfall-duration-intensity curves and flood hazard maps for Bahamas, Cayman Islands, the coastal zone of Guyana, Montserrat, St. Vincent & the Grenadines and Trinidad & Tobago in order to enhance understanding of the hazard and to inform the development CADs.

3.0 SCOPE OF WORK

3.01 The Consultant shall prepare:

(a) rainfall-duration-intensity curves for return periods up to 50 years; and

(b) country-wide maps at a scale of 1: 25,000 or other scale as agreed with PEU. In the case of Guyana the Flood Hazard Map shall be restricted to the coastal zone.

3.02 The Consultant shall report to the Project Coordinator, PEU and shall work in direct consultation with National Disaster Coordinators (NDC) of the respective countries.

For each country, the Consultant shall:

(a) undertake an initial mission to review and become familiar with the common digital database (CDD) for hazard mapping and vulnerability assessment (HMVA) and national geographic information system (GIS) and to collect the necessary data. The Consultant shall:

(i) in preparation for the mission, prepare the following for PEU approval:

(aa) a statement of the mission's objectives, expected outcomes and proposed mission schedule; and

(bb) a generic list of the data required to generate the hazard maps, including data characteristics e.g. scale/resolution;

(ii) during the mission:

(aa) hold an initial meeting with the NHC and its HMVA sub-committee, in order to outline the mission's objectives and expected outcomes and finalise the mission schedule;

(bb) hold a final meeting at the end of the mission to debrief the NHC/HMVA subcommittee on the mission's outcomes and the way forward; and

(cc) in consultation with the NHC/HMVA subcommittee, develop a schedule of proposed future missions (if required) identifying objectives, expected outcomes and outputs;

(b) collect and analyse relevant information on rainfall/flood hazard required to generate the rainfall-intensity-duration curves and hazard map, including, but not limited to, location, frequency and magnitude of past hazards, topographic surveys of relevant drainage basins, hydrologic data including river discharge, historical flood data including peak flow records, flood inundation maps, flood frequency and damage reports, stage area curves, slope maps, cross sections, and hydraulic roughness. As part of the data collection and analysis exercise, the Consultant shall meet with resource persons and agencies in the public and private sector, non-governmental organizations and community-based organizations, obtain local knowledge and conduct necessary field surveys;

(c) produce GIS data layers depicting the flood hazard at the indicated scale. The Consultant shall utilise the CDD for this purpose and shall include additional layers where deemed necessary. These layers are to be generated in an identical GIS platform as the CDD;

(d) prepare draft country-wide flood hazard maps (coastal zone wide in the case of Guyana) at the agreed scale, utilizing a rigorous and established scientific methodology for hazard mapping. These maps will depict areas at high, medium and low-risk to flooding. The hazard maps should be prepared and presented on the CDD GIS platform and shall include a common set of reference features to be finalised in consultation with PEU. The maps shall also conform to the layout defined in consultation with PEU;

(e) produce draft rainfall-intensity-duration curves;

(f) prepare draft technical reports of the hazard assessment process documenting the following:

(i) the hazard assessment methodology, to include descriptions of the structure and content of the hazard maps; methodology employed in map preparation (including data collected, analysis method, list of digital data layers used and final map preparation); and limitations of the methodology;

(ii) hazard mapping results in terms of the distribution of the hazard zones;

(iii) map use and limitations, including explanations of how the maps may be used for development planning purposes;

(iv) detailed process for map updating;

(v) metadata and information sources; and

(vi) recommendations for future work.

(g) prepare non-technical summaries of the hazard assessment process for each country, including mapping methodology, results and their interpretation. These summaries should be suitable for inclusion in the national HM plans. They should be no more than three pages in length each and contain minimal technical jargon;

(h) submit the draft rainfall-intensity duration curves, hazard reports and maps to key stakeholders in each country, including the NHC and its HMVA subcommittee and the PEU;

(i) present the draft hazard maps to a workshop at PEU at which key stakeholders will be present;

(j) prepare final rainfall-intensity-duration curves, maps and reports, incorporating the comments from the stakeholders and the PEU; and

(k) make recommendations for improvement of the national process for generating hazard maps.

4.0 INPUTS

4.01 The National Disaster Office and PEU shall provide the Consultant with all relevant documentation to facilitate the completion of the consultancy, including the Survey on Hazard Mapping, Vulnerability Assessment and Digital Map Information in CDERA Participating States, prepared by CDERA.

5.0 QUALIFICATIONS AND EXPERIENCE

5.01 The Consultant shall have the following or equivalent qualifications and experience:

(a) post-graduate qualification in hazard mapping and assessment, or equivalent qualification;

(b) a minimum of five years experience in flood hazard mapping and assessment, preferably in the Caribbean; and

(c) specialist knowledge in GIS as demonstrated by previous work in hazard mapping in a GIS environment.

6.0 RESULTS AND DELIVERABLES

6.01 The Consultant will be required to submit the following reports to PEU and each respective country:

(a) an inception report after completion of the tasks described in paragraph 3.02 (a), including the following:

(i) a summary of the missions findings;

(ii) an outline of the proposed hazard assessment methodology, including proposed scientific definitions of map categories;

(iii) a list of data required;

(iv) a list of available data and data suitability, including data quality and currency;

(v) specific limitations/ constraints to completion of the work, if any;

(vi) recommendations for completion of the consultancy in the context of (i) to (v) above; and

(vii) a detailed work plan including proposed missions to the BMCs.

The inception report shall be submitted to PEU and copied to the NDC in the respective country within two (2) weeks of the start of the consultancy. PEU shall submit comments within two weeks of receipt of the report;

(b) draft final reports to PEU and copies to each respective country within four months of the start of the consultancy. PEU shall submit comments within three weeks of receipt of the reports. The draft reports shall contain the following:

(i) copies of the digital database for rainfall-intensity-duration curves and flood hazard generated as part of the consultancy, including all GIS data layers utilised and developed as input layers for the mapping or derived from the project (including flood hazard maps), as outlined in paragraph 3.02 (c);

(ii) draft technical reports as described in paragraph 3.04 (f) including draft rainfall-intensity-duration curves and hazard maps in hardcopy format; and

(iii) draft non-technical summaries of the hazard assessment process as described in paragraph 3.02 (g);

(c) draft reports of the map review workshop referred to in paragraph 3.02 (i), which shall include the major issues raised and proposals for addressing these, and recommendations

as outlined in paragraph 3.02 (j), to be submitted to PEU and copied to the respective country within one week of the workshop. PEU shall submit comments within ten days of receipt of each report;

(d) final reports, containing the final rainfall-intensity-duration and flood hazard digital database for each country, final hard copy rainfall-intensity-duration curves and hazard maps, and final technical reports and non-technical summaries as described in paragraphs 3.02 (i) incorporating the comments by PEU, within four weeks of receipt of comments; and

(e) final map review workshop reports described in paragraph 6.01(d) within one week of receipt of comments from PEU.

6.02 Draft copies of reports may be submitted by electronic mail. Draft and final maps shall be submitted via electronic media, in GIF or JPEG format. Three hard copies and one digital copy of the final reports referred to at paragraph 6.01 (d) and 6.01 (e), formatted in Microsoft Word/Excel shall be submitted. Five hardcopies of the final maps at actual scale are to be submitted as well as one copy in electronic format. The final flood hazard digital database is to be submitted in GIS format.

FLOOD HAZARD MAPPING
BUDGET (USD)

Item	CDB	CROSQ	Total
A. Bahamas			
1. Professional Fees			
30 days @ 400	12,000	0	12,000
Survey Crew – 3 days @ 1200	3,600	0	3,600
2. Air Travel 2 trips @ 1000	2,000	0	2,000
3. Per Diem 16 days @ 250	4,000	0	4,000
4. Map and report production	600	0	600
5. Communication	200	0	200
6. Local Transportation	500	0	500
Sub-total	22,900	0	22,900
B. Cayman Islands			
1. Professional Fees			
15 days @ 400	6,000	0	6,000
Survey Crew – 2 days @ 1200	2,400	0	2,400
2. Air Travel 2 trips @ 1,000	2,000	0	2,000
3. Per Diem 7 days @ 250	1,750	0	1,750
4. Map and report production	400	0	400
5. Communication	200	0	200
6. Local Transportation	400	0	400
Sub-total	13,150	0	13,150

C. Guyana			
1. Professional Fees			
50 days @ 400	20,000	0	20,000
Survey Crew – 10 days @ 1200	12,000	0	12,000
2. Air Travel 4 trips @ 750	3,000	0	3,000
3. Per Diem 20 days @ 250	5,000	0	5,000
4. Map and report production	600	0	600
5. Communication	200	0	200
6. Local Transportation	500	0	500
Sub-total	41,300	0	41,300
D. Montserrat			
1. Professional Fees			
15 days @ 400	6,000	0	6,000
Survey Crew – 2 days @ 1200	2,400	0	2,400
2. Air Travel 2 trips @ 750	1,500	0	1,500
3. Per Diem 5 days @ 250	1,250	0	1,250
4. Map and report production	400	0	400
5. Communication	200	0	200
6. Local Transportation	300	0	300
Sub-total	12,050	0	12,050
D. St. Vincent & the Grenadines			
1. Professional Fees			
15 days @ 400	6,000	0	6,000
Survey Crew – 4 days @ 1200	4,800	0	4,800
2. Air Travel 2 trips @ 750	1,500	0	1,500
3. Per Diem 10 days @ 250	2,500	0	2,500
4. Map and report production	400	0	400
5. Communication	200	0	200
6. Local Transportation	800	0	800
Sub-total	16,200		16,200
E. Trinidad & Tobago			
1. Professional Fees			
35 days @ 400	14,000	0	14,000
Survey Crew – 6 days @ 1200	7,200	0	7,200
2. Air Travel 2 trips @ 750	1,500	0	1,500
3. Per Diem 16 days @ 250	4,000	0	4,000
4. Map and report production	400	0	400
5. Communication	200	0	200
6. Local Transportation	500	0	500
Sub-total	27,800	0	27,800
F. Contingencies - 5% of $133,400	6,600	0	6,600
Grand Total	**140,000**	**0**	**140,000**

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